# Education at a Glance 2017

## OECD INDICATORS

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# Education at a Glance 2017

OECD INDICATORS




BETTER POLICIES FOR BETTER LIVES

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**Please cite this publication as:**
OECD (2017), *Education at a Glance 2017: OECD Indicators*, OECD Publishing, Paris.
*http://dx.doi.org/10.1787/eag-2017-en*

ISBN (print) 978-92-64-27976-6
ISBN (PDF) 978-92-64-27983-4

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# Foreword

Governments are increasingly looking to international comparisons of education opportunities and outcomes as they develop policies to enhance individuals' social and economic prospects, provide incentives for greater efficiency in schooling, and help to mobilise resources to meet rising demands. The OECD Directorate for Education and Skills contributes to these efforts by developing and analysing the quantitative, internationally comparable indicators that it publishes annually in *Education at a Glance*. Together with OECD country policy reviews, these indicators can be used to assist governments in building more effective and equitable education systems.

*Education at a Glance* addresses the needs of a range of users, from governments seeking to learn policy lessons to academics requiring data for further analysis to the general public wanting to monitor how its country's schools are progressing in producing world-class students. The publication examines the quality of learning outcomes, the policy levers and contextual factors that shape these outcomes, and the broader private and social returns that accrue to investments in education.

*Education at a Glance* is the product of a long-standing, collaborative effort between OECD governments, the experts and institutions working within the framework of the OECD Indicators of Education Systems (INES) programme and the OECD Secretariat. The publication was prepared by the staff of the Innovation and Measuring Progress Division of the OECD Directorate for Education and Skills, under the responsibility of Dirk Van Damme and Marie-Hélène Doumet and in co-operation with Étienne Albiser, Manon Costinot, Corinne Heckmann, Michael Jacobs, Karinne Logez, Camila de Moraes, Simon Normandeau, Joris Ranchin, Gara Rojas González, Martha Rozsi, Daniel Sánchez Serra, Markus Schwabe and Giovanni Maria Semeraro. Administrative support was provided by Laetitia Dehelle, and additional advice and analytical support were provided by Anithasree Athiyaman, Fatine Guedira, Michaela Horvathova, Sandrine Kergroach, Axelle Magnier, Gabriele Marconi, Nicolas Miranda, Junyeong Park and Roland Tusz. Marilyn Achiron, Cassandra Davis and Sophie Limoges provided valuable support in the editorial and production process. The development of the publication was steered by member countries through the INES Working Party and facilitated by the INES Networks. The members of the various bodies as well as the individual experts who have contributed to this publication and to OECD INES more generally are listed at the end of the book.

While much progress has been accomplished in recent years, member countries and the OECD continue to strive to strengthen the link between policy needs and the best available internationally comparable data. This presents various challenges and trade-offs. First, the indicators need to respond to education issues that are high on national policy agendas, and where the international comparative perspective can offer added value to what can be accomplished through national analysis and evaluation. Second, while the indicators should be as comparable as possible, they also need to be as country-specific as is necessary to allow for historical, systemic and cultural differences between countries. Third, the indicators need to be presented in as straightforward a manner as possible, while remaining sufficiently complex to reflect multi-faceted realities. Fourth, there is a general desire to keep the indicator set as small as possible, but it needs to be large enough to be useful to policy makers across countries that face different challenges in education.

The OECD will continue not only to address these challenges vigorously and develop indicators in areas where it is feasible and promising to develop data, but also to advance in areas where a considerable investment still needs to be made in conceptual work. The OECD Programme for International Student Assessment (PISA) and its extension through the OECD Programme for the International Assessment of Adult Competencies (Survey of Adult Skills [PIAAC]), as well as the OECD Teaching and Learning International Survey (TALIS), are major efforts to this end.

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# Editorial

## Building for the future

Who has not seen the glow in a child's eyes when asked what they want to be when they grow up? Who does not reminisce about their own childhood dreams of a career? Typically, such dreams revolve around saving people, conducting breakthrough scientific research, fighting for justice, conveying emotion through the arts, or teaching the children of tomorrow. But often the careers people choose for themselves are nothing like the ones they dreamed of as children; this is because the factors that motivate students to pursue a career in a given field can be much more complex than assumed.

At a relatively early age, students are asked to make important decisions about the paths they will follow towards their future: whether or not to continue in formal academic or vocational education, pursue a tertiary degree in a selected field of study, or enter the labour market. They will factor in their personal interests, beliefs about their capacity to excel, and the economic rewards of the different pathways. Their decision will affect the rest of their lives – a daunting prospect for a teenager – and will have repercussions on the societies we build in future generations.

In whatever the field of study chosen, higher education programmes help students develop a broad range of knowledge, skills and attitudes that are indispensable for navigating through life, and not just through the labour market. Proficiency in critical thinking and problem solving, and in social and emotional skills, such as teamwork, communication and cultural awareness, are all essential to ensure an individual's inclusion and constructive engagement in society.

This edition of *Education at a Glance* focuses on fields of study, analysing various indicators through the prism of young adults' career choices. Results show that the most common field of study in which tertiary students enrol is business, administration and law, whereas science, technology, engineering and mathematics, commonly referred to as the STEM fields, are less attractive: approximately 23% of new entrants into tertiary education select to study business, administration and law compared to 16% in engineering, construction and manufacturing, and 6% in natural sciences, mathematics and statistics. The field of information and communication technologies (ICT) in particular attracts less than 5% of new entrants, the smallest share to a field of study, yet yields the highest employment rate on average across OECD countries – even exceeding 90% in about a third of them – signalling a shortage of supply.

However, not all science-related fields have high employment outcomes. Although there has been a recent push to produce more scientists in many OECD countries, the employment rate of graduates from the fields of natural science, statistics and mathematics is more comparable to the lower employment prospects of arts and humanities graduates than to the higher rate enjoyed by engineers and ICT specialists.

In addition, the persistent differences in the way men and women select their future careers are disturbing. Nowhere is this more apparent than in the teaching profession, where more than seven out of ten teachers, on average across OECD countries, are women – and there is no sign that this gender gap is narrowing among young adults entering the field of education. The opposite is observed in science and engineering where men still outnumber women. Results from the PISA 2015 assessment indicate that boys' and girls' career paths start to diverge well before they actually select a career. On average across OECD countries, although girls outperform boys in the PISA science test, boys are more likely than girls to envision themselves in a science-related career when they are 30. Gender differences are even starker when young adults select a field of study at the tertiary level: close to three out of four engineering students and four out of five ICT students are men.

Enrolment in higher education has exploded over the past decade and the strong labour market outcomes associated with tertiary qualifications signal that this has not led to a decline in graduates' employment prospects. Vocational programmes have long promoted their ties with the labour market and their ability to produce graduates with trade-specific skills. Meanwhile, apprenticeships and work-study programmes have promoted more flexible pathways into the labour market, although the earning prospects for graduates of these types of programmes have generally remained poor.

To participate fully in their society, people need to develop a transferable skillset over a lifetime. This is the objective at the heart of Goal 4 of the Sustainable Development Goals (SDGs) set by world leaders in New York in September 2015. By advocating "inclusive and equitable quality education and promoting lifelong learning opportunities for all", Goal 4 establishes an ambitious agenda to ensure that every adult has an equal opportunity to a quality education and to contribute to society.

*Education at a Glance* dedicates an entire chapter to the SDGs, providing an assessment of where OECD and partner countries stand on their way to meeting the SDG targets. The results show that, for certain targets, the disparities across OECD countries are substantial. On average over the past 12 months, OECD and partner countries have achieved gender parity in the participation rate of adults in formal and non-formal education and training. However, this result masks one of the largest variations among all gender parity indicators, with the ratio of women to men participating in such programmes in the past 12 months ranging between 0.7 and 1.4 across countries. Similarly, the share of men and women achieving minimum proficiency in literacy and numeracy varies widely, reflecting inequalities in basic skills across OECD countries.

More than an end in itself, education is a means to deliver our vision of tomorrow. It is the foundation for promoting development, reducing economic disparities and creating a society of inclusiveness. Prosperous countries depend on skilled and educated workers, but more than ever, they also depend on a set of coherent strategies that link education outcomes to the needs and demands of society in a way that fosters inclusive growth.

Designing these strategies requires close alignment with the organisations, markets and industries that make up today's world, but also strong leadership with the foresight to identify where we want to be in the next 30 years. More guidance and support must be provided to young students as they select their future careers. Young people need to find the right balance of personal interests, potential social and economic outcomes, and the skills they can expect to develop in the selected education programmes that will carry them through their lives.

Education fuels personal growth, particularly when it is of high quality and provided equitably, as well as economic growth, particularly when it is accompanied by a thorough understanding of how skills are linked with the labour market. Our responsibility is to ensure that education meets the needs of today's children and informs their aspirations for the future, both personal and professional. We cannot let them down.



**Angel Gurría**
OECD Secretary-General

# Introduction: The Indicators and their Framework

## The organising framework

*Education at a Glance 2017: OECD Indicators* offers a rich, comparable and up-to-date array of indicators that reflects a consensus among professionals on how to measure the current state of education internationally. The indicators provide information on the human and financial resources invested in education, how education and learning systems operate and evolve, and the returns to investments in education. The indicators are organised thematically, and each is accompanied by information on the policy context and an interpretation of the data. The education indicators are presented within an organising framework that:

- distinguishes between the actors in education systems: individual learners and teachers, instructional settings and learning environments, education service providers, and the education system as a whole
- groups the indicators according to whether they address learning outcomes for individuals or countries, policy levers or circumstances that shape these outcomes, or to antecedents or constraints that put policy choices into context
- identifies the policy issues to which the indicators relate, with three major categories distinguishing between the quality of education outcomes and education opportunities, issues of equity in education outcomes and opportunities, and the adequacy and effectiveness of resource management.

The following matrix describes the first two dimensions:

| | 1. Education and learning outputs and outcomes | 2. Policy levers and contexts shaping education outcomes | 3. Antecedents or constraints that contextualise policy |
|---|---|---|---|
| **I. Individual participants in education and learning** | **1.I.** The quality and distribution of individual education outcomes | **2.I.** Individual attitudes towards, engagement in, and behaviour in teaching and learning | **3.I.** Background characteristics of the individual learners and teachers |
| **II. Instructional settings** | **1.II.** The quality of instructional delivery | **2.II.** Pedagogy, learning practices and classroom climate | **3.II.** Student learning conditions and teacher working conditions |
| **III. Providers of educational services** | **1.III.** The output of educational institutions and institutional performance | **2.III.** School environment and organisation | **3.III.** Characteristics of the service providers and their communities |
| **IV. The education system as a whole** | **1.IV.** The overall performance of the education system | **2.IV.** System-wide institutional settings, resource allocations, and policies | **3.IV.** The national educational, social, economic, and demographic contexts |

## Actors in education systems

The OECD Indicators of Education Systems (INES) programme seeks to gauge the performance of national education systems as a whole, rather than to compare individual institutional or other subnational entities. However, there is increasing recognition that many important features of the development, functioning and impact of education systems can only be assessed through an understanding of learning outcomes and their relationships to inputs and processes at the level of individuals and institutions. To account for this, the indicator framework distinguishes between a macro-level, two meso-levels and a micro-level of education systems. These relate to:

- the education system as a whole
- the educational institutions and providers of educational services
- the instructional setting and the learning environment within the institutions
- the individual participants in education and learning.

To some extent, these levels correspond to the entities from which data are being collected, but their importance mainly centres on the fact that many features of the education system play out quite differently at different levels of the system, which needs to be taken into account when interpreting the indicators. For example, at the level of students within a classroom, the relationship between student achievement and class size may be negative, if students in small classes benefit from improved contact with teachers. At the class or school level, however, students are often intentionally grouped such that weaker or disadvantaged students are placed in smaller classes so that they receive more individual attention. At the school level, therefore, the observed relationship between class size and student achievement is often positive, suggesting that students in larger classes perform better than students in smaller classes. At higher aggregated levels of education systems, the relationship between student achievement and class size is further confounded, e.g. by the socio-economic intake of schools or by factors relating to the learning culture in different countries. Therefore, past analyses that have relied on macro-level data alone have sometimes led to misleading conclusions.

## Outcomes, policy levers and antecedents

The second dimension in the organising framework further groups the indicators at each of the above levels:

- Indicators on observed outputs of education systems, as well as indicators related to the impact of knowledge and skills for individuals, societies and economies, are grouped under the sub-heading *output and outcomes of education and learning*.
- The sub-heading *policy levers and contexts* groups activities seeking information on the policy levers or circumstances that shape the outputs and outcomes at each level.
- These policy levers and contexts typically have *antecedents* – factors that define or constrain policy. These are represented by the sub-heading *antecedents and constraints*. The antecedents or constraints are usually specific for a given level of the education system; antecedents at a lower level of the system may well be policy levers at a higher level. For teachers and students in a school, for example, teacher qualifications are a given constraint while, at the level of the education system, professional development of teachers is a key policy lever.

## Policy issues

Each of the resulting cells in the framework can then be used to address a variety of issues from different policy perspectives. For the purpose of this framework, policy perspectives are grouped into three classes that constitute the third dimension in the organising framework for INES:

- quality of education outcomes and education opportunities
- equality of education outcomes and equity in education opportunities
- adequacy, effectiveness and efficiency of resource management.

In addition to the dimensions mentioned above, the time perspective in the framework allows for dynamic aspects of the development of education systems to be modelled as well.

The indicators that are published in *Education at a Glance 2017* fit within this framework, though often they speak to more than one cell.

Most of the indicators in **Chapter A**, *The output of educational institutions and the impact of learning*, relate to the first column of the matrix describing outputs and outcomes of education. Even so, indicators in Chapter A measuring educational attainment for different generations, for instance, not only provide a measure of the output of the education system, but also provide context for current education policies, helping to shape policies on, for example, lifelong learning.

**Chapter B**, *Financial and human resources invested in education*, provides indicators that are either policy levers or antecedents to policy, or sometimes both. For example, expenditure per student is a key policy measure that most directly affects the individual learner, as it acts as a constraint on the learning environment in schools and learning conditions in the classroom.

**Chapter C**, *Access to education, participation and progression*, provides indicators that are a mixture of outcome indicators, policy levers and context indicators. Internationalisation of education and progression rates are, for instance, outcome measures to the extent that they indicate the results of policies and practices at the classroom, school and system levels. But they can also provide contexts for establishing policy by identifying areas where policy intervention is necessary to address issues of inequity, for example.

**Chapter D**, *The learning environment and organisation of schools*, provides indicators on instruction time, teachers' working time and teachers' salaries that not only represent policy levers that can be manipulated but also provide contexts for the quality of instruction in instructional settings and for the outcomes of individual learners. It also presents data on the profile of teachers, the levels of government at which decisions about education are taken, and pathways and gateways to gain access to secondary and tertiary education.

The reader should note that this edition of *Education at a Glance* covers a significant amount of data from partner countries as well (please refer to the *Reader's Guide* for details).

# Reader's Guide

## Coverage of the statistics

Although a lack of data still limits the scope of the indicators in many countries, the coverage extends, in principle, to the entire national education system (within the national territory), regardless of who owns or sponsors the institutions concerned and regardless of how education is delivered. With one exception (described below), all types of students and all age groups are included: children (including students with special needs), adults, nationals, foreigners, and students in open-distance learning, in special education programmes or in education programmes organised by ministries other than the ministry of education, provided that the main aim of the programme is to broaden or deepen an individual's knowledge. Vocational and technical training in the workplace, with the exception of combined school- and work-based programmes that are explicitly deemed to be part of the education system, is not included in the basic education expenditure and enrolment data.

Educational activities classified as "adult" or "non-regular" are covered, provided that the activities involve the same or similar content as "regular" education studies, or that the programmes of which they are a part lead to qualifications similar to those awarded in regular education programmes.

Courses for adults that are primarily for general interest, personal enrichment, leisure or recreation are excluded.

More information on the coverage of the indicators presented in *Education at a Glance* can be found in the *OECD Handbook for Internationally Comparative Statistics on Education* (OECD, 2017a).

## Country coverage

This publication features data on education from the 35 OECD countries, 2 partner countries that participate in the OECD Indicators of Education Systems programme (INES), namely Brazil and the Russian Federation, and other partner G20 and OECD accession countries that do not participate in INES (Argentina, China, Colombia, Costa Rica, India, Indonesia, Lithuania, Saudi Arabia and South Africa). Data sources for the non-INES participating countries come from the UNESCO Institute of Statistics or from Eurostat.

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

## Note on subnational regions

When interpreting the results on subnational entities, readers should take into account that the population size as well as geographic size of subnational entities can vary widely within countries. For example, in Canada, the population of Nunavut is 37 082 and the territory covers 1.9 million square kilometres, while the population of the province of Ontario is 13.9 million and the territory covers 909 000 square kilometres (OECD Regional Statistics Database, OECD [2017b]). Also, regional disparities tend to be higher especially in big countries like Canada, the Russian Federation or the United States when more subnational entities are used in the analysis.

## Calculation of international means

The main purpose of *Education at a Glance* is to provide an authoritative compilation of key international comparisons of education statistics. While countries attain specific values in these comparisons, readers should not assume that countries themselves are homogeneous. The country averages include significant variations among subnational jurisdictions, much as the OECD average encompasses a variety of national experiences.

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For many indicators, an OECD average is presented; for some, an OECD total is shown. The **OECD average** is calculated as the unweighted mean of the data values of all OECD countries for which data are available or can be estimated. The OECD average therefore refers to an average of data values at the level of the national systems and can be used to answer the question of how an indicator value for a given country compares with the value for a typical or average country. It does not take into account the absolute size of the education system in each country.

The **OECD total** is calculated as the weighted mean of the data values of all OECD countries for which data are available or can be estimated. It reflects the value for a given indicator when the OECD area is considered as a whole. This approach is taken for the purpose of comparing, for example, expenditure charts for individual countries with those of the entire OECD area for which valid data are available, with this area considered as a single entity.

For tables using trend series, the OECD average is calculated for countries providing data for all reference years used. This allows for a comparison of the OECD average over time with no distortion due to the exclusion of certain countries in the different years.

For many indicators, an **EU22 average** is also presented. It is calculated as the unweighted mean of the data values of the 22 countries that are members of both the European Union and the OECD for which data are available or can be estimated. These 22 countries are Austria, Belgium, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Luxembourg, the Netherlands, Poland, Portugal, Slovenia, the Slovak Republic, Spain, Sweden and the United Kingdom.

For some indicators, a **G20 average** is presented. The G20 average is calculated as the unweighted mean of the data values of all G20 countries for which data are available or can be estimated (Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Korea, Mexico, the Russian Federation, Saudi Arabia, South Africa, Turkey, the United Kingdom and the United States; the European Union is the 20th member of the G20 but is not included in the calculation). The G20 average is not computed if data for both China and India are not available.

OECD, EU22 and G20 averages and totals can be significantly affected by missing data. In the case of some countries, data may not be available for specific indicators, or specific categories may not apply. Therefore, readers should keep in mind that the term "OECD/EU22/G20 average" refers to the OECD, EU22 or G20 countries included in the respective comparisons. Averages are not calculated if more than 40% of countries have missing information or have information included in other columns.

For some indicators, an **average** is presented. This average is included in tables with data from the 2012 and 2015 OECD Programme for the International Assessment of Adult Competencies (Survey of Adult Skills [PIAAC]). The average corresponds to the arithmetic mean of the estimates included in the table or figure from both the national and the subnational entities (which include the Flemish Community of Belgium and England/Northern Ireland [UK]). Partner countries are not included in the average presented in any of the tables or figures.

### Standard error (S.E.)

The statistical estimates presented in this report are based on samples of adults, rather than values that could be calculated if every person in the target population in every country had answered every question. Therefore, each estimate has a degree of uncertainty associated with sampling and measurement error, which can be expressed as a standard error. The use of confidence intervals is a way to make inferences about the population means and proportions in a manner that reflects the uncertainty associated with the sample estimates. In this report, confidence intervals are stated at a 95% level. In other words, the result for the corresponding population would lie within the confidence interval in 95 out of 100 replications of the measurement on different samples drawn from the same population.

In tables showing standard errors, there is one column with the heading "%", which indicates the average percentage, and a column with the heading "S.E.", which indicates the standard error. Given the survey method, there is a sampling uncertainty in the percentages (%) of twice the standard error (S.E.).

...

For example, for the values: % = 10 and S.E. = 2.6, 10% has an uncertainty zone of twice (1.96) the standard error of 2.6, assuming an error risk of 5%. Thus, the true percentage would probably (error risk of 5%) be somewhere between 5% and 15% ("confidence interval"). The confidence interval is calculated as: % +/– 1.96 * S.E., i.e. for the previous example, 5% = 10% – 1.96 * 2.6 and 15% = 10% + 1.96 * 2.6.

## Classification of levels of education

The classification of levels of education is based on the International Standard Classification of Education (ISCED). ISCED is an instrument for compiling statistics on education internationally. ISCED-97 was recently revised, and the new International Standard Classification of Education (ISCED 2011) was formally adopted in November 2011 and is now the basis of the levels presented in this publication, with the exception of tables showing data from the Survey of Adult Skills (PIAAC).

In some indicators, intermediate programmes are also used. These correspond to recognised qualifications from an ISCED 2011 level programme which is not considered as sufficient for ISCED 2011 completion and is classified at a lower ISCED 2011 level.

| Terms used in this publication | ISCED classification |
|---|---|
| **Early childhood education**<br>Refers to early childhood programmes that have an intentional education component and aim to develop cognitive, physical and socio-emotional skills necessary for participation in school and society. Programmes at this level are often differentiated by age. | **ISCED 0**<br>(sub-categories: 01 for early childhood educational development and 02 for pre-primary education) |
| **Primary education**<br>Designed to provide a sound basic education in reading, writing and mathematics and a basic understanding of some other subjects. Entry age: between 5 and 7. Typical duration: 6 years. | **ISCED 1** |
| **Lower secondary education**<br>Completes provision of basic education, usually in a more subject-oriented way with more specialist teachers. Programmes may differ by orientation, general or vocational, though this is less common than at upper secondary level. Entry follows completion of primary education and typical duration is 3 years. In some countries, the end of this level marks the end of compulsory education. | **ISCED 2** |
| **Upper secondary education**<br>Stronger specialisation than at lower secondary level. Programmes offered are differentiated by orientation: general or vocational. Typical duration is 3 years. | **ISCED 3** |
| **Post-secondary non-tertiary education**<br>Serves to broaden rather than deepen the knowledge, skills and competencies gained in upper secondary level. Programmes may be designed to increase options for participants in the labour market, for further studies at tertiary level, or both. Usually, programmes at this level are vocationally oriented. | **ISCED 4** |
| **Short-cycle tertiary education**<br>Serves to deepen the knowledge developed at previous levels by imparting new techniques, concepts and ideas not generally covered in upper secondary education. | **ISCED 5** |
| **Bachelor's or equivalent level**<br>Designed to provide participants with intermediate academic and/or professional knowledge, skills and competencies, leading to a first degree or equivalent qualification. Typical duration: 3-4 years full-time study. | **ISCED 6** |
| **Master's or equivalent level**<br>Stronger specialisation and more complex content than bachelor's level. Designed to provide participants with advanced academic and/or professional knowledge. May have a substantial research component. | **ISCED 7** |
| **Doctoral or equivalent level**<br>Designed to lead to an advanced research qualification. Programmes at this level are devoted to advanced study and original research, and exist in both academic and professional fields. | **ISCED 8** |

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### Fields of education and training

Within ISCED, programmes and related qualifications can be classified by fields of education and training as well as by levels. Following the adoption of ISCED 2011, a separate review and global consultation process took place on the ISCED fields of education. The ISCED fields were revised, and the UNESCO General Conference adopted the ISCED 2013 Fields of Education and Training classification (ISCED-F 2013) in November 2013 at its 37th session. The ISCED 2013 Fields of Education and Training classification (UNESCO-UIS, 2014) is used for the first time in *Education at a Glance 2017*. Throughout this publication, the term "field of study" is used to refer to the different fields of this classification.

## Symbols for missing data and abbreviations

These symbols and abbreviations are used in the tables and figures:

- a Data are not applicable because the category does not apply.
- b There is a break in the series when data for the latest year refer to ISCED 2011 and data for previous years refer to ISCED-97.
- c There are too few observations to provide reliable estimates (e.g. in the Survey of Adult Skills [PIAAC], there are fewer than 3 individuals for the numerator or fewer than 30 individuals for the denominator).
- d Includes data from another category.
- m Data are not available.
- r Values are below a certain reliability threshold and should be interpreted with caution.
- q Data have been withdrawn at the request of the country concerned.
- x Data included in another category or column of the table (e.g. x(2) means that data are included in Column 2 of the table).

## Further resources

The website www.oecd.org/education/education-at-a-glance-19991487.htm provides information on the methods used to calculate the indicators, on the interpretation of the indicators in the respective national contexts, and on the data sources involved. The website also provides access to the data underlying the indicators and to a comprehensive glossary for technical terms used in this publication.

All post-production changes to this publication are listed at www.oecd.org/publishing/corrigenda (corrections) and http://dx.doi.org/10.1787/eag-data-en (updates).

*Education at a Glance* uses the OECD's *StatLinks* service. Below each table and figure in *Education at Glance 2017* is a URL that leads to a corresponding Excel file containing the underlying data for the indicator. These URLs are stable and will not change. In addition, readers of the *Education at a Glance* e-book will be able to click directly on these links and the workbook will open in a separate window.

The Education at a Glance Database on OECD.Stat (http://stats.oecd.org/) houses the raw data and indicators presented in *Education at a Glance*, as well as the metadata that provides context and explanations for countries' data. The Education at a Glance Database allows users to break down data in more ways than is possible in this publication in order to conduct their own analyses of education systems in participating countries. The Education at a Glance Database can be accessed from the OECD.Stat site under the heading "Education and Training". Subnational data presented in this publication can be accessed from a subnational supplement to *Education at a Glance* via the website https://nces.ed.gov/surveys/annualreports/oecd/.

## Layout of tables

In all tables, the numbers in parentheses at the top of the columns are simply used for reference. When a consecutive number does not appear, that column is available on line only.

## Names used for territorial entities

For consistency, national and subnational entities are referred to as "countries" and "economies", respectively, in the whole publication. Territorial and subnational entities are referred to throughout the publication by their subnational name and country, e.g. England (United Kingdom). For consistency with other indicators from

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*Education at a Glance*, the subnational entity "Flanders (Belgium)" used in the Survey of Adult Skills (PIAAC) and the Teaching and Learning International Survey (TALIS) will be referred to by the name "Flemish Community of Belgium" throughout the publication. The Flemish Community of Belgium and French Community of Belgium are abbreviated in the tables and figures as "Flemish Com. (Belgium)" and "French Com. (Belgium)".

### Abbreviations used in this report

| | |
|---|---|
| ICT | Information and communication technologies |
| ISCED | International Standard Classification of Education |
| PIAAC | Programme for the International Assessment of Adult Competencies |
| PPP | Purchasing power parity |
| S.E. | Standard error |
| STEM | Science, technology, engineering, and mathematics |
| UIS | UNESCO Institute of Statistics |
| UOE | Refers to the data collection managed by the three organisations, UNESCO, OECD, Eurostat |

### References

OECD (2017a), OECD *Handbook for Internationally Comparative Education Statistics: Concepts, Standards, Definitions and Classifications,* OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264279889-en.

OECD (2017b), OECD Regional Databast, http://stats.oecd.org/Index.aspx?DataSetCode=REGION_DEMOGR.

OECD, Eurostat, UNESCO Institute for Statistics (2015), *ISCED 2011 Operational Manual: Guidelines for Classifying National Education Programmes and Related Qualifications,* OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264228368.

UNESCO–UIS (2014), *ISCED 2013 Fields of Education and Training 2013 (ISCED-F 2013),* UNESCO Institute for Statistics, Montreal, http://dx.doi.org/10.15220/978-92-9189-150-4-en.

# Executive summary

## Graduates from science-related fields are the most employable, though not across the board

In most OECD countries, the most popular tertiary degrees held by adults are in business, administration or law. On average across the OECD, 23% of tertiary-educated 25-64 year-olds hold a degree in one of these three fields of study, compared to 5% in natural sciences, statistics and mathematics; 4% in information and communication technologies; and 17% in engineering, manufacturing, and construction. The share is similar among new entrants to tertiary education, indicating that interest in these fields remains stable.

However, interest in science, technology, engineering and mathematics (STEM) grows with higher levels of education, with almost double the share of students graduating from these fields at doctoral level than at bachelor's level in 2015. These fields are also favoured among international tertiary students, with the highest share, almost one-third of those studying in OECD countries, doing so in a science-related field.

Interest in engineering is higher for upper secondary vocational pathways than at tertiary level due to these programmes' strong ties with the industry sector. Approximately one-third of students graduate from upper secondary vocational programmes with a degree in engineering, manufacturing and construction – more than double the share at tertiary level.

STEM-related fields also benefit from higher employment rates, reflecting the demands of an increasingly innovation-driven society: information and communication technologies (ICT) graduates can expect an employment rate that is 7 percentage points higher than those graduating from arts and humanities, or from social sciences, journalism and information. However, employment rates within science-related fields are unequal: natural sciences, mathematics and statistics graduates are more likely to have similar employment rates as arts and humanities graduates – both lower than the rates enjoyed by engineers or ICT specialists.

Gender parity in graduation rates is still a distant dream for some fields of study, particularly upper secondary vocational education. Gender parity improves at the tertiary level, though women still represent approximately only one in four entrants to engineering, manufacturing and construction. On the other hand they represent close to three out of four entrants in health and welfare fields of study. Other fields – such as business administration and law; and natural sciences, mathematics and statistics – have almost achieved gender parity among new entrants.

## Adults are generally better educated today, but some are still left behind

Since 2000, the workforce has become more highly educated across OECD and partner countries. Whereas in 2000, the majority of young adults had attained upper secondary education as their highest education level, today the largest share of 25-34 year-olds holds a tertiary degree. The share of young adults with below upper secondary education only has also declined in the majority of OECD and partner countries, to 16% in 2016 on average across OECD countries. Although more adults are reaching upper secondary level, completion of the programme still remains problematic. Among countries with available true cohort data, approximately 25% of students who enrolled had not graduated after two years from the theoretical end date of the programme; four out of five of these students are no longer enrolled in education. This is a critical loss: the unemployment rate for young adults (25-34 year-olds) who failed to complete upper secondary education is close to 17%, compared to 9% for those who did.

Adults with a tertiary degree benefit from substantial returns on their investment: they are 10 percentage points more likely to be employed, and will earn 56% more on average than adults who only completed upper secondary education. They are also the first to recover from economic downturns: employment rates for young adults with tertiary degrees have returned to pre-crisis levels, while rates for those who did not complete upper secondary education are still lagging behind. Tertiary-educated adults are also less likely to suffer from depression than their less-educated peers. For these reasons, young adults are increasingly inclined to pursue education that will enhance

their qualifications than to enter the labour market directly at the end of compulsory education. Between 2000 and 2016, the share of 20-24 year-olds still in education increased by 10 percentage points compared to a 9 percentage-point decrease of those in employment.

### Total spending on tertiary education has outpaced student enrolments

Expenditure has been increasing at a much higher rate than student enrolments at all levels, particularly tertiary. Expenditure on primary, secondary, and post-secondary non-tertiary educational institutions increased by 4% between 2010 and 2014, although student enrolments decreased slightly over the same period. In contrast, total expenditure on tertiary institutions increased by more than twice the rate of students over the same period, reflecting the priority given by government and society to higher education.

While public expenditure on primary to tertiary institutions has clearly been rising, it did not keep up with the increase in GDP between 2010 and 2014 on average across OECD countries. This has led to a decrease of 2% in public expenditure on educational institutions as a percentage of GDP over the same period. Similarly, in half of OECD countries, the share of public spending on primary to tertiary education in total government spending declined between 2010 and 2014.

The share of public funding is significantly higher for compulsory than for tertiary education. While the public sector still provides 91% of the funds at primary, secondary and post-secondary non-tertiary levels, it only provides for 70% of total expenditure at tertiary level, leaving households to foot the rest of the bill. However, the share of public funding to education expenditure on institutions has remained generally stable between 2010 and 2014 across all levels.

### Lagging salaries and an ageing workforce are ailing the teaching profession

Teachers are the backbone of the education system, yet the profession is increasingly unattractive to young students and the teaching population is getting older, particularly at higher levels of education. On average across OECD countries, 33% of primary to secondary teachers were at least 50 years old in 2015, up 3 percentage points from 2005. In addition, the profession is still largely dominated by women, who make up seven out of ten teachers on average across OECD countries. However gender parity improves at higher levels of education – while 97% of teachers at the pre-primary level are women, they make up 43% at the tertiary level.

Teachers' salaries are low compared to other similarly educated full-time workers. This is a key obstacle for attracting young people into teaching. While salaries increase with the level of education taught, they still range between 78% and 94% of the salaries of full-time workers with tertiary education. The economic downturn in 2008 had a direct impact on teachers' salaries, which were either frozen or cut in some countries. Between 2005 and 2015 teachers' statutory salaries decreased in real terms in one-third of the countries and economies with available data.

### Other findings

Due to lower public investment in early childhood education, the share of children enrolled in private institutions at this level is considerably larger than in primary and secondary education.

General upper secondary education programmes are more popular than vocational programmes: 37% of 15-19 year-olds are enrolled in general upper secondary education programmes, compared to 25% in vocational programmes though vocational programmes are a strong component in the educational systems of many countries.

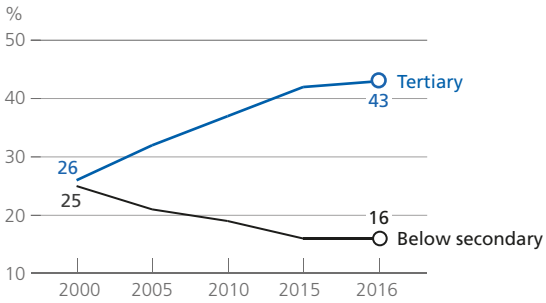
Financial support helps offset the burden of high tuition fees charged by certain tertiary institutions; 75% or more of students in Australia, England (United Kingdom) and the United States benefit from public loans or scholarships/grants.

Open admissions systems to public and/or private tertiary institutions can be found in more than half the countries and economies with available data. National/central examinations taken towards the end of upper secondary education, and entrance examinations administered by tertiary institutions, are most widely used for entry into first-degree tertiary programmes.

# Key findings from *Education at a Glance 2017*

## Young people continue to attain higher levels of education...

Educational attainment rates (%) among 25-34 year-olds, OECD average




## ... as higher education brings better labour and life outcomes...

Adults with a tertiary degree (as compared to adults with upper secondary degree only)

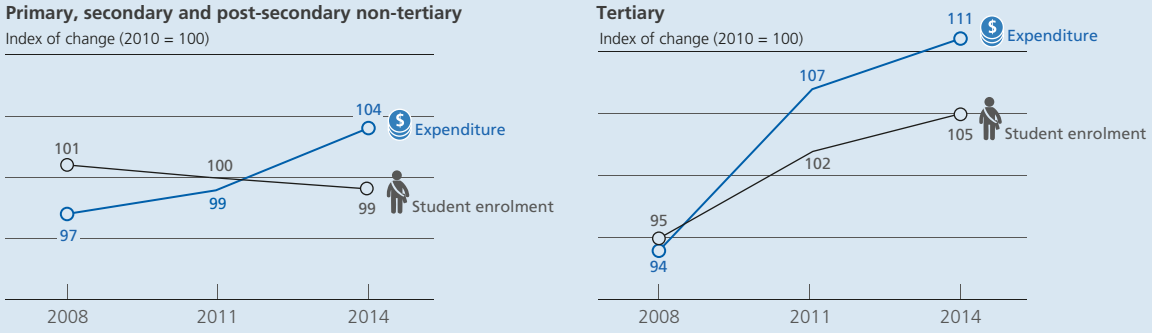
- Are more likely to be employed: **84%** compared to **74%**
- Are **LESS** likely to have suffered from depression
- Earn **56%** more

## ... but some are still left behind

**25%** of upper secondary students did not graduate two years after the end of the programme (true cohort)

**15%** of 18-24 year-olds are neither in employment nor in education or training

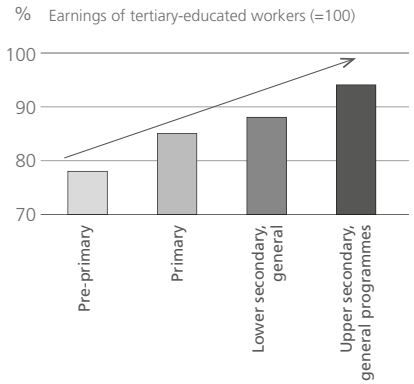
## Yet total spending on educational institutions outpaced student enrolment



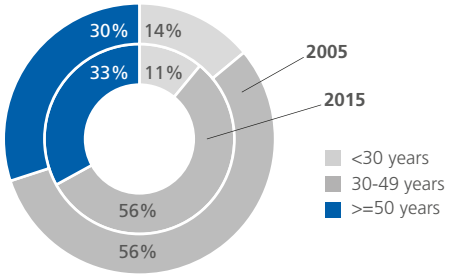

**91%** of expenditure on primary and secondary education – but only **70%** of expenditure on tertiary education – from public funds

## Teacher salaries are not competitive

Teachers' salaries relative to other tertiary-educated workers (2015)




## The teaching force continues to age...



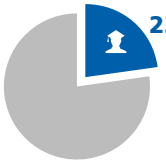

## ... and the teaching profession attracts few men

**7** out of **10** teachers are women



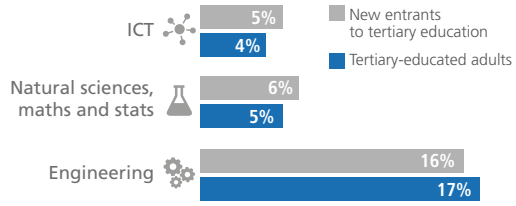
# Which careers do students go for?

## The most popular degrees: business, administration and law



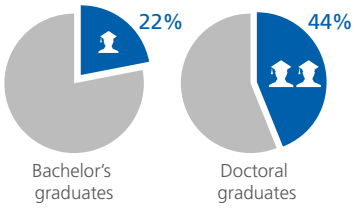
**23%** of tertiary-educated adults

## Overall, interest in scientific fields remains stable across generations

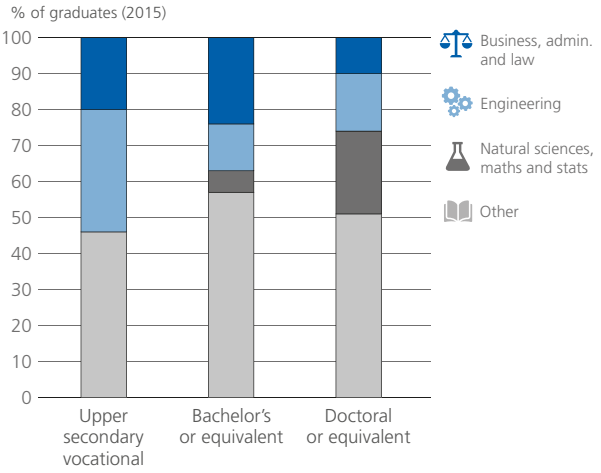



**S**cience
**T**echnology
**E**ngineering
**M**athematics

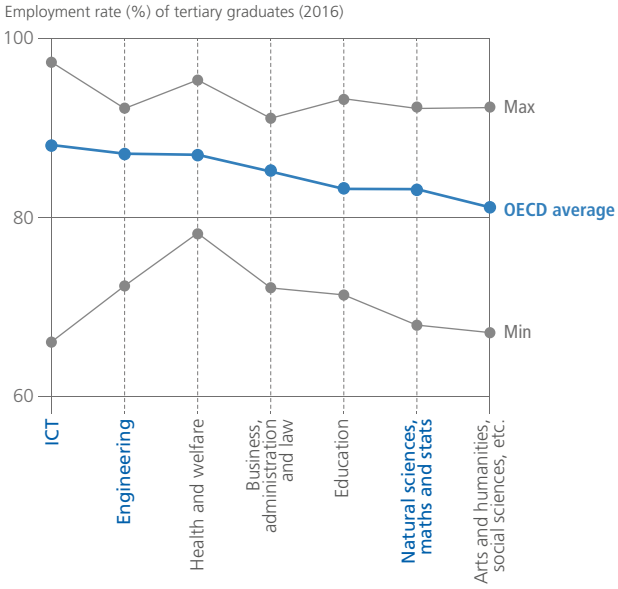
## STEM are more popular at higher levels of education




## Engineering is most popular among upper secondary vocational graduates, doctoral students favour natural sciences

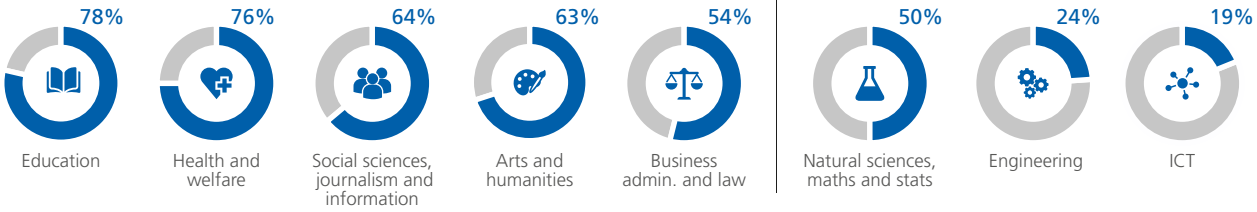



## STEM graduates have better employment prospects, though not across the board




## Gender parity across disciplines: still a long way to go

% of women entering tertiary-level studies (2015)



# The education sustainable development goal

- The 17 Sustainable Development Goals (SDGs) adopted by the 70th General Assembly of the United Nations in 2015, otherwise known as the Global Goals or the 2030 Agenda for Sustainable Development, are a universal call for action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity. The fourth SDG aims to "Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all". SDG 4 is to be achieved through the accomplishment of ten targets, which together represent the most comprehensive and ambitious agenda for global education ever attempted.
- OECD and partner countries have been successful in their progress towards some of the SDG 4 targets, having partially achieved many of those relating to school infrastructure and access to basic education. However, significant challenges remain for many countries with respect to achieving targets that measure learning outcomes and equity.
- Although OECD countries have achieved gender parity in access to early levels of education, gender gaps appear in adult education and in learning outcomes.

## Context

Making SDG 4 a reality will transform lives around the globe. Education is so central to the achievement of a sustainable, prosperous and equitable planet that failure to achieve this particular SDG puts at risk the achievement of the 17 SDGs as a whole. It is well recognised that education plays a critical role in eradicating poverty and steering the vision for prosperous and sustainable development. As the next *World Development Report* will make clear, education is also a foundation block for nearly every other SDG: it saves lives, improves health, and fosters shared understanding and values. Achieving SDG 4 will therefore be instrumental in realising the broader aspirations of the SDG agenda, and as a consequence the international community will need to invest substantially in achieving this necessary condition in the global fight against poverty and the achievement of a sustainable planet for all.

The OECD's education programmes have a key role to play in the achievement of – and measuring progress towards – SDG 4 and its targets, as well as other education-related SDG targets.[1] There is a high level of complementarity between the SDG 4 agenda and the OECD's education policy tools, instruments, evidence and dialogue platforms. While *Education at a Glance 2015* and *2016* included editorials on the SDGs, this is the first edition to devote a chapter to this universal education agenda.

This chapter of *Education at a Glance 2017* presents a report on each of the ten SDG 4 targets using data on the global and thematic indicators agreed with UNESCO, which oversees the education SDG agenda, in the context of the United Nations-led SDG framework. Global indicators are a small set of globally-comparable indicators that will be used to track progress by all countries towards the targets. Thematic indicators are a larger set of indicators from which countries and organisations can choose in order to complement the global indicators in monitoring each target (see *Note* below). The OECD is working with UNESCO to help build a comprehensive data system for global reporting. This chapter provides an assessment of where OECD and partner countries are on their pathway towards meeting the SDG targets.

## Note

In the SDG framework, each target has at least one global indicator and a number of related thematic indicators designed to complement the analysis and the measurement of the target. In total, there are 11 global indicators and 32 thematic indicators included in the SDG 4 monitoring framework. A list of all the indicators and their methodologies can be found at http://SDG4monitoring.uis.unesco.org.

The tables and figures in this chapter only present a few indicators for each target, selected based on their relevance for OECD and partner countries and on data availability. Some of the SDG 4 indicators correspond to indicators already published in other chapters of *Education at a Glance*. In these cases, data are not repeated in this chapter and reference is made to the corresponding indicator.

Whenever an indicator presented in the tables and figures of this chapter does not correspond to the methodology set out by UNESCO, it is clearly labelled as a proxy. However, even the indicators that follow the same methodology may have slightly different results from those reported by UNESCO because of different sources of data. The OECD is currently working with the UNESCO Institute for Statistics (UIS), the SDG 4 Steering Committee and technical working groups that have been put in place by UNESCO and its partners to oversee the global education agenda to agree on the data sources and formulae used for reporting on the SDG 4 global indicators and on selected thematic indicators for OECD member countries and partner countries.

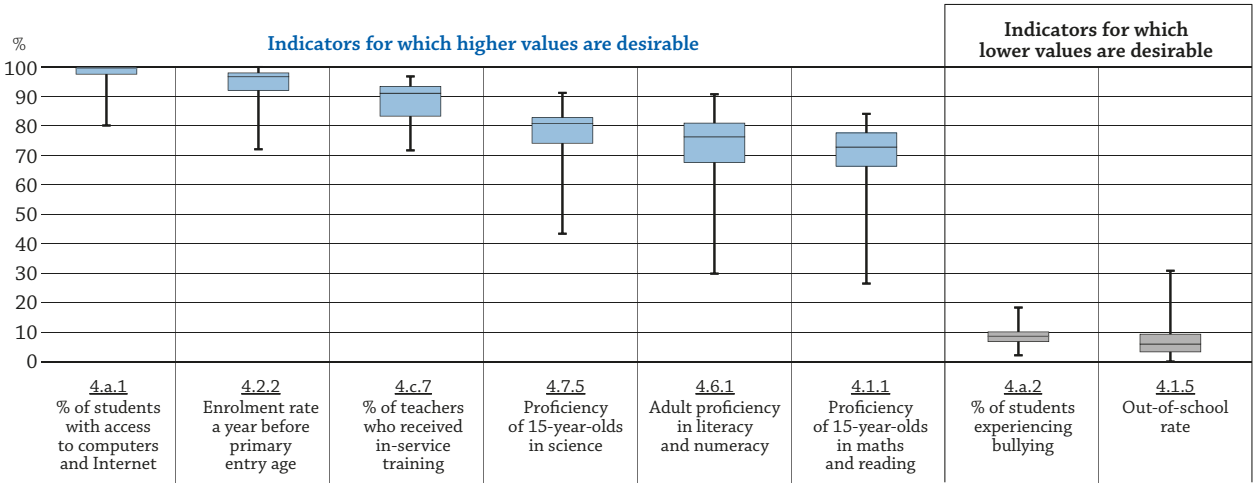
## Analysis

### Overview of OECD member and partner countries' progress towards the SDG 4 indicators

SDG 4 and its associated targets set an ambitious agenda that emphasises quality learning and equity in education alongside the more traditional indicators of access and participation. In doing so, it challenges every single country in the world to improve its education system and marks a significant departure from previous global education goals and targets, such as the Millennium Development Goals (MDGs) and Education for All (EFA), that were not universal and focused more on access and participation.

OECD countries have generally been successful in guaranteeing adequate infrastructure and near-universal access to basic education. Figure 1 shows that results for indicators such as availability of computers, enrolment rates and out-of-school rates are relatively similar across OECD and partner countries, with most countries close to the desirable values for the target. However, participation in education is not enough to ensure the knowledge, competence, skills and attitudes that are necessary to increase individuals' well-being and the prosperity of modern societies.

**Figure 1. General overview of the SDG indicators**




**How to read this figure**

The box plot indicates the position of the median country among OECD and partner countries with available data (shown by the line within the box) and the first and the third quartiles of the distribution (corresponding to the box boundaries). The caps of the lines above and below the box represent the maximum and minimum values respectively. For example, for Indicator 4.c.7, 91% of teachers received in-service training in the median country. The maximum value is 97%, the minimum value is 72% and the middle half of the countries fall within the box boundaries of 83% and 93%.

**Note**: Refer to Table 1 for the full description of the SDG Indicators presented.
*Indicators are ranked in decreasing order of the median value.*

**Source**: OECD (2017), Tables 2 and 3. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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Results for indicators related to learning outcomes – such as 15-year-olds' proficiency in science, mathematics and reading; and adult proficiency in literacy and numeracy – show a much wider distribution across OECD and partner countries. The proportion of 15-year-olds who perform at least at the minimum proficiency level in the OECD Programme for International Student Assessment (PISA) (Level 2) in both mathematics and reading, for example, ranges from 26% to 84%. Learning outcomes also reveal the wide disparity in results across equity dimensions, such as gender (Figure 3) and socio-economic background (Column 3 in Table 1). In some countries, only half as many students from a disadvantaged socio-economic background perform at or above the minimum proficiency level in both mathematics and reading as students from more advantaged backgrounds.

Finally, there is also considerable progress to be made on what are classified as "means of implementation" targets (Targets 4.a, 4.b and 4.c) – those which are meant to guarantee the essential structure and resources needed to achieve all other SDG 4 targets. Among these, OECD and partner countries must work to continuously improve student well-being and the quality of the teaching profession.

### Target 4.1: By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes

Target 4.1 aims at quality primary and secondary education leading to effective learning outcomes for all. It must therefore be measured and analysed along two dimensions: participation and learning. Table 2 contains data on three indicators for this target:

- Global indicator 4.1.1: Proportion of children and young people at the end of lower secondary education achieving at least a minimum proficiency level (Level 2 in PISA) in reading and mathematics.
- Thematic indicator 4.1.5: Out-of-school rate.
- Thematic indicator 4.1.7: Number of years of compulsory primary and secondary education guaranteed in legal framework.

The first global indicator measures learning outcomes and the two thematic indicators measure access and participation. Most OECD countries are able to provide universal access to primary and secondary education. Nearly all OECD and partner countries have a legal provision that makes at least 9 years of primary and secondary education compulsory. In 9 countries this figure reaches 12 years. Enrolment rates for 5-14 year-olds (the age group which roughly corresponds to primary and lower secondary education) are close to 100% for all OECD and partner countries (see Indicator C1). However, participation for older age groups, more specifically for those who are theoretically supposed to be in upper secondary education, drops considerably in some countries. In ten OECD and partner countries, 10% or more of young people at ages corresponding to upper secondary education are not in school (see Annex 3 at www.oecd.org/education/education-at-a-glance-19991487.htm for the theoretical age group for upper secondary education in each country).

Moreover, not all schools provide quality learning. The indicator on the proportion of young people achieving a minimum proficiency level uses data from PISA 2015. It considers Level 2 in reading and mathematics to be the minimum level of proficiency required for students to participate fully in the knowledge-based society (see *Definitions* section). In Estonia, Finland and Japan, at least 83% of students attain Level 2 or above in both reading and mathematics, while fewer than 35% of students do so in Brazil, Colombia and Costa Rica.

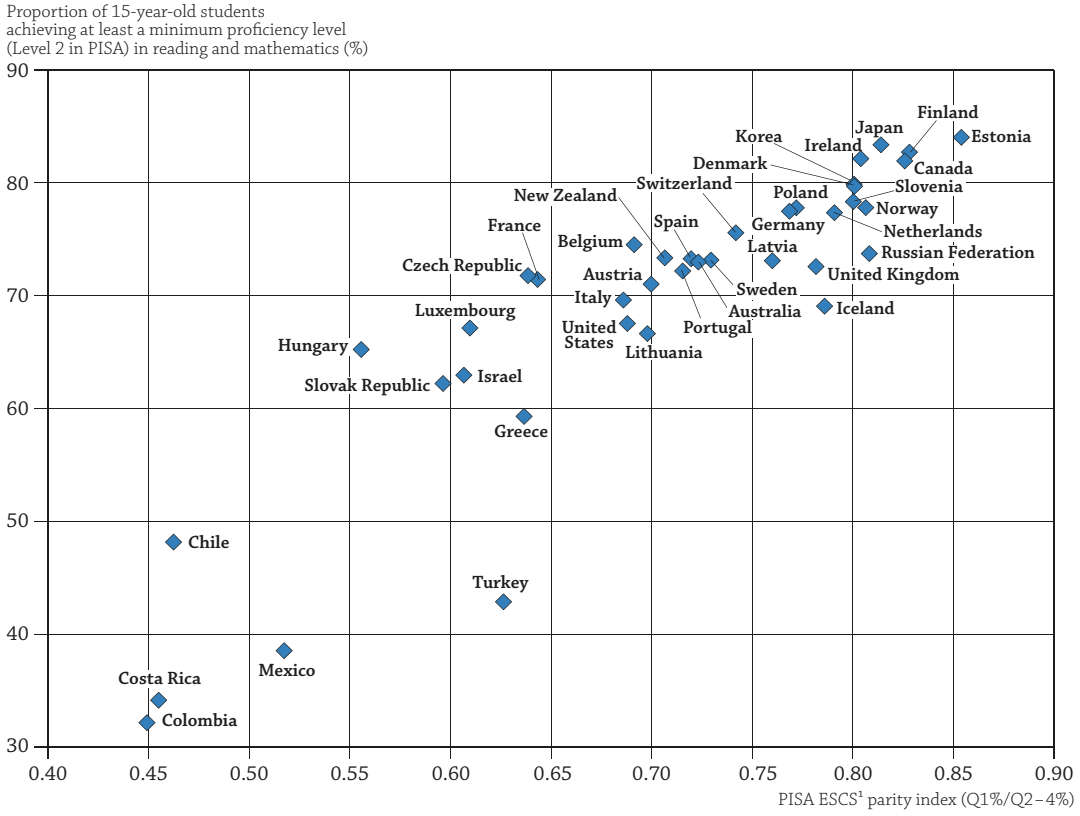
PISA also shows that in many countries, no matter how well the education system performs as a whole, socio-economic status continues to predict students' performance (OECD, 2016a). However, PISA also consistently shows that high performance and greater equity are not mutually exclusive (Figure 2). Indeed, being able to improve the performance of all students, regardless of background, is necessary for countries to become high-performers and to achieve the SDG 4 targets.

### Target 4.2: By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education

The growing body of evidence on the long-lasting benefits of early childhood education and care for children's development, together with the complementary benefits for parents and society, has prompted many countries to expand their provision of this level of education. Table 2 presents global indicator 4.2.2 on the participation rate in organised learning (one year before the official primary entry age). This shows that OECD and partner countries have been successful in universalising access to education for children one year prior to the official starting age for primary education. As a consequence, nearly all OECD and partner countries have achieved perfect gender parity for this indicator. Many OECD countries have in fact prioritised the provision of education and care services to even younger

children (see Indicator C2 for enrolment rates from ages 2 to 6 and other information on early childhood education). Nevertheless, more data would be needed in order to assess whether all children are receiving learning and care that is of high enough quality to ensure the desired health, learning and psychosocial outcomes (global indicator 4.2.1).

## Figure 2. Excellence and equity: Student achievement in PISA 2015 and the socio-economic parity index




**How to read this figure**

A value closer to 1 on the PISA ESCS parity index (x-axis) indicates greater equity (a value of 1 would mean perfect equity) and a value closer to 100% in the proportion of 15-year-old students achieving at least a minimum proficiency level in reading and mathematics (y-axis) indicates a better performance in the PISA assessment.

1. ESCS refers to the PISA index of economic, social and cultural status (See Volume I of the *PISA 2015 Results* for more information). The parity is calculated as Q1%/Q2–4% where Q = quartile of ESCS.

**Source**: OECD (2017), Table 2. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933559085

### Target 4.3: By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university

Vocational education and training and higher education help shape people's pathways into the labour market. Unlike targets 4.1 and 4.2, which include both participation and learning outcomes, target 4.3 focuses only on participation. However, it is closely related to targets 4.4 and 4.6, which measure some of the skills that can be acquired through participation in technical, vocational and tertiary levels of education and training. Thematic indicator 4.3.3 on the participation rate in technical-vocational programmes for 15-24 year-olds shows a wide variation in participation across OECD and partner countries, ranging from 4% in Brazil and Colombia to 31% in Slovenia (Table 2). In some countries the large majority of students who participate in technical-vocational programmes do so at younger ages, such as those corresponding to upper secondary education (see Indicator C1 for more information on enrolment in secondary education). Thus, taking into account the extended 15-24 age span in this indicator may underestimate participation rates in these programmes.

Target 4.3 also addresses lifelong learning opportunities as measured by global indicator 4.3.1 on the participation rate of adults (25-64 year-olds) in formal and non-formal education and training in the previous 12 months. By including formal and non-formal education, this indicator captures participation in any type of programme that aims to improve knowledge, skills and competencies from a personal, civic, social or employment-related perspective (UNESCO, 2016). In most OECD and partner countries, at least 20% of 25-64 year-olds have participated in formal or non-formal education and training in the last 12 months. This figure reaches 70% or more in Luxembourg and Sweden.

### Target 4.4: By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship

Target 4.4 focuses on the skills required for work as an outcome of education, including technical and vocational skills. Three indicators are associated with this target in the SDG 4 framework:

- Global indicator 4.4.1: Percentage of youth and adults with information and communications technology (ICT) skills;
- Thematic indicator 4.4.2: Percentage of adults who have achieved at least a minimum level of proficiency in digital literacy skills;
- Thematic indicator 4.4.3: Youth and adult educational attainment rates by age group, economic activity status, levels of education and programme orientation (thematic indicator 4.4.3).

Only the third indicator (Indicator 4.4.3) is presented in this edition, in Indicator A1. Although educational attainment rates are not directly linked to the target on skills, they nevertheless shed light on the extent to which countries are successful in increasing the educational attainment of their populations. On average across OECD countries, the share of 25-34 year-olds who had attained tertiary education increased from 26% in 2000 to 43% in 2016 (see Indicator A1).

### Target 4.5: By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations

The equity dimension permeates the entire 2030 Agenda for Sustainable Development, and is at the centre of the SDG 4 targets. Target 4.5 and its global indicator 4.1.5 (*Parity indices [female/male, rural/urban, bottom/top wealth quintile and others such as disability status, indigenous peoples and conflict-affected, as data become available] for all education indicators on this list that can be disaggregated*) is cross-cutting in nature, as they should be applied to all education indicators for which data can be disaggregated by income, gender, race, ethnicity, migratory status, disability, geographic location and other relevant characteristics. As this creates challenges for data collection, currently only two equity dimensions are reported in this chapter: gender and socio-economic status for PISA learning outcomes.

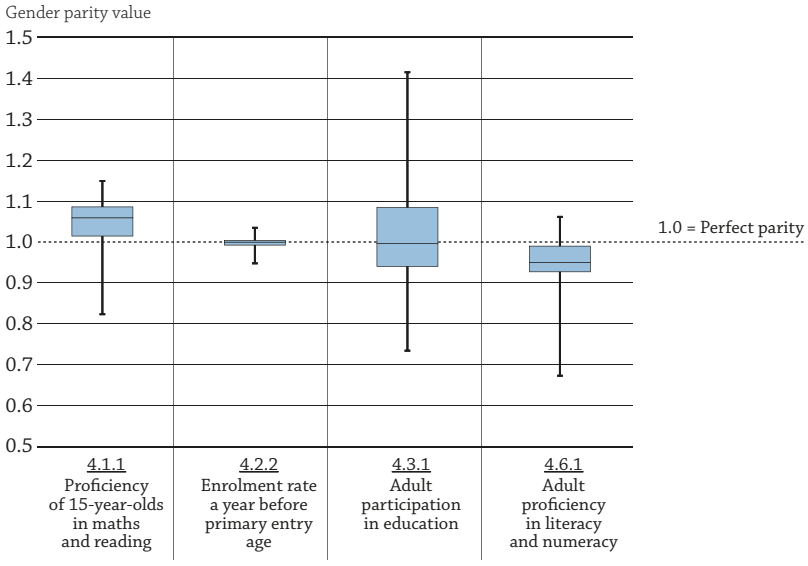
Gender gaps in education still persist in OECD and partner countries. Although girls and women tend to generally be the disadvantaged group in society in most countries, the reverse is sometimes true when analysing education data for OECD countries. Although participation at earlier levels of education is similar for boys and girls, gender disparities appear for adult participation and learning outcomes (Figure 3). The gender gap for global indicator 4.3.1, adult participation in formal or non-formal education in the previous 12 months, varies in magnitude and direction across countries. Participation is higher among women in 11 countries and economies and higher among men in 10 countries and economies. The most extreme cases are in Japan and Turkey, where participation for women is about 30% lower than for men, and in Latvia, Lithuania and the Russian Federation, where female participation is 40% higher.

The proportion of 15-year-old girls achieving at least the minimum level of proficiency in mathematics and reading (global indicator 4.1.1) is also greater than for boys in nearly all OECD countries. These results are consistent with other education indicators that display gender gaps in favour of girls, such as completion rate in upper secondary education and participation and completion in tertiary education. However, proficiency in literacy and numeracy among the adult population is higher for men in over three-quarters of OECD and partner countries with available data (Table 3).

Table 2 also shows the socio-economic parity index for indicator 4.1.1 (proficiency of 15-year-olds in reading and mathematics) using the PISA index of economic, social and cultural status (ESCS) (see *Definitions* section). These results show that socio-economic background still affects student performance in every OECD and partner country. The gap in results by socio-economic status is narrowest in Canada, Estonia and Finland – three countries that have achieved high levels of both performance and equity (Figure 2).

## Figure 3. Gender parity in education as measured by four global indicators

*Parity calculated as the indicator value for women divided by the indicator value for men*




**How to read this figure**

The box plot indicates the position of the the median country among OECD and partner countries with available data (shown by the line within the box) and the first and the third quartiles of the distribution (corresponding to the box boundaries). The caps of the lines above and below the box represent the maximum and minimum values respectively. For example, for Indicator 4.1.1, the gender parity value for the median country is 1.06, the maximum value is 1.15, the minimum value is 0.82 and the middle half of the countries fall within the box boundaries of 1.01 and 1.08. The dotted line at 1.0 indicates perfect parity (indicator values are the same for men and women). Values above 1 indicate that the indicator value for girls/women is higher than that for boys/men and values below 1 indicate that the opposite is true.

**Note**: Refer to Table 1 for the full description of the SDG Indicators presented.
*Indicators are ranked in decreasing order of the median value.*
**Source**: OECD (2017), Tables 2 and 3. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).
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### Target 4.6: By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy

This target focuses on literacy and numeracy, which are considered the most important foundation skills for individuals and the labour market. Global indicator 4.6.1 measures the percentage of adults (25-64 year-olds) achieving at least a fixed level of proficiency in functional literacy and numeracy skills. One of the main challenges in reporting on this indicator is to define a globally relevant "fixed level of proficiency". The proxy indicator presented in Table 3 uses the score of 226 in both literacy and numeracy skills in the OECD Programme for International Assessment of Adult Competencies (Survey of Adult Skills [PIAAC]). This corresponds to Level 2 in the survey, which reports results on a scale from "below Level 1" (below 176 points) to "Level 5" (376 points or more).

Individuals scoring at or above 226 points in literacy can successfully process or integrate two or more pieces of information based on criteria; compare and contrast or reason about information requested in the question; and navigate within digital texts to access and identify information from various parts of a document. In numeracy, individuals scoring at or above 226 can identify and act on mathematical information and ideas embedded in a range of common contexts where the mathematics content is fairly explicit or visual, with relatively few distractors. Tasks tend to require the application of two or more steps or processes involving calculation with whole numbers and common decimals, percentages and fractions; simple measurement and spatial representation; estimation; and interpretation of relatively simple data and statistics in texts, tables and graphs (OECD, 2016b).

In most OECD countries and economies with available data, at least 70% of 25-64 year-olds scored at or above 226 in both literacy and numeracy. However, this is one of the indicators with the greatest variation across countries. Over 90% of the adult population in Japan achieved this score, compared to less than 40% in Chile and Turkey.

### Target 4.7: By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development

Target 4.7 links education with several other Sustainable Development Goals related to social and humanistic aspects of the global agenda. It is one of the most ambitious targets for data collection and consequently the most challenging to measure on a global scale.

Data are not available for any of the global or thematic indicators associated with this target, but Table 3 presents a proxy indicator – percentage of 15-year-old students scoring at or above Level 2 in science in PISA 2015 – which reflects at least one part of the target: the extent to which learners acquire the scientific skills needed to promote sustainable development. At least 50% of students participating in PISA 2015 score at or above Level 2 in science in most of the OECD and partner countries. The highest proportions of students achieving Level 2 in science are in Estonia (91%), Japan (90%), Canada and Finland (both 89%).

### Target 4.a: Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all

Target 4.a aims at guaranteeing that schools have the necessary resources for effective learning, which encompasses everything from the physical infrastructure of the buildings to the ability to keep children safe. Two proxy indicators are presented in Table 3, one which measures physical resources, and one which measures student well-being.

All schools in most OECD and partner countries have electricity, basic drinking water and sanitation facilities. Results for the proxy indicator "Percentage of 15-year-old students with access to a computer connected to the Internet available to students for educational purposes" show that, with few exceptions, students in OECD countries also have access to computers and Internet at school. This indicator, however, does not provide information on how often computers are used or made available to students or on how well technology is integrated into learning practices. The PISA report *Students, Computers and Learning* has more information on students' use of ICT devices (OECD, 2015).

Progress is still needed to improve student well-being. The proxy indicator "Percentage of frequently bullied 15 year-old students" uses PISA 2015 data to show that in some countries an alarming share of students, over 15% in some cases, report being frequently bullied in school (OECD, 2017).

### Target 4.b: By 2020, substantially expand globally the number of scholarships available to developing countries, in particular least developed countries, small island developing states and African countries, for enrolment in higher education, including vocational training and information and communications technology, technical, engineering and scientific programmes, in developed countries and other developing countries

Target 4.b was set by the international community to substantially increase international equity in education by focusing on scholarships. The set of indicators associated with target 4.b aims to measure both the number of scholarships and the amount of money allocated to students from developing countries by countries that are members of or report to the OECD Development Assistance Committee (DAC).

Global indicator 4.b.1 looks at the volume of official development assistance (ODA)[2] flows allocated to developing country nationals for scholarships in donor countries' educational institutions.

In 2015, the 29 countries presented in Table 3 extended a total of USD 954 million in scholarships in donor countries to students from developing countries. The amount allocated by each of these countries depends on their specific development co-operation policies, but ranged from zero (13 countries allocated less than USD 5 million in aid for scholarships) to USD 262 million (Australia) in 2015. Five countries provided 72% of the total aid for scholarships for OECD and partner countries: Australia, France, Germany, Korea and the United Kingdom.

### Target 4.c: By 2030, substantially increase the supply of qualified teachers, including through international co-operation for teacher training in developing countries, especially least developed countries and small island developing states

Raising the standing and quality of the teaching profession is essential for attracting the best people for teaching and for retaining qualified and well-performing teachers – all necessary steps for improving the education system

as a whole. At least three important factors influence the attractiveness and quality of the teaching profession: working conditions, salaries, and professional development. One indicator is presented for each of these factors.

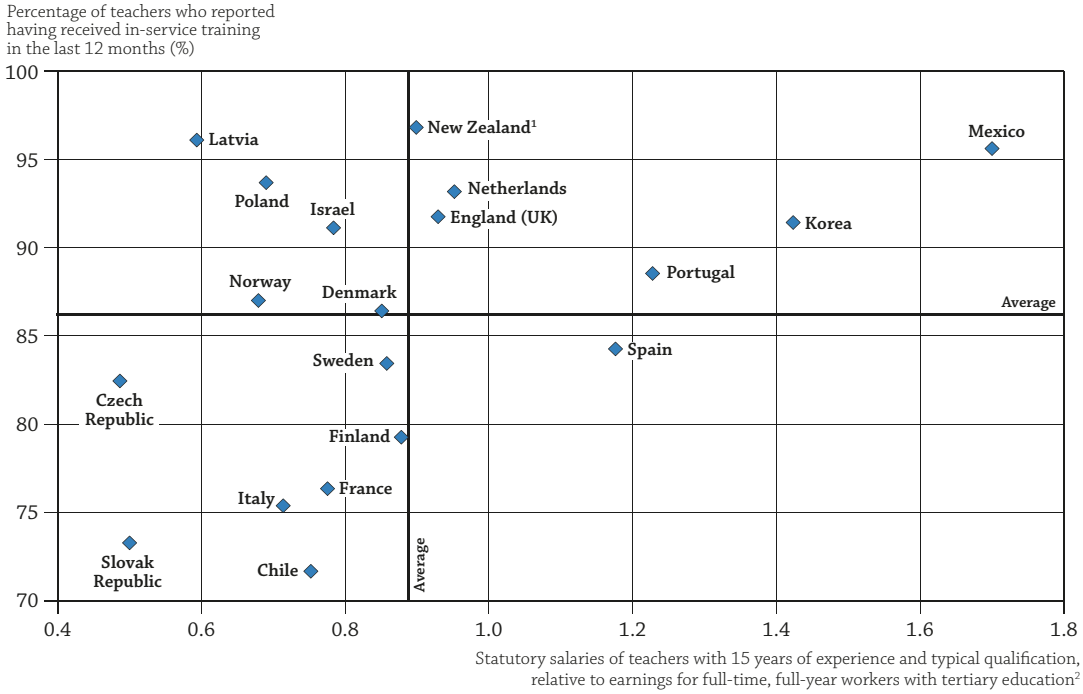
Although it is not directly indicative of teachers' working conditions, the student-teacher ratio, along with other indicators such as class size and teaching time, can reflect teachers' workload. Across OECD countries the average student-teacher ratio – a proxy indicator for thematic indicator 4.c.4 (pupil-qualified teacher ratio) – is 15 in primary, 13 in secondary and 16 in tertiary education (see indicator D2).

Across OECD countries, teachers from pre-primary to upper secondary earn less than other tertiary-educated workers on average. Results for the proxy indicator "Statutory salaries of teachers with 15 years of experience and typical qualification, relative to earnings for full-time, full-year workers with tertiary education" (see Indicator D3) show that statutory salaries for pre-primary and primary teachers are only about 85% of the salaries of non-teacher tertiary-educated workers. The figure increases to 91% for lower secondary teachers and to 96% for teachers in upper secondary general programmes.

SDG 4 thematic indicator 4.c.7 (percentage of teachers who received in-service training in the last 12 months) uses data from the OECD Teaching and Learning International Survey (TALIS) 2013 to measure the extent to which teachers participate in professional development through in-service training. In all OECD and partner countries, at least 70% of teachers had received training in the previous 12 months, with the highest rates in Australia and New Zealand, at 97% (Table 3).

Figure 4 shows countries' relative position on two factors that may impact the attractiveness of the teaching profession: relative teacher salaries and participation in professional development. Countries in the top-right quadrant of the figure have above-average relative salaries and an above-average percentage of teachers who received in-service training in the previous year, suggesting more attractive teaching conditions along these two dimensions. However, more information would be needed in order to understand how in-service education can better serve the needs of teachers, and in turn how teacher engagement can affect student performance.

## Figure 4. Teaching profession: Relative salaries and in-service training in lower secondary education




1. Data on percentage of teachers who reported having received in-service training in the last 12 months refer to year 2014 instead of 2013.
2. Data on statutory salaries refer to teachers in public institutions only.

**Source**: OECD (2017), Table 3 and Table D3.2b (available on line) in Indicator D3. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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## Definitions

**Level 2 in PISA (baseline proficiency level)**

Mathematics: students can use basic algorithms, formulae, procedures or conventions to solve problems involving whole numbers – e.g. to compute the approximate price of an object in a different currency or to compare the total distance across two alternative routes. They can interpret and recognise situations in contexts that require no more than direct inference, extract relevant information from a single source and make use of a single representational mode. Students at this level are capable of making literal interpretations of the results.

Reading: students begin to demonstrate the reading skills that will enable them to participate effectively and productively in life. Some tasks at Level 2 require the student to retrieve one or more pieces of information that may have to be inferred and may have to meet several conditions. Others require recognising the main idea in a text, understanding relationships, or interpreting meaning within a limited part of the text when the information is not prominent and the student must make low-level inferences.

Science: students can draw on their knowledge of basic science content and procedures to identify an appropriate explanation, interpret data, and identify the question being addressed in a simple experiment.

**PISA index of economic, social and cultural status (ESCS)** was created on the basis of the following variables**:** the International Socio-Economic Index of Occupational Status (ISEI); the highest level of education of the student's parents, converted into years of schooling; the PISA index of family wealth; the PISA index of home educational resources; and the PISA index of possessions related to "classical" culture in the family home. See Volume I of the *PISA 2015 Results* (OECD, 2016c) for more information.

**Technical and vocational education and training** is a comprehensive term commonly used by the UNESCO Institute for Statistics to refer to education, training and skills development in a wide range of occupational fields, production, services and livelihoods.

## Methodology

For *Education at a Glance 2017*, the gender parity index has been calculated for indicators 4.1.1, 4.2.2, 4.3.1 and 4.6.1. Parity is always calculated as the indicator value for women divided by the indicator value for men. The ESCS parity for indicator 4.1.1 refers to the PISA index of economic, social and cultural status (ESCS) (see above) and is calculated as Q1%/Q2 – 4%, where Q = a quartile of ESCS.

Even when the indicators presented in this chapter follow the same methodology as the one use by the UNESCO Institute for Statistics (UIS), there may be differences in results due to differences in data sources. More specifically, the OECD uses population data collected through the UOE questionnaires, whereas UIS uses the UN Population Division data. Current dialogue between the OECD and UIS on data sources aims to reach a common approach between the two organisations.

Please find more information on data sources and the specific methodology for each indicator presented in this chapter in Annex 3 (www.oecd.org/education/education-at-a-glance-19991487.htm).

## Sources

| Indicator | Source |
|---|---|
| 4.1.1 | OECD, PISA 2015 Database |
| 4.1.5 | UOE 2016 data collection |
| 4.1.7 | UIS database |
| 4.2.2 | UOE 2016 data collection |
| 4.3.1 | Two different data sources: PIAAC (2012, 2015) and Adult Education Survey (2011) |
| 4.3.3 | UOE 2016 data collection |
| 4.4.3 | Indicator A1 in *Education at a Glance 2017* |
| 4.5.1 | The source for the parity index is the same as the source for the indicator |
| 4.6.1 | PIAAC Database (2012, 2015) |
| 4.7.5 | OECD, PISA 2015, Table I.2.1a (Volume I) |
| 4.a.1 | OECD, PISA 2015 Database |
| 4.a.2 | OECD, PISA 2015, Table III.8.1 (Volume III) |
| 4.b.1 | OECD Development Assistance Committee |
| 4.c.4 | Indicator D2 of *Education at a Glance 2017* |
| 4.c.5 | Indicator D3 of *Education at a Glance 2017* |
| 4.c.7 | TALIS 2013 |

**Note regarding data from Israel**

The statistical data for Israel are supplied by and are under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

**Note regarding data from the Russian Federation in the Survey of Adult Skills (PIAAC)**

The sample for the Russian Federation does not include the population of the Moscow municipal area. The data published, therefore, do not represent the entire resident population aged 16-65 in the Russian Federation but rather the population of the Russian Federation excluding the population residing in the Moscow municipal area. More detailed information regarding the data from the Russian Federation as well as that of other countries can be found in the *Technical Report of the Survey of Adult Skills*, Second Edition (OECD, 2016b).

## Notes

1. Education targets are included in seven other SDGs: 1) ending poverty; 3) health; 5) gender equality; 8) decent work; 12) responsible consumption; 13) climate change; and 16) peace, justice, strong institutions.

2. I.e. concessional financial flows from OECD Development Assistance Committee (DAC) and other countries' public sources; for further information see DAC Converged Statistical Reporting Directives (www.oecd.org/dac/financing-sustainable-development/development-finance-standards/DCDDAC(2016)3FINAL.pdf).

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## Table 1. List of SDG indicators presented in this chapter

| SDG 4 targets | | Indicators | Data available in |
|---|---|---|---|
| 4.1 | By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes | **4.1.1. Proportion of children and young people at the end of lower secondary education achieving at least a minimum proficiency level (level 2 in PISA) in reading and mathematics (2015)** | Table 2 |
| | | 4.1.5. Out-of-school rate (upper secondary education) (2015) | Table 2 |
| | | 4.1.7. Number of years of compulsory primary and secondary education guaranteed in legal frameworks (2015) | Table 2 |
| 4.2 | By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education | **4.2.2. Participation rate in organised learning (one year before the official primary entry age) (2015)** | Table 2 |
| 4.3 | By 2030, ensure equal access for all women and men to affordable quality technical, vocational and tertiary education, including university | **4.3.1. Participation rate of adults (25-64 year-olds) in formal and non-formal education and training in the previous 12 months. Survey of Adult Skills (PIAAC) (2012, 2015)/Adult education survey (2011)** | Table 2 |
| 4.4 | By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship. | 4.4.3. Youth/adult educational attainment rates by age group, economic activity status, levels of education and programme orientation (2016) | Indicator A1 |
| 4.5 | By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations | **4.5.1. Parity indices (female/male, rural/urban, bottom/top wealth quintile and others such as disability status, indigenous peoples and conflict-affected, as data become available) for all education indicators on this list that can be disaggregated** | Table 2 (Columns 2, 3, 7, 9) and Table 3 (Column 2) |
| 4.6 | By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy | **Proxy for 4.6.1: Percentage of adults (25-64 year-olds) achieving at least a score of 226 in both literacy and numeracy skills (2012, 2015)** | Table 3 |
| 4.7 | By 2030, ensure all learners acquire knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship, and appreciation of cultural diversity and of culture's contribution to sustainable development | Proxy for 4.7.5: Percentage of 15-year-old students scoring at or above Level 2 in science in PISA 2015 | Table 3 |
| 4.a | Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all | **Proxy for 4.a.1: Percentage of 15-year-old students with access to a computer connected to the Internet available to students for educational purposes[1] (2015)** | Table 3 |
| | | Proxy for 4.a.2: Percentage of 15 year-old students frequently bullied[2] (2015) | Table 3 |
| 4.b | By 2020, substantially expand globally the number of scholarships available to developing countries, in particular least developed countries, small island developing states and African countries, for enrolment in higher education, including vocational training, information and communications technology, technical, engineering and scientific programmes in developed countries and other developing countries | **4.b.1. Volume of official development assistance flows for scholarships in donor countries (USD millions, current prices, 2015)** | Table 3 |
| 4.c | By 2030, substantially increase the supply of qualified teachers, including through international co-operation for teacher training in developing countries, especially least developed countries and small island developing states | Proxy for 4.c.4: Student to teacher ratio by education level (2015) | Indicator D2 |
| | | Proxy for 4.c.5: Statutory salaries of teachers with 15 years of experience and typical qualification, relative to earnings for full-time, full-year workers with tertiary education (2015) | Indicator D3 |
| | | 4.c.7. Percentage of teachers who received in-service training in the last 12 months (2013) | Table 3 |

**Note**: Global indicators are in blue. Indicators labelled "proxy" provide similar information to the official indicator, but do not follow the exact methodology set out by the Unesco Institute for Statistics (UIS).

1. Results based on school principals' reports.

2. A student is frequently bullied if he or she is in the top 10% of the index of exposure to bullying among all countries/economies. See Annex A1 of the Volume III of PISA 2015 for information on the index of exposure to bullying.

## Table 2. Targets 4.1, 4.2, 4.3 and related 4.5.1 Indicators

| | | Target 4.1 | | | | | | | | Target 4.2 | | Target 4.3 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Indicator 4.1.1 | | | | | | Indicator 4.1.5 | Indicator 4.1.7 | Indicator 4.2.2 | | Indicator 4.3.1[2] | | | | Indicator 4.3.3 |
| | | Total | | Related 4.5.1 Indicators: Gender parity index (F/M) | | Related 4.5.1 Indicators: PISA ESCS parity index[1] | | | | Total | Related 4.5.1 Indicator: Gender parity index (F/M) | Total | | Related 4.5.1 Indicator: Gender parity index (F/M) | | |
| | | % | (S.E.) | Index | (S.E.) | Index | (S.E.) | % | Years | % | Index | % | (S.E.) | Index | (S.E.) | % |
| | | (1) | | (2) | | (3) | | (4) | (5) | (6) | (7) | (8) | | (9) | | (10) |
| OECD | **Countries** | | | | | | | | | | | | | | | |
| | Australia | 73 | (0.61) | 1.1 | (0.02) | 0.7 | (0.02) | 0 | 10 | 90 | 1.0 | 55 | (0.69) | 1.0 | (0.02) | 23 |
| | Austria | 71 | (1.19) | 1.0 | (0.03) | 0.7 | (0.02) | 7 | 9 | 97 | 1.0 | *48* | *m* | *1.0* | *m* | 29 |
| | Belgium | 75 | (0.97) | 1.0 | (0.02) | 0.7 | (0.02) | 2 | 12 | 98 | 1.0 | *38* | *m* | *1.0* | *m* | 24 |
| | Canada | 82 | (0.76) | 1.0 | (0.01) | 0.8 | (0.01) | 12 | 10 | 96 | 1.0 | 58 | (0.57) | 1.0 | (0.02) | m |
| | Chile | 48 | (1.27) | 0.9 | (0.03) | 0.5 | (0.03) | 5 | 12 | 94 | 1.0 | 47 | (1.87) | 0.8 | (0.03) | 18 |
| | Czech Republic | 72 | (1.19) | 1.1 | (0.03) | 0.6 | (0.03) | 4 | 9 | 91 | 1.0 | *37* | *m* | *1.0* | *m* | 25 |
| | Denmark | 80 | (0.99) | 1.0 | (0.02) | 0.8 | (0.02) | 9 | 10 | 99 | 1.0 | *59* | *m* | *1.1* | *m* | 15 |
| | Estonia | 84 | (0.79) | 1.1 | (0.02) | 0.9 | (0.02) | 6 | 9 | 92 | 1.0 | *50* | *m* | *1.2* | *m* | 13 |
| | Finland | 83 | (0.87) | 1.1 | (0.02) | 0.8 | (0.02) | 4 | 10 | 98 | 1.0 | *56* | *m* | *1.3* | *m* | 23 |
| | France | 71 | (0.90) | 1.1 | (0.03) | 0.6 | (0.02) | m | 10 | 100 | 1.0 | *51* | *m* | *1.0* | *m* | 19 |
| | Germany | 78 | (1.06) | 1.0 | (0.02) | 0.8 | (0.02) | 9 | 12 | 98 | 1.0 | *50* | *m* | *0.9* | *m* | 21 |
| | Greece | 59 | (1.82) | 1.1 | (0.04) | 0.6 | (0.03) | 6 | 9 | 96 | 0.9 | *12* | *m* | *1.3* | *m* | 12 |
| | Hungary | 65 | (1.21) | 1.1 | (0.03) | 0.6 | (0.03) | 10 | 7 | 91 | 1.0 | *41* | *m* | *0.9* | *m* | 15 |
| | Iceland | 69 | (0.98) | 1.1 | (0.03) | 0.8 | (0.04) | 15 | 10 | 98 | 1.0 | m | m | m | m | 11 |
| | Ireland | 82 | (0.89) | 1.0 | (0.02) | 0.8 | (0.02) | 0 | 10 | 89 | 1.0 | *24* | *m* | *1.0* | *m* | 9 |
| | Israel | 63 | (1.45) | 1.1 | (0.04) | 0.6 | (0.03) | 5 | 12 | 97 | 1.0 | 53 | (0.74) | 1.0 | (0.03) | 15 |
| | Italy | 70 | (1.18) | 1.0 | (0.03) | 0.7 | (0.03) | 7 | 12 | 97 | 1.0 | *36* | *m* | *0.9* | *m* | 22 |
| | Japan | 83 | (1.05) | 1.0 | (0.02) | 0.8 | (0.02) | 3 | 9 | 97 | m | 42 | (0.77) | 0.7 | (0.02) | m |
| | Korea | 80 | (1.14) | 1.1 | (0.03) | 0.8 | (0.02) | 3 | 9 | 93 | 1.0 | 50 | (0.84) | 0.8 | (0.02) | 15 |
| | Latvia | 73 | (1.04) | 1.1 | (0.02) | 0.8 | (0.02) | 5 | 9 | 97 | 1.0 | *32* | *m* | *1.4* | *m* | 16 |
| | Luxembourg | 67 | (0.55) | 1.0 | (0.02) | 0.6 | (0.02) | 16 | 10 | 99 | 1.0 | *70* | *m* | *1.0* | *m* | 23 |
| | Mexico | 39 | (1.26) | 1.0 | (0.04) | 0.5 | (0.04) | 31 | 12 | 100 | 1.0 | m | m | m | m | 12 |
| | Netherlands | 77 | (1.10) | 1.1 | (0.02) | 0.8 | (0.03) | 1 | 11 | 99 | 1.0 | *59* | *m* | *0.9* | *m* | 22 |
| | New Zealand | 73 | (1.12) | 1.1 | (0.03) | 0.7 | (0.03) | 5 | 10 | 94 | 1.0 | 67 | (0.81) | 1.0 | (0.02) | m |
| | Norway | 78 | (0.88) | 1.1 | (0.02) | 0.8 | (0.02) | 8 | 10 | 98 | 1.0 | *60* | *m* | *1.0* | *m* | 18 |
| | Poland | 78 | (1.01) | 1.0 | (0.02) | 0.8 | (0.02) | 4 | 9 | 95 | 1.0 | *24* | *m* | *1.1* | *m* | 20 |
| | Portugal | 72 | (1.04) | 1.0 | (0.02) | 0.7 | (0.02) | 1 | 9 | 97 | 1.0 | *44* | *m* | *1.0* | *m* | 18 |
| | Slovak Republic | 62 | (1.18) | 1.1 | (0.03) | 0.6 | (0.03) | 9 | 10 | 81 | 1.0 | *42* | *m* | *1.0* | *m* | 23 |
| | Slovenia | 78 | (0.63) | 1.1 | (0.02) | 0.8 | (0.02) | 2 | 9 | 92 | 1.0 | *36* | *m* | *1.1* | *m* | 31 |
| | Spain | 73 | (1.02) | 1.0 | (0.02) | 0.7 | (0.02) | 6 | 10 | 98 | 1.0 | *38* | *m* | *0.9* | *m* | 14 |
| | Sweden | 73 | (1.34) | 1.1 | (0.02) | 0.7 | (0.02) | 2 | 9 | 98 | 1.0 | *72* | *m* | *1.1* | *m* | 13 |
| | Switzerland | 76 | (1.13) | 1.1 | (0.02) | 0.7 | (0.02) | 6 | 9 | 98 | 1.0 | *66* | *m* | *1.0* | *m* | 25 |
| | Turkey | 43 | (2.19) | 1.1 | (0.06) | 0.6 | (0.05) | 14 | 12 | 72 | 1.0 | *18* | *m* | *0.7* | *m* | 25 |
| | United Kingdom | 73 | (1.00) | 1.0 | (0.02) | 0.8 | (0.02) | 0 | 11 | 100 | 1.0 | *36* | *m* | *1.1* | *m* | 18 |
| | United States | 68 | (1.47) | 1.0 | (0.03) | 0.7 | (0.03) | 6 | 12 | 91 | 1.0 | 59 | (1.05) | 1.0 | (0.03) | m |
| | **Economies** | | | | | | | | | | | | | | | |
| | Flemish Com. (Belgium) | m | m | m | m | m | m | m | m | m | m | 48 | (0.81) | 1.0 | (0.04) | m |
| | England (UK) | m | m | m | m | m | m | m | m | m | m | 56 | (0.89) | 0.9 | (0.03) | m |
| | Northern Ireland (UK) | m | m | m | m | m | m | m | m | m | m | 48 | (0.95) | 1.0 | (0.04) | m |
| Partners | Brazil | 26 | (1.10) | 0.9 | (0.03) | 0.4 | (0.03) | 16 | 12 | 93 | 1.0 | m | m | m | m | 4 |
| | Colombia | 32 | (1.12) | 0.9 | (0.04) | 0.4 | (0.04) | 22 | 9 | 95 | 1.0 | m | m | m | m | 4 |
| | Costa Rica | 34 | (1.43) | 0.8 | (0.04) | 0.5 | (0.04) | 14 | 9 | 91 | 1.0 | m | m | m | m | 8 |
| | Lithuania | 67 | (1.16) | 1.1 | (0.02) | 0.7 | (0.02) | 4 | 9 | 98 | 1.0 | *29* | *m* | *1.4* | *m* | 9 |
| | Russian Federation* | 74 | (1.45) | 1.1 | (0.02) | 0.8 | (0.03) | 8 | 11 | 89 | 1.0 | 19 | (1.51) | 1.4 | (0.13) | 15 |

**Note**: Global indicators are in blue. Indicators 4.1.5, 4.2.2 and 4.3.3 are calculated using UOE population data, so results may slightly differ from UIS calculations, which use the UN Population Division data. Refer to Table 1 for the full description of the SDG indicators presented.

1. ESCS refers to the PISA index of economic, social and cultural status (See Volume I of the *PISA 2015 Results* for more information). The parity is calculated as Q1%/Q2 – 4% where Q = quartile of ESCS.

2. Data from the Adult Education Survey are reported in italics and data from the Survey of Adult Skills (PIAAC) are not italicised.

* For Columns 8 and 9, see note on data for the Russian Federation in the *Source* section.

**Source**: OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933562904

## Table 3. Targets 4.6, 4.7, 4.a, 4.b, 4.c and related 4.5.1 Indicator

| | | Target 4.6 | | | | Target 4.7 | | Target 4.a | | | | Target 4.b | Target 4.c | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Proxy for Indicator 4.6.1 | | | | | | | | | | | | |
| | | Total | | Related 4.5.1 Indicator: Gender parity index (F/M) | | Proxy for Indicator 4.7.5 | | Proxy for Indicator 4.a.1 | | Proxy for Indicator 4.a.2 | | Indicator 4.b.1 | Indicator 4.c.7 | |
| | | % | (S.E.) | Index | (S.E.) | % | (S.E.) | % | (S.E.) | % | (S.E.) | USD millions | % | (S.E.) |
| | | (1) | | (2) | | (3) | | (4) | | (5) | | (6) | (7) | |
| OECD | **Countries** | | | | | | | | | | | | | |
| | Australia | 77 | (0.73) | 0.9 | (0.02) | 82 | (0.56) | 99 | (0.51) | 15 | (0.41) | 262 | 97 | (0.5) |
| | Austria | 80 | (0.74) | 1.0 | (0.02) | 79 | (0.96) | 100 | (0.00) | 8 | (0.46) | 9 | m | m |
| | Belgium | m | m | m | m | 80 | (0.90) | 98 | (1.08) | 7 | (0.33) | 33 | m | m |
| | Canada | 74 | (0.53) | 0.9 | (0.01) | 89 | (0.53) | 100 | (0.06) | 13 | (0.43) | 15 | m | m |
| | Chile | 30 | (2.46) | 0.7 | (0.05) | 65 | (1.18) | 97 | (1.40) | 8 | (0.45) | m | 72 | (1.8) |
| | Czech Republic | 82 | (1.04) | 1.0 | (0.02) | 79 | (1.00) | 100 | c | 12 | (0.50) | 5 | 82 | (1.0) |
| | Denmark | 80 | (0.63) | 1.0 | (0.02) | 84 | (0.83) | 97 | (1.42) | 6 | (0.27) | 6 | 86 | (1.1) |
| | Estonia | 81 | (0.65) | 1.0 | (0.02) | 91 | (0.65) | 99 | (0.57) | 10 | (0.47) | 1 | 93 | (0.5) |
| | Finland | 84 | (0.62) | 1.0 | (0.02) | 89 | (0.69) | 99 | (0.55) | 10 | (0.44) | 0 | 79 | (1.0) |
| | France | 66 | (0.66) | 1.0 | (0.02) | 78 | (0.86) | 100 | (0.41) | 7 | (0.35) | 164 | 76 | (0.9) |
| | Germany | 76 | (0.88) | 0.9 | (0.02) | 83 | (0.95) | 97 | (1.33) | 6 | (0.43) | 92 | m | m |
| | Greece | 64 | (1.29) | 1.0 | (0.04) | 67 | (1.88) | 100 | c | 7 | (0.54) | 2 | m | m |
| | Hungary | m | m | m | m | 74 | (1.04) | 99 | (0.57) | 9 | (0.50) | 0 | m | m |
| | Iceland | m | m | m | m | 75 | (0.87) | 100 | c | 5 | (0.36) | m | 91 | (0.8) |
| | Ireland | 71 | (1.04) | 0.9 | (0.02) | 85 | (0.96) | 100 | c | 7 | (0.41) | 3 | m | m |
| | Israel | 62 | (0.82) | 0.9 | (0.03) | 69 | (1.36) | 87 | (2.76) | m | m | m | 91 | (0.6) |
| | Italy | 61 | (1.24) | 0.9 | (0.03) | 77 | (1.02) | 99 | (1.08) | m | m | 8 | 75 | (0.9) |
| | Japan | 91 | (0.57) | 1.0 | (0.01) | 90 | (0.70) | 98 | (0.99) | 5 | (0.33) | 44 | 83 | (0.8) |
| | Korea | 77 | (0.64) | 0.9 | (0.02) | 86 | (0.91) | 100 | c | 2 | (0.20) | 67 | 91 | (0.6) |
| | Latvia | m | m | m | m | 83 | (0.75) | 100 | c | 18 | (0.58) | m | 96 | (0.6) |
| | Luxembourg | m | m | m | m | 74 | (0.71) | 100 | c | 8 | (0.38) | 0 | m | m |
| | Mexico | m | m | m | m | 52 | (1.29) | 81 | (2.27) | 10 | (0.39) | m | 96 | (0.4) |
| | Netherlands | 83 | (0.63) | 0.9 | (0.01) | 81 | (0.97) | 100 | c | 3 | (0.37) | 33 | 93 | (0.6) |
| | New Zealand[1] | 79 | (0.77) | 0.9 | (0.02) | 83 | (0.90) | 100 | c | 18 | (0.62) | 40 | 97 | (0.4) |
| | Norway | 83 | (0.72) | 1.0 | (0.02) | 81 | (0.81) | 100 | c | 10 | (0.45) | 3 | 87 | (0.9) |
| | Poland | 71 | (0.84) | 1.0 | (0.03) | 84 | (0.85) | 100 | c | 11 | (0.45) | 8 | 94 | (0.7) |
| | Portugal | m | m | m | m | 83 | (0.92) | 94 | (1.58) | 6 | (0.31) | 5 | 89 | (0.7) |
| | Slovak Republic | 83 | (0.69) | 1.0 | (0.02) | 69 | (1.10) | 100 | c | 11 | (0.54) | 1 | 73 | (1.0) |
| | Slovenia | 66 | (0.88) | 1.0 | (0.02) | 85 | (0.50) | 100 | c | 7 | (0.38) | 1 | m | m |
| | Spain | 63 | (0.81) | 0.9 | (0.02) | 82 | (0.80) | 100 | c | 6 | (0.35) | 3 | 84 | (1.0) |
| | Sweden | 82 | (0.81) | 1.0 | (0.02) | 78 | (1.15) | 100 | (0.08) | 8 | (0.42) | 37 | 83 | (1.0) |
| | Switzerland | m | m | m | m | 82 | (1.06) | 100 | (0.17) | 7 | (0.48) | 7 | m | m |
| | Turkey | 39 | (1.27) | 0.7 | (0.05) | 56 | (2.10) | 80 | (3.18) | 9 | (0.51) | m | m | m |
| | United Kingdom | m | m | m | m | 83 | (0.80) | 100 | c | 14 | (0.55) | 107 | m | m |
| | United States[2] | 69 | (0.89) | 0.9 | (0.02) | 80 | (1.07) | 100 | c | 10 | (0.49) | m | 95 | (0.8) |
| | **Economies** | | | | | | | | | | | | | |
| | Flemish Com. (Belgium) | 81 | (0.73) | 0.9 | (0.02) | m | m | m | m | m | m | m | 88 | (0.9) |
| | England (UK) | 74 | (1.13) | 0.9 | (0.02) | m | m | m | m | m | m | m | 92 | (0.7) |
| | Northern Ireland (UK) | 71 | (1.53) | 0.9 | (0.03) | m | m | m | m | m | m | m | m | m |
| Partners | Brazil | m | m | m | m | 43 | (1.08) | 91 | (1.61) | 9 | (0.30) | m | 92 | (0.5) |
| | Colombia | m | m | m | m | 51 | (1.32) | 89 | (2.66) | 8 | (0.36) | m | m | m |
| | Costa Rica | m | m | m | m | 54 | (1.23) | 84 | (2.64) | 11 | (0.49) | m | m | m |
| | Lithuania | 76 | (0.97) | 1.0 | (0.02) | 75 | (1.07) | 100 | c | 10 | (0.42) | 1 | m | m |
| | Russian Federation[1]* | 81 | (2.00) | 1.1 | (0.03) | 82 | (1.12) | 99 | (0.97) | 9 | (0.71) | m | 95 | (0.8) |

**Note**: Global indicators are in blue. Indicators labelled "proxy" provide similar information to the proposed indicator, but do not follow the exact methodology set out by the Unesco Institute for Statistics (UIS). Refer to Table 1 for the full description of the SDG indicators presented.

1. Data for Column 7 (Indicator 4.c.7) refer to year 2014 instead of 2013.

2. Data from the United States in Column 7, Indicator 4.c.7, should be interpreted carefully since they did not meet international participation rates for TALIS 2013.To maintain a minimum level of reliability, the TALIS technical standards, which the United States was not able to meet, require that at least 75% of schools (after replacement) and at least 75% of teachers within the selected schools participate in the survey.

* For Columns 1 and 2, see note on data for the Russian Federation in the *Source* section.

**Source**: OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933562923

Chapter

A

# The Output of Educational Institutions and the Impact of Learning




**Indicator A1** To what level have adults studied?
StatLink http://dx.doi.org/10.1787/888933559199

**Indicator A2** Who is expected to graduate from upper secondary education?
StatLink http://dx.doi.org/10.1787/888933559275

**Indicator A3** Who is expected to graduate from tertiary education?
StatLink http://dx.doi.org/10.1787/888933559351

**Indicator A4** To what extent does parents' education influence their children's educational attainment?
StatLink http://dx.doi.org/10.1787/888933559446

**Indicator A5** How does educational attainment affect participation in the labour market?
StatLink http://dx.doi.org/10.1787/888933559579

**Indicator A6** What are the earnings advantages from education?
StatLink http://dx.doi.org/10.1787/888933559655

**Indicator A7** What are the financial incentives to invest in education?
StatLink http://dx.doi.org/10.1787/888933559883

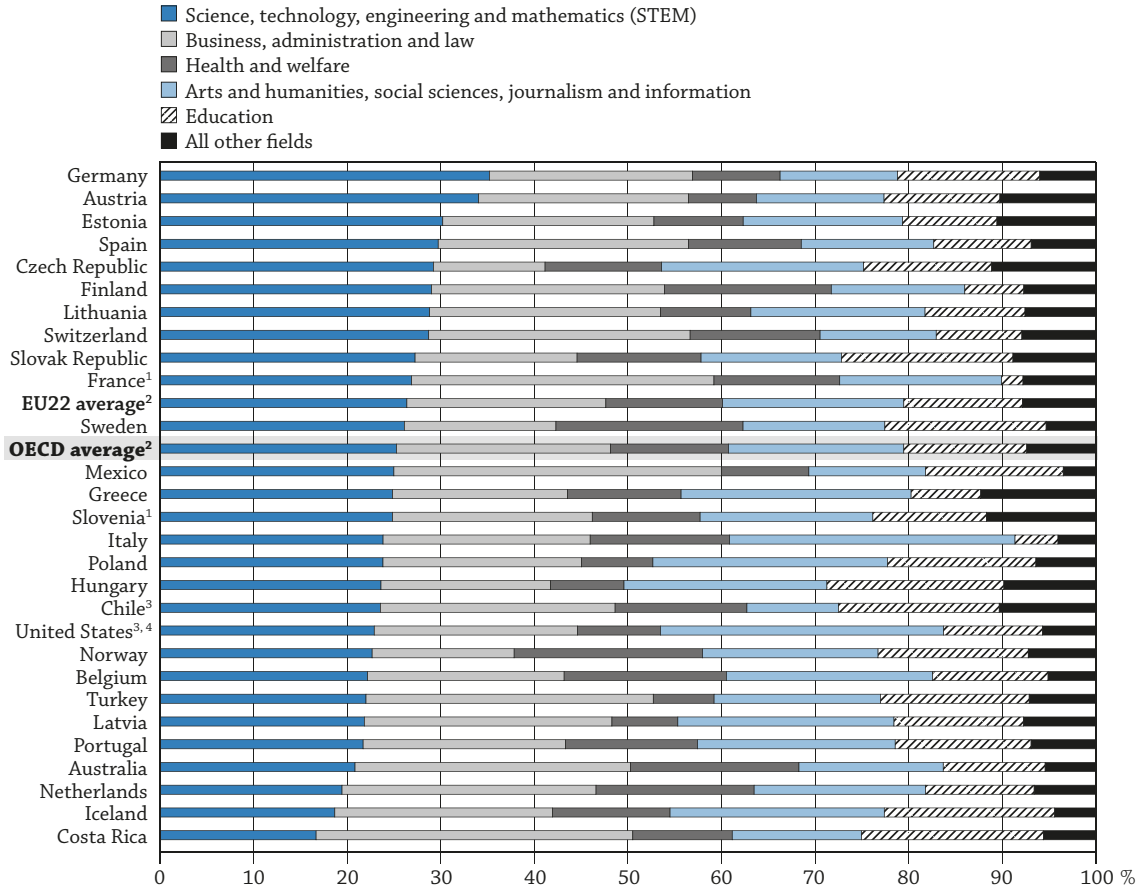
**Indicator A8** How are social outcomes related to education?
StatLink http://dx.doi.org/10.1787/888933559959

**Indicator A9** How many students complete upper secondary education?
StatLink http://dx.doi.org/10.1787/888933560016

# TO WHAT LEVEL HAVE ADULTS STUDIED?

- In most OECD countries, the most popular degree for tertiary-educated adults is business, administration or law. On average across the OECD, 23% of tertiary-educated 25-64 year-olds hold a degree in one of these three fields of study.
- In recent decades, the share of younger adults not completing upper secondary education has declined in the majority of OECD and partner countries, falling from 21% in 2005 to an average of 16% in 2016 among 25-34 year-olds. But some countries are lagging behind, with shares of about 65% in China and India; 50% in Costa Rica, Indonesia, Mexico and South Africa; and 45% in Turkey.
- Across all countries reporting subnational data, the region with the highest share of 25-64 year-old tertiary-educated adults is the one including the capital city, with the only exception of Spain.

## Figure A1.1. Fields of study among tertiary-educated 25-64 year-olds (2016)




**Note**: Science, technology, engineering and mathematics (STEM) comprise the ISCED-F 2013 fields of natural sciences, mathematics and statistics, information and communication technologies, and engineering, manufacturing and construction.

1. The age group refers to 25-34 year-olds.
2. The OECD and EU22 averages exclude France and Slovenia.
3. Year of reference differs from 2016. Refer to the source table for more details.
4. Data refer to bachelor's degree fields, even for those with additional tertiary degrees.

*Countries are ranked in descending order of the field of STEM.*

**Source**: OECD (2017), Table A1.3. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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## Context

Giving everyone a fair chance to obtain a quality education is a fundamental part of the social contract. To improve social mobility and socio-economic outcomes, it is critically important to remove inequalities in education opportunities and to promote inclusive growth by broadening the pool of candidates for high-skilled jobs.

Educational attainment, measured as the percentage of a population that has reached a certain level of education and holds a formal qualification at that level, is frequently used as a proxy measure of human capital and the level of an individual's skills – in other words, a measure of the skills associated with a given level of education and available in the population and to the labour force. In this sense, qualifications certify and offer information on the type of knowledge and skills that graduates have acquired in formal schooling.

Higher levels of educational attainment are associated with several positive economic and social outcomes for individuals (see Indicators A5, A6, A7 and A8). Highly educated individuals generally have better health, are more socially engaged, and have higher employment rates and higher relative earnings. Higher proficiency in literacy and numeracy is also strongly associated with higher levels of formal education (OECD, 2016).

Individuals thus have incentives to pursue more education, and governments have incentives to provide appropriate infrastructure and organisation to support the expansion of higher educational attainment across the population. Over past decades, almost all OECD countries have seen significant increases in educational attainment, especially among the young and among women.

## Other findings

- In some OECD and partner countries a very large share of the adult population has only achieved primary education: 25% of adults in China, 29% in Costa Rica, 43% in Indonesia, 30% in Portugal, 24% in Saudi Arabia and 43% in Turkey.
- The importance of vocational programmes varies greatly among countries. The share of younger adults with upper secondary or post-secondary non-tertiary education with a vocational component varies from less than 5% in Costa Rica, Israel and Mexico to more than 40% in Austria, Germany, the Slovak Republic and Slovenia.

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## Analysis

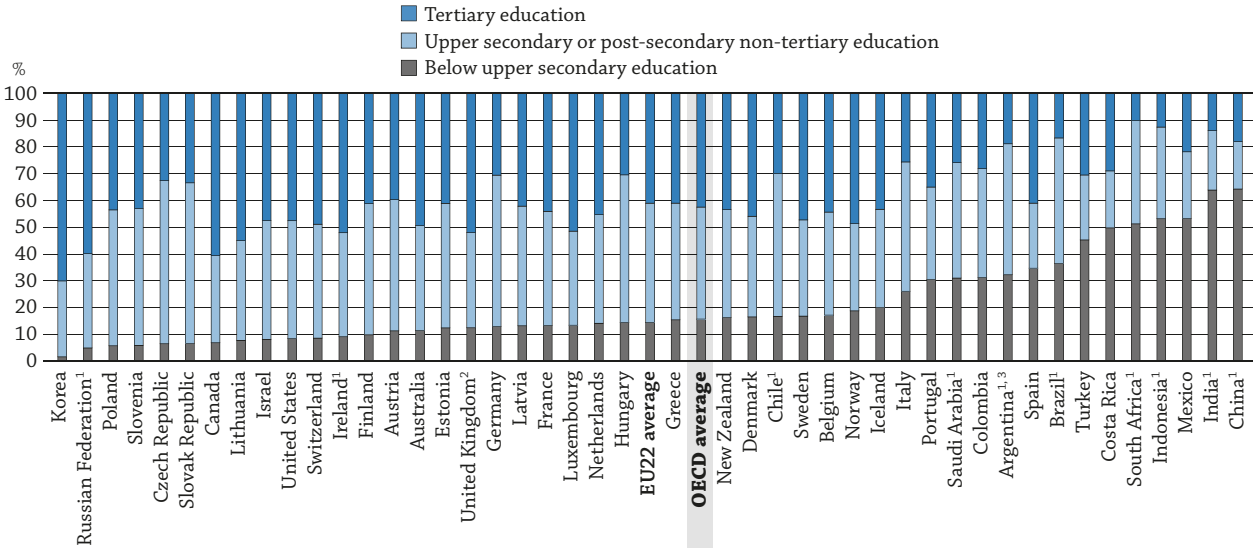
### Below upper secondary education

The percentage of adults (25-64 year-olds) with below upper secondary education has been falling since 2000. Across OECD countries, the share decreased from 35% in 2000 to 29% in 2005, 26% in 2010 and 22% in 2016 (Education at a Glance Database).

While in most OECD and partner countries at most only 5% of adults have not achieved primary education, there are some notable exceptions: Brazil (17%), Costa Rica (13%), India (46%), Mexico (14%) and South Africa (15%). On average across OECD countries, 6% of adults have only been educated to primary level, but this percentage is much higher in some OECD and partner countries, notably China (25%), Costa Rica (29%), Indonesia (43%), Portugal (30%), Saudi Arabia (24%) and Turkey (43%) (Table A1.1).

Among younger adults (25-34 year-olds), on average across OECD countries, the share of adults with below upper secondary education fell from 25% in 2000 to 21% in 2005, 19% in 2010 and 16% in 2016 (Table A1.2). In 2016, the share of 25-34 year-olds with below upper secondary education is 16% on average across OECD countries. But in some countries more than half the young population lack an upper secondary or higher degree: China (64%), Costa Rica (51%), India (64%), Indonesia (53%), Mexico (53%) and South Africa (51%) (Figure A1.2).

**Figure A1.2. Educational attainment of 25-34 year-olds (2016)**




1. Year of reference differs from 2016. Refer to the source table for more details.

2. Data for upper secondary attainment include completion of a sufficient volume and standard of programmes that would be classified individually as completion of intermediate upper secondary programmes (16% of adults aged 25-64 are in this group).

3. Data should be used with caution. See *Methodology* section for more information.

*Countries are ranked in ascending order of the percentage of 25-34 year-olds with below upper secondary education.*

**Source**: OECD / ILO / UIS (2017), Education at a Glance Database, http://stats.oecd.org/. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

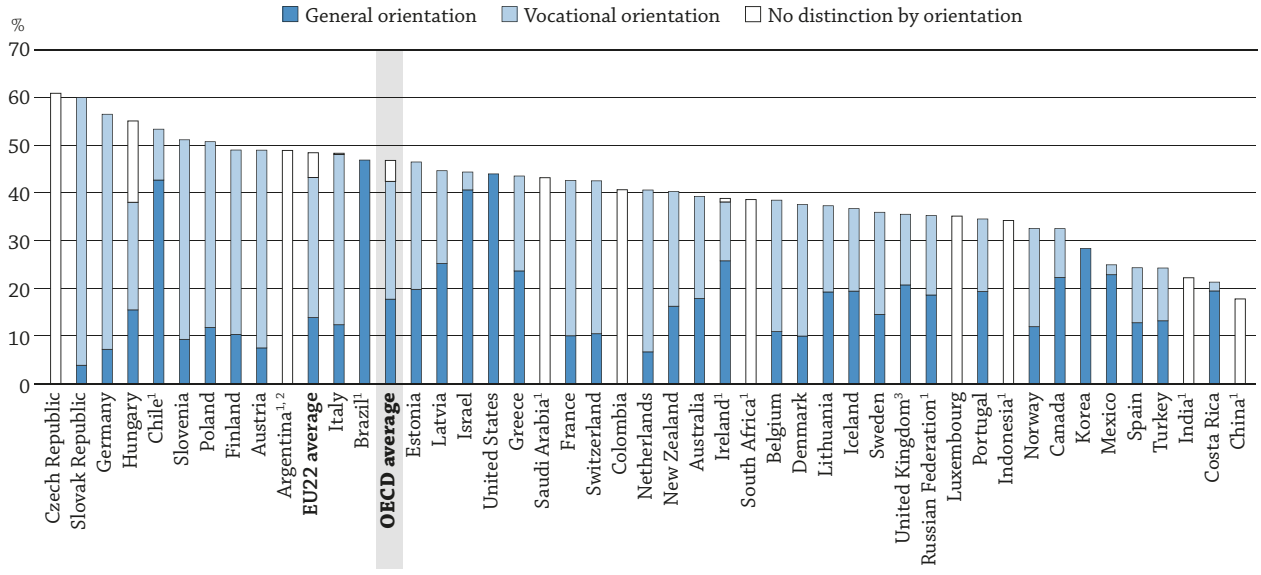
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### Upper secondary or post-secondary non-tertiary education

On average across OECD countries in 2016 (or latest available year), 43% of adults (25-64 year-olds) have an upper secondary or post-secondary non-tertiary degree as their highest educational level. This share remains highly stable across generations, being about 42% among both 25-34 year-olds and 55-64 year-olds. However, in certain countries the rate for the younger group (25-34 year-olds) is above 50%: 53% in Chile, 61% in the Czech Republic, 56% in Germany, 55% in Hungary, 51% in Poland, 60% in the Slovak Republic and 51% in Slovenia. On the other hand, it is below 30% in Korea (28%), Mexico (25%) Spain (24%) and Turkey (24%) (Figure A1.2; Education at a Glance Database).

On average, of those adults with upper secondary or post-secondary non-tertiary as their highest educational attainment, more have completed vocational programmes than general programmes. However, there are large country differences among the 25-34 year-old group. The share of younger adults with a vocational qualification at upper secondary or post-secondary non-tertiary level varies from 2% in Costa Rica, 4% in Israel and 2% in Mexico, to more than 41% in Austria, 49% in Germany, 56% in the Slovak Republic and 42% in Slovenia. In most countries, general programmes are usually designed to prepare students for further education, and those who acquire this qualification often continue to tertiary education (Figure A1.3).

## Figure A1.3. Percentage of 25-34 year-olds whose highest level of education is upper secondary or post-secondary non-tertiary, by programme orientation (2016)




1. Year of reference differs from 2016. Refer to the Table A1.1 for more details.

2. Data should be used with caution. See *Methodology* section for more information.

3. Data for upper secondary attainment include completion of a sufficient volume and standard of programmes that would be classified individually as completion of intermediate upper secondary programmes (16% of adults aged 25-64 are in this group).

*Countries are ranked in descending order of the percentage of 25-34 year-olds with upper secondary or post-secondary non-tertiary education.*

**Source**: OECD / ILO / UIS (2017), Education at a Glance Database, http://stats.oecd.org/. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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### Tertiary education

On average across OECD countries, the share of 25-64 year-olds with a tertiary degree has increased by 14 percentage points since 2000, from 22% in 2000 to 27% in 2005, 31% in 2010 and 36% in 2016. The increase is even higher among younger adults (25-34 year-olds), who have benefited from the expansion of higher education in recent decades in many countries. Between 2000 and 2016, their share increased by 17 percentage points, from 26% in 2000, to 32% in 2005, 37% in 2010 and 43% in 2016. The increase was 21 percentage points in the Czech Republic, 33 percentage points in Korea, 25 percentage points in Latvia, 22 percentage points in Portugal, 22 percentage points in the Slovak Republic and 22 percentage points in Turkey (Table A1.2).

In 2016, 43% of 25-34 year-olds across OECD countries have a tertiary degree, with the share reaching more than 50% in some countries: Canada (61%), Ireland (52%), Japan (60%), Korea (70%), Lithuania (55%) and the Russian Federation (60%) (Figure A1.2).

### Overall trends in educational attainment levels

In recent years, educational attainment levels have risen further in all OECD and partner countries. In 2000, 80% of younger adults were educated to at least upper secondary level in about 20 of the 35 OECD countries; by 2016 all but five countries had reached this threshold. This is a major step towards a more highly educated population.

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On average across the OECD, 84% of 25-34 year-olds have attained at least upper secondary education in 2016, compared to 75% in 2000 and roughly 50% in 1970.[1] The percentage of 25-34 year-olds with upper secondary or post-secondary non-tertiary education as their highest level of educational attainment increased from less than 35% in 1970 to about 50% in 2000 and decreased to 42% in 2016. On the other hand, the percentage of 25-34 year-olds with tertiary education has been continuously increasing, from about 15% in 1970[1] to 26% in 2000 and 43% in 2016 (Education at a Glance Database).

Countries have followed different paths and seen different dynamics in their educational expansion. Some OECD countries have followed a sequential bottom-up approach: first expanding secondary education before then expanding tertiary education. In Korea, for example, the focus of educational policies during the 1960s and 1970s was the expansion of secondary education, with more opportunities for higher education starting in 1980. The impact of the educational reforms in Korea is clearly reflected in the educational levels attained by subsequent generations of 25-34 year-olds. Between 1965 and 2016, the percentage of younger adults without upper secondary education dropped from more than 75% in 1965 to 7% in 2000 and 2% in 2016. At the same time, the share of younger adults with an upper secondary or post-secondary non-tertiary education continuously increased, but the trend reversed in the mid-1990s, with the increase of tertiary attainment. In 2000, upper secondary or post-secondary non-tertiary education was still the most widespread educational attainment level among younger adults (56%), while the proportion decreased to 28% by 2016 in favour of tertiary education. During this period, the respective share of the population with tertiary education has risen from 37% in 2000 to 70% in 2016. This represents the highest proportion among OECD and partner countries (OECD, 2017a; Education at a Glance Database).

In contrast, many other OECD countries have followed a concurrent bottom-up approach, expanding upper secondary education and tertiary education simultaneously. This is especially the case in countries where educational expansion started relatively late, mainly Mexico, Portugal, Spain and Turkey (OECD, 2017a).

### *Fields of study among tertiary-educated adults*

Certain fields of study are more prevalent among tertiary-educated adults. On average across OECD and partner countries with available data, 23% of tertiary-educated 25-64 year-olds have a degree in business, administration and law. The share ranges from 16% in Sweden and 17% in the Slovak Republic to over 30% in Costa Rica, France, Mexico and Turkey. For most countries with disaggregated data on this field of study, a larger share of adults obtained their degree in business and administration than in law (Figure A1.1).

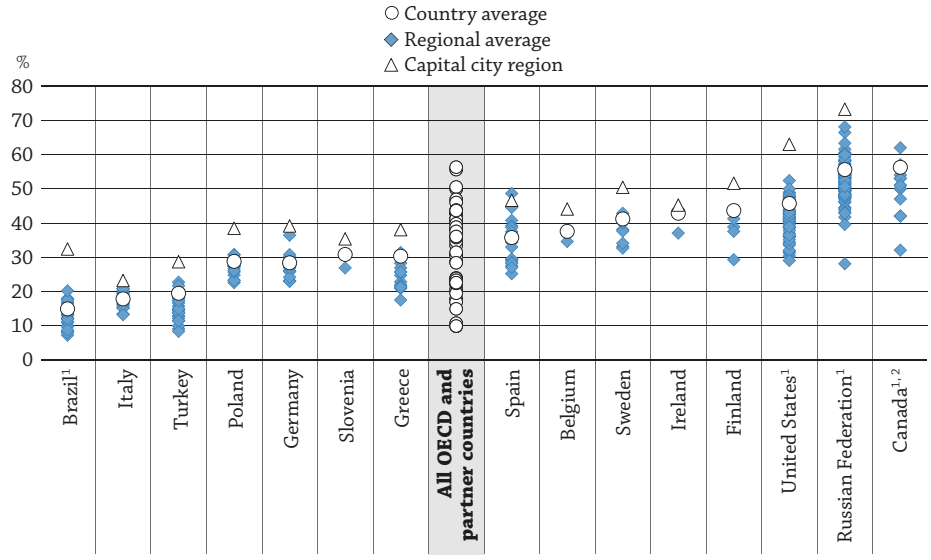
In Belgium, the Czech Republic, Greece, Hungary, Italy, Poland and the United States, the most popular field of study is the field of arts and humanities, social sciences, journalism and information. In Austria, Germany and the Slovak Republic, the largest share of tertiary-educated adults hold a degree in engineering, manufacturing or construction fields of study, while the most widespread field of study in Norway and Sweden is health and welfare (Table A1.3).

The STEM fields (science, technology, engineering and mathematics) – which encompass natural sciences, mathematics and statistics; information and communication technologies; and engineering, manufacturing and construction – are seen as especially important for fostering innovation and economic growth. Many countries have tried to expand the rate of STEM education among their population, or to attract highly qualified immigrants with these degrees. Among tertiary-educated adults in OECD countries, an average of 25% have studied in STEM fields. However, there are big differences across countries, ranging from 20% or less in Costa Rica, Iceland and the Netherlands to 30% or more in Austria, Estonia, Germany and Spain (Figure A1.1).

### *Subnational variations in educational attainment*

On average, about 22% of 25-64 year-olds in OECD countries have below upper secondary education as their highest level of educational attainment, but there are significant subnational variations within countries. In 8 out of the 15 OECD and partner countries that reported subnational data on educational attainment, the share of 25-64 year-olds with this level of educational attainment is over twice as large in the subnational region with the highest share as in the subnational region with the lowest share. When dividing the highest by the lowest shares within countries, the ratio is above six only in Canada and the Russian Federation. In Canada, there is one region with 46% of 25-64 year-olds without an upper secondary education while there is another region with only 7%. While the corresponding ratio is even larger in the Russian Federation, the percentage-point difference is smaller: 15% in the region with the highest share and 1% in the region with the lowest share. In contrast, across the OECD and partner countries that reported subnational data, the difference is the smallest in Slovenia: 14% in the region with the highest share and 11% in the region with the lowest share (OECD/NCES, 2017).

## Figure A1.4. Percentage of 25-64 year-olds with tertiary education, by subnational regions (2016)




**Note**: The country average is the weighted average of the regions for 25-64 year-olds. "All OECD and partner countries" refers to the country averages shown in Table A1.1.

1. Year of reference 2015.

2. The province of Ontario has been presented as a regular region because the capital Ottawa is a comparatively small urban centre in the province of Ontario.

*Countries are ranked in asscending order of the percentage of 25-64 year-olds with tertiary education (country average).*

**Source**: OECD / NCES (2017), Education at a Glance Subnational Supplement, http://nces.ed.gov/surveys/AnnualReports/oecd/. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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Compared with below upper secondary educational attainment, less regional variation is observed in the relative share of younger adults with upper secondary or post-secondary non-tertiary education. Among countries with data, only in Canada, the Russian Federation, Turkey and the United States is the percentage with upper secondary or post-secondary non-tertiary education subnational region with the highest share over twice as large as for subnational region with the lowest share (OECD/NCES, 2017).

The percentage of 25-64 year-olds with tertiary education is over twice as large in the subnational region with the highest share as in the subnational region with the lowest share in Brazil, Greece, the Russian Federation, Turkey and the United States. By contrast, Ireland and Slovenia are again the two countries showing the lowest within-country variation. However, this may be related to the fact that there are only two subnational entities in these two countries (Figure A1.4).

Having a tertiary education is often associated with high skills or proficiency, and adults with this level of education are highly represented in the capital city region in many countries. Across all countries reporting subnational data, the region with the highest share of tertiary-educated 25-64 year-olds is the one including the capital city, with the only exception of Spain (Figure A1.4).

## Definitions

**Age groups: Adults** refer to 25-64 year-olds; **younger adults** refer to 25-34 year-olds; and **older adults** refer to 55-64 year-olds.

**Completion of intermediate programmes** for educational attainment (ISCED 2011) corresponds to a recognised qualification from an ISCED 2011 level programme that is not considered sufficient for ISCED 2011 level completion and is classified at a lower ISCED 2011 level. In addition, this recognised qualification does not give direct access to an upper ISCED 2011 level programme.

**Educational attainment** refers to the highest level of education reached by a person.

**Levels of education:** See the *Reader's Guide* at the beginning of this publication for a presentation of all ISCED 2011 levels.

**Vocational programmes:** The International Standard Classification of Education (ISCED 2011) defines vocational programmes as education programmes that are designed for learners to acquire the knowledge, skills and competencies specific to a particular occupation, trade, or class of occupations or trades. Such programmes may have work-based components (e.g. apprenticeships and dual-system education programmes). Successful completion of such programmes leads to vocational qualifications relevant to the labour market and acknowledged as occupationally oriented by the relevant national authorities and/or the labour market.

## Methodology

Attainment profiles are based on the percentage of the adult population (25-64 year-olds) in a specific age group that has successfully completed a specified level of education.

In OECD statistics, recognised qualifications from ISCED 2011 level 3 programmes that are not of sufficient duration for ISCED 2011 level 3 completion are classified at ISCED 2011 level 2 (see *Reader's Guide*). Where countries have been able to demonstrate equivalencies in the labour market value of attainment formally classified as "completion of intermediate upper secondary programmes" (e.g. achieving five good GCSEs or equivalent in the United Kingdom) and "full upper secondary attainment", attainment of these programmes is reported as ISCED 2011 level 3 completion in the tables that show three aggregate levels of educational attainment (UNESCO Institute for Statistics, 2012).

Countries have defined general or vocational orientation based on the features of the education programme and the resulting credentials and qualifications. Some countries may also use variables based on students' choice of field of study and students' destinations after their studies, because such variables also reflect the distribution of students in general and vocational programmes.

Most OECD countries include people without education (i.e. illiterate adults) under the international classification ISCED 2011 level 0. Therefore averages for the category "less than primary educational attainment" are likely to be influenced by this inclusion.

Please see the *OECD Handbook for Internationally Comparative Education Statistics: Concepts, Standards, Definitions and Classifications* (OECD, 2017b) for more information and Annex 3 for country-specific notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

## Source

Data on population and educational attainment for most countries are taken from OECD and Eurostat databases, which are compiled from National Labour Force Surveys by the OECD LSO (Labour Market, Economic and Social Outcomes of Learning) Network. Data on educational attainment for Indonesia, Saudi Arabia and South Africa are taken from the International Labour Organization (ILO) database, and data for China from the UNESCO Institute of Statistics (UIS) database.

Data on subnational regions for selected indicators have been released by the OECD, with the support from the US National Centre for Education Statistics (NCES), and are currently available for 15 countries: Belgium, Brazil, Canada, Finland, Germany, Greece, Ireland, Italy, Poland, Slovenia, Spain, Sweden, the Russian Federation, Turkey and the United States. Subnational estimates were provided by countries using national data sources or by Eurostat based on data for Level 2 of the Nomenclature of Territorial Units for Statistics (NUTS 2).

### Note

1. The share of the population with a given educational attainment level among 25-34 year-olds in 1970 has been estimated using the respective share among 55-64 year-olds in 2000.

**Note regarding data from Israel**

The statistical data for Israel are supplied by and are under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

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## Indicator A1 Tables

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| | |
|---|---|
| **Table A1.1** | **Educational attainment of 25-64 year-olds (2016)** |
| **Table A1.2** | **Trends in educational attainment of 25-34 year-olds (2000, 2005, 2010, 2015 and 2016)** |
| **Table A1.3** | **Field of study among tertiary-educated 25-64 year-olds (2016)** |

Cut-off date for the data: 19 July 2017. Any updates on data can be found on line at http://dx.doi.org/10.1787/eag-data-en. More breakdowns can also be found at http://stats.oecd.org/, Education at a Glance Database.

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## Table A1.1. Educational attainment of 25-64 year-olds (2016)

| | | Below upper secondary | | | | | Upper secondary or post-secondary non-tertiary | | Tertiary | | | | All levels of education |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Less than primary | Primary | Completion of intermediate lower secondary programmes | Lower secondary | Completion of intermediate upper secondary programmes | Upper secondary | Post-secondary non-tertiary | Short-cycle tertiary | Bachelor's or equivalent | Master's or equivalent | Doctoral or equivalent | |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
| OECD | Australia | 0 | 5 | a | 15 | a | 31 | 6 | 12 | 25 | 6 | 1 | 100 |
| | Austria | x(2) | 1[d] | a | 15 | a | 51 | 2 | 16 | 3 | 12 | 1 | 100 |
| | Belgium | 3 | 6 | a | 16 | a | 36 | 1 | 0 | 21 | 15 | 1 | 100 |
| | Canada | x(2) | 2[d] | a | 7 | a | 24 | 11 | 26 | 21 | 10[d] | x(10) | 100 |
| | Chile[1] | 7 | 6 | a | 22 | a | 42 | a | 8 | 13 | 1[d] | x(10) | 100 |
| | Czech Republic | 0 | 0 | a | 6 | a | 70[d] | x(6) | 0 | 5 | 17 | 1 | 100 |
| | Denmark | x(2) | 3[d] | a | 16 | a | 42 | 0 | 5 | 20 | 12 | 1 | 100 |
| | Estonia | 0 | 1 | a | 10 | a | 42 | 8 | 7 | 11 | 20 | 1 | 100 |
| | Finland | x(2) | 3[d] | a | 9 | a | 43 | 1 | 12 | 16 | 14 | 1 | 100 |
| | France | 2 | 6 | a | 14 | a | 43 | 0 | 14 | 10 | 10 | 1 | 100 |
| | Germany | x(2) | 3[d] | a | 10 | a | 46 | 12 | 1 | 15 | 11 | 1 | 100 |
| | Greece | 1 | 14 | 0 | 13 | 0 | 32 | 9 | 2 | 25 | 3 | 1 | 100 |
| | Hungary | 0 | 1 | a | 15 | a | 52 | 8 | 1 | 13 | 9 | 1 | 100 |
| | Iceland | x(2) | 0[d] | a | 22 | a | 30 | 8 | 3 | 22 | 14 | 1 | 100 |
| | Ireland[1] | 0 | 7 | a | 12 | a | 24 | 13 | 13 | 21 | 8 | 1 | 100 |
| | Israel | 2 | 4 | a | 7 | a | 37 | a | 14 | 23 | 12 | 1 | 100 |
| | Italy | 1 | 6 | a | 33 | a | 41 | 1 | 0 | 4 | 14 | 0 | 100 |
| | Japan | x(6) | x(6) | a | x(6) | a | 50[d] | x(8) | 21[d] | 29[d] | x(9) | x(9) | 100 |
| | Korea | x(2) | 5[d] | a | 8 | a | 40 | a | 13 | 34[d] | x(9) | x(9) | 100 |
| | Latvia | 0 | 0 | a | 9 | 2 | 48 | 7 | 3 | 19 | 12 | 0 | 100 |
| | Luxembourg | x(2) | 7[d] | a | 14 | a | 34 | 2 | 5 | 15 | 21 | 2 | 100 |
| | Mexico | 14 | 17 | 2 | 26 | 4 | 20 | a | 1 | 15 | 1 | 0 | 100 |
| | Netherlands | 1 | 6 | a | 16 | a | 41 | 0 | 2 | 21 | 12 | 1 | 100 |
| | New Zealand | x(4) | x(4) | a | 23[d] | a | 26 | 14 | 4 | 27 | 4 | 1 | 100 |
| | Norway | 0 | 0 | a | 17 | a | 38 | 1 | 12 | 19 | 11 | 1 | 100 |
| | Poland | 0 | 8 | a | 1 | a | 59 | 3 | 0 | 7 | 22 | 1 | 100 |
| | Portugal | 2 | 30 | a | 20 | a | 22 | 1 | a | 6 | 18 | 1 | 100 |
| | Slovak Republic | 0 | 0 | m | 8 | 0 | 68 | 2 | 0 | 2 | 19 | 1 | 100 |
| | Slovenia | 0 | 1 | a | 12 | a | 57 | a | 7 | 6 | 14 | 3 | 100 |
| | Spain | 3 | 8 | a | 31 | a | 23 | 0 | 11 | 10 | 14 | 1 | 100 |
| | Sweden | x(2) | 3[d] | a | 12 | 2 | 34 | 7 | 10 | 17 | 13 | 2 | 100 |
| | Switzerland | 0 | 2 | a | 10 | a | 46[d] | x(6) | x(9, 10, 11) | 20[d] | 18[d] | 3[d] | 100 |
| | Turkey | 5 | 43 | a | 14 | a | 19 | a | 5 | 12 | 2 | 0 | 100 |
| | United Kingdom | 0 | 1 | a | 18 | 16 | 18 | a | 10 | 23 | 12 | 1 | 100 |
| | United States | 1 | 3 | a | 6 | a | 44[d] | x(6) | 11 | 22 | 11 | 2 | 100 |
| | OECD average | 2 | 6 | m | 14 | m | 39 | 5 | 8 | 16 | 12 | 1 | 100 |
| | EU22 average | 1 | 5 | m | 14 | m | 42 | 4 | 6 | 13 | 14 | 1 | 100 |
| Partners | Argentina[2, 3] | 5 | 21 | a | 16 | a | 38 | a | x(9) | 21[d] | x(9) | x(9) | 100 |
| | Brazil[1] | 17 | 20 | a | 15 | a | 34[d] | x(6) | x(9) | 15[d] | x(9) | x(9) | 100 |
| | China[4] | 3 | 25 | a | 47 | a | 15[d] | x(6) | 6 | 3 | 0[d] | x(10) | 100 |
| | Colombia | x(4) | x(4) | a | 42[d] | 5 | 30[d] | x(6) | x(9) | 22[d] | x(9) | x(9) | 100 |
| | Costa Rica | 13 | 29 | 8 | 7 | 2 | 17 | 0 | 6 | 15 | 2[d] | x(10) | 100 |
| | India[5] | 46 | 14 | a | 11 | a | 18 | 0 | 1 | 10[d] | x(9) | x(9) | 100 |
| | Indonesia[1] | 4 | 43 | a | 18 | a | 26 | 0 | x(9) | 10[d] | x(9) | x(9) | 100 |
| | Lithuania | 0 | 0 | 0 | 5 | 2 | 33 | 20 | a | 25 | 14 | 1 | 100 |
| | Russian Federation[1] | x(2) | 1[d] | a | 5 | a | 20 | 19 | 25 | 1 | 29 | 0 | 100 |
| | Saudi Arabia[2] | 3 | 24 | a | 19 | a | 32 | a | x(9) | 23[d] | x(9) | x(9) | 100 |
| | South Africa[1] | 15 | 11 | a | 31 | a | 28[d] | 3 | 5 | 6[d] | 1 | x(9) | 100 |
| | G20 average | 8 | 14 | m | 17 | m | 31 | m | 10 | 16 | 9 | m | 100 |

**Note:** In most countries data refer to ISCED 2011. The countries with data referring to ISCED-97 are: Indonesia, Saudi Arabia and South Africa. See *Definitions* and *Methodology* sections for more information. Data and more breakdowns available at http://stats.oecd.org/, Education at a Glance Database.

1. Year of reference 2015.
2. Year of reference 2014.
3. Data should be used with caution. See *Methodology* section for more information.
4. Year of reference 2010.
5. Year of reference 2011.

**Source:** OECD/ILO/UIS (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933559142

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## Table A1.2. Trends in educational attainment of 25-34 year-olds (2000, 2005, 2010, 2015 and 2016)

| | | Below upper secondary | | | | | Upper secondary or post-secondary non-tertiary | | | | | Tertiary | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2000 | 2005 | 2010 | 2015 | 2016 | 2000 | 2005 | 2010 | 2015 | 2016 | 2000 | 2005 | 2010 | 2015 | 2016 |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) |
| OECD | Australia | 32[b] | 21[b] | 15[b] | 12 | 11 | 37[b] | 41[b] | 40[b] | 40 | 39 | 31[b] | 38[b] | 44[b] | 48 | 49 |
| | Austria | m | 14 | 12 | 10 | 11 | m | 55 | 54 | 51 | 49 | m | 31 | 34 | 39 | 40 |
| | Belgium | 25[b] | 19[b] | 18[b] | 17 | 17 | 39[b] | 40[b] | 38[b] | 39 | 38 | 36[b] | 41[b] | 44[b] | 43 | 44 |
| | Canada | 12 | 9 | 8 | 7 | 7 | 40 | 37 | 36 | 34 | 32 | 48 | 54 | 56 | 59 | 61 |
| | Chile[1] | m | m | 26[b] | 17 | m | m | m | 53[b] | 53 | m | m | m | 22[b] | 30 | m |
| | Czech Republic | 8[b] | 6[b] | 6[b] | 6 | 7 | 81[b] | 80[b] | 72[b] | 63 | 61 | 11[b] | 14[b] | 23[b] | 31 | 33 |
| | Denmark | 13[b] | 13[b] | 20[b] | 16 | 17 | 58[b] | 48[b] | 42[b] | 39 | 38 | 29[b] | 40[b] | 38[b] | 44 | 46 |
| | Estonia | 9 | 13 | 13 | 12 | 12 | 63 | 54 | 49 | 47 | 46 | 29 | 33 | 38 | 41 | 41 |
| | Finland | 14[b] | 11[b] | 9[b] | 10 | 10 | 48[b] | 52[b] | 52[b] | 49 | 49 | 39[b] | 38[b] | 39[b] | 41 | 41 |
| | France | 24 | 19 | 16 | 13 | 13 | 45 | 42 | 41 | 42 | 43 | 31 | 40 | 43 | 45 | 44 |
| | Germany | 15[b] | 16[b] | 14[b] | 13 | 13 | 63[b] | 62[b] | 60[b] | 58 | 56 | 22[b] | 22[b] | 26[b] | 30 | 31 |
| | Greece | 31[b] | 26[b] | 24[b] | 16 | 15 | 45[b] | 49[b] | 44[b] | 44 | 44 | 24[b] | 26[b] | 31[b] | 40 | 41 |
| | Hungary | 19 | 15 | 14 | 14 | 15 | 67 | 65 | 60 | 54 | 55 | 15 | 20 | 26 | 32 | 30 |
| | Iceland | m | 29 | 26 | 25 | 20 | m | 36 | 37 | 35 | 37 | m | 35 | 36 | 40 | 43 |
| | Ireland | 27[b] | 19[b] | 14[b] | 9 | m | 43[b] | 40[b] | 37[b] | 39 | m | 30[b] | 41[b] | 48[b] | 52 | m |
| | Israel | m | 15[b] | 12[b] | 9 | 8 | m | 43[b] | 44[b] | 45 | 44 | m | 43[b] | 44[b] | 46 | 47 |
| | Italy | 44[b] | 34[b] | 29[b] | 26 | 26 | 46[b] | 50[b] | 50[b] | 49 | 48 | 10[b] | 16[b] | 21[b] | 25 | 26 |
| | Japan[2] | m | m | m | m | m | m | m | m | m | m | 48[db] | 53[db] | 57[db] | 60[d] | 60[d] |
| | Korea | 7 | 3 | 2 | 2 | 2 | 56 | 46 | 33 | 29 | 28 | 37 | 51 | 65 | 69 | 70 |
| | Latvia | 11 | 20 | 16 | 15 | 13 | 71 | 59 | 49 | 45 | 45 | 17 | 22 | 35 | 40 | 42 |
| | Luxembourg | 32[b] | 23[b] | 16[b] | 16 | 13 | 45[b] | 40[b] | 40[b] | 35 | 35 | 23[b] | 37[b] | 44[b] | 50 | 51 |
| | Mexico | 63[b] | 66 | 62 | 55 | 53 | 20[b] | 19 | 21 | 24 | 25 | 17[b] | 15 | 18 | 21 | 22 |
| | Netherlands | 26[b] | 19[b] | 17[b] | 14 | 14 | 48[b] | 46[b] | 42[b] | 40 | 41 | 27[b] | 35[b] | 41[b] | 45 | 45 |
| | New Zealand | 31 | 24 | 21 | 19 | 16 | m | m | m | 42 | 40 | m | m | m | 39 | 43 |
| | Norway | m | 17 | 17 | 19 | 19 | m | 43 | 36 | 33 | 33 | m | 41 | 47 | 48 | 49 |
| | Poland | 11[b] | 8[b] | 6[b] | 6 | 6 | 75[b] | 66[b] | 57[b] | 51 | 51 | 14[b] | 26[b] | 37[b] | 43 | 43 |
| | Portugal | 68 | 57 | 48 | 33 | 31 | 19 | 24 | 27 | 34 | 35 | 13 | 19 | 25 | 33 | 35 |
| | Slovak Republic | 6[b] | 7[b] | 6[b] | 7 | 7 | 82[b] | 77[b] | 70[b] | 61 | 60 | 11[b] | 16[b] | 24[b] | 31 | 33 |
| | Slovenia | 15[b] | 9[b] | 7[b] | 6 | 6 | 66[b] | 67[b] | 62[b] | 53 | 51 | 19[b] | 25[b] | 31[b] | 41 | 43 |
| | Spain | 44[b] | 36[b] | 35[b] | 34 | 35 | 22[b] | 24[b] | 25[b] | 25 | 24 | 34[b] | 41[b] | 40[b] | 41 | 41 |
| | Sweden | 13[b] | 9[b] | 9[b] | 18 | 17 | 54[b] | 53[b] | 49[b] | 36 | 36 | 34[b] | 37[b] | 42[b] | 46 | 47 |
| | Switzerland | 10[b] | 10[b] | 12[b] | 9 | 9 | 64[b] | 59[b] | 50[b] | 45 | 43 | 26[b] | 31[b] | 37[b] | 47 | 49 |
| | Turkey | 72 | 63 | 58 | 48 | 45 | 19 | 24 | 25 | 25 | 24 | 9 | 13 | 17 | 28 | 30 |
| | United Kingdom[3] | 33[b] | 27[b] | 17[b] | 14 | 13 | 38[b] | 38[b] | 37[b] | 36 | 36 | 29[b] | 35[b] | 46[b] | 50 | 52 |
| | United States | 12 | 13 | 12 | 10 | 9 | 50 | 47 | 46 | 44 | 44 | 38 | 39 | 42 | 47 | 48 |
| | OECD average | 25 | 21 | 19 | 16 | 16 | 50 | 48 | 45 | 42 | 42 | 26 | 32 | 37 | 42 | 43 |
| | EU22 average | 23 | 19 | 17 | 15 | 15 | 53 | 51 | 48 | 45 | 45 | 24 | 30 | 35 | 40 | 40 |
| Partners | Argentina[1, 4, 5] | m | 41 | 35 | 32 | m | m | 42 | 46 | 49 | m | m | 17 | 19 | 19 | m |
| | Brazil | m | m | 47 | 36 | m | m | m | 41 | 47 | m | m | m | 12 | 17 | m |
| | China | m | m | 64 | m | m | m | m | 18 | m | m | m | m | 18 | m | m |
| | Colombia | m | m | m | 33 | 31 | m | m | m | 39 | 41 | m | m | m | 27 | 28 |
| | Costa Rica | 68 | 62 | 55 | 51 | 50 | 15 | 14 | 19 | 20 | 21 | 18 | 24 | 26 | 28 | 29 |
| | India[6] | m | m | m | 64 | m | m | m | m | 22 | m | m | m | m | 14 | m |
| | Indonesia | m | m | 60 | 53 | m | m | m | 31 | 34 | m | m | m | 9 | 13 | m |
| | Lithuania | 8[b] | 13[b] | 12[b] | 10 | 8 | 52[b] | 50[b] | 42[b] | 35 | 37 | 40[b] | 37[b] | 46[b] | 55 | 55 |
| | Russian Federation | m | m | m | 5 | m | m | m | m | 35 | m | m | m | m | 60 | m |
| | Saudi Arabia[4] | m | m | m | 31 | m | m | m | m | 43 | m | m | m | m | 26 | m |
| | South Africa | m | m | 53 | 51 | m | m | m | 37 | 39 | m | m | m | 9 | 10 | m |
| | G20 average | m | m | 33 | 28 | m | m | m | 37 | 38 | m | m | m | 31 | 35 | m |

**Note:** In most countries there is a break in the time series, represented by the code "b", as data for 2015 and 2016 refer to ISCED 2011 while data for previous years refer to ISCED-97. For China, Indonesia and Saudi Arabia data refer to ISCED-97 for all years. See *Definitions* and *Methodology* sections for more information. Data and more breakdowns available at http://stats.oecd.org/, Education at a Glance Database.

1. Year of reference 2009 instead of 2010.
2. Data for short-cycle tertiary education and total tertiary education include post-secondary non-tertiary programmes (less than 5% of the adults are under this group).
3. Data for upper secondary attainment include completion of a sufficient volume and standard of programmes that would be classified individually as completion of intermediate upper secondary programmes (16% of adults aged 25-64 are under this group).
4. Year of reference 2014 instead of 2015.
5. Data should be used with caution. See *Methodology* section for more information.
6. Year of reference 2011 instead of 2015.

**Source:** OECD/ILO/UIS (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933559161

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## Table A1.3. Field of study among tertiary-educated 25-64 year-olds (2016)

| | | Education | Arts or humanities (except languages), social sciences, journalism and information | | Arts and humanities, social sciences, journalism and information | Business and administration or law | | Business, administration and law | Natural sciences, mathematics and statistics | Information and communication technologies | Engineering, manufacturing and construction | Health | | Health and welfare | Other fields |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Arts | Humanities (except languages), social sciences, journalism and information | | Business and administration | Law | | | | | Health (medical and dental) | Health (nursing and associate health fields) | | |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) |
| OECD | Australia | 11 | x(4) | x(4) | 15 | x(7) | x(7) | 29 | 5 | 5 | 11 | x(13) | x(13) | 18 | 5 |
| | Austria | 12 | 4 | 7 | 14 | 5 | 3 | 22 | 4 | 2 | 28 | 3 | 3 | 7 | 10 |
| | Belgium | 12 | 0 | 12 | 22 | 1 | 4 | 21 | 4 | 4 | 13 | 3 | 11 | 17 | 5 |
| | Canada | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Chile[1] | 17 | 4 | 5 | 10 | 23 | 3 | 25 | 2 | 5 | 17 | 2 | 5 | 14 | 10 |
| | Czech Republic | 14 | 3 | 17 | 22 | 9 | 2 | 12 | 5 | 4 | 20 | 4 | 6 | 12 | 11 |
| | Denmark | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Estonia | 10 | 4 | 10 | 17 | 17 | 5 | 23 | 4 | 3 | 23 | 3 | 5 | 10 | 11 |
| | Finland | 6 | 4 | 7 | 14 | 23 | 1 | 25 | 4 | 7 | 18 | 2 | 11 | 18 | 8 |
| | France[2] | 2 | x(4) | x(4) | 17 | x(7) | x(7) | 32 | 5 | 5 | 17 | x(13) | x(13) | 13 | 8 |
| | Germany | 15 | 4 | 6 | 13 | 7 | 3 | 22 | 5 | 4 | 26 | 4 | 2 | 9 | 6 |
| | Greece | 7 | x(4) | x(4) | 25 | x(7) | x(7) | 19 | 6 | 4 | 16 | x(13) | x(13) | 12 | 12 |
| | Hungary | 19 | 3 | 16 | 22 | 14 | 3 | 18 | 2 | 6 | 15 | 2 | 4 | 8 | 10 |
| | Iceland | 18 | x(4) | x(4) | 23 | x(7) | x(7) | 23 | 4 | 4 | 10 | x(13) | x(13) | 13 | 4 |
| | Ireland | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Israel | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Italy | 5 | 4 | 21 | 30 | 12 | 10 | 22 | 8 | 1 | 14 | x(13) | x(13) | 15 | 4 |
| | Japan | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Korea | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Latvia | 14 | 3 | 17 | 23 | 18 | 8 | 26 | 4 | 3 | 15 | 4 | 1 | 7 | 8 |
| | Luxembourg | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Mexico | 15 | 2 | 9 | 12 | 26 | 9 | 35 | 3 | 7 | 16 | 5 | 5 | 9 | 3 |
| | Netherlands | 12 | x(4) | x(4) | 18 | x(7) | x(7) | 27 | 4 | 3 | 12 | x(13) | x(13) | 17 | 7 |
| | New Zealand | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Norway | 16 | x(4) | x(4) | 19 | x(7) | x(7) | 15 | 7 | 3 | 13 | x(13) | x(13) | 20 | 7 |
| | Poland | 16 | x(4) | x(4) | 25 | x(7) | x(7) | 21 | 6 | 4 | 14 | x(13) | x(13) | 8 | 6 |
| | Portugal | 15 | x(4) | x(4) | 21 | x(7) | x(7) | 22 | 4 | 2 | 15 | x(13) | x(13) | 14 | 7 |
| | Slovak Republic | 18 | 2 | 12 | 15 | 14 | 3 | 17 | 5 | 3 | 19 | 3 | 4 | 13 | 9 |
| | Slovenia[2] | 12 | x(4) | x(4) | 18 | x(7) | x(7) | 21 | 5 | 3 | 17 | x(13) | x(13) | 12 | 12 |
| | Spain | 10 | x(4) | x(4) | 14 | x(7) | x(7) | 27 | 6 | 6 | 17 | x(13) | x(13) | 12 | 7 |
| | Sweden | 17 | x(4) | x(4) | 15 | x(7) | x(7) | 16 | 4 | 3 | 19 | x(13) | x(13) | 20 | 5 |
| | Switzerland | 9 | 3 | 7 | 12 | 24 | 4 | 28 | 5 | 5 | 19 | 3 | 7 | 14 | 8 |
| | Turkey | 16 | x(4) | x(4) | 18 | x(7) | x(7) | 31 | 5 | 1 | 16 | x(13) | x(13) | 6 | 7 |
| | United Kingdom | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | United States[1, 3] | 11 | 6 | 20 | 30 | x(7) | x(7) | 22 | 10 | 4 | 9 | x(13) | x(13) | 9 | 6 |
| | OECD average[4] | 13 | m | m | 19 | m | m | 23 | 5 | 4 | 17 | m | m | 13 | 7 |
| | EU22 average[4] | 13 | m | m | 19 | m | m | 21 | 5 | 4 | 18 | m | m | 12 | 8 |
| Partners | Argentina | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Brazil | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | China | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Colombia | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Costa Rica | 19 | 9 | 18 | 14 | 6 | 9 | 34 | 1 | 6 | 9 | x(13) | x(13) | 11 | 6 |
| | India | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Indonesia | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Lithuania | 11 | 3 | 13 | 19 | 20 | 5 | 25 | 5 | 3 | 21 | 4 | 4 | 10 | 8 |
| | Russian Federation | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Saudi Arabia | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | South Africa | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | G20 average | m | m | m | m | m | m | m | m | m | m | m | m | m | m |

**Note:** Individual narrow fields do not necessarily add up to the totals for the broader fields because these broad fields also include inter-disciplinary programmes as well as other narrow fields not shown in the table. See *Definitions* and *Methodology* sections for more information. Data and more breakdowns available at http://stats.oecd.org/, Education at a Glance Database.

1. Year of reference 2015.
2. The age group refers to 25-34 year-olds.
3. Data refer to bachelor's degree field, even for those with additional tertiary degrees.
4. The OECD and EU22 averages exclude France and Slovenia.

**Source:** OECD/ILO/UIS (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

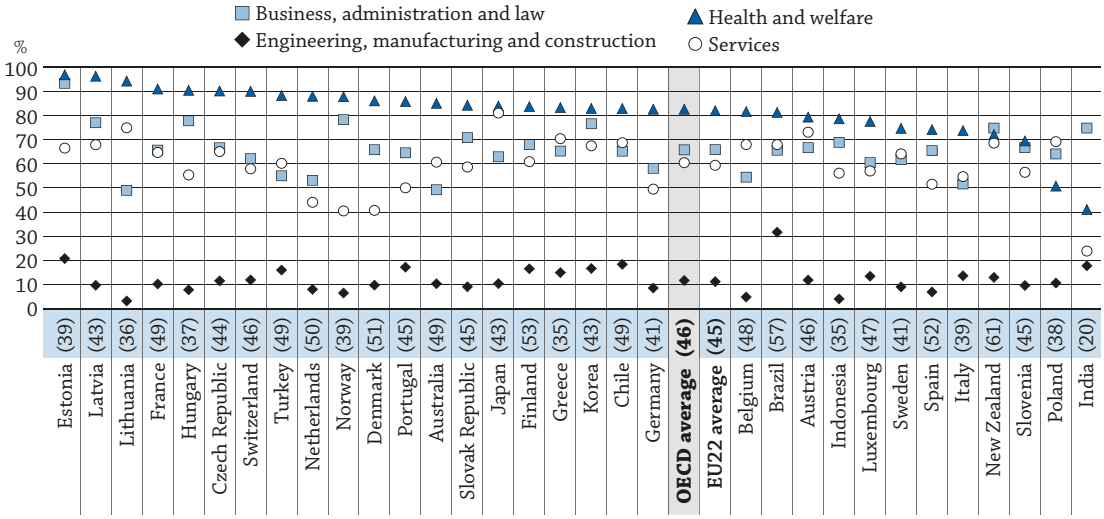
*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933559180

# WHO IS EXPECTED TO GRADUATE FROM UPPER SECONDARY EDUCATION?

- Most upper secondary vocational graduates earn a diploma with a specialisation in engineering, manufacturing and construction (33%) or in business, administration and law (19%). The fields of study with the lowest gender diversity in upper secondary vocational programmes are engineering, manufacturing and construction, where women represent 11% of graduates; and health and welfare, where they represent 80% of graduates.
- The average age of graduates from upper secondary education is 18 in general programmes and 22 in vocational programmes.
- Based on current patterns, it is estimated that on average across OECD countries, 80% of today's young people will graduate from upper secondary education before the age of 25.

**Figure A2.1. Share of female graduates from upper secondary vocational programmes, by field of study (2015)**




**Note**: The number in parentheses corresponds to the share of female graduates (all fields combined).
*Countries are ranked in descending order of the share of female graduates from upper secondary vocational programmes in health and welfare.*
**Source**: OECD/UIS/Eurostat (2017), Table A2.1. See Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).
StatLink http://dx.doi.org/10.1787/888933557014

## Context

Upper secondary education, which develops students' basic skills and knowledge through either academic or vocational pathways, aims to prepare students to enter further levels of education or the labour market and to become engaged citizens. In many countries, this level of education is not compulsory and can last from two to five years. What is crucial, however, is to provide education of good quality that meets the needs of society and the economy.

Graduating from upper secondary education has become increasingly important in all countries, as the skills needed in the labour market are becoming more knowledge-based, and workers are progressively required to adapt to the uncertainties of a rapidly changing global economy. However, while graduation rates give an indication of the extent to which education systems are succeeding in preparing students to meet the minimum requirements of the labour market, they do not capture the quality of education outcomes.

## Other findings

- On average across OECD countries, women represent 55% of upper secondary graduates in general programmes, and 46% of graduates in vocational programmes.
- At the upper secondary level, first-time graduation rates exceed 75% in more than two-thirds of the countries with available data. At the post-secondary non-tertiary level, this rate is below 15% in two-thirds of the countries with available data.
- In countries for which data are available for 2005, 2010 and 2015, first-time graduation rates increased by 4 percentage points at the upper secondary level between 2005 and 2015. In contrast, they remained constant (around 10%) at the post-secondary non-tertiary level.

## Note

Graduation rates, when calculated for all ages, represent the estimated percentage of people from a given age cohort that is expected to graduate within the country at some point during their lifetime. This estimate is based on the number of graduates in 2015 and the age distribution of this group. Graduation rates are based on both the population and the current pattern of graduation, and are thus sensitive to any changes in the education system, such as the introduction of new programmes, and changes in the duration of programmes. Graduation rates can be very high – even above 100% – during a period when an unexpected number of people go back to school.

When the age breakdown is not available, the gross graduation rate is calculated instead. This refers to the total number of graduates divided by the average cohort of the population at the typical age provided by the country.

In this indicator, age refers generally to the age of students at the beginning of the calendar year. Students could be one year older than the age indicated when they graduate at the end of the school year. Twenty-five is used as the upper age limit for completing secondary education because, across OECD countries, more than 95% of graduates from upper secondary general programmes in 2015 were under 25 (see Education at a Glance Database). People who graduate from this level at 25 or older are usually enrolled in second-chance programmes. At the post-secondary non-tertiary level, 30 is considered to be the upper age limit for graduation.

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## Analysis

### Upper secondary graduation rates in general and vocational programmes

Although many countries have developed extensive vocational programmes at the secondary level, in most OECD countries, most students pursue general programmes. On average across OECD countries, 54% of people will graduate from an upper secondary general programme over their lifetime, and 52% of people will do so before the age of 25. In comparison, it is expected that 44% of people will earn a vocational degree over their lifetime, and 36% before the age of 25. This difference may reflect the lower share of students enrolled in upper secondary vocational programmes than in general programmes (see Indicator C1), together with the lower completion rates in vocational education (see Indicator A9).

In Austria (72%), France (65%) and Switzerland (65%), a large share of people are expected to receive an upper secondary vocational degree before the age of 25 (Table A2.2). In contrast, this proportion is small in Brazil (5%), Canada (1%) and Costa Rica (6%). In Canada, upper secondary vocational programmes are offered as separate from general programs primarily in the province of Quebec, where vocational training at the secondary level is largely a second-chance programme for older students. In fact, 73% of graduates from upper secondary vocational programmes in Quebec (Canada) are older than 24 (Figure A2.2).

Vocational education and training (VET) is an important part of upper secondary education in many OECD countries, and it can play a central role in preparing young people for work, developing adults' skills and responding to labour market needs (see Indicator A1). But in some countries, VET has been neglected and marginalised in policy discussions, often overshadowed by the increasing emphasis on general academic education. Nevertheless, an increasing number of countries are recognising that good initial VET has a major contribution to make to economic competitiveness (OECD, 2015a).

Vocational programmes can be offered in combined school-based and work-based programmes, where up to 75% of the curriculum is presented in the school environment or through distance education. These include apprenticeship programmes that involve concurrent school-based and work-based training, and programmes that involve alternating periods of attendance at educational institutions and participation in work-based training. This type of dual system can be found in Austria, the Czech Republic, Denmark, Germany, Hungary, the Netherlands, the Slovak Republic and Switzerland (OECD, 2015a). Through work-based learning, students acquire the skills that are valued in the workplace. Work-based learning is also a way to develop public-private partnerships and to involve social partners and employers in developing VET programmes, often by defining curricular frameworks.

Moreover, high-quality VET programmes can be effective in developing skills among those who would otherwise lack the qualifications to ensure a smooth and successful transition into the labour market. Employment rates tend to be higher, and inactivity rates lower, among young adults who graduated from vocational training than among those who pursued an upper secondary general programme as their highest level of educational attainment (see Indicator A5). However, it is important to ensure that graduates of upper secondary VET programmes have good employment opportunities, since VET can be more expensive than other education programmes (see Indicator B1).

### Share of upper secondary vocational graduates by field of study and gender

On average across OECD countries, 33% of graduates in vocational programmes earn a diploma with a specialisation in engineering, manufacturing and construction (Table A2.1). This number goes down to 19% for business, administration and law, 16% for services, and 12% for health and welfare. However, there are a few exceptions: in Denmark, the Netherland and Spain, a higher share of vocational students graduated in health and welfare than in engineering, manufacturing and construction – with a difference of at least 4 percentage points.

Women make up 46% of graduates from vocational programmes – compared to 55% from general programmes – and fields of study among vocational students are highly gender-segregated. These differences can be attributed to traditional perceptions of gender roles and identities, as well as to the cultural values sometimes associated with particular fields of study.

As Figure A2.1 shows, the percentage of women pursuing an engineering, manufacturing and construction programme is low at upper secondary vocational level: only 11% of graduates in this field of study are women. On the other hand, women are over-represented in health and welfare, where they make up 80% of the graduates. Strikingly, in this field, the share of female graduates exceeds 70% in all countries except India (41%), Poland (51%) and Slovenia (69%). Between these two extremes, there is more gender diversity in the fields of services (where, on average, 58% of graduates are women) and in business, administration and law (where 63% of graduates are women).

The relevance of gender balance across fields of study is twofold. From the economic point of view, gender imbalances in fields of study may translate into imbalances in the labour market, and there is evidence of gains in GDP from more equal participation between male and female workers (Elborgh-Woytek et al., 2013). There is also a moral imperative to ensure that men and women have the same opportunities in their personal and professional lives. In this regard, formal education plays an important role (OECD, 2015b).

### *Age distribution of upper secondary graduates*

Graduation rates vary according to the age of the students. Students' age at graduation can be related to changes in the education system, such as whether opportunities become available to complete upper secondary education later on in life or if the duration of general and vocational programmes is altered. The average age of graduates from upper secondary general programmes is 18, ranging from 17 in Australia, France, Israel and the Netherlands, to 21 in Poland (Table A2.1).

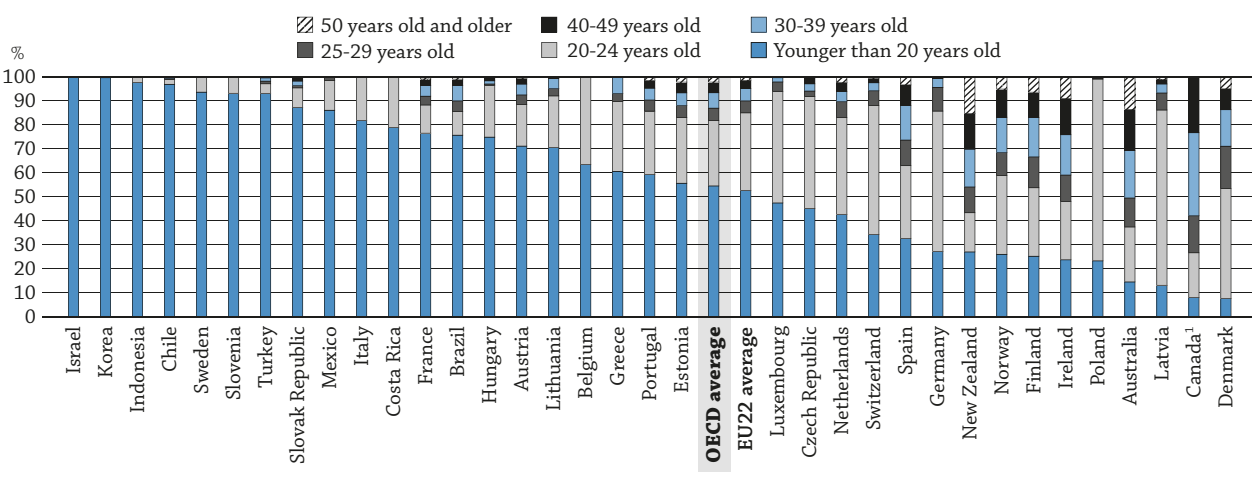
The variation in average graduation age is much more pronounced among students in vocational programmes (Figure A2.2). Across OECD countries, the average age of graduation from upper secondary vocational programmes is 22 – with values ranging from 17 in Israel to 33 in Australia.

On average across the OECD, 55% of upper secondary vocational graduates are below the age of 20, and 27% are between the ages of 20 and 24 (Figure A2.2). Strikingly, in Chile, Indonesia, Slovenia, Sweden and Turkey, more than 90% of graduates are below 20, and this share goes up to 100% in Israel and Korea. In contrast, in Australia, Denmark, Latvia and Quebec (Canada), fewer than 20% of graduates are younger than 20 years old.

Only 7% of vocational graduates are aged 40 and over on average across the OECD; this share is below 6% in around three-quarters of the countries with available data. However, there are some exceptions – with particularly high proportions of graduates over the age of 39 in Australia (31%), New Zealand (30%), Ireland (24%) and Quebec (Canada) (23%).

The high share of older graduates in vocational programmes in some countries may be explained by the offer of part-time studies (which increases the number of options through which students can combine financial, career and family needs) and/or by the availability of lifelong learning programmes. For example, the Australian VET system is flexible and able to satisfy different needs at different stages of people's lives, whether they are preparing for a first career, seeking additional skills to assist in their work or catching up on educational attainment. Interestingly, in Sweden the enrolment rate of adults over the age of 40 is relatively high (see Indicator C1), but the share of graduates in that age group is nil – as most students in upper secondary adult education complete their education without graduating.

**Figure A2.2. Share of upper secondary graduates from vocational programmes, by age group (2015)**




1. Includes data for Quebec only.

*Countries are ranked in descending order of the share of graduates below the age of 20.*

**Sources**: OECD/UIS/Eurostat (2017), Education at a Glance Database, http://stats.oecd.org/. See *Source* for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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### A snapshot of upper secondary graduation rates

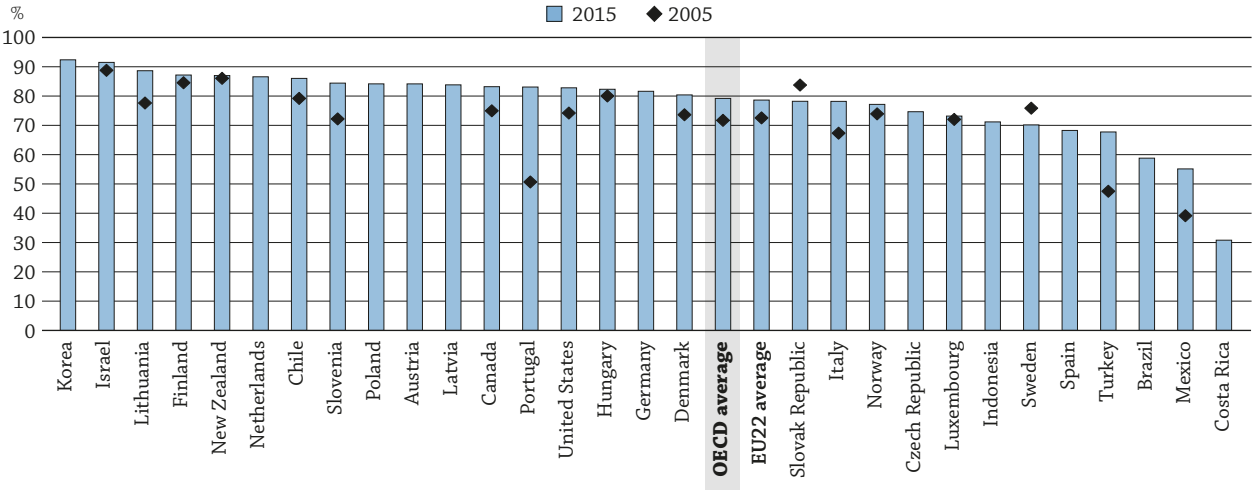
An upper secondary education is often considered to be the minimum credential for successful entry into the labour market and necessary for continuing to further education. The costs of not completing this level of education on time can be considerable to both individuals and society (see Indicators A6 and A7).

Graduation rates offer an indication of whether government initiatives have been successful in increasing the number of people who graduate from upper secondary education. The large differences in graduation rates among countries reflect the variety of systems and programmes available, as well as other country-specific factors, such as current social norms and economic performance.

Current estimates indicate that, on average, 86% of people across OECD countries will graduate from upper secondary education in their lifetime, and 80% of people will do so before the age of 25 (Table A2.2). In 8 of the countries with available data, at least 85% of people are expected to graduate from upper secondary school before the age of 25, but less than 60% of young people in Brazil, Costa Rica and Mexico are expected to do so.

In countries with available data for 2005, 2010 and 2015, the first-time graduation rate below age 25 increased by 7 percentage points between 2005 and 2015 (compared to a 4 percentage-point increase in first-time graduation rates for all ages). The increase was striking in two countries: Portugal (32 percentage points) and Turkey (20 percentage points). In contrast, in the Slovak Republic and Sweden, the first-time graduation rate below age 25 declined by 6 percentage points over the period (Figure A2.3).

**Figure A2.3. Trends in first-time upper secondary graduation rates for students younger than 25 (2005, 2015)**




*Countries are ranked in descending order of first-time upper secondary graduation rates for students younger than 25 in 2015.*

**Source**: OECD/UIS/Eurostat (2017), Table A2.3. See Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933557052

Graduation rates, however, do not imply that all graduates will pursue a tertiary degree or enter the labour force immediately. Indeed, the number of graduates who wind up neither employed nor in education or training (NEET) has been growing throughout OECD countries (see Indicator C5). For this reason, it is important to have high-quality upper secondary programmes that provide individuals with the right mix of guidance and education opportunities to ensure there are no dead ends once they have graduated.

### Post-secondary non-tertiary graduation rates

Various kinds of post-secondary non-tertiary programmes are offered in OECD countries. These programmes straddle upper secondary and post-secondary education and may be considered as either upper secondary or post-secondary programmes, depending on the country. Although the content of these programmes may not be significantly more advanced than upper secondary programmes, they broaden the knowledge of individuals who have already attained an upper secondary qualification.

First-time graduation rates from post-secondary non-tertiary education are low compared to those from upper secondary programmes. On average, it is estimated that 12% of today's young people in OECD countries will complete post-secondary non-tertiary programmes over their lifetime. The highest first-time graduation rates in post-secondary non-tertiary education (for all ages) are observed in the Czech Republic (35%), Germany (25%), Hungary (19%), New Zealand (26%) and the United States (22%) (Table A2.2). For OECD countries with available data for 2005, 2010 and 2015, the first-time graduation rate (for all ages) remained constant over the past decade (around 10%). Nine countries do not offer this level of education (Chile, Costa Rica, Indonesia, Korea, Mexico, the Netherlands, Slovenia, Turkey and the United Kingdom).

## Definitions

**Graduates** in the reference period can be either first-time graduates or repeat graduates. A **first-time graduate** is a student who has graduated for the first time at a given level of education in the reference period. Thus, if a student has graduated multiple times over the years, he or she is counted as a graduate each year, but as a first-time graduate only once.

**Gross graduation rates** refer to the total number of graduates (the graduates themselves may be of any age) at the specified level of education divided by the population at the typical graduation age from the specified level.

**Net graduation rates** represent the estimated percentage of an age group that will complete upper secondary education, based on current patterns of graduation.

**Typical age** is the age at the beginning of the last school/academic year of the corresponding educational level and programme when the degree is obtained.

## Methodology

Unless otherwise indicated, graduation rates are calculated as net graduation rates (i.e. as the sum of age-specific graduation rates). Gross graduation rates are presented for countries that are unable to provide such detailed data. In order to calculate gross graduation rates, countries identify the age at which graduation typically occurs (see Annex 1). The number of graduates, regardless of their age, is divided by the population at the typical graduation age. In many countries, defining a typical age of graduation is difficult, however, because graduates are dispersed over a wide range of ages.

Graduates by programme orientation at the upper secondary and post-secondary non-tertiary levels are not counted as first-time graduates, given that many students graduate from more than one upper secondary or post-secondary non-tertiary programme. Therefore, graduation rates cannot be added, as some individuals would be counted twice. In addition, the typical graduation ages are not necessarily the same for the different types of programmes (see Annex 1). Vocational programmes include both school-based programmes and combined school-based and work-based programmes that are recognised as part of the education system. Entirely work-based education and training programmes that are not overseen by a formal education authority are not included.

## Sources

Data refer to the academic year 2014/15 and are based on the UNESCO-UIS/OECD/EUROSTAT data collection on education statistics administered by the OECD in 2016 (for details, see Annex 3 at www.oecd.org/education/education-at-a-glance-19991487.htm).

**Note regarding data from Israel**

The statistical data for Israel are supplied by and are under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

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## Indicator A2 Tables

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| | |
|---|---|
| Table A2.1 | Profile of upper secondary graduates from general and vocational programmes (2015) |
| Table A2.2 | Upper secondary and post-secondary non-tertiary graduation rates (2015) |
| Table A2.3 | Trends in upper secondary and post-secondary non-tertiary first-time graduation rates (2005, 2010 and 2015) |

Cut-off date for the data: 19 July 2017. Any updates on data can be found on line at http://dx.doi.org/10.1787/eag-data-en. More breakdowns can also be found at http://stats.oecd.org/, Education at a Glance Database.

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## Table A2.1. Profile of upper secondary graduates from general and vocational programmes (2015)

| | | General programmes | | Vocational programmes | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Percentage of graduates in upper secondary programmes by field of study | | | | Percentage of female graduates in upper secondary programmes by field of study | | | |
| | | Average age | Percentage of female graduates | Average age | Percentage of female graduates | Business, administration and law | Engineering, manufacturing and construction | Health and welfare | Services | Business, administration and law | Engineering, manufacturing and construction | Health and welfare | Services |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
| OECD | Australia | 17 | 51 | 33 | 49 | 26 | 27 | 26 | 11 | 49 | 10 | 85 | 61 |
| OECD | Austria | 18 | 58 | 20 | 46 | 29 | 35 | 3 | 19 | 67 | 12 | 79 | 73 |
| OECD | Belgium | 18 | 56 | 19 | 48 | 20 | 25 | 15 | 20 | 54 | 5 | 82 | 68 |
| OECD | Canada | 18 | 51 | 32 | 46 | m | m | m | m | m | m | m | m |
| OECD | Chile | 19 | 52 | 18 | 49 | 33 | 39 | 6 | 12 | 65 | 18 | 83 | 69 |
| OECD | Czech Republic | 20 | 60 | 21 | 44 | 19 | 39 | 7 | 20 | 67 | 12 | 90 | 65 |
| OECD | Denmark | 19 | 54 | 28 | 51 | 23 | 26 | 30 | 12 | 66 | 10 | 86 | 41 |
| OECD | Estonia | 19 | 58 | 22 | 39 | 2 | 49 | 3 | 28 | 93 | 21 | 97 | 66 |
| OECD | Finland | 19 | 57 | 28 | 53 | 16 | 27 | 21 | 20 | 68 | 17 | 84 | 61 |
| OECD | France | 17 | 55 | 20 | 49 | 20 | 34 | 19 | 19 | 66 | 10 | 91 | 65 |
| OECD | Germany | 19 | 54 | 22 | 41 | 33 | 34 | 11 | 12 | 58 | 9 | 82 | 49 |
| OECD | Greece | 18 | 54 | 20 | 35 | 17 | 49 | 6 | 8 | 65 | 15 | 83 | 70 |
| OECD | Hungary | 19 | 52 | 19 | 37 | 12 | 48 | 5 | 27 | 78 | 8 | 90 | 55 |
| OECD | Iceland | m | m | m | m | m | m | m | m | m | m | m | m |
| OECD | Ireland | 19 | 49 | 30 | 67 | m | m | m | m | m | m | m | m |
| OECD | Israel | 17 | 52 | 17 | 50 | m | m | m | m | m | m | m | m |
| OECD | Italy | 18 | 62 | 19 | 39 | 34 | 30 | 5 | 18 | 52 | 14 | 74 | 55 |
| OECD | Japan | m | 51 | m | 43 | 31 | 42 | 6 | 8 | 63 | 11 | 84 | 81 |
| OECD | Korea | 18 | 48 | 18 | 43 | 20 | 44 | 2 | 6 | 76 | 17 | 83 | 67 |
| OECD | Latvia | 19 | 53 | 22 | 43 | 14 | 40 | 3 | 25 | 77 | 10 | 96 | 68 |
| OECD | Luxembourg | 18 | 55 | 20 | 47 | 36 | 27 | 12 | 6 | 60 | 14 | 77 | 57 |
| OECD | Mexico | 18 | 53 | 18 | 50 | m | m | m | m | m | m | m | m |
| OECD | Netherlands | 17 | 52 | 23 | 50 | 20 | 19 | 25 | 21 | 53 | 8 | 88 | 44 |
| OECD | New Zealand | 18 | 51 | 31 | 61 | 17 | 14 | 6 | 20 | 75 | 13 | 72 | 69 |
| OECD | Norway | 19 | 58 | 27 | 39 | 6 | 45 | 25 | 17 | 78 | 7 | 88 | 41 |
| OECD | Poland | 21 | 60 | 20 | 38 | 11 | 39 | 0 | 26 | 64 | 11 | 51 | 69 |
| OECD | Portugal | 18 | 57 | 21 | 45 | 15 | 19 | 13 | 25 | 64 | 17 | 86 | 50 |
| OECD | Slovak Republic | 18 | 59 | 19 | 45 | 18 | 36 | 8 | 25 | 71 | 9 | 84 | 59 |
| OECD | Slovenia | 18 | 59 | 18 | 45 | 16 | 32 | 13 | 14 | 67 | 10 | 69 | 56 |
| OECD | Spain | 18 | 55 | 26 | 52 | 12 | 16 | 21 | 11 | 65 | 7 | 74 | 52 |
| OECD | Sweden | 18 | 55 | 18 | 41 | 8 | 46 | 16 | 20 | 62 | 9 | 75 | 64 |
| OECD | Switzerland | 20 | 57 | 22 | 46 | 33 | 33 | 14 | 9 | 62 | 12 | 90 | 58 |
| OECD | Turkey | 19 | 52 | 18 | 49 | 16 | 39 | 19 | 8 | 55 | 16 | 88 | 60 |
| OECD | United Kingdom | m | m | m | m | m | m | m | m | m | m | m | m |
| OECD | United States | m | m | m | m | a | a | a | a | a | a | a | a |
| | OECD average | 18 | 55 | 22 | 46 | 20 | 34 | 12 | 17 | 66 | 12 | 82 | 60 |
| | EU22 average | 19 | 56 | 22 | 45 | 19 | 33 | 12 | 19 | 66 | 11 | 82 | 59 |
| Partners | Argentina | m | m | m | m | m | m | m | m | m | m | m | m |
| Partners | Brazil | 19 | 56 | 20 | 57 | 19 | 20 | 10 | 6 | 66 | 32 | 81 | 68 |
| Partners | China | m | m | m | m | m | m | m | m | m | m | m | m |
| Partners | Colombia | m | m | m | m | m | m | m | m | m | m | m | m |
| Partners | Costa Rica | 18 | 54 | 19 | 52 | m | m | m | m | m | m | m | m |
| Partners | India | m | 48 | m | 20 | 1 | 92 | 2 | 0 | 75 | 18 | 41 | 24 |
| Partners | Indonesia | 18 | 50 | 18 | 35 | 24 | 39 | 4 | 6 | 69 | 4 | 79 | 56 |
| Partners | Lithuania | 18 | 53 | 20 | 36 | 17 | 48 | 1 | 28 | 49 | 3 | 94 | 75 |
| Partners | Russian Federation | m | 55 | m | 39 | m | m | m | m | m | m | m | m |
| Partners | Saudi Arabia | m | m | m | m | m | m | m | m | m | m | m | m |
| Partners | South Africa | m | m | m | m | m | m | m | m | m | m | m | m |
| | G20 average | m | 53 | m | 44 | 20 | 35 | 11 | 9 | 58 | 12 | 72 | 53 |

**Note:** This table does not include data for all fields of study. The data for other fields are available at http://stats.oecd.org/, Education at a Glance Database.
**Source:** OECD/UIS/Eurostat (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).
*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*
StatLink http://dx.doi.org/10.1787/888933559218

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## Table A2.2. Upper secondary and post-secondary non-tertiary graduation rates (2015)

*Sum of age-specific graduation rates, by programme orientation*

| | | Upper secondary | | | | | | Post-secondary non-tertiary | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | First-time graduation rates | | Graduation rates | | | | First-time graduation rates | | Graduation rates | |
| | | All programmes | | General programmes | | Vocational programmes | | All programmes | | Vocational programmes | |
| | | All ages | Younger than 25 years | All ages | Younger than 25 years | All ages | Younger than 25 years | All ages | Younger than 30 years | All ages | Younger than 30 years |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
| OECD | Australia | m | m | 77 | 77 | 53 | 20 | 14 | 6 | 22 | 8 |
| | Austria | 90 | 84 | 20 | 20 | 80 | 72 | 9 | 4 | 11 | 5 |
| | Belgium | m | m | 38 | 38 | 60 | 57 | m | m | 7 | 7 |
| | Canada | 88 | 83 | 84 | 82 | 5 | 1 | m | m | m | m |
| | Chile | 90 | 86 | 61 | 57 | 29 | 29 | a | a | a | a |
| | Czech Republic | 76 | 75 | 24 | 24 | 57 | 54 | 35 | m | 9 | m |
| | Denmark | 92 | 80 | 69 | 65 | 44 | 23 | 1 | 0 | 1 | 0 |
| | Estonia | m | m | 60 | 59 | 26 | 23 | m | m | 24 | 15 |
| | Finland | 99 | 87 | 45 | 45 | 101 | 55 | 7 | 1 | 8 | 1 |
| | France | m | m | 55 | 55 | 73 | 65 | m | m | m | m |
| | Germany | 87 | 82 | 48 | 48 | 38 | 34 | 25 | 23 | 22 | 20 |
| | Greece | m | m | 72 | 72 | 27 | 25 | m | m | 2 | 1 |
| | Hungary | 86 | 82 | 65 | 62 | 21 | 21 | 19 | 17 | 20 | 19 |
| | Iceland | m | m | m | m | m | m | m | m | m | m |
| | Ireland | m | m | 100 | 100 | 40 | 22 | m | m | 11 | 7 |
| | Israel | 92 | 92 | 53 | 53 | 39 | 39 | m | m | m | m |
| | Italy | 92 | 78 | 39 | 39 | 53 | 39 | 1 | m | m | m |
| | Japan | 98 | m | 75 | m | 23 | m | m | m | m | m |
| | Korea | 93 | 92 | 77 | 76 | 16 | 16 | a | a | a | a |
| | Latvia | 86 | 84 | 67 | 65 | 26 | 23 | 8 | 7 | 8 | 7 |
| | Luxembourg | 75 | 73 | 34 | 34 | 44 | 41 | 2 | 1 | 2 | 1 |
| | Mexico | 56 | 55 | 35 | 35 | 21 | 21 | a | a | a | a |
| | Netherlands | 93 | 87 | 43 | 43 | 75 | 63 | a | a | a | a |
| | New Zealand | 95 | 87 | 78 | 78 | 55 | 23 | 26 | 16 | m | m |
| | Norway | 87 | 77 | 64 | 62 | 38 | 23 | 5 | 3 | 5 | 3 |
| | Poland | 88 | 84 | 50 | 47 | 39 | 39 | 15 | 11 | 15 | 11 |
| | Portugal | 89 | 83 | 45 | 44 | 44 | 39 | 7 | 6 | 7 | 6 |
| | Slovak Republic | 80 | 78 | 27 | 27 | 54 | 53 | 7 | 5 | 7 | 5 |
| | Slovenia | 92 | 85 | 35 | 34 | 67 | 56 | a | a | a | a |
| | Spain | 75 | 68 | 53 | 51 | 30 | 22 | 2 | 1 | 2 | 1 |
| | Sweden | 70 | 70 | 51 | 51 | 28 | 28 | 4 | 2 | 4 | 2 |
| | Switzerland | m | m | 42 | 41 | 72 | 65 | m | m | a | a |
| | Turkey | 73 | 68 | 37 | 33 | 36 | 35 | a | a | a | a |
| | United Kingdom | m | m | m | m | m | m | a | a | a | a |
| | United States | 83 | 83 | m | m | m | m | 22 | m | 22 | m |
| | OECD average | 86 | 80 | 54 | 52 | 44 | 36 | 12 | m | 10 | 7 |
| | EU22 average | 86 | 80 | 50 | 49 | 49 | 41 | m | m | 9 | 7 |
| Partners | Argentina[1] | 61 | m | m | m | m | m | m | m | m | m |
| | Brazil | 65 | 59 | 61 | 55 | 6 | 5 | 9 | 6 | 9 | 6 |
| | China | 88 | m | m | m | m | m | m | m | m | m |
| | Colombia | 72 | m | m | m | m | m | m | m | m | m |
| | Costa Rica | 33 | 31 | 27 | 24 | 7 | 6 | a | a | a | a |
| | India | m | m | 30 | m | 1 | m | m | m | m | m |
| | Indonesia | 71 | 71 | 42 | 42 | 30 | 30 | a | a | a | a |
| | Lithuania | 92 | 89 | 79 | 76 | 14 | 13 | 18 | 14 | 22 | 17 |
| | Russian Federation | 98 | m | 49 | m | 50 | m | 4 | m | 4 | m |
| | Saudi Arabia | m | m | m | m | m | m | m | m | m | m |
| | South Africa | m | m | m | m | m | m | m | m | m | m |
| | G20 average | 81 | m | 54 | m | 31 | m | m | m | m | m |

1. Year of reference 2014.

**Source:** OECD/UIS/Eurostat (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933559237

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## Table A2.3. Trends in upper secondary and post-secondary non-tertiary first-time graduation rates (2005, 2010 and 2015)

*Sum of age-specific graduation rates*

| | | Upper secondary | | | | | | Post-secondary non-tertiary | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | First-time graduation rates | | | | | | First-time graduation rates | | | | | |
| | | All ages | | | Younger than 25 years | | | All ages | | | Younger than 30 years | | |
| | | 2005 | 2010 | 2015 | 2005 | 2010 | 2015 | 2005 | 2010 | 2015 | 2005 | 2010 | 2015 |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
| OECD | Australia | m | m | m | m | m | m | m | 16 | 14 | m | 7 | 6 |
| | Austria | m | 87 | 90 | m | 84 | 84 | m | 7 | 9 | m | 4 | 4 |
| | Belgium | m | m | m | m | m | m | m | m | m | m | m | m |
| | Canada | 80 | 85 | 88 | 75 | 81 | 83 | m | m | m | m | m | m |
| | Chile | m | m | 90 | 79 | 79 | 86 | a | a | a | a | a | a |
| | Czech Republic | 116 | 110 | 76 | m | m | 75 | x(1) | x(2) | 35 | m | m | m |
| | Denmark | 83 | 85 | 92 | 74 | 76 | 80 | 1 | 1 | 1 | 1 | 0 | 0 |
| | Estonia | m | m | m | m | m | m | m | m | m | m | m | m |
| | Finland | 94 | 95 | 99 | 85 | 85 | 87 | 6 | 7 | 7 | 1 | 1 | 1 |
| | France | m | m | m | m | m | m | m | m | m | m | m | m |
| | Germany | 78 | 83 | 87 | m | m | 82 | 23 | 25 | 25 | m | m | 23 |
| | Greece | 95 | 88 | m | 95 | 88 | m | 9 | 6 | m | 9 | 6 | m |
| | Hungary | 84 | 86 | 86 | 80 | 82 | 82 | 20 | 18 | 19 | 18 | 16 | 17 |
| | Iceland | m | m | m | m | m | m | m | m | m | m | m | m |
| | Ireland | 92 | 86 | m | 90 | 85 | m | 14 | 10 | m | 14 | 7 | m |
| | Israel | 89 | 91 | 92 | 89 | 91 | 92 | m | m | m | m | m | m |
| | Italy | 85 | 85 | 92 | 67 | 67 | 78 | 6 | 4 | 1 | 4 | 2 | m |
| | Japan | m | 95 | 98 | m | m | m | m | m | m | m | m | m |
| | Korea | 94 | 92 | 93 | m | m | 92 | a | a | a | a | a | a |
| | Latvia | m | 89 | 86 | m | 88 | 84 | m | 3 | 8 | m | 2 | 7 |
| | Luxembourg | 74 | 70 | 75 | 72 | 68 | 73 | m | 2 | 2 | m | 1 | 1 |
| | Mexico | 40 | 45 | 56 | 39 | 44 | 55 | a | a | a | a | a | a |
| | Netherlands | m | m | 93 | m | m | 87 | m | m | a | m | m | a |
| | New Zealand | 95 | 91 | 95 | 86 | 80 | 87 | 26 | 29 | 26 | 12 | 18 | 16 |
| | Norway | 90 | 87 | 87 | 74 | 75 | 77 | 5 | 10 | 5 | 3 | 7 | 3 |
| | Poland | m | 83 | 88 | m | 82 | 84 | 14 | 12 | 15 | 12 | 10 | 11 |
| | Portugal | 54 | 105 | 89 | 51 | 67 | 83 | 0 | 3 | 7 | 0 | 2 | 6 |
| | Slovak Republic | 86 | 86 | 80 | 84 | 84 | 78 | 12 | 10 | 7 | 11 | 8 | 5 |
| | Slovenia | 85 | 94 | 92 | 72 | 83 | 85 | a | a | a | a | a | a |
| | Spain | m | m | 75 | m | m | 68 | a | a | 2 | a | a | 1 |
| | Sweden | 76 | 75 | 70 | 76 | 75 | 70 | 1 | 3 | 4 | 0 | 2 | 2 |
| | Switzerland | m | m | m | m | m | m | m | m | m | m | m | m |
| | Turkey | 48 | 54 | 73 | 48 | 54 | 68 | a | a | a | a | a | a |
| | United Kingdom | 87 | 88 | m | m | m | m | a | a | a | a | a | a |
| | United States | 74 | 77 | 83 | 74 | 77 | 83 | 17 | 22 | 22 | m | m | m |
| | OECD average | 82 | 85 | 86 | m | 77 | 80 | m | 10 | 12 | m | m | m |
| | Average for countries with available data for all reference years | 77 | 80 | 80 | 68 | 70 | 75 | 10 | 11 | 11 | 6 | 7 | 7 |
| | EU22 average | 85 | 88 | 86 | m | 80 | 80 | m | m | m | m | m | m |
| Partners | Argentina[1] | m | m | 61 | m | m | m | m | m | m | m | m | m |
| | Brazil | m | m | 65 | m | m | 59 | m | m | 9 | m | m | 6 |
| | China | m | m | 88 | m | m | m | m | m | m | m | m | m |
| | Colombia | m | m | 72 | m | m | m | m | m | m | m | m | m |
| | Costa Rica | m | m | 33 | m | m | 31 | a | a | a | a | a | a |
| | India | m | m | m | m | m | m | m | m | m | m | m | m |
| | Indonesia | m | m | 71 | m | m | 71 | a | a | a | a | a | a |
| | Lithuania | 82 | 94 | 92 | 78 | 89 | 89 | 8 | 9 | 18 | 8 | 7 | 14 |
| | Russian Federation | 89 | 97 | 98 | m | m | m | 7 | 12 | 4 | m | m | m |
| | Saudi Arabia | m | m | m | m | m | m | m | m | m | m | m | m |
| | South Africa | m | m | m | m | m | m | m | m | m | m | m | m |
| | G20 average | m | m | 81 | m | m | m | m | m | m | m | m | m |

1. Year of reference 2014 instead of 2015.

**Source:** OECD/UIS/Eurostat (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

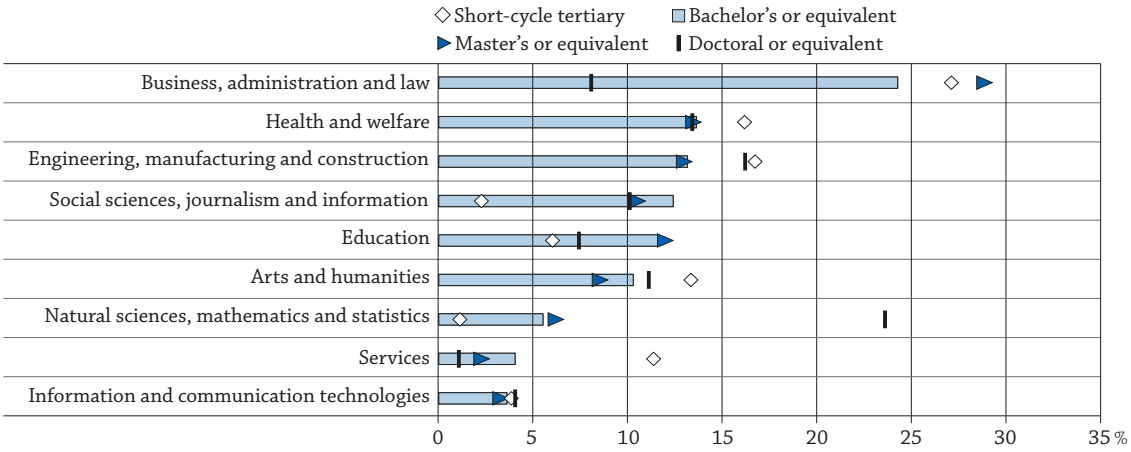
*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

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# WHO IS EXPECTED TO GRADUATE FROM TERTIARY EDUCATION?

- Propensity to major in science, technology, engineering and mathematics fields of study (STEM) increases with education level: while 22% of graduates complete a degree in these fields at bachelor's level or equivalent, the share almost doubles to 44% at doctoral level.
- Bachelor's degrees remain the most common tertiary diploma to be held by graduates in OECD countries. In 2015, on average across OECD countries, a majority of first-time tertiary graduates (72%) earned a bachelor's degree, 11% earned a master's degree and 17% earned a short-cycle tertiary diploma.
- Based on current patterns of graduation, an average of 49% of today's young people across OECD countries are expected to graduate from tertiary education at least once in their lifetime.

## Figure A3.1. Distribution of tertiary graduates on average across OECD and partner countries, by field of study and by ISCED level (2015)




**Note**: Agriculture, forestry, fisheries and veterinary are not included in the figure but data are available in the Education at a Glance Database.

*Fields of study are ranked in descending order of their share of graduates at bachelor's level or equivalent.*

**Source**: OECD/UIS/Eurostat (2017), Education at a Glance Database, http://stats.oecd.org/. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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## Context

Tertiary graduation rates illustrate a country's capacity to provide future workers with advanced and specialised knowledge and skills. Incentives to earn a tertiary degree, including higher salaries and better employment prospects, remain strong across OECD countries (see Indicators A5, A6 and A7 for further reading on these themes). Tertiary education varies in structure and scope among countries, and graduation rates seem to be influenced by the ease of access to and flexibility in programmes, the supply of spaces available by education level and fields of study, as well as by labour market demand for higher skills.

In recent decades, access to tertiary education has expanded remarkably, involving new types of institutions that offer more choice and new modes of delivery (OECD, 2014a). In parallel, the student population is becoming increasingly diverse in gender and in study pathways chosen. Students are also becoming more likely to seek a tertiary degree outside their country of origin.

Policy makers are exploring ways to help ease the transition from tertiary education into the labour market (OECD, 2015). Understanding current graduation patterns would help to understand student progression throughout higher education and anticipate the flow of new tertiary-educated workers into the labour force.

## Other findings

- Advanced tertiary degrees attract more international students (see *Definitions* section) than bachelor's or equivalent degrees. Some 26% of students in OECD countries who graduated for the first time from a doctoral programme in 2015 were international students, as were 19% of students who were awarded a master's degree or the equivalent, and 7% of graduates who earned a bachelor's degree for the first time (Education at a Glance Database).
- Participation of women in higher education has been increasing in recent years, and their share among first-time tertiary graduates remains higher than their share among first-time tertiary entrants. This is in line with previous findings suggesting that women are more likely to complete their degree than men (OECD, 2016).
- Average age at graduation is a combination of average age at entry and the time taken to complete tertiary educational programmes. Across OECD countries with data, 26 years old is the average age at which people graduate for the first time from a tertiary level programme.

## Note

Graduation rates are the estimated percentage of an age cohort that is expected to graduate in their lifetime. This estimate is based on the total number of graduates in 2015 and the age-specific distribution of graduates. Therefore, graduation rates are based on the current pattern of graduation and are sensitive to any changes in education systems, such as the introduction of new programmes or any variations in a programme's duration (as has occurred in many countries in the European Union [EU] with the implementation of the Bologna Process).

A3

## Analysis

### Profile of graduates and first-time graduates from tertiary education

Over the past two decades, tertiary education in OECD countries has changed significantly. The student body is more international, more women than men are graduating from this level of education, and the fields of study chosen have evolved. These changes might reflect concerns about competitiveness in the global economy and the labour market, but also the interests and priorities of a growing student population.

#### *Profile of graduates, by field of study*

The distribution of graduates by field of study is related to the relative popularity of these fields among students, the number of positions offered in universities and equivalent institutions, and the degree structure of the various disciplines in each country.

Currently, across most OECD countries, the largest share of graduates across all tertiary education programmes complete degrees in business, administration and law (Figure A3.1). There are a few exceptions: Korea and Portugal have the largest share of students graduating from engineering, manufacturing and construction fields of study; Belgium, Denmark, Finland, Norway and Sweden see their highest share of graduates completing degrees in health and welfare; and the largest share of tertiary students in India graduate from the fields of social sciences, information and journalism. Some of these differences can be explained in the structure of educational systems and the types of institutions offering qualifications in each field of study across countries. For example, degrees in fields of study such as nursing (included in the field of study of health and welfare) are more likely to be offered in tertiary programmes in countries that have integrated most of the post-secondary vocational education into their tertiary education system.

In most countries, the fields of science, technology, engineering, and mathematics (also known as STEM) are less popular. In half of the OECD and partner countries with data, the combined share of students graduating from the fields of natural sciences, mathematics and statistics, engineering, manufacturing and construction, and information and communication technologies is still lower than the share of students graduating from business, administration and law. In 2015, 23% of tertiary graduates completed their degree from these fields on average across OECD countries, though this ranges from 14% in Luxembourg to 37% in Germany.

The smaller share of graduates in science and engineering at the tertiary level hides large differences by level of tertiary education, however. Graduation rates from these fields of study increases with educational level: on average across OECD countries in 2015, around 22% of graduates from short-cycle tertiary programmes, bachelor's and master's or equivalent programmes earned a degree in natural sciences, mathematics and statistics, engineering, manufacturing and construction, or information and communication technologies, while 44% of graduates from doctoral programmes earned a degree in these fields (Figure A3.1). In Canada, Chile, Estonia, France, Israel, Luxembourg, Spain and Sweden, 50% or more of doctoral students graduated from the fields of science, mathematics, statistics, engineering, manufacturing and construction, and information and communication technologies in 2015.

The popularity of science and engineering in doctoral programmes may be the result of policies that encourage academic research in these fields. Recent OECD work has highlighted that while innovation draws on a wide set of skills, excellence in scientific research is the basis of science-based innovation, and research competence is essential for building co-operation among the scientific community, business and society. Thus, developing scientific research skills through doctoral training has become an important aim of education policy in many countries (OECD, 2014b).

Many countries are pushing for a better balance in the distribution of graduates across fields of study with many strategies at national level to promote STEM in particular. Not only are STEM skills seen as critical in generating innovation for future generations, but also the labour market clearly highlights the importance of science-related skills that extends beyond scientific occupations. Many countries have derived national strategy plans to renew interest in science fields of study, and build capacity in scientific skills. For instance, the European Union recently launched the "Science with and for Society" programme to build co-operation between science and society, recruit new talent for science, and pair scientific excellence with social awareness and responsibility by 2020. The programme aims to make science more attractive, particularly to young people, and to open further research and innovation activities across Europe.

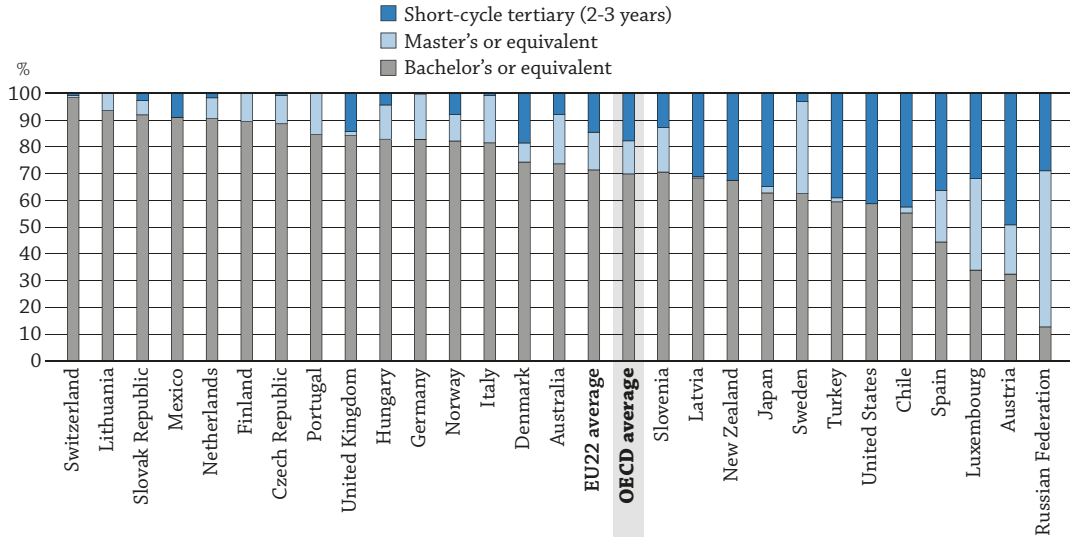
#### *Profile of first-time graduates, by education level*

First-time graduates from tertiary education are defined as students who receive a tertiary degree for the first time in their life in a given country.

In 2015, the large majority of first-time tertiary graduates were awarded a bachelor's degree. In fact, on average across OECD countries, 72% of first-time tertiary graduates earned a bachelor's degree, 11% earned a master's degree and 17% earned a short-cycle tertiary diploma (Figure A3.2).

However, there are considerable differences across countries. In Austria, the largest share of first-time graduates (49%) graduated from short-cycle tertiary programmes, while in Luxembourg the shares of first-time graduates are similar across the three levels of tertiary education. These differences may result from the structure of the tertiary system; or because certain programmes – such as short-cycle programmes – are more vigorously promoted in some countries; or because of the attractiveness of the programmes to international students, particularly at master's level (Figure A3.2).

## Figure A3.2. Distribution of first-time tertiary graduates by level of education (2015)




*Countries are ranked in descending order of the percentage of first-time graduates at bachelor's level or equivalent.*

**Source**: OECD/UIS/Eurostat (2017), Table A3.2. See Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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### *Profile of first-time graduates, by gender*

Recognising the impact that education has on participation in the labour market, occupational mobility and quality of life, policy makers and educators are emphasising the importance of reducing differences in education opportunities and outcomes between men and women.

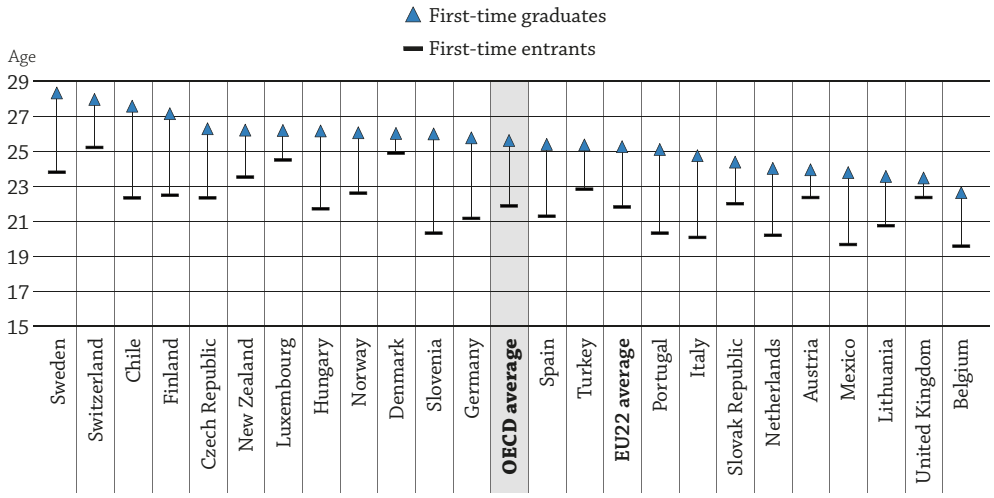
In 2015, more women than men graduated from tertiary education: an average of 57% of first-time graduates from tertiary education in OECD countries were women, ranging from 49% in Switzerland and Turkey to 64% in Latvia (Table A3.2). While participation of women in tertiary education has been increasing over the past years, the share of female graduates was higher than the share of female first-time new entrants into tertiary education (see Indicator C3) in all OECD and partner countries with available data. This confirms previous findings that women are more likely to complete tertiary education than their male counterparts (OECD, 2016).

Although most tertiary graduates in 2015 were women, men still have better labour market outcomes. Earnings for tertiary-educated men are higher, on average, than those for tertiary-educated women, and tertiary-educated men tend to have higher employment rates than women with the same level of education (see Indicators A5 and A6).

### *Profile of first-time graduates, by age*

For some years now, many OECD countries have been concerned about the length of time tertiary students take to complete their studies. They have developed policies to encourage students to graduate more quickly so as to get more workers into the labour market at an earlier age. For example, the reforms following the Bologna Declaration in 1999 (which introduced a new degree structure in European countries) were explicitly motivated by a policy objective to reduce the length of studies.

## Figure A3.3. Average age of first-time graduates compared to first-time entrants into tertiary education (2015)




**Note**: The average age of the students refers normally to 1st January for countries where the academic year starts in the second semester of the calendar year and 1st of July for countries where the academic year starts in the first semester of the calendar year. The average age of new entrants is then slightly overestimated and the average age of graduates slightly underestimated (e.g. students will generally be between 6 and 9 months older than the age indicated when they graduate at the end of the school year).

*Countries are ranked in descending order of the average age of first-time graduates at tertiary level.*

**Source**: OECD/UIS/Eurostat (2017), Tables A3.2. and C3.2. See Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933557109

Across OECD countries in 2015, 84% of first-time graduates graduated before the age of 30; the average age of graduation was 26. The variation among countries is large, however, ranging from 23 in Belgium and the United Kingdom, to 28 in Chile, Sweden and Switzerland (Table A3.2). The average age at which most students graduate reflects a combination of average age at entry and programme duration. Entrance to tertiary education can be delayed by the structure of upper secondary education systems, entry schemes and admission processes into tertiary education, conscription requirements, or diverse pathways to transition from study to work. Programme duration on the other hand will depend on the structure of the educational programme, or on the intensity of enrolment, i.e. full time or part time. For example, Chile has one of the highest average graduation ages of all OECD countries, at 28, while students enrol at the age of 22 on average. The age difference between graduates and entrants reflects the duration of the programme and the strong focus of long first degrees in the education system (see Indicator C3, Box C3.1), particularly in science and engineering. In contrast, students also graduate later in Sweden and Switzerland but the average age of entry is two to three years older than the OECD average. The older age at both graduation and entry in these countries reflects students' various trajectories before entering higher education, the flexibility of the education system to accommodate transitions between educational programmes or between work and study, and adults' lifelong learning. The higher enrolment in part-time studies observed in these countries also tends to delay the average graduation age (Education at a Glance Database).

The difference between entry and graduation age can be very small in some countries and can be driven in part by the prevalence of short-cycle tertiary degrees, where the duration of these programmes is generally 2 years compared to 3 or 4 years for a bachelor's degree. Moreover, in some countries, short-cycle tertiary programmes are specifically designed for older students who may take longer to graduate, increasing the entry age compared to the graduation age at this level.

### *First-time graduation rates from tertiary education*

Based on 2015 current patterns of graduation, 49% of today's young people (including international students) can be expected to graduate from tertiary education at least once in their lifetime on average across OECD countries. The proportion ranges from 24% in Luxembourg – where about 80% of Luxembourg secondary school graduates continuing through a tertiary education degree are pursuing studies abroad – to 70% or more in Australia, Japan and New Zealand (Table A3.3).

### *First-time graduation rates, by levels of education*

More young people are expected to graduate from a bachelor's degree programme in their lifetime than from any other level of tertiary education. Based on patterns of graduation prevailing in 2015, on average across OECD countries, 38% of young people are expected to graduate with a bachelor's degree, 17% are expected to earn a master's degree, 11% are expected to graduate from a short-cycle tertiary programme, and roughly 2% are expected to graduate from a doctoral programme in their lifetime (Table A3.3).

Although bachelor's degrees remain the most common tertiary diploma to be held by graduates in OECD countries, countries are also promoting other levels of tertiary education. In an effort to improve employability and the transition into the labour market, some countries are encouraging participation in short-cycle tertiary programmes. The probability of a person in Austria, Chile, China, Japan, New Zealand and the Russian Federation graduating from a short-cycle tertiary programme in his or her lifetime is 25% or higher. Other ways of boosting employability and easing the transition into the labour market include promoting professional or vocational programmes at bachelor's and master's levels of education.

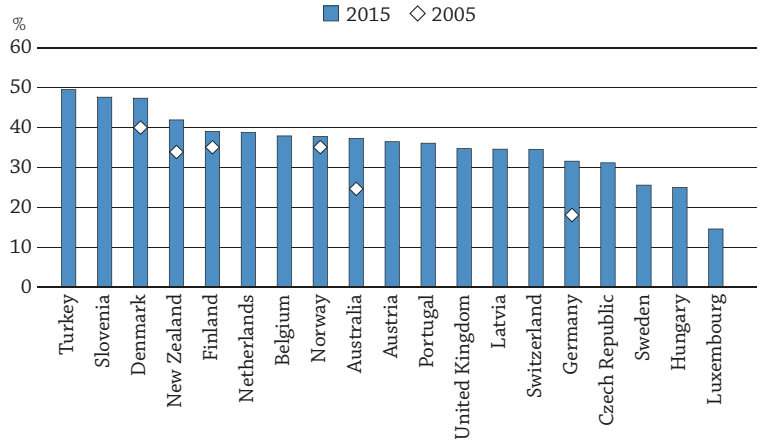
### *First-time graduation rates, excluding international students*

International students (see *Definitions* section) can have a marked impact on graduation rates by inflating the estimate of graduate students compared to the national population. In countries with a high proportion of international students, such as Australia and New Zealand, the difference can be significant. When international students are excluded, first-time tertiary graduation rates drop by 31 percentage points for Australia and 20 percentage points for New Zealand (Table A3.3). Advanced tertiary degrees attract more international students than bachelor's or equivalent degrees. Some 26% of students in OECD countries who graduated for the first time from a doctoral programme in 2015 were international students, compared to 19% of students who were awarded a master's degree or equivalent, and 7% of graduates who earned a bachelor's degree for the first time (Education at a Glance Database).

### *First-time graduation rates among people under the age of 30*

The first-time graduation rate from tertiary education among people under the age of 30 is an indicator of how many young people are expected to enter the labour force for the first time with a tertiary qualification. On average across the 19 countries with available data, 36% of young people (excluding international students) are expected to obtain a tertiary diploma for the first time before the age of 30. This rate ranges from 25% in Hungary to 50% in Turkey among countries with comparable data (Figure A3.4).

## Figure A3.4. First-time tertiary graduation rates for national students younger than 30 (2005, 2015)




**Note**: Mismatches between the coverage of the population data and first-time graduate data mean that the graduation rates for those countries that are net exporters of students may be underestimated and those that are net importers may be overestimated. The first-time tertiary graduation rate excluding international students accounts for this.

*Countries are ranked in descending order of the first-time tertiary graduation rates for students younger than 30 in 2015.*

**Source**: OECD/UIS/Eurostat (2017), Table A3.3. See Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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In addition, some education systems accommodate a wider range of ages among their students than others. In New Zealand, Sweden, Switzerland and Turkey, first-time graduation rates at the tertiary level drop by more than 10 percentage points when restricted to young people under 30 (excluding international students). This suggests that these education systems are more flexible in terms of access to and duration of programmes, particularly for students outside the typical age of study, and may also reflect the different policies and attitudes towards adult and lifelong learning. Indeed, with the exception of Turkey, the average age of first-time graduates is typically higher in these countries than the OECD average, mainly driven by entrance at a later age.

First-time tertiary graduation rates for national students younger than 30 has increased between 2005 and 2015 across all countries with data for this time span. The increase has been strongest in Germany and Australia, where graduation rates increased by 14 and 12 percentage points over the decade. In Denmark and Germany, the increase in first-time graduation rates has not kept up with the increase in first-time entry rates into tertiary education over this period, signalling a stronger expansion in access to tertiary education in recent years in both countries.

## Definitions

**First-time graduate** is a student who has graduated for the first time at a given level of education during the reference period. Therefore, if a student has graduated multiple times over the years, he or she is counted as a graduate each year, but as a first-time graduate only once.

**First-time tertiary graduate** is a student who graduates for the first time with a tertiary diploma, regardless of the education programme in which he or she is enrolled. This definition is applied in Tables A3.2 and A3.3 (Columns 13 to 15).

**First-time graduate from a given programme** or level of tertiary education is a first-time graduate from the given programme, but may have a diploma from another programme. For example, a first-time graduate at the master's level has earned a master's degree for the first time, but may have previously graduated with a bachelor's degree. This definition is applied in Tables A3.2 (Columns 5 to 7) and A3.3.

**International students** are those students who left their country of origin and moved to another country for the purpose of study. In the majority of countries, international students are considered first-time graduates, regardless of their previous education in other countries. In the calculations described here, when countries could not report the number of international students, foreign students have been used as an approximation. **Foreign students** are students who do not have the citizenship of the country in which they studied (for more details, please refer to Annex 3, www.oecd.org/education/education-at-a-glance-19991487.htm).

**Net graduation rates** represent the estimated percentage of people from a specific age cohort who will complete tertiary education in their lifetime, based on current patterns of graduation.

## Methodology

Unless otherwise indicated, graduation rates are calculated as net graduation rates (i.e. as the sum of age-specific graduation rates). Net tertiary graduation rates represent the expected probability of graduating from tertiary education in an individual's lifetime if current patterns are maintained. The current cohort of graduates by ages (cross-section data) is used in the calculation.

Gross graduation rates are used when data by age are missing. In order to calculate gross graduation rates, countries identify the age at which graduation typically occurs (see Annex 1). The typical age of graduation for a given education level is defined in *Education at a Glance* as the age range comprising at least half of the graduate population. The number of graduates of which the age is unknown is divided by the population at the typical graduation age. In many countries, defining a typical age at graduation is difficult, however, because graduates are dispersed over a wide range of ages.

The average age of students is calculated from 1 January for countries where the academic year starts in the second semester of the calendar year and 1 July for countries where the academic year starts in the first semester of the calendar year. As a consequence, the average age of new entrants may be overestimated by up to 6 months while that of first-time graduates may be underestimated by the same.

For more information please see the *OECD Handbook for Internationally Comparative Education Statistics: Concepts, Standards, Definitions and Classifications* (OECD, 2017) and Annex 3 for country-specific notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

## Source

Data on entrants refer to the school year 2014/15 (unless otherwise specified) and are based on the UOE data collection on education systems administered annually by UNESCO, the OECD and Eurostat for all OECD and partner countries. Data from Argentina, China, Colombia, India, Indonesia, Saudi Arabia and South Africa are from the UNESCO Institute of Statistics.

**Note regarding data from Israel**

The statistical data for Israel are supplied by and are under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

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## Indicator A3 Tables

StatLink http://dx.doi.org/10.1787/888933559351

| | |
|---|---|
| **Table A3.1** | **Distribution of tertiary graduates, by field of study (2015)** |
| **Table A3.2** | **Profile of a first-time tertiary graduate (2015)** |
| **Table A3.3** | **First-time graduation rates, by tertiary level (2015)** |

Cut-off date for the data: 19 July 2017. Any updates on data can be found on line at http://dx.doi.org/10.1787/eag-data-en. More breakdowns can also be found at http://stats.oecd.org/, Education at a Glance Database.

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## Table A3.1. Distribution of tertiary graduates, by field of study (2015)

| | | Education | Arts and humanities | Social sciences, journalism and information | Business, administration and law | Natural sciences, mathematics and statistics | Information and communication technologies | Engineering, manufacturing and construction | Agriculture, forestry, fisheries and veterinary | Health and welfare | Services |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
| OECD | Australia | 9 | 11 | 7 | 34 | 6 | 4 | 8 | 1 | 19 | 1 |
| | Austria | 13 | 9 | 10 | 22 | 6 | 4 | 20 | 2 | 7 | 9 |
| | Belgium | 9 | 11 | 11 | 21 | 4 | 1 | 12 | 2 | 27 | 1 |
| | Canada | 6 | 11 | 16 | 26 | 7 | 3 | 12 | 2 | 15 | 3 |
| | Chile | 15 | 4 | 4 | 23 | 1 | 3 | 16 | 2 | 21 | 11 |
| | Czech Republic | 11 | 8 | 11 | 23 | 5 | 4 | 16 | 3 | 11 | 7 |
| | Denmark | 9 | 13 | 10 | 20 | 5 | 4 | 11 | 2 | 22 | 4 |
| | Estonia | 8 | 12 | 9 | 25 | 7 | 5 | 14 | 2 | 12 | 6 |
| | Finland | 7 | 13 | 7 | 18 | 5 | 7 | 17 | 2 | 19 | 5 |
| | France | 3 | 9 | 8 | 34 | 7 | 3 | 15 | 2 | 16 | 3 |
| | Germany | 10 | 12 | 7 | 23 | 10 | 5 | 22 | 2 | 7 | 3 |
| | Greece | m | m | m | m | m | m | m | m | m | m |
| | Hungary | 16 | 10 | 10 | 25 | 4 | 2 | 16 | 3 | 8 | 5 |
| | Iceland | m | m | m | m | m | m | m | m | m | m |
| | Ireland | 8 | 13 | 7 | 24 | 8 | 6 | 10 | 2 | 17 | 5 |
| | Israel | m | m | m | m | m | m | m | m | m | m |
| | Italy | m | m | m | m | m | m | m | m | m | m |
| | Japan[1] | 9[d] | 15[d] | 8[d] | 20[d] | 3[d] | x | 18[d] | 3[d] | 15[d] | 8[d] |
| | Korea | 7 | 17 | 5 | 16 | 5 | 2 | 22 | 1 | 14 | 9 |
| | Latvia | 7 | 8 | 9 | 32 | 4 | 4 | 13 | 2 | 14 | 8 |
| | Luxembourg | 16 | 9 | 7 | 39 | 4 | 5 | 5 | 0 | 15 | 0 |
| | Mexico | 12 | 4 | 9 | 34 | 3 | 2 | 23 | 2 | 10 | 1 |
| | Netherlands[2] | 11 | 9 | 15 | 28 | 5 | 2 | 8 | 1 | 16 | 5 |
| | New Zealand | 10 | 12 | 9 | 25 | 6 | 7 | 8 | 2 | 15 | 5 |
| | Norway | 16 | 9 | 11 | 16 | 5 | 3 | 13 | 1 | 20 | 5 |
| | Poland | 14 | 7 | [11] | 24 | 4 | 3 | 15 | 2 | 13 | 8 |
| | Portugal | 7 | 9 | 11 | 19 | 6 | 1 | 21 | 2 | 19 | 6 |
| | Slovak Republic | 13 | 7 | 11 | 21 | 6 | 3 | 13 | 2 | 18 | 6 |
| | Slovenia | 10 | 9 | 12 | 22 | 6 | 3 | 16 | 3 | 10 | 7 |
| | Spain | 16 | 9 | 7 | 19 | 5 | 4 | 16 | 1 | 15 | 7 |
| | Sweden | 12 | 6 | 13 | 18 | 4 | 4 | 18 | 1 | 22 | 2 |
| | Switzerland | 10 | 8 | 7 | 28 | 7 | 2 | 15 | 1 | 15 | 6 |
| | Turkey | 10 | 11 | 8 | 38 | 4 | 2 | 13 | 2 | 8 | 4 |
| | United Kingdom | 10 | 15 | 12 | 22 | 13 | 4 | 9 | 1 | 13 | 0 |
| | United States | 7 | 20 | 12 | 20 | 7 | 4 | 7 | 1 | 17 | 7 |
| | OECD average | 10 | 10 | 10 | 24 | 6 | 4 | 14 | 2 | 15 | 5 |
| | EU22 average | 10 | 10 | 10 | 24 | 6 | 4 | 14 | 2 | 15 | 5 |
| Partners | Argentina[3] | 16 | 10 | 36[d] | x(3) | 8[d] | x(5) | 6 | 2 | 18 | 3 |
| | Brazil | 20 | 3 | 4 | 37 | 3 | 3 | 10 | 2 | 14 | 4 |
| | China | m | m | m | m | m | m | m | m | m | m |
| | Colombia | 9 | 4 | 7 | 45 | 1 | 5 | 16 | 2 | 7 | 4 |
| | Costa Rica | 22 | 3 | 5 | 39 | 2 | 4 | 7 | 1 | 16 | 1 |
| | India | 9 | 6 | 33 | 17 | 13 | 7 | 11 | 1 | 3 | 0 |
| | Indonesia | 28 | 3 | 12 | 16 | 3 | 9 | 8 | 3 | 18 | 0 |
| | Lithuania | 7 | 8 | 12 | 32 | 4 | 2 | 17 | 2 | 14 | 2 |
| | Russian Federation | 8 | 4 | 7 | 38 | 2 | 5 | 22 | 2 | 6 | 7 |
| | Saudi Arabia[4] | 15 | 25 | 8 | 20 | 8 | 7 | 8 | 0 | 6 | 2 |
| | South Africa[4] | 19 | 5 | 16 | 32 | 7 | 3 | 9 | 2 | 7 | 0 |
| | G20 average | 12 | 11 | 12 | 25 | 6 | 4 | 13 | 2 | 12 | 3 |

1. Data on Information and communication technologies are included in the other fields.
2. Excludes doctoral graduates.
3. Year of reference 2013.
4. Year of reference 2014.

**Source:** OECD/UIS/Eurostat (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

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## Table A3.2. Profile of a first-time tertiary graduate (2015)

| | | Share of female graduates | Share of graduates below the typical age of 30 | Average age | Share of international graduates | Share of first-time graduates by level of education | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Short-cycle tertiary (2-3 years) | Bachelor's or equivalent | Master's or equivalent |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| OECD | Australia | 56 | 84 | 25 | 41 | 8 | 74 | 18 |
| | Austria | 57 | 84 | 24 | 16 | 49 | 32 | 18 |
| | Belgium | 61 | 96 | 23 | 8 | m | m | a |
| | Canada | m | m | m | m | m | m | m |
| | Chile | 57 | 76 | 28 | m | 42 | 55 | 2 |
| | Czech Republic | 63 | 84 | 26 | 10 | 1 | 89 | 11 |
| | Denmark | 57 | 85 | 26 | 13 | 19 | 74 | 7 |
| | Estonia | m | m | m | m | m | m | m |
| | Finland | 57 | 81 | 27 | 9 | a | 89 | 11 |
| | France | m | m | m | m | m | m | m |
| | Germany | 51 | 83 | 26 | 3 | 0 | 83 | 17 |
| | Greece | m | m | m | m | m | m | m |
| | Hungary | 59 | 80 | 26 | 5 | 4 | 83 | 13 |
| | Iceland | m | m | m | m | m | m | m |
| | Ireland | m | m | m | m | m | m | m |
| | Israel | m | m | m | m | m | m | m |
| | Italy | 59 | 88 | 25 | m | 1 | 81 | 18 |
| | Japan | 52 | m | m | 4 | 35 | 63 | 2 |
| | Korea | m | m | m | m | m | m | m |
| | Latvia | 64 | 79 | 27 | 3 | 31 | 68 | 1 |
| | Luxembourg | 58 | 80 | 26 | 35 | 32 | 34 | 34 |
| | Mexico | 53 | 93 | 24 | m | 9 | 91 | a |
| | Netherlands | 55 | 93 | 24 | 15 | 2 | 91 | 8 |
| | New Zealand | 54 | 79 | 26 | 26 | 33 | 67 | a |
| | Norway | 60 | 83 | 26 | 2 | 8 | 82 | 10 |
| | Poland | m | m | m | m | m | m | m |
| | Portugal | 59 | 88 | 25 | 2 | a | 85 | 15 |
| | Slovak Republic | 63 | m | m | 5 | 3 | 92 | 5 |
| | Slovenia | 60 | 83 | 26 | 2 | 13 | 71 | 17 |
| | Spain | 56 | 84 | 25 | m | 36 | 44 | 19 |
| | Sweden | 62 | 72 | 28 | 10 | 3 | 63 | 34 |
| | Switzerland | 49 | 75 | 28 | 7 | 1 | 98 | 1 |
| | Turkey | 49 | 83 | 25 | 0 | 39 | 59 | 1 |
| | United Kingdom | 56 | 90 | 23 | 12 | 14 | 84 | 1 |
| | United States | 58 | m | m | 3 | 41 | 59 | a |
| | OECD average | 57 | 84 | 26 | 10 | 17 | 72 | 11 |
| | EU22 average | 59 | 84 | 25 | 10 | 13 | 73 | 14 |
| Partners | Argentina | m | m | m | m | m | m | m |
| | Brazil | m | m | m | m | m | m | m |
| | China | m | m | m | m | m | m | m |
| | Colombia | m | m | m | m | m | m | m |
| | Costa Rica | m | m | m | m | m | m | m |
| | India | m | m | m | m | m | m | m |
| | Indonesia | m | m | m | m | m | m | m |
| | Lithuania | 63 | 93 | 24 | m | a | 94 | 6 |
| | Russian Federation | 57 | m | m | m | 29 | 13 | 58 |
| | Saudi Arabia | m | m | m | m | m | m | m |
| | South Africa | m | m | m | m | m | m | m |
| | G20 average | m | m | m | m | m | m | m |

**Source:** OECD/UIS/Eurostat (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).
*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*
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A3

## Table A3.3. First-time graduation rates, by tertiary level (2015)

*Sum of age-specific graduation rates, by demographic group*

| | | Short-cycle tertiary (2-3 years) | | | Bachelor's or equivalent | | | Master's or equivalent | | | Doctoral or equivalent | | | First-time tertiary | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Excluding international students | | | Excluding international students | | | Excluding international students | | | Excluding international students | | | Excluding international students | |
| | | Total | Total | Younger than 30 | Total | Total | Younger than 30 | Total | Total | Younger than 35 | Total | Total | Younger than 35 | Total | Total | Younger than 30 |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) |
| OECD | Australia | 15 | 11 | 6 | 60 | 44 | 35 | 20 | 9 | 6 | 2.5 | 1.6 | 0.8 | 76 | 45 | 37 |
| | Austria | 26 | 26 | 25 | 25 | 21 | 18 | 20 | 15 | 13 | 1.9 | 1.3 | 1.0 | 49 | 42 | 36 |
| | Belgium | x(4) | x(5) | x(6) | 43[d] | 39[d] | 38[d] | 12 | 8 | 8 | 0.6 | 0.3 | 0.2 | 43 | 39 | 38 |
| | Canada | 21 | 17 | 13 | 40 | 37 | 33 | 11 | 9 | 6 | 1.5 | 1.2 | 0.7 | m | m | m |
| | Chile | 25 | m | m | 36 | m | m | 9 | m | m | 0.2 | m | m | 58 | m | m |
| | Czech Republic | 0 | 0 | 0 | 37 | 34 | 28 | 26 | 23 | 20 | 1.6 | 1.4 | 1.0 | 41 | 37 | 31 |
| | Denmark | 12 | 10 | 8 | 53 | 50 | 42 | 28 | 23 | 21 | 3.2 | 2.2 | 1.4 | 65 | 56 | 47 |
| | Estonia | a | a | a | m | m | m | m | m | m | m | m | m | m | m | m |
| | Finland | a | a | a | 50 | 47 | 36 | 24 | 22 | 17 | 2.6 | 2.0 | 0.8 | 53 | 48 | 39 |
| | France | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Germany | 0 | 0 | 0 | 32 | 31 | 26 | 17 | 15 | 15 | 2.9 | 2.4 | 2.0 | 39 | 37 | 32 |
| | Greece | a | a | a | m | m | m | m | m | m | m | m | m | m | m | m |
| | Hungary | 1 | 1 | 1 | 27 | 26 | 21 | 15 | 14 | 12 | 0.9 | 0.8 | 0.6 | 32 | 30 | 25 |
| | Iceland | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Ireland | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Israel | m | m | m | 42 | 41 | 31 | 19 | 18 | 10 | 1.5 | 1.4 | 0.5 | m | m | m |
| | Italy | 0 | m | m | 28 | m | m | 20 | m | m | 1.5 | m | m | 35 | m | m |
| | Japan | 25 | 24 | m | 45 | 44 | m | 8 | 7 | m | 1.2 | 1.0 | m | 72 | 69 | m |
| | Korea | m | m | m | m | m | m | m | m | m | 1.6 | m | m | m | m | m |
| | Latvia | 14 | 14 | 9 | 31 | 30 | 26 | 16 | 15 | 13 | 0.9 | 0.8 | 0.4 | 45 | 44 | 35 |
| | Luxembourg | 8 | 7 | 7 | 9 | 7 | 7 | 9 | 3 | 3 | 1.3 | 0.1 | 0.1 | 24 | 16 | 15 |
| | Mexico | 2 | m | m | 24 | m | m | 4 | m | m | 0.3 | m | m | 26 | m | m |
| | Netherlands | 1 | 1 | 1 | 44 | 40 | 38 | 19 | 14 | 14 | 2.3 | 1.3 | 1.1 | 49 | 41 | 39 |
| | New Zealand | 27 | 18 | 12 | 57 | 44 | 34 | 9 | 6 | 4 | 2.2 | 1.1 | 0.6 | 75 | 55 | 42 |
| | Norway | 4 | 4 | 3 | 39 | 38 | 32 | 17 | 16 | 13 | 2.0 | 1.5 | 0.5 | 46 | 45 | 38 |
| | Poland | 0 | 0 | 0 | m | m | m | m | m | m | m | m | m | m | m | m |
| | Portugal | a | a | a | 35 | 34 | 30 | 16 | 15 | 15 | 1.6 | 1.4 | 0.6 | 41 | 40 | 36 |
| | Slovak Republic | 1 | 1 | 1 | 38 | 36 | m | 36 | 34 | 28 | 2.3 | 2.3 | 1.7 | 41 | 39 | m |
| | Slovenia | 7 | 7 | 5 | 43 | 42 | 37 | 21 | 20 | 18 | 2.8 | 2.6 | 1.7 | 56 | 55 | 48 |
| | Spain | 23 | m | m | 31 | 31 | 28 | 18 | 16 | 14 | 1.7 | m | m | 60 | m | m |
| | Sweden | 7 | 7 | 4 | 26 | 26 | 18 | 20 | 17 | 13 | 2.4 | 1.6 | 0.8 | 41 | 37 | 26 |
| | Switzerland | 0 | 0 | 0 | 48 | 45 | 34 | 18 | 13 | 12 | 3.3 | 1.5 | 1.2 | 49 | 45 | 35 |
| | Turkey | 24 | 24 | 18 | 36 | 36 | 30 | 5 | 4 | 3 | 0.4 | 0.4 | 0.3 | 61 | 61 | 50 |
| | United Kingdom | 6 | 6 | 4 | 44 | 37 | 33 | 22 | 11 | 8 | 3.0 | 1.7 | 1.2 | 44 | 39 | 35 |
| | United States | 23 | 23 | m | 39 | 38 | m | 20 | 17 | m | 1.6 | 1.2 | m | 55 | 53 | m |
| | OECD average | 11 | 10 | 6 | 38 | 36 | 30 | 17 | 15 | 12 | 1.8 | 1.4 | 0.9 | 49 | 44 | 36 |
| | EU22 average | 7 | 6 | 6 | 35 | 33 | 28 | 20 | 17 | 14 | 2.0 | 1.5 | 1.0 | 45 | 40 | 34 |
| Partners | Argentina[1] | 18 | m | m | 12 | m | m | 2 | m | m | 0.3 | m | m | m | m | m |
| | Brazil | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | China | 28 | m | m | 26 | m | m | 3 | m | m | 0.2 | m | m | m | m | m |
| | Colombia | 14 | m | m | 21 | m | m | 9 | m | m | 0.1 | m | m | m | m | m |
| | Costa Rica | 6 | m | m | 49 | m | m | 6 | m | m | 0.1 | m | m | m | m | m |
| | India | a | a | a | m | m | m | m | m | m | m | m | m | m | m | m |
| | Indonesia | 5 | 5 | 5 | 17 | 17 | 14 | 1 | 1 | 1 | 0.1 | m | m | m | m | m |
| | Lithuania | a | a | a | 51 | m | m | 20 | m | m | 1.1 | m | m | 54 | m | m |
| | Russian Federation | 30 | m | m | 11 | m | m | 45 | m | m | 1.2 | m | m | 85 | m | m |
| | Saudi Arabia[1] | 7 | m | m | 29 | m | m | 2 | m | m | 0.1 | m | m | m | m | m |
| | South Africa[1] | 6 | m | m | 12 | m | m | 1 | m | m | 0.2 | m | m | m | m | m |
| | G20 average | 15 | m | m | 30 | m | m | 12 | m | m | 1.2 | m | m | m | m | m |

1. Year of reference 2014.

**Source:** OECD/UIS/Eurostat (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

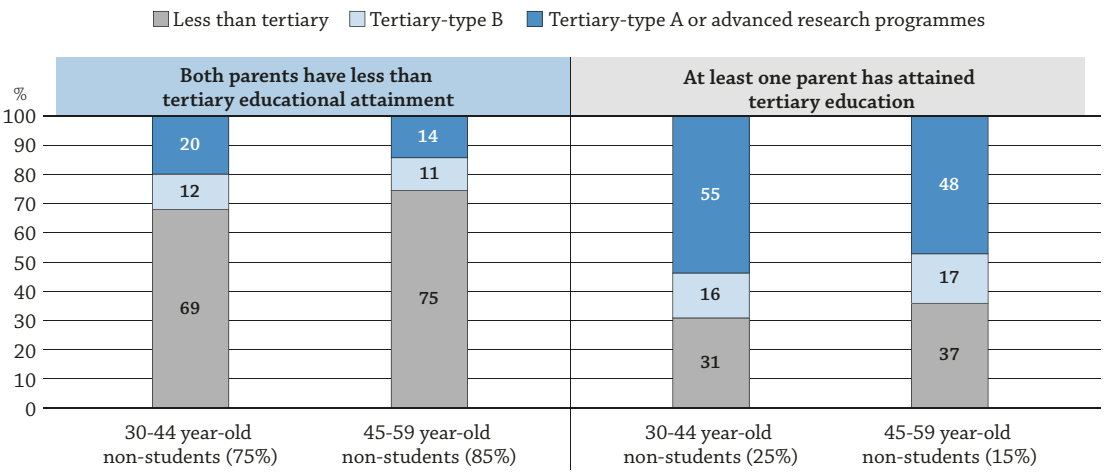
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# TO WHAT EXTENT DOES PARENTS' EDUCATION INFLUENCE THEIR CHILDREN'S EDUCATIONAL ATTAINMENT?

- Indicator A1 shows that more younger adults (25-34 year-olds) are attaining tertiary degree than the older adults (55-64 year-olds) but results from the Survey of Adult Skills (PIAAC) show that adults (30-59 year-olds) with at least one tertiary-educated parent are still more likely to attain a tertiary degree than adults whose parents both are not tertiary-educated.
- Adults (30-59 year-olds) from highly educated families more often complete tertiary-type A or advanced research programmes than tertiary-type B (see *Definitions* section) than adults whose parents are not tertiary-educated.
- Parents' educational attainment is a much stronger predictor than age or gender of an individual's educational attainment.

**Figure A4.1. Educational attainment of 30-44 and 45-59 year-olds, by parents' educational attainment (2012 or 2015)**

*Survey of Adult Skills (PIAAC), average*




**Note**: The percentage in parentheses represents the share of the population in each group. The values may not add up to 100% because of missing values in the source table. Data on educational attainment are based on ISCED-97.

**Source**: OECD (2017), Tables A4.1 and A4.2. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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## Context

Education is strongly linked to people's earnings, employment, overall wealth and well-being; as such it can reduce inequalities in society. But education can also perpetuate inequalities, as levels of educational attainment often persist down the generations. To facilitate social inclusion and mobility, and to improve socio-economic outcomes now and for future generations, countries need to offer all young people a fair chance to obtain a quality education.

In today's fast-changing labour market, the gap in returns between low-qualified and high-qualified workers is growing. On average over their working lives, less-educated adults have the highest unemployment and inactivity rates, as well as the lowest and more rapidly declining relative wages (see Indicators A5 and A6). Having a large population of low-qualified workers may thus lead to a heavier social burden and deepening inequalities that are both difficult and costly to address once people have left initial education.

It is therefore particularly important that students from disadvantaged backgrounds (often identified as being of low socio-economic status) receive appropriate support to allow them to stay in education as long as possible. Various policy options – such as maintaining reasonable costs for higher education

and funding student support systems – can help disadvantaged students. Ensuring access to and success in tertiary education for all is important, but so is addressing inequalities at the earliest stages of schooling.

Not everyone will attain tertiary education, but everyone should at least have the same opportunities to reach the level of education to which they aspire. Adults who complete tertiary education often have highly educated parents but those from families with lower levels of education should receive proper support so that they can achieve their full potential. Tertiary education enables people to develop transversal skills, and it gives them the tools to adapt to changing labour market needs. Such benefits should not be limited to a privileged few.

## Other findings

- In Finland, Korea, Poland and Singapore, there is a large difference between 30-44 year-olds and 45-59 year-olds in upward mobility (see *Note* section) to tertiary-type A education or advanced research programmes.
- In Italy and Turkey, only a small share of the population has tertiary-educated parents; they are much more likely to achieve the same educational level as their parents than those whose parents are not tertiary educated.
- In most countries with available data, there is very little difference in the achievement of a tertiary-type B degree between 30-44 year-olds with and without tertiary-educated parents.

## Note

Intergenerational mobility in education, as measured by the Survey of Adult Skills (PIAAC) (see *Source* section), reflects the proportion of individuals with a different level of qualification to their parents: a higher level in the case of upward mobility and lower in the case of downward mobility. Status quo refers to the situation when children attain the same level of education as their parents (see *Methodology* section for more detail). Measures of mobility are sensitive to the number of educational attainment levels chosen for intergenerational comparisons (more mobility tends to be observed the higher the number of categories) and, more substantially, to changes in the structure of the education system (most notably to expansion at specific levels). Information on the educational attainment of parents is only provided for the three aggregated levels based on ISCED-97 (below upper secondary education, upper secondary or post-secondary non-tertiary education, and tertiary education; see *Definitions* section) and it is therefore not possible to capture the intergenerational mobility between the different levels of tertiary education.

Opportunities for improving intergenerational mobility also depend on parents' level of education. For example, upward mobility can be low in countries where a large share of parents have already attained tertiary education. The overall increase in the educational attainment of the population eventually leads to reduced upward mobility, particularly for countries experiencing a strong transition towards tertiary education. It is, therefore, important to look at the data in light of parents' educational attainment, because low upward mobility does not necessarily indicate lower opportunities to attain high levels of education.

The data do not generally reflect the impact of recent policies implemented by countries. For example, recent policies focusing on younger generations will only be reflected in the data once a significant number of people have completed their studies under the new conditions. Due to the small number of observations for some categories, data need to be interpreted with care and should take into account the standard error that is presented next to the estimates.

A4

## Analysis

This indicator looks for the first time at tertiary attainment by type of programme and by parents' educational attainment. It complements the analyses on intergenerational mobility in education published in earlier editions of *Education at a Glance* (OECD, 2014; 2015; and 2016a).

The Survey of Adult Skills (PIAAC) disaggregate the tertiary attainment of respondents into two ISCED-97 attainment levels: 1) tertiary-type B, which refers to more practical programmes leading directly to the labour market; and 2) tertiary-type A and advanced research programmes, which are more theory-based (see *Definitions* section for more details). It also asks respondents about the level of education of their father and their mother, classified into three categories: 1) below upper secondary education; 2) upper secondary or post-secondary non-tertiary education; and 3) tertiary education. These responses, along with respondent's age, provide the basis for the analyses presented in this indicator. They allow for the comparison of trends among two age groups: 30-44 year-olds and 45-59 year-olds. Students are excluded because the analysis focuses on the highest level of education already completed.

Figure A4.1 shows that regardless of the age group, adults whose parents have both not attained tertiary education (the two bars on the left) are about twice as likely not to complete tertiary education as those who have at least one parent who is tertiary educated (the two bars on the right). It also shows that the share of 30-44 year-olds attaining tertiary education is greater than among 45-59 year-olds (Figure A4.1).

On average across OECD countries and economies with available data, 85% of 45-59 year-olds have parents who did not complete tertiary education. In this age group, 25% surpassed their parents' level of education (11% completed tertiary-type B and 14% completed tertiary-type A or advanced research programmes). The results for the younger group are very different: 75% of 30-44 year-olds have parents who did not complete tertiary education, while 32% reached a higher level than their parents (12% completed tertiary-type B and 20% completed tertiary-type A or advanced research programmes). This means that the younger age group is more likely to have tertiary-educated parents, and even when their parents do not have tertiary education, this age group is more likely to be tertiary-educated than the older age group. Similar patterns can be observed among adults with tertiary-educated parents: a higher share of the younger age group have completed tertiary education. These results are partly explained by the expansion of tertiary education in recent decades (Tables A4.1 and A4.2, and see Indicator A1).

The share of people with tertiary-type A or advanced research degrees is generally much higher among people with tertiary-educated parents than among those with non-tertiary-educated parents. Among 30-44 year-olds with tertiary-educated parents, 55% have completed tertiary-type A or advanced research programmes – more than three times the share of those who have completed tertiary-type B (16%). Among the same age group but with non-tertiary-educated parents, the share of those who have completed tertiary-type A or advanced research programmes (20%) is less than double the share of those who have completed tertiary-type B (12%) (Tables A4.1 and A4.2).

### *Tertiary attainment by adults with non-tertiary-educated parents, by type of programme and age group*

On average across OECD countries and economies that participated in the Survey of Adult Skills (PIAAC), the expansion of tertiary education has generally been in theory-based programmes. However, the extent of the expansion varies widely across countries. Figure A4.2 shows how the share of upward mobility differs between 45-59 year-olds and 30-44 year-olds for those attaining tertiary-type A or advanced research degrees. In Finland, Korea, Poland and Singapore, the difference between the two age groups is at least 12 percentage points; the difference is highest in Singapore (22 percentage points). This change in upward mobility reflects the relatively recent expansion of the higher education systems in these countries. In Korea, Poland and Singapore, more than 80% of all young adults come from families where both parents were not tertiary educated (Figure A4.2).

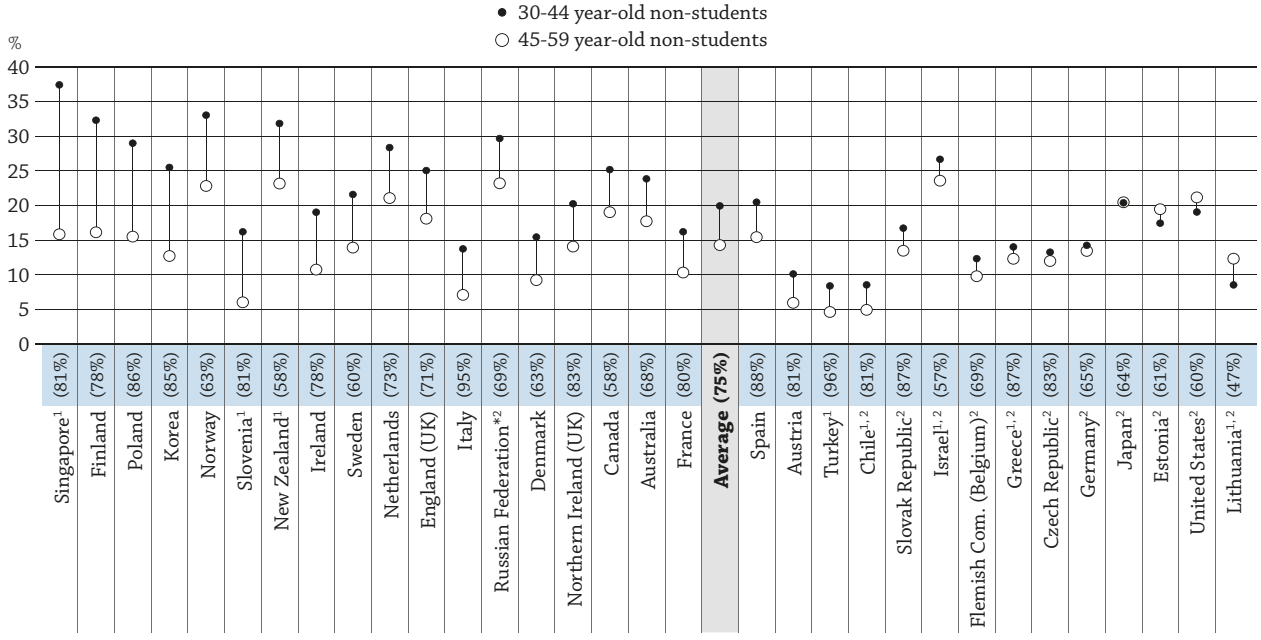
In contrast, in Chile, the Czech Republic, Estonia, the Flemish Community of Belgium, Germany, Greece, Israel, Japan, Lithuania, the Slovak Republic and the United States, the upward mobility differences between the two age groups for those attaining tertiary-type A or advanced research degrees are below 5 percentage points and not statistically significant. It should also be noted that among these countries in Estonia, Japan, Lithuania and the United States, fewer than 65% of 30-44 year-olds have parents without tertiary education. This means that the possibility for upward mobility to tertiary education is limited in these countries (Table A4.1).

Figure A4.2 also shows that among those with non-tertiary-educated parents, the upward mobility difference between age groups is statistically significant in 20 countries. However, among those who have at least one parent

who is tertiary educated, the differences between age groups are only statistically significant in Canada, Denmark, England (United Kingdom), Ireland, Poland and Sweden. In all these countries, with the exception of Canada, the share of attainment of tertiary-type A or advanced research degrees is at least 10 percentage points higher for 30-44 year-olds than for 45-59 year-olds (Figure A4.2 and Tables A4.1 and A4.2).

## Figure A4.2. Share of 30-44 and 45-59 year-olds with no tertiary-educated parent who completed a tertiary-type A or an advanced research programme (2012 or 2015)

*Survey of Adult Skills (PIAAC)*




**Note**: The percentage in parentheses represents the share of 30-44 year-old non-students whose parents both have less than tertiary educational attainment. Data on educational attainment are based on ISCED-97.

1. Reference year is 2015; for all other countries and economies the reference year is 2012.

2. The difference between the two age groups is not statistically significant at 5%.

* See note on data for the Russian Federation in the *Source* section.

*Countries and economies are ranked in descending order of the gap between the two age groups.*

**Source**: OECD (2017), Table A4.1. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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### Tertiary educational attainment of 30-44 year-olds by type of programme and parents' education

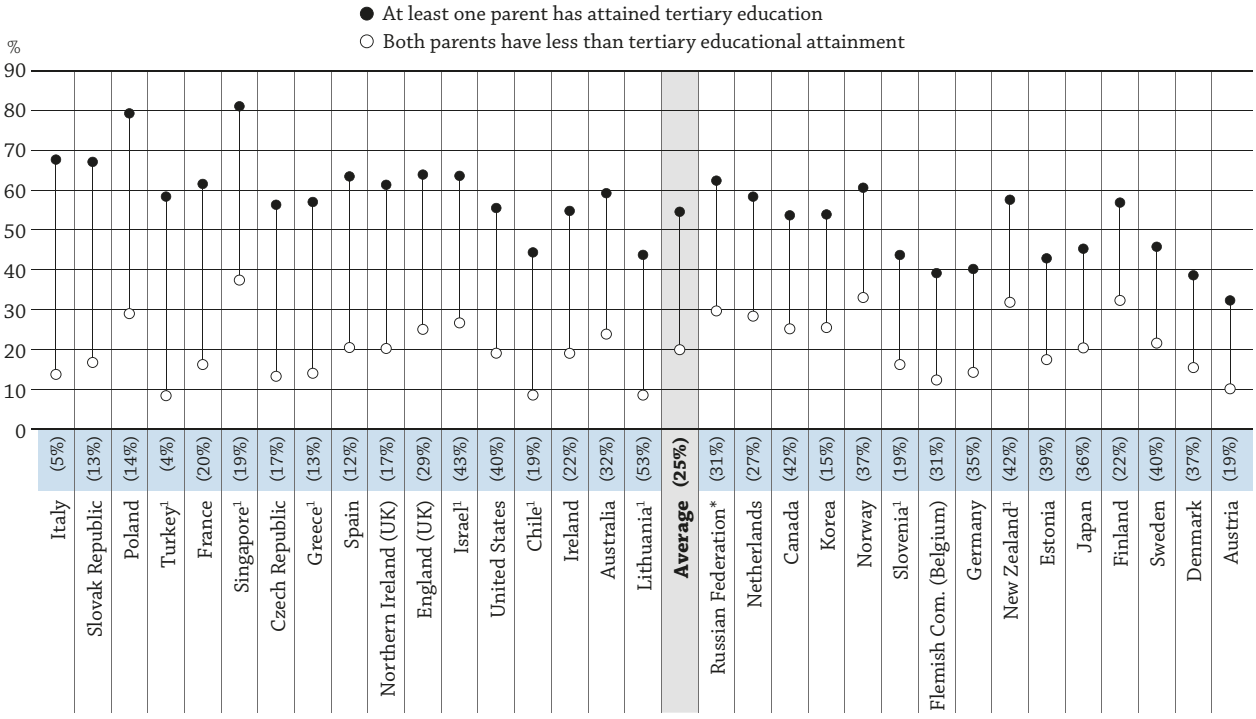
In general, a larger share of 30-44 year-olds is completing tertiary education than 45-59 year-olds, regardless of their parents' education level. However, Figure A4.3 shows that in all countries inequalities persist among the younger age group. In all OECD countries and economies with available data, high parental educational attainment seems to positively influence the likelihood of completing tertiary-type A or an advanced research programme. This means that those who were born to parents with a tertiary degree are more likely to get a tertiary degree themselves (Figure A4.3 and Tables A4.1 and A4.2).

Having at least one tertiary-educated parent affects an individual's own educational attainment. The greatest differences between individuals with or without tertiary-educated parent(s) are seen in Italy, Poland, the Slovak Republic and Turkey: the share of attainment of tertiary-type A or advanced research degrees among people with two non-tertiary-educated parents is 50 percentage points lower than for those with at least one tertiary-educated parent. It is also worth noting that the share of 30-44 year-olds with at least one tertiary-educated parent is very low in Italy (5%) and Turkey (4%). This means that in these two countries only a small share of the population has tertiary-educated parents, but these parents are much more likely to have the same educational level (Tables A4.1 and A4.2).

A4

## Figure A4.3. Share of 30-44 year-olds who completed tertiary-type A or an advanced research programme, by parents' educational attainment (2012 or 2015)

*Survey of Adult Skills (PIAAC), 30-44 year-old non-students*




**Note**: The percentage in parentheses represents the share of 30-44 year-old non-students who have at least one parent who attained tertiary education. Data on educational attainment are based on ISCED-97.

1. Reference year is 2015; for all other countries and economies the reference year is 2012.

* See note on data for the Russian Federation in the *Source* section.

*Countries and economies are ranked in descending order of the gap between the two groups.*

**Source**: OECD (2017), Tables A4.1 and A4.2. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933557185

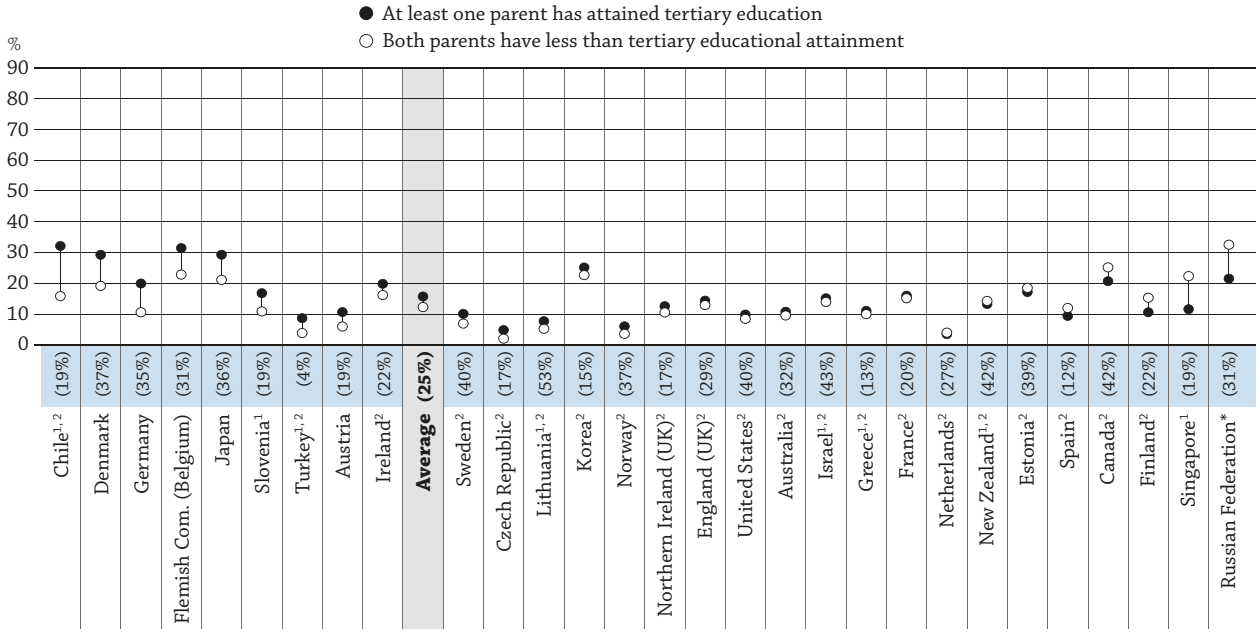
In contrast, in Austria, Denmark, Estonia, Finland, Japan and Sweden, the share of 30-44 year-olds attaining a tertiary-type A or advanced research degree seems to be less influenced by their parents' educational attainment. The difference by parents' educational attainment is 25 percentage points or lower in these six countries (Tables A4.1 and A4.2).

In Austria, the difference is as low as 22 percentage points, but this can also be related to the fact that it is not as common to attain tertiary-type A or advanced research degrees in Austria. Among Austrian 30-44 year-olds who have at least one tertiary-educated parent, 32% have completed a tertiary-type A or an advanced research programme. This is more than 20 percentage points below the average for OECD participating countries and economies (55%). The share is 10 percentage points below the average for those with two non-tertiary-educated parents. This shows the importance of interpreting the data alongside the distribution of attainment in the population, as this may help to understand patterns in the data for intergenerational mobility in education (Tables A4.1 and A4.2, and see Indicator A1).

Figure A4.4 also looks at 30-44 year-olds, but focuses on those who have attained a tertiary-type B degree. It shows that for this group, parents' educational level has less influence on their children's level of education. In 21 countries out of the 29 with available data, the difference is not statistically significant. In Austria, Denmark, the Flemish Community of Belgium, Germany, Japan and Slovenia, 30-44 year-olds with at least one tertiary-educated parent are more likely to get a tertiary-type B degree than those with two non-tertiary-educated parents. The opposite situation is observed in the Russian Federation and Singapore, where those with two non-tertiary-educated parents are more likely to complete a tertiary-type B programme than those with at least one tertiary-educated parent (Figure A4.4).

## Figure A4.4. Share of 30-44 year-olds who completed a tertiary-type B programme, by parents' educational attainment (2012 or 2015)

*Survey of Adult Skills (PIAAC), 30-44 year-old non-students*




**Note**: The percentage in parentheses represents the share of 30-44 year-old non-students who have at least one parent who attained tertiary education. Data on educational attainment are based on ISCED-97.

1. Reference year is 2015; for all other countries and economies the reference year is 2012.

2. The difference between the two parents' educational attainment categories is not statistically significant at 5%.

* See note on data for the Russian Federation in the *Source* section.

*Countries and economies are ranked in descending order of the gap between the two groups.*

**Source**: OECD (2017), Tables A4.1 and A4.2. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933557204

By comparing Figure A4.3 and A4.4 we see that the attainment of tertiary-type B degrees is generally less frequent than the attainment of tertiary-type A or advanced research degrees, regardless of parents' educational attainment. On average across OECD countries and economies, 16% of 30-44 year-olds with at least one tertiary-educated parent have completed a tertiary-type B programme, while 55% have completed a tertiary-type A or advanced research programme. Among those with two non-tertiary-educated parents, 12% have completed a tertiary-type B programme and 20% have completed a tertiary-type A or advanced research programme. This indicates that having tertiary-educated parents generally increases the likelihood of completing tertiary education, but it has a greater effect on the likelihood of completing a tertiary-type A or advanced research programme than on the likelihood of completing a tertiary-type B programme (Figures A4.3 and A4.4).

### The cumulative impact of gender, age and parents' educational attainment on the likelihood of having a tertiary degree

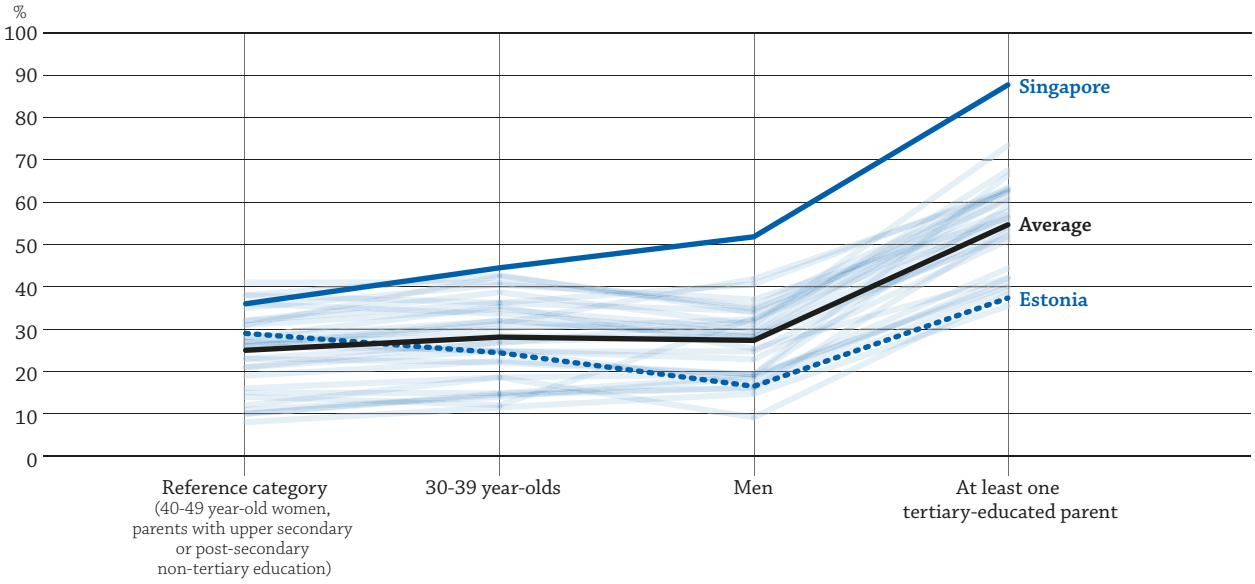
Figure A4.5 shows that in all countries and economies that participated in the Survey of Adult Skills (PIAAC), there is a significant upward shift in the likelihood of attaining a tertiary-type A or an advanced research degree when parents are more educated. Parents' education level has a greater impact than age or gender on the likelihood of attaining a tertiary-type A or an advanced research degree. The only exception is Japan, where gender and parents' educational attainment seem to have an equal influence on the likelihood of attaining a tertiary-type A or an advanced research degree (about 20 percentage points each) (Figure A4.5 and Table A4.3).

Figure A4.5 also shows that compared to the reference category (40-49 year-old women whose parents have only upper secondary or post-secondary non-tertiary education), when a 40-49 year-old woman has at least one tertiary-educated parent, the likelihood of attaining a tertiary-type A or an advanced research degree increases by about 30 percentage points on average across OECD countries and economies. The influence of age and gender is minor or negligible in comparison to the strong influence of parental education (Figure A4.5).

A4

## Figure A4.5. Cumulative likelihood of having a tertiary-type A or an advanced research programme degree (2012 or 2015)

*Survey of Adult Skills (PIAAC)*




**How to read this figure**

On average across OECD countries and economies, 25% of the reference category (40-49 year-old women whose parents have upper secondary or post-secondary non-tertiary education) have a tertiary-type A or an advanced research programme degree. Changing the age group to 30-39 year-olds increases this share by 3 percentage points whereas changing the gender to men decreases it by 1 percentage point. Finally, changing parental attainment to at least one tertiary-educated parent increases the share by 27 percentage points.

**Note**: All countries and economies with available data are represented in the figure, but only two countries and the OECD average are highlighted to show the country with the lowest and highest impact for the three variables selected and the average. The reference categories are upper secondary or post-secondary non-tertiary education for parents' educational attainment, women for gender, and 40-49 year-olds for age group. The data presented in this figure are based on an ordinary least square regression. Chile, Greece, Israel, Lithuania, New Zealand, Singapore, Slovenia, Turkey: year of reference 2015. All other countries and economies: year of reference 2012. Data on educational attainment are based on ISCED-97.

**Source**: OECD (2017), Table A4.3. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933557223

When comparing the reference category with 30-39 year-old men with at least one tertiary-educated parent (Figure A4.5), the greatest difference is seen in Singapore (+52 percentage points) and the smallest in Estonia (+8 percentage points). This demonstrates that age, gender and parents' educational attainment level influence the likelihood of completing tertiary education in a cumulative way, and that the factors contributing to inequalities in opportunities of completing tertiary education vary both across and within countries (Table A4.3).

## Definitions

**Adults** refer to 30-59 year-olds.

**Educational attainment** refers to the highest level of education achieved by a person.

**Non-student** refers to an individual who was not enrolled as a student at the time of the survey. For example, "non-students who completed tertiary education" refers to individuals who had completed tertiary education and were not students when the survey was conducted.

**Levels of education (of respondent):**

- **Advanced research programmes** refer to programmes that lead directly to the award of an advanced research qualification (e.g. Ph.D.). The theoretical duration of these programmes is three years, full-time, in most countries (for a cumulative total of at least seven years full-time equivalent at the tertiary level), although the actual enrolment time is typically longer. Programmes are devoted to advanced study and original research.
- **Less than tertiary** refers to ISCED-97 levels 0, 1, 2, 3 and 4.

- **Tertiary-type A** refers to largely theory-based programmes designed to provide sufficient qualifications for entry to advanced research programmes and professions with high skill requirements, such as medicine, dentistry or architecture. Duration is at least three years full-time, though usually four or more years. These programmes are not exclusively offered at universities, and not all programmes nationally recognised as university programmes fulfil the criteria to be classified as tertiary-type A. Tertiary-type A programmes include second-degree programmes, such as the US master's degree.
- **Tertiary-type B** refers to programmes that are typically shorter than those of tertiary-type A and focus on practical, technical or occupational skills for direct entry into the labour market, although some theoretical foundations may be covered in the respective programmes. They have a minimum duration of two years full-time equivalent at the tertiary level.

**Levels of education (of parents):**

- **Below upper secondary** means that both parents have attained ISCED-97 level 0, 1, 2 or 3C short programmes.
- **Less than tertiary** refers to ISCED-97 levels 0, 1, 2, 3 and 4.
- **Tertiary** means that at least one parent (whether mother or father) has attained ISCED-97 level 5A, 5B or 6.
- **Upper secondary or post-secondary non-tertiary** means that at least one parent (whether mother or father) has attained ISCED-97 level 3A, 3B, 3C long programmes, or ISCED level 4.

## Methodology

Intergenerational mobility is the intergenerational mobility in educational attainment between children and their parents. For example, if a respondent has completed a higher level of education than the highest educational level achieved by a parent, this is considered as upward mobility. Mobility can also be downward, meaning that the respondent's highest level of education is below that of the parent with the highest educational attainment. Finally, the status quo means that the respondent has the same level of educational attainment as the parent with the highest educational attainment.

Respondents who did not know their parents' level of education were excluded from the analysis in all tables of this indicator. Students have also been excluded from the analysis as they are not finished with their education. Including them could underestimate intergenerational mobility because they might reach a higher educational level than their parents once they have finished their studies.

The level of non-response has not been analysed and may bias the results. This can be significant for respondents who do not know the educational attainment level of their parents. For some data analysis, the sample is small, explaining why standard errors are slightly higher than usual. Data should, therefore, be interpreted with caution.

The observations based on a numerator with less than 3 observations or a denominator with less than 30 observations have been replaced by "c" in the tables.

Please see Annex 3 for country-specific notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

## Source

All data are based on the OECD Programme for the International Assessment of Adult Competencies (the Survey of Adult Skills [PIAAC]).

**Note regarding data from Israel**

The statistical data for Israel are supplied by and are under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

**Note regarding data from the Russian Federation in the Survey of Adult Skills (PIAAC)**

The sample for the Russian Federation does not include the population of the Moscow municipal area. The data published, therefore, do not represent the entire resident population aged 16-65 in the Russian Federation but rather the population of the Russian Federation excluding the population residing in the Moscow municipal area. More detailed information regarding the data from the Russian Federation as well as that of other countries can be found in the *Technical Report of the Survey of Adult Skills*, Second Edition (OECD, 2016b).

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## Indicator A4 Tables

StatLink http://dx.doi.org/10.1787/888933559446

| | |
|---|---|
| Table A4.1 | Tertiary attainment among adults whose parents both have less than tertiary educational attainment, by type of programme and age group (2012 or 2015) |
| Table A4.2 | Tertiary attainment among adults who have at least one parent who attained tertiary education, by type of programme and age group (2012 or 2015) |
| Table A4.3 | Changes in the likelihood of having a tertiary-type A or an advanced research programme degree, by gender, age group and parents' educational attainment (2012 or 2015) |
| WEB Table A4.4 | Changes in the likelihood of having a tertiary-type B degree, by gender, age group and parents' educational attainment (2012 or 2015) |

Cut-off date for the data: 19 July 2017. Any updates on data can be found on line at http://dx.doi.org/10.1787/eag-data-en. Data can also be found at http://stats.oecd.org/, Education at a Glance Database.

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## Table A4.1. Tertiary attainment among adults whose parents both have less than tertiary educational attainment, by type of programme and age group (2012 or 2015)

*Survey of Adult Skills (PIAAC), 30-59 year-old non-students*

**How to read this table:** In Australia, 68% of 30-44 year-old non-students have parents who both have less than tertiary education. Of these non-students whose parents both have less than tertiary education, 67% have attained less than tertiary education like their parents, 10% have a tertiary-type B degree and 24% have a tertiary-type A or an advanced research programme degree.

| | | 30-44 year-olds | | | | | | | | 45-59 year-olds | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Educational attainment of adults in this group | | | | | | | | Educational attainment of adults in this group | | | | | |
| | | Percentage of adults in this group | | Less than tertiary | | Tertiary-type B | | Tertiary-type A or advanced research programmes | | Percentage of adults in this group | | Less than tertiary | | Tertiary-type B | | Tertiary-type A or advanced research programmes | |
| | | % | S.E. | % | S.E. | % | S.E. | % | S.E. | % | S.E. | % | S.E. | % | S.E. | % | S.E. |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) |
| OECD | **Countries** | | | | | | | | | | | | | | | | |
| | Australia | 68 | (1.3) | 67 | (1.5) | 10 | (1.0) | 24 | (1.4) | 81 | (1.0) | 72 | (1.1) | 10 | (0.7) | 18 | (1.1) |
| | Austria | 81 | (1.1) | 84 | (0.7) | 6 | (0.6) | 10 | (0.6) | 85 | (1.0) | 86 | (0.7) | 8 | (0.7) | 6 | (0.7) |
| | Canada | 58 | (0.9) | 50 | (1.4) | 25 | (1.1) | 25 | (1.0) | 76 | (0.8) | 57 | (0.9) | 24 | (0.9) | 19 | (0.7) |
| | Chile[1] | 81 | (2.6) | 76 | (3.0) | 16 | (2.4) | 9 | (1.4) | 84 | (2.4) | 83 | (2.2) | 12 | (1.5) | 5 | (1.2) |
| | Czech Republic | 83 | (1.1) | 85 | (1.1) | 2 | (0.4) | 13 | (1.0) | 90 | (1.1) | 87 | (0.9) | 1 | (0.4) | 12 | (0.8) |
| | Denmark | 63 | (1.2) | 65 | (1.3) | 19 | (1.2) | 15 | (0.9) | 81 | (1.0) | 73 | (1.0) | 18 | (0.9) | 9 | (0.6) |
| | Estonia | 61 | (1.1) | 64 | (1.3) | 18 | (1.1) | 17 | (1.0) | 78 | (0.8) | 64 | (1.3) | 17 | (1.0) | 19 | (1.1) |
| | Finland | 78 | (1.2) | 52 | (1.4) | 15 | (1.1) | 32 | (1.3) | 91 | (0.7) | 61 | (1.1) | 23 | (1.0) | 16 | (0.9) |
| | France | 80 | (0.9) | 69 | (0.9) | 15 | (0.8) | 16 | (0.7) | 90 | (0.5) | 81 | (0.7) | 8 | (0.6) | 10 | (0.5) |
| | Germany | 65 | (1.5) | 75 | (1.1) | 11 | (0.9) | 14 | (1.1) | 71 | (1.1) | 72 | (1.2) | 14 | (1.0) | 13 | (1.0) |
| | Greece[1] | 87 | (1.0) | 76 | (1.2) | 10 | (0.8) | 14 | (1.1) | 93 | (0.7) | 81 | (1.0) | 7 | (0.8) | 12 | (0.9) |
| | Ireland | 78 | (1.0) | 65 | (1.1) | 16 | (0.7) | 19 | (0.9) | 90 | (0.7) | 80 | (0.9) | 9 | (0.7) | 11 | (0.6) |
| | Israel[1] | 57 | (1.3) | 59 | (1.9) | 14 | (1.2) | 27 | (1.5) | 72 | (1.5) | 58 | (2.0) | 18 | (1.4) | 24 | (1.8) |
| | Italy | 95 | (0.6) | 86 | (0.8) | 0 | (0.1) | 14 | (0.8) | 97 | (0.4) | 93 | (0.7) | 0 | (0.1) | 7 | (0.7) |
| | Japan | 64 | (1.4) | 59 | (1.3) | 21 | (1.1) | 20 | (1.0) | 79 | (1.2) | 62 | (1.1) | 18 | (1.0) | 20 | (1.1) |
| | Korea | 85 | (0.9) | 52 | (0.6) | 23 | (1.0) | 25 | (1.0) | 90 | (0.7) | 78 | (0.5) | 9 | (0.6) | 13 | (0.7) |
| | Netherlands | 73 | (1.2) | 68 | (1.5) | 4 | (0.5) | 28 | (1.3) | 85 | (0.9) | 74 | (1.3) | 5 | (0.7) | 21 | (1.2) |
| | New Zealand[1] | 58 | (1.4) | 54 | (2.0) | 14 | (1.4) | 32 | (1.8) | 69 | (1.4) | 58 | (2.0) | 19 | (1.4) | 23 | (1.7) |
| | Norway | 63 | (1.4) | 63 | (1.5) | 4 | (0.7) | 33 | (1.4) | 79 | (1.1) | 72 | (1.3) | 6 | (0.7) | 23 | (1.1) |
| | Poland | 86 | (1.1) | 71 | (1.3) | c | c | 29 | (1.3) | 92 | (0.8) | 85 | (1.0) | c | c | 15 | (1.0) |
| | Slovak Republic | 87 | (1.1) | 83 | (1.1) | c | c | 17 | (1.1) | 93 | (0.7) | 87 | (1.1) | c | c | 13 | (1.1) |
| | Slovenia[1] | 81 | (1.2) | 73 | (1.0) | 11 | (0.7) | 16 | (0.9) | 91 | (0.8) | 85 | (0.8) | 9 | (0.6) | 6 | (0.6) |
| | Spain | 88 | (0.8) | 68 | (1.1) | 12 | (0.8) | 20 | (1.0) | 93 | (0.7) | 78 | (1.0) | 7 | (0.7) | 15 | (0.9) |
| | Sweden | 60 | (1.7) | 72 | (1.5) | 7 | (1.0) | 22 | (1.4) | 76 | (1.2) | 77 | (1.1) | 9 | (0.9) | 14 | (0.9) |
| | Turkey[1] | 96 | (0.5) | 88 | (0.7) | 4 | (0.5) | 8 | (0.6) | 99 | (0.3) | 92 | (0.9) | 3 | (0.6) | 5 | (0.6) |
| | United States | 60 | (1.7) | 73 | (1.5) | 8 | (1.1) | 19 | (1.2) | 70 | (1.3) | 71 | (1.4) | 8 | (1.1) | 21 | (1.2) |
| | **Economies** | | | | | | | | | | | | | | | | |
| | Flemish Com. (Belgium) | 69 | (1.2) | 65 | (1.6) | 23 | (1.2) | 12 | (1.1) | 85 | (0.9) | 69 | (1.3) | 21 | (1.1) | 10 | (0.9) |
| | England (UK) | 71 | (1.3) | 62 | (1.7) | 13 | (1.4) | 25 | (1.3) | 83 | (1.2) | 68 | (1.5) | 13 | (1.3) | 18 | (0.9) |
| | Northern Ireland (UK) | 83 | (1.1) | 69 | (1.6) | 10 | (1.1) | 20 | (1.3) | 93 | (0.9) | 76 | (1.5) | 10 | (1.3) | 14 | (0.8) |
| | **Average** | 75 | (0.2) | 69 | (0.3) | 12 | (0.2) | 20 | (0.2) | 85 | (0.2) | 75 | (0.2) | 11 | (0.2) | 14 | (0.2) |
| Partners | Lithuania[1] | 47 | (1.7) | 86 | (1.8) | 5 | (0.9) | 8 | (1.4) | 77 | (1.4) | 85 | (1.0) | 3 | (0.6) | 12 | (1.0) |
| | Russian Federation* | 69 | (2.5) | 38 | (2.5) | 32 | (1.5) | 30 | (2.5) | 81 | (2.9) | 41 | (2.1) | 36 | (2.0) | 23 | (1.6) |
| | Singapore[1] | 81 | (0.9) | 40 | (1.1) | 22 | (1.0) | 37 | (1.1) | 93 | (0.6) | 70 | (1.0) | 14 | (0.9) | 16 | (0.9) |

**Note:** Data on educational attainment are based on ISCED-97. See *Definitions* and *Methodology* sections for more information.

1. Reference year is 2015; for all other countries and economies the reference year is 2012.

* See note on data for the Russian Federation in the *Source* section.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

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## Table A4.2. Tertiary attainment among adults who have at least one parent who attained tertiary education, by type of programme and age group (2012 or 2015)

*Survey of Adult Skills (PIAAC), 30-59 year-old non-students*

**How to read this table:** In Austria, 19% of 30-44 year-old non-students have at least one parent who attained tertiary education. Of these non-students who have at least one parent who attained tertiary education, 57% have attained less than tertiary education themselves, 11% have attained a tertiary-type B degree and 32% have attained a tertiary-type A or an advanced research programme degree.

| | | 30-44 year-olds | | | | | | | | 45-59 year-olds | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Percentage of adults in this group | | Educational attainment of adults in this group | | | | | | Percentage of adults in this group | | Educational attainment of adults in this group | | | | | |
| | | | | Less than tertiary | | Tertiary-type B | | Tertiary-type A or advanced research programmes | | | | Less than tertiary | | Tertiary-type B | | Tertiary-type A or advanced research programmes | |
| | | % | S.E. | % | S.E. | % | S.E. | % | S.E. | % | S.E. | % | S.E. | % | S.E. | % | S.E. |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) |
| OECD | **Countries** | | | | | | | | | | | | | | | | |
| | Australia | 32 | (1.3) | 30 | (2.3) | 11 | (1.5) | 59 | (2.3) | 19 | (1.0) | 37 | (3.1) | 12 | (1.8) | 52 | (2.9) |
| | Austria | 19 | (1.1) | 57 | (2.8) | 11 | (1.8) | 32 | (2.6) | 15 | (1.0) | 55 | (3.3) | 15 | (2.0) | 30 | (3.1) |
| | Canada | 42 | (0.9) | 26 | (1.5) | 21 | (1.3) | 54 | (1.5) | 24 | (0.8) | 29 | (1.7) | 24 | (1.8) | 47 | (1.6) |
| | Chile[1] | 19 | (2.6) | 24 | (3.4) | 32 | (7.1) | 44 | (6.0) | 16 | (2.4) | 40 | (7.2) | 35 | (7.7) | 25 | (7.2) |
| | Czech Republic | 17 | (1.1) | 39 | (4.4) | 5 | (1.7) | 56 | (4.3) | 10 | (1.1) | 60 | (6.3) | c | c | 40 | (6.3) |
| | Denmark | 37 | (1.2) | 32 | (2.2) | 29 | (1.8) | 39 | (1.9) | 19 | (1.0) | 37 | (2.7) | 34 | (2.5) | 29 | (2.2) |
| | Estonia | 39 | (1.1) | 40 | (1.7) | 17 | (1.6) | 43 | (1.8) | 22 | (0.8) | 34 | (2.0) | 18 | (1.8) | 48 | (2.4) |
| | Finland | 22 | (1.2) | 33 | (3.1) | 11 | (1.7) | 57 | (3.4) | 9 | (0.7) | 33 | (3.5) | 16 | (3.0) | 51 | (4.1) |
| | France | 20 | (0.9) | 23 | (1.9) | 16 | (1.9) | 62 | (2.4) | 10 | (0.5) | 37 | (3.1) | 11 | (1.9) | 52 | (3.5) |
| | Germany | 35 | (1.5) | 40 | (2.2) | 20 | (1.7) | 40 | (2.2) | 29 | (1.1) | 40 | (2.2) | 18 | (2.1) | 42 | (2.3) |
| | Greece[1] | 13 | (1.0) | 32 | (3.9) | 11 | (2.4) | 57 | (4.2) | 7 | (0.7) | 42 | (5.7) | 8 | (3.1) | 50 | (6.0) |
| | Ireland | 22 | (1.0) | 25 | (2.1) | 20 | (1.9) | 55 | (2.3) | 10 | (0.7) | 39 | (3.7) | 22 | (2.8) | 39 | (3.2) |
| | Israel[1] | 43 | (1.3) | 21 | (1.8) | 15 | (1.5) | 64 | (1.9) | 28 | (1.5) | 20 | (2.6) | 21 | (2.9) | 60 | (3.2) |
| | Italy | 5 | (0.6) | 32 | (5.1) | c | c | 68 | (5.1) | 3 | (0.4) | 32 | (6.7) | c | c | 68 | (6.7) |
| | Japan | 36 | (1.4) | 25 | (1.8) | 29 | (1.9) | 45 | (2.2) | 21 | (1.2) | 25 | (2.5) | 24 | (2.7) | 51 | (2.5) |
| | Korea | 15 | (0.9) | 21 | (2.3) | 25 | (2.4) | 54 | (3.2) | 10 | (0.7) | 34 | (3.4) | 17 | (2.9) | 49 | (3.3) |
| | Netherlands | 27 | (1.2) | 38 | (2.6) | 3 | (1.0) | 58 | (2.6) | 15 | (0.9) | 36 | (3.4) | 6 | (1.4) | 58 | (3.5) |
| | New Zealand[1] | 42 | (1.4) | 29 | (2.2) | 13 | (1.7) | 58 | (2.7) | 31 | (1.4) | 33 | (3.1) | 19 | (2.1) | 48 | (2.7) |
| | Norway | 37 | (1.4) | 33 | (2.1) | 6 | (1.1) | 61 | (2.1) | 21 | (1.1) | 40 | (3.0) | 9 | (1.4) | 51 | (3.0) |
| | Poland | 14 | (1.1) | 21 | (2.9) | c | c | 79 | (2.9) | 8 | (0.8) | 39 | (5.5) | c | c | 61 | (5.5) |
| | Slovak Republic | 13 | (1.1) | 33 | (4.4) | c | c | 67 | (4.4) | 7 | (0.7) | 32 | (5.5) | c | c | 68 | (5.5) |
| | Slovenia[1] | 19 | (1.2) | 40 | (3.5) | 17 | (2.2) | 44 | (3.7) | 9 | (0.8) | 36 | (3.8) | 23 | (3.5) | 41 | (4.1) |
| | Spain | 12 | (0.8) | 27 | (3.0) | 9 | (2.0) | 63 | (3.4) | 7 | (0.7) | 27 | (4.4) | 6 | (1.8) | 67 | (4.3) |
| | Sweden | 40 | (1.7) | 44 | (1.9) | 10 | (1.3) | 46 | (2.0) | 24 | (1.2) | 52 | (2.7) | 13 | (1.9) | 35 | (2.8) |
| | Turkey[1] | 4 | (0.5) | 33 | (5.8) | 9 | (3.1) | 58 | (5.9) | 1 | (0.3) | c | c | c | c | c | c |
| | United States | 40 | (1.7) | 35 | (2.2) | 10 | (1.3) | 56 | (1.9) | 30 | (1.3) | 40 | (2.1) | 10 | (1.4) | 50 | (1.8) |
| | **Economies** | | | | | | | | | | | | | | | | |
| | Flemish Com. (Belgium) | 31 | (1.2) | 29 | (2.5) | 31 | (2.1) | 39 | (2.5) | 15 | (0.9) | 28 | (3.0) | 33 | (3.3) | 39 | (4.0) |
| | England (UK) | 29 | (1.3) | 22 | (2.4) | 14 | (2.1) | 64 | (2.6) | 17 | (1.2) | 34 | (3.5) | 14 | (2.9) | 52 | (3.2) |
| | Northern Ireland (UK) | 17 | (1.1) | 26 | (3.5) | 13 | (2.1) | 61 | (3.4) | 7 | (0.9) | 39 | (6.5) | 11 | (3.9) | 49 | (6.3) |
| | **Average** | 25 | (0.2) | 31 | (0.6) | 16 | (0.4) | 55 | (0.6) | 15 | (0.2) | 37 | (0.8) | 17 | (0.6) | 48 | (0.8) |
| Partners | Lithuania[1] | 53 | (1.7) | 49 | (2.2) | 8 | (1.3) | 44 | (1.9) | 23 | (1.4) | 54 | (3.4) | 5 | (1.5) | 41 | (3.3) |
| | Russian Federation* | 31 | (2.5) | 16 | (3.1) | 21 | (3.1) | 62 | (4.3) | 19 | (2.9) | 9 | (4.5) | 20 | (6.2) | 71 | (7.3) |
| | Singapore[1] | 19 | (0.9) | 7 | (1.5) | 12 | (1.8) | 81 | (2.4) | 7 | (0.6) | 15 | (3.4) | 15 | (3.5) | 70 | (4.5) |

**Note:** Data on educational attainment are based on ISCED-97. See *Definitions* and *Methodology* sections for more information.

1. Reference year is 2015; for all other countries and economies the reference year is 2012.

* See note on data for the Russian Federation in the *Source* section.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

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## Table A4.3. Changes in the likelihood of having a tertiary-type A or an advanced research programme degree, by gender, age group and parents' educational attainment (2012 or 2015)

*Survey of Adult Skills (PIAAC), 30-59 year-old non-students*

**How to read this table:** In Canada, 27% of 40-49 year-old women whose parents have upper secondary or post-secondary non-tertiary education are likely to have a tertiary-type A or an advanced research programme degree. Compared to this group, those whose parents have below upper secondary education are 8 percentage points less likely to have a tertiary-type A or an advanced research programme degree, while those who have at least one parent who attained tertiary education are 25 percentage points more likely to have a tertiary-type A or an advanced research programme degree.

| | | Reference category (women, 40-49 year-olds, parents with upper secondary or post-secondary non-tertiary education) | | Changes in the likelihood of having a tertiary-type A or an advanced research programme degree, dependent on: | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Gender | | Age group | | | | Parents' educational attainment | | | |
| | | | | Men | | 30-39 year-olds | | 50-59 year-olds | | Below upper secondary | | Tertiary | |
| | | % | S.E. | pp | S.E. | pp | S.E. | pp | S.E. | pp | S.E. | pp | S.E. |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
| OECD | **Countries** | | | | | | | | | | | | |
| | Australia | 28 | (2.1) | -4 | (1.8) | 4 | (2.0) | -2 | (2.0) | -9 | (1.9) | 29 | (2.6) |
| | Austria | 8 | (1.0) | 3 | (0.9) | 4 | (1.4) | -2 | (1.1) | -5 | (0.9) | 21 | (2.3) |
| | Canada | 27 | (1.4) | -1 | (1.1) | 1 | (1.7) | -4 | (1.3) | -8 | (1.3) | 25 | (1.4) |
| | Chile[1] | 10 | (1.9) | 1 | (1.7) | 5 | (2.3) | -1 | (1.9) | -9 | (1.2) | 23 | (6.4) |
| | Czech Republic | 10 | (1.9) | 2 | (1.1) | 4 | (2.4) | 3 | (2.1) | -12 | (1.0) | 37 | (3.8) |
| | Denmark | 12 | (1.3) | 1 | (1.3) | 7 | (1.8) | -2 | (1.2) | -2 | (1.3) | 21 | (2.0) |
| | Estonia | 29 | (1.6) | -8 | (1.5) | -5 | (1.7) | 4 | (1.5) | -16 | (1.5) | 21 | (1.7) |
| | Finland | 31 | (1.7) | -8 | (1.5) | 12 | (2.2) | -4 | (1.6) | -10 | (1.5) | 23 | (3.3) |
| | France | 19 | (1.1) | -3 | (1.2) | 4 | (1.3) | -3 | (1.3) | -7 | (1.1) | 40 | (2.3) |
| | Germany | 11 | (1.4) | 4 | (1.5) | 3 | (1.8) | 3 | (1.5) | -9 | (1.8) | 26 | (1.9) |
| | Greece[1] | 27 | (2.3) | 0 | (1.3) | -2 | (1.9) | -2 | (1.7) | -15 | (2.2) | 29 | (3.9) |
| | Ireland | 26 | (1.8) | -4 | (1.0) | 6 | (1.3) | -4 | (1.4) | -15 | (1.7) | 23 | (2.8) |
| | Israel[1] | 38 | (2.8) | -2 | (2.0) | -2 | (2.6) | -2 | (2.6) | -19 | (2.5) | 26 | (2.7) |
| | Italy | 31 | (1.9) | -5 | (1.1) | 4 | (1.4) | 0 | (1.1) | -23 | (1.7) | 37 | (4.9) |
| | Japan | 14 | (1.7) | 20 | (1.5) | -2 | (2.1) | 3 | (2.4) | -13 | (1.7) | 23 | (2.1) |
| | Korea | 26 | (2.1) | 11 | (1.3) | 5 | (1.7) | -7 | (1.5) | -16 | (1.7) | 20 | (3.1) |
| | Netherlands | 32 | (2.1) | 4 | (1.5) | 4 | (2.3) | 0 | (1.9) | -16 | (2.2) | 22 | (2.9) |
| | New Zealand[1] | 35 | (2.3) | -4 | (2.0) | 6 | (2.6) | -5 | (2.2) | -10 | (2.6) | 19 | (2.7) |
| | Norway | 38 | (1.8) | -9 | (1.9) | 5 | (2.0) | -4 | (2.2) | -14 | (1.8) | 22 | (2.1) |
| | Poland | 32 | (2.0) | -8 | (1.8) | 7 | (2.4) | -5 | (2.0) | -18 | (1.4) | 42 | (2.9) |
| | Slovak Republic | 23 | (1.5) | -3 | (1.3) | -1 | (1.8) | -2 | (1.6) | -14 | (1.4) | 47 | (3.7) |
| | Slovenia[1] | 21 | (1.3) | -8 | (1.3) | 4 | (1.9) | -4 | (1.2) | -12 | (1.0) | 25 | (3.3) |
| | Spain | 41 | (2.7) | -6 | (1.3) | 0 | (1.7) | -3 | (1.6) | -22 | (2.5) | 27 | (3.5) |
| | Sweden | 28 | (2.2) | -10 | (1.4) | 7 | (2.2) | -4 | (1.7) | -9 | (2.0) | 17 | (2.6) |
| | Turkey[1] | 23 | (3.8) | 5 | (1.0) | 4 | (1.2) | 0 | (1.0) | -22 | (3.9) | 31 | (6.4) |
| | United States | 26 | (1.6) | -2 | (1.5) | -1 | (1.5) | 0 | (1.7) | -17 | (2.0) | 28 | (2.2) |
| | **Economies** | | | | | | | | | | | | |
| | Flemish Com. (Belgium) | 15 | (1.9) | 4 | (1.4) | 0 | (2.1) | -1 | (1.6) | -10 | (1.5) | 22 | (2.5) |
| | England (UK) | 27 | (1.9) | 2 | (1.8) | 3 | (2.4) | -5 | (2.1) | -13 | (1.9) | 31 | (2.8) |
| | Northern Ireland (UK) | 21 | (2.3) | 2 | (2.0) | 6 | (2.4) | -1 | (2.2) | -12 | (2.3) | 33 | (3.8) |
| | **Average** | 25 | (0.4) | -1 | (0.3) | 3 | (0.4) | -2 | (0.3) | -13 | (0.3) | 27 | (0.6) |
| Partners | Lithuania[1] | 16 | (2.0) | -9 | (1.7) | 3 | (2.1) | 6 | (1.9) | -6 | (2.0) | 29 | (2.2) |
| | Russian Federation* | 36 | (1.9) | -4 | (2.6) | -2 | (3.8) | -3 | (3.0) | -15 | (2.5) | 33 | (4.1) |
| | Singapore[1] | 36 | (2.3) | 7 | (1.4) | 9 | (2.0) | -13 | (1.9) | -16 | (2.2) | 36 | (2.9) |

**Note:** The reference categories are upper secondary or post-secondary non-tertiary education for parents' educational attainment, women for gender and 40-49 year-olds for age group. The data presented in this table are based on an ordinary least square regression. Data on educational attainment are based on ISCED-97. See *Definitions* and *Methodology* sections for more information.

1. Reference year is 2015; for all other countries and economies the reference year is 2012.

* See note on data for the Russian Federation in the *Source* section.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

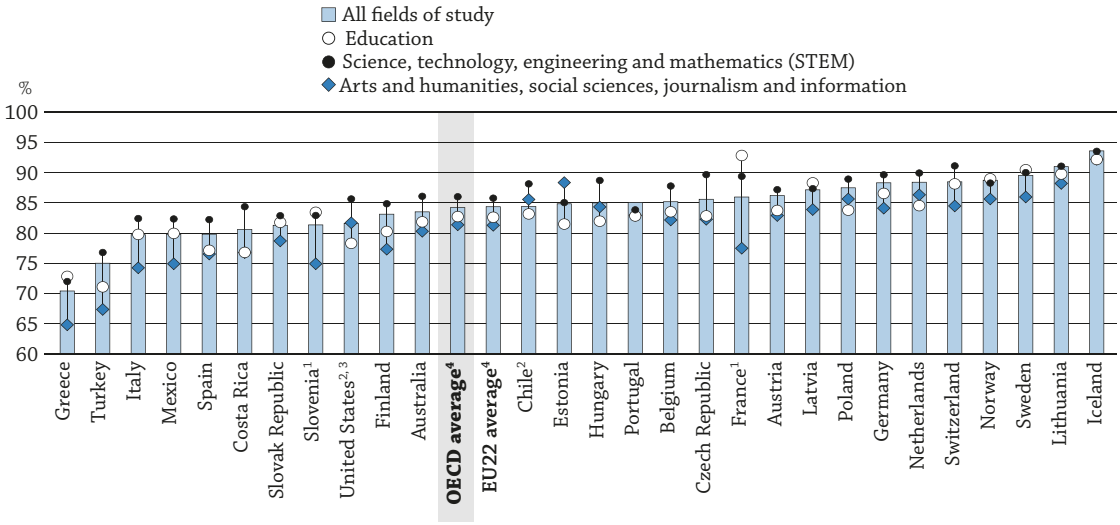
*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

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# HOW DOES EDUCATIONAL ATTAINMENT AFFECT PARTICIPATION IN THE LABOUR MARKET?

- On average across OECD countries, 84% of tertiary-educated adults are employed. However this varies by field of study: the employment rate is 81% for arts and humanities, social sciences, journalism and information graduates; and 88% for information and communication technology (ICT) graduates.
- In all OECD and partner countries, employment prospects improve for adults who have gone beyond compulsory education. On average across OECD countries, employment rates are around 20 percentage points higher for adults with upper secondary or post-secondary non-tertiary education than for those who have not completed upper secondary education. The employment rate for tertiary-educated adults is about 10 percentage points higher on average than for adults with upper secondary or post-secondary non-tertiary education.
- In some OECD and partner countries, younger adults (25-34 year-olds) who did not complete upper secondary education have missed out on the post-crisis economic recovery; for this group, employment rates in 2016 were still below those in 2005. For example, in Finland, France, Greece, Ireland, Italy and Spain, employment rates for this group were more than 10 percentage points lower in 2016 than they were in 2005.

## Figure A5.1. Employment rates of tertiary-educated 25-64 year-olds, by field of study (2016)




**Note**: Science, technology, engineering and mathematics (STEM) comprise the ISCED-F 2013 fields of natural sciences, mathematics and statistics, information and communication technologies, and engineering, manufacturing and construction.

1. The age group refers to 25-34 year-olds.
2. Year of reference 2015.
3. Data refer to bachelor's degree field, even for those with additional tertiary degrees.
4. The OECD and EU22 averages exclude France and Slovenia.

*Countries are ranked in ascending order for all fields of study.*

**Source**: OECD (2017), Table A5.3. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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## Context

The economies of OECD countries depend upon a supply of highly skilled workers. Expanded education opportunities have increased the pool of skilled people across countries and those with high qualifications are more likely to be employed. On the other hand, while employment opportunities still exist for those with lower qualifications, their labour market prospects are relatively challenging. People with the lowest educational qualifications are at greater risk of being unemployed, and their earnings are lower (see Indicator A6). These disparities in labour market outcomes can exacerbate inequalities in society.

Education systems face challenges in responding to changing demands for skills in the labour market. Given the technological advances that have been transforming the needs of the global labour market, employment prospects are better among those with higher skills, particularly in ICT, and those who are comfortable with using ICT for problem solving. Such skills may be acquired outside of formal education and in some cases can help people find jobs despite lower educational attainment (Lane and Conlon, 2016).

## Other findings

- On average across OECD countries, 17% of younger adults (25-34 year-olds) who have not completed upper secondary education are unemployed. Their unemployment risk is almost double the risk of those with higher educational qualifications, which is 9% on average for younger adults with upper secondary and post-secondary non-tertiary education, and 7% for tertiary-educated younger adults.
- In the 16 OECD and partner countries with subnational data on labour force status, employment rates tend to vary more across regions for those with lower levels of education than for those with higher levels of education.

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## Analysis

### Educational attainment and employment

Higher educational attainment increases the likelihood of being employed. On average across OECD countries, the employment rate is about 85% for tertiary-educated adults (25-64 year-olds), 75% for adults with an upper secondary or post-secondary non-tertiary qualification, and less than 60% for adults who have not completed upper secondary education.

Adults who have not completed upper secondary education only enjoy high employment rates (between 70% and 80%) in a few countries: Colombia, Iceland, Indonesia and New Zealand. In all other countries these adults are penalised in the labour market. Less than half are employed in Belgium, the Czech Republic, Greece, Ireland, Israel, Lithuania, Poland, the Slovak Republic, Slovenia and South Africa (Table A5.1).

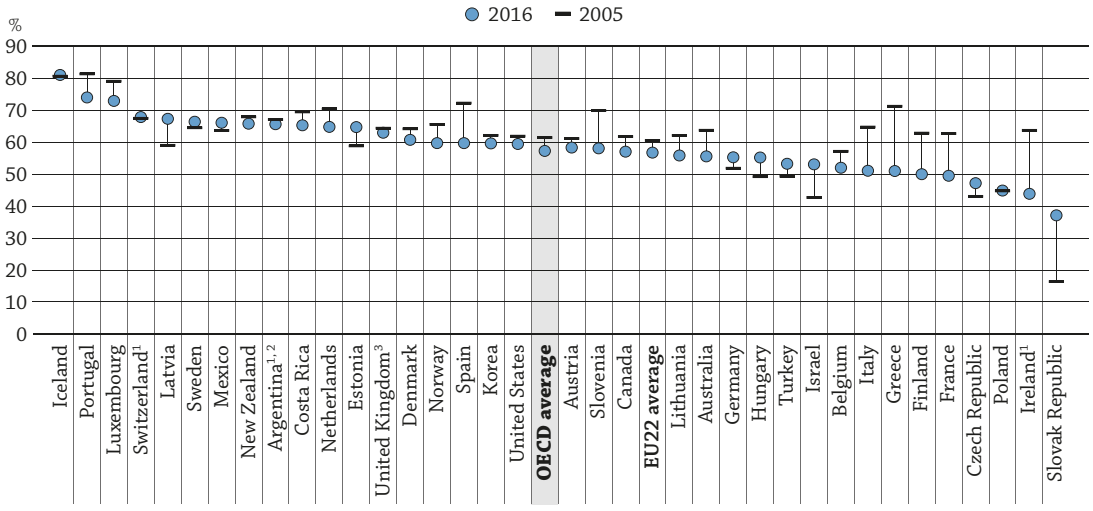
In all OECD and partner countries, employment prospects increase for adults who have completed upper secondary or post-secondary education. On average across OECD countries, the employment rates increase by around 20 percentage points for these adults. In Belgium, the Czech Republic, Poland and the Slovak Republic, their employment rates are more than 25 percentage points higher than those who have not completed upper secondary education.

On average across OECD countries, getting a tertiary education improves employment rates by a further 9 percentage points. In Latvia, Lithuania, Luxembourg, Poland and South Africa, the increase in employment rates for tertiary-educated adults is at least 15 percentage points higher than for adults with upper secondary or post-secondary non-tertiary qualifications (Table A5.1).

### Trends in employment rates for younger adults by education attainment level

Since the Great Recession in the late 2000s and early 2010s, in most OECD and partner countries employment rates for younger adults (25-34 year-olds) have returned to the level they were a decade earlier. On average across OECD countries, regardless of educational attainment, about 77% of younger adults were employed in 2005, which is similar to 2016 levels. However, in Greece, Ireland, Italy, Slovenia and Spain, employment rates for this group in 2016 are still more than 5 percentage points below those in 2005 (Education at a Glance Database).

**Figure A5.2. Trends in employment rates of 25-34 year-olds with below upper secondary education (2005 and 2016)**




1. Year of reference differs from 2016. Refer to the source table for more details.

2. Data should be used with caution. See *Methodology* section for more information.

3. Data for upper secondary attainment include completion of a sufficient volume and standard of programmes that would be classified individually as completion of intermediate upper secondary programmes (16% of the adults aged 25-64 are in this group).

*Countries are ranked in descending order of the percentage of the 25-34 year-old employed population with below upper secondary education in 2016.*

**Source**: OECD / ILO (2017), Table A5.2. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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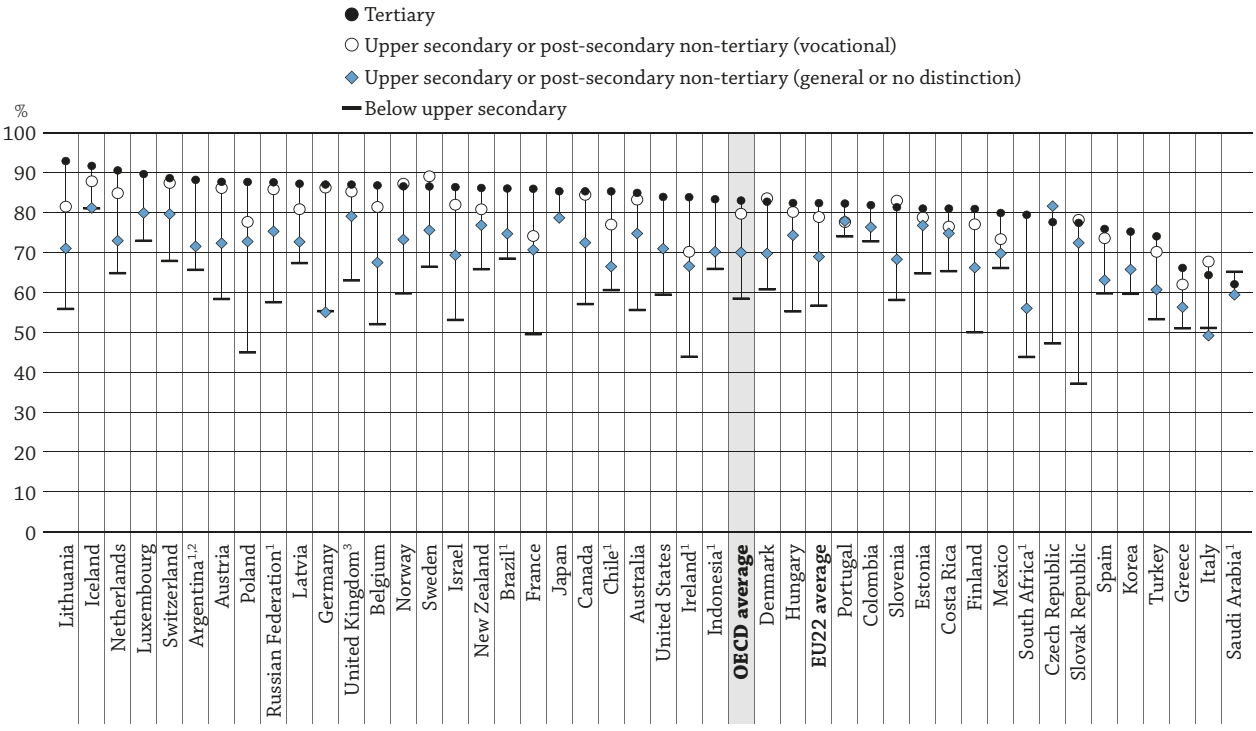
Figure A5.2 shows that in some OECD and partner countries this situation is even worse for younger adults who have not completed upper secondary education. In Finland, France, Greece, Ireland, Italy, Slovenia and Spain, employment rates for younger adults (25-34 year-olds) who have not completed upper secondary education are still at least 10 percentage points lower in 2016 than in 2005. In Greece, for example, the employment rate for these adults fell from 71% in 2005 to 51% in 2016. However, in all of these countries, the 2016 employment rates for more highly educated adults, i.e. those with an upper secondary education or above, are similar to the pre-crisis rates. In France, for example, while employment rates among younger adults who have not completed upper secondary education are 13 percentage points lower in 2016 than they were in 2005, employment rates among tertiary-educated adults are the same as in 2005 (Figure A5.2 and Table A5.2).

It should be noted that between 2005 and 2016, the overall share of younger adults (25-34 year-olds) who have not completed upper secondary education has decreased in all of these countries with the exceptions of Finland and Spain, where the share has remained stable (see Table A1.2).

### *Links between employment rates and vocational versus general upper secondary or post-secondary non-tertiary education for younger adults*

Vocational programmes in upper secondary or post-secondary non-tertiary education are often designed to prepare people for direct entry into the labour force. On average across OECD countries, younger adults (25-34 year-olds) who have completed vocational programmes as their highest educational attainment have higher employment rates than those with a general qualification (80% and 70% respectively) (Figure A5.3).

## Figure A5.3. Employment rates of 25-34 year-olds, by educational attainment and programme orientation (2016)




**Note**: The label upper secondary or post-secondary non-tertiary (general or no distinction) refers to "general" for countries with a value for "vocational" and to "no distinction" for the others.

1. Year of reference differs from 2016. Refer to the Table A5.1 for more details.

2. Data should be used with caution. See *Methodology* section for more information.

3. Data for upper secondary attainment include completion of a sufficient volume and standard of programmes that would be classified individually as completion of intermediate upper secondary programmes (16% of the adults aged 25-64 are in this group).

*Countries are ranked in descending order of the employment rate of tertiary-educated 25-34 year-olds.*

**Source**: OECD/ILO (2017), Education at a Glance Database, http://stats.oecd.org/. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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Figure A5.3 shows that, for younger adults in most countries, the higher their educational attainment the higher their employment rates. However, in Australia, Austria, Canada, Denmark, Estonia, Germany, Hungary, Norway, the Slovak Republic, Slovenia, Spain and Switzerland, employment rates of younger adults with an upper secondary or post-secondary non-tertiary vocational qualification are almost as high as for tertiary graduates. Many of these countries have vocational programmes with a strong and integrated work-based learning component. In Austria, Germany and Switzerland, a majority of vocational graduates participate in combined school- and work-based programmes in which students are paid for at least part of their work periods (work-study programmes). In these countries, graduates from work-study programmes have much better labour market outcomes than those from school-based programmes (Figure A5.3 and Box A5.1).

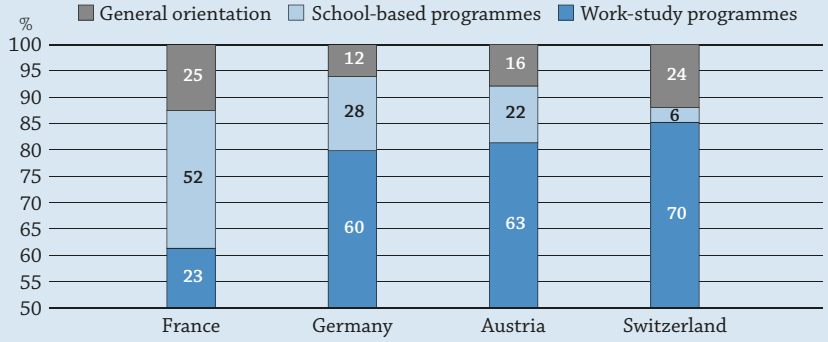
The difference in employment rates between adults graduating from vocational and general programmes is largest in Germany (31 percentage points), Italy and Slovenia (at least 15 percentage points). Younger adults (25-34 year-olds) with a general education at the upper secondary or post-secondary non-tertiary level have just as low employment rates as those without an upper secondary education. In Germany, 55% of younger adults with a general degree at the upper secondary or post-secondary non-tertiary level are employed, which is the same as for those without any upper secondary education. However, the group of adults who only have an upper secondary general qualification is small since most such adults pursue further education and do not enter the labour market at this stage (Figure A5.3 and see Table A1.1).

### Box A5.1 Labour market outcomes for adults with a work-study qualification

The literature indicates that vocational education and training (VET) improves the school-to-work transition for young people; many countries are increasingly interested in further developing their education system in this direction (e.g. OECD, 2015). One type of VET is work-study programmes, which combine interrelated formal study and work periods for which the student/trainee receives earnings. Since the students/trainees are paid for their work, employers are encouraged to not only support them in acquiring the practical knowledge required for their future occupation, but also to give them the skills to contribute better to the productive output of the firm. Despite their growing relevance in public policy discourse, internationally comparable indicators fail to highlight the outcomes of such work-study qualifications or even to measure the prevalence of such programmes.

A survey conducted by the OECD in 2016 aimed to fill this gap by measuring the labour market outcomes of adults educated through work-study programmes. The survey covered countries with a significant share of work-study programmes: Austria, France, Germany and Switzerland. It found that a large share of the population in these four countries is educated to only upper secondary or post-secondary non-tertiary level; at least 75% of the 25-34 year-old group had studied in vocational programmes (Figure A5.a). In Austria, Germany and Switzerland over 70% of younger adults with a vocational education have a work-study qualification.

**Figure A5.a. Percentage of 25-34 year-olds with upper secondary or post-secondary non-tertiary education, by programme orientation and type of vocational programmes (2015)**




*Countries are ranked in ascending order by work-study programmes.*

**Source**: OECD (2017), Table A5.b, available on line. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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In contrast, in France the majority of younger adults with a vocational qualification have completed a school-based programme. In all four countries, the percentage of 25-34 year-old men with work-study qualifications is higher than for women (Table A5.b, available on line).

**Labour market outcomes for younger adults**

The study found that in all four countries, younger adults with a work-study qualification have higher employment rates and lower inactivity rates than those with a general qualification. For example in Austria, the differences in employment rates are 85% versus 71%, 6.5% versus 7.7% for unemployment rates and 9% versus 23% respectively for inactivity rates. However, some of the inactive adults are still pursuing further education at the tertiary level which explains their higher inactivity rate (Table A5.a).

Comparing labour market outcomes for adults with work-study qualifications and those with other forms of vocational qualifications reveals mixed results and cross-country variation. For example, in Austria and Germany, employment rates for 25-34 year-olds with work-study qualifications are similar to those with other vocational qualifications (each about 85%). In France and Switzerland, employment rates are higher for adults with a work-study qualification than adults with other vocational qualifications (81% and 71% respectively in France; and 89% and 84% respectively in Switzerland). In these two countries unemployment rates are lower for younger adults with work-study qualifications than for those with other forms of vocational qualifications. But in Austria and Germany the opposite is the case (Table A5.a).

**Table A5.a. Labour market status for 25-34 year-olds with upper secondary or post-secondary non-tertiary education, by programme orientation and type of vocational programme (2015)**

| | | Employment rate | | | Unemployment rate | | | Inactivity rate | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Vocational orientation | | | Vocational orientation | | | Vocational orientation | | |
| | | Work-study programme | School-based programme | General orientation | Work-study programme | School-based programme | General orientation | Work-study programme | School-based programme | General orientation |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| OECD | Austria | 85 | 87 | 71 | 6 | 4 | 8 | 9 | 10 | 23 |
| | France | 81 | 71 | 73 | 11 | 16 | 11 | 9 | 16 | 18 |
| | Germany | 86 | 85 | 54 | 5 | 3 | 6 | 9 | 12 | 43 |
| | Switzerland | 89 | 84 | 80 | 4 | 8 | 4 | 8 | 8 | 17 |

**Source**: OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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Analysing the lifetime impact of vocational education is particularly important. Some studies have found that gains in youth employment due to vocational education could be offset by less adaptability and diminished employment later in life, due to narrower job specialisation which risks becoming obsolete over time, and less ability to adapt to new technology (Hanushek, Schwerdt and Woessmann, 2011; Forster, Bol and Werfhorst, 2016).

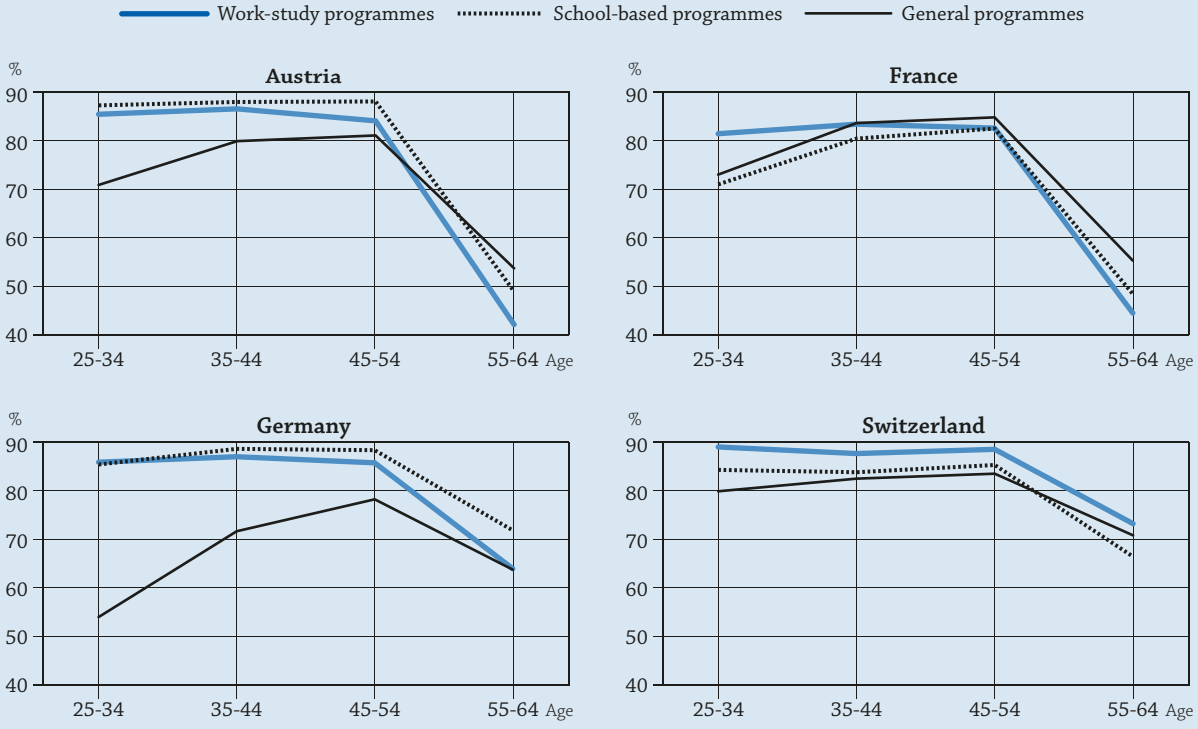
Differences in pension systems have an impact on the employment rates of older adults (55-64 year-olds) with work-study qualifications. In countries where similar career durations allow employees to receive retirement pensions, the earlier they enter the labour market, the earlier they retire. Data confirm that in the four countries, the employment rates of younger adults are higher for those with work-study qualifications than for those with general qualifications, but that the difference in employment rates between the two becomes smaller as the work force ages (Figure A5.b).

In the four countries, the employment rate for 25-64 year-old men with work-study qualifications is higher than for similarly educated women (Table A5.b, available on line).

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**Figure A5.b. Employment rates of adults with upper secondary or post-secondary non-tertiary education, by age, programme orientation and type of vocational programmes (2015)**




*Countries are shown in alphabetical order.*

**Source**: OECD (2017), Table A5.b, available on line. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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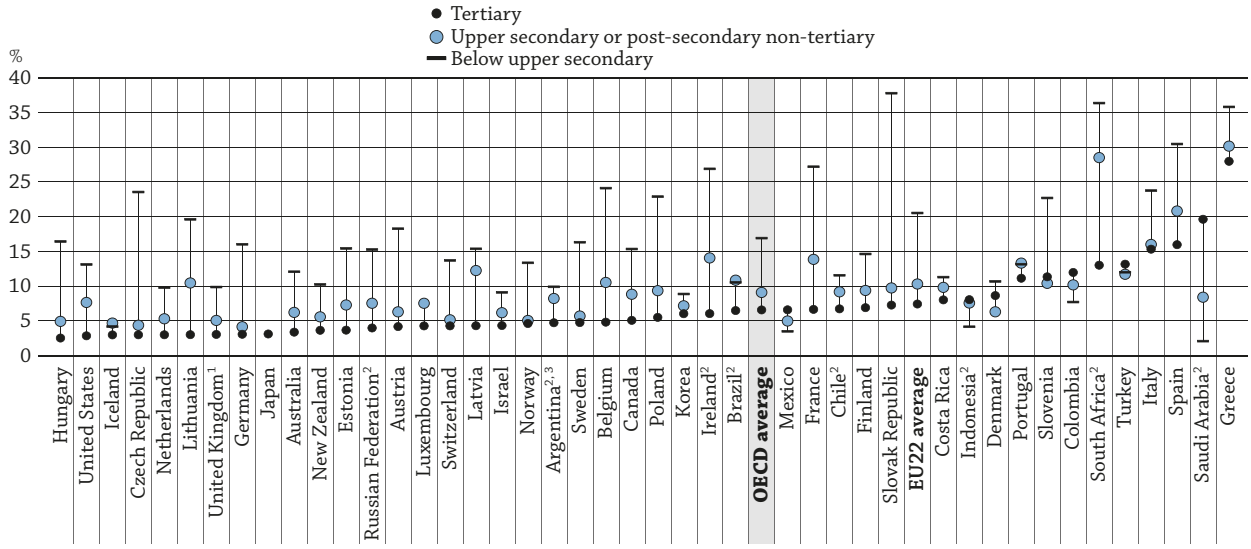
### *Links between unemployment rates and educational attainment for younger adults*

In many OECD and partner countries, unemployment rates are especially high among younger adults (25-34 year-olds). On average across OECD countries, the risk of unemployment is almost twice as high for those who have not completed upper secondary education compared to those with higher qualifications: 17% compared to 9% for those with upper secondary or post-secondary non-tertiary education and 7% for tertiary-educated younger adults (Figure A5.4 and Table A5.4).

As Figure A5.4 shows, in most countries the situation is especially severe for younger adults who have not completed upper secondary education. The unemployment rates for this group are 30% or more in Greece, the Slovak Republic, South Africa and Spain. In Belgium, the Czech Republic, France, Ireland and Italy about one-quarter of these younger adults are unemployed (Figure A5.4).

Figure A5.4 also shows that having attained upper secondary education or above reduces the risk of unemployment. The positive impact of further education on the risk of unemployment is especially high in Austria, the Czech Republic, Germany, Hungary, Norway, the Slovak Republic, Sweden and Switzerland. In all these countries the unemployment rate for younger adults with an upper secondary or post-secondary non-tertiary education is about one-third of the unemployment rate for those with a lower educational attainment level. While in many countries unemployment rates improve only slightly when continuing education beyond upper secondary or post-secondary non-tertiary education, the positive effect on the unemployment rates of having a tertiary degree is especially high in Belgium, France, Ireland, Latvia, Lithuania, South Africa and the United States. In all these countries, unemployment rates among tertiary-educated adults are less than half the rates for those with an upper secondary or post-secondary non-tertiary education (Figure A5.4).

## Figure A5.4. Unemployment rates of 25-34 year-olds, by educational attainment (2016)




1. Data for upper secondary attainment include completion of a sufficient volume and standard of programmes that would be classified individually as completion of intermediate upper secondary programmes (16% of the adults aged 25-64 are in this group).

2. Year of reference differs from 2016. Refer to the Table A5.1 for more details.

3. Data should be used with caution. See *Methodology* section for more information.

*Countries are ranked in ascending order of the unemployment rate of tertiary-educated 25-34 year-olds.*

**Source**: OECD / ILO (2017), Education at a Glance Database, http://stats.oecd.org/. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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In Iceland, Korea, Mexico, Portugal and Turkey, unemployment rates are similar across educational attainment levels. In Saudi Arabia, the relationship between unemployment rates and educational attainment levels is reversed: 20% of tertiary-educated adults are unemployed, compared to only 2% of those who have not completed upper secondary education (Figure A5.4).

### Inactivity rates by educational attainment for younger adults

The percentage of inactive people (i.e. not seeking employment) is higher among those with lower educational attainment. On average across OECD countries, 11% of tertiary-educated adults aged 25-34 are inactive. This compares to 16% for adults with upper secondary or post-secondary non-tertiary education and 30% (almost double) for younger adults who have not completed upper secondary education. In Ireland, Israel, Poland, Turkey and the Slovak Republic the percentage of inactive younger adults among those who left school with only secondary education is about 40%. The highest inactivity rates among tertiary-educated adults (20% or more) can be observed in the Czech Republic, Italy, Saudi Arabia and Korea (Table A5.4).

Various factors contribute to being inactive. For a small percentage of younger adults the reason for inactivity is that they will soon re-enter education. On average across OECD countries among 25-29 year-olds, one-third of inactive adults are still in education. Among the younger adults not in education, the main reasons for inactivity among women are childcare responsibilities, while health and other factors are more prevalent among men (OECD, 2016).

Women have consistently higher inactivity rates than men across all educational attainment levels, but are especially high among younger adults who have not completed upper secondary education. On average across OECD countries, almost half (45%) of less-educated women are inactive, compared to less than one-fifth of men (18%). The gender gap in inactivity rates is highest in Mexico (55% and 5% respectively), Saudi Arabia (75% and 4% respectively) and Turkey (69% and 6% respectively). Portugal is the only country where the gender gap in inactivity rates has been almost completely closed: among less-educated adults the inactivity rates are 18% for women and 13% for men. Portugal's gender gap at higher educational attainment levels is close to zero (Education at a Glance Database).

### Employment rates of tertiary-educated adults by field of study

While employment rates are highest for tertiary-educated adults across OECD countries, rates vary by field of study. On average across OECD countries, the overall employment rate of tertiary-educated adults (25-64 year-olds) is 84%.

However, it is lowest for graduates of arts and humanities, social sciences, journalism and information (81%); and highest for information and communication technology graduates (88%). The differences between these two fields of studies are largest in Costa Rica (14 percentage points), France (13 percentage points), Portugal (11 percentage points) and the Slovak Republic (12 percentage points), while in Estonia employment rates are similar for these two fields of study (less than 1 percentage-point difference) (Table A5.3).

The STEM fields (science, technology, engineering and mathematics) – which encompass natural sciences, mathematics and statistics; information and communication technologies; and engineering, manufacturing and construction – are seen as especially important for fostering innovation and economic growth. On average across OECD countries employment rates for STEM fields graduates are 86%, ranging from 90% or higher in the Czech Republic, Germany, Iceland, Lithuania, the Netherlands, Sweden and Switzerland to below 80% in Greece and Turkey. Tertiary-educated adults with a degree in STEM benefit from higher employment rates than their peers with a qualification in arts and humanities, social sciences, journalism and information across all OECD countries except Estonia (three percentage-point difference) (Figure A5.1).

Labour market prospects, expected salaries and the general reputation of teachers are a few of the factors influencing young people's selection of field of study. Across OECD countries, the average employment rate for 25-64 year-olds is 83% among education graduates, compared to 87% for engineering, manufacturing and construction graduates. The inactivity rates in these two fields of study are very different: 14% for education graduates compared to 9% for graduates in engineering, manufacturing and construction. This difference reflects the gender bias as higher inactivity rates are more likely to occur in fields with a higher share of women: for example, 19% of women and 6% of men have a degree in education, while 28% of men and 6% of women have a degree in engineering, manufacturing and construction (Table A5.3 and Education at a Glance Database).

### *Subnational variations in labour market outcomes*

Across the 16 OECD and partner countries with subnational data on the labour force status, on average the employment rates tend to vary more across regions among those with lower levels of education than for those with higher levels of education. For example, in the United States, among adults who have not completed upper secondary education, the employment rate ranges from 31% to 66% between states; while the employment rate for adults with upper secondary education ranges from 61% to 78% between states (OECD/NCES, 2017).

The ratio of the highest to lowest employment rates for adults without upper secondary within countries is 1.5 or above in 8 out of 16 countries while the respective ratios for adults with a bachelor's, master's or equivalent degree in most countries is approximately 1.1 with only 3 countries displaying a ratio higher or equal to 1.5.

In many countries, employment rates in the region including the capital city are above the country average regardless of the educational attainment level. In Spain, for example, the employment rate for adults who have not completed upper secondary education in the capital city region is 59%, higher than the country average of 54%. This is also the case for most other educational attainment levels. In contrast, in Germany employment rates in the capital region are below the country average regardless of educational attainment level (OECD/NCES, 2017).

### Box A5.2 Relative employment advantage by educational attainment

This textbox presents new analysis to assess the labour market demand for education across countries. The main added value of this analysis is that the results are not affected by specific country employment and unemployment rates. Instead they reflect the share of people employed with a specific level of educational attainment over the share of people unemployed with the same level of educational attainment. To better illustrate the advantages of this calculation we can take the example of a country where the unemployment rate is very high. In this case, the unemployment rates by level of education would show that the unemployment rates are higher than average for each level of educational attainment, but it would not give the reader the opportunity to see if, for a given level of educational attainment, adults are more likely to be over-represented among the employed or the unemployed population.

The formula for this index is the following:

$$Index = \frac{\frac{number\ of\ employed\ persons\ with\ an\ educational\ attainment\ "a"}{number\ of\ employed\ persons\ regardless\ of\ their\ educational\ attainment}}{\frac{number\ of\ unemployed\ persons\ with\ an\ educational\ attainment\ "a"}{number\ of\ unemployed\ persons\ regardless\ of\ their\ educational\ attainment}}$$

...

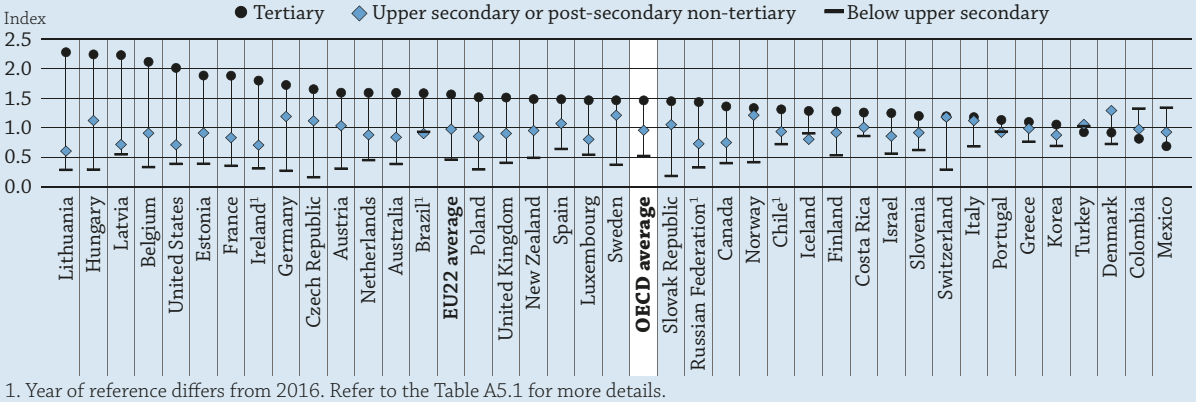
If the index is equal to one, it means that the share of employed individuals with a given level of educational attainment is equal to their respective share among the unemployed population. It also means that the unemployment rate for this given level of educational attainment is equal to the unemployment rate, regardless of the educational attainment level. An index of less than one would imply that the share of employed individuals with a given level of educational attainment is lower than their respective share among the unemployed population. The opposite could be inferred for an index greater than one.

Figure A5.c shows that on average across the OECD, the index for 25-34 year-olds with below upper secondary education is 0.5, 1.0 for those with upper secondary or post-secondary non-tertiary education, and 1.5 among the tertiary-educated. This means that on average across the OECD, the share of younger adults with below upper secondary education among the younger employed adults is half their respective share among the unemployed younger adults. For younger adults with upper secondary or post-secondary non-tertiary education their share among the employed and unemployed population is equal, and for tertiary-educated younger adults their share among the employed population is 50% higher than their respective share in the unemployed population. In 35 out of the 39 countries with available data, the relative employment advantage of tertiary-educated 25-34 year-olds is greater than for less-educated people of this age group. In addition, in Denmark, tertiary-educated young adults have a lower relative employment advantage than those with upper secondary education, but higher than for those with below upper secondary among the employed population than among the unemployed population (index above 1). For 25-34 year-olds with upper secondary or post-secondary non-tertiary education, the index is above 1 in 11 countries, while for those with below upper secondary education the index is only above 1 in Colombia and Mexico. In Colombia and Mexico, the index for younger adults with a tertiary education is lower than the index for those with below upper secondary education. This means that in these two countries, those who complete tertiary education are more likely to be over-represented among the unemployed population than those with below upper secondary education. This is also true in Turkey, but in this country the result is close to 1 across all attainment levels (Figure A5.c).

The highest index for younger tertiary-educated adults is observed in Belgium, Hungary, Latvia, Lithuania and the United States, where it is equal to or above 2. This means that the share of younger tertiary-educated people in the younger employed population is at least twice as large as their respective share in the unemployed population. It is also in these five countries where the largest differences in the index are observed (a 1.6 point difference or more) between younger adults with below upper secondary education and those with tertiary education (Figure A5.c).

Among countries with data, the Czech Republic and the Slovak Republic have the lowest index for younger adults with below upper secondary education. In these two countries, the index is as low as 0.2, meaning that the share of younger adults with below upper secondary education in the younger employed population is at least five times lower than their respective share in the unemployed population (Figure A5.c).

**Figure A5.c. Relative employment advantage of 25-34 year-olds, by educational attainment (2016)**




1. Year of reference differs from 2016. Refer to the Table A5.1 for more details.

*Countries are ranked in descending order for tertiary-educated 25-34 year-olds.*

**Source**: OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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## Definitions

**Active population (labour force)** is the total number of employed and unemployed persons, in accordance with the definition in the Labour Force Survey.

**Age groups: Adults** refer to 25-64 year-olds; **younger adults** refer to 25-34 year-olds; and **older adults** refer to 55-64 year-olds.

**Educational attainment** refers to the highest level of education attained by a person.

**Employed individuals** are those who, during the survey reference week: i) were working for pay or profit for at least one hour; or ii) had a job but were temporarily not at work. The **employment rate** refers to the number of persons in employment as a percentage of the working-age population.

**Inactive individuals** are those who were, during the survey's reference week, neither employed nor unemployed (i.e. individuals who are not looking for a job). The **inactivity rate** refers to inactive persons as a percentage of the population (i.e. the number of inactive people is divided by the number of all working-age people).

**Levels of education:** See the *Reader's Guide* at the beginning of this publication for a presentation of all ISCED 2011 levels.

**Unemployed individuals** are those who were, during the survey reference week, without work, actively seeking employment, and currently available to start work. The **unemployment rate** refers to unemployed persons as a percentage of the labour force (i.e. the number of unemployed people is divided by the sum of employed and unemployed people).

The **working-age population** is the total population aged 25 to 64.

## Methodology

For information on methodology, see Indicator A1.

Please see the *OECD Handbook for Internationally Comparative Education Statistics: Concepts, Standards, Definitions and Classifications* (OECD, 2017) for more information and Annex 3 for country-specific notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

## Source

For information on the sources, see Indicator A1.

Data on subnational regions for selected indicators have been released by the OECD, with the support from the US National Centre for Education Statistics (NCES), and are currently available for 16 countries: Belgium, Brazil, Canada, Colombia, Finland, Germany, Greece, Ireland, Italy, Poland, Slovenia, Spain, Sweden, the Russian Federation, Turkey and the United States. Subnational estimates were provided by countries using national data sources or by Eurostat based on data for Level 2 of the Nomenclature of Territorial Units for Statistics (NUTS 2).

**Note regarding data from Israel**

The statistical data for Israel are supplied by and are under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

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## Indicator A5 Tables

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| | | |
|---|---|---|
| | Table A5.1 | Employment rates of 25-64 year-olds, by educational attainment (2016) |
| | Table A5.2 | Trends in employment rates of 25-34 year-olds, by educational attainment (2000, 2005, 2010, 2015 and 2016) |
| | Table A5.3 | Employment rates of tertiary-educated 25-64 year-olds, by field of study (2016) |
| | Table A5.4 | Employment, unemployment and inactivity rates of 25-34 year-olds, by educational attainment (2016) |
| | Table A5.a | Labour market status for 25-34 year-olds with upper secondary or post-secondary non-tertiary education, by programme orientation and type of vocational programmes (2015) |
| WEB | Table A5.b | Labour market status or educational attainment, by age, gender, programme orientation, type of vocational programmes and labour market status or educational attainment (2015) |

Cut-off date for the data: 19 July 2017. Any updates on data can be found on line at http://dx.doi.org/10.1787/eag-data-en. More breakdowns can also be found at http://stats.oecd.org/, Education at a Glance Database.

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## Table A5.1. Employment rates of 25-64 year-olds, by educational attainment (2016)

*Percentage of employed 25-64 year-olds among all 25-64 year-olds*

| | | Below upper secondary | Upper secondary or post-secondary non-tertiary | | | Tertiary | | | | | All levels of education |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Upper secondary | Post-secondary non-tertiary | Total | Short-cycle tertiary | Bachelor's or equivalent | Master's or equivalent | Doctoral or equivalent | Total | |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
| OECD | Australia | 58 | 78 | 82 | 78 | 81 | 84 | 84 | 90 | 84 | 76 |
| | Austria | 54 | 76 | 81 | 76 | 86 | 77 | 89 | 92 | 86 | 76 |
| | Belgium | 46 | 72 | 85 | 73 | 68 | 84 | 87 | 92 | 85 | 71 |
| | Canada | 55 | 71 | 79 | 74 | 80 | 83 | 84[d] | x(7) | 82 | 76 |
| | Chile[1] | 62 | 72 | a | 72 | 80 | 86 | 95[d] | x(7) | 84 | 71 |
| | Czech Republic | 45 | 81[d] | x(2) | 81 | 84 | 80 | 87 | 94 | 86 | 80 |
| | Denmark | 63 | 81 | 93 | 81 | 87 | 83 | 90 | 90 | 86 | 80 |
| | Estonia | 61 | 77 | 76 | 77 | 80 | 85 | 86 | 95 | 85 | 78 |
| | Finland | 54 | 73 | 94 | 73 | 81 | 83 | 85 | 89 | 83 | 75 |
| | France | 51 | 73 | 60 | 73 | 83 | 83 | 88 | 90 | 85 | 72 |
| | Germany | 59 | 80 | 86 | 81 | 90 | 88 | 88 | 93 | 88 | 80 |
| | Greece | 48 | 57 | 61 | 58 | 63 | 69 | 82 | 88 | 70 | 59 |
| | Hungary | 52 | 75 | 82 | 76 | 86 | 83 | 88 | 94 | 85 | 74 |
| | Iceland | 79 | 87 | 93 | 88 | 90 | 92 | 96 | 98 | 94 | 88 |
| | Ireland[1] | 49 | 67 | 72 | 69 | 78 | 83 | 86 | 88 | 82 | 71 |
| | Israel | 48 | 73 | a | 73 | 83 | 88 | 90 | 92 | 87 | 77 |
| | Italy | 51 | 71 | 73 | 71 | c | 69 | 82 | 89 | 80 | 64 |
| | Japan[2] | x(2) | 78[d] | x(5) | m | 78[d] | 87[d] | x(6) | x(6) | 83[d] | 80 |
| | Korea | 66 | 72 | a | 72 | 77 | 77[d] | x(6) | x(6) | 77 | 74 |
| | Latvia | 59 | 71 | 69 | 71 | 86 | 85 | 90 | 98 | 87 | 75 |
| | Luxembourg | 60 | 70 | 77 | 71 | 84 | 83 | 87 | 91 | 86 | 75 |
| | Mexico | 65 | 70 | a | 70 | 70 | 80 | 86 | 85 | 80 | 68 |
| | Netherlands | 61 | 79 | 87 | 79 | 86 | 88 | 90 | 95 | 88 | 78 |
| | New Zealand | 72 | 80 | 86 | 82 | 87 | 87 | 87 | 91 | 87 | 82 |
| | Norway | 62 | 80 | 84 | 80 | 83 | 90 | 92 | 92 | 89 | 81 |
| | Poland | 41 | 68 | 71 | 68 | 77 | 84 | 88 | 97 | 88 | 71 |
| | Portugal | 65 | 79 | 79 | 79 | a | 78 | 87 | 88 | 85 | 73 |
| | Slovak Republic | 38 | 74 | 76 | 74 | 87 | 73 | 82 | 86 | 81 | 73 |
| | Slovenia | 46 | 71 | a | 71 | 79 | 87 | 87 | 89 | 85 | 72 |
| | Spain | 54 | 69 | 63 | 69 | 76 | 79 | 82 | 89 | 80 | 67 |
| | Sweden | 66 | 86 | 84 | 85 | 85 | 90 | 93 | 94 | 90 | 84 |
| | Switzerland | 68 | 82[d] | x(2) | 82 | x(6, 7, 8) | 88[d] | 88[d] | 92[d] | 88 | 83 |
| | Turkey | 51 | 62 | a | 62 | 67 | 77 | 85 | 94 | 75 | 58 |
| | United Kingdom[3] | 62 | 83 | a | 80 | 82 | 85 | 86 | 89 | 85 | 79 |
| | United States | 57 | 69[d] | x(2) | 69 | 77 | 82 | 85 | 90 | 82 | 73 |
| | OECD average | 57 | 74 | 79 | 75 | 81 | 83 | 87 | 91 | 84 | 75 |
| | EU22 average | 54 | 74 | 77 | 74 | 81 | 82 | 87 | 91 | 84 | 74 |
| Partners | Argentina[4, 5] | 65 | 73 | a | 73 | x(6) | 87[d] | x(6) | x(6) | 87 | 73 |
| | Brazil[1] | 65 | 74[d] | x(2) | 74 | x(9) | x(9) | x(9) | x(9) | 83 | 71 |
| | China | m | m | m | m | m | m | m | m | m | m |
| | Colombia | 72 | 76[d] | x(2) | 76 | x(9) | x(9) | x(9) | x(9) | 83 | 76 |
| | Costa Rica | 62 | 71 | c | 71 | 74 | 82 | 87[d] | x(7) | 81 | 68 |
| | India | m | m | m | m | m | m | m | m | m | m |
| | Indonesia[1] | 71 | 73 | m | 73 | x(6) | 85[d] | x(6) | x(6) | 85 | 73 |
| | Lithuania | 49 | 70 | 76 | 73 | a | 90 | 92 | 97 | 91 | 78 |
| | Russian Federation[1] | 51 | 68 | 77 | 72 | 78 | 87 | 86 | 87 | 82 | 77 |
| | Saudi Arabia[4] | 60 | 65 | a | 65 | x(6) | 75[d] | x(6) | x(6) | 75 | 65 |
| | South Africa[1] | 47 | 62 | 66 | 62 | 79 | 85 | 93[d] | x(7) | 83 | 56 |
| | G20 average | m | m | m | m | m | m | m | m | m | m |

**Note:** In most countries data refer to ISCED 2011. The countries with data referring to ISCED-97 are: Indonesia, Saudi Arabia and South Africa. See *Definitions* and *Methodology* sections for more information. Data and more breakdowns available at http://stats.oecd.org/, Education at a Glance Database.

1. Year of reference 2015.
2. Data for tertiary education include upper secondary or post-secondary non-tertiary programmes (less than 5% of the adults are under this group).
3. Data for upper secondary attainment include completion of a sufficient volume and standard of programmes that would be classified individually as completion of intermediate upper secondary programmes (16% of the adults aged 25-64 are in this group).
4. Year of reference 2014.
5. Data should be used with caution. See *Methodology* section for more information.

**Source:** OECD/ILO (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

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## Table A5.2. Trends in employment rates of 25-34 year-olds, by educational attainment (2000, 2005, 2010, 2015 and 2016)

*Percentage of employed 25-34 year-olds among all 25-34 year-olds*

| | | Below upper secondary | | | | | Upper secondary or post-secondary non-tertiary | | | | | Tertiary | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2000 | 2005 | 2010 | 2015 | 2016 | 2000 | 2005 | 2010 | 2015 | 2016 | 2000 | 2005 | 2010 | 2015 | 2016 |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) |
| OECD | Australia | 64[b] | 64[b] | 61[b] | 59 | 56 | 80[b] | 81[b] | 78[b] | 79 | 79 | 84[b] | 85[b] | 85[b] | 85 | 85 |
| | Austria | m | 61 | 59 | 58 | 58 | m | 83 | 83 | 83 | 84 | m | 86 | 86 | 86 | 88 |
| | Belgium | 64[b] | 57[b] | 56[b] | 51 | 52 | 84[b] | 81[b] | 80[b] | 77 | 77 | 92[b] | 90[b] | 89[b] | 87 | 87 |
| | Canada | 60 | 62 | 58 | 57 | 57 | 79 | 80 | 77 | 77 | 76 | 86 | 85 | 84 | 84 | 85 |
| | Chile[1] | m | m | 58[b] | 61 | m | m | m | 67[b] | 69 | m | m | m | 83[b] | 85 | m |
| | Czech Republic | 51[b] | 43[b] | 47[b] | 42 | 47 | 77[b] | 78[b] | 76[b] | 79 | 82 | 83[b] | 81[b] | 77[b] | 77 | 78 |
| | Denmark | 70[b] | 64[b] | 65[b] | 58 | 61 | 85[b] | 83[b] | 82[b] | 81 | 80 | 88[b] | 87[b] | 86[b] | 82 | 83 |
| | Estonia | 58 | 59 | 50 | 62 | 65 | 74 | 77 | 71 | 82 | 78 | 82 | 84 | 80 | 85 | 81 |
| | Finland | 69[b] | 63[b] | 59[b] | 53 | 50 | 76[b] | 77[b] | 76[b] | 75 | 75 | 84[b] | 86[b] | 84[b] | 81 | 81 |
| | France | 61 | 63 | 57 | 51 | 50 | 80 | 80 | 79 | 74 | 73 | 85 | 86 | 87 | 84 | 86 |
| | Germany | 60[b] | 52[b] | 55[b] | 56 | 55 | 79[b] | 74[b] | 78[b] | 82 | 82 | 89[b] | 85[b] | 88[b] | 88 | 87 |
| | Greece | 67[b] | 71[b] | 66[b] | 52 | 51 | 69[b] | 73[b] | 70[b] | 58 | 59 | 79[b] | 79[b] | 77[b] | 65 | 66 |
| | Hungary | 50 | 49 | 40 | 51 | 55 | 75 | 75 | 71 | 78 | 80 | 83 | 83 | 79 | 82 | 82 |
| | Iceland | m | 81 | 67 | 79 | 81 | m | 82 | 73 | 83 | 84 | m | 94 | 88 | 88 | 92 |
| | Ireland | 68[b] | 64[b] | 44[b] | 44 | m | 85[b] | 83[b] | 67[b] | 68 | m | 91[b] | 89[b] | 83[b] | 84 | m |
| | Israel | m | 43[b] | 45[b] | 58 | 53 | m | 65[b] | 68[b] | 72 | 70 | m | 82[b] | 82[b] | 86 | 86 |
| | Italy | 60[b] | 65[b] | 57[b] | 51 | 51 | 67[b] | 72[b] | 69[b] | 63 | 63 | 73[b] | 69[b] | 67[b] | 62 | 64 |
| | Japan[2] | m | m | m | m | m | m | m | m | m | m | 78[db] | 78[db] | 81[db] | 83[d] | 85[d] |
| | Korea | 65 | 62 | 57 | 52 | 60 | 64 | 64 | 64 | 65 | 66 | 74 | 74 | 74 | 76 | 75 |
| | Latvia | 52 | 59 | 56 | 64 | 67 | 74 | 77 | 71 | 80 | 76 | 86 | 84 | 81 | 85 | 87 |
| | Luxembourg | 78[b] | 79[b] | 78[b] | 76 | 73 | 85[b] | 82[b] | 83[b] | 82 | 80 | 83[b] | 87[b] | 87[b] | 87 | 90 |
| | Mexico | 63[b] | 64[b] | 63[b] | 66 | 66 | 71[b] | 71[b] | 71[b] | 70 | 70 | 80[b] | 82[b] | 81[b] | 80 | 80 |
| | Netherlands | 72[b] | 70[b] | 70[b] | 65 | 65 | 88[b] | 86[b] | 87[b] | 81 | 83 | 93[b] | 92[b] | 93[b] | 91 | 91 |
| | New Zealand | 63 | 68 | 64 | 63 | 66 | 78 | 82 | 77 | 78 | 79 | 82 | 81 | 81 | 86 | 86 |
| | Norway | m | 66 | 64 | 61 | 60 | m | 84 | 85 | 82 | 82 | m | 86 | 89 | 86 | 87 |
| | Poland | 50[b] | 45[b] | 49[b] | 46 | 45 | 71[b] | 68[b] | 74[b] | 75 | 77 | 87[b] | 83[b] | 86[b] | 87 | 88 |
| | Portugal | 83 | 81 | 75 | 75 | 74 | 83 | 78 | 80 | 78 | 78 | 91 | 87 | 85 | 80 | 82 |
| | Slovak Republic | 29[b] | 16[b] | 21[b] | 39 | 37 | 72[b] | 73[b] | 72[b] | 76 | 78 | 83[b] | 84[b] | 78[b] | 75 | 77 |
| | Slovenia | 75[b] | 70[b] | 60[b] | 63 | 58 | 86[b] | 84[b] | 81[b] | 78 | 80 | 92[b] | 91[b] | 88[b] | 82 | 81 |
| | Spain | 65[b] | 72[b] | 59[b] | 56 | 60 | 73[b] | 78[b] | 69[b] | 66 | 68 | 76[b] | 82[b] | 79[b] | 75 | 76 |
| | Sweden | 67[b] | 65[b] | 60[b] | 66 | 66 | 83[b] | 81[b] | 80[b] | 84 | 84 | 82[b] | 84[b] | 85[b] | 87 | 87 |
| | Switzerland | 68[b] | 68[b] | 68[b] | 66 | 68 | 84[b] | 83[b] | 83[b] | 86 | 86 | 91[b] | 91[b] | 87[b] | 89 | 89 |
| | Turkey | 55 | 49 | 51 | 53 | 53 | 67 | 64 | 64 | 66 | 65 | 83 | 79 | 77 | 76 | 74 |
| | United Kingdom[3] | 66[b] | 64[b] | 56[b] | 61 | 63 | 83[b] | 81[b] | 79[b] | 81 | 82 | 91[b] | 90[b] | 87[b] | 88 | 87 |
| | United States | 64 | 62 | 55 | 56 | 59 | 80 | 74 | 68 | 71 | 71 | 87 | 83 | 82 | 83 | 84 |
| | OECD average | 63 | 61 | 57 | 58 | 59 | 78 | 77 | 75 | 76 | 76 | 85 | 84 | 83 | 83 | 83 |
| | EU22 average | 63 | 61 | 56 | 56 | 57 | 79 | 78 | 76 | 76 | 77 | 85 | 85 | 83 | 82 | 82 |
| Partners | Argentina[1, 4, 5] | m | 67 | 67 | 66 | m | m | 72 | 73 | 72 | m | m | 86 | 87 | 88 | m |
| | Brazil[1] | m | m | 72 | 68 | m | m | m | 79 | 75 | m | m | m | 88 | 86 | m |
| | China | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Colombia | m | m | m | 73 | 73 | m | m | m | 77 | 76 | m | m | m | 84 | 82 |
| | Costa Rica | 64 | 69 | 67 | 68 | 65 | 76 | 78 | 77 | 74 | 75 | 83 | 86 | 84 | 81 | 81 |
| | India | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Indonesia | m | m | 70 | 66 | m | m | m | 71 | 70 | m | m | m | 74 | 83 | m |
| | Lithuania | 52[b] | 62[b] | 41[b] | 60 | 56 | 71[b] | 80[b] | 65[b] | 76 | 76 | 81[b] | 89[b] | 87[b] | 91 | 93 |
| | Russian Federation | m | m | m | 58 | m | m | m | m | 80 | m | m | m | m | 88 | m |
| | Saudi Arabia[4] | m | m | m | 65 | m | m | m | m | 59 | m | m | m | m | 62 | m |
| | South Africa | m | m | 42 | 44 | m | m | m | 58 | 56 | m | m | m | 79 | 79 | m |
| | G20 average | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |

**Note:** In most countries there is a break in the time series, represented by the code "b", as data for 2015 and 2016 refer to ISCED 2011 while data for previous years refer to ISCED-97. For Indonesia, Saudi Arabia and South Africa data refer to ISCED-97 for all years. See *Definitions* and *Methodology* sections for more information. Data and more breakdowns available at http://stats.oecd.org/, Education at a Glance Database.

1. Year of reference 2009 instead of 2010.

2. Data for tertiary education include upper secondary and post-secondary non-tertiary programmes (less than 5% of the adults are under this group).

3. Data for upper secondary attainment include completion of a sufficient volume and standard of programmes that would be classified individually as completion of intermediate upper secondary programmes (16% of the adults aged 25-64 are in this group).

4. Year of reference 2014 instead of 2015.

5. Data should be used with caution. See *Methodology* section for more information.

**Source:** OECD/ILO (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

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## Table A5.3. Employment rates of tertiary-educated 25-64 year-olds, by field of study (2016)

*Percentage of employed 25-64 year-olds among all 25-64 year-olds*

| | | Education | Arts or humanities (except languages), social sciences, journalism and information | | Arts and humanities, social sciences, journalism and information | Business and administration or law | | Business, administration and law | Natural sciences, mathematics and statistics | Information and communication technologies | Engineering, manufacturing and construction | Health | | Health and welfare | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Arts | Humanities (except languages), social sciences, journalism and information | | Business and administration | Law | | | | | Health (medical and dental) | Health (nursing and associate health fields) | | |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) |
| OECD | Australia | 82 | x(4) | x(4) | 80 | x(7) | x(7) | 85 | 83 | 86 | 88 | x(13) | x(13) | 84 | 84 |
| | Austria | 84 | 78 | 85 | 83 | 85 | 90 | 87 | 82 | 91 | 88 | 90 | 87 | 89 | 86 |
| | Belgium | 84 | c | 85 | 82 | 91 | 86 | 85 | 84 | 88 | 89 | 87 | 88 | 88 | 85 |
| | Canada | m | m | m | m | m | m | m | m | m | m | m | m | m | 82 |
| | Chile[1] | 83 | 82 | 89 | 86 | 83 | 84 | 83 | 80 | 89 | 89 | 89 | 84 | 85 | 84 |
| | Czech Republic | 83 | 85 | 82 | 82 | 85 | 88 | 85 | 84 | 92 | 91 | 90 | 82 | 84 | 86 |
| | Denmark | m | m | m | m | m | m | m | m | m | m | m | m | m | 86 |
| | Estonia | 81 | 88 | 89 | 88 | 86 | 86 | 86 | 87 | 89 | 84 | 86 | 82 | 83 | 85 |
| | Finland | 80 | 82 | 74 | 77 | 82 | 88 | 82 | 84 | 84 | 86 | 89 | 86 | 87 | 83 |
| | France[2] | 93 | x(4) | x(4) | 77 | x(7) | x(7) | 85 | 81 | 90 | 92 | x(13) | x(13) | 91 | 86 |
| | Germany | 87 | 86 | 84 | 84 | 89 | 89 | 90 | 86 | 91 | 90 | 91 | 88 | 89 | 88 |
| | Greece | 73 | x(4) | x(4) | 65 | x(7) | x(7) | 72 | 72 | 71 | 72 | x(13) | x(13) | 77 | 70 |
| | Hungary | 82 | 84 | 85 | 84 | 83 | 90 | 84 | 83 | 94 | 88 | 92 | 87 | 89 | 85 |
| | Iceland | 92 | x(4) | x(4) | 92 | x(7) | x(7) | 95 | 92 | 97 | 93 | x(13) | x(13) | 95 | 94 |
| | Ireland[1] | m | m | m | m | m | m | m | m | m | m | m | m | m | 82 |
| | Israel | m | m | m | m | m | m | m | m | m | m | m | m | m | 87 |
| | Italy | 80 | 71 | 75 | 74 | 82 | 81 | 81 | 78 | 84 | 85 | m | m | 85 | 80 |
| | Japan | m | m | m | m | m | m | m | m | m | m | m | m | m | 83[d] |
| | Korea | m | m | m | m | m | m | m | m | m | m | m | m | m | 77 |
| | Latvia | 88 | 73 | 86 | 84 | 88 | 91 | 89 | 92 | 90 | 85 | 94 | 94 | 93 | 87 |
| | Luxembourg | m | m | m | m | m | m | m | m | m | m | m | m | m | 86 |
| | Mexico | 80 | 78 | 75 | 75 | 80 | 81 | 80 | 75 | 83 | 83 | 80 | 78 | 79 | 80 |
| | Netherlands | 85 | x(4) | x(4) | 86 | x(7) | x(7) | 90 | 87 | 91 | 91 | x(13) | x(13) | 88 | 88 |
| | New Zealand | m | m | m | m | m | m | m | m | m | m | m | m | m | 87 |
| | Norway | 89 | x(4) | x(4) | 86 | x(7) | x(7) | 91 | 86 | 88 | 89 | x(13) | x(13) | 91 | 89 |
| | Poland | 84 | x(4) | x(4) | 86 | x(7) | x(7) | 89 | 86 | 95 | 88 | x(13) | x(13) | 92 | 88 |
| | Portugal | 83 | x(4) | x(4) | 83 | x(7) | x(7) | 87 | 80 | 94 | 84 | x(13) | x(13) | 90 | 85 |
| | Slovak Republic | 82 | 81 | 79 | 79 | 81 | 76 | 80 | 68 | 91 | 85 | 84 | 82 | 82 | 81 |
| | Slovenia[2] | 83 | x(4) | x(4) | 75 | x(7) | x(7) | 80 | 69 | 66 | 90 | x(13) | x(13) | 91 | 81 |
| | Spain | 77 | x(4) | x(4) | 77 | x(7) | x(7) | 80 | 82 | 84 | 82 | x(13) | x(13) | 86 | 80 |
| | Sweden | 90 | x(4) | x(4) | 86 | x(7) | x(7) | 89 | 86 | 90 | 91 | x(13) | x(13) | 92 | 90 |
| | Switzerland | 88 | 82 | 87 | 84 | 89 | 85 | 88 | 88 | 93 | 91 | 89 | 89 | 88 | 88 |
| | Turkey | 71 | x(4) | x(4) | 67 | x(7) | x(7) | 73 | 73 | 74 | 78 | x(13) | x(13) | 78 | 75 |
| | United Kingdom | m | m | m | m | m | m | m | m | m | m | m | m | m | 85 |
| | United States[1, 3] | 78 | 81 | 82 | 82 | x(7) | x(7) | 85 | 84 | 86 | 88 | x(13) | x(13) | 84 | 82 |
| | OECD average[4] | 83 | m | m | 81 | m | m | 85 | 83 | 88 | 87 | m | m | 87 | 84 |
| | EU22 average[4] | 83 | m | m | 81 | m | m | 85 | 83 | 89 | 86 | m | m | 87 | 84 |
| Partners | Argentina[5, 6] | m | m | m | m | m | m | m | m | m | m | m | m | m | 87 |
| | Brazil | m | m | m | m | m | m | m | m | m | m | m | m | m | 83 |
| | China | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Colombia | m | m | m | m | m | m | m | m | m | m | m | m | m | 83 |
| | Costa Rica | 77 | c | 76 | 77 | 79 | 78 | 83 | c | 91 | 81 | m | m | 80 | 81 |
| | India | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Indonesia | m | m | m | m | m | m | m | m | m | m | m | m | m | 85 |
| | Lithuania | 90 | 85 | 90 | 88 | 92 | 94 | 92 | 91 | 93 | 91 | 97 | 93 | 95 | 91 |
| | Russian Federation | m | m | m | m | m | m | m | m | m | m | m | m | m | 82 |
| | Saudi Arabia[5] | m | m | m | m | m | m | m | m | m | m | m | m | m | 75 |
| | South Africa | m | m | m | m | m | m | m | m | m | m | m | m | m | 83 |
| | G20 average | m | m | m | m | m | m | m | m | m | m | m | m | m | m |

**Note:** See *Definitions* and *Methodology* sections for more information. Data and more breakdowns available at http://stats.oecd.org/, Education at a Glance Database.

1. Year of reference 2015.
2. The age group refers to 25-34 year-olds.
3. Data refer to bachelor's degree field, even for those with additional tertiary degrees.
4. The OECD and EU22 averages exclude France and Slovenia.
5. Year of reference 2014.
6. Data should be used with caution. See *Methodology* section for more information.

**Source:** OECD/ILO (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933559503

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## Table A5.4. Employment, unemployment and inactivity rates of 25-34 year-olds, by educational attainment (2016)

| | | Employment rate | | | Unemployment rate | | | Inactivity rate | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Below upper secondary | Upper secondary or post-secondary non-tertiary | Tertiary | Below upper secondary | Upper secondary or post-secondary non-tertiary | Tertiary | Below upper secondary | Upper secondary or post-secondary non-tertiary | Tertiary |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| OECD | Australia | 56 | 79 | 85 | 12.1 | 6.2 | 3.4 | 34 | 16 | 12 |
| OECD | Austria | 58 | 84 | 88 | 18.3 | 6.3 | 4.2 | 29 | 10 | 8 |
| OECD | Belgium | 52 | 77 | 87 | 24.1 | 10.5 | 4.8 | 31 | 13 | 9 |
| OECD | Canada | 57 | 76 | 85 | 15.4 | 8.8 | 5.1 | 33 | 16 | 10 |
| OECD | Chile[1] | 61 | 69 | 85 | 11.6 | 9.2 | 6.7 | 32 | 24 | 9 |
| OECD | Czech Republic | 47 | 82 | 78 | 23.6 | 4.4 | 3.0 | 38 | 15 | 20 |
| OECD | Denmark | 61 | 80 | 83 | 10.7 | 6.3 | 8.7 | 32 | 15 | 9 |
| OECD | Estonia | 65 | 78 | 81 | 15.4 | 7.3 | 3.7 | 23 | 16 | 16 |
| OECD | Finland | 50 | 75 | 81 | 14.6 | 9.4 | 6.9 | 40 | 18 | 13 |
| OECD | France | 50 | 73 | 86 | 27.2 | 13.9 | 6.7 | 32 | 15 | 8 |
| OECD | Germany | 55 | 82 | 87 | 16.0 | 4.2 | 3.1 | 34 | 14 | 10 |
| OECD | Greece | 51 | 59 | 66 | 35.8 | 30.2 | 28.0 | 21 | 16 | 8 |
| OECD | Hungary | 55 | 80 | 82 | 16.4 | 4.9 | 2.5 | 34 | 16 | 15 |
| OECD | Iceland | 81 | 84 | 92 | 4.2 | 4.7 | 3.0 | 15 | 12 | 5 |
| OECD | Ireland[1] | 44 | 68 | 84 | 26.9 | 14.1 | 6.1 | 40 | 21 | 11 |
| OECD | Israel | 53 | 70 | 86 | 9.1 | 6.2 | 4.3 | 42 | 25 | 10 |
| OECD | Italy | 51 | 63 | 64 | 23.8 | 16.0 | 15.3 | 33 | 25 | 24 |
| OECD | Japan[2] | m | m | 85[d] | m | m | 3.1[d] | m | m | 12[d] |
| OECD | Korea | 60 | 66 | 75 | 8.9 | 7.2 | 6.0 | 34 | 29 | 20 |
| OECD | Latvia | 67 | 76 | 87 | 15.4 | 12.3 | 4.3 | 20 | 13 | 9 |
| OECD | Luxembourg | 73 | 80 | 90 | c | 7.5 | 4.3 | 18 | 14 | 6 |
| OECD | Mexico | 66 | 70 | 80 | 3.5 | 5.0 | 6.6 | 31 | 26 | 14 |
| OECD | Netherlands | 65 | 83 | 91 | 9.8 | 5.3 | 3.0 | 28 | 12 | 7 |
| OECD | New Zealand | 66 | 79 | 86 | 10.3 | 5.6 | 3.7 | 27 | 16 | 11 |
| OECD | Norway | 60 | 82 | 87 | 13.4 | 5.1 | 4.6 | 31 | 13 | 9 |
| OECD | Poland | 45 | 77 | 88 | 20.0 | 8.0 | 4.3 | 43 | 17 | 8 |
| OECD | Portugal | 74 | 78 | 82 | 13.2 | 13.3 | 11.1 | 15 | 10 | 7 |
| OECD | Slovak Republic | 37 | 78 | 77 | 37.8 | 9.7 | 7.3 | 40 | 14 | 17 |
| OECD | Slovenia | 58 | 80 | 81 | 22.7 | 10.4 | 11.4 | 25 | 10 | 8 |
| OECD | Spain | 60 | 68 | 76 | 30.5 | 20.8 | 16.0 | 14 | 14 | 10 |
| OECD | Sweden | 66 | 84 | 87 | 16.3 | 5.7 | 4.8 | 21 | 11 | 9 |
| OECD | Switzerland | 68 | 86 | 89 | 13.7 | 5.2 | 4.3 | 21 | 10 | 7 |
| OECD | Turkey | 53 | 65 | 74 | 12.0 | 11.7 | 13.2 | 39 | 26 | 15 |
| OECD | United Kingdom[3] | 63 | 82 | 87 | 9.9 | 5.1 | 3.1 | 30 | 14 | 10 |
| OECD | United States | 59 | 71 | 84 | 13.1 | 7.7 | 2.9 | 32 | 23 | 14 |
| | OECD average | 58 | 76 | 83 | 16.8 | 9.1 | 6.6 | 30 | 16 | 11 |
| | EU22 average | 57 | 77 | 82 | 20.4 | 10.3 | 7.4 | 29 | 15 | 11 |
| Partners | Argentina[4, 5] | 66 | 72 | 88 | 9.9 | 8.2 | 4.7 | 27 | 22 | 7 |
| Partners | Brazil[1] | 68 | 75 | 86 | 10.6 | 10.9 | 6.5 | 23 | 16 | 8 |
| Partners | China | m | m | m | m | m | m | m | m | m |
| Partners | Colombia | 73 | 76 | 82 | 7.7 | 10.2 | 12.0 | 21 | 15 | 7 |
| Partners | Costa Rica | 65 | 75 | 81 | 11.3 | 9.8 | 8.0 | 26 | 17 | 12 |
| Partners | India | m | m | m | m | m | m | m | m | m |
| Partners | Indonesia[1] | 66 | 70 | 83 | 4.2 | 7.6 | 8.1 | 31 | 24 | 9 |
| Partners | Lithuania | 56 | 76 | 93 | 19.6 | 10.5 | 3.0 | 31 | 15 | 4 |
| Partners | Russian Federation[1] | 58 | 80 | 88 | 15.3 | 7.5 | 4.0 | 32 | 13 | 9 |
| Partners | Saudi Arabia[4] | 65 | 59 | 62 | 2.1 | 8.4 | 19.6 | 33 | 35 | 23 |
| Partners | South Africa[1] | 44 | 56 | 79 | 36.3 | 28.5 | 13.0 | 31 | 22 | 9 |
| | G20 average | m | m | m | m | m | m | m | m | m |

**Note:** For Indonesia, Saudi Arabia and South Africa data refer to ISCED-97 for all years. See *Definitions* and *Methodology* sections for more information. Data and more breakdowns available at http://stats.oecd.org/, Education at a Glance Database.

1. Year of reference 2015.

2. Data for tertiary education include upper secondary and post-secondary non-tertiary programmes (less than 5% of the adults are under this group).

3. Data for upper secondary attainment include completion of a sufficient volume and standard of programmes that would be classified individually as completion of intermediate upper secondary programmes (16% of the adults are in this group).

4. Year of reference 2014.

5. Data should be used with caution. See *Methodology* section for more information.

**Source:** OECD/ILO (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

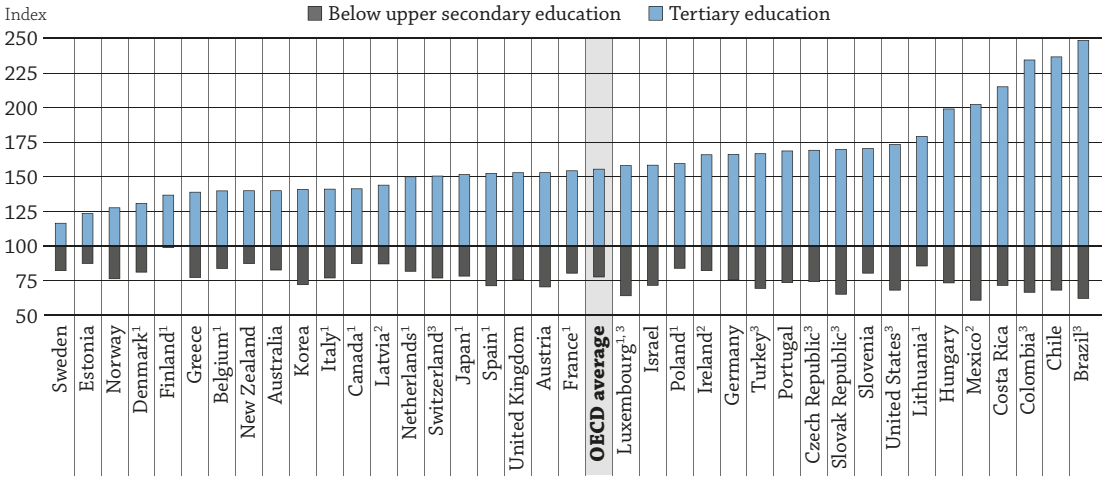
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# WHAT ARE THE EARNINGS ADVANTAGES FROM EDUCATION?

- Across OECD countries, 25-64 year-old adults with a tertiary degree earn on average 56% more than those with only upper secondary education, while those with below upper secondary education earn on average 22% less.
- People's relative earning advantage increases with their level of tertiary education. On average across OECD countries, those with a short-cycle tertiary degree earn only about 22% more than those with upper secondary education, while those with a master's, doctoral or equivalent degree earn about twice as much.
- The proportion of older students (25-29 year-olds) who are in paid employment is much higher than among younger students (15-24 year-olds): 64% of the older group are in paid employment, compared to only about 40% of the younger group.

## Figure A6.1. Relative earnings of adults, by educational attainment (2015)

*25-64 year-olds with income from employment; upper secondary education = 100*




**Note**: Tertiary education includes short-cycle tertiary, bachelor's, master's, doctoral or equivalent degrees.

1. Year of reference differs from 2015. Refer to the source table for details.
2. Earnings net of income tax.
3. Index 100 refers to the combined ISCED levels 3 and 4 of the educational attainment levels in the ISCED 2011 classification.

*Countries are ranked in ascending order of the relative earnings of 25-64 year-olds with tertiary education.*

**Source**: OECD (2017), Table A6.1. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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## Context

Higher levels of education usually translate into better employment opportunities (see Indicator A5) and higher earnings. While people with higher qualifications are generally better placed to see their earnings increase over time, the lower-educated – who usually have lower earnings at the start of their career – tend to see their earnings decline with age. Hence, the potential for higher earnings and faster earnings progression can be an important incentive for individuals to pursue education and training (see Indicator A7). It may also be one of the decisive factors in their choice of field of study at the tertiary level.

A number of factors other than education also play a role in individuals' earnings. In many countries, earnings are systematically lower for women than men across all levels of educational attainment. This may be related to gender differences in the sectors where they work and the types of occupation (OECD, 2016a). Variations in earnings also reflect other factors, including the demand for skills in the labour market, the supply of workers and their skills, the minimum wage and other labour market laws,

structures and practices (such as the strength of labour unions, the coverage of collective-bargaining agreements and the quality of working environments). These factors also contribute to differences in the distribution of earnings. In some countries, earnings vary little, while in other countries there are large earnings disparities, leading to widening inequalities.

## Other findings

- Between 2005 and 2015 on average across 21 OECD countries with available data for both years, the earnings gap between adults with tertiary education and those with upper secondary education declined slightly (from 53% to 50%).
- On average across OECD countries, about 25% of adults with tertiary education earn more than twice the median earnings for all employed people, including both full-time and part-time earners, while only 3% of those with below upper secondary education have this level of earnings.
- Students typically earn less from work than non-students of the same age and level of education. On average across OECD countries, the earnings of 15-24 year-old students are about half those of non-students (56%). They increase to 80% among older students (aged 25-29).

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## Analysis

### Relative earnings by educational attainment

In all OECD countries, earning differentials between adults with a tertiary education and those with an upper secondary education are generally more pronounced than the differences between adults with no upper secondary education and those with secondary education as their highest level of education. On average across OECD countries, 25-64 year-old adults without upper secondary education earn on average 22% less for part-time or full-time employment than those with upper secondary education, while those with a tertiary degree have an earnings advantage of 56% more (Figure A6.1).

Cross-country variations in relative earnings for adults without an upper secondary qualification are small compared to the considerable earnings advantages of the tertiary-educated. In Mexico, the earnings disadvantages for adults without upper secondary education are the largest of all OECD and partner countries: they earn on average 39% less for part-time or full-time work than adults with upper secondary education. Earnings disadvantages for the lowest-educated are also large (more than 30%) in Brazil, Chile, Colombia, Luxembourg, the Slovak Republic and the United States. On the other hand, in Finland, adults with below upper secondary education and those with upper secondary education have similar earnings, and earnings differences are 15% or less in Canada, Estonia, Finland, Latvia, Lithuania and New Zealand. In tertiary education, the relative earnings are largest in Brazil, Chile, Colombia, Costa Rica and Mexico, where the tertiary-educated earn on average at least twice as much as adults with upper secondary education. They are lowest in Denmark, Estonia, Norway and Sweden, where the tertiary earnings are only about 25% to 30% higher (Figure A6.1).

Among tertiary-educated adults, the relative earnings advantages increase with the level of tertiary education. On average across OECD countries, those with short-cycle tertiary education earn only about 22% more than those with upper secondary education as their highest level of attainment, while those with a master's, doctoral or equivalent degree earn twice as much (Table A6.1).

The same holds true when analysing the relative earnings of men and women separately: the higher their educational attainment, the higher their relative earnings advantage. However, women earn less than men on average regardless of their educational attainment. On average across OECD countries, the salaries of tertiary-educated women aged 25-64 are only 68% of those of tertiary-educated men. The gender gap persists even when accounting for the fact that more women than men work part time: women with a tertiary degree working full time earn only 74% of the amount earned by tertiary-educated men working full time. The gender gap is slightly smaller between women and men educated to below upper secondary and to upper secondary or post-secondary non-tertiary level (women's earnings are 78% of men's for both levels) (Table A6.3).

### Relative earnings and the share of adults with a tertiary degree

According to classic economic theories, the earnings advantages of tertiary-educated people and the earnings disadvantages of less-educated people can be explained by the economic rule of supply and demand. Supply and demand for the labour force with a given skills level cannot be directly measured. However, the share of tertiary-educated people in the population is an indicator of the supply of a skilled labour force in a country, and the unemployment rate – reflecting the tightness of the labour market – is a useful indicator of demand. As shown in Indicator A5, unemployment rates decrease as attainment rates rise in all OECD and partner countries, suggesting a skills-biased demand for labour. Thus, the earnings advantages of people with tertiary education should be higher in countries where their share is low.

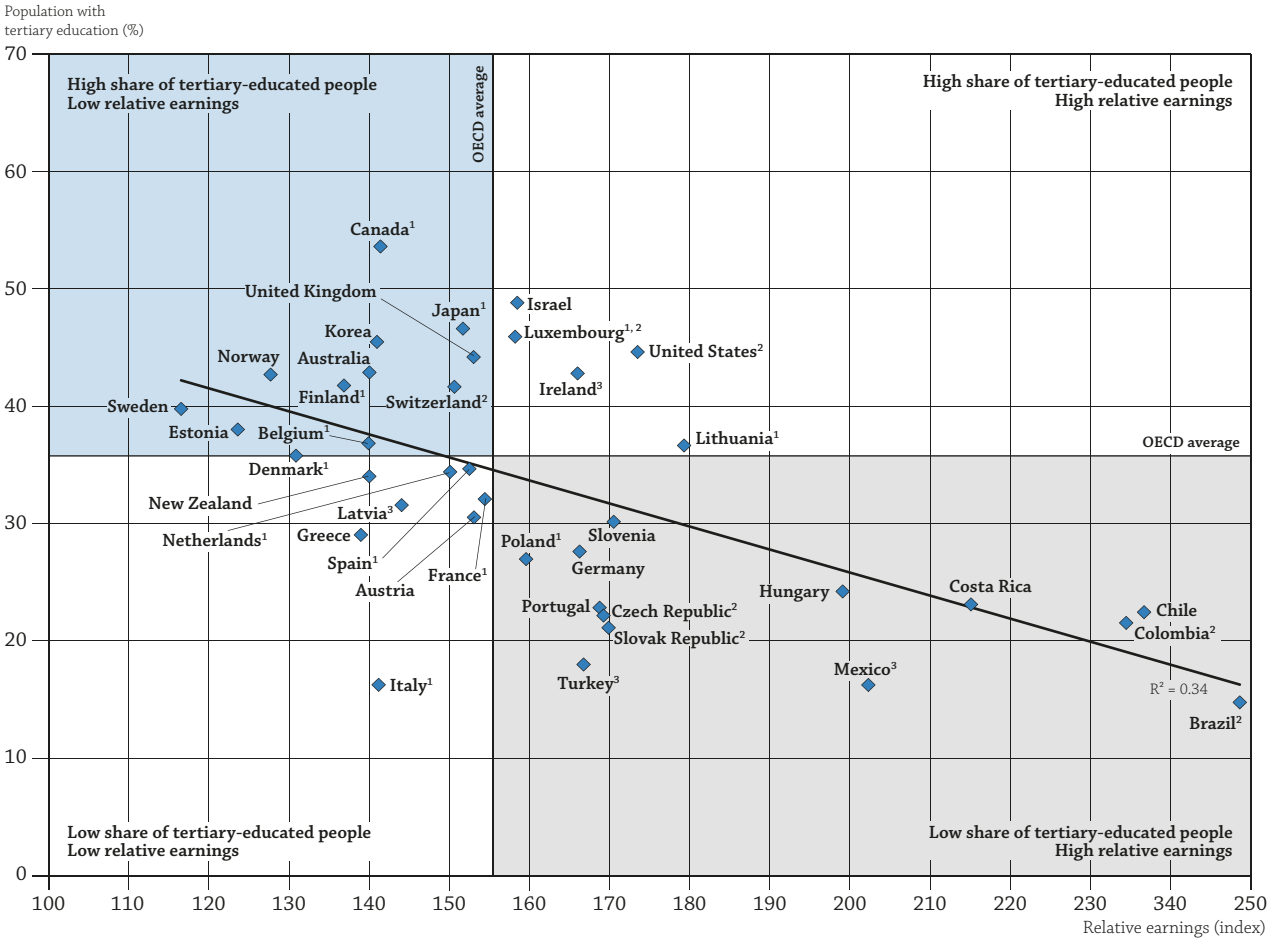
To illustrate whether the theory is confirmed by the numbers, Figure A6.2 compares the earnings advantages for tertiary-educated workers aged 25-64 with the share of tertiary-educated adults in the population. The data support the hypothesis, as the earnings advantages are largest in countries with a small share of tertiary-educated people, such as Brazil, Chile, Colombia, Hungary and Mexico, and smallest in countries with a large share of tertiary-educated people, such as Norway and Sweden (Figure A6.2).

In general, there is an inverse linear relationship between the share of tertiary-educated adults and the earnings advantages for tertiary graduates (R=-0.59). However, the relationship weakens when Brazil, Chile, Colombia and Costa Rica –the countries with the highest earnings advantages – are excluded from the analysis (Figure A6.2).

Some countries, such as Canada, Israel and the United States, are outliers in this relationship (located a long way from the regression line). In these countries, the earnings advantages are much higher than the regression relationship would suggest. Italy is an outlier at the other end, because despite having the lowest share of tertiary-educated people among OECD countries, earnings advantages are rather low and largely below the OECD average (Figure A6.2).

## Figure A6.2. Relative earnings of tertiary-educated workers and their share of the population (2015)

*25-64 year-olds with income from employment; upper secondary education = 100*




**Note**: Tertiary education includes short-cycle tertiary, bachelor's, master's, doctoral or equivalent degrees.

1. Year of reference differs from 2015. Refer to the source table for details.

2. Index 100 refers to the combined ISCED levels 3 and 4 of the educational attainment levels in the ISCED 2011 classification.

3. Earnings net of income tax.

**Source**: OECD (2017), Table A6.1. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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Many characteristics other than the scarcity of tertiary-educated workers (not shown in Figure A6.2) explain the earnings differentials. The earnings differential also depends on the national minimum wages, hiring and firing costs, centralised bargaining, the power of unions, the job share among the public and private sectors, and the recognised value of formal qualifications.

### Trends in relative earnings

On average across the 21 OECD countries with available data for both years, the earnings advantages of adults with tertiary education compared to those with upper secondary education declined slightly between 2005 (53%) and 2015 (50%). This general picture is more diverse at the country level. In about two-thirds of the 21 OECD countries with available data for both years, the relative earnings of tertiary-educated people remained stable or decreased over the same period. The earnings advantages dropped by 5 percentage points or more in the Czech Republic, Finland, Hungary, Ireland, Korea, Poland, Portugal, Slovenia, Sweden, Switzerland and the United Kingdom. However, they increased by more than 5 percentage points in Australia, Belgium, Canada, Denmark, New Zealand and Spain (Education at a Glance Database).

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The earnings disadvantages of adults without an upper secondary education remained more or less stable across OECD countries, at about 20%. In Canada, Estonia, Finland, New Zealand, Portugal, Slovenia and the United Kingdom, the gap in earnings closed by at least 5 percentage points between 2005 and 2015. A different trend can be observed in Belgium and Spain, where the gap increased by at least 5 percentage points over this period. These are the only countries where the overall earnings gap between adults with below upper secondary education and tertiary education has increased (Education at a Glance Database).

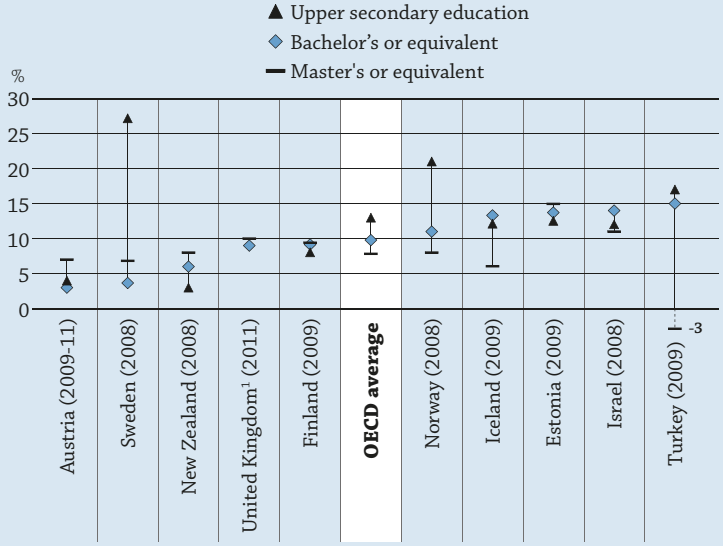
### Box A6.1: Earnings growth since graduation

For a few countries, a variety of data sources can be used to analyse the labour market outcomes of young graduates. A few countries have longitudinally-linked administrative data for students, combining study information with post-study employment information. Administrative sources can provide near full coverage of students and their post-study employment experiences. Along with existing sample-based graduate surveys available in other countries, the opportunities to develop new rich cohort-based data for international comparisons are therefore growing. These data can provide further insights into the education-related growth in young graduates' earnings.

Figure A6.a shows that during the first years of professional life, young graduates experience a major increase in wages. On average, across the 10 countries with available data, adults with an upper secondary qualification can expect an annual increase of about 13% between the first and third year after graduation. Those with a bachelor's or equivalent degree on average see an annual increase of about 10%, while the annual increase for those with a master's or equivalent degree is only about 8%. However, this general picture hides large country differences. In some countries, such as Austria and New Zealand, those with the highest educational attainment level can expect the highest increase in annual earnings, while in Norway, Sweden and Turkey, the annual increase in earnings is highest for adults with an upper secondary qualification (Figure A6.a).

**Figure A6.a. Annual growth in earnings for adults following the three years after graduation, by educational attainment (2011)**

*Annual growth between the first and third year after graduation*




**Note**: The year(s) in brackets relate to the year(s) when the cohort of tertiary graduates left their studies. Data on graduates who left their home country are not included. The ranges used for the typical graduating ages of young graduates vary by tertiary education level and country. All graduates are under 30 years old except for Israel, where data relate to all graduates who have taken a first break in their education career of at least one year. All data are from linked administrative sources.

1. Data refer to the annual growth between the first and fourth year after graduation.

*Countries are ranked in ascending order of the annual growth in earnings of adults with a bachelors's or equivalent degree.*

**Source**: OECD (2015), INES LSO Survey of Employment Outcomes of Recent Graduates. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance- 19991487.htm).

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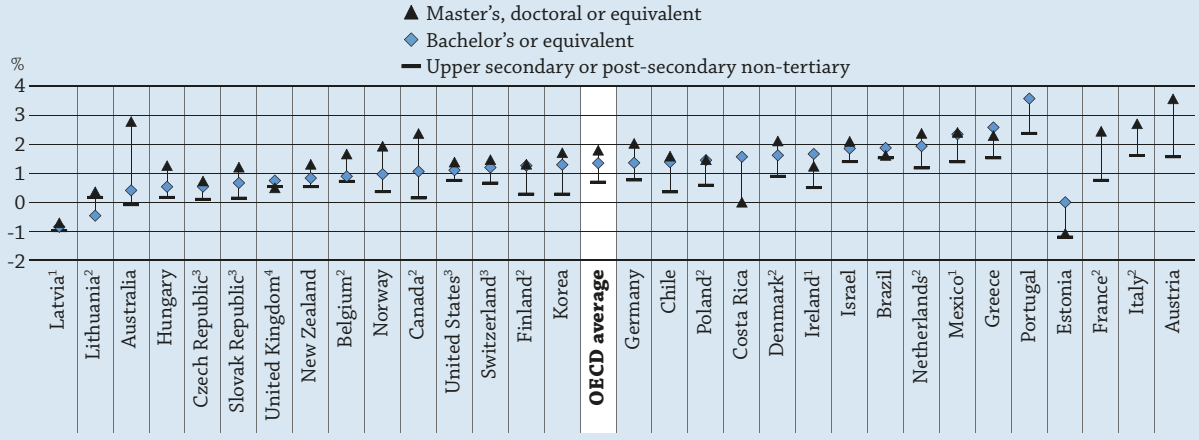
...

When comparing the wage increase during the first years of professional experience with the earning gap between young tertiary graduates and adults with only upper secondary education, no relationship is found between the overall earnings differentials and the annual increase (see *Education at a Glance 2016* [OECD, 2016b], Box A6.1).

Young graduates experience the highest percentage increase in annual earnings at the beginning of their professional careers, while the annual percentage increase in earnings slows down at later stages.

As longitudinally-linked administrative data are not available for a longer period, the average annual increase in earnings between 25-34 year-olds and 55-64 year-olds provides a rough estimate of the increase in earnings over people's professional life span (Figure A6.b). In contrast to the earnings gains during the first working years, the overall annual increase in earnings is positively correlated with the level of educational attainment. On average across OECD and partner countries with available data, younger adults with upper secondary or post-secondary non-tertiary education can expect an annual earnings increase of 0.7% over the following 30 years of their professional career, while the annual increase in earnings rises to 1.3% for younger adults with a bachelor's degree and 1.8% for those with a master's or doctoral degree. This means the disparities in earnings observed at the beginning of professional careers largely widen as careers progress (Figure A6.b).

## Figure A6.b. Cross-cohort annual growth in earnings of 25-34 and 55-64 year-olds, by educational attainment (2015)




**Note**: Tertiary education includes short-cycle tertiary, bachelor's, master's, doctoral or equivalent degrees.

1. Earnings net of income tax.

2. Year of reference differs from 2015. Refer to Table A6.1 for details.

3. Index 100 refers to the combined ISCED levels 3 and 4 of the educational attainment levels in the ISCED 2011 classification.

4. Data for upper secondary attainment include completion of a sufficient volume and standard of programmes that would be classified individually as completion of intermediate upper secondary programmes (16% of the adults aged 25-64 are under this group).

*Countries are ranked in ascending order of the annual growth in earnings of adults with a bachelors's or equivalent degree.*

**Source**: OECD / ILO (2017), Education at a Glance Database, http://stats.oecd.org/. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/educa<>tion-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933557470

Over time, the earnings gap between adults with an upper secondary or post-secondary non-tertiary qualification and those with a master's, doctoral or equivalent degree increases most in Australia and Canada. In both countries, the increase in earnings of those with upper secondary education is around zero, while the increase rises annually by 2.8% and 2.4% respectively for adults with a bachelor degree and with a master's, doctoral or equivalent degree. The largest overall disparities in earnings can be observed in Brazil, Chile, Colombia and Costa Rica (Figure A6.1).

In Brazil, Estonia, Latvia, Lithuania and the United Kingdom, the overall disparities in earnings observed at the beginning of people's professional career are maintained throughout the following three decades. In all these countries, the absolute difference in the annual earnings increase of younger adults with upper secondary or post-secondary non-tertiary education and those with a master's, doctoral or equivalent degree is less than 0.5 percentage points.

### Distribution of earnings by educational attainment

To complement the analysis of the earnings advantages/disadvantages of educational attainment, data on the distribution of earnings among groups with different levels of education can show the degree to which earnings centre around the country median. "Median earnings" refer to earnings of all workers, without adjusting for differences in hours worked.

Across countries, tertiary-educated workers are more likely than workers with below upper secondary education to earn more than twice the median and less likely to earn less than half the median. On average across OECD countries, about 25% of adults with tertiary education earn more than twice the median earnings of all employed people, including both full-time and part-time earners, while only 3% of those with below upper secondary education have this level of earnings. At the other end of the earnings distribution, one in ten tertiary-educated adults earn below half the medium earnings, compared to more than one in four adults without upper secondary qualification (Table A6.2).

Among OECD and partner countries, the share of tertiary-educated adults with earnings more than twice the median is highest in Brazil (60%), Chile (50%), Costa Rica (51%) and Mexico (51%). In these countries, the share of the tertiary-educated adults with below half the median earnings is much lower than the OECD average, providing further insights into the large relative earnings for tertiary education seen in Figure A6.1, and possibly signalling equity concerns in these countries (Table A6.2).

Although in all countries, less-qualified individuals usually face large earnings disadvantages, in several countries, however, at least some of them earn the highest level of earnings (more than twice the median). Among adults with below upper secondary education, the share earning less than half the national median varies substantially, ranging from highs of 41% in Germany, 40% in Ireland, 41% in Spain and 47% in the United States to lows of 3% in Hungary, 10% in Latvia and 9% in Portugal. However, in several countries the share of the low-educated with the highest earnings is 5% and over – Brazil (7%), Canada (7%), Estonia (5%), Ireland (5%), Mexico (6%), Portugal (5%) and Spain (5%) – suggesting that factors other than educational attainment play an important role in high remuneration in these countries (Table A6.2).

Among adults with upper secondary or post-secondary non-tertiary education the shares of those earning more than twice the median or less than half the median earnings in a country is usually between the respective shares for those with tertiary and below upper secondary education. On average, 17% of adults with upper secondary or post-secondary non-tertiary education earn less than half of the median earnings across OECD countries, while 7% earn more than twice the median earnings (Table A6.2).

### Characteristics of students as earners or non-earners

On average across OECD countries, about half of 15-29 year-olds are still in education. The younger individuals in this age band are more likely to be enrolled in upper secondary education programmes and the older individuals in tertiary education programmes (see Indicators C1 and C5).

Across OECD countries on average, 38% of all 15-24 year-old students are also in paid employment. Among OECD and partner countries the share of students who are earning varies considerably, ranging from less than 5% in Belgium and Greece to more than 70% in Canada, Denmark, Finland, Sweden and Turkey. Among 25-29 year-olds, on average across OECD countries, 64% of students are in paid employment, with shares ranging from 27% in Greece to 89% in Norway and Sweden (Figure A6.3).

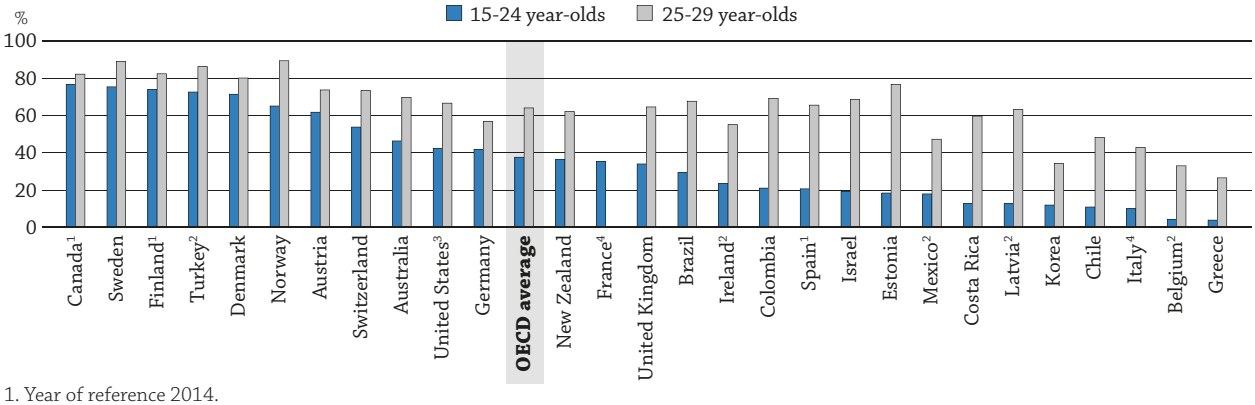
Comparing both age groups shows that the share of older students (25-29 year-olds) who are earning is much higher than for younger students (15-24 year-olds). The biggest differences between the two age groups are found in Estonia, Israel and Latvia, where the share of students with earnings is at least 50 percentage points higher among older students than among younger students (Figure A6.3).

Students typically earn less from work than non-students of the same age and level of educational attainment. On average across OECD countries, 15-24 year-old students' earnings are about half those of non-students (56%). In Colombia, Costa Rica, Israel, Latvia and Turkey, students' earnings are at least 90% of non-students'. In Austria, Canada, Norway, Sweden and Switzerland, students' earnings drop to less than 40% of non-students' (Figure A6.4).

There are several reasons for students' lower earnings. For instance, data on working hours show that the share of younger adults aged 15-29 years working part time (less than 35 hours per week) is higher among students than among non-students. On average across OECD countries for this age group in 2014, the rates were about 70% for students and 25% for non-students. Furthermore, in countries with a higher percentage of students in employment,

their earnings tend to be much lower than those of their counterparts who are not studying, and across OECD countries both values are negatively correlated (R=-0.51) (i.e. the higher the share of employed students, the lower their earnings compared with the employed non-students' earnings). For instance, in Canada and Sweden, the proportion of 15-24 year-old students who are earners is about 75%, but their earnings are less than 40% of their non-student counterparts. In Costa Rica and Latvia, only about 13% of students are earning, but their earnings are more than 90% of their non-student counterparts (Figure A6.4; Education at a Glance Database).

## Figure A6.3. Share of earners among students, by age (2015)




1. Year of reference 2014.
2. Earnings net of income tax.
3. Data refer to 16-24 year-olds.
4. Year of reference 2013.

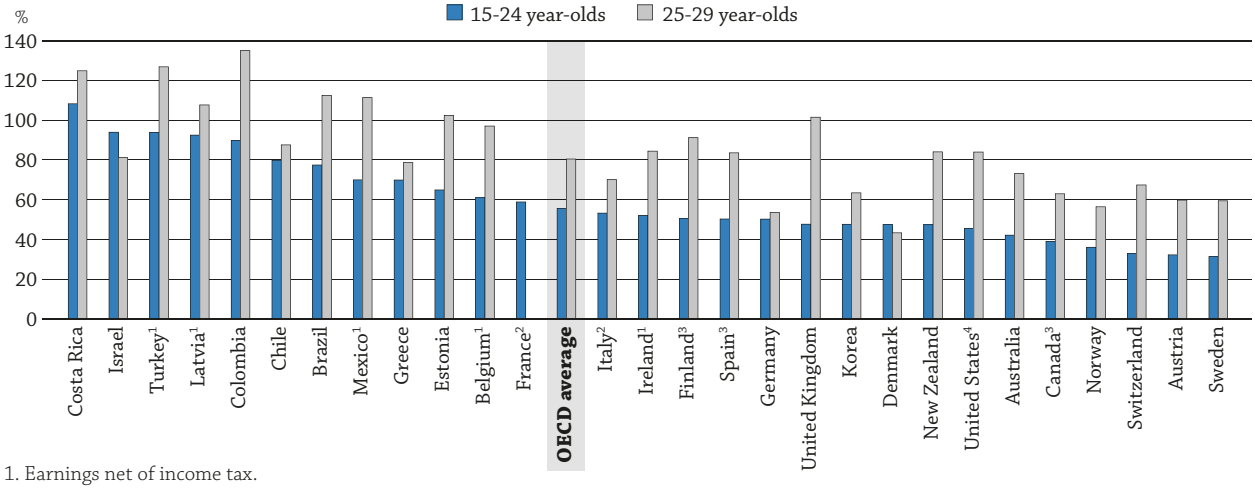
*Countries are ranked in descending order of the share of earners among 15-24 year-old students.*

**Source**: OECD, Education at a Glance Database, http://stats.oecd.org/. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933557413

## Figure A6.4. Earnings of students as a percentage of earnings of non-students, by age (2015)

*Students and non-students with earnings*




1. Earnings net of income tax.
2. Year of reference 2013.
3. Year of reference 2014.
4. Data refer to 16-24 year-olds.

*Countries are ranked in descending order of the earnings of 15-24 year-old students as a percentage of earnings of non-students.*

**Source**: OECD (2017), Education at a Glance Database, http://stats.oecd.org/. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933557432

The earnings gap between students and non-students narrows as the students' educational attainment increases. Across OECD countries on average, 15-24 year-old students with below upper secondary education earn 47% of what non-students earn. This gap is higher than the gap for 15-24 year-olds with upper secondary or post-secondary non-tertiary education (59%) or for those with tertiary education (61%) (Education at a Glance Database).

Earnings of older students (who are most likely enrolled in tertiary education) are close to those of non-students. Across OECD countries on average, 25-29 year-old students' earnings are about 80% of those of non-students. In Brazil, Costa Rica, Colombia, Latvia, Mexico and Turkey, older students earn more than non-students. In Denmark, Germany and Norway, however, they earn about 50% less than non-students (Figure A6.4).

In this section we have been comparing the earnings of students and non-students who are employed. What happens if we include in this comparison those who are not employed, i.e. we compare the average per capita earnings of all students with those of all non-students? The earnings gap between students and non-students becomes even larger: on average across OECD countries, 15-24 year-old students earn 56% of the earnings of non-students, but the percentage drops to 28% when including those who are earning and those who are not. The respective percentages among older students (aged 25-29) are 80% and 63%. One reason is that the share of students who are not earning is generally larger than the share of non-students with no earnings (Education at a Glance Database).

## Definitions

**Adults** refer to 25-64 year-olds.

**Educational attainment** refers to the highest level of education attained by a person.

**Levels of education:** See the *Reader's Guide* at the beginning of this publication for a presentation of all ISCED 2011 levels.

## Methodology

Most of the analyses use full-time, full-year earnings of the population (25-64 year-olds), but relative earnings of the population with specific educational attainment are also analysed by taking into account part-time earners and people with no income from employment. For distribution of earnings, data include part-time workers and do not control for hours worked, although they are likely to influence earnings in general and the distribution in particular. For the definition of full-time earnings, countries were asked whether they had applied a self-designated full-time status or a threshold value of the typical number of hours worked per week.

Earnings data are based on an annual, monthly or weekly reference period, depending on the country. The length of the reference period for earnings also differs. Data on earnings are before income tax for most countries. Earnings of self-employed people are excluded for many countries and, in general, there is no simple and comparable method to separate earnings from employment and returns to capital invested in a business.

This indicator does not take into consideration the impact of effective income from free government services. Therefore, in some countries although incomes could be lower than in other countries, the state provides both free healthcare and schooling.

The total (men plus women) average for earnings is not the simple average of the earnings figures for men and women. Instead it is the average based on earnings of the total population. This overall average weights the average earnings separately for men and women by the share of men and women with different levels of educational attainment.

Please see the *OECD Handbook for Internationally Comparative Education Statistics: Concepts, Standards, Definitions and Classifications* (OECD, 2017) for more information and Annex 3 for country-specific notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

## Source

The indicator is based on the data collection on education and earnings by the OECD LSO (Labour Market and Social Outcomes of Learning) Network. The data collection takes account of earnings for individuals working full time full year, as well as part time or part year, during the reference period. This database contains data on dispersion of earnings from work and on student versus non-student earnings. The source for most countries is national household surveys.

**Note regarding data from Israel**

The statistical data for Israel are supplied by and are under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

## References

OECD (2017), *OECD Handbook for Internationally Comparative Education Statistics: Concepts, Standards, Definitions and Classifications*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264279889-en.

OECD (2016a), *OECD Employment Outlook 2016*, OECD Publishing, Paris, http://dx.doi.org/10.1787/empl_outlook-2016-en.

OECD (2016b), *Education at a Glance 2016: OECD Indicators*, OECD Publishing, Paris, http://dx.doi.org/10.1787/eag-2016-en.

## Indicator A6 Tables

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| | |
|---|---|
| Table A6.1 | Relative earnings of workers, by educational attainment (2015) |
| Table A6.2 | Level of earnings relative to median earnings, by educational attainment (2015) |
| Table A6.3 | Differences in earnings between female and male workers, by educational attainment and age group (2015) |

Cut-off date for the data: 19 July 2017. Any updates on data can be found on line at http://dx.doi.org/10.1787/eag-data-en. More breakdowns can also be found at http://stats.oecd.org/, Education at a Glance Database.

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## Table A6.1. Relative earnings of workers, by educational attainment (2015)

*25-64 year-olds with income from employment (full- and part-time workers); upper secondary education = 100*

| | | Below upper secondary | Post-secondary non-tertiary | Tertiary | | | Total tertiary |
|---|---|---|---|---|---|---|---|
| | | | | Short-cycle tertiary | Bachelor's or equivalent | Master's, doctoral or equivalent | |
| | | (1) | (2) | (3) | (4) | (5) | (6) |
| OECD | Australia | 83 | 97 | 108 | 143 | 179 | 140 |
| | Austria | 71 | 107 | 138 | 91 | 184 | 153 |
| | Belgium[1] | 84 | 101 | c | 121 | 167 | 140 |
| | Canada[1] | 87 | 122 | 118 | 147 | 189 | 141 |
| | Chile | 68 | a | 142 | 264 | 472 | 237 |
| | Czech Republic[2] | 74 | m | 112 | 142 | 180 | 169 |
| | Denmark[1] | 81 | 129 | 116 | 113 | 169 | 131 |
| | Estonia | 87 | 87 | 92 | 124 | 133 | 124 |
| | Finland[1] | 99 | 115 | 120 | 122 | 164 | 137 |
| | France[3] | 80 | c | 131 | 138 | 205 | 154 |
| | Germany | 76 | 118 | 153 | 158 | 185 | 166 |
| | Greece | 77 | 99 | 114 | 134 | 166 | 139 |
| | Hungary | 73 | 97 | 103 | 177 | 240 | 199 |
| | Iceland | m | m | m | m | m | m |
| | Ireland[4] | 82 | 95 | 124 | 170 | 203 | 166 |
| | Israel | 72 | a | 109 | 161 | 211 | 158 |
| | Italy[3] | 77 | m | x(5) | x(5) | 141[d] | 141 |
| | Japan[5] | 78 | m | m | m | m | 152 |
| | Korea | 72 | a | 115 | 145 | 190 | 141 |
| | Latvia[4] | 87 | 92 | 111 | 134 | 165 | 144 |
| | Luxembourg[1, 2] | 64 | m | m | m | m | 158 |
| | Mexico[4] | 61 | a | 130 | 196 | 371 | 202 |
| | Netherlands[1] | 82 | 124 | 132 | 132 | 184 | 150 |
| | New Zealand | 87 | 114 | 115 | 137 | 178 | 140 |
| | Norway | 76 | 103 | 119 | 114 | 157 | 128 |
| | Poland[1] | 84 | 100 | m | 141 | 164 | 160 |
| | Portugal | 74 | 105 | 165 | 169[d] | x(4) | 169 |
| | Slovak Republic[2] | 65 | m | 125 | 125 | 177 | 170 |
| | Slovenia | 80 | a | m | m | m | 171 |
| | Spain[1] | 71 | 114 | m | m | m | 153 |
| | Sweden | 82 | 126 | m | m | m | 117 |
| | Switzerland[2] | 77 | m | x(4, 5) | 137[d] | 164[d] | 151 |
| | Turkey[4] | 70 | a | m | m | m | 167 |
| | United Kingdom | 76 | a | 124 | 151 | 181 | 153 |
| | United States[2] | 68 | m | 114 | 166 | 232 | 174 |
| | OECD average | 78 | m | 122 | 146 | 198 | 156 |
| | EU22 average | 79 | 107 | 124 | 138 | 177 | 153 |
| Partners | Argentina | m | m | m | m | m | m |
| | Brazil[2] | 62 | m | x(4) | 235[d] | 449 | 249 |
| | China | m | m | m | m | m | m |
| | Colombia[2] | 67 | m | m | m | m | 234 |
| | Costa Rica | 72 | c | 133 | 212 | 365 | 215 |
| | India | m | m | m | m | m | m |
| | Indonesia | m | m | m | m | m | m |
| | Lithuania[1] | 86 | 113 | a | 155 | 213 | 179 |
| | Russian Federation | m | m | m | m | m | m |
| | Saudi Arabia | m | m | m | m | m | m |
| | South Africa | m | m | m | m | m | m |
| | G20 average | m | m | m | m | m | m |

**Note:** See *Definitions* and *Methodology* sections for more information. Data and more breakdowns available at http://stats.oecd.org/, Education at a Glance Database.

1. Year of reference 2014.
2. Index 100 refers to the combined ISCED levels 3 and 4 of the educational attainment levels in the ISCED 2011 classification.
3. Year of reference 2013.
4. Earnings net of income tax.
5. Year of reference 2012.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

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## Table A6.2. Level of earnings relative to median earnings, by educational attainment (2015)

*Median earnings from work for the 25-64 year-olds with earnings for all levels of education*

| | | Below upper secondary | | | | | Upper secondary or post-secondary non-tertiary | | | | | Tertiary | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | At or below half of the median | More than half the median but at or below the median | More than the median but at or below 1.5 times the median | More than 1.5 times the median but at or below twice the median | More than twice the median | At or below half of the median | More than half the median but at or below the median | More than the median but at or below 1.5 times the median | More than 1.5 times the median but at or below twice the median | More than twice the median | At or below half of the median | More than half the median but at or below the median | More than the median but at or below 1.5 times the median | More than 1.5 times the median but at or below twice the median | More than twice the median |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) |
| OECD | Australia | 29 | 42 | 19 | 5 | 4 | 20 | 39 | 26 | 8 | 7 | 15 | 25 | 28 | 17 | 16 |
| | Austria | 35 | 42 | 18 | 4 | 2 | 21 | 32 | 30 | 11 | 6 | 17 | 18 | 24 | 17 | 23 |
| | Belgium[1] | 11 | 63 | 25 | 1 | 0 | 5 | 57 | 34 | 3 | 0 | 1 | 28 | 51 | 14 | 6 |
| | Canada[2] | 37 | 30 | 19 | 8 | 7 | 27 | 29 | 21 | 11 | 12 | 22 | 22 | 20 | 14 | 22 |
| | Chile | 23 | 53 | 16 | 5 | 3 | 11 | 41 | 24 | 12 | 11 | 3 | 14 | 17 | 17 | 50 |
| | Czech Republic | 22 | 58 | 17 | 2 | 0 | 10 | 47 | 32 | 8 | 4 | 3 | 18 | 37 | 18 | 23 |
| | Denmark | 27 | 42 | 25 | 4 | 2 | 16 | 38 | 34 | 8 | 4 | 13 | 22 | 40 | 14 | 11 |
| | Estonia | 18 | 51 | 19 | 7 | 5 | 15 | 46 | 23 | 8 | 8 | 10 | 32 | 29 | 12 | 16 |
| | Finland[2] | 28 | 37 | 25 | 6 | 3 | 22 | 38 | 30 | 7 | 3 | 13 | 22 | 33 | 17 | 15 |
| | France[3] | 34 | 39 | 19 | 4 | 3 | 21 | 37 | 28 | 9 | 5 | 11 | 20 | 32 | 18 | 19 |
| | Germany | 41 | 33 | 20 | 5 | 2 | 23 | 35 | 28 | 9 | 5 | 14 | 18 | 24 | 20 | 24 |
| | Greece | 36 | 38 | 20 | 4 | 2 | 21 | 35 | 30 | 9 | 5 | 11 | 23 | 35 | 16 | 15 |
| | Hungary | 3 | 80 | 14 | 3 | 1 | 0 | 61 | 24 | 9 | 7 | 0 | 15 | 25 | 26 | 34 |
| | Iceland | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Ireland[1] | 40 | 29 | 19 | 7 | 5 | 29 | 32 | 22 | 9 | 8 | 15 | 20 | 20 | 19 | 26 |
| | Israel | 31 | 50 | 13 | 4 | 2 | 19 | 43 | 21 | 8 | 8 | 12 | 27 | 20 | 14 | 27 |
| | Italy[3] | 30 | 34 | 25 | 7 | 3 | 19 | 29 | 30 | 12 | 10 | 15 | 18 | 27 | 16 | 23 |
| | Japan[4] | 37 | 33 | 18 | 7 | 4 | 29 | 29 | 19 | 12 | 11 | 17 | 20 | 21 | 16 | 27 |
| | Korea | 28 | 57 | 12 | 2 | 1 | 14 | 48 | 23 | 8 | 6 | 6 | 30 | 29 | 17 | 19 |
| | Latvia[1] | 10 | 61 | 22 | 5 | 2 | 5 | 56 | 28 | 7 | 3 | 2 | 27 | 38 | 18 | 15 |
| | Luxembourg[2] | 11 | 69 | 16 | 4 | 1 | 3 | 53 | 25 | 11 | 7 | 0 | 20 | 29 | 24 | 27 |
| | Mexico[1] | 28 | 40 | 20 | 7 | 6 | 13 | 27 | 26 | 15 | 20 | 5 | 10 | 17 | 17 | 51 |
| | Netherlands[2] | 33 | 36 | 24 | 5 | 2 | 22 | 35 | 28 | 10 | 5 | 15 | 21 | 26 | 18 | 20 |
| | New Zealand | 21 | 47 | 22 | 7 | 3 | 17 | 36 | 28 | 11 | 8 | 11 | 26 | 29 | 17 | 17 |
| | Norway | 31 | 41 | 21 | 5 | 2 | 16 | 38 | 32 | 9 | 5 | 12 | 23 | 39 | 14 | 12 |
| | Poland[2] | 15 | 58 | 20 | 5 | 3 | 10 | 49 | 27 | 8 | 6 | 2 | 25 | 34 | 18 | 21 |
| | Portugal | 9 | 55 | 24 | 6 | 5 | 6 | 39 | 29 | 11 | 16 | 3 | 14 | 21 | 20 | 42 |
| | Slovak Republic | 35 | 47 | 14 | 3 | 1 | 18 | 36 | 28 | 11 | 7 | 12 | 16 | 27 | 18 | 27 |
| | Slovenia | c | 84 | 14 | 1 | 0 | c | 63 | 28 | 6 | 3 | c | 20 | 33 | 25 | 23 |
| | Spain[2] | 41 | 27 | 19 | 8 | 5 | 27 | 25 | 21 | 14 | 14 | 17 | 17 | 18 | 15 | 33 |
| | Sweden | 20 | 52 | 23 | 3 | 2 | 13 | 41 | 32 | 10 | 4 | 16 | 29 | 35 | 12 | 8 |
| | Switzerland | 28 | 51 | 18 | 1 | 0 | 22 | 39 | 31 | 6 | 2 | 10 | 23 | 33 | 19 | 15 |
| | Turkey[1] | 33 | 43 | 18 | 5 | 2 | 19 | 35 | 23 | 14 | 9 | 12 | 12 | 12 | 26 | 38 |
| | United Kingdom | 29 | 44 | 19 | 5 | 2 | 21 | 39 | 25 | 10 | 6 | 10 | 22 | 27 | 20 | 21 |
| | United States | 47 | 38 | 10 | 3 | 2 | 27 | 37 | 19 | 9 | 8 | 14 | 22 | 23 | 15 | 26 |
| | **OECD average** | 27 | 47 | 19 | 5 | 3 | 17 | 40 | 27 | 10 | 7 | 10 | 21 | 28 | 17 | 24 |
| | **EU22 average** | 25 | 49 | 20 | 5 | 2 | 16 | 42 | 28 | 9 | 6 | 10 | 21 | 30 | 18 | 22 |
| Partners | Argentina | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Brazil | 29 | 42 | 15 | 6 | 7 | 9 | 40 | 22 | 12 | 18 | 2 | 12 | 13 | 13 | 60 |
| | China | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Colombia | 35 | 35 | 21 | 6 | 3 | 18 | 27 | 33 | 12 | 10 | 6 | 12 | 21 | 15 | 47 |
| | Costa Rica | 24 | 49 | 19 | 5 | 3 | 12 | 37 | 27 | 13 | 11 | 3 | 12 | 19 | 15 | 51 |
| | India | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Indonesia | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Lithuania[2] | 31 | 44 | 13 | 8 | 3 | 20 | 43 | 19 | 11 | 7 | 15 | 22 | 20 | 17 | 27 |
| | Russian Federation | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Saudi Arabia | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | South Africa | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | **G20 average** | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |

**Note:** See *Definitions* and *Methodology* sections for more information. Data and more breakdowns are available at http://stats.oecd.org/, Education at a Glance Database.

1. Earnings net of income tax.
2. Year of reference 2014.
3. Year of reference 2013.
4. Year of reference 2012.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

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## Table A6.3. Differences in earnings between female and male workers, by educational attainment and age group (2015)

*Adults with income from employment, average annual full-time full-year earnings of women as a percentage of men's earnings*

| | | Below upper secondary education | | | Upper secondary or post-secondary non-tertiary education | | | Tertiary education | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 25-64 | 35-44 | 55-64 | 25-64 | 35-44 | 55-64 | 25-64 | 35-44 | 55-64 |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| OECD | Australia | 82 | 86 | 78 | 74 | 76 | 77 | 79 | 75 | 97 |
| | Austria | 79 | 76 | 76 | 82 | 81 | 89 | 69 | 72 | 60 |
| | Belgium | c | c | c | 83 | 86 | c | 81 | 86 | c |
| | Canada[1] | 67 | 80 | 64 | 70 | 74 | 70 | 72 | 74 | 72 |
| | Chile | 78 | 81 | 74 | 73 | 72 | 74 | 65 | 71 | 59 |
| | Czech Republic | 81 | 82 | 83 | 79 | 75 | 86 | 69 | 66 | 82 |
| | Denmark | 83 | 80 | 83 | 81 | 79 | 83 | 76 | 78 | 74 |
| | Estonia | 60 | 62 | 66 | 62 | 56 | 69 | 67 | 71 | 72 |
| | Finland[1] | 81 | 79 | 80 | 79 | 76 | 79 | 77 | 76 | 74 |
| | France[2] | 75 | c | c | 79 | 74 | 100 | 71 | 79 | c |
| | Germany | 84 | c | 114 | 86 | 86 | 84 | 74 | 74 | 80 |
| | Greece | 82 | 72 | 78 | 82 | 91 | 63 | 71 | 75 | 66 |
| | Hungary | 81 | 81 | 76 | 85 | 83 | 88 | 68 | 62 | 75 |
| | Iceland | m | m | m | m | m | m | m | m | m |
| | Ireland[3] | 86 | c | c | 73 | 69 | 61 | 70 | 75 | 63 |
| | Israel | c | c | c | 71 | 67 | 82 | 70 | 79 | 73 |
| | Italy[2] | 79 | 83 | 80 | 80 | 82 | 80 | 72 | 71 | 71 |
| | Japan | m | m | m | m | m | m | m | m | m |
| | Korea | 68 | 71 | 68 | 63 | 65 | 60 | 71 | 73 | 70 |
| | Latvia[3] | 77 | 77 | 78 | 72 | 69 | 78 | 76 | 75 | 86 |
| | Luxembourg[1] | 90 | 91 | 95 | 96 | 100 | 92 | 86 | 90 | c |
| | Mexico[3] | 74 | 74 | 75 | 76 | 73 | 81 | 70 | 66 | 131 |
| | Netherlands[1] | 87 | 90 | 88 | 83 | 89 | 79 | 77 | 87 | 75 |
| | New Zealand | 78 | 76 | 77 | 75 | 74 | 71 | 74 | 77 | 67 |
| | Norway | 81 | 79 | 80 | 78 | 77 | 77 | 73 | 74 | 71 |
| | Poland[1] | 71 | 67 | 74 | 78 | 71 | 85 | 70 | 67 | 73 |
| | Portugal | 76 | 77 | 73 | 73 | 74 | 69 | 71 | 75 | 69 |
| | Slovak Republic | 73 | 73 | 73 | 75 | 70 | 81 | 68 | 62 | 72 |
| | Slovenia | 83 | 82 | 82 | 87 | 82 | 95 | 82 | 80 | 87 |
| | Spain[1] | 75 | 73 | 77 | 76 | 77 | 76 | 82 | 81 | 84 |
| | Sweden | 91 | 92 | 94 | m | m | m | 81 | 89 | 85 |
| | Switzerland | 77 | 79 | 78 | 82 | 78 | 80 | 80 | 89 | 84 |
| | Turkey[3] | 67 | 68 | 63 | 82 | 77 | c | 86 | 91 | c |
| | United Kingdom | 81 | 94 | 80 | 75 | 75 | 68 | 77 | 77 | 80 |
| | United States | 65 | 65 | 58 | 72 | 66 | 73 | 70 | 69 | 67 |
| | OECD average | 78 | 78 | 78 | 78 | 76 | 78 | 74 | 76 | 77 |
| | EU22 average | 80 | 79 | 82 | 79 | 78 | 80 | 74 | 76 | 75 |
| Partners | Argentina | m | m | m | m | m | m | m | m | m |
| | Brazil | 69 | 69 | 68 | 65 | 66 | 60 | 65 | 66 | 63 |
| | China | m | m | m | m | m | m | m | m | m |
| | Colombia | 80 | 78 | 77 | 79 | 80 | 73 | 76 | 75 | 67 |
| | Costa Rica | 80 | 79 | 80 | 81 | 82 | c | 91 | 102 | 91 |
| | India | m | m | m | m | m | m | m | m | m |
| | Indonesia | m | m | m | m | m | m | m | m | m |
| | Lithuania[1] | 79 | 76 | 73 | 79 | 76 | 85 | 75 | 70 | 80 |
| | Russian Federation | m | m | m | m | m | m | m | m | m |
| | Saudi Arabia | m | m | m | m | m | m | m | m | m |
| | South Africa | m | m | m | m | m | m | m | m | m |
| | G20 average | m | m | m | m | m | m | m | m | m |

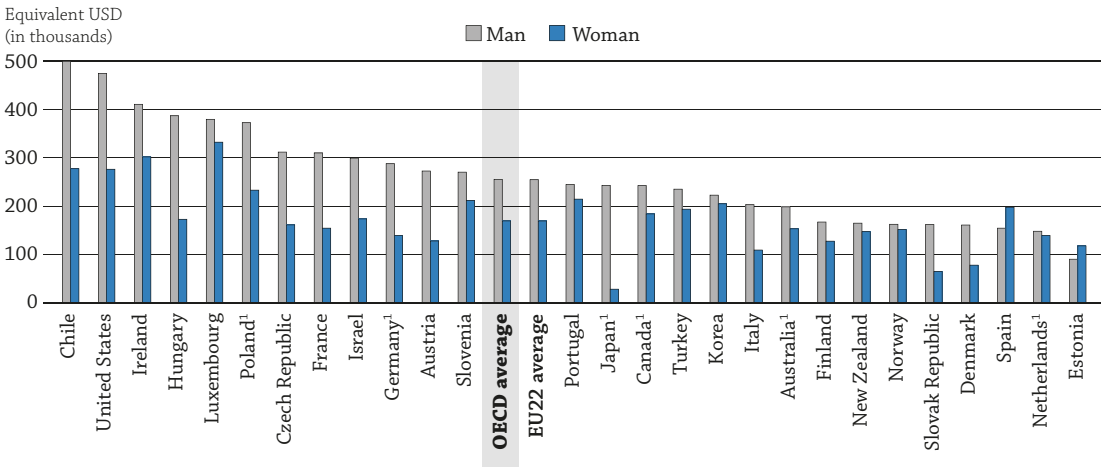
**Note:** See *Definitions* and *Methodology* sections for more information. Data and more breakdowns available at http://stats.oecd.org/, Education at a Glance Database.
1. Year of reference 2014.
2. Year of reference 2013.
3. Earnings net of income tax.
**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).
*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*
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# WHAT ARE THE FINANCIAL INCENTIVES TO INVEST IN EDUCATION?

- Not only does education pay off for individuals financially, but the public sector also benefits from a large proportion of tertiary-educated individuals through, for instance, greater tax revenues and social contributions.
- Adults completing tertiary education benefit from substantial returns on investment: they are more likely to be employed and earn more than adults without tertiary education.
- Gender matters: on average across OECD countries, the private net financial returns for a woman with tertiary education are about two-thirds of those for a man with a similar level of education.

## Figure A7.1. Private net financial returns for a man or a woman attaining tertiary education (2013)

*As compared with returns to upper secondary education, in equivalent USD converted using PPPs for GDP*




1. Reference year differs from 2013. Refer to the source table for more details.

*Countries are ranked in descending order of private net returns for a man.*

**Source**: OECD (2017), Tables A7.1a and A7.1b. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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## Context

Investing time and money in education is an investment in human capital. For adults, the labour market outcomes of higher educational attainment outweigh the initial cost of pursuing education. Better chances of employment (see Indicator A5) and higher earnings (see Indicator A6) are strong incentives for adults to invest in education and postpone employment. Although women currently have higher levels of education than men on average (see Indicator A1), men reap more benefits from their investment, as they have better employment and earning outcomes from education, on average.

Countries benefit from more highly educated individuals through reduced public expenditure on social welfare programmes and higher revenues earned through taxes paid once individuals enter the labour market. As both individuals and governments benefit from higher levels of educational attainment, it is important to consider the financial returns to education alongside other indicators, such as completion and access to higher education (see Indicators A9 and C3).

It is crucial for policy makers to understand the economic incentives to invest in education. For instance, large increases in labour market demand for more highly educated workers can drive up earnings and returns until supply catches up. Such conditions signal a need for additional investment in education. In countries with rigid labour laws and structures that tend to limit differences in wages across the board, this signal will be weaker.

Other factors not reflected in this indicator also affect the returns to education. The financial returns may be affected by the field of study and by the country-specific economic, labour market and institutional context, as well as by social and cultural factors. Furthermore, returns to education are not limited to financial returns, but also include other economic outcomes, such as increased productivity boosting economic growth; and social outcomes, such as higher social participation and better health and well-being (see Indicator A8).

## Other findings

- In all OECD countries with data, the main cost for tertiary education is not direct costs such as tuition fees or living expenses but foregone earnings of individuals while they are in school.
- Across OECD countries on average, a man invests around USD 60 900 to earn a tertiary degree while a woman invests around USD 55 000. In Japan and the Netherlands, average investment exceeds USD 100 000 for both genders when direct and indirect costs are taken into account.
- The gender gap in private net financial returns to tertiary education is the largest in Japan, where the returns for a man are nine times higher than the returns for a woman.

## Note

This indicator provides information on the incentives to invest in further education by considering its costs and benefits, including net financial returns and internal rate of return. It examines the choice between pursuing higher levels of education and entering the labour market, focusing on two scenarios:

1. Investing in tertiary education versus entering the labour market with an upper secondary degree.
2. Investing in upper secondary education versus entering the labour market without an upper secondary degree.

Two types of investors are considered:

1. The individual (referred to here as "private") who chooses to pursue higher levels of education, and the additional net earnings and costs he or she can expect.
2. The government (referred to here as "public") that decides to invest in education, and the additional revenue it would receive (e.g. as tax revenues) and the costs involved.

This indicator estimates the financial returns on investment in education up until only a theoretical age of retirement of 64 years old, and therefore does not take into account pensions. Values are presented separately for men and women to account for gender differences in earnings and unemployment rates.

Please note that due to continuous improvements to this indicator's methodology, values presented in this edition of *Education at a Glance* are not comparable with values in previous editions.

A7

## Analysis

### Financial incentives for individuals to invest in tertiary education

Figure A7.1 shows that investing in education pays off in the long run for both men and women. Even if it may seem costly for individuals at the time of making the choice to pursue further education, the gains they will make over their career exceed the costs they bear during their studies. This is true for tertiary education, and it also holds for upper secondary education (Figure A7.1, Tables A7.1a and b, and Tables A7.4a and b, available on line).

Across OECD countries, the average private financial returns from tertiary education for a man are USD 252 100. Although young women tend to complete higher education more often than young men (see Indicator A1), women have lower relative net financial returns to investing in tertiary education than men. This is the case in all OECD countries with available data, with the exception of Estonia and Spain. For a woman, on average, net financial returns for tertiary education are USD 167 400, representing only two-thirds of those for a man (Figure A7.1).

Another way to analyse returns to education is through the internal rate of return, which can be interpreted as the interest rate on the investment made on a higher level of education that an individual can expect to receive every year during a working-age life. On average across OECD countries, the internal rate of return to tertiary education for men is 13%, and 11% for women (Tables A7.1a and b).

The lower returns for women can be attributed to a variety of factors, such as women's lower earnings, higher unemployment rates, a higher share of part-time work on average and differences in the choice of field of study between men and women. Tax systems can discourage married women from seeking full-time employment, or if there are not enough resources for early childhood education and care, women might stay at home taking care of small children. Japan has the largest gender difference, with net financial returns for a tertiary-educated man nine times higher than for a woman with a similar level of education; in this country, the tax system and the labour market structure tend to drive down women's returns from tertiary education. Private net financial returns may increase for Japanese women in the future, however, as the current government aims to promote women's higher labour market participation by introducing a number of specific policy measures (Cabinet Secretariat, 2016) (Tables A7.1a and b).

### The costs and benefits of tertiary education for individuals

Private net financial returns are the difference between the costs and benefits associated with attaining an additional level of education. In this analysis, the costs include direct costs of attaining education and foregone earnings, while the benefits include earnings from employment and unemployment benefits. To show the impact of the tax system on total benefits, the income tax effect, social contributions effect and social transfers effect are also analysed (see *Definitions* section).

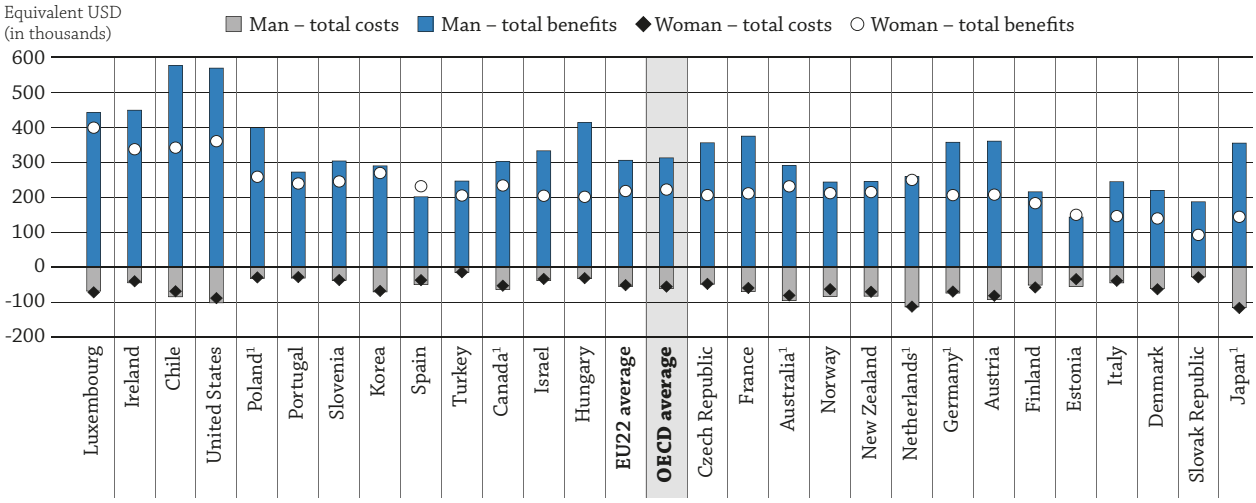
Total private costs – composed of direct costs and foregone earnings – generally rise with the level of education. The direct costs for a man or a women with tertiary education are, on average across OECD countries, about USD 9 800. The main costs are the foregone earnings, however. These vary substantially across countries, depending on the length of education, earnings levels and the difference in earnings across levels of educational attainment. Foregone earnings for a man while attaining tertiary education vary from USD 10 900 in Turkey to more than USD 100 000 in the Netherlands. When direct costs and foregone earnings are combined, Japan has the highest total private costs. A man or a woman attaining tertiary education in Japan can expect total costs to be more than seven times higher than those in Turkey (Tables A7.1a and b).

Figure A7.2 shows that the earning advantages of higher education bring considerable benefits for individuals, but how men and women benefit can depend on country-specific labour market outcomes. On average, the total benefit for a tertiary-educated man is USD 313 000 while the total benefit for a tertiary-educated woman is USD 222 400. This means that, over a career of 40 years, a tertiary-educated man will get about USD 2 265 more per year in total benefits than a woman with the same level of education. This is mainly due to gender gaps in earnings (see Indicator A6), but is also related to higher inactivity and unemployment rates for women (see Indicator A5) (Tables A7.1a and b).

While further education yields higher earnings over the career of an individual, private benefits from investing in education also depend on countries' tax and social benefits systems. Higher income taxes and social contributions and lower social transfers linked to higher earnings can discourage investing in further education by creating a wedge between the level of gross earnings needed to recover the cost of education and the final net earnings perceived by the individual (Brys and Torres, 2013). For instance, a man who chooses to invest in tertiary education will pay, on average, about 40% of his additional income associated with tertiary education in taxes and social contributions.

## Figure A7.2. Private costs and benefits of education for a man or a woman attaining tertiary education (2013)

*In equivalent USD converted using PPPs for GDP*




1. Reference year differs from 2013. Refer to the source table for more details.

*Countries are ranked in descending order of net financial private returns for a woman.*

**Source**: OECD (2017), Tables A7.1a and A7.1b. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933557508

In Chile, Estonia and Korea, income taxes and social contributions amount to less than a quarter of the gross earning benefits, while in Denmark, Ireland and the Netherlands, they add up to more than half of the gross earning benefits. As women tend to have lower earnings, they often fall into lower income tax brackets. For example, in Ireland and Israel, the income tax and social contributions relative to the gross earnings for a tertiary-educated woman are about 10 percentage points lower than for a tertiary-educated man (Tables A7.1a and b).

### *Financial incentives for governments to invest in tertiary education*

Governments are major investors in education (see Indicator B3). From a budgetary point of view, it is important to analyse if these investment will be recovered, particularly in an era of substantial fiscal constraints. Since higher levels of educational attainment tend to translate into higher earnings (see Indicator A6), investments in education generate higher public returns, because tertiary-educated adults pay higher income taxes and social contributions and require fewer social transfers. Across OECD countries, on average, the public net financial returns are about USD 154 000 for a man who has completed tertiary education (Table A7.2a).

Comparison of Figures A7.2 and A7.3 shows that net financial returns on investment for governments are generally closely related to private returns. Countries where individuals benefit the most from pursuing tertiary education are also those where governments gain the largest returns. This is the case in Luxembourg, Ireland and Portugal – countries with very large net financial private and public returns. Net financial private and public returns are lowest in Denmark, Estonia and the Slovak Republic (Figures A7.2 and A7.3).

### *The costs and benefits of tertiary education for governments*

Public net financial returns are based on the difference between costs and benefits associated with an individual attaining an additional level of education. In this analysis, the costs include direct public costs for supporting education and foregone taxes on earnings, while the benefits are calculated using income tax, social contributions, social transfers and unemployment benefits.

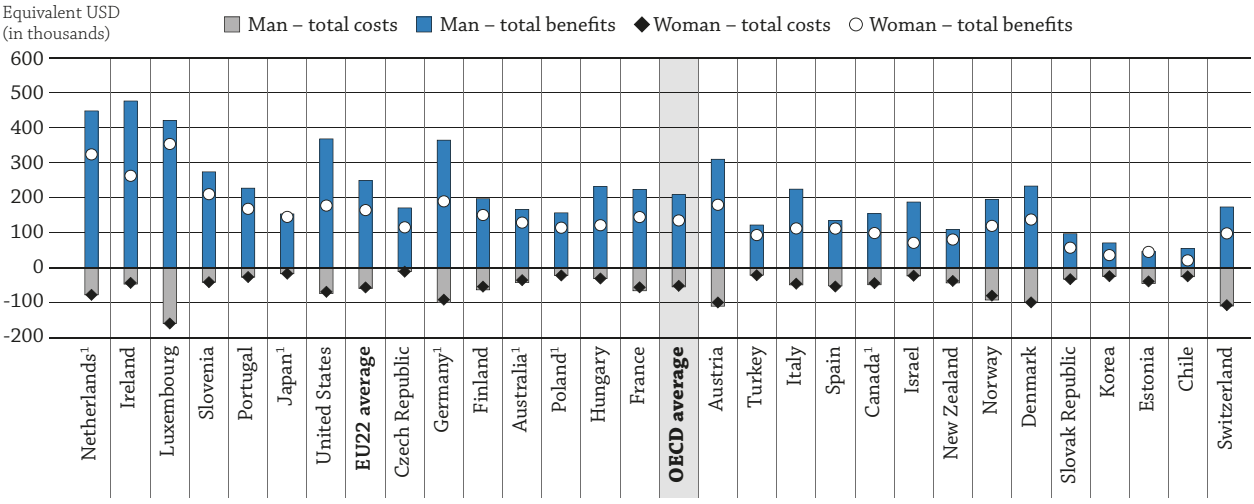
For governments, direct costs represent the largest share of total public costs for tertiary education. This is particularly true in countries such as Denmark, Finland and Norway, where students pay low or no tuition fees and have access to generous public subsidies for higher education (see Indicator B5). Countries with high direct costs, such as Austria, Denmark, Germany, Luxembourg, Norway and Switzerland, are also the countries with the largest total public costs (more than USD 90 000). In contrast, the Czech Republic has the lowest total public costs (USD 11 000) of all OECD countries. This is mostly because adults with upper secondary education who enter

the labour market receive more public benefits than they pay taxes, contributing to lower the foregone taxes on earnings for adults who complete tertiary education. On average across OECD countries, the total public cost for a man to attain tertiary education is USD 54 900 and USD 51 800 for a woman (Tables A7.2a and b).

Governments offset the costs of direct investment and foregone tax revenue associated with education by receiving additional tax revenue and social contributions from higher-paid workers, who often have higher educational attainment. On average, these total public benefits are USD 208 900 for a man and USD 135 200 for a woman with tertiary education (Table A7.2a and b).

## Figure A7.3. Public costs and benefits of education for a man or a woman attaining tertiary education (2013)

*In equivalent USD converted using PPPs for GDP*




1. Reference year differs from 2013. Refer to the source table for more details.

*Countries are ranked in descending order of net financial public returns for a woman.*

**Source**: OECD (2017), Tables A7.2a and A7.2b. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933557527

Total public benefits differ between men and women, mainly due to differences in labour market outcomes. This suggests that governments have a role to play in easing the integration and participation of women in the labour market, in order to assure higher gains from the large investment that women make in their education. On average, the total public benefits of education for a man attaining tertiary education are about 50% larger than the total public benefits for a tertiary-educated woman. Across OECD countries, Ireland has the largest total public benefits of tertiary education for a man (USD 476 800) and Luxembourg has the largest total public benefits for a woman (USD 353 900). Estonia has the lowest total public benefits of tertiary education for a man (USD 46 100) and Chile has the lowest total public benefits of tertiary education for a woman (USD 21 000) (Tables A7.2a and b).

The internal rate of return to governments is also higher for a man (10% for tertiary and 9% for upper secondary) than for a woman with similar levels of education (8% for both tertiary and upper secondary) (Tables A7.2a and b, and Tables A7.5a and b, available on line).

On average, the total public benefits (USD 208 900) for a tertiary-educated man can be broken down into income tax effect (USD 132 100), social contribution effect (USD 48 700), transfers effect (USD 400) and unemployment benefits effect (USD 27 700). For a tertiary-educated woman, the total public benefits are lower (USD 135 200) and can also be broken down into USD 75 600 in income tax effect, USD 33 300 in social contribution effect, USD 3 700 in transfers effect and USD 22 600 in unemployment benefits effect (Tables A7.2a and b).

Higher taxes can sometimes deter private investment in different areas, including education, and a number of countries have tax policies that effectively lower the actual tax paid by adults, particularly by those in high-income brackets. For example, tax relief for interest payments on mortgage debt has been introduced in many OECD countries to encourage home ownership. These benefits favour those with higher levels of education and high

marginal tax rates. The tax incentives for housing are particularly large in the Czech Republic, Denmark, Finland, the Netherlands, Norway and the United States (Andrews, Caldera Sánchez and Johansson, 2011).

### *Private and public costs and benefits by level of tertiary education*

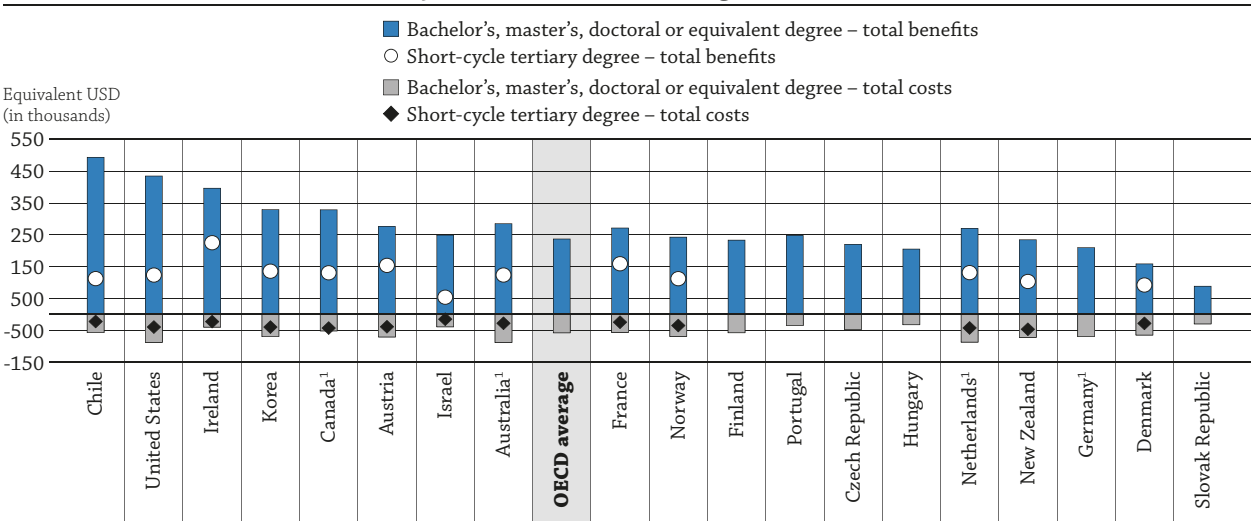
A new development in this edition of Indicator A7 is the disaggregation of the financial returns by level of tertiary education. The returns for tertiary education can be broken down into short-cycle tertiary (ISCED 5) and bachelor's, master's and doctoral or equivalent level (ISCED 6 to 8). The composition of the population with qualifications at each tertiary level differs between countries (see Indicator A1), and the mix of qualifications can have a significant effect on the financial returns to education for the aggregate tertiary level.

On average, for a man, the private net financial returns from achieving a bachelor's, master's, doctoral or equivalent level (USD 316 700) are greater than for all tertiary education (USD 252 100) when both are compared to a man attaining upper secondary education. The same pattern is true for the private net financial returns for a woman (USD 206 400 for bachelor's, master's and doctoral or equivalent level compared to USD 167 400 for all tertiary). For short-cycle tertiary there are insufficient countries with available data to compute the OECD average, but the general trend shows that the private net financial returns are lower than for all tertiary education. Therefore, financial returns to tertiary education will under-represent the value of investing in bachelor's, master's and doctoral degrees in countries with a larger share of tertiary-educated adults with short-cycle tertiary, than in countries with a smaller share of adults with short-cycle tertiary (Tables A7.1b and A7.3b).

Figure A7.4 shows that the private total costs for a woman holding a bachelor's, master's, doctoral or equivalent degree are higher than the private total costs for short-cycle tertiary education. However, the total benefits for bachelor's, master's and doctoral or equivalent degree largely offsets the additional costs, resulting in higher private net financial returns from bachelor's, master's, doctoral or equivalent degree. The difference in the private net financial returns between these two categories can be large in some countries. In Chile and the United States the difference for a woman is largest: the private net financial returns from short-cycle tertiary are less than USD 95 000 and over USD 345 000 for bachelor's, master's, doctoral or equivalent level. In contrast, in Denmark, the difference is smallest: the private net financial returns from short-cycle tertiary are USD 64 600 and USD 94 300 for bachelor's, master's, doctoral or equivalent level. This can be explained by a more even net earnings distribution across levels of educational attainment in Denmark (see Indicator A6) (Figure A7.4).

## Figure A7.4. Private costs and benefits of education for a woman attaining a short-cycle tertiary degree or a bachelor's, master's and doctoral or equivalent degree (2013)

*In equivalent USD converted using PPPs for GDP*




**Note**: Short-cycle tertiary degree corresponds to ISCED level 5 and bachelor's, master's, doctoral or equivalent degrees correspond to ISCED levels 6, 7 and 8.

1. Year of reference differs from 2013. Refer to the source table for more details.

*Countries are ranked in descending order of net financial private returns for a woman with a bachelor's, master's or equivalent degree.*

**Source**: OECD (2017), Table A7.3b. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933557546

A7

## Box A7.1. Foregone earnings and students working while studying

In addition to being composed of direct costs such as tuition fees or living expenses, a large share of the cost of tertiary education is made up of the foregone earnings: what individuals could have earned if they had entered the labour market instead of pursuing a degree. The net financial returns presented in the tables and figures of this indicator assume that students have no earnings while studying, which means that to calculate the foregone earnings associated with gaining a tertiary education, the average earnings of individuals with an upper secondary education are used.

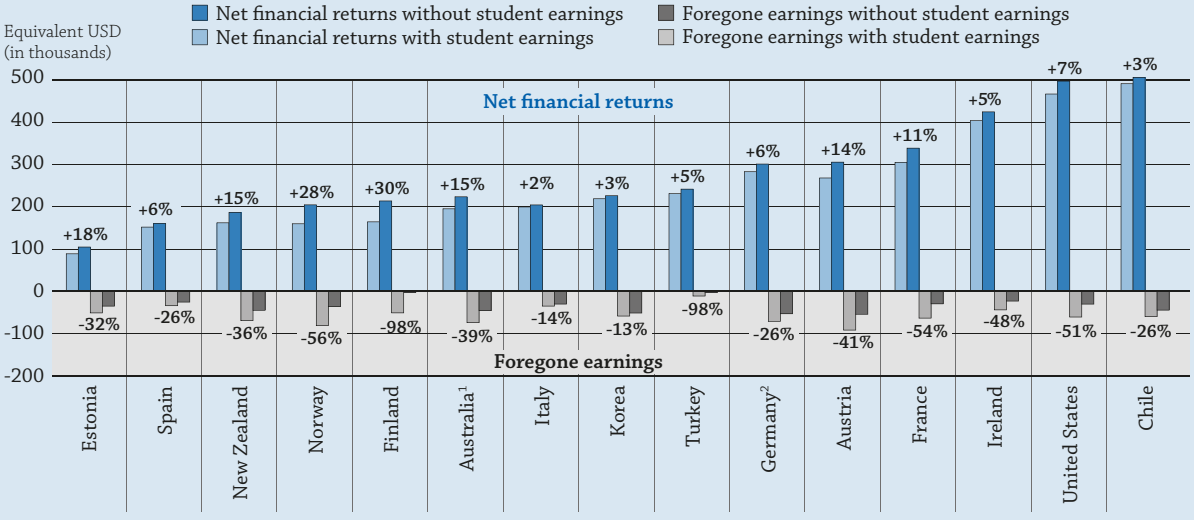
In many countries, however, it is very common for students to work while attending a tertiary programme. In Finland, Norway and Turkey, over 80% of 15-24 year-old tertiary students have earnings from work (see Indicator A6). In these cases, the foregone earnings of education do not represent what an individual could have earned in the labour market, but instead the difference between what they could have earned in the labour market and what they are able to earn as tertiary students. Figure A7.a shows the increase in the net present value for a man when taking into account the fact that students can work while in education.

It is clear that by working while studying, students are able to considerably reduce the foregone earnings, which then increases considerably the net financial returns to investing in it. The change in the net present value varies across countries, depending on the share of tertiary students who work and on the average earnings they receive. In about half of countries with data, the net present value increases by over 10%.

It is important to note that by overestimating the cost of education, the assumption that students have no earnings leads to an underestimation of the net financial returns presented in the rest of the tables and figures of this indicator. Therefore, given that the results presented are already overwhelmingly positive, assuming students can have earnings while in education only reinforces the message that investing in education pays off.

### Figure A7.a. Change in private net financial returns and foregone earnings for a man attaining tertiary education when student earnings are taken into account (2013)

*As compared with returns to upper secondary education, in equivalent USD converted using PPPs for GDP*




**How to read this figure**

In Estonia, the inclusion of student earnings in the model decreases the foregone earnings to tertiary education by 32% (from USD 50 900 to USD 34 700) and increases the net present value by 18% (from USD 89 300 to USD 105 500).

1. Year of reference 2012.
2. Year of reference 2014.

*Countries are ranked in ascending order of net private returns with student earnings.*

**Source**: OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933557565

## Box A7.2. The effect of the discount rate on the net financial returns to education

Investment in education is costly in the short term but accrues benefits in the long term, in the form of better labour market prospects throughout an individual's working life. One way to analyse the returns on this investment is through its net present value (NPV) – a cost-benefit analysis that converts future expected flows into a present value by using a discount rate.

The choice of the discount rate depends on the estimation of how risky the investment is deemed to be. Higher discount rates mean a higher value is put on money today as opposed to money tomorrow, and are used when the flows in the future are considered less certain. The choice of the discount rate makes a considerable difference when analysing investments with long-term effects, as is the case with investment in education.

The NPV results presented in the tables and figures of this indicator are calculated using a discount rate of 2%, based on the average real interest on government bonds across OECD countries. However, it can be argued that education is not a risk-free investment, and that therefore a higher discount rate should be used. For example, some OECD countries have performed similar cost-benefit analyses to assess investment in education using higher discount rates: Sweden and the United Kingdom have used 3.5%, and Ireland and the Netherlands have used 5%.

### Table A7.a. Net financial returns for a man attaining tertiary education, by discount rate (2013)

*As compared with a man attaining upper secondary education, in equivalent USD converted using PPPs for GDP*

| | Discount rate | | |
|---|---|---|---|
| | 2% | 3.5% | 5% |
| Australia[1] | 196 000 | 107 200 | 51 900 |
| Austria | 269 100 | 151 300 | 79 500 |
| Canada | 239 300 | 143 900 | 84 700 |
| Chile | 492 700 | 311 200 | 197 400 |
| Czech Republic | 307 700 | 206 700 | 140 800 |
| Denmark | 159 000 | 91 700 | 49 200 |
| Estonia | 89 300 | 52 600 | 28 600 |
| Finland | 165 100 | 102 300 | 62 000 |
| France | 305 900 | 185 300 | 110 800 |
| Germany[2] | 284 000 | 180 800 | 114 700 |
| Hungary | 381 800 | 264 100 | 187 000 |
| Ireland | 405 100 | 272 600 | 187 700 |
| Israel | 295 400 | 200 500 | 138 800 |
| Italy | 200 400 | 121 100 | 71 900 |
| Japan[1] | 239 900 | 134 700 | 68 700 |
| Korea | 219 900 | 132 100 | 77 200 |
| Latvia[2] | 77 700 | 49 100 | 30 200 |
| Luxembourg | 374 500 | 243 300 | 158 900 |
| Netherlands[2] | 146 300 | 74 500 | 29 500 |
| New Zealand | 162 800 | 94 800 | 51 300 |
| Norway | 160 500 | 81 600 | 32 900 |
| Poland[1] | 367 600 | 246 200 | 168 500 |
| Portugal | 241 600 | 155 900 | 102 000 |
| Slovak Republic | 160 000 | 104 500 | 68 800 |
| Slovenia | 266 800 | 172 300 | 112 800 |
| Spain | 152 600 | 87 500 | 47 600 |
| Turkey | 232 100 | 153 400 | 104 100 |
| United States | 468 200 | 303 200 | 197 300 |
| **OECD average** | 252 200 | 158 000 | 98 400 |
| **EU22 average** | 251 600 | 159 600 | 101 200 |

**Note**: Values are based on the difference between men who attained a tertiary education compared with those who have attained an upper secondary education. Values have been rounded up to the nearest hundred.

1. Year of reference 2012.

2. Year of reference 2014.

**Source**: OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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Table A7.a shows how the net present value for a man attaining tertiary education changes when three different discount rates are used. Changing from a discount rate of 2% to 3.5% reduces the NPV by over 30% in all countries with data. If the discount rate of 5% is used, the NPV falls by over 50% in all countries and in the Netherlands and Norway the decrease is the largest, at 80%. Although the returns remain positive in all countries even when using a discount rate of 5%, these comparisons highlight the sensitivity of the NPV results to changes in the discount rate.

Another way to analyse this sensitivity is by examining the internal rate of return, which corresponds to the discount rate at which the investment in education would break even. In other words, as long as there is reason to believe the discount rate is below the internal rate of return, the returns to investing in education are expected to be positive.

## Definitions

**Adults** refer to 15-64 year-olds.

**Direct costs** are the direct expenditure on education per student during the time spent in school.

- **Private direct costs** are the total expenditure by households on education. They include net payments to educational institutions as well as payments for educational goods and services outside of educational institutions (school supplies, tutoring, etc.).
- **Public direct costs** are the spending by government on a student's education. They include direct public expenditure on educational institutions, government scholarships and other grants to students and households, and transfers and payments to other private entities for educational purposes.

**Foregone earnings** are the net earnings an individual would have had if he or she had entered the labour market and successfully found a job instead of choosing to pursue further studies.

**Foregone taxes on earnings** are the tax revenues the government would have received if the individual had chosen to enter the labour force and successfully found a job instead of choosing to pursue further studies.

**Gross earnings benefits** are the discounted sum of earnings premiums over the course of a working-age life associated with a higher level of education, provided that the individual successfully enters the labour market.

The **income tax effect** is the discounted sum of additional levels of income tax paid by the private individual or earned by the government over the course of a working-age life associated with a higher level of education.

The **internal rate of return** is the (hypothetical) real interest rate equalising the costs and benefits related to the educational investment. It can be interpreted as the interest rate an individual can expect to receive every year during a working-age life on the investment made on a higher level of education.

**Levels of education:** See the *Reader's Guide* at the beginning of this publication for a presentation of all ISCED 2011 levels.

**Net financial returns** are the net present value of the financial investment in education, the difference between the discounted financial benefits and the discounted financial cost of education, representing the additional value that education produces over and above the 2% real interest that is charged on these cash flows.

The **social contribution effect** is the discounted sum of additional employee social contributions paid by the private individual or received by the government over the course of a working-age life and associated with a higher level of education.

The **transfers effect** is the discounted sum of additional social transfers from the government to the private individual associated with a higher education level over the course of a working-age life. Social transfers include two types of benefits: housing benefits and social assistance.

The **unemployment benefit effect** is the discounted sum of additional unemployment benefits associated with a higher education level over the course of a working-age life and received during periods of unemployment.

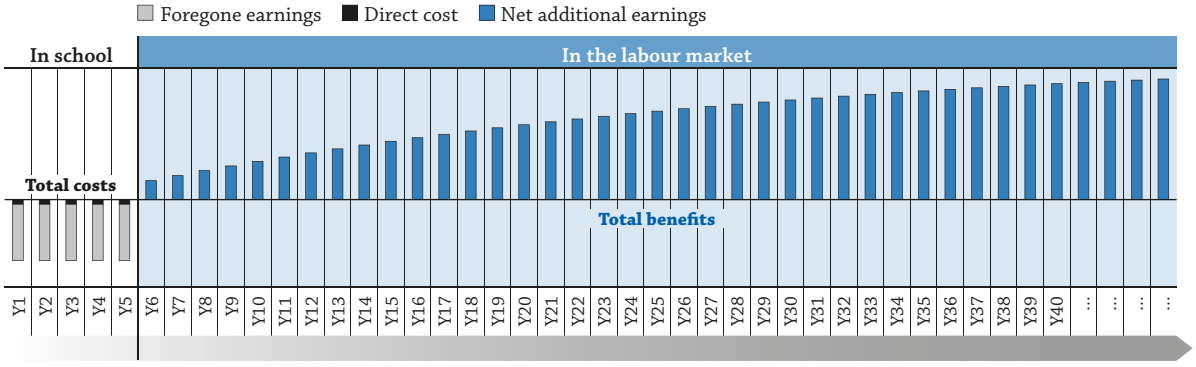
## Methodology

This indicator estimates the financial returns on investment in education from the age of entry into further education to a theoretical age of retirement of 64 years old. Returns to education are studied purely from the perspective of financial investment that weighs the costs and benefits of the investment.

Two periods are considered (Diagram 1):

- Time spent in school during which the private individual and the government pay the cost of education.
- Time spent in the labour market during which the individual and the government receive the added payments associated with further education.

**Diagram 1. Financial returns on investment in education over a life-time for a representative individual**




In calculating the returns to education, the approach taken here is the net present value of the investment. The net present value expresses in present value cash transfers happening at different times, to allow direct comparisons of costs and benefits. In this framework, costs and benefits during a working-age life are transferred back to the start of the investment. This is done by discounting all cash flows back to the beginning of the investment with a fixed interest rate (discount rate).

To set a value for the discount rate, long-term government bonds have been used as a benchmark. Across OECD countries, the average long-term interest rate was approximately 4.12% in 2012, which leads to an average real interest on government bonds of approximately 2%. The 2% real discount rate used in this indicator reflects the fact that calculations are made in constant prices (OECD, 2016a; OECD, 2016b).

The choice of discount rate is difficult, as it should reflect not only the overall time horizon of the investment, but also the cost of borrowing or the perceived risk of the investment (see Box A7.2). To allow for comparability and to facilitate interpretation of results, the same discount rate (2%) is applied across all OECD countries. All values presented in the tables in this indicator are in net present value equivalent USD using purchasing power parities (PPP).

### Changes in the methodology between *Education at a Glance 2017* and *2016*

In the current edition, the counterfactual for tertiary education is upper secondary (ISCED 3), while it was upper secondary or post-secondary non-tertiary (ISCED 3-4) in the previous edition. Similarly, the group compared to below upper secondary (ISCED 0 to 2) is now upper secondary (ISCED 3), while it was upper secondary or post-secondary non-tertiary (ISCED 3-4) in *Education at a Glance 2016*. Finally, earnings of non-students are now used instead of the minimum wage to calculate the foregone earnings.

Please see the *OECD Handbook for Internationally Comparative Education Statistics: Concepts, Standards, Definitions and Classifications* (OECD, 2017) for more information and Annex 3 for country-specific notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

## Source

The source for the direct costs of education is the UOE data collection on finance (year of reference 2013 unless otherwise specified in the tables).

The data on gross earnings are from the OECD Network on Labour Market and Social Outcomes earnings data collection. Earnings are age, gender and attainment level-specific.

Income tax data are computed using the OECD *Taxing Wages* model, which determines the level of taxes based on a given level of income. This model computes the level of the tax wedge on income for several household composition scenarios. For this indicator, a single worker with no children is used. For country-specific details on income tax in this model, see *Taxing Wages 2016* (OECD, 2016c).

Employee social contributions are computed using the OECD *Taxing Wages* model's scenario of a single worker aged 40 with no children. For country-specific details on employee social contributions in this model, see *Taxing Wages 2016* (OECD, 2016c).

Social transfers and unemployment benefits are computed using the OECD Tax-Benefit model, assuming a single worker aged 40 with no children. Individuals are considered eligible for full unemployment benefits during unemployment. For country-specific details on social transfers or unemployment benefits in the Tax-Benefit model, see OECD Benefits and Wages country-specific information, available on line at www.oecd.org/els/soc/benefits-and-wages-country-specific-information.htm.

**Note regarding data from Israel**

The statistical data for Israel are supplied by and are under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

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## Indicator A7 Tables

StatLink http://dx.doi.org/10.1787/888933559883

| | | |
|---|---|---|
| | Table A7.1a | Private costs and benefits for a man attaining tertiary education (2013) |
| | Table A7.1b | Private costs and benefits for a woman attaining tertiary education (2013) |
| | Table A7.2a | Public costs and benefits for a man attaining tertiary education (2013) |
| | Table A7.2b | Public costs and benefits for a woman attaining tertiary education (2013) |
| | Table A7.3a | Private/public costs and benefits for a man attaining tertiary education, by level of tertiary education (2013) |
| | Table A7.3b | Private/public costs and benefits for a woman attaining tertiary education, by level of tertiary education (2013) |
| | Table A7.a | Net financial returns for a man attaining tertiary education, by discount rate (2013) |
| WEB | Table A7.4a | Private costs and benefits for a man attaining upper secondary education (2013) |
| WEB | Table A7.4b | Private costs and benefits for a woman attaining upper secondary education (2013) |
| WEB | Table A7.5a | Public costs and benefits for a man attaining upper secondary education (2013) |
| WEB | Table A7.5b | Public costs and benefits for a woman attaining upper secondary education (2013) |

Cut-off date for the data: 19 July 2017. Any updates on data can be found on line at http://dx.doi.org/10.1787/eag-data-en.

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## Table A7.1a. Private costs and benefits for a man attaining tertiary education (2013)

*As compared with a man attaining upper secondary education, in equivalent USD converted using PPPs for GDP*

| | | Direct costs | Foregone earnings | Total costs | Earnings benefits decomposition (taking into account the unemployment effect) | | | | Unemployment benefits effect | Total benefits | Net financial returns | Internal rate of return |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Gross earnings benefits | Income tax effect | Social contribution effect | Transfers effect | | | | |
| | | (1) | (2) | (3)=(1)+(2) | (4) | (5) | (6) | (7) | (8) | (9)=(4)+(5)+(6)+(7)+(8) | (10)=(9)+(3) | (11) |
| OECD | Australia[1] | - 21 200 | - 73 900 | **- 95 100** | 431 400 | - 156 100 | 0 | 0 | 15 800 | **291 100** | **196 000** | 8% |
| | Austria | 0 | - 91 700 | **- 91 700** | 621 000 | - 201 500 | - 83 500 | 0 | 24 800 | **360 800** | **269 100** | 8% |
| | Belgium | m | m | **m** | m | m | m | m | m | **m** | **m** | m |
| | Canada[2] | - 18 300 | - 44 700 | **- 63 000** | 405 800 | - 122 700 | - 9 500 | 0 | 28 700 | **302 300** | **239 300** | 10% |
| | Chile | - 24 800 | - 59 400 | **- 84 200** | 598 300 | - 17 200 | - 40 900 | 0 | 36 700 | **576 900** | **492 700** | 13% |
| | Czech Republic | - 3 900 | - 44 500 | **- 48 400** | 483 800 | - 97 200 | - 53 200 | 0 | 22 700 | **356 100** | **307 700** | 17% |
| | Denmark | 0 | - 61 100 | **- 61 100** | 432 300 | - 211 600 | 0 | - 11 500 | 10 900 | **220 100** | **159 000** | 8% |
| | Estonia | - 3 500 | - 50 900 | **- 54 400** | 155 600 | - 32 000 | - 3 100 | 0 | 23 200 | **143 700** | **89 300** | 8% |
| | Finland | 0 | - 50 800 | **- 50 800** | 353 700 | - 138 000 | - 27 500 | 0 | 27 700 | **215 900** | **165 100** | 11% |
| | France | - 5 900 | - 63 300 | **- 69 200** | 526 000 | - 132 100 | - 67 900 | - 100 | 49 200 | **375 100** | **305 900** | 11% |
| | Germany[3] | - 2 600 | - 71 000 | **- 73 600** | 653 000 | - 216 300 | - 110 700 | 0 | 31 600 | **357 600** | **284 000** | 12% |
| | Greece | m | m | **m** | m | m | m | m | m | **m** | **m** | m |
| | Hungary | - 11 100 | - 20 900 | **- 32 000** | 563 800 | - 90 200 | - 104 300 | 0 | 44 500 | **413 800** | **381 800** | 24% |
| | Iceland | m | m | **m** | m | m | m | m | m | **m** | **m** | m |
| | Ireland | - 500 | - 43 700 | **- 44 200** | 697 400 | - 322 800 | - 28 200 | - 1 200 | 104 100 | **449 300** | **405 100** | 21% |
| | Israel | - 11 400 | - 26 400 | **- 37 800** | 476 500 | - 113 400 | - 57 100 | 0 | 27 200 | **333 200** | **295 400** | 19% |
| | Italy | - 9 600 | - 34 800 | **- 44 400** | 417 500 | - 158 400 | - 40 600 | 0 | 26 300 | **244 800** | **200 400** | 11% |
| | Japan[1] | - 44 700 | - 70 600 | **- 115 300** | 458 400 | - 72 700 | - 60 700 | 0 | 30 200 | **355 200** | **239 900** | 8% |
| | Korea | - 11 800 | - 58 400 | **- 70 200** | 344 200 | - 40 500 | - 28 300 | 0 | 14 700 | **290 100** | **219 900** | 10% |
| | Latvia[3] | - 7 000 | - 23 600 | **- 30 600** | 130 900 | - 28 100 | - 13 700 | 0 | 19 200 | **108 300** | **77 700** | 10% |
| | Luxembourg | 0 | - 67 900 | **- 67 900** | 817 300 | - 301 400 | - 101 700 | 0 | 28 200 | **442 400** | **374 500** | 14% |
| | Mexico | m | m | **m** | m | m | m | m | m | **m** | **m** | m |
| | Netherlands[3] | - 6 900 | - 106 300 | **- 113 200** | 621 500 | - 277 100 | - 115 000 | 0 | 30 100 | **259 500** | **146 300** | 7% |
| | New Zealand | - 13 200 | - 69 300 | **- 82 500** | 344 800 | - 106 300 | 0 | 0 | 6 800 | **245 300** | **162 800** | 8% |
| | Norway | - 2 400 | - 81 000 | **- 83 400** | 423 800 | - 153 700 | - 33 100 | 0 | 6 900 | **243 900** | **160 500** | 7% |
| | Poland[1] | - 3 300 | - 28 400 | **- 31 700** | 483 100 | - 42 700 | - 86 100 | 0 | 45 000 | **399 300** | **367 600** | 21% |
| | Portugal | - 7 300 | - 23 500 | **- 30 800** | 406 700 | - 145 800 | - 44 700 | 0 | 56 200 | **272 400** | **241 600** | 16% |
| | Slovak Republic | - 5 000 | - 22 400 | **- 27 400** | 213 500 | - 35 100 | - 28 600 | 0 | 37 600 | **187 400** | **160 000** | 14% |
| | Slovenia | 0 | - 37 300 | **- 37 300** | 498 600 | - 117 200 | - 110 200 | 0 | 32 900 | **304 100** | **266 800** | 15% |
| | Spain | - 15 300 | - 33 800 | **- 49 100** | 214 700 | - 60 600 | - 13 400 | 0 | 61 000 | **201 700** | **152 600** | 9% |
| | Sweden | m | m | **m** | m | m | m | m | m | **m** | **m** | m |
| | Switzerland | m | m | **m** | m | m | m | m | m | **m** | **m** | m |
| | Turkey | - 3 700 | - 10 900 | **- 14 600** | 338 500 | - 65 000 | - 50 800 | 0 | 24 000 | **246 700** | **232 100** | 23% |
| | United Kingdom | m | m | **m** | m | m | m | m | m | **m** | **m** | m |
| | United States | - 40 700 | - 60 700 | **- 101 400** | 808 200 | - 245 100 | - 61 800 | 0 | 68 300 | **569 600** | **468 200** | 13% |
| | OECD average | - 9 800 | - 51 100 | **- 60 900** | 461 400 | - 132 200 | - 49 100 | - 500 | 33 400 | **313 000** | **252 100** | 13% |
| | EU22 average | - 4 600 | - 50 100 | **- 54 700** | 480 000 | - 151 800 | - 59 900 | - 800 | 38 600 | **306 100** | **251 400** | 13% |

**Note:** Values are based on the difference between men who attained tertiary education compared with those who have attained upper secondary education. Values have been rounded up to the nearest hundred.

1. Year of reference 2012.
2. Year of reference for direct costs is 2012.
3. Year of reference 2014.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933559674

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## Table A7.1b. Private costs and benefits for a woman attaining tertiary education (2013)

*As compared with a woman attaining upper secondary education, in equivalent USD converted using PPPs for GDP*

| | | | | | Earnings benefits decomposition (taking into account the unemployment effect) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Direct costs | Foregone earnings | Total costs | Gross earnings benefits | Income tax effect | Social contribution effect | Transfers effect | Unemployment benefits effect | Total benefits | Net financial returns | Internal rate of return |
| | | (1) | (2) | (3)=(1)+(2) | (4) | (5) | (6) | (7) | (8) | (9)=(4)+(5)+(6)+(7)+(8) | (10)=(9)+(3) | (11) |
| OECD | Australia[1] | - 21 200 | - 59 100 | **- 80 300** | 333 100 | - 117 500 | 0 | 0 | 16 000 | **231 600** | **151 300** | 9% |
| | Austria | 0 | - 81 300 | **- 81 300** | 368 800 | - 102 400 | - 69 700 | 0 | 11 100 | **207 800** | **126 500** | 6% |
| | Belgium | m | m | **m** | m | m | m | m | m | **m** | **m** | m |
| | Canada[2] | - 18 300 | - 34 100 | **- 52 400** | 294 200 | - 63 500 | - 24 100 | 0 | 27 500 | **234 100** | **181 700** | 13% |
| | Chile | - 24 800 | - 43 600 | **- 68 400** | 340 100 | - 3 200 | - 23 800 | 0 | 29 100 | **342 200** | **273 800** | 12% |
| | Czech Republic | - 3 900 | - 43 400 | **- 47 300** | 271 500 | - 54 500 | - 29 900 | - 3 800 | 23 300 | **206 600** | **159 300** | 11% |
| | Denmark | 0 | - 62 600 | **- 62 600** | 235 500 | - 96 100 | 0 | - 13 900 | 14 300 | **139 800** | **77 200** | 7% |
| | Estonia | - 3 500 | - 30 200 | **- 33 700** | 161 700 | - 33 300 | - 3 200 | 0 | 25 000 | **150 200** | **116 500** | 14% |
| | Finland | 0 | - 57 400 | **- 57 400** | 282 300 | - 99 200 | - 22 300 | 0 | 22 700 | **183 500** | **126 100** | 9% |
| | France | - 5 900 | - 53 100 | **- 59 000** | 297 400 | - 67 800 | - 41 000 | - 9 000 | 32 000 | **211 600** | **152 600** | 9% |
| | Germany[3] | - 2 600 | - 66 600 | **- 69 200** | 363 300 | - 93 400 | - 74 200 | - 4 700 | 15 500 | **206 500** | **137 300** | 7% |
| | Greece | m | m | **m** | m | m | m | m | m | **m** | **m** | m |
| | Hungary | - 11 100 | - 19 800 | **- 30 900** | 270 300 | - 43 300 | - 50 000 | 0 | 24 600 | **201 600** | **170 700** | 15% |
| | Iceland | m | m | **m** | m | m | m | m | m | **m** | **m** | m |
| | Ireland | - 500 | - 39 300 | **- 39 800** | 482 600 | - 176 200 | - 22 100 | - 1 400 | 54 800 | **337 700** | **297 900** | 20% |
| | Israel | - 11 400 | - 21 700 | **- 33 100** | 244 400 | - 36 700 | - 27 900 | 0 | 24 800 | **204 600** | **171 500** | 15% |
| | Italy | - 9 600 | - 28 800 | **- 38 400** | 217 100 | - 70 000 | - 20 600 | 0 | 19 900 | **146 400** | **108 000** | 8% |
| | Japan[1] | - 44 700 | - 71 500 | **- 116 200** | 266 500 | - 22 500 | - 36 500 | - 72 500 | 9 400 | **144 400** | **28 200** | 3% |
| | Korea | - 11 800 | - 55 600 | **- 67 400** | 295 100 | - 12 200 | - 24 500 | 0 | 11 300 | **269 700** | **202 300** | 9% |
| | Latvia[3] | - 7 000 | - 20 200 | **- 27 200** | 110 800 | - 23 800 | - 11 600 | 0 | 17 100 | **92 500** | **65 300** | 10% |
| | Luxembourg | 0 | - 71 400 | **- 71 400** | 667 200 | - 230 200 | - 83 100 | 0 | 45 400 | **399 300** | **327 900** | 14% |
| | Mexico | m | m | **m** | m | m | m | m | m | **m** | **m** | m |
| | Netherlands[3] | - 6 900 | - 105 400 | **- 112 300** | 488 900 | - 193 800 | - 80 900 | 0 | 35 800 | **250 000** | **137 700** | 6% |
| | New Zealand | - 13 200 | - 56 600 | **- 69 800** | 258 200 | - 64 600 | 0 | - 2 000 | 23 600 | **215 200** | **145 400** | 9% |
| | Norway | - 2 400 | - 60 000 | **- 62 400** | 316 400 | - 88 600 | - 24 700 | 0 | 9 000 | **212 100** | **149 700** | 9% |
| | Poland[1] | - 3 300 | - 25 500 | **- 28 800** | 297 600 | - 26 300 | - 53 100 | 0 | 40 700 | **258 900** | **230 100** | 17% |
| | Portugal | - 7 300 | - 20 600 | **- 27 900** | 311 800 | - 100 800 | - 34 300 | 0 | 63 000 | **239 700** | **211 800** | 16% |
| | Slovak Republic | - 5 000 | - 23 500 | **- 28 500** | 96 400 | - 15 900 | - 12 900 | 0 | 25 100 | **92 700** | **64 200** | 8% |
| | Slovenia | 0 | - 36 300 | **- 36 300** | 373 000 | - 80 200 | - 82 400 | 0 | 35 100 | **245 500** | **209 200** | 13% |
| | Spain | - 15 300 | - 21 300 | **- 36 600** | 220 900 | - 56 000 | - 14 000 | 0 | 81 000 | **231 900** | **195 300** | 13% |
| | Sweden | m | m | **m** | m | m | m | m | m | **m** | **m** | m |
| | Switzerland | m | m | **m** | m | m | m | m | m | **m** | **m** | m |
| | Turkey | - 3 700 | - 10 400 | **- 14 100** | 226 900 | - 39 200 | - 34 000 | 0 | 51 700 | **205 400** | **191 300** | 26% |
| | United Kingdom | m | m | **m** | m | m | m | m | m | **m** | **m** | m |
| | United States | - 40 700 | - 47 300 | **- 88 000** | 466 500 | - 111 600 | - 35 700 | 0 | 41 500 | **360 700** | **272 700** | 11% |
| | OECD average | - 9 800 | - 45 200 | **- 55 000** | 305 700 | - 75 800 | - 33 400 | - 3 800 | 29 700 | **222 400** | **167 400** | 11% |
| | EU22 average | - 4 600 | - 46 300 | **- 50 900** | 318 000 | - 90 600 | - 40 800 | - 1 900 | 33 500 | **218 200** | **167 300** | 11% |

**Note:** Values are based on the difference between women who attained tertiary education compared with those who have attained upper secondary education. Values have been rounded up to the nearest hundred.

1. Year of reference 2012.
2. Year of reference for direct costs is 2012.
3. Year of reference 2014.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933559693

## Table A7.2a. Public costs and benefits for a man attaining tertiary education (2013)

*As compared with a man attaining upper secondary education, in equivalent USD converted using PPPs for GDP*

| | | Direct costs | Foregone taxes on earnings | Total costs | Earnings benefits decomposition (taking into account the unemployment effect) | | | Unemployment benefits effect | Total benefits | Net financial returns | Internal rate of return |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Income tax effect | Social contribution effect | Transfers effect | | | | |
| | | (1) | (2) | (3)=(1)+(2) | (4) | (5) | (6) | (7) | (8)=(4)+(5)+(6)+(7) | (9)=(8)+(3) | (10) |
| OECD | Australia[1] | - 29 300 | - 13 100 | **- 42 400** | 156 100 | 0 | 0 | 10 600 | **166 700** | **124 300** | 9% |
| | Austria | - 78 400 | - 31 700 | **- 110 100** | 201 500 | 83 500 | 0 | 25 200 | **310 200** | **200 100** | 7% |
| | Belgium | m | m | **m** | m | m | m | m | **m** | **m** | m |
| | Canada[2] | - 39 400 | - 9 400 | **- 48 800** | 122 700 | 9 500 | 0 | 22 300 | **154 500** | **105 700** | 8% |
| | Chile | - 21 300 | - 4 500 | **- 25 800** | 17 200 | 40 900 | 0 | - 2 800 | **55 300** | **29 500** | 5% |
| | Czech Republic | - 28 700 | 17 700 | **- 11 000** | 97 200 | 53 200 | 0 | 20 600 | **171 000** | **160 000** | 27% |
| | Denmark | - 80 500 | - 18 200 | **- 98 700** | 211 600 | 0 | 11 500 | 10 400 | **233 500** | **134 800** | 6% |
| | Estonia | - 33 000 | - 11 700 | **- 44 700** | 32 000 | 3 100 | 0 | 11 000 | **46 100** | **1 400** | 2% |
| | Finland | - 77 700 | 14 400 | **- 63 300** | 138 000 | 27 500 | 0 | 31 800 | **197 300** | **134 000** | 8% |
| | France | - 61 500 | - 4 500 | **- 66 000** | 132 100 | 67 900 | 100 | 24 000 | **224 100** | **158 100** | 8% |
| | Germany[3] | - 70 700 | - 28 800 | **- 99 500** | 216 300 | 110 700 | 0 | 37 800 | **364 800** | **265 300** | 9% |
| | Greece | m | m | **m** | m | m | m | m | **m** | **m** | m |
| | Hungary | - 26 000 | - 5 200 | **- 31 200** | 90 200 | 104 300 | 0 | 37 800 | **232 300** | **201 100** | 17% |
| | Iceland | m | m | **m** | m | m | m | m | **m** | **m** | m |
| | Ireland | - 42 400 | - 4 500 | **- 46 900** | 322 800 | 28 200 | 1 200 | 124 600 | **476 800** | **429 900** | 19% |
| | Israel | - 22 500 | - 1 000 | **- 23 500** | 113 400 | 57 100 | 0 | 17 300 | **187 800** | **164 300** | 14% |
| | Italy | - 40 600 | - 8 600 | **- 49 200** | 158 400 | 40 600 | 0 | 25 700 | **224 700** | **175 500** | 9% |
| | Japan[1] | - 32 600 | 15 300 | **- 17 300** | 72 700 | 60 700 | 0 | 20 400 | **153 800** | **136 500** | 16% |
| | Korea | - 18 900 | - 5 700 | **- 24 600** | 40 500 | 28 300 | 0 | 2 100 | **70 900** | **46 300** | 7% |
| | Latvia[3] | - 27 100 | - 9 200 | **- 36 300** | 28 100 | 13 700 | 0 | 19 600 | **61 400** | **25 100** | 5% |
| | Luxembourg | - 151 700 | - 7 400 | **- 159 100** | 301 400 | 101 700 | 0 | 18 200 | **421 300** | **262 200** | 7% |
| | Mexico | m | m | **m** | m | m | m | m | **m** | **m** | m |
| | Netherlands[3] | - 77 300 | - 300 | **- 77 600** | 277 100 | 115 000 | 0 | 56 300 | **448 400** | **370 800** | 11% |
| | New Zealand | - 32 900 | - 10 600 | **- 43 500** | 106 300 | 0 | 0 | 2 700 | **109 000** | **65 500** | 7% |
| | Norway | - 66 600 | - 25 800 | **- 92 400** | 153 700 | 33 100 | 0 | 8 100 | **194 900** | **102 500** | 5% |
| | Poland[1] | - 23 200 | 1 100 | **- 22 100** | 42 700 | 86 100 | 0 | 28 100 | **156 900** | **134 800** | 15% |
| | Portugal | - 23 900 | - 3 200 | **- 27 100** | 145 800 | 44 700 | 0 | 37 000 | **227 500** | **200 400** | 12% |
| | Slovak Republic | - 34 400 | 1 500 | **- 32 900** | 35 100 | 28 600 | 0 | 33 500 | **97 200** | **64 300** | 8% |
| | Slovenia | - 34 300 | - 7 300 | **- 41 600** | 117 200 | 110 200 | 0 | 46 700 | **274 100** | **232 500** | 13% |
| | Spain | - 49 700 | - 2 400 | **- 52 100** | 60 600 | 13 400 | 0 | 61 000 | **135 000** | **82 900** | 6% |
| | Sweden | m | m | **m** | m | m | m | m | **m** | **m** | m |
| | Switzerland | - 92 400 | - 17 300 | **- 109 700** | 130 100 | 38 200 | 0 | 5 400 | **173 700** | **64 000** | 4% |
| | Turkey | - 19 500 | - 2 000 | **- 21 500** | 65 000 | 50 800 | 0 | 6 300 | **122 100** | **100 600** | 10% |
| | United Kingdom | m | m | **m** | m | m | m | m | **m** | **m** | m |
| | United States | - 59 400 | - 14 400 | **- 73 800** | 245 100 | 61 800 | 0 | 61 500 | **368 400** | **294 600** | 12% |
| | **OECD average** | - 48 100 | - 6 800 | **- 54 900** | 132 100 | 48 700 | 400 | 27 700 | **208 900** | **154 000** | 10% |
| | **EU22 average** | - 53 400 | - 5 800 | **- 59 200** | 151 800 | 59 900 | 800 | 37 000 | **249 500** | **190 300** | 11% |

**Note:** Values are based on the difference between men who attained tertiary education compared with those who have attained upper secondary education. Values have been rounded up to the nearest hundred.

1. Year of reference 2012.

2. Year of reference for direct costs is 2012.

3. Year of reference 2014.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933559712

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## Table A7.2b. Public costs and benefits for a woman attaining tertiary education (2013)

*As compared with a woman attaining upper secondary education, in equivalent USD converted using PPPs for GDP*

| | | Direct costs | Foregone taxes on earnings | Total costs | Earnings benefits decomposition (taking into account the unemployment effect) | | | Unemployment benefits effect | Total benefits | Net financial returns | Internal rate of return |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Income tax effect | Social contribution effect | Transfers effect | | | | |
| | | (1) | (2) | (3)=(1)+(2) | (4) | (5) | (6) | (7) | (8)=(4)+(5)+(6)+(7) | (9)=(8)+(3) | (10) |
| OECD | Australia[1] | - 29 300 | - 6 300 | **- 35 600** | 117 500 | 0 | 0 | 11 500 | **129 000** | **93 400** | 10% |
| | Austria | - 78 400 | - 21 000 | **- 99 400** | 102 400 | 69 700 | 0 | 7 800 | **179 900** | **80 500** | 4% |
| | Belgium | m | m | **m** | m | m | m | m | **m** | **m** | m |
| | Canada[2] | - 39 400 | - 4 700 | **- 44 100** | 63 500 | 24 100 | 0 | 11 500 | **99 100** | **55 000** | 7% |
| | Chile | - 21 300 | - 3 300 | **- 24 600** | 3 200 | 23 800 | 0 | - 6 000 | **21 000** | **- 3 600** | 1% |
| | Czech Republic | - 28 700 | 17 300 | **- 11 400** | 54 500 | 29 900 | 3 800 | 27 300 | **115 500** | **104 100** | 22% |
| | Denmark | - 80 500 | - 18 700 | **- 99 200** | 96 100 | 0 | 13 900 | 27 800 | **137 800** | **38 600** | 4% |
| | Estonia | - 33 000 | - 6 200 | **- 39 200** | 33 300 | 3 200 | 0 | 8 700 | **45 200** | **6 000** | 3% |
| | Finland | - 77 700 | 23 600 | **- 54 100** | 99 200 | 22 300 | 0 | 29 200 | **150 700** | **96 600** | 8% |
| | France | - 61 500 | 5 400 | **- 56 100** | 67 800 | 41 000 | 9 000 | 27 000 | **144 800** | **88 700** | 8% |
| | Germany[3] | - 70 700 | - 20 700 | **- 91 400** | 93 400 | 74 200 | 4 700 | 17 500 | **189 800** | **98 400** | 6% |
| | Greece | m | m | **m** | m | m | m | m | **m** | **m** | m |
| | Hungary | - 26 000 | - 4 900 | **- 30 900** | 43 300 | 50 000 | 0 | 28 200 | **121 500** | **90 600** | 11% |
| | Iceland | m | m | **m** | m | m | m | m | **m** | **m** | m |
| | Ireland | - 42 400 | - 1 000 | **- 43 400** | 176 200 | 22 100 | 1 400 | 63 100 | **262 800** | **219 400** | 15% |
| | Israel | - 22 500 | - 400 | **- 22 900** | 36 700 | 27 900 | 0 | 6 500 | **71 100** | **48 200** | 8% |
| | Italy | - 40 600 | - 5 100 | **- 45 700** | 70 000 | 20 600 | 0 | 21 800 | **112 400** | **66 700** | 6% |
| | Japan[1] | - 32 600 | 15 500 | **- 17 100** | 22 500 | 36 500 | 72 500 | 13 800 | **145 300** | **128 200** | 21% |
| | Korea | - 18 900 | - 5 400 | **- 24 300** | 12 200 | 24 500 | 0 | - 700 | **36 000** | **11 700** | 4% |
| | Latvia[3] | - 27 100 | - 7 600 | **- 34 700** | 23 800 | 11 600 | 0 | 12 200 | **47 600** | **12 900** | 4% |
| | Luxembourg | - 151 700 | - 7 800 | **- 159 500** | 230 200 | 83 100 | 0 | 40 600 | **353 900** | **194 400** | 6% |
| | Mexico | m | m | **m** | m | m | m | m | **m** | **m** | m |
| | Netherlands[3] | - 77 300 | - 300 | **- 77 600** | 193 800 | 80 900 | 0 | 49 400 | **324 100** | **246 500** | 10% |
| | New Zealand | - 32 900 | - 4 900 | **- 37 800** | 64 600 | 0 | 2 000 | 14 000 | **80 600** | **42 800** | 6% |
| | Norway | - 66 600 | - 13 300 | **- 79 900** | 88 600 | 24 700 | 0 | 6 300 | **119 600** | **39 700** | 4% |
| | Poland[1] | - 23 200 | 1 000 | **- 22 200** | 26 300 | 53 100 | 0 | 35 000 | **114 400** | **92 200** | 12% |
| | Portugal | - 23 900 | - 2 800 | **- 26 700** | 100 800 | 34 300 | 0 | 33 300 | **168 400** | **141 700** | 10% |
| | Slovak Republic | - 34 400 | 1 600 | **- 32 800** | 15 900 | 12 900 | 0 | 28 400 | **57 200** | **24 400** | 5% |
| | Slovenia | - 34 300 | - 7 100 | **- 41 400** | 80 200 | 82 400 | 0 | 47 700 | **210 300** | **168 900** | 10% |
| | Spain | - 49 700 | - 4 100 | **- 53 800** | 56 000 | 14 000 | 0 | 41 900 | **111 900** | **58 100** | 5% |
| | Sweden | m | m | **m** | m | m | m | m | **m** | **m** | m |
| | Switzerland | - 92 400 | - 14 800 | **- 107 200** | 68 700 | 28 400 | 0 | 1 100 | **98 200** | **- 9 000** | 2% |
| | Turkey | - 19 500 | - 2 000 | **- 21 500** | 39 200 | 34 000 | 0 | 20 100 | **93 300** | **71 800** | 11% |
| | United Kingdom | m | m | **m** | m | m | m | m | **m** | **m** | m |
| | United States | - 59 400 | - 9 500 | **- 68 900** | 111 600 | 35 700 | 0 | 30 400 | **177 700** | **108 800** | 7% |
| | OECD average | - 48 100 | - 3 700 | **- 51 800** | 75 600 | 33 300 | 3 700 | 22 600 | **135 200** | **83 400** | 8% |
| | EU22 average | - 53 400 | - 3 000 | **- 56 400** | 90 600 | 40 800 | 1 900 | 31 500 | **164 800** | **108 400** | 8% |

**Note:** Values are based on the difference between women who attained tertiary education compared with those who have attained upper secondary education. Values have been rounded up to the nearest hundred.

1. Year of reference 2012.
2. Year of reference for direct costs is 2012.
3. Year of reference 2014.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933559731

## Table A7.3a. Private/public costs and benefits for a man attaining tertiary education, by level of tertiary education (2013)

*As compared with a man attaining upper secondary education, in equivalent USD converted using PPPs for GDP*

| | | Short-cycle tertiary (ISCED 5) | | | | | | Bachelor's, master's and doctoral or equivalent levels (ISCED 6 to 8) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Private | | | Public | | | Private | | | Public | | |
| | | Total costs | Total benefits | Net financial returns | Total costs | Total benefits | Net financial returns | Total costs | Total benefits | Net financial returns | Total costs | Total benefits | Net financial returns |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
| OECD | Australia[1] | - 34 100 | 183 700 | **149 600** | - 16 500 | 101 300 | **84 800** | - 103 400 | 336 700 | **233 300** | - 45 500 | 195 300 | **149 800** |
| OECD | Austria | - 43 500 | 238 100 | **194 600** | - 51 200 | 219 600 | **168 400** | - 79 800 | 513 500 | **433 700** | - 96 200 | 422 100 | **325 900** |
| OECD | Belgium | m | m | **m** | m | m | **m** | m | m | **m** | m | m | **m** |
| OECD | Canada[2] | - 49 600 | 169 200 | **119 600** | - 30 000 | 91 200 | **61 200** | - 63 500 | 400 100 | **336 600** | - 57 300 | 208 800 | **151 500** |
| OECD | Chile | - 28 000 | 187 700 | **159 700** | - 5 400 | 12 800 | **7 400** | - 69 100 | 774 300 | **705 200** | - 23 700 | 74 600 | **50 900** |
| OECD | Czech Republic | m | m | **m** | m | m | **m** | - 48 400 | 367 100 | **318 700** | - 10 900 | 176 100 | **165 200** |
| OECD | Denmark | - 27 300 | 83 500 | **56 200** | - 44 000 | 73 600 | **29 600** | - 63 100 | 253 000 | **189 900** | - 102 000 | 266 100 | **164 100** |
| OECD | Estonia | a | a | **a** | a | a | **a** | m | m | **m** | m | m | **m** |
| OECD | Finland | a | a | **a** | a | a | **a** | - 50 800 | 256 900 | **206 100** | - 63 300 | 235 600 | **172 300** |
| OECD | France | - 28 900 | 205 100 | **176 200** | - 27 500 | 123 600 | **96 100** | - 65 600 | 504 800 | **439 200** | - 62 500 | 306 500 | **244 000** |
| OECD | Germany[3] | m | m | **m** | m | m | **m** | - 73 900 | 378 400 | **304 500** | - 99 900 | 386 200 | **286 300** |
| OECD | Greece | a | a | **a** | a | a | **a** | m | m | **m** | m | m | **m** |
| OECD | Hungary | m | m | **m** | m | m | **m** | - 33 300 | 419 100 | **385 800** | - 32 000 | 235 100 | **203 100** |
| OECD | Iceland | m | m | **m** | m | m | **m** | m | m | **m** | m | m | **m** |
| OECD | Ireland | - 25 000 | 273 700 | **248 700** | - 26 600 | 286 000 | **259 400** | - 44 200 | 532 900 | **488 700** | - 46 800 | 567 300 | **520 500** |
| OECD | Israel | - 17 500 | 97 700 | **80 200** | - 17 900 | 49 500 | **31 600** | - 43 400 | 421 200 | **377 800** | - 28 100 | 261 000 | **232 900** |
| OECD | Italy | m | m | **m** | m | m | **m** | m | m | **m** | m | m | **m** |
| OECD | Japan[1] | m | m | **m** | m | m | **m** | m | m | **m** | m | m | **m** |
| OECD | Korea | - 41 200 | 158 600 | **117 400** | - 8 600 | 33 400 | **24 800** | - 72 200 | 331 700 | **259 500** | - 28 200 | 81 700 | **53 500** |
| OECD | Latvia[3] | - 21 600 | 20 200 | **- 1 400** | - 23 900 | 26 200 | **2 300** | - 33 400 | 115 200 | **81 800** | - 40 000 | 64 000 | **24 000** |
| OECD | Luxembourg | m | m | **m** | m | m | **m** | m | m | **m** | m | m | **m** |
| OECD | Mexico | m | m | **m** | m | m | **m** | m | m | **m** | m | m | **m** |
| OECD | Netherlands[3] | - 42 700 | 172 400 | **129 700** | - 21 500 | 247 100 | **225 600** | - 87 600 | 275 200 | **187 600** | - 60 100 | 472 700 | **412 600** |
| OECD | New Zealand | - 54 800 | 76 900 | **22 100** | - 20 500 | 30 300 | **9 800** | - 85 100 | 272 600 | **187 500** | - 47 900 | 121 700 | **73 800** |
| OECD | Norway | - 47 000 | 126 100 | **79 100** | - 49 700 | 107 800 | **58 100** | - 92 000 | 308 500 | **216 500** | - 102 000 | 244 200 | **142 200** |
| OECD | Poland[1] | m | m | **m** | m | m | **m** | m | m | **m** | m | m | **m** |
| OECD | Portugal | m | m | **m** | m | m | **m** | - 38 200 | 282 100 | **243 900** | - 33 500 | 237 100 | **203 600** |
| OECD | Slovak Republic | m | m | **m** | m | m | **m** | - 28 400 | 181 800 | **153 400** | - 34 300 | 102 600 | **68 300** |
| OECD | Slovenia | m | m | **m** | m | m | **m** | m | m | **m** | m | m | **m** |
| OECD | Spain | m | m | **m** | m | m | **m** | m | m | **m** | m | m | **m** |
| OECD | Sweden | m | m | **m** | m | m | **m** | m | m | **m** | m | m | **m** |
| OECD | Switzerland | m | m | **m** | m | m | **m** | m | m | **m** | m | m | **m** |
| OECD | Turkey | m | m | **m** | m | m | **m** | m | m | **m** | m | m | **m** |
| OECD | United Kingdom | m | m | **m** | m | m | **m** | m | m | **m** | m | m | **m** |
| OECD | United States | - 45 500 | 177 800 | **132 300** | - 33 100 | 116 500 | **83 400** | - 100 900 | 685 700 | **584 800** | - 73 600 | 446 200 | **372 600** |
| | OECD average | m | m | **m** | m | m | **m** | - 63 800 | 373 300 | **316 700** | - 54 400 | 255 200 | **200 900** |
| | EU22 average | m | m | **m** | m | m | **m** | - 53 900 | 331 500 | **286 100** | - 56 800 | 289 300 | **232 500** |

**Note:** Values are based on the difference between men who attained a specific level of tertiary education compared with those who have attained upper secondary education. Values have been rounded up to the nearest hundred.

1. Year of reference 2012.
2. Year of reference for direct costs is 2012.
3. Year of reference 2014.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933559750

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## Table A7.3b. Private/public costs and benefits for a woman attaining tertiary education, by level of tertiary education (2013)

*As compared with a woman attaining upper secondary education, in equivalent USD converted using PPPs for GDP*

| | | Short-cycle tertiary (ISCED 5) | | | | | | Bachelor's, master's and doctoral or equivalent levels (ISCED 6 to 8) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Private | | | Public | | | Private | | | Public | | |
| | | Total costs | Total benefits | Net financial returns | Total costs | Total benefits | Net financial returns | Total costs | Total benefits | Net financial returns | Total costs | Total benefits | Net financial returns |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
| OECD | Australia[1] | - 27 700 | 124 000 | **96 300** | - 13 500 | 67 400 | **53 900** | - 87 900 | 285 300 | **197 400** | - 38 400 | 158 300 | **119 900** |
| OECD | Austria | - 38 600 | 154 300 | **115 700** | - 46 200 | 132 500 | **86 300** | - 70 700 | 276 700 | **206 000** | - 86 900 | 241 300 | **154 400** |
| OECD | Belgium | m | m | **m** | m | m | **m** | m | m | **m** | m | m | **m** |
| OECD | Canada[2] | - 42 700 | 131 000 | **88 300** | - 26 900 | 54 900 | **28 000** | - 51 600 | 329 000 | **277 400** | - 51 900 | 144 700 | **92 800** |
| OECD | Chile | - 22 100 | 112 700 | **90 600** | - 4 900 | 6 900 | **2 000** | - 56 700 | 493 900 | **437 200** | - 22 800 | 33 400 | **10 600** |
| OECD | Czech Republic | m | m | **m** | m | m | **m** | - 47 300 | 220 200 | **172 900** | - 11 300 | 122 000 | **110 700** |
| OECD | Denmark | - 28 000 | 92 600 | **64 600** | - 44 200 | 79 700 | **35 500** | - 64 700 | 159 000 | **94 300** | - 102 500 | 131 300 | **28 800** |
| OECD | Estonia | a | a | **a** | a | a | **a** | m | m | **m** | m | m | **m** |
| OECD | Finland | a | a | **a** | a | a | **a** | - 57 400 | 233 600 | **176 200** | - 54 100 | 195 800 | **141 700** |
| OECD | France | - 24 300 | 159 400 | **135 100** | - 23 100 | 129 200 | **106 100** | - 56 200 | 271 700 | **215 500** | - 53 400 | 177 100 | **123 700** |
| OECD | Germany[3] | m | m | **m** | m | m | **m** | - 69 500 | 210 300 | **140 800** | - 91 800 | 195 900 | **104 100** |
| OECD | Greece | a | a | **a** | a | a | **a** | m | m | **m** | m | m | **m** |
| OECD | Hungary | m | m | **m** | m | m | **m** | - 32 200 | 205 500 | **173 300** | - 31 700 | 123 300 | **91 600** |
| OECD | Iceland | m | m | **m** | m | m | **m** | m | m | **m** | m | m | **m** |
| OECD | Ireland | - 22 500 | 225 500 | **203 000** | - 24 600 | 166 700 | **142 100** | - 39 800 | 396 700 | **356 900** | - 43 300 | 321 500 | **278 200** |
| OECD | Israel | - 14 900 | 54 300 | **39 400** | - 17 600 | 19 600 | **2 000** | - 38 800 | 249 400 | **210 600** | - 27 600 | 99 500 | **71 900** |
| OECD | Italy | m | m | **m** | m | m | **m** | m | m | **m** | m | m | **m** |
| OECD | Japan[1] | m | m | **m** | m | m | **m** | m | m | **m** | m | m | **m** |
| OECD | Korea | - 39 600 | 136 000 | **96 400** | - 8 400 | 15 300 | **6 900** | - 69 400 | 329 700 | **260 300** | - 27 900 | 48 500 | **20 600** |
| OECD | Latvia[3] | - 19 400 | 25 100 | **5 700** | - 22 900 | 20 700 | **- 2 200** | - 29 600 | 98 500 | **68 900** | - 38 300 | 50 100 | **11 800** |
| OECD | Luxembourg | m | m | **m** | m | m | **m** | m | m | **m** | m | m | **m** |
| OECD | Mexico | m | m | **m** | m | m | **m** | m | m | **m** | m | m | **m** |
| OECD | Netherlands[3] | - 42 300 | 131 500 | **89 200** | - 21 500 | 138 900 | **117 400** | - 86 900 | 270 300 | **183 400** | - 60 100 | 352 200 | **292 100** |
| OECD | New Zealand | - 46 500 | 103 700 | **57 200** | - 16 800 | 38 800 | **22 000** | - 72 000 | 234 800 | **162 800** | - 42 000 | 88 900 | **46 900** |
| OECD | Norway | - 34 800 | 112 500 | **77 700** | - 42 400 | 66 600 | **24 200** | - 68 800 | 243 000 | **174 200** | - 88 300 | 137 200 | **48 900** |
| OECD | Poland[1] | m | m | **m** | m | m | **m** | m | m | **m** | m | m | **m** |
| OECD | Portugal | m | m | **m** | m | m | **m** | - 34 600 | 248 400 | **213 800** | - 33 000 | 176 400 | **143 400** |
| OECD | Slovak Republic | m | m | **m** | m | m | **m** | - 29 600 | 88 700 | **59 100** | - 34 300 | 61 000 | **26 700** |
| OECD | Slovenia | m | m | **m** | m | m | **m** | m | m | **m** | m | m | **m** |
| OECD | Spain | m | m | **m** | m | m | **m** | m | m | **m** | m | m | **m** |
| OECD | Sweden | m | m | **m** | m | m | **m** | m | m | **m** | m | m | **m** |
| OECD | Switzerland | m | m | **m** | m | m | **m** | m | m | **m** | m | m | **m** |
| OECD | Turkey | m | m | **m** | m | m | **m** | m | m | **m** | m | m | **m** |
| OECD | United Kingdom | m | m | **m** | m | m | **m** | m | m | **m** | m | m | **m** |
| OECD | United States | - 39 500 | 123 900 | **84 400** | - 30 800 | 66 300 | **35 500** | - 87 600 | 435 100 | **347 500** | - 68 600 | 221 900 | **153 300** |
| | OECD average | m | m | **m** | m | m | **m** | - 57 600 | 264 000 | **206 400** | - 50 400 | 154 000 | **103 600** |
| | EU22 average | m | m | **m** | m | m | **m** | - 51 500 | 223 300 | **171 800** | - 53 400 | 179 000 | **125 600** |

**Note:** Values are based on the difference between women who attained a specific level of tertiary education compared with those who have attained upper secondary education. Values have been rounded up to the nearest hundred.

1. Year of reference 2012.

2. Canada: Year of reference for direct costs is 2012.

3. Year of reference 2014.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

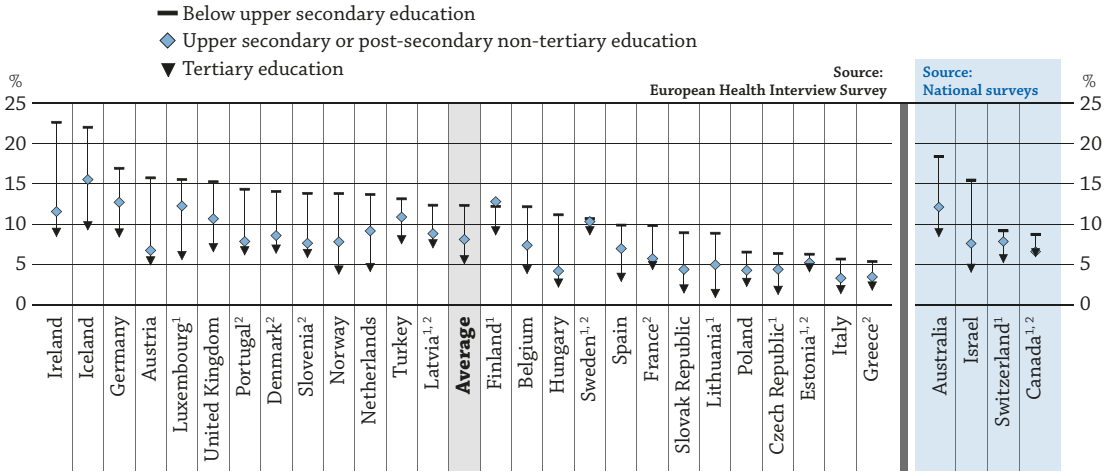
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# HOW ARE SOCIAL OUTCOMES RELATED TO EDUCATION?

- People with higher levels of education report less incidence of depression in all countries responding to the 2014 European Health Interview Survey (EHIS) (Eurostat, 2017; see *Methodology* section).
- A higher share of women than men report suffering from depression, but the share decreases more steeply for women than for men as educational attainment increases.
- Education may play a role in preventing depression, along with employment; the variation in depression prevalence across educational attainment levels is much smaller among the employed population than among the unemployed or the inactive population.

## Figure A8.1. Percentage of adults who report having depression, by educational attainment (2014)

*European Health Interview Survey and national surveys, 25-64 year-olds*




**Note**: As the questions asked in the different surveys vary, survey results are not directly compared in the analysis.

1. Differences between below upper secondary education and upper secondary or post-secondary non-tertiary education are not statistically significant at 5%.

2. Differences between tertiary education and upper secondary or post-secondary non-tertiary education are not statistically significant at 5%.

*Countries are ranked in descending order of the percentage of adults with below upper secondary education who report having depression.*

**Source**: OECD (2017), Table A8.2. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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## Context

Education and health are key aspects of the well-being of societies and individuals. These two areas make up a significant share of public spending, demonstrating government recognition of their fundamental role. Improving health is a key policy objective for all OECD countries; the high gains linked to good health make it a key issue not only for health policies, but also for labour market and social policies. Education is linked in multiple ways to health – a relationship that has been well documented in many countries over many years. One important connection is that better-educated people have lower morbidity rates and greater life expectancy (Cutler and Lleras-Muney, 2012). Education systems can also help reduce depression, as higher educational attainment usually leads to better labour market outcomes, such as lower unemployment rates and higher earnings, in turn linked with lower prevalence of anxiety and depression (Bjelland et al., 2008; Ross and Mirowsky, 2006).

## Other findings

- Estonia and Sweden have the smallest difference in self-reported depression between levels of educational attainment.
- Among European countries, in Denmark, Finland, Iceland and Sweden, 25-44 year-olds tend to have a higher prevalence of self-reported depression than the 45-64 year-olds, regardless of their educational attainment.
- Earning levels partly explain the links between self-reported depression and educational attainment. The difference in self-reported depression between educational attainment levels decreases when analysing the EHIS data within the same level of earnings.

## Note

This indicator presents data drawn from a variety of sources. For European Union (EU) countries, the 2014 European Health Interview Survey (EHIS) is used, which included all the OECD/EU countries plus Iceland, Norway and Turkey. For non-EU countries, the data sources are national surveys (see *Source*). More information about the different questions in the surveys is included in the *Methodology* section at the end of this indicator. As the questions asked in the different surveys vary, the results are not directly compared in the analysis. Differences by level of educational attainment within countries, however, can still provide good insights into the links between education and the prevalence of depression.

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## Analysis

### Self-reported depression among 25-64 year-olds, by educational attainment

On average across the OECD countries that participated in the 2014 EHIS, 8% of 25-64 year-olds reported suffering from depression in the 12 months prior to the survey. Across OECD countries, self-reported depression varies significantly by educational attainment. On average, the rate is twice as high among adults with below upper secondary education (12%) than among tertiary-educated adults (6%). In all countries with data, it is higher for adults with below upper secondary education than for those with tertiary education (Table A8.2).

Figure A8.1 shows that self-reported depression is particularly high among adults with below upper secondary education: 4 percentage points higher on average than among adults with upper secondary or post-secondary non-tertiary education. The gap is 3 percentage points between upper secondary or post-secondary non-tertiary education and tertiary education. There is a decrease in self-reported depression with each additional level of education, and attaining upper secondary or post-secondary non-tertiary education provides significant tools to assure better emotional well-being. This is particularly true in Austria, Hungary, Portugal and Slovenia, where there is at least a 6 percentage-point difference in self-reported depression between adults with below upper secondary education and those with upper secondary or post-secondary non-tertiary education. In these countries, the level of self-reported depression among adults with upper secondary or post-secondary non-tertiary education is very close to that reported by tertiary-educated adults, differing by 2 percentage points at most (Figure A8.1).

Education generally contributes to developing a variety of skills, but not all these skills interact in the same way with depression. The OECD report *Skills for Social Progress* found that expanding social and emotional skills (such as self-esteem) is more effective in reducing depression than other sets of skills (such as literacy or numeracy). For example, in Switzerland, increasing cognitive skills (such as reading, maths and science) has only half the effect on reducing self-reported depression as raising self-esteem from the lowest to the highest decile (OECD, 2015a).

### Self-reported depression by gender and educational attainment

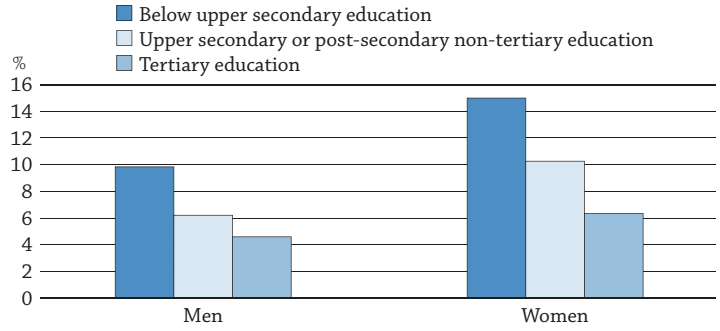
Similar to self-reported health, on average women report higher levels of depression than men, but self-reported depression decreases more steeply for women than men as they acquire further qualifications (OECD, 2016a).

Figure A8.2 shows that, on average across the OECD countries participating in the EHIS, 15% of women with below upper secondary education reported having suffered from depression. This fell to 6% among tertiary-educated women, a gap of 9 percentage points. For men, the prevalence is 10% among those who have below upper secondary education and 5% among those with tertiary education, a gap of 5 percentage points (Figure A8.2).

Iceland not only has one of the highest share of low-educated women who report having depression (above 25%); it also has the biggest difference in the prevalence of depression between women with low and high educational attainment (above 15 percentage points). The gap is much lower for men: the difference between low-educated and tertiary-educated men is 8 percentage points. Similar patterns are also found in most countries where the difference for women is larger than that of men (Table A8.1).

**Figure A8.2. Percentage of adults who report having depression, by gender and educational attainment (2014)**

*European Health Interview Survey, average, 25-64 year-olds*




**Source**: OECD (2017), Table A8.1. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933557603

These larger differences in women's self-reported depression may be explained by the labour market outcomes across educational attainment levels (see Indicator A5). Being employed tends to be associated with a lower prevalence of depression (Tables A8.1 and A8.2). In OECD countries, with a few exceptions, the gender gap in employment rates decreases as educational attainment increases, meaning that gender inequalities in the labour market are lowest among highly educated adults.

Ross and Mirowsky (2006) also underline that even if highly educated women have lower earnings and fewer management responsibilities than their male peers, they tend to be more able to draw on their skills to maintain their emotional well-being than less-educated women who have not had the chance to develop these skills through formal education. Less-educated women suffer more from depression than their male peers, however, partly because they face greater economic dependency and are more likely to occupy routine and poorly paid work (Ross and Mirowsky, 2006).

### Depression by age and educational attainment

On average, across the OECD countries participating in the EHIS, self-reported depression is slightly lower among 25-44 year-olds than among 45-64 year-olds. Similar patterns linked to educational attainment are observed between the two age groups. Among 25-44 year-olds with below upper secondary education, 12% report having had depression in the 12 months prior to the survey. This declines to 7% among those with upper secondary or post-secondary non-tertiary education and to 5% among those with tertiary education. Among 45-64 year-olds, there is also a difference of 7 percentage points between those with below upper secondary education and those with tertiary education. The only difference is that self-reported depression among the older age group is slightly higher for all educational attainment levels than among the 25-44 year-olds (Table A8.1).

In almost all countries, the difference in self-reported depression between the two age groups is higher among those with below upper secondary education than among those with tertiary education. However, the age group with the highest prevalence varies across countries. In Denmark, Finland, Iceland and Sweden, the younger age group tends to have higher shares of self-reported depression than the older age group, regardless of their educational attainment. In contrast, in 16 other countries, across all educational attainment levels, the older age group tends to have higher shares of self-reported depression than the younger one (Table A8.1).

The OECD report *Fit Mind, Fit Job* states that most mental illness sets in early on, often before the age of 14. This suggests that education systems have an important role to play in identifying individuals who are susceptible to developing a mental illness and giving them appropriate support. This would help to avoid consequences, such as leaving school early, which could have negative repercussions later in life (OECD, 2015b).

### Depression by labour market status and educational attainment

Although the prevalence of mental illness is not increasing, greater awareness leads to an increase in the number of diagnosed cases and to greater labour market exclusion of mentally ill people (OECD, 2012). Those who have a mental illness have more difficulty finding a job, and when they do, they struggle more to deliver what is expected of them and often show comparatively low productivity (OECD, 2012). However, individuals with mental illness who find work often show improvement in their condition, as their labour force status increases their self-esteem and sense of worth in society. It is therefore crucial that education systems ensure a smooth school-to-work transition, even for those who perform poorly at school, as they are the ones who are most likely to suffer from mental illness (OECD, 2015b).

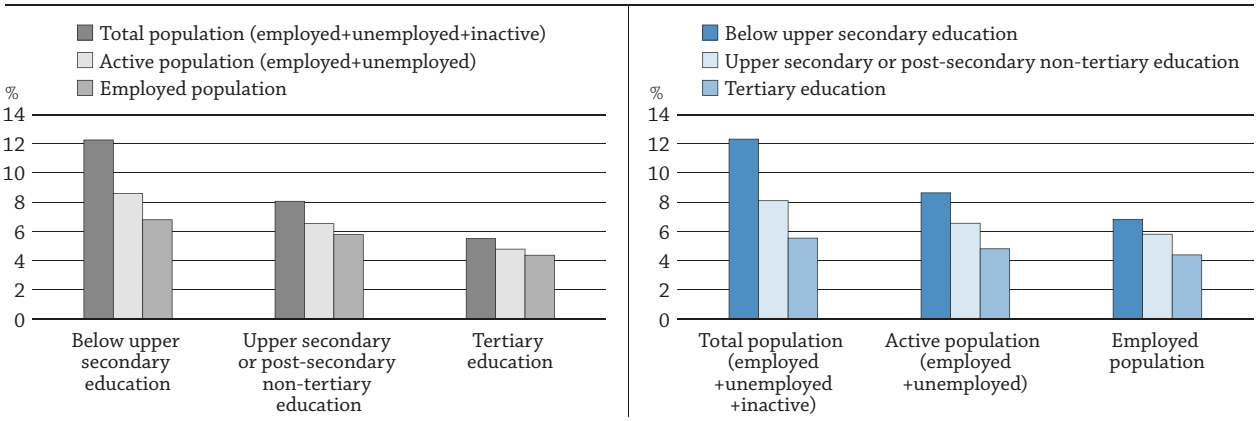
The two panels in Figure A8.3 use the same data to tell a different story. The left-hand panel shows how self-reported depression varies by labour force status at each educational attainment level, while the right-hand panel shows how self-reported depression varies by educational attainment level within the different labour force categories (Figure A8.3).

On average across the OECD countries participating in the EHIS, the largest variations are observed among adults with below upper secondary education. Among this group, 7% of those who are employed report having had depression in the 12 months prior to the survey. When adding the unemployed to this group (i.e. the active population), depression prevalence rises to 9%, and when including the inactive (i.e. the total population), it rises to 12%, meaning that inactive adults with low education are the most likely to report depression. In contrast, only 6% of the total population of tertiary-educated adults reported having had depression; the rate only falls by 2 percentage points when restricting the observation to employed tertiary-educated adults. This means that, regardless of labour force status, completing tertiary education is associated with a lower prevalence of depression (Figure A8.3).

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## Figure A8.3. Percentage of adults who report having depression, by labour-force status and educational attainment (2014)

*European Health Interview Survey, average, 25-64 year-olds*




**Source**: OECD (2017), Table A8.2. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933557622

The right-hand panel in Figure A8.3 shows that self-reported depression not only decreases with higher levels of education, it also decreases when adults are employed as opposed to unemployed or inactive. Among the total population – including the employed, unemployed and inactive – self-reported depression shows the largest variations by educational attainment, going from 12% among those with below upper secondary education to 6% among the tertiary-educated. But among those who are employed, the level of education has a weaker effect on depression, as it ranges from 7% among those with below upper secondary education to 4% among those with tertiary education (Figure A8.3).

These two panels in Figure A8.3 show that the greatest gap in self-reported depression exists between employed tertiary-educated adults (4%) and adults with below upper secondary who are either employed, unemployed or inactive (12%), a difference of 8 percentage points (Figure A8.3 and Table A8.2).

### *Relationship between depression and educational attainment accounting for age, gender, labour market status and income*

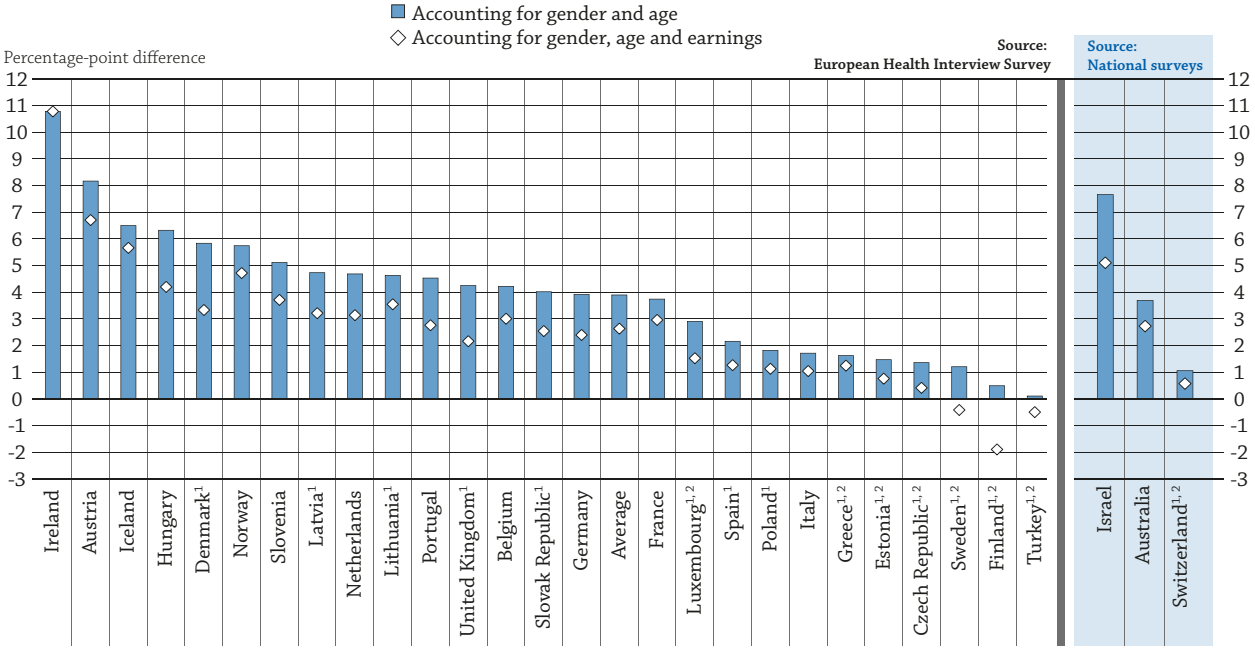
The previous sections have shown that regardless of age, gender or labour market status, self-reported depression declines as educational attainment increases. They have also shown that the education-depression gradient is much weaker among the employed, meaning that labour force status is moderating or mediating the effect of education on depression. Being unemployed or inactive increases the risk of depression since adults in this situation may be more likely to experience loneliness and may tend to worry more about money. Having a higher educational level provides people with better tools to deal with this risk factor.

Figure A8.4 shows the difference in self-reported depression between below upper secondary and upper secondary or post-secondary non-tertiary education when accounting for gender and age, and how earning levels affect this difference. On average, the difference in depression prevalence between these two levels is 4 percentage points, and this remains unchanged when age and gender are held constant. This means that gender and age do not explain the difference in self-reported depression across these two educational attainment levels. However, when analysing the difference in depression prevalence across these two educational attainment levels within the same level of earnings, the difference decreases between these two groups, meaning that earnings have a moderating effect. Thus earning levels and educational attainment play a role in depression prevalence (Table A8.2 and Figure A8.4).

This exercise is particularly interesting to conduct in Denmark, Latvia, Lithuania, Poland, the Slovak Republic, Spain and the United Kingdom. In these countries, when earnings are added to gender and age in the analysis, the difference in self-reported depression between people with below upper secondary and upper secondary or post-secondary non-tertiary education becomes not statistically significant. However, in 14 other countries, while this same exercise slightly reduces the difference in self-reported depression between below upper secondary and upper secondary or post-secondary non-tertiary, the difference remains large enough to be statistically significant.

## Figure A8.4. Likelihood of reporting depression when accounting for gender, age and earnings (2014)

*European Health Interview Survey and national surveys, 25-64 year-olds, difference in the depression prevalence between below upper secondary and upper secondary or post-secondary non-tertiary education*




**Note**: As the questions asked in the different surveys vary, survey results are not directly compared in the analysis.

1. Differences are not statistically significant at 5% when gender, age and earnings are accounted for.

2. Differences are not statistically significant at 5% when gender and age are accounted for.

*Countries are ranked in descending order of the percentage-point difference in the share of adults who report having depression between below upper secondary and upper secondary or post-secondary non-tertiary education, when gender and age are accounted for.*

**Source**: OECD (2017), Table A8.3. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933557641

Finally, in the Czech Republic, Estonia, Finland, Greece, Luxembourg, Sweden and Turkey, the differences in self-reported depression between these two educational attainment levels is not statistically significant, even without accounting for earnings (Figure A8.4).

### Box A8.1. Thematic framework for the indicator on education and social outcomes in *Education at a Glance*

In the last 10 to 15 years there has been a significant shift in recognition of the importance of social benefits and measures of social well-being. Data collection and monitoring activity have increased significantly, with many countries collecting social data using topics and questions that have been developed with international frameworks and standards in mind. National data are now collected for many OECD countries via social surveys, health or disability surveys, or surveys on income or living conditions. A number of countries have developed, or are developing, data sources that link administrative or survey data across a number of outcome areas, providing opportunities to explore relationships between previously separate policy areas. Accompanying this shift has been a growing body of new research on the importance of non-economic aspects of well-being and the role that education plays. Building on this insight, the OECD initiated work on developing indicators on the potential social outcomes of learning for publication in *Education at a* Glance (EAG).

The first indicators on the social outcomes of learning were published in 2009. These indicators were based on developmental work jointly conducted by the LSO Network and the OECD Centre for Educational Research

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and Innovation (CERI). This work used a conceptual framework developed by CERI's Social Outcomes of Learning project (OECD, 2007; 2010). This framework focused on two broad themes: (1) education and health; and (2) education and civic and social engagement; both set in the context of measures of well-being and social cohesion.

The framework guided the initial choice of social outcome indicators in *Education at a Glance*, with topics on self-reported health, civic engagement and interpersonal trust. It also influenced later editions, with topics such as life expectancy, voting, volunteering, students' views on civics and citizenship, obesity and smoking.

In 2011, the OECD introduced a framework for well-being as part of its development of *How's Life?* and the *Better Life Index* (OECD, 2015c). This built on the growing research and evidence base on well-being, one of the key influences being the *Report by the Commission on the Measurement of Economic Performance and Social Progress* (Stiglitz et al., 2009). This report brought about a key shift in government and research thinking, broadening out the measurement of societies' well-being from using only economic measures such as GDP to including a range of other indicators. This laid the foundations for much of the subsequent development of the role of governments and organisations in measuring, shaping and monitoring the well-being of societies.

### Implementing the new thematic framework in *Education at a Glance*

The indicator on education and social outcomes in *Education at a Glance* will follow the eight dimensions of quality of life from the OECD well-being framework (OECD, 2015c).

With education already one of these eight dimensions of quality of life, the remaining seven dimensions form the thematic framework against which the benefits of education can be assessed and compared across countries (Table A8.a). The seven dimensions span many possible social topics, some of which have well-established links to education, such as health status. The connection to education is less established for other topics, however.

**Table A8.a. Thematic framework for the indicator on education and social outcomes in *Education at a Glance***

| | Dimension | Topic |
|---|---|---|
| 1. | **Health status** | Self-reported health, disability, depression |
| 2. | **Work-life balance** | Balance between work and family |
| 3. | **Social connections** | Trust in others, volunteering, cultural participation |
| 4. | **Civic engagement and governance** | Trust in authorities, voting |
| 5. | **Environment** | Air and water quality, attitude and behaviour towards environmental matters |
| 6. | **Personal safety** | Safe walking alone, victim of crime |
| 7. | **Subjective well-being** | Life satisfaction, happiness |

The framework foresees that the seven dimensions will be covered over a four-year publication cycle, starting with *Education at a Glance 2018*, with one or two dimensions covered each year (Table A8.b).

**Table A8.b. Summary of the dimensions foreseen in future editions of *Education at a Glance***

| Dimension | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|---|---|---|
| Environment | ✓ | | | | ✓ | | | |
| Work-life balance | | ✓ | | | | ✓ | | |
| Social connections | | ✓ | | | | ✓ | | |
| Civic engagement and governance | | | ✓ | | | | ✓ | |
| Personal safety | | | ✓ | | | | ✓ | |
| Health status | | | | ✓ | | | | ✓ |
| Subjective well-being | | | | ✓ | | | | ✓ |

Adopting this framework and reporting cycle will depend on the availability, quality and comparability of data that also have an education component. While such data have grown significantly in recent years in many social outcome areas, they are scarcer in other areas. This may affect how this proposed cycle of reporting is eventually adopted.

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**Table A8.c. Previous indicators on education and social outcomes in *Education at a Glance* since 2009**

| Dimension | Topic |
|---|---|
| **Health** | Self-reported health, life expectancy, obesity, smoking, activity limitation/ disability, depression |
| **Civic engagement and governance** | Voting, political interest, belief in having a say in government, students' civic engagement, their expected electoral participation as adults, their attitudes towards gender equality, and equal rights for ethnic minorities, and their trust in civic institutions |
| **Social connections** | Volunteering, interpersonal trust, engagement in social activities |
| **Subjective well-being** | Life satisfaction |

## Box A8.2 Personal safety and educational attainment

Personal safety is a core element in individuals' well-being (OECD, 2011). Feelings of insecurity have a variety of negative effects on society and tend to limit people's daily activities. For example, when students feel safe at school, they tend to have better educational outcomes. This justifies measures and policies to guarantee a safe learning environment, such as the National Safe Schools Framework in Australia (Cornell and Mayer, 2010; OECD, 2015a). Personal safety is a broad concept that can be measured in different ways, but levels of crime is one of the most common influencing factors (OECD, 2011).

Crime and violence have a strong impact on people's physical and mental health; they also affect levels of trust and other forms of interpersonal relationships within the population, bearing a close relationship with social cohesion. It is also worth noting that the World Health Organization manifested through its Global Burden Disease (GBD) framework that violence is a significant component of "injuries", one group in the three-pronged classification of GBD: "Communicable diseases", "Non-communicable diseases" and "Injuries".

In general, economies with better education and labour market opportunities are associated with lower rates of violent crime. Figure A8.a shows that the share of the population reporting being assaulted or mugged in the 12 months prior to the survey (self-reported victimisation) was highest in countries with a large share of less-educated people, such as Brazil, Chile, Colombia, Costa Rica, Mexico and South Africa. In contrast, countries such as Canada, Korea, Norway and Switzerland have the lowest rates of self-reported victimisation and a highly educated population. While there appears to be an association between educational attainment and personal safety, the relationship is less evident when limiting the analysis to OECD member countries, which in general have higher GDP, employment rates, and fewer people educated only to primary level. Nevertheless, results show that crime rates are higher in countries with high income inequalities, which may also be a factor in the perpetuation of violent crime. For example, Chile and Mexico are the two OECD countries with the highest rates of self-reported victimisation, and they also have the highest Gini coefficient, meaning they have the highest income and wealth inequalities (OECD, 2016b).

Indonesia is an outlier: the share of less-educated adults is the highest of all OECD and partner countries with available data, but it has one of the lowest shares of the population reported having been assaulted or mugged in the 12 months prior to the survey. These findings are consistent with other data collections. For instance, the United Nations Office on Drugs and Crime also puts Indonesia among the countries with a low assault rate (UNDOC, 2017).

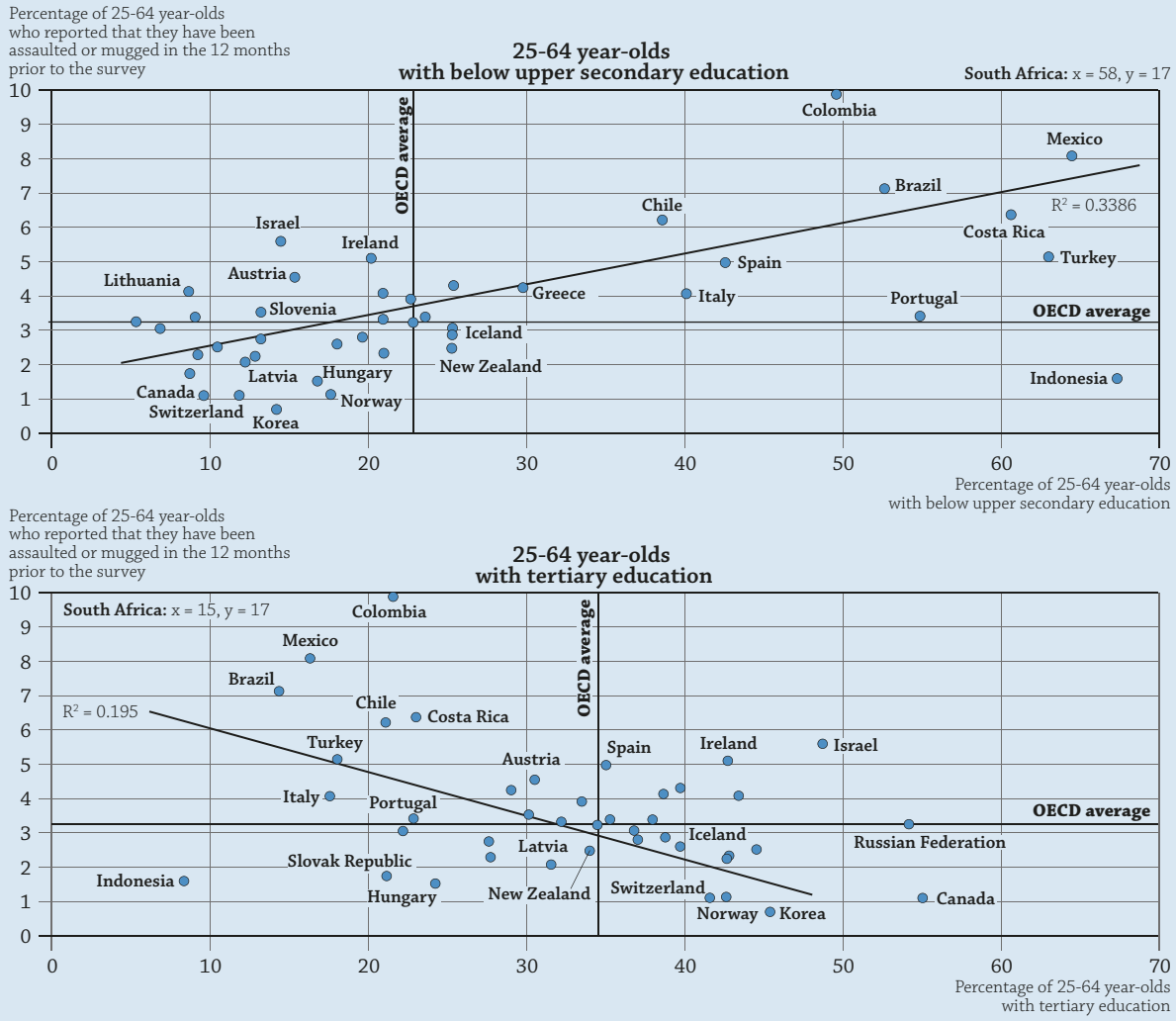
The correlation between education and crime could be explained by considering the various linkages that exist between the two elements. Evidence shows that individuals committing violent crimes are more likely to be low-educated. This could be explained from a human capital perspective: the opportunity costs of committing a crime increase with additional years of education, as individuals have better labour market prospects and wages (Lochner, 2004). Alternately, engaging in criminal activities has negative effects on participation and completion of schooling; those who do get involved in criminal activities are more likely to drop out of school (Hjalmarsson, 2008). Reducing crime inevitably increases the feeling of personal safety; investing in inclusive quality education can contribute to achieving this goal.

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## Figure A8.a. Percentage of adults who report having been assaulted or mugged and educational attainment (2015)

*Gallup World Poll data and* Education at a Glance 2016, *25-64 year-olds*




**Note**: Data on self-reported victimisation should be interpreted with care as this subjective measure may be affected by social and cultural factors which can vary both within and across countries. The results represent a national average of individual reporting, taken through a nationally representative survey. It does not reflect differences within countries where criminality may not be that high overall at the national level but may be very high in some localities. To ease readability some country names have been removed in the figure, but all information is included in the source table available for consultation on line (see *StatLink* below).

**Source**: Share of the population that reported having been assaulted or mugged: Gallup World Poll, www.gallup.com/services/170945/world-poll.aspx. Educational attainment: *Education at a Glance 2016*, Table A1.3. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*StatLink* http://dx.doi.org/10.1787/888933557660

## Definitions

**Adults** refer to 25-64 year-olds.

**Educational attainment** refers to the highest level of education achieved by a person.

**Levels of education:** see the *Reader's Guide* at the beginning of this publication for a presentation of all ISCED 2011 levels.

## Methodology

For EU countries, the source for the data is the second wave of the European Health Interview Survey, conducted between 2013 and 2015, which measured health status, health determinants and use, and limitations in access to health care services. Data on depression are drawn from a sub-module on chronic diseases or conditions and refer to those who responded "yes" to the following question: "During the past 12 months, have you had any of the following diseases or conditions? Yes/No" (where one of the items is depression).

Data on depression for **Australia** refer to the financial year 2014-15 and include those who reported in the Australian National Health Survey "having depression" or "feeling depressed"; who reported being told by a doctor or nurse that they had depression/depressed feelings, and that these feelings are still current and long-term; or who have not been told by a doctor or nurse that they had depression/depressed feelings, but the condition is current and long-term which captures the chronic "(six months or longer)" concept.

Data on depression for **Canada** refer to 2012 and represent those who were identified positively for the depression item in the following questions in the Canadian Community Health Survey:

> "Remember, we're interested in conditions diagnosed by a health professional and are expected to last or have already lasted 6 months or more. Do you have a mood disorder such as depression, bipolar disorder, mania or dysthymia? Yes/No
>
> What kind of mood disorder do you have?
>
> - 1. Depression / 2. Bipolar disorder (manic depression) / 3. Mania / 4. Dysthymia / 5. Other"

Data on depression for **Israel** refer to 2016 and represent those who answered "always, often" to the following question: "During the past 12 months, did you feel depressed?" in the Israeli Social Survey.

Data on depression for **Switzerland** refer to 2012 and are based on the following questions in the Swiss Health Survey, where one of the items is depression:

> "Have you been or are you currently in medical treatment for one or several of the following illnesses?
>
> - Yes, I am still in treatment / Yes, I received treatment in the past 12 months / Yes, I received treatment more than 12 months ago / No
>
> If you have not been in medical treatment in the past 12 months for one or several of these illnesses, have you had any of the following diseases during the past 12 months?
>
> - Yes / No"

Please see the *OECD Handbook for Internationally Comparative Education Statistics: Concepts, Standards, Definitions and Classifications* (OECD, 2017) for more information and Annex 3 for country-specific notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

## Source

Data on depression are taken from the European Health Interview Survey for the 22 OECD/EU countries plus Iceland, Norway and Turkey. National surveys are used for Australia (National Health Survey), Canada (Canadian Community Health Survey), Israel (Social Survey) and Switzerland (Swiss Health Survey).

Data on personal safety (i.e. whether the person has been assaulted or mugged in the previous 12 months) in Box A8.2 are taken from the Gallup World Poll.

**Note regarding data from Israel**

The statistical data for Israel are supplied by and are under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

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## Indicator A8 Tables

StatLink http://dx.doi.org/10.1787/888933559959

| | |
|---|---|
| **Table A8.1** | **Percentage of adults who report having depression, by gender, age group and educational attainment (2014)** |
| **Table A8.2** | **Percentage of adults who report having depression, by labour-force status and educational attainment (2014)** |
| **Table A8.3** | **Changes in the likelihood of reporting having depression, by educational attainment and labour force status (2014)** |

Cut-off date for the data: 19 July 2017. Any updates on data can be found on line at http://dx.doi.org/10.1787/eag-data-en.

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## Table A8.1. Percentage of adults who report having depression, by gender, age group and educational attainment (2014)

*European Health Interview Survey and national surveys, 25-64 year-olds*

| | | European Health Interview Survey | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Men | | | | Women | | | | 25-44 year-olds | | | | 45-64 year-olds | | | |
| | | Below upper secondary | Upper secondary or post-secondary non-tertiary | Tertiary | Total | Below upper secondary | Upper secondary or post-secondary non-tertiary | Tertiary | Total | Below upper secondary | Upper secondary or post-secondary non-tertiary | Tertiary | Total | Below upper secondary | Upper secondary or post-secondary non-tertiary | Tertiary | Total |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) |
| OECD | Austria | 15 | 5 | 4 | 6 | 16 | 8 | 7 | 10 | 13 | 5 | 5 | 6 | 17 | 8 | 6 | 9 |
| OECD | Belgium | 10 | 6 | 3 | 6 | 15 | 9 | 5 | 8 | 9 | 5 | 4 | 5 | 14 | 10 | 4 | 9 |
| | Czech Republic | 6 | 4 | 3 | 3 | 7 | 5 | 1 | 4 | 6 | 3 | 1 | 3 | 7 | 6 | 3 | 6 |
| | Denmark | 11 | 8 | 6 | 7 | 19 | 9 | 8 | 9 | 18 | 10 | 7 | 9 | 12 | 7 | 6 | 7 |
| | Estonia | 6 | 4 | 3 | 4 | 7 | 6 | 5 | 6 | 6 | 3 | 4 | 4 | 7 | 7 | 5 | 6 |
| | Finland | 12 | 11 | 8 | 9 | 13 | 16 | 10 | 12 | 21 | 15 | 9 | 12 | 10 | 11 | 9 | 10 |
| | France | 6 | 4 | 4 | 4 | 13 | 8 | 5 | 8 | 8 | 5 | 4 | 5 | 11 | 7 | 6 | 8 |
| | Germany | 16 | 11 | 8 | 10 | 18 | 14 | 10 | 13 | 18 | 12 | 7 | 10 | 16 | 14 | 11 | 13 |
| | Greece | 3 | 3 | 2 | 3 | 8 | 4 | 3 | 5 | 6 | 3 | 2 | 3 | 5 | 4 | 3 | 4 |
| | Hungary | 7 | 3 | 2 | 3 | 15 | 5 | 3 | 6 | 6 | 2 | 2 | 2 | 15 | 6 | 4 | 7 |
| | Iceland | 18 | 13 | 9 | 12 | 27 | 19 | 10 | 16 | 26 | 18 | 11 | 16 | 19 | 13 | 7 | 12 |
| | Ireland | 21 | 9 | 8 | 11 | 26 | 14 | 10 | 13 | 22 | 11 | 9 | 10 | 23 | 12 | 10 | 14 |
| | Italy | 4 | 2 | 2 | 3 | 7 | 4 | 2 | 5 | 3 | 2 | 2 | 2 | 7 | 5 | 2 | 6 |
| | Latvia | 9 | 5 | 5 | 6 | 17 | 13 | 9 | 11 | 11 | 6 | 6 | 7 | 15 | 11 | 9 | 11 |
| | Luxembourg | 15 | 11 | 4 | 9 | 16 | 14 | 8 | 12 | 14 | 11 | 6 | 9 | 16 | 13 | 6 | 12 |
| | Netherlands | 14 | 8 | 4 | 8 | 14 | 11 | 5 | 10 | 15 | 8 | 5 | 8 | 13 | 10 | 4 | 9 |
| | Norway | 12 | 5 | 3 | 6 | 16 | 11 | 5 | 9 | 17 | 8 | 4 | 8 | 11 | 8 | 4 | 7 |
| | Poland | 4 | 3 | 2 | 3 | 9 | 6 | 3 | 5 | 4 | 3 | 2 | 3 | 8 | 6 | 4 | 6 |
| | Portugal | 7 | 2 | 4 | 5 | 22 | 13 | 9 | 16 | 9 | 6 | 6 | 7 | 17 | 12 | 9 | 15 |
| | Slovak Republic | 9 | 3 | 2 | 3 | 9 | 6 | 2 | 5 | 6 | 3 | 1 | 3 | 11 | 6 | 3 | 6 |
| | Slovenia | 8 | 7 | 6 | 7 | 18 | 9 | 6 | 10 | 11 | 6 | 5 | 6 | 15 | 9 | 8 | 11 |
| | Spain | 6 | 5 | 2 | 5 | 14 | 9 | 4 | 9 | 7 | 4 | 3 | 5 | 12 | 10 | 5 | 10 |
| | Sweden | 7 | 7 | 9 | 8 | 16 | 14 | 9 | 12 | 12 | 13 | 9 | 11 | 10 | 8 | 9 | 9 |
| | Turkey | 8 | 8 | 6 | 7 | 19 | 16 | 11 | 17 | 12 | 10 | 7 | 10 | 15 | 14 | 11 | 14 |
| | United Kingdom | 14 | 9 | 6 | 8 | 16 | 13 | 8 | 11 | 14 | 10 | 6 | 8 | 16 | 11 | 9 | 11 |
| | Average | 10 | 6 | 5 | 6 | 15 | 10 | 6 | 10 | 12 | 7 | 5 | 7 | 13 | 9 | 6 | 9 |
| | EU22 average | 10 | 6 | 4 | 6 | 14 | 10 | 6 | 9 | 11 | 7 | 5 | 6 | 13 | 9 | 6 | 9 |
| Partner | Lithuania | 4 | 3 | 1 | 2 | 17 | 7 | 2 | 5 | 8 | 3 | 1 | 2 | 10 | 6 | 3 | 5 |

| | | National surveys | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Men | | | | Women | | | | 25-44 year-olds | | | | 45-64 year-olds | | | |
| | | Below upper secondary | Upper secondary or post-secondary non-tertiary | Tertiary | Total | Below upper secondary | Upper secondary or post-secondary non-tertiary | Tertiary | Total | Below upper secondary | Upper secondary or post-secondary non-tertiary | Tertiary | Total | Below upper secondary | Upper secondary or post-secondary non-tertiary | Tertiary | Total |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) |
| OECD | Australia | 17 | 10 | 7 | 9 | 20 | 15 | 11 | 14 | 19 | 11 | 8 | 10 | 18 | 14 | 10 | 13 |
| OECD | Canada | 5[r] | 5 | 5 | 5 | 13[r] | 9 | 8 | 9 | 10[r] | 7 | 5 | 6 | 8 | 6 | 8 | 7 |
| | Israel | 14 | 7 | 3 | 6 | 17 | 8 | 6 | 8 | 12 | 8 | 4 | 6 | 19 | 8 | 5 | 8 |
| | Switzerland | 6 | 7 | 4 | 6 | 12 | 9 | 8 | 9 | 6 | 7 | 6 | 7 | 11 | 8 | 6 | 8 |

**Note:** As the questions asked in the different surveys vary, survey results are not directly compared in the analysis. See *Definitions* and *Methodology* sections for more information.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933559902

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## Table A8.2. Percentage of adults who report having depression, by labour-force status and educational attainment (2014)

*European Health Interview Survey and national surveys, 25-64 year-olds*

| | | European Health Interview Survey | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Total population (employed, unemployed and inactive) | | | | Active population (employed and unemployed) | | | | Employed population | | | |
| | | Below upper secondary | Upper secondary or post-secondary non-tertiary | Tertiary | Total | Below upper secondary | Upper secondary or post-secondary non-tertiary | Tertiary | Total | Below upper secondary | Upper secondary or post-secondary non-tertiary | Tertiary | Total |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
| OECD | Austria | 16 | 7 | 5 | 8 | 16 | 5 | 4 | 6 | 10 | 4 | 3 | 5 |
| OECD | Belgium | 12 | 7 | 4 | 7 | 7 | 5 | 4 | 5 | 5 | 5 | 3 | 4 |
| OECD | Czech Republic | 6 | 4 | 2 | 4 | 1 | 3 | 2 | 3 | 1 | 3 | 2 | 3 |
| OECD | Denmark | 14 | 9 | 7 | 8 | 9 | 7 | 6 | 7 | 6 | 7 | 5 | 6 |
| OECD | Estonia | 6 | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| OECD | Finland | 12 | 13 | 9 | 11 | 6 | 10 | 8 | 9 | 2 | 9 | 7 | 7 |
| OECD | France | 10 | 6 | 5 | 6 | 8 | 5 | 4 | 5 | 7 | 4 | 4 | 5 |
| OECD | Germany | 17 | 13 | 9 | 12 | 14 | 11 | 8 | 10 | 12 | 11 | 8 | 10 |
| OECD | Greece | 5 | 3 | 2 | 4 | 4 | 3 | 2 | 3 | 2 | 2 | 2 | 2 |
| OECD | Hungary | 11 | 4 | 3 | 5 | 6 | 2 | 2 | 3 | 5 | 2 | 2 | 2 |
| OECD | Iceland | 22 | 16 | 10 | 14 | 14 | 12 | 9 | 11 | 13 | 11 | 9 | 11 |
| OECD | Ireland | 23 | 12 | 9 | 12 | 20 | 11 | 8 | 11 | 16 | 9 | 8 | 9 |
| OECD | Italy | 6 | 3 | 2 | 4 | 4 | 2 | 2 | 3 | 3 | 2 | 1 | 2 |
| OECD | Latvia | 12 | 9 | 7 | 9 | 6 | 7 | 7 | 7 | 5 | 6 | 6 | 6 |
| OECD | Luxembourg | 16 | 12 | 6 | 10 | 13 | 12 | 5 | 9 | 12 | 11 | 5 | 8 |
| OECD | Netherlands | 14 | 9 | 5 | 9 | 8 | 7 | 4 | 6 | 6 | 6 | 3 | 5 |
| OECD | Norway | 14 | 8 | 4 | 8 | 10 | 5 | 3 | 5 | 8 | 4 | 3 | 4 |
| OECD | Poland | 7 | 4 | 3 | 4 | 3 | 3 | 2 | 3 | 2 | 2 | 2 | 2 |
| OECD | Portugal | 14 | 8 | 7 | 11 | 12 | 8 | 6 | 9 | 9 | 7 | 5 | 8 |
| OECD | Slovak Republic | 9 | 4 | 2 | 4 | 5 | 2 | 2 | 2 | 3 | 2 | 2 | 2 |
| OECD | Slovenia | 14 | 8 | 6 | 8 | 13 | 7 | 6 | 7 | 10 | 5 | 5 | 6 |
| OECD | Spain | 10 | 7 | 3 | 7 | 7 | 5 | 3 | 5 | 5 | 5 | 3 | 4 |
| OECD | Sweden | 11 | 10 | 9 | 10 | 8 | 9 | 8 | 8 | 7 | 8 | 8 | 8 |
| OECD | Turkey | 13 | 11 | 8 | 12 | 9 | 9 | 7 | 8 | 8 | 8 | 6 | 8 |
| OECD | United Kingdom | 15 | 11 | 7 | 10 | 11 | 8 | 6 | 7 | 8 | 7 | 5 | 6 |
| | Average | 12 | 8 | 6 | 8 | 9 | 7 | 5 | 6 | 7 | 6 | 4 | 5 |
| | EU22 average | 12 | 8 | 5 | 8 | 8 | 6 | 5 | 6 | 6 | 5 | 4 | 5 |
| Partner | Lithuania | 9 | 5 | 1 | 4 | 3 | 3 | 1 | 2 | 3 | 2 | 1 | 2 |

| | | National surveys | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Total population (employed, unemployed and inactive) | | | | Active population (employed and unemployed) | | | | Employed population | | | |
| | | Below upper secondary | Upper secondary or post-secondary non-tertiary | Tertiary | Total | Below upper secondary | Upper secondary or post-secondary non-tertiary | Tertiary | Total | Below upper secondary | Upper secondary or post-secondary non-tertiary | Tertiary | Total |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
| OECD | Australia | 18 | 12 | 9 | 11 | 12 | 10 | 8 | 9 | 11 | 9 | 8 | 9 |
| OECD | Canada | 9 | 7 | 6 | 7 | 5[r] | 5 | 6 | 5 | 4[r] | 4 | 5 | 5 |
| OECD | Israel | 15 | 8 | 5 | 7 | 12 | 7 | 4 | 5 | 11 | 6 | 3 | 5 |
| OECD | Switzerland | 9 | 8 | 6 | 7 | 8 | 7 | 5 | 6 | 7 | 7 | 5 | 6 |

**Note:** As the questions asked in the different surveys vary, survey results are not directly compared in the analysis. See *Definitions* and *Methodology* sections for more information.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933559921

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## Table A8.3. [1/2] Changes in the likelihood of reporting having depression, by educational attainment and labour force status (2014)

*European Health Interview Survey and national surveys, 25-64 year-olds, percentage-point differences between educational attainment levels*

**How to read this table:** In Norway, among the total population of 25-64 year-olds, there is a difference of 6 percentage points in the proportion of adults reporting having depression between those with below upper secondary education and those with upper secondary or post-secondary non-tertiary education, and when gender and age are accounted for. This means that those with below upper secondary education are 6 percentage points more likely to suffer from depression than those with upper secondary or post-secondary non-tertiary education. When including earnings in the linear regression model, the difference decreases to 5 percentage points, meaning that earnings capture a part of the explanation and that educational attainment is moderated when earnings are held constant.

| | | European Health Interview Survey | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Total population (employed, unemployed and inactive) | | | | | | | |
| | | Difference between below upper secondary and upper secondary or post-secondary non-tertiary | | | | Difference between tertiary and upper secondary or post-secondary non-tertiary | | | |
| | | Accounting for gender and age | | Accounting for gender, age and earnings | | Accounting for gender and age | | Accounting for gender, age and earnings | |
| | | pp | S.E. | pp | S.E. | pp | S.E. | pp | S.E. |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| OECD | Austria | 8 | (1.9) | 7 | (1.9) | -1 | (0.6) | 0 | (0.7) |
| OECD | Belgium | 4 | (1.5) | 3 | (1.5) | -3 | (0.9) | -2 | (1.0) |
| | Czech Republic | 1 | (1.8) | 0 | (1.8) | -2 | (0.7) | -1 | (0.7) |
| | Denmark | 6 | (2.1) | 3 | (2.1) | -2 | (1.1) | -1 | (1.1) |
| | Estonia | 1 | (1.4) | 1 | (1.4) | -1 | (0.8) | 0 | (0.8) |
| | Finland | 0 | (2.2) | -2 | (2.1) | -4 | (1.2) | -2 | (1.2) |
| | France | 4 | (0.9) | 3 | (0.9) | -1 | (0.6) | 0 | (0.6) |
| | Germany | 4 | (1.1) | 2 | (1.1) | -3 | (0.6) | -2 | (0.6) |
| | Greece | 2 | (0.9) | 1 | (0.9) | -1 | (0.7) | -1 | (0.7) |
| | Hungary | 6 | (1.3) | 4 | (1.4) | -1 | (0.7) | 0 | (0.7) |
| | Iceland | 7 | (2.2) | 6 | (2.2) | -7 | (1.6) | -5 | (1.6) |
| | Ireland | 11 | (1.5) | 11 | (1.5) | -3 | (1.0) | -3 | (1.0) |
| | Italy | 2 | (0.4) | 1 | (0.4) | -1 | (0.3) | -1 | (0.4) |
| | Latvia | 5 | (1.8) | 3 | (1.8) | -2 | (1.0) | 0 | (1.0) |
| | Luxembourg | 3 | (2.0) | 2 | (2.0) | -6 | (1.3) | -5 | (1.3) |
| | Netherlands | 5 | (1.4) | 3 | (1.3) | -5 | (0.9) | -3 | (0.9) |
| | Norway | 6 | (1.5) | 5 | (1.5) | -4 | (0.8) | -3 | (0.8) |
| | Poland | 2 | (0.8) | 1 | (0.8) | -1 | (0.4) | 0 | (0.4) |
| | Portugal | 5 | (1.1) | 3 | (1.1) | -2 | (1.2) | 0 | (1.2) |
| | Slovak Republic | 4 | (1.7) | 3 | (1.7) | -2 | (0.7) | -1 | (0.7) |
| | Slovenia | 5 | (1.8) | 4 | (1.8) | -1 | (0.9) | 0 | (1.0) |
| | Spain | 2 | (0.7) | 1 | (0.7) | -3 | (0.6) | -3 | (0.6) |
| | Sweden | 1 | (1.7) | 0 | (1.7) | -2 | (1.2) | -1 | (1.2) |
| | Turkey | 0 | (0.9) | -1 | (0.9) | -3 | (1.0) | -2 | (1.1) |
| | United Kingdom | 4 | (1.1) | 2 | (1.1) | -4 | (0.7) | -1 | (0.7) |
| | Average | 4 | (0.3) | 3 | (0.3) | -3 | (0.2) | -1 | (0.2) |
| | EU22 average | 4 | (0.3) | 3 | (0.3) | -2 | (0.2) | -1 | (0.2) |
| Partner | Lithuania | 5 | (2.1) | 4 | (2.1) | -3 | (0.7) | -3 | (0.7) |

| | | National surveys | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Total population (employed, unemployed and inactive) | | | | | | | |
| | | Difference between below upper secondary and upper secondary or post-secondary non-tertiary | | | | Difference between tertiary and upper secondary or post-secondary non-tertiary | | | |
| | | Accounting for gender and age | | Accounting for gender, age and earnings | | Accounting for gender and age | | Accounting for gender, age and earnings | |
| | | pp | S.E. | pp | S.E. | pp | S.E. | pp | S.E. |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| OECD | Australia | 4 | (0.8) | 3 | (0.8) | -3 | (0.6) | -2 | (0.6) |
| OECD | Canada | m | m | m | m | m | m | m | m |
| | Israel | 8 | (1.7) | 5 | (1.6) | -3 | (0.8) | -2 | (0.8) |
| | Switzerland | 1 | (1.4) | 1 | (1.5) | -2 | (0.6) | -1 | (0.7) |

**Note:** Data presented in this table are based on an ordinary least square regression where the reference category for educational attainment is upper secondary or post-secondary non-tertiary education. Six different regression models are used in this table: model 1 refers to Columns 1, 2, 5 and 6; model 2 refers to Columns 3, 4, 7 and 8; model 3 refers to Columns 9, 10, 13 and 14; model 4 refers to Columns 11, 12, 15 and 16; model 5 refers to Columns 17, 18, 21 and 22; and model 6 refers to Columns 19, 20, 23 and 24. As the questions asked in the different surveys vary, survey results are not directly compared in the analysis. See *Definitions* and *Methodology* sections for more information.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933559940

A8

## Table A8.3. [2/2] Changes in the likelihood of reporting having depression, by educational attainment and labour force status (2014)

*European Health Interview Survey and national surveys, 25-64 year-olds, percentage-point differences between educational attainment levels*

**How to read this table:** In Norway, among the total population of 25-64 year-olds, there is a difference of 6 percentage points in the proportion of adults reporting having depression between those with below upper secondary education and those with upper secondary or post-secondary non-tertiary education, and when gender and age are accounted for. This means that those with below upper secondary education are 6 percentage points more likely to suffer from depression than those with upper secondary or post-secondary non-tertiary education. When including earnings in the linear regression model, the difference decreases to 5 percentage points, meaning that earnings capture a part of the explanation and that educational attainment is moderated when earnings are held constant.

**European Health Interview Survey**

| | | Active population (employed and unemployed) | | | | | | | | Employed population | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Difference between below upper secondary and upper secondary or post-secondary non-tertiary | | | | Difference between tertiary and upper secondary or post-secondary non-tertiary | | | | Difference between below upper secondary and upper secondary or post-secondary non-tertiary | | | | Difference between tertiary and upper secondary or post-secondary non-tertiary | | | |
| | | Accounting for gender and age | | Accounting for gender, age and earnings | | Accounting for gender and age | | Accounting for gender, age and earnings | | Accounting for gender and age | | Accounting for gender, age and earnings | | Accounting for gender and age | | Accounting for gender, age and earnings | |
| | | pp | S.E. | pp | S.E. | pp | S.E. | pp | S.E. | pp | S.E. | pp | S.E. | pp | S.E. | pp | S.E. |
| | | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) | (17) | (18) | (19) | (20) | (21) | (22) | (23) | (24) |
| OECD | Austria | 10 | (2.6) | 8 | (2.5) | -1 | (0.6) | 0 | (0.6) | 5 | (2.2) | 5 | (2.0) | -1 | (0.5) | 0 | (0.6) |
| OECD | Belgium | 1 | (1.3) | 0 | (1.3) | -2 | (0.9) | -1 | (1.0) | 0 | (1.2) | -1 | (1.3) | -2 | (0.9) | -1 | (1.0) |
| OECD | Czech Republic | -2 | (0.7) | -3 | (0.8) | -1 | (0.8) | -1 | (0.8) | -2 | (0.8) | -2 | (0.8) | -1 | (0.8) | -1 | (0.8) |
| OECD | Denmark | 3 | (2.2) | 1 | (2.2) | -2 | (1.1) | -1 | (1.1) | 0 | (2.0) | -1 | (1.9) | -2 | (1.0) | -1 | (1.1) |
| OECD | Estonia | 1 | (1.5) | 0 | (1.5) | 0 | (0.8) | 0 | (0.8) | 1 | (1.5) | 0 | (1.5) | 0 | (0.8) | 0 | (0.8) |
| OECD | Finland | -3 | (2.1) | -4 | (2.0) | -3 | (1.3) | -2 | (1.3) | -5 | (1.7) | -5 | (1.6) | -2 | (1.2) | -2 | (1.3) |
| OECD | France | 3 | (0.9) | 2 | (0.9) | -1 | (0.6) | 0 | (0.6) | 3 | (1.0) | 3 | (1.0) | 0 | (0.6) | 0 | (0.7) |
| OECD | Germany | 2 | (1.2) | 1 | (1.2) | -3 | (0.6) | -2 | (0.6) | 1 | (1.2) | 1 | (1.2) | -3 | (0.6) | -2 | (0.6) |
| OECD | Greece | 1 | (1.1) | 1 | (1.1) | -1 | (0.7) | 0 | (0.7) | 0 | (0.9) | 0 | (0.8) | -1 | (0.7) | -1 | (0.7) |
| OECD | Hungary | 4 | (1.4) | 2 | (1.4) | -1 | (0.6) | 0 | (0.7) | 3 | (1.5) | 2 | (1.4) | -1 | (0.6) | 0 | (0.6) |
| OECD | Iceland | 2 | (2.1) | 2 | (2.1) | -4 | (1.6) | -3 | (1.6) | 2 | (2.1) | 1 | (2.1) | -3 | (1.6) | -2 | (1.6) |
| OECD | Ireland | 9 | (2.2) | 9 | (2.2) | -3 | (1.7) | -3 | (1.7) | 6 | (2.3) | 6 | (2.3) | -1 | (1.7) | -1 | (1.7) |
| OECD | Italy | 1 | (0.4) | 1 | (0.4) | -1 | (0.4) | 0 | (0.4) | 1 | (0.4) | 0 | (0.4) | -1 | (0.3) | 0 | (0.4) |
| OECD | Latvia | 0 | (1.6) | -1 | (1.6) | -1 | (1.0) | 0 | (1.0) | 0 | (1.7) | -1 | (1.7) | -1 | (0.9) | 0 | (0.9) |
| OECD | Luxembourg | 1 | (2.4) | 0 | (2.4) | -7 | (1.4) | -6 | (1.4) | 1 | (2.3) | 0 | (2.4) | -6 | (1.4) | -5 | (1.4) |
| OECD | Netherlands | 1 | (1.3) | 0 | (1.3) | -3 | (0.9) | -2 | (0.9) | 0 | (1.2) | 0 | (1.2) | -3 | (0.8) | -2 | (0.8) |
| OECD | Norway | 5 | (1.5) | 5 | (1.5) | -2 | (0.7) | -2 | (0.7) | 3 | (1.4) | 3 | (1.4) | -2 | (0.7) | -2 | (0.7) |
| OECD | Poland | 0 | (0.7) | 0 | (0.7) | -1 | (0.4) | 0 | (0.4) | 0 | (0.7) | 0 | (0.7) | 0 | (0.4) | 0 | (0.4) |
| OECD | Portugal | 3 | (1.1) | 2 | (1.1) | -3 | (1.2) | -1 | (1.3) | 2 | (1.2) | 1 | (1.2) | -3 | (1.2) | -1 | (1.3) |
| OECD | Slovak Republic | 3 | (1.6) | 2 | (1.6) | -1 | (0.6) | 0 | (0.7) | 1 | (1.9) | 1 | (1.9) | -1 | (0.6) | 0 | (0.7) |
| OECD | Slovenia | 5 | (2.2) | 4 | (2.3) | -1 | (1.0) | 0 | (1.0) | 4 | (2.4) | 3 | (2.4) | 0 | (1.0) | 1 | (1.0) |
| OECD | Spain | 2 | (0.7) | 1 | (0.7) | -2 | (0.6) | -2 | (0.6) | 0 | (0.7) | 0 | (0.8) | -2 | (0.7) | -2 | (0.7) |
| OECD | Sweden | 0 | (1.7) | -2 | (1.7) | -2 | (1.2) | -1 | (1.2) | 0 | (1.7) | -1 | (1.7) | -1 | (1.2) | 0 | (1.2) |
| OECD | Turkey | -1 | (1.0) | -2 | (1.1) | -4 | (1.1) | -3 | (1.2) | -1 | (1.0) | -1 | (1.0) | -3 | (1.1) | -3 | (1.2) |
| OECD | United Kingdom | 3 | (1.2) | 2 | (1.2) | -3 | (0.7) | -1 | (0.7) | 1 | (1.2) | 1 | (1.2) | -2 | (0.7) | -1 | (0.7) |
| | Average | 2 | (0.3) | 1 | (0.3) | -2 | (0.2) | -1 | (0.2) | 1 | (0.3) | 1 | (0.3) | -2 | (0.2) | -1 | (0.2) |
| | EU22 average | 2 | (0.3) | 1 | (0.3) | -2 | (0.2) | -1 | (0.2) | 1 | (0.3) | 1 | (0.3) | -2 | (0.2) | -1 | (0.2) |
| Partner | Lithuania | 1 | (1.4) | 0 | (1.5) | -2 | (0.6) | -1 | (0.6) | 1 | (1.7) | 1 | (1.8) | -2 | (0.6) | -2 | (0.6) |

**National surveys**

| | | Active population (employed and unemployed) | | | | | | | | Employed population | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Difference between below upper secondary and upper secondary or post-secondary non-tertiary | | | | Difference between tertiary and upper secondary or post-secondary non-tertiary | | | | Difference between below upper secondary and upper secondary or post-secondary non-tertiary | | | | Difference between tertiary and upper secondary or post-secondary non-tertiary | | | |
| | | Accounting for gender and age | | Accounting for gender, age and earnings | | Accounting for gender and age | | Accounting for gender, age and earnings | | Accounting for gender and age | | Accounting for gender, age and earnings | | Accounting for gender and age | | Accounting for gender, age and earnings | |
| | | pp | S.E. | pp | S.E. | pp | S.E. | pp | S.E. | pp | S.E. | pp | S.E. | pp | S.E. | pp | S.E. |
| | | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) | (17) | (18) | (19) | (20) | (21) | (22) | (23) | (24) |
| OECD | Australia | 1 | (0.9) | 0 | (0.9) | -3 | (0.6) | -2 | (0.6) | 1 | (0.9) | 0 | (0.9) | -2 | (0.6) | -1 | (0.6) |
| OECD | Canada | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| OECD | Israel | 5 | (1.9) | 4 | (1.9) | -3 | (0.8) | -2 | (0.8) | 5 | (1.9) | 4 | (1.9) | -3 | (0.8) | -2 | (0.8) |
| OECD | Switzerland | 0 | (1.6) | 0 | (1.7) | -1 | (0.7) | -1 | (0.7) | 1 | (1.7) | 0 | (1.7) | -1 | (0.7) | -1 | (0.7) |

**Note:** Data presented in this table are based on an ordinary least square regression where the reference category for educational attainment is upper secondary or post-secondary non-tertiary education. Six different regression models are used in this table: model 1 refers to Columns 1, 2, 5 and 6; model 2 refers to Columns 3, 4, 7 and 8; model 3 refers to Columns 9, 10, 13 and 14; model 4 refers to Columns 11, 12, 15 and 16; model 5 refers to Columns 17, 18, 21 and 22; and model 6 refers to Columns 19, 20, 23 and 24. As the questions asked in the different surveys vary, survey results are not directly compared in the analysis. See *Definitions* and *Methodology* sections for more information.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

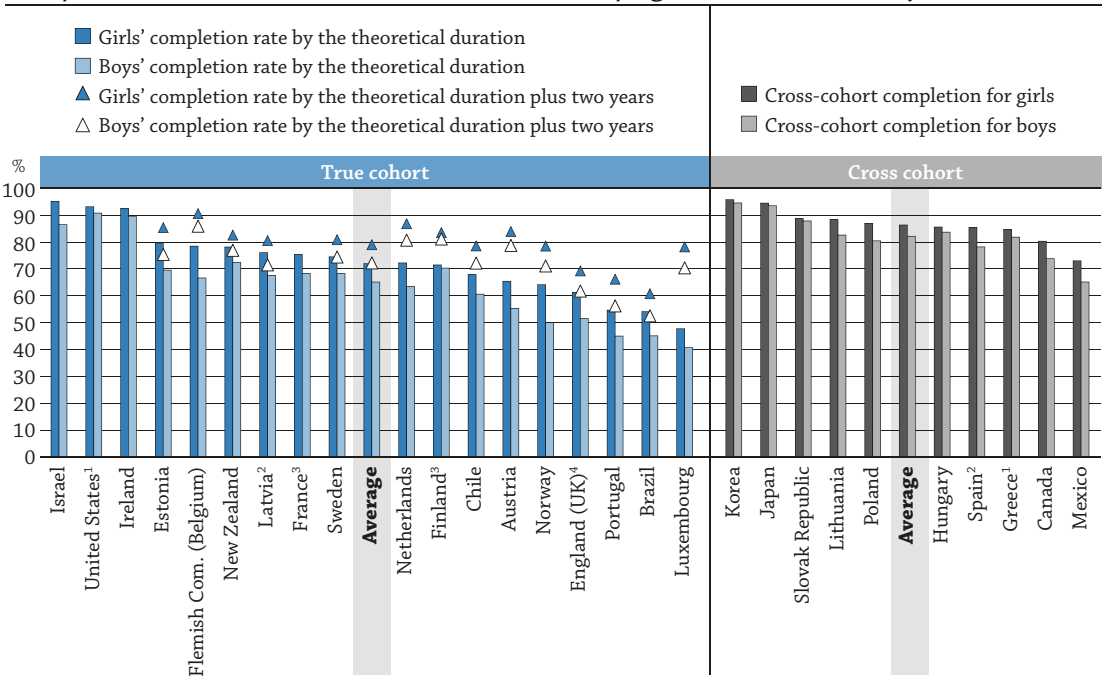
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# HOW MANY STUDENTS COMPLETE UPPER SECONDARY EDUCATION?

- On average across countries that submitted true-cohort data (data on individual students), 68% of students who enter upper secondary education graduate within the theoretical duration of the programme in which they began. Two years after the end of the theoretical duration, average completion increases to 75%. For countries with cross-cohort data (aggregate data on student cohorts; see *Analysis* section), the average completion rate is 84%.
- In all countries, girls have higher completion rates than boys in total upper secondary education, though the gender gap tends to decrease when looking at completion rates two years beyond the theoretical end of the programme. This means more boys graduate late than girls.
- On average, 4% of students are still in education two years after the theoretical end of the programme in which they enrolled, while 21% have not graduated and are no longer enrolled.

## Figure A9.1. Completion rate of upper secondary education by gender (2015)

*Completion rate of full-time students in initial education programmes of at least two years of duration*




1. Year of reference 2013.
2. Upper secondary general programmes only.
3. Year of reference 2014.
4. Year of reference is 2016 and data cover successful completion and achievement of two-year GCSE programmes.

*Countries are ranked in descending order of girls' completion rate (for true cohort, by the theoretical duration).*

**Source**: OECD (2017), Table A9.1. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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## Context

Upper secondary completion rates measure how many of the students who enter an upper secondary programme graduate from it within a given time frame. One of the challenges facing education systems in many countries is students' disengagement and consequent dropout from the education system, meaning that they leave school without an upper secondary qualification. These young people tend to face severe difficulties entering – and remaining in – the labour market. Leaving school early is a problem therefore for individuals and society alike.

Evidence shows that the risk of not completing upper secondary programmes can be linked to students' socio-economic, demographic and educational backgrounds. As policy makers examine ways to reduce the number of early school-leavers, it is important to identify and address these potential at-risk groups (Box A9.1).

This indicator is restricted to initial education only, meaning it only captures students who are entering upper secondary education for the first time. For these students, it measures the successful completion of upper secondary programmes and the proportion of students still in education after two specific time frames: 1) the theoretical duration of the programme in which students enrolled; and 2) two years after the end of the theoretical duration. The difference between these two time frames sheds light on the extent to which students tend to graduate "on time" (or within the amount of time expected given the theoretical duration of the programme). This indicator also allows for a comparison of completion rates by gender and programme orientation.

Like the graduation rate (see Indicator A2), the completion rate does not indicate the quality of upper secondary education; it does however indicate to a certain extent the capacity of this education level to engage students to the end of the programme.

## Other findings

- For nearly all countries, completion rates are higher for general programmes than for vocational programmes. In Estonia, Luxembourg and Norway, the completion rate for general programmes is over 20 percentage points higher than for vocational programmes.
- In some countries, it is common for students to transfer between programme orientations before graduating from upper secondary education. In Chile, the Flemish Community of Belgium, Israel and Norway, 10% or more of students graduate from a different programme orientation to the one in which they originally enrolled.
- Completion rates within the theoretical duration for vocational programmes vary widely across countries, from 33% in Luxembourg to 92% in Israel. For countries with cross-cohort data, the figures range from 58% in Greece to 92% in Japan and Korea.

## Note

The completion rate in this indicator describes the percentage of students who enter an upper secondary programme for the first time and graduate from it a given number of years after they entered. The restriction to first-time entrants into upper secondary education means that adult-education programmes and students entering upper secondary education again after their initial schooling are excluded. For example, students who enter a vocational upper secondary programme after having completed a general upper secondary programme are not captured by this indicator. In addition, this indicator is restricted to programmes of at least two years' duration, even though some countries have one-year programmes offering an upper secondary qualification and the credentials required to obtain a job.

Completion and graduation rates are two different measures; this measure of upper secondary completion should not be confused with the indicator on upper secondary graduation rates (see Indicator A2). Graduation rates represent the estimated percentage of people from a certain age cohort that are expected to graduate at some point during their lifetime. It measures the number of graduates from upper secondary education relative to the country's population. For each country, for a given year, the number of students who graduate is broken down into age groups (for example, the number of 16-year-old graduates divided by the total number of 16-year-olds in the country). The overall graduation rate is the sum of these age-specific graduation rates.

A third indicator in *Education at a Glance* uses the notion of educational attainment (see Indicator A1). Attainment measures the percentage of a population that has reached a certain level of education, in this case those who graduated from upper secondary education. It represents the relationship between all graduates (of the given year and previous years) and the total population.

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## Analysis

### Completion rates for true-cohort and cross-cohort data

Completion rates in this indicator are calculated using two different methods, depending on data availability. The first method, true-cohort, follows individual students from entry into an upper secondary programme until a specified number of years later. Completion is then calculated as the share of entrants who have graduated in that time frame. The second method, cross-cohort, is used when individual data are not available. It calculates completion by dividing the number of graduates in a year by the number of new entrants to that programme a certain number of years previously, where the number of years corresponds to the theoretical duration of the programme.

Because of the difference in methodologies, caution must be exercised when comparing true-cohort and cross-cohort completion rates. On the one hand, countries with true-cohort data are able to report exactly how many students from a given entry cohort have graduated within a specific time frame. This means that the true-cohort completion rate includes students who graduated before or exactly at the end of the time frame (even if they graduated from a different upper secondary programme than the one in which they began) and excludes students who graduated after the expected time frame.

On the other hand, the number of graduates used in the cross-cohort calculation corresponds to the total number of graduates of an upper secondary programme in a given calendar year. Thus, it includes every student who graduated that year, regardless of the time they took to successfully complete the programme. As an example, consider a programme with a theoretical duration of three years. Completion rates will then be calculated using the graduation cohort in 2015 and an entry cohort three academic years earlier, in 2012/2013. For countries with cross-cohort data, the graduation cohort in 2015 will include students who entered in 2012/2013 and graduated on time (within three years), as well as all others who entered before 2012/2013 and graduated in 2015. As a result, in countries where a significant share of students takes longer to graduate, cross-cohort completion will be overestimated when compared to true-cohort completion, for which the time frame is limited. The cross-cohort method may also be more vulnerable to changes in the student population due to immigration.

The theoretical duration of upper secondary programmes may vary across countries. Therefore, despite having the same reference year for graduates (2015 unless specified otherwise), the year used for entry cohorts differs across countries. Please see Annex 3 (www.oecd.org/education/education-at-a-glance-19991487.htm) for more information on each country's theoretical duration of upper secondary programmes.

#### *True-cohort completion rates*

On average across the countries that submitted true-cohort data, 68% of students who enter upper secondary education graduate within the theoretical duration of the programme in which they enrolled, 20% are still in education and 12% have not graduated and are not enrolled. Two years after the end of the theoretical duration, average completion increases to 75%. While the completion rate for all countries increases between the end of the theoretical duration and two years afterwards, for some countries the increase is substantial: by over 15 percentage points in Austria, the Flemish Community of Belgium, the Netherlands and Norway; and by 30 percentage points in Luxembourg.

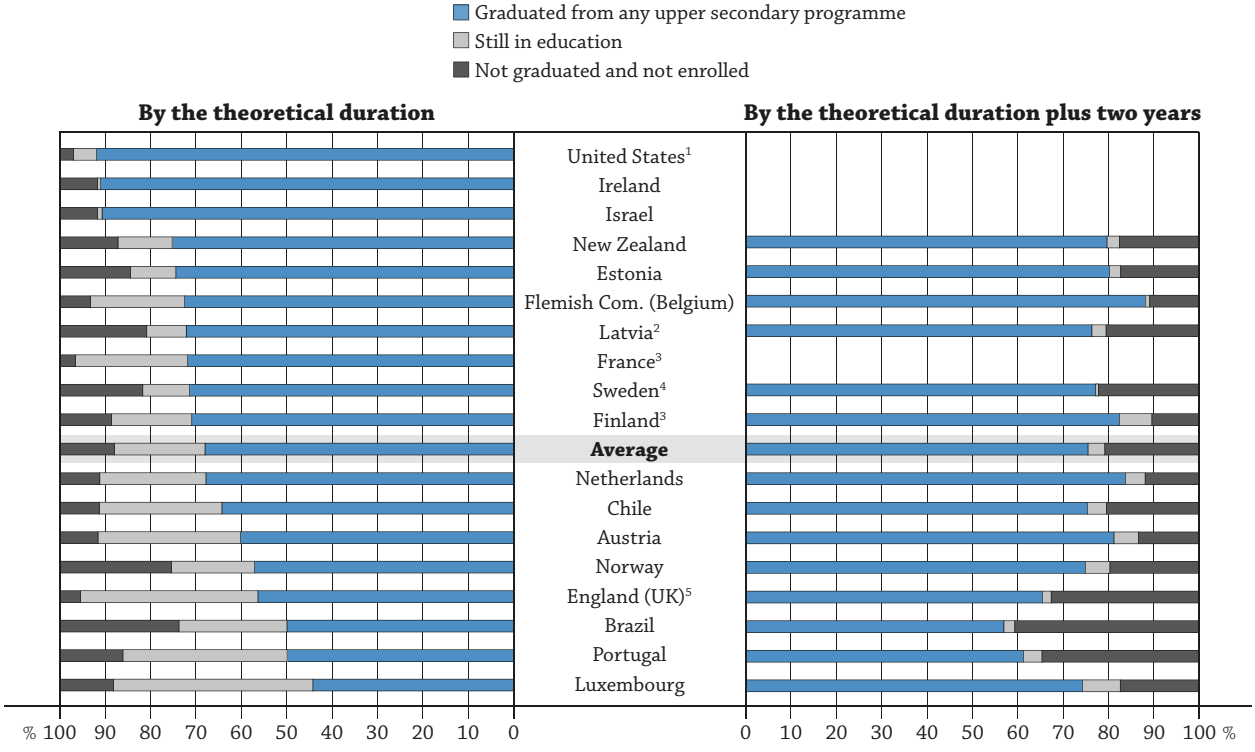
A large difference in completion rates between the shorter and longer time frames is not necessarily a negative outcome. It could reflect a more flexible upper secondary system in which it is common for students to transfer between different programmes or programme orientations, thus delaying their graduation. In the Flemish Community of Belgium, for example, 19% of students who enter a general upper secondary programme graduate instead from a vocational programme within the two years following the end of the theoretical duration of their original programme. In Norway, many students take the opposite pathway: 21% of students who enter a vocational programme transfer and graduate instead from a general programme. In Chile and Israel also, 10% or more of students graduate from a different programme orientation to the one in which they first enrolled (Table A9.2).

More generally, in countries that provide broad access to upper secondary education, flexibility may be important to give students more time to meet the standards set by their educational institution. In countries where upper secondary education is restricted, either by admissions criteria or because students from disadvantaged backgrounds have less access to this level, completion rates may be higher because of the selection bias (see Indicator C1 for more information on age-specific enrolment rates in secondary education).

Nevertheless, students with excessive delays in graduating or who are leaving the system without graduating are a source of concern. In most countries, the majority of students who are still in education at the end of the theoretical duration of the programme will graduate within the following two years. However, this is not the case in every country. In Chile and Portugal, for example, over one quarter of the students who enter an upper secondary programme are still in education after the theoretical duration of the programme; out of those, more than half will no longer be enrolled two years later. In these countries, the delay in graduating could signal students who are falling behind and at risk of dropping out. On average across countries with available data, 4% of students are still in education two years after the end of the theoretical duration of the programme in which they enrolled, while 21% have not graduated and are no longer enrolled (Figure A9.2).

## Figure A9.2. Outcomes for students who entered upper secondary education, by duration (2015)

*Completion rate of full-time students in initial education programmes of at least two years of duration. True cohort only*




1. Year of reference is 2013.
2. Upper secondary general programmes only.
3. Year of reference is 2014.
4. Students who continued their studies in the adult education system are included in the share of "not graduated and not enrolled".
5. Year of reference is 2016 and data cover succesful completion and achievement of two-year GCSE programmes.

*Countries are ranked in descending order of the percentage of students who graduated from any upper secondary programme by the theoretical duration.*

**Source**: OECD (2017), Table A9.2. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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### *Cross-cohort completion rates*

Completion rates for countries that submitted cross-cohort data tend to be higher than for countries with true-cohort data because they include all graduates, with no limitation on the time it took them to complete the programme. So although it is not possible to assess whether students are graduating with excessive delays, cross-cohort completion provides valuable information on the share of students who are graduating in the long run. On average across the ten countries that submitted cross-cohort data, 84% of students complete upper secondary education. There is, however, wide variation among countries, ranging from 69% in Mexico, to 94% in Japan and 95% in Korea.

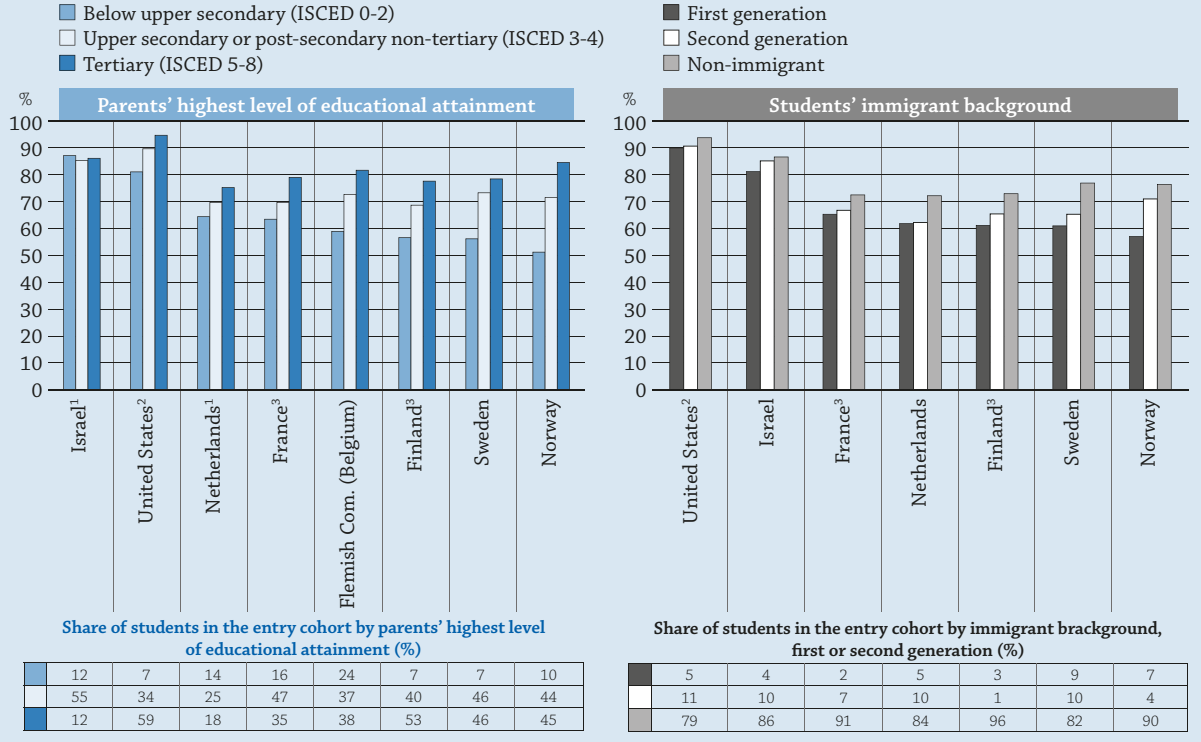
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## Box A9.1. How immigrant status and parents' educational attainment affect completion rates

Recent results from the OECD Programme for International Student Assessment (PISA) show that a variety of demographic, social, economic and educational factors can significantly affect a student's performance and well-being in school (OECD, 2016b). Similarly, non-completion of upper secondary education is not the result of any single risk factor, but rather a combination and accumulation of various barriers and disadvantages that affect students throughout their lives. Figure A9.a shows the completion rate of upper secondary education disaggregated by two measures of socio-economic background: parents' educational attainment and students' immigrant status.

In all countries except Israel, students' completion rate increases as their parents' educational attainment increases. Having at least one parent who completed upper secondary education increases students' likelihood of completing upper secondary education considerably. In Finland, the Flemish Community of Belgium, Norway and Sweden, the completion rate of students whose parents (at least one) has upper secondary or post-secondary non-tertiary as their highest level of attainment is over 10 percentage points higher than their peers whose parents did not attain this level.

### Figure A9.a. Completion rate of upper secondary education by parents' educational background and students' immigrant status (2015)




**Share of students in the entry cohort by parents' highest level of educational attainment (%)**

| | Israel[1] | United States[2] | Netherlands[1] | France[3] | Flemish Com. (Belgium) | Finland[3] | Sweden | Norway |
|---|---|---|---|---|---|---|---|---|
| Below upper secondary (ISCED 0-2) | 12 | 7 | 14 | 16 | 24 | 7 | 7 | 10 |
| Upper secondary or post-secondary non-tertiary (ISCED 3-4) | 55 | 34 | 25 | 47 | 37 | 40 | 46 | 44 |
| Tertiary (ISCED 5-8) | 12 | 59 | 18 | 35 | 38 | 53 | 46 | 45 |

**Share of students in the entry cohort by immigrant brackground, first or second generation (%)**

| | United States[2] | Israel | France[3] | Netherlands | Finland[3] | Sweden | Norway |
|---|---|---|---|---|---|---|---|
| First generation | 5 | 4 | 2 | 5 | 3 | 9 | 7 |
| Second generation | 11 | 10 | 7 | 10 | 1 | 10 | 4 |
| Non-immigrant | 79 | 86 | 91 | 84 | 96 | 82 | 90 |

**Note**: Some students in the entry cohort may have been reported as having unknown parents' educational attainment or unknown immigrant background. That explains why the shares of students reported below each figure does not always add up to 100%.
France and the United States provided data based on longitudinal studies whereas the other countries provided data based on registries. The results for students' immigrant background may not be comparable across these methods, as longitudinal studies would not account for the most recent waves of immigration.

1. The number of new entrants in Israel and the Netherlands whose parents' educational background is unknown is considerable: 22% and 43%, respectively.

2. Year of reference is 2013. In the international classification, upper secondary education refers only to grades 10-12 in the United States.

3. Year of reference is 2014.

*Countries are ranked in descending order of completion rate in upper secondary education of students whose parents have below upper secondary education or first generation students.*

**Source**: OECD, 2016 ad hoc survey on completion rates. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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The likelihood of completing upper secondary education further increases if at least one parent is tertiary-educated. In Norway, the completion rate of students whose mother or father attained tertiary education is 33 percentage points higher than the completion rate of students whose parents did not attain upper secondary education. These results are consistent with the findings from the OECD Programme for International Assessment of Adult Competencies (Survey of Adult Skills [PIAAC]), which highlight the challenge of intergenerational mobility in education (Indicator A4 in *Education at a Glance 2015* [OECD, 2015]).

Being a first or second-generation immigrant also seems to affect students' likelihood of completing upper secondary education. In all countries with available data, the completion rate for non-immigrant students is higher than for first-generation immigrants (those born outside the country and whose both parents were born in another country, excluding international students) and for second-generation immigrants (those born in the country and whose both parents were born in another country). These lower completion rates among students with an immigrant background add to existing concerns about their educational outcomes, such as the fact that immigrant students are more than twice as likely to underperform in PISA, even after adjusting for socio-economic differences (OECD, 2016b).

The difference in completion rates between non-immigrant students and first-generation immigrants is greater than 10 percentage points in Finland, the Netherlands, Norway and Sweden – although first-generation immigrants make up less than 5% of Finland's entry cohort. Second-generation immigrants have higher completion rates than first-generation immigrants, though this difference tends to be smaller in magnitude than the difference between non-immigrant students and either immigrant group.

Children from disadvantaged social groups not only face more barriers to accessing education, but their performance and outcomes once in education are also lower than those of their counterparts. Education outcomes among students with an immigrant background or from families with low levels of educational attainment should be an area of focus among education policy makers, particularly in countries where these students show significantly lower completion rates than their peers from more advantaged social groups.

### *Gender differences in completion rate*

In all countries with available data, girls have higher completion rates than boys in total upper secondary education. This is true for both time frames in countries with true-cohort data, as well as in countries with cross-cohort data (Figure A9.1). These results are consistent with those of other education indicators, namely the higher share of girls who are expected to graduate from upper secondary education (see Indicator A2), the higher likelihood that women will study at the tertiary level when their parents did not reach this level (see Indicator A4), as well as women's higher completion rate at tertiary level (see Indicator A9 of *Education at a Glance 2016* [OECD, 2016a]).

On average across countries with true-cohort data, 72% of girls graduate from upper secondary education within the theoretical duration of the programme in which they enrolled compared to only 64% of boys. The gender difference in completion within this time frame is highest in the Flemish Community of Belgium and in Norway – both over 11 percentage points.

In most countries, the gender gap in completion rates decreases within the two years after the end of the theoretical duration of programmes, meaning more boys tend to delay graduation than girls. Many factors may contribute to this delay, including the higher incidence of grade repetition among boys, who are more likely than girls to repeat a grade even after accounting for students' academic performance and self-reported behaviour and attitudes (OECD, 2016b). On average across countries with available data, 79% of girls and 72% of boys graduate within the two years following the end of the theoretical duration. Indeed, the two countries/economies with the highest gender gap within the theoretical duration (the Flemish Community of Belgium and Norway) also see the largest closing of the gender gap during the two additional years, of about 7 percentage points each.

Following the same pattern of decreasing gender gaps over longer time frames, the difference between upper secondary completion for girls and boys tends to be smaller among countries with cross-cohort data. On average, the completion rate for girls is 4 percentage points higher than for boys, with the biggest gap being in Mexico, at 8 percentage points.

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The gender gap also varies considerably depending on the programme orientation. While the gender gap in favour of girls tends to be even higher for general programmes, boys' completion rates in vocational programmes are higher than girls' in several countries: Finland (true cohort within the theoretical duration), Greece, Hungary, Lithuania and the Slovak Republic (the four of which have cross-cohort data).

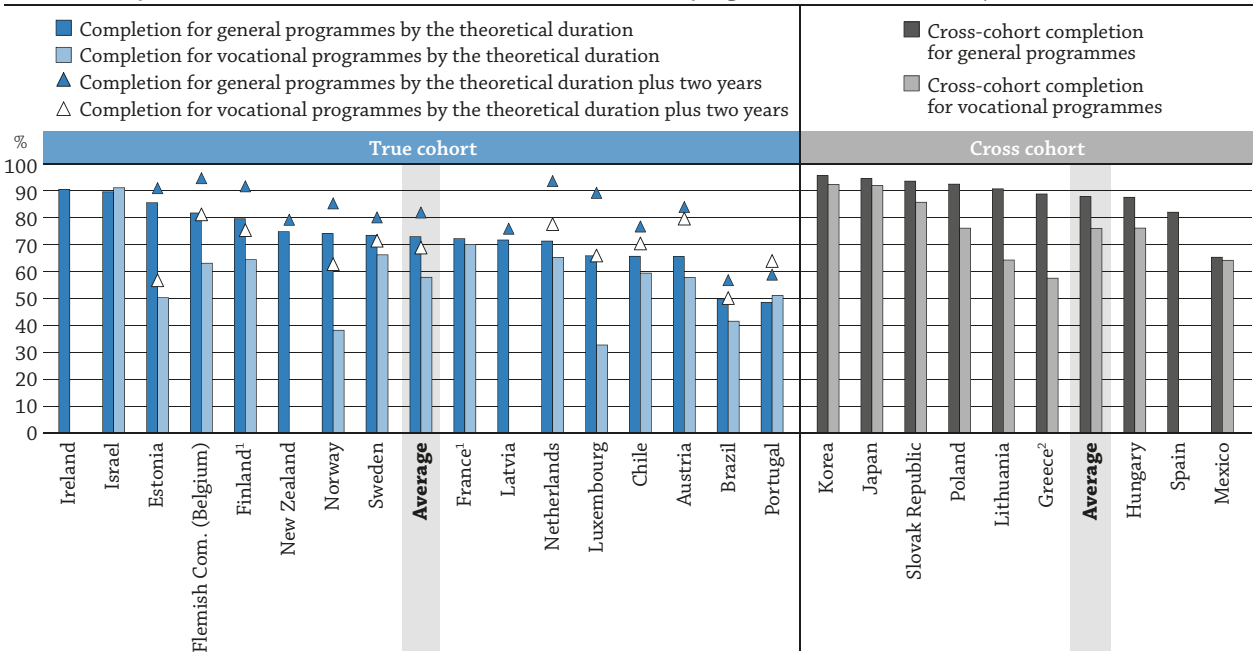
### Completion rate by programme orientation

In all countries except Israel and Portugal, the completion rate for students who enter upper secondary education in a general programme is higher than for students who enter a vocational programme (Figure A9.3). On average across countries with true-cohort data, the completion rate for general programmes within the theoretical duration is 73%, compared to 58% for vocational programmes. In Estonia, Luxembourg and Norway, the completion rate for general programmes is over 30 percentage points higher than for vocational programmes. There is, however, broad variation in size, duration and even completion of vocational programmes across countries. Within the theoretical duration, for example, completion of vocational programmes ranges from 33% in Luxembourg to 92% in Israel.

In most countries, the difference in completion between the two orientations does not change significantly within the two years following the theoretical duration. Two notable exceptions are Luxembourg and Norway, where this gap reduces by 10 and 13 percentage points, respectively, between the shorter and longer time frames. The other exception is the Netherlands, where the gap actually increases by 10 percentage points, as the completion of general programmes is considerably higher than for vocational programmes within the two years after the end of the theoretical duration.

**Figure A9.3. Completion rate of upper secondary education, by programme orientation (2015)**

*Completion rate of full-time students in initial education programmes of at least two years of duration*




1. Year of reference 2014.

2. Year of reference 2013.

*Countries are ranked in descending order of completion rate in general programmes (for true cohort, by the theoretical duration).*

**Source**: OECD (2017), Table A9.1. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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Across countries with cross-cohort data, the average completion rate for general programmes is 88%, compared to 76% for vocational programmes. The largest differences are found in Greece and Lithuania, where the completion rates for general programmes are, respectively, 31 and 26 percentage points higher than for vocational programmes. However, there is broad variation in completion of vocational programmes across countries, with rates that range from 58% in Greece to 92% in Japan and Korea.

As many countries aim to develop their upper secondary vocational programmes to better prepare students for the labour market, the lower completion rates for these programmes are of concern. Some countries have been successful in considerably increasing completion rates in vocational programmes and diminishing the gap between vocational and general programmes, however (Box A9.2).

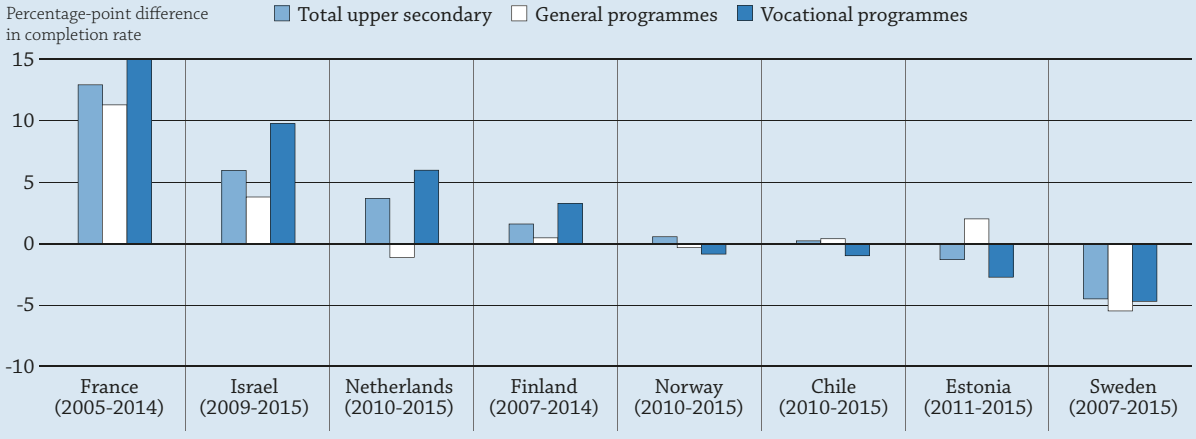
### Box A9.2. Trends in completion rates

Increasing the number of students who complete upper secondary education is a priority for many education policy makers. However, this is a challenging goal, which may require changes at the system, school and classroom levels. Figure A9.b shows trends in completion rates broken down by programme orientation. Due to lack of data availability, the time frame for comparison is different for each country (as indicated below the country's name on the horizontal axis), and therefore cross-country comparisons cannot be drawn from these data.

It is, however, possible to observe that countries such as Israel, Finland and France have been able to increase completion rates over recent years for both general and vocational programmes in upper secondary education. In all three countries, the completion rate for vocational programmes has increased by more than for general programmes. In France, the total upper secondary completion rate increased by 13 percentage points between 2005 and 2014, led mostly by an increase of 15 percentage points in the completion rate for vocational programmes. This sharp increase in completion rates for vocational programmes can also be observed in Israel from 2009 to 2015 and in the Netherlands between 2010 and 2015, though the completion rate for general programmes actually slightly decreased in the same period.

In Sweden, an upper secondary school reform in 2011 may help explain the negative trend between 2007 and 2015. This has meant, among other things, that higher demands have been introduced for completion/graduation and that vocational programmes no longer automatically give access to university admission.

### Figure A9.b. Trends in completion rates of upper secondary education, by programme orientation




**How to read this figure**

In France, the completion rate for total upper secondary education increased by 13 percentage points from 2005 to 2014. In Sweden, it decreased by 5 percentage points from 2007 to 2015.

**Note**: Completion rate by the theoretical duration of the programme.

*Countries are ranked in descending order of the percentage-point change in completion rates of upper secondary programmes.*

**Source**: OECD, 2016 ad hoc survey on completion rates. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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## Definitions

The **theoretical duration** of studies is the regulatory or common-practice time it takes a full-time student to complete a level of education. Please see Annex 3 (www.oecd.org/education/education-at-a-glance-19991487.htm) for information on each country's theoretical duration for general and vocational upper secondary programmes.

**Parents' educational attainment**:

- **Below upper secondary** means that both parents have attained ISCED 2011 levels 0, 1 and 2, and includes recognised qualifications from ISCED 2011 level 3 programmes (see *Reader's Guide*), which are not considered as sufficient for ISCED 2011 level 3 completion, and without direct access to post-secondary non-tertiary education or tertiary education.
- **Upper secondary** or **post-secondary non-tertiary** means that at least one parent has attained ISCED 2011 levels 3 and 4.
- **Tertiary** means that at least one parent has attained ISCED 2011 levels 5, 6, 7 and 8.

**First-generation immigrants** are people born outside the country and whose parents were both also born in another country. In this indicator it excludes international students.

**Second-generation immigrants** are people born in the country but whose parents were both born in another country.

## Methodology

The **true-cohort** method requires following an entry cohort through a specific time frame. In this survey it corresponds to the theoretical duration N and the theoretical duration plus two years (N+2). Only countries with longitudinal surveys or registers are able to provide such information. Panel data may be available in the form of an individual student registry (a system including unique personal ID numbers for students) or a cohort of students used for conducting a longitudinal survey.

The **cross-cohort** method only requires data on the number of new entrants to a given ISCED level and the number of graduates N years later, where N corresponds to the theoretical duration of the programme. Under the assumption of constant student flows (constant increase or decrease in the number of students entering a given ISCED level throughout the years), the cross-cohort completion rate is closer to a total completion rate (i.e. the completion rate of all students, regardless of the time it took them to graduate). Thus, in countries where a large share of students do not graduate "on time" (within the theoretical duration of the programme), the cross-cohort completion rate may be more comparable to longer time frames in the true-cohort completion.

Completion rates for both methods are calculated as the number of graduates divided by the number of entrants N or N+2 years previously (where N is the theoretical duration of the programme).

For countries that submit true-cohort data it is also possible to calculate the share of students still in education and the share of students who have neither graduated nor are still enrolled – all of which is calculated within the timeframes of N and N+2. Both shares are calculated by dividing the number of students in the given situation by the number of new entrants N or N+2 years before.

For more information please see the *OECD Handbook for Internationally Comparative Education Statistics: Concepts, Standards, Definitions and Classifications* (OECD, 2017) and Annex 3 for country-specific notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

## Source

Data on completion rates refer to the academic year 2014/2015 and were collected through a special survey undertaken in 2016. Countries could submit data either using either true-cohort or cross-cohort methodology.

**Note regarding data from Israel**

The statistical data for Israel are supplied by and are under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

## References

OECD (2017), *OECD Handbook for Internationally Comparative Education Statistics: Concepts, Standards, Definitions and Classifications*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264279889-en.

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OECD (2016b), *PISA 2015 Results (Volume II): Policies and Practices for Successful Schools*, PISA, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264267510-en.

OECD (2015), *Education at a Glance 2015: OECD Indicators*, OECD Publishing, Paris, http://dx.doi.org/10.1787/eag-2015-en.

## Indicator A9 Tables

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| | |
|---|---|
| Table A9.1 | Completion rate of upper secondary education, by programme orientation and gender (2015) |
| Table A9.2 | Distribution of entrants to upper secondary education, by programme orientation and outcomes after theoretical duration and after the theoretical duration plus two years (2015) |

Cut-off date for the data: 19 July 2017. Any updates on data can be found on line at http://dx.doi.org/10.1787/eag-data-en.

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## Table A9.1. Completion rate of upper secondary education, by programme orientation and gender (2015)

| | General programmes | | | Vocational programmes | | | Total upper secondary | | |
|---|---|---|---|---|---|---|---|---|---|
| | Boys | Girls | Total | Boys | Girls | Total | Boys | Girls | Total |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| | **True cohort – Completed upper secondary by theoretical duration** | | | | | | | | |
| Austria | 59 | 71 | 66 | 54 | 63 | 58 | 55 | 65 | 60 |
| Flemish Com. (Belgium) | 76 | 87 | 82 | 59 | 69 | 63 | 67 | 78 | 73 |
| Brazil | 45 | 54 | 50 | 40 | 44 | 42 | 45 | 54 | 50 |
| Chile | 62 | 70 | 66 | 57 | 63 | 60 | 61 | 68 | 64 |
| Estonia | 84 | 88 | 86 | 50 | 51 | 51 | 70 | 80 | 74 |
| Finland[1] | 79 | 81 | 80 | 65 | 64 | 65 | 70 | 71 | 71 |
| France[1] | 69 | 76 | 73 | 68 | 74 | 70 | 68 | 75 | 72 |
| Ireland | 90 | 92 | 91 | a | a | a | 90 | 92 | 91 |
| Israel | 85 | 95 | 90 | 89 | 95 | 92 | 86 | 95 | 91 |
| Latvia | 68 | 76 | 72 | m | m | m | m | m | m |
| Luxembourg | 62 | 70 | 66 | 32 | 34 | 33 | 41 | 48 | 44 |
| Netherlands | 69 | 74 | 72 | 61 | 71 | 66 | 63 | 72 | 68 |
| New Zealand | 72 | 78 | 75 | a | a | a | 72 | 78 | 75 |
| Norway | 70 | 78 | 75 | 33 | 45 | 38 | 50 | 64 | 57 |
| Portugal | 45 | 52 | 49 | 46 | 59 | 51 | 45 | 55 | 50 |
| Sweden | 70 | 77 | 74 | 66 | 67 | 67 | 68 | 75 | 71 |
| England (UK)[2] | x(7) | x(8) | x(9) | x(7) | x(8) | x(9) | 52 | 61 | 56 |
| United States[3] | x(7) | x(8) | x(9) | x(7) | x(8) | x(9) | 91 | 93 | 92 |
| Average | 69 | 76 | 73 | 55 | 62 | 58 | 64 | 72 | 68 |
| | **True cohort – Completed upper secondary education by theoretical duration plus two years** | | | | | | | | |
| Austria | 82 | 87 | 84 | 78 | 83 | 80 | 79 | 84 | 81 |
| Flemish Com. (Belgium) | 94 | 97 | 95 | 80 | 84 | 82 | 86 | 91 | 88 |
| Brazil | 53 | 61 | 57 | 48 | 53 | 50 | 53 | 61 | 57 |
| Chile | 74 | 80 | 77 | 68 | 74 | 71 | 72 | 79 | 75 |
| Estonia | 90 | 93 | 91 | 57 | 58 | 57 | 75 | 85 | 80 |
| Finland[1] | 91 | 93 | 92 | 76 | 76 | 76 | 81 | 84 | 82 |
| France | m | m | m | m | m | m | m | m | m |
| Ireland | m | m | m | a | a | a | m | m | m |
| Israel | m | m | m | m | m | m | m | m | m |
| Latvia | 72 | 81 | 76 | m | m | m | m | m | m |
| Luxembourg | 88 | 92 | 90 | 63 | 70 | 66 | 70 | 78 | 74 |
| Netherlands | 93 | 95 | 94 | 74 | 82 | 78 | 81 | 87 | 84 |
| New Zealand | 77 | 83 | 80 | a | a | a | 77 | 83 | 80 |
| Norway | 82 | 89 | 86 | 62 | 65 | 63 | 71 | 79 | 75 |
| Portugal | 55 | 62 | 59 | 57 | 74 | 64 | 56 | 66 | 61 |
| Sweden | 77 | 84 | 81 | 71 | 73 | 72 | 74 | 81 | 78 |
| England (UK)[2] | x(7) | x(8) | x(9) | x(7) | x(8) | x(9) | 62 | 69 | 65 |
| United States | m | m | m | m | m | m | m | m | m |
| Average | 79 | 84 | 82 | 67 | 72 | 69 | 72 | 79 | 75 |
| | **Cross cohort** | | | | | | | | |
| Canada | x(7) | x(8) | x(9) | x(7) | x(8) | x(9) | 74 | 80 | 77 |
| Greece[3] | 86 | 91 | 89 | 60 | 56 | 58 | 82 | 85 | 83 |
| Hungary | 86 | 89 | 88 | 78 | 74 | 76 | 84 | 86 | 85 |
| Japan | 94 | 95 | 95 | 91 | 93 | 92 | 93 | 94 | 94 |
| Korea | 95 | 96 | 96 | 92 | 93 | 92 | 95 | 96 | 95 |
| Lithuania | 89 | 93 | 91 | 65 | 63 | 64 | 83 | 88 | 85 |
| Mexico | 62 | 69 | 65 | 60 | 69 | 64 | 65 | 73 | 69 |
| Poland | 91 | 93 | 93 | 75 | 78 | 76 | 80 | 87 | 84 |
| Slovak Republic | 92 | 95 | 94 | 86 | 85 | 86 | 88 | 89 | 88 |
| Spain | 78 | 85 | 82 | m | m | m | m | m | m |
| Average | 86 | 90 | 88 | 76 | 76 | 76 | 83 | 86 | 84 |

**Note:** Data presented in this table come from an ad hoc survey and only concern initial education programmes. For true cohorts, the reference year (2015, unless noted otherwise) refers to the year of graduation by the theoretical duration plus two years. See *Definitions* and *Methodology* sections for more information.

1. Year of reference is 2014.
2. Year of reference is 2016 and data cover successful full completion and achievement of two-year GCSE programmes.
3. Year of reference is 2013.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

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## Table A9.2. Distribution of entrants to upper secondary education, by programme orientation and outcomes after theoretical duration and after the theoretical duration plus two years (2015)

*True cohort only*

| | Students' status by theoretical duration | | | | | | Students' status by theoretical duration plus two years | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Graduated | | | Still in education | Not graduated and not enrolled[1] | Total (3)+(4)+(5) | Graduated | | | Still in education | Not graduated and not enrolled[1] | Total (3)+(4)+(5) |
| | From general programmes | From vocational programmes | Total | | | | From general programmes | From vocational programmes | Total | | | |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
| | **Distribution of students who entered an upper secondary general programme** | | | | | | | | | | | |
| **Austria** | 63 | 3 | 66 | 25 | 9 | **100** | 76 | 9 | 84 | 4 | 11 | **100** |
| **Flemish Com. (Belgium)** | 70 | 12 | 82 | 15 | 2 | **100** | 77 | 19 | 95 | 0 | 4 | **100** |
| **Brazil** | 50 | 0 | 50 | 23 | 26 | **100** | 57 | 0 | 57 | 2 | 40 | **100** |
| **Chile** | 51 | 15 | 66 | 26 | 8 | **100** | 59 | 18 | 77 | 4 | 19 | **100** |
| **Estonia** | 86 | 0 | 86 | 9 | 5 | **100** | 89 | 3 | 91 | 3 | 6 | **100** |
| **Finland[2]** | 79 | 1 | 80 | 16 | 4 | **100** | 89 | 3 | 92 | 4 | 4 | **100** |
| **France[2]** | 72 | 1 | 73 | 26 | 1 | **100** | m | m | m | m | m | **m** |
| **Ireland** | 91 | a | 91 | 1 | 8 | **100** | m | m | m | m | m | **m** |
| **Israel** | 80 | 10 | 90 | 1 | 9 | **100** | m | m | m | m | m | **m** |
| **Latvia** | 72 | 0 | 72 | 9 | 19 | **100** | 75 | 2 | 76 | 3 | 21 | **100** |
| **Luxembourg** | 65 | 1 | 66 | 30 | 4 | **100** | 84 | 6 | 90 | 3 | 7 | **100** |
| **Netherlands** | 72 | 0 | 72 | 28 | 0 | **100** | 92 | 2 | 94 | 5 | 1 | **100** |
| **New Zealand** | 71 | 4 | 75 | 12 | 13 | **100** | 73 | 7 | 80 | 3 | 18 | **100** |
| **Norway** | 75 | 0 | 75 | 9 | 17 | **100** | 85 | 1 | 86 | 2 | 12 | **100** |
| **Portugal** | 49 | 0 | 49 | 34 | 17 | **100** | 59 | 0 | 59 | 4 | 37 | **100** |
| **Sweden[3]** | 73 | 1 | 74 | 10 | 16 | **100** | 78 | 2 | 81 | 0 | 19 | **100** |
| **England (UK)[4]** | x(3) | x(3) | 56[d] | 39[d] | 5[d] | **100** | x(9) | x(9) | 65[d] | 2[d] | 33[d] | **100** |
| **United States[5]** | x(3) | x(3) | 92[d] | 5[d] | 3[d] | **100** | m | m | m | m | m | **m** |
| **Average** | 70 | 3 | 73 | 18 | 9 | **100** | 76 | 6 | 81 | 3 | 17 | **100** |
| | **Distribution of students who entered an upper secondary vocational programme** | | | | | | | | | | | |
| **Austria** | 0 | 58 | 58 | 33 | 8 | **100** | 0 | 80 | 80 | 6 | 14 | **100** |
| **Flemish Com. (Belgium)** | 0 | 63 | 63 | 26 | 11 | **100** | 0 | 81 | 82 | 1 | 17 | **100** |
| **Brazil** | 9 | 33 | 42 | 35 | 23 | **100** | 15 | 36 | 50 | 3 | 46 | **100** |
| **Chile** | 4 | 55 | 60 | 30 | 11 | **100** | 6 | 65 | 71 | 5 | 24 | **100** |
| **Estonia** | 1 | 50 | 51 | 12 | 38 | **100** | 1 | 56 | 57 | 2 | 41 | **100** |
| **Finland[2]** | 1 | 64 | 65 | 19 | 17 | **100** | 1 | 75 | 76 | 9 | 15 | **100** |
| **France[2]** | 0 | 70 | 70 | 22 | 8 | **100** | m | m | m | m | m | **m** |
| **Ireland** | a | a | a | a | a | **a** | a | a | a | a | a | **a** |
| **Israel** | 10 | 81 | 92 | 0 | 8 | **100** | m | m | m | m | m | **m** |
| **Latvia** | m | m | m | m | m | **m** | m | m | m | m | m | **m** |
| **Luxembourg** | 0 | 33 | 33 | 51 | 16 | **100** | 0 | 66 | 66 | 11 | 23 | **100** |
| **Netherlands** | 0 | 65 | 66 | 21 | 13 | **100** | 0 | 78 | 78 | 4 | 18 | **100** |
| **New Zealand** | a | a | a | a | a | **a** | a | a | a | a | a | **a** |
| **Norway** | 15 | 24 | 38 | 28 | 33 | **100** | 21 | 42 | 63 | 9 | 28 | **100** |
| **Portugal** | 0 | 51 | 51 | 40 | 9 | **100** | 0 | 64 | 64 | 5 | 31 | **100** |
| **Sweden[3]** | 1 | 66 | 67 | 10 | 23 | **100** | 2 | 70 | 72 | 0 | 28 | **100** |
| **England (UK)[4]** | x | x | x | m | x | **x** | x | x | x | x | x | **x** |
| **United States[5]** | x | x | x | x | x | **x** | m | m | m | m | m | **m** |
| **Average** | 3 | 55 | 58 | 25 | 17 | **100** | 4 | 65 | 69 | 5 | 26 | **100** |

**Note:** Data presented in this table come from an ad hoc survey and only concern initial education programmes. See *Definitions* and *Methodology* sections for more information.

1. The columns for "not graduated and not enrolled" may include students who left the country before graduation.
2. Year of reference is 2014.
3. Students who continued their studies in the adult education system are included in the columns "not graduated and not enrolled".
4. Year of reference is 2016 and data cover successful full completion and achievement of two-year GCSE programmes. Vocational programmes are included with general programmes.
5. Year of reference is 2013 and vocational programmes are included with general programmes. In the international classification, upper secondary education refers only to grades 10-12 in the United States.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

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Chapter

B

# Financial and Human Resources Invested In Education




**Indicator B1** How much is spent per student?
StatLink http://dx.doi.org/10.1787/888933560130

**Indicator B2** What proportion of national wealth is spent on educational institutions?
StatLink http://dx.doi.org/10.1787/888933560225

**Indicator B3** How much public and private investment on educational institutions is there?
StatLink http://dx.doi.org/10.1787/888933560339

**Indicator B4** What is the total public spending on education?
StatLink http://dx.doi.org/10.1787/888933560415

**Indicator B5** How much do tertiary students pay and what public support do they receive?
StatLink http://dx.doi.org/10.1787/888933560529

**Indicator B6** On what resources and services is education funding spent?
StatLink http://dx.doi.org/10.1787/888933560605

**Indicator B7** Which factors influence the level of expenditure on education?
StatLink http://dx.doi.org/10.1787/888933560795

## Classification of educational expenditure

Educational expenditure in this chapter is classified through three dimensions:

- The first dimension – represented by the horizontal axis in the diagram below – relates to the location where spending occurs. Spending on schools and universities, education ministries and other agencies directly involved in providing and supporting education is one component of this dimension. Spending on education outside these institutions is another.
- The second dimension – represented by the vertical axis in the diagram below – classifies the goods and services that are purchased. Not all expenditure on educational institutions can be classified as direct educational or instructional expenditure. Educational institutions in many OECD countries offer various ancillary services – such as meals, transport, housing, etc. – in addition to teaching services to support students and their families. At the tertiary level, spending on research and development can be significant. Not all spending on educational goods and services occurs within educational institutions. For example, families may purchase textbooks and materials themselves or seek private tutoring for their children.
- The third dimension – represented by the colours in the diagram below – distinguishes among the sources from which funding originates. These include the public sector and international agencies (indicated by light blue), and households and other private entities (indicated by medium-blue). Where private expenditure on education is subsidised by public funds, this is indicated by cells in the grey colour.

Public sources of funds | Private sources of funds | Private funds publicly subsidised

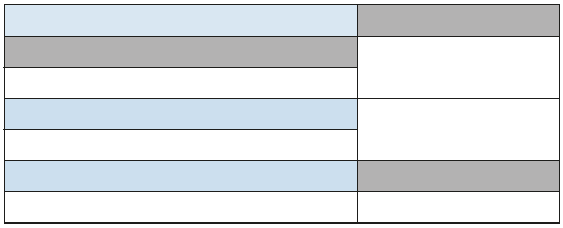
| | **Spending on educational institutions** (e.g. schools, universities, educational administration and student welfare services) | **Spending on education outside educational institutions** (e.g. private purchases of educational goods and services, including private tutoring) |
|---|---|---|
| **Spending on core educational services** | e.g. public spending on instructional services in educational institutions | e.g. subsidised private spending on books |
| | e.g. subsidised private spending on instructional services in educational institutions | e.g. private spending on books and other school materials or private tutoring |
| | e.g. private spending on tuition fees | |
| **Spending on research and development** | e.g. public spending on university research | |
| | e.g. funds from private industry for research and development in educational institutions | |
| **Spending on educational services other than instruction** | e.g. public spending on ancillary services such as meals, transport to schools, or housing on the campus | e.g. subsidised private spending on student living costs or reduced prices for transport |
| | e.g. private spending on fees for ancillary services | e.g. private spending on student living costs or transport |

## Coverage diagrams

### For Indicators B1, B2, B3 and B6



### For Indicator B4

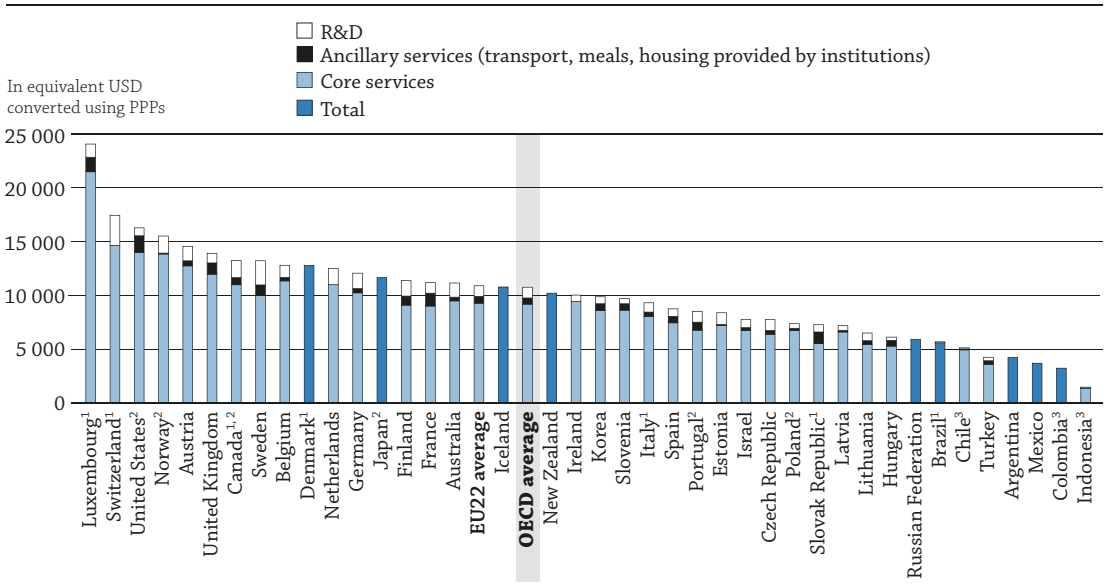


## HOW MUCH IS SPENT PER STUDENT?

- On average, OECD countries spend USD 10 759 a year on educational institutions to educate each student (from primary to tertiary education), broken down as USD 8 733 per primary student, USD 10 235 per lower secondary student, USD 10 182 per upper secondary student and USD 16 143 per tertiary student.
- In primary, secondary and post-secondary non-tertiary education, 94% of institutions' expenditure per student is devoted to core educational services such as teaching costs (USD 8 948 per student), and only 6% is devoted to ancillary services such as student welfare (USD 540). At the tertiary level, a much lower share of institutional expenditure goes to core services (64%), while roughly one-third of total educational expenditure per student (USD 5 084) is on research and development.
- From 2008 to 2014, expenditure on primary, secondary and post-secondary non-tertiary educational institutions increased by 8% on average across OECD countries, while the number of students decreased by 2%, resulting in an increase of 10% in expenditure per student over the same period.

### Figure B1.1. Annual expenditure by educational institutions per student, by types of service (2014)

*In equivalent USD converted using PPPs, based on full-time equivalents, from primary to tertiary education*




**Note**: PPP and USD stand for purchasing power parity and United States dollars respectively.
1. Public institutions only (for Italy, for primary and secondary education; for Canada and Luxembourg, for tertiary education and from primary to tertiary; for the Slovak Republic, for bachelor's, master's and doctoral degrees).
2. Some levels of education are included with others. Refer to "x" code in Table B1.1 for details.
3. Year of reference 2015.
*Countries are ranked in descending order of total expenditure per student by educational institutions.*
**Source**: OECD/UIS/Eurostat (2017), Table B1.2. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).
StatLink http://dx.doi.org/10.1787/888933557793

### Context

The willingness of policy makers to expand access to educational opportunities and to provide high-quality education can translate into higher costs per student, and must be balanced against other demands on public expenditure and the overall tax burden. As a result, the question of whether the resources devoted to education yield adequate returns features prominently in public debate. Although it is difficult to assess the optimal volume of resources needed to prepare each student for life and work in modern societies, international comparisons of spending by educational institutions per student (see *Definitions* and *Methodology* sections) can provide useful reference points.

Expenditure per student by educational institutions is largely influenced by teachers' salaries (see Indicators B7 and D3), pension systems, instructional and teaching hours (see Indicator B7), the cost of teaching materials and facilities, the programme provided (e.g. general or vocational) and the number of students enrolled in the education system (see Indicator C1). Policies to attract new teachers, reduce average class size or change staffing patterns (see Indicator D2) have also affected per-student expenditure. Ancillary and research and development (R&D) services can also influence the level of expenditure per student.

## Other findings

- In almost all countries, expenditure by educational institutions per student increases along with educational level, with the exception of post-secondary non-tertiary education, where expenditure per student is lower than in other levels on average.
- The orientation of secondary school programmes influences expenditure by educational institutions per student in most countries. Among the 26 OECD countries with separate data on expenditure per student for general and vocational programmes at the upper secondary and post-secondary non-tertiary levels, an average of USD 855 more was spent per student in a vocational programme than in a general programme in 2014.
- Excluding activities peripheral to instruction (R&D and ancillary services, such as student welfare services), OECD countries annually spend an average of USD 9 189 per student from primary to tertiary education.
- On average, OECD countries spend around 70% more per student at tertiary level than at primary, secondary and post-secondary non-tertiary levels combined. R&D activities or ancillary services can account for a significant proportion of expenditure at tertiary level (36% on average), but even when these are excluded, expenditure per student on core educational services at tertiary level is still on average 16% higher than at primary, secondary and post-secondary non-tertiary levels.
- Students are expected to spend an average of six years in primary education, leading to a total per-student cost of USD 51 266 over this period. The sum is even higher for secondary education, where students are expected to spend seven years, costing a total of USD 72 371 each. At the end of their primary and secondary studies, the total expenditure adds up to USD 123 637 per student.
- Annual expenditure per student by educational institutions at primary amounts to 22% of GDP per capita on average across the OECD, while at the secondary level represents a 25%. This figure is much higher at tertiary level, where countries spend on average 40% of the country's GDP per capita on funding bachelor's, master's and doctoral degrees.

B1

## Analysis

### Expenditure per student by educational institutions

In 2014, annual spending per student from primary to tertiary education ranged from around USD 1 500 in Indonesia to nearly USD 25 000 in Luxembourg (Table B1.1 and Figure B1.2). Even in those countries where per-student expenditures are similar, allocations of resources to the various levels of education can vary widely. The OECD average amount spent by educational institutions per primary student amounts to USD 8 733, but ranges from less than USD 1 500 per student in Indonesia, to more than USD 21 000 in Luxembourg (Table B1.1 and Figure B1.2). While the typical amount spent on each secondary student is USD 10 106, this average spans a per-student expenditure of USD 1 175 in Indonesia to more than USD 21 500 in Luxembourg. For tertiary level students, the higher average of USD 16 143 is explained by high expenditures – more than USD 20 000 – in a few OECD countries, notably Canada, Luxembourg, Norway, Sweden, Switzerland, the United Kingdom and the United States.

These differences in annual expenditure by educational institutions per student at each level of education can also lead to large differences in the cumulative expenditure per student over the duration of studies (see below, and Table B1.4, available on line).

Expenditure per student by educational institutions rises with the level of education in almost all countries, but the size of the differentials varies markedly across countries (Table B1.1). On average, expenditure on secondary education is 1.2 times greater than expenditure on primary education. This ratio reaches or exceeds 1.5 in the Czech Republic, France, Hungary and the Netherlands, but is lower than 1 in Denmark, Iceland, Indonesia, Poland, Slovenia and Turkey. Similarly, educational institutions in OECD countries spend an average of 1.8 times more on each tertiary student than they do on each primary student. However, spending patterns vary widely, mainly because education policies vary more at the tertiary level (see Indicator B5). For example, Canada, France, Hungary, Luxembourg, the Netherlands, Sweden, Turkey and the United States spend between 2.2 and 2.6 times more on a tertiary student than on a primary student, but Brazil and Mexico spend 3 times as much (Table B1.1).

These comparisons are based on purchasing power parities (PPPs) for GDP, not on market exchange rates. Therefore, they reflect the amount of a national currency required to produce the same basket of goods and services in a given country as produced by the United States in USD (see *Methodology* section).

### Expenditure per student differences between upper secondary general and vocational programmes

On average across the 26 OECD countries for which data are available, USD 855 more is spent per student in vocational than in general programmes at upper secondary level. However, this masks large differences in expenditure per student within countries. In 6 of the 26 OECD countries, expenditure per student in educational institutions is higher for general programmes than vocational programmes. In the case of Australia, for example, USD 6 434 more is spent per student in general programmes than in vocational programmes. On the other hand, countries like Germany and Sweden spend over USD 4 000 more per student in vocational programmes. Luxembourg and Norway spend the most on upper secondary vocational education (USD 22 964 and USD 16 523 respectively), amounts which are similar to their spending on general programmes at the same level (USD 21 809 in Luxembourg and USD 15 561 in Norway). Underestimation of the expenditure by private enterprises on dual vocational programmes can partly explain these spending differences between general and vocational programmes (see Table C1.3).

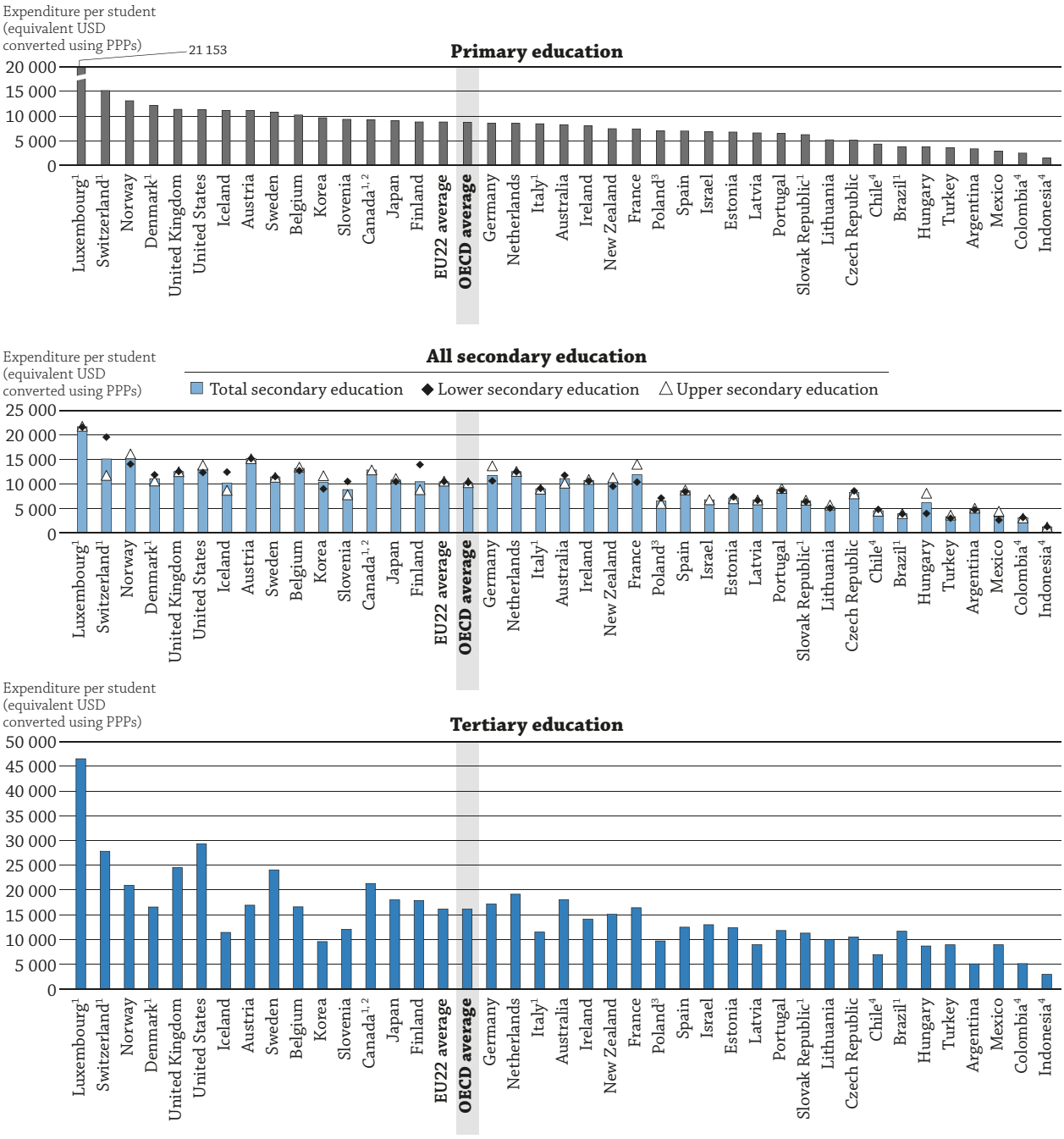
### Expenditure per student on core education services, ancillary services and R&D

On average across OECD countries, expenditure on core education services (such as teaching costs) represents 85% of total expenditure per student from primary to tertiary education, and exceeds 90% in Chile, Indonesia, Ireland, Latvia and Poland. Only in France and the Slovak Republic ancillary services (non-educational services including student welfare, transport, meals and housing provided by educational institutions) account for over 10% of the expenditure per student.

However, this overall picture masks large variations among the levels of education (Table B1.2). At primary, secondary and post-secondary non-tertiary levels, expenditure is dominated by spending on core education services. On average, OECD countries for which data are available spend 94% of the total per-student expenditure (or USD 8 948) on core educational services. However, in Finland, France, the Slovak Republic and Sweden, ancillary services account for over 10% of the expenditure per student (Table B1.2).

## Figure B1.2. Annual expenditure per student by educational institutions for all services, by level of education (2014)

*Expenditure on core, ancillary services and R&D, in equivalent USD converted using PPPs, based on full-time equivalents*




**Note**: PPP and USD stand for purchasing power parity and United States dollars respectively.

1. Public institutions only (for Italy, for primary and secondary education; for Canada and Luxembourg, for tertiary education and from primary to tertiary; for the Slovak Republic, for bachelor's, master's and doctoral degrees).

2. Primary education includes data from pre-primary and lower secondary education.

3. Upper secondary education includes information from vocational programmes in lower secondary education.

4. Year of reference 2015.

*Countries are ranked in descending order of expenditure on educational institutions per student in primary education.*

**Source**: OECD/UIS/Eurostat (2017), Table B1.1. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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At tertiary level, educational core services also make up the largest expenditure in all countries (USD 10 348 per student on average), ranging from USD 2 562 in Indonesia, and more than USD 30 700 in Luxembourg (Table B1.2). Ancillary services are even less important in tertiary education than at lower levels. On average, a mere 4% of expenditure on tertiary institutions targets ancillary services, and in the Czech Republic, Estonia, Finland, Ireland, Israel, Korea, the Netherlands, Sweden and Switzerland the sum is negligible. The United Kingdom and the United States stand out for spending over USD 3 000 on ancillary services per student in their tertiary institutions. However, across all countries R&D takes up a large part of the tertiary budget, accounting for 31% of expenditure per student on average, but rising to over 50% in Sweden (USD 13 137) and Switzerland (USD 15 229). In the OECD countries in which most R&D is conducted in tertiary educational institutions (e.g. Portugal and Switzerland, and Sweden for publicly funded R&D), expenditure per student in these activities is higher. Other countries may have lower R&D expenditure per student because a large proportion of research is performed outside the academic environment.

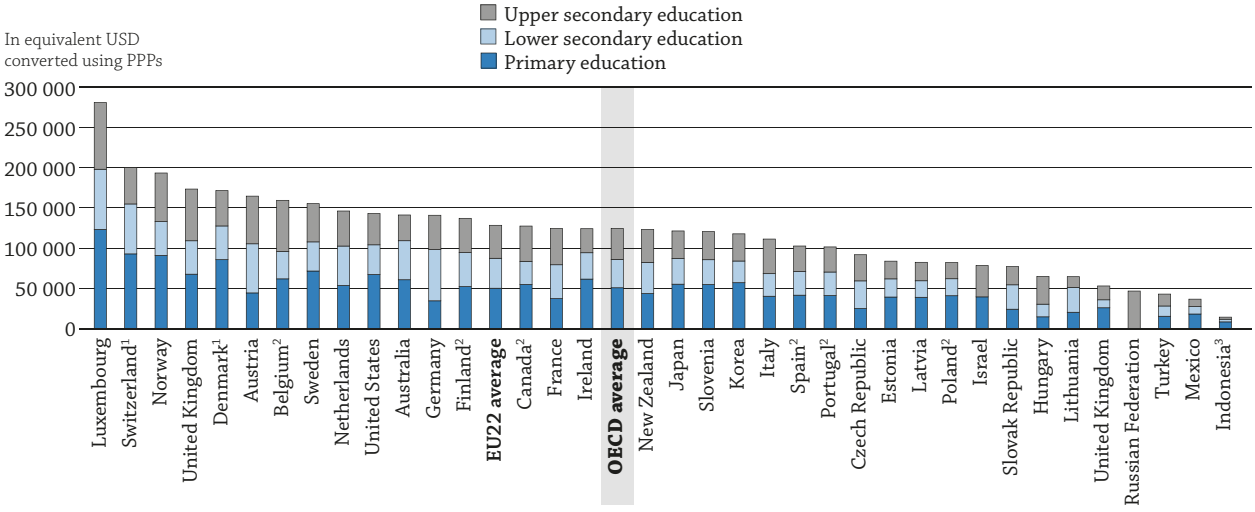
### Cumulative expenditure over the expected duration of studies

The resources that countries can devote to education can help to explain the variation of outcomes of education systems (Box B1.1). In order to compare how costly education is across countries, it is important to consider not only the yearly expenditure per student, but also the cumulative expenditure students incur over the total period they are expected to spend at that educational level. High expenditure per student, for example, might be offset by short programmes or weaker access to education in certain levels. On the other hand, a seemingly inexpensive education system can prove to be costly overall if enrolment is high and students spend more time in school.

Primary and secondary education are usually compulsory across the OECD, and the expected cumulative expenditure per student at these levels shows how much a student will cost based on the current compulsory education (Figure B1.3 and Table B1.4, available on line). On average across OECD countries, students are expected to be enrolled at primary or secondary school for a total of 13 years. This adds up to a total cumulative expenditure of USD 123 637 per student. Luxembourg and Switzerland spend over USD 195 000 per student across those two levels, while in Indonesia and Mexico, the figure is below USD 40 000.

**Figure B1.3. Cumulative expenditure per student by educational institutions over the expected duration of primary and secondary studies (2014)**

*Annual expenditure on educational institutions per student multiplied by the theoretical duration of studies, in equivalent USD converted using PPPs*




**Note**: Cumulative expenditure per student by educational institution is calculated using expected years in education. PPP and USD stand for purchasing power parity and United States dollars, respectively.

1. Public institutions only.

2. Some levels of education are included with others. Refer to "x" code in Table B1.1 for details.

3. Year of reference 2015.

*Countries are ranked in descending order of the total expenditure on educational institutions per student over the theoretical duration of primary and secondary studies.*

**Source**: OECD/UIS/Eurostat (2017), Table B1.4, available on line. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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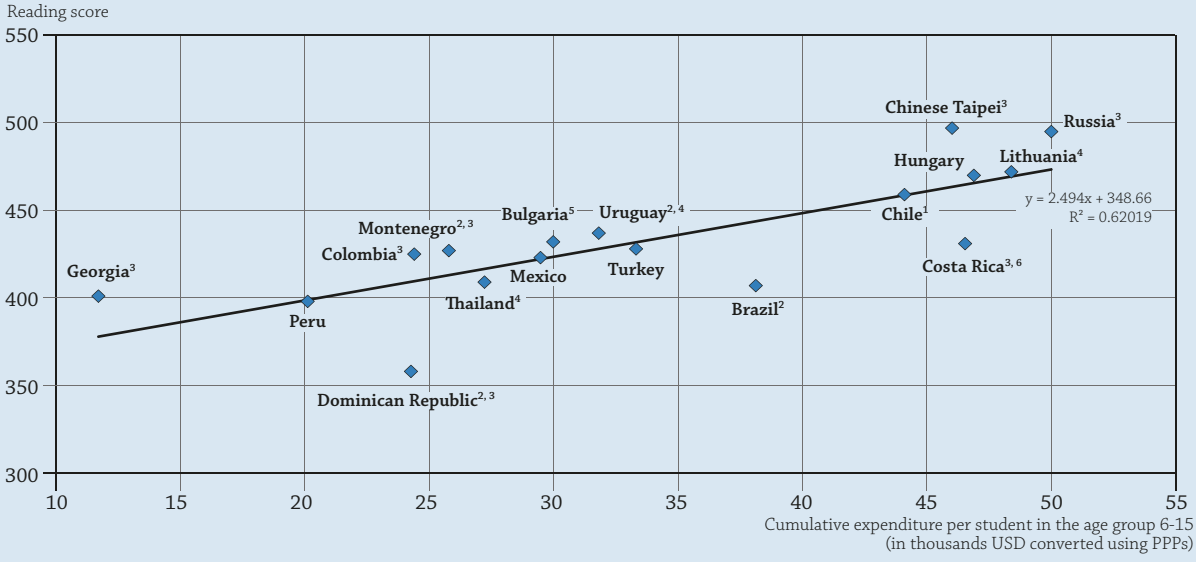
## Box B1.1 The link between cumulative education spending per student and reading performance in PISA

Wealthier countries can afford to spend more on education and at the same time, the resources countries can devote to education are an important element in the variation of outcomes of education systems. Figure B1.a compares countries investing less than USD 50 000 per student with their reading scores in the 6-15 age group as measured by the Programme for International Student Assessment (PISA) (OECD, 2016). Cumulative expenditure per student is computed by multiplying public and private expenditure on educational institutions per student in 2014 at each level of education by the theoretical duration of education at the respective level, up to the age of 15.

This figure shows a positive link between cumulative expenditure per student and PISA reading scores across the countries investing less than USD 50 000 per student. Indeed, a country's mean reading performance increases 25 points for every additional USD 10 000 cumulative expenditures per student invested. Similar results are also observed when analysing PISA science and maths scores: across countries investing less than USD 50 000 per student, an increment of USD 10 000 per student can be expected to bring on an improvement in a country's mean science and maths scores by 30 and 34 points respectively. Above USD 50 000 per student, the relationship between performance and cumulative expenditure per student disappears, suggesting that beyond a minimum threshold, the way funds are allocated may be more relevant than total cumulative expenditure (OECD, 2016).

### Figure B1.a. Relationship between cumulative expenditure per student between the age of 6 and 15 and average reading performance in PISA

*Concentrating on countries with a cumulative expenditure per student of less than USD 50 000. Cumulative expenditure per student refers to the year 2014 while average reading performance in PISA refers to the year 2015*




**Note**: Cumulative expenditure per student is calculated using the theoretical duration of studies. USD stands for United States dollars.

1. Year of reference 2015.
2. Public institutions only.
3. Year of reference 2013.
4. Total expenditure data include pre-primary education.
5. Year of reference 2012.
6. Combined public and government-dependent private institutions.

**Source**: OECD/UIS/Eurostat (2017), Table B1.4 (available on line); OECD, PISA 2015 Database, Table I.4.2 and Table II.6.58. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance- 19991487.htm).

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B1

### Expenditure per student by educational institutions relative to per capita GDP

Since in most OECD countries access to education is universal (and usually compulsory) at the lower levels of schooling, the quotient between the amount spent per student and the per capita GDP can be indicative of whether the resources spent per student are correlated to the country's ability to pay. At higher levels of education, where student enrolments vary sharply among countries, the link is less clear. At tertiary level, for example, OECD countries may rank relatively high on this measure even when a large proportion of their wealth is spent on educating a relatively small number of students.

In OECD countries, overall expenditure per student by educational institutions from primary to tertiary levels of education averages 27% of per capita GDP, broken down into 22% of per capita GDP at primary level, 25% at lower secondary level, 25% at upper secondary level and 40% at tertiary level (Table B1.4, available on line).

Countries with low levels of expenditure per student may nonetheless invest relatively higher amounts as a share of per capita GDP. For example, although Slovenia's expenditure per student at secondary level and per capita GDP are both below the OECD average, it spends an above-average share of its per capita GDP on each student at secondary level.

The relationship between per capita GDP and expenditure per student by educational institutions is difficult to interpret. However, there is a clear positive relationship between the two at both primary and secondary levels – in other words, less wealthy countries tend to spend less per student than richer ones. Although the relationship is generally positive at these levels, there are variations, even among countries with similar levels of per capita GDP, and especially in those in which per capita GDP exceeds USD 30 000. Australia and Austria, for example, have similar levels of per capita GDP (around USD 48 000 and USD 50 000 respectively) (see Table X2.1 in Annex 2) but allocate very different shares to primary and secondary education. Australia's expenditure at primary level is 17% (below the OECD average of 22%) and is 23% at secondary level (below the OECD average of 25%), while in Austria, the proportions are 23% at primary level and 31% at secondary level (Table B1.5, available on line).

At tertiary level there is more country variation in spending, and in the relationship between countries' relative wealth and their tertiary expenditure levels. Tertiary institutions spending in Brazil, Sweden, the United Kingdom and the United States represents more than 50% of per capita GDP on each student (Table B1.5 available on line). The high share for Sweden, for example, is clearly explained by its extremely high expenditure on R&D, which accounts for over half of total expenditure per student (Table B1.2).

### Changes in expenditure per student by educational institutions between 2008 and 2014

Changes in expenditure by educational institutions largely reflect changes in the size of the school-age population and in teachers' salaries, both of which tend to increase over time in real terms. Teachers' salaries, the main component of costs, have increased in the majority of countries during the past decade (see Indicator D3). The size of the school-age population influences both enrolment levels and the amount of resources and organisational effort a country must invest in its education system. The larger this population, the greater the potential demand for education services. Changes in expenditure per student over the years may also vary between levels of education within countries, as both enrolment and expenditure may follow different trends at different levels of education.

Expenditure by primary, secondary and post-secondary non-tertiary educational institutions increased in most countries by an average of 8% between 2008 and 2014, despite the economic crisis (Table B1.3). Over the same period, enrolment at those levels decreased slowly, with a total decline of 2% over the six-year period. Falling enrolment together with increasing expenditure resulted in greater expenditure per student at those levels – 10% higher in 2014 than in 2008. Most countries were spending more in 2014 than they did at the start of the crisis in 2008, with the exception of the United States and some European countries hit hard by the economic turmoil: Estonia, Hungary, Iceland, Italy, Slovenia and Spain. In some countries, this fall in expenditure coincided with policy-making decisions. In Italy, for example, national public expenditure on education decreased following Law 133 of 2008, which allowed, among other measures, for an increase in the pupil-teacher ratio and hence lower educational expenditure. On the other hand, in Israel, Portugal, Turkey and the United Kingdom, expenditure increased significantly between 2008 and 2014, by 76% in Turkey, 36% in Israel, 32% in the United Kingdom and 27% in Portugal.

At tertiary level, expenditure increased much faster than for the lower levels of education, rising on average by 18% between 2008 and 2014. This results, in part, from enrolment growing by a total of 10% between 2008 and 2014. Countries like Brazil and Turkey saw an increase of more than 50% in their total tertiary enrolment over that period. As a result, Turkey almost doubled its expenditure on tertiary education, while expenditure per student expanded by only 60%. Yet, despite these recent advances, Brazil, Chile and Turkey still remain among the countries with the lowest expenditure per student (Table B1.3).

### *Subnational variation in annual expenditure per student by educational institutions (2014)*

Annual expenditure per student is not homogeneous within countries. Among the four countries providing data, large differences are observed across regions within a country in 2014. The Russian Federation is the country with the highest subnational range in terms of annual expenditure per student by educational institution at primary and secondary levels combined with a ratio of almost 9 between the regions with the highest and lowest values and, ranging from USD 27 448 to USD 3 053. Comparatively, regional differences are the smallest in Belgium and Germany (mainly due to a strong fiscal equalization scheme), although the highest value observed for a *Land* in Germany is less than half the highest subnational value observed in Canada and the Russian Federation. In terms of homogeneity in spending at primary and secondary levels within countries, 61 out of 83 regions in the Russian Federation devoted a lower annual expenditure per student than the national average, indicating that the peak values are the benefit of a select minority of regions. This is contrast to Canada and Germany where almost half the regional entities provide a lower level of expenditure than the national average. In Germany, the majority of the *Länder* that spend less than the national average are mainly located in the west side of the country (OECD/NCES, 2017).

## Definitions

**Ancillary services** are services provided by educational institutions that are peripheral to their main educational mission. The main component of ancillary services is student welfare. In primary, secondary and post-secondary non-tertiary education, student welfare services include meals, school health services and transportation to and from school. At the tertiary level, they include residence halls (dormitories), dining halls and healthcare.

**Core educational services** include all expenditures that are directly related to instruction in educational institutions, including teachers' salaries, construction and maintenance of school buildings, teaching materials, books and administration of schools.

**Research and development** includes research performed at universities and other tertiary educational institutions, regardless of whether the research is financed from general institutional funds or through separate grants or contracts from public or private sponsors.

## Methodology

The indicator shows direct public and private expenditure by educational institutions in relation to the number of full-time equivalent students enrolled. Public subsidies for students' living expenses outside educational institutions have been excluded to ensure international comparability.

Table B1.3 shows the changes in expenditure per student by educational institutions between the financial years 2008, 2011, and 2014. OECD countries were asked to collect 2008 and 2011 data according to the definitions and coverage of UOE 2016 data collection. All expenditure data and GDP information for 2008 and 2011 are adjusted to 2014 prices using the GDP price deflator.

**Core educational services** are estimated as the residual of all expenditure, that is, total expenditure on educational institutions net of expenditure on R&D and ancillary services. The classification of R&D expenditure is based on data collected from the institutions carrying out R&D, rather than on the sources of funds.

**Expenditure per student by educational institutions** at a particular level of education is calculated by dividing total expenditure by educational institutions at that level by the corresponding full-time equivalent enrolment. Only educational institutions and programmes for which both enrolment and expenditure data are available are taken into account. Expenditure in national currency is converted into equivalent USD by dividing the national currency figure by the purchasing power parity (PPP) index for GDP. The PPP conversion factor is used because the market exchange rate is affected by many factors (interest rates, trade policies, expectations of economic growth, etc.) that have little to do with current relative domestic purchasing power in different OECD countries (see Annex 2 for further details).

Expenditure data for students in private educational institutions are not available for certain countries, and some other countries provide incomplete data on independent private institutions. Where this is the case, only expenditure on public and government-dependent private institutions has been taken into account.

**Expenditure per student by educational institutions relative to per capita GDP** is calculated by expressing expenditure per student by educational institutions in units of national currency as a percentage of per capita GDP, and also in national currency. In cases where the educational expenditure data and the GDP data pertain to different

reference periods, the expenditure data are adjusted to the same reference period as the GDP data, using inflation rates for the OECD country in question (see Annex 2).

**Full-time equivalent student**: The ranking of OECD countries by annual expenditure on educational services per student is affected by differences in how countries define full-time, part-time and full-time equivalent enrolment. Some OECD countries count every participant at the tertiary level as a full-time student, while others determine a student's intensity of participation by the credits that he/she obtains for successful completion of specific course units during a specified reference period. OECD countries that can accurately account for part-time enrolment have higher apparent expenditure per full-time equivalent student by educational institutions than OECD countries that cannot differentiate among the different types of student attendance.

Data on subnational regions on how much is spent per student are adjusted using national purchasing power of parity (PPPs). Future work on cost of living at subnational level is required to fully adjust expenditure per student used in this section.

## Source

Data refer to the financial year 2014 (unless otherwise specified) and are based on the UNESCO, the OECD and Eurostat (UOE) data collection on education statistics administered by the OECD in 2016 (for details see Annex 3 at www.oecd.org/education/education-at-a-glance-19991487.htm). Data from Argentina, China, Colombia, India, Indonesia, Saudi Arabia, South Africa are from the UNESCO Institute of Statistics (UIS).

Data on subnational regions for selected indicators have been released by the OECD, with the support from the US National Centre for Education Statistics (NCES) and are currently available for four countries: Belgium, Canada Germany and the Russian Federation. Subnational estimates were provided by countries using national data sources.

**Note regarding data from Israel**

The statistical data for Israel are supplied by and are under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

### References

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OECD/NCES (2017), *Education at a Glance Subnational Supplement*, OECD/National Center for Education Statistics, Paris and Washington, DC, https://nces.ed.gov/surveys/annualreports/oecd/.

## Indicator B1 Tables

StatLink http://dx.doi.org/10.1787/888933560130

| | | |
|---|---|---|
| | Table B1.1 | Annual expenditure per student by educational institutions for all services (2014) |
| | Table B1.2 | Annual expenditure per student by educational institutions for core educational services, ancillary services and R&D (2014) |
| | Table B1.3 | Change in expenditure per student by educational institutions for all services, relative to different factors by levels of education (2008, 2011, 2014) |
| WEB | Table B1.4 | Cumulative expenditure per student by educational institutions over the expected duration of primary and secondary studies (2014) |
| WEB | Table B1.5 | Annual expenditure per student by educational institutions for all services, relative to per capita GDP (2014) |

Cut-off date for the data: 19 July 2017. Any updates on data can be found on line at http://dx.doi.org/10.1787/eag-data-en. More breakdowns can also be found at http://stats.oecd.org/, Education at a Glance Database.

## Table B1.1. Annual expenditure per student by educational institutions for all services (2014)

*In equivalent USD converted using PPPs for GDP, by level of education, based on full-time equivalents*

| | | Primary | Secondary | | | | | Post-secondary non-tertiary | Tertiary (including R&D activities) | | | All tertiary (excluding R&D activities) | Primary to tertiary education (including R&D activities) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Lower secondary | Upper secondary | | | All secondary | | Short-cycle tertiary | Bachelor's, master's and doctoral degrees | All tertiary | | |
| | | | | General programmes | Vocational programmes | All programmes | | | | | | | |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
| OECD | Australia | 8 251 | 11 698 | 12 397 | 5 963 | 10 082 | 11 023 | 5 963 | 9 299 | 19 772 | 18 038 | 11 434 | **11 149** |
| | Austria | 11 154 | 15 106 | 13 198 | 16 306 | 15 079 | 15 094 | 4 817 | 16 275 | 17 061 | 16 933 | 12 528 | **14 549** |
| | Belgium | 10 216 | 12 649 | 13,571[d] | 13,224[d] | 13,363[d] | 13,118[d] | x(3, 4, 5) | 11 901 | 16 780 | 16 599 | 10 747 | **12 796** |
| | Canada[1, 2] | 9 256[d] | x(1) | x(5) | x(5) | 12 780 | 12 780 | m | 14 377 | 25 185 | 21 326 | 15 004 | **13 235** |
| | Chile[3] | 4 321 | 4 737 | 4 287 | 4 501 | 4 349 | 4 478 | a | 3 989 | 8 186 | 6 952 | 6 591 | **5 135** |
| | Czech Republic | 5 101 | 8 507 | 6 661 | 8 340 | 7 905 | 8 191 | 2 428 | 17 292 | 10 504 | 10 521 | 6 225 | **7 751** |
| | Denmark[1] | 12 158 | 11 792 | x(5) | x(5) | 10 526 | 10 998 | a | x(10) | x(10) | 16 568 | m | **12 785** |
| | Estonia | 6 760 | 7 272 | 6 313 | 7 972 | 6 900 | 7 077 | 8 014 | a | 12 375 | 12 375 | 8 210 | **8 389** |
| | Finland | 8 812 | 13 865 | 7 978 | 9 056[d] | 8 759[d] | 10 387[d] | x(4, 5, 6) | a | 17 893 | 17 893 | 10 586 | **11 381** |
| | France | 7 396 | 10 309 | 13 399 | 14 811 | 13 927 | 11 815 | 9 736 | 14 122 | 17 178 | 16 422 | 11 310 | **11 184** |
| | Germany | 8 546 | 10 554 | 11 389 | 15 861 | 13 615 | 11 684 | 10 646 | 10 107 | 17 181 | 17 180 | 10 048 | **12 063** |
| | Greece | m | m | m | m | m | m | m | m | m | m | m | **m** |
| | Hungary | 3 789 | 3 915 | 8 350 | 7 076 | 8 033 | 6 104 | 9 855 | 6 187 | 8 831 | 8 688 | 7 000 | **6 126** |
| | Iceland | 11 163 | 12 359 | 7 115 | 12 278 | 8 631 | 10 078 | 12 336 | 9 388 | 11 476 | 11 435 | m | **10 782** |
| | Ireland | 8 007 | 10 518 | 10 837 | a | 10 837 | 10 665 | 11 359 | x(10) | x(10) | 14 131 | 10 525 | **10 030** |
| | Israel | 6 833 | x(3, 4, 5) | 5 880[d] | 9 768[d] | 6 699[d] | 6 699 | 2 380 | 4 669 | 14 924 | 12 989 | 8 426 | **7 758** |
| | Italy[1] | 8 442 | 9 033 | x(5) | x(5) | 8 859 | 8 927 | m | 5 771 | 11 527 | 11 510 | 7 114 | **9 317** |
| | Japan | 9 062 | 10 422 | x(5) | x(5) | 11 047[d] | 10 739[d] | x(5, 6, 8, 9, 10) | 11 297[d] | 19 836[d] | 18 022[d] | m | **11 654** |
| | Korea | 9 656 | 8 932 | x(5) | x(5) | 11 610 | 10 316 | a | 5 432 | 10 765 | 9 570 | 7 681 | **9 873** |
| | Latvia | 6 585 | 6 587 | 6 581 | 6 785 | 6 665 | 6 629 | 8 357 | 9 146 | 8 931 | 8 962 | 7 171 | **7 190** |
| | Luxembourg[1] | 21 153 | 21 499 | 21 809 | 22 964 | 21 682 | 21 595 | 1 364 | 24 855 | 48 756 | 46 526 | 31 364 | **24 045** |
| | Mexico | 2 896 | 2 579 | 4 280 | 4 489 | 4 360 | 3 219 | a | x(10) | x(10) | 8 949 | 7 060 | **3 703** |
| | Netherlands | 8 529 | 12 404 | 10 326 | 13 532 | 12 491 | 12 446 | 11 313 | 11 477 | 19 188 | 19 159 | 11 948 | **12 495** |
| | New Zealand | 7 438 | 9 448 | 11 013 | 11 745 | 11 195 | 10 267 | 10 019 | 10 312 | 16 219 | 15 088 | 12 063 | **10 205** |
| | Norway | 13 104 | 13 975 | 15 561 | 16 523 | 16 047 | 15 149 | 15 979 | 12 813 | 21 262 | 20 962 | 13 059 | **15 510** |
| | Poland[4] | 7 026 | 7 058 | 5 057 | 6 673[d] | 5 949[d] | 6 455[d] | 3 950 | 14 012 | 9 697 | 9 708 | 7 890 | **7 374** |
| | Portugal | 6 474 | 8 634 | x(5, 6) | x(5, 6) | 9 015[d] | 8 821[d] | x(5, 6, 9, 10, 11) | a | 11 813[d] | 11 813[d] | 6 691[d] | **8 516** |
| | Slovak Republic[1] | 6 235 | 6 308 | 5 194 | 7 401 | 6 618 | 6 453 | 7 590 | 8 118 | 11 346 | 11 290 | 7 542 | **7 279** |
| | Slovenia | 9 335 | 10 432 | 8 535 | 7 267 | 7 716 | 8 785 | a | 3 943 | 13 326 | 12 067 | 9 904 | **9 698** |
| | Spain | 6 970 | 8 347 | 8 153 | 9 773[d] | 8 704[d] | 8 528[d] | x(4, 5, 6) | 8 784 | 13 464 | 12 489 | 9 144 | **8 752** |
| | Sweden | 10 804 | 11 411 | 8 224 | 15 362 | 11 291 | 11 342 | 4 313 | 6 590 | 25 554 | 24 072 | 10 935 | **13 219** |
| | Switzerland[1] | 15 177 | 19 483 | 17 873[d] | 9 030[d] | 11 671[d] | 15 022[d] | x(3, 4, 5, 6) | x(3, 4, 5, 6) | 27 831 | 27 831 | 12 602 | **17 436** |
| | Turkey | 3 589 | 2 953 | 3 566 | 3 574 | 3 570 | 3 268 | a | x(10) | x(10) | 8 927 | 6 931 | **4 259** |
| | United Kingdom | 11 367 | 12 478 | 12 862 | 11 539 | 12 435 | 12 452 | a | x(10) | x(10) | 24 542 | 18 743 | **13 906** |
| | United States | 11 319 | 12 261 | x(5) | x(5) | 13 776 | 12 995 | 15 086 | x(10) | x(10) | 29 328 | 26 256 | **16 268** |
| | OECD average | 8 733 | 10 235 | 9 645 | 10 454 | 10 182 | 10 106 | 8 184 | 10 423 | 16 674 | 16 143 | 11 056 | **10 759** |
| | EU22 average | 8 803 | 10 413 | 9 913 | 11 408 | 10 494 | 10 360 | 7 211 | 11 239 | 16 189 | 16 164 | 10 781 | **10 897** |
| Partners | Argentina | 3 356 | 4 663 | 4 985 | a | 4 985 | 4 790 | a | x(10) | x(10) | 5 085 | m | **4 240** |
| | Brazil[1] | 3 799 | 3 814 | x(5) | x(5) | 3 870[d] | 3 837[d] | a | x(10) | x(10) | 11 666 | 10 552 | **5 610** |
| | China | m | m | m | m | m | m | m | m | m | m | m | **m** |
| | Colombia[3] | 2 490 | 3 093 | x(5) | x(5) | 2 976 | 3 060 | a | x(10) | x(10) | 5 126 | m | **3 245** |
| | Costa Rica | m | m | m | m | m | m | a | m | m | m | m | **m** |
| | India | m | m | m | m | m | m | m | a | m | m | m | **m** |
| | Indonesia[3] | 1 476 | 1 200 | 1 395 | 795 | 1 143 | 1 175 | a | x(10) | x(10) | 2 962 | 2 706 | **1 486** |
| | Lithuania | 5 179 | 5 017 | 4 839 | 7 763 | 5 631 | 5 205 | 7 306 | a | 10 021 | 10 021 | 7 237 | **6 508** |
| | Russian Federation | x(3, 4, 5) | x(3, 4, 5) | 5 084[d] | 3 664[d] | 4 939[d] | 4 939 | x(5) | 6 117 | 9 496 | 8 808 | 7 960 | **5 928** |
| | Saudi Arabia | m | m | m | m | m | m | m | m | m | m | m | **m** |
| | South Africa | m | m | m | m | m | m | m | m | m | m | m | **m** |
| | G20 average | m | m | m | m | m | m | m | m | m | m | m | **m** |

**Note:** Data on early childhood education are available in Indicator C2. See *Definitions* and *Methodology* sections for more information. Data and more breakdowns available at http://stats.oecd.org/, Education at a Glance Database.

1. Public institutions only (for Italy, for primary and secondary education; for Canada and Luxembourg, for tertiary education and from primary to tertiary; for the Slovak Republic, for bachelor's, master's and doctoral degrees).

2. Primary education includes data from pre-primary and lower secondary education.

3. Year of reference 2015.

4. Vocational programmes in upper secondary education include information from vocational programmes in lower secondary education.

**Source:** OECD/UIS/Eurostat (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933560035

B1

## Table B1.2. Annual expenditure per student by educational institutions for core educational services, ancillary services and R&D (2014)

*In equivalent USD converted using PPPs for GDP, by level of education and type of service, based on full-time equivalents*

| | | Primary, secondary and post-secondary non-tertiary | | | Tertiary | | | | Primary to tertiary | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Educational core services | Ancillary services (transport, meals, housing provided by institutions) | Total | Educational core services | Ancillary services (transport, meals, housing provided by institutions) | R&D | Total | Educational core services | Ancillary services (transport, meals, housing provided by institutions) | R&D | Total |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) |
| OECD | Australia | 9 189 | 249 | **9 438** | 10 701 | 733 | 6 603 | **18 038** | 9 490 | 345 | 1 314 | **11 149** |
| | Austria | 12 901 | 606 | **13 507** | 12 373 | 155 | 4 405 | **16 933** | 12 740 | 469 | 1 339 | **14 549** |
| | Belgium | 11 581 | 314 | **11 896** | 10 360 | 387 | 5 852 | **16 599** | 11 348 | 328 | 1 120 | **12 796** |
| | Canada[1, 2] | 9 937 | 503 | **10 440** | 13 808 | 1 196 | 6 323 | **21 326** | 10 989 | 662 | 1 584 | **13 235** |
| | Chile[3] | 4 401 | 0 | **4 401** | 6 496 | 96 | 361 | **6 952** | 5 004 | 28 | 104 | **5 135** |
| | Czech Republic | 6 475 | 432 | **6 907** | 6 148 | 77 | 4 296 | **10 521** | 6 399 | 349 | 1 003 | **7 751** |
| | Denmark[2] | x(3) | x(3) | **11 529** | x(7) | x(7) | x(7) | **16 568** | x(11) | x(11) | x(11) | **12 785** |
| | Estonia | 6 881 | 110 | **6 991** | 8 207 | 3 | 4 165 | **12 375** | 7 225 | 82 | 1 082 | **8 389** |
| | Finland | 8 732 | 1 047 | **9 779** | 10 586 | 0 | 7 307 | **17 893** | 9 098 | 840 | 1 443 | **11 381** |
| | France | 8 671 | 1 274 | **9 944** | 10 474 | 836 | 5 112 | **16 422** | 9 016 | 1 190 | 979 | **11 184** |
| | Germany | 10 486 | 289 | **10 776** | 9 252 | 796 | 7 131 | **17 180** | 10 238 | 391 | 1 434 | **12 063** |
| | Greece | m | m | **m** | m | m | m | **m** | m | m | m | **m** |
| | Hungary | 5 053 | 525 | **5 578** | 6 434 | 566 | 1 688 | **8 688** | 5 296 | 532 | 298 | **6 126** |
| | Iceland | x(3) | x(3) | **10 615** | x(7) | x(7) | x(7) | **11 435** | x(11) | x(11) | x(11) | **10 782** |
| | Ireland | 9 203 | a | **9 203** | 10 525 | a | 3 606 | **14 131** | 9 425 | a | 605 | **10 030** |
| | Israel | 6 417 | 311 | **6 728** | 8 384 | 43 | 4 563 | **12 989** | 6 740 | 267 | 751 | **7 758** |
| | Italy[1] | 8 519 | 407 | **8 926** | 6 694 | 420 | 4 396 | **11 510** | 8 058 | 396 | 864 | **9 317** |
| | Japan[1] | x(3) | x(3) | **9 934** | x(7) | x(7) | x(7) | **18 022** | x(11) | x(11) | x(11) | **11 654** |
| | Korea | 9 129 | 901 | **10 030** | 7 594 | 86 | 1 890 | **9 570** | 8 604 | 622 | 647 | **9 873** |
| | Latvia | 6 484 | 152 | **6 635** | 6 998 | 174 | 1 790 | **8 962** | 6 606 | 157 | 427 | **7 190** |
| | Luxembourg[2] | 19 950 | 1 247 | **21 197** | 30 759 | 606 | 15 162 | **46 526** | 21 475 | 1 347 | 1 224 | **24 045** |
| | Mexico | x(3) | x(3) | **3 049** | x(7) | x(7) | 1 889 | **8 949** | x(11) | x(11) | x(11) | **3 703** |
| | Netherlands | 10 739 | a | **10 739** | 11 948 | a | 7 211 | **19 159** | 10 991 | a | 1 504 | **12 495** |
| | New Zealand | x(3) | x(3) | **9 051** | x(7) | x(7) | 3 025 | **15 088** | x(11) | x(11) | x(11) | **10 205** |
| | Norway[1] | 14 144 | 0 | **14 144** | 12 843 | 216 | 7 903 | **20 962** | 13 883 | 43 | 1 584 | **15 510** |
| | Poland[1] | 6 476 | 184 | **6 661** | 7 654 | 236 | 1 818 | **9 708** | 6 752 | 196 | 426 | **7 374** |
| | Portugal[1] | 6 956 | 760 | **7 716** | 6 002 | 689 | 5 122 | **11 813** | 6 770 | 746 | 1 000 | **8 516** |
| | Slovak Republic[2] | 5 498 | 903 | **6 401** | 5 691 | 1 851 | 3 748 | **11 290** | 5 533 | 1 073 | 673 | **7 279** |
| | Slovenia | 8 359 | 674 | **9 034** | 9 600 | 304 | 2 164 | **12 067** | 8 631 | 593 | 474 | **9 698** |
| | Spain | 7 164 | 609 | **7 772** | 8 578 | 565 | 3 345 | **12 489** | 7 457 | 600 | 695 | **8 752** |
| | Sweden | 9 802 | 1 177 | **10 979** | 10 935 | 0 | 13 137 | **24 072** | 9 996 | 976 | 2 248 | **13 219** |
| | Switzerland[2] | 15 092 | a | **15 092** | 12 602 | a | 15 229 | **27 831** | 14 634 | a | 2 802 | **17 436** |
| | Turkey | 3 103 | 272 | **3 375** | 6 320 | 611 | 1 996 | **8 927** | 3 610 | 326 | 323 | **4 259** |
| | United Kingdom | 11 626 | 344 | **11 970** | 13 868 | 4 875 | 5 799 | **24 542** | 11 971 | 1 042 | 893 | **13 906** |
| | United States[1] | 11 163 | 1 013 | **12 176** | 23 014 | 3 242 | 3 072 | **29 328** | 13 990 | 1 545 | 733 | **16 268** |
| | OECD average | 8 948 | 540 | **9 489** | 10 348 | 710 | 5 084 | **16 143** | 9 189 | 571 | 999 | **10 759** |
| | EU22 average | 9 105 | 616 | **9 721** | 10 123 | 694 | 5 346 | **16 164** | 9 278 | 630 | 989 | **10 897** |
| Partners | Argentina | x(3) | x(3) | **4 047** | x(7) | x(7) | x(7) | **5 085** | x(11) | x(11) | x(11) | **4 240** |
| | Brazil[2] | x(3) | x(3) | **5 113** | x(7) | x(7) | 1 114 | **11 666** | x(11) | x(11) | 84 | **5 610** |
| | China | m | m | **m** | m | m | m | **m** | m | m | m | **m** |
| | Colombia[3] | x(3) | x(3) | **2 781** | x(7) | x(7) | x(7) | **5 126** | x(11) | x(11) | x(11) | **3 245** |
| | Costa Rica | m | m | **m** | m | m | m | **m** | m | m | m | **m** |
| | India | m | m | **m** | m | m | m | **m** | m | m | m | **m** |
| | Indonesia[3] | 1 288 | 55 | **1 344** | 2 562 | 144 | 257 | **2 962** | 1 401 | 63 | 23 | **1 486** |
| | Lithuania | 5 072 | 225 | **5 297** | 6 576 | 661 | 2 784 | **10 021** | 5 457 | 337 | 713 | **6 508** |
| | Russian Federation | x(3) | x(3) | **4 939** | x(7) | x(7) | 848 | **8 808** | x(11) | x(11) | x(11) | **5 928** |
| | Saudi Arabia | m | m | **m** | m | m | m | **m** | m | m | m | **m** |
| | South Africa | m | m | **m** | m | m | m | **m** | m | m | m | **m** |
| | G20 average | m | m | **m** | m | m | m | **m** | m | m | m | **m** |

**Note:** See *Definitions* and *Methodology* sections for more information. Data and more breakdowns available at http://stats.oecd.org/, Education at a Glance Database.
1. Some levels of education are included with others. Refer to "x" code in Table B1.1 for details.
2. Public institutions only (for Italy, for primary and secondary education; for Canada and Luxembourg, for tertiary education and from primary to tertiary; for the Slovak Republic, for bachelor's, master's and doctoral degrees).
3. Year of reference 2015.
**Source:** OECD/UIS/Eurostat (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).
*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*
StatLink http://dx.doi.org/10.1787/888933560054

## Table B1.3. Change in expenditure per student by educational institutions for all services, relative to different factors by levels of education (2008, 2011, 2014)

*Index of change (GDP deflator 2010 = 100, constant prices)*

| | | Primary, secondary and post-secondary non-tertiary | | | | | | | | | Tertiary | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Change in expenditure (2010 = 100) | | | Change in the number of students (2010 = 100) | | | Change in expenditure per student (2010 = 100) | | | Change in expenditure (2010 = 100) | | | Change in the number of students (2010 = 100) | | | Change in expenditure per student (2010 = 100) | | |
| | | 2008 | 2011 | 2014 | 2008 | 2011 | 2014 | 2008 | 2011 | 2014 | 2008 | 2011 | 2014 | 2008 | 2011 | 2014 | 2008 | 2011 | 2014 |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) | (17) | (18) |
| OECD | Australia | 83 | 98 | 102 | 98 | 102 | 108 | 84 | 96 | 94 | 88 | 102 | 127 | 86 | 103 | 113 | 102 | 99 | 113 |
| | Austria | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Belgium | 100 | 101 | 104 | 101 | 100 | 102 | 100 | 101 | 102 | 93 | 102 | 110 | 92 | 103 | 112 | 101 | 98 | 99 |
| | Canada[1] | 92 | 97 | 101 | 101 | 99 | 102 | 91 | 98 | 98 | 89 | 97 | 104 | 99 | 100 | 115 | 89 | 97 | 91 |
| | Chile | 102 | 104 | 109 | 105 | 98 | 94 | 97 | 106 | 115 | 78 | 110 | 121 | 82 | 107 | 122 | 95 | 103 | 99 |
| | Czech Republic | 96 | 103 | 101 | 104 | 98 | 97 | 92 | 105 | 104 | 95 | 117 | 108 | 90 | 101 | 89 | 106 | 116 | 121 |
| | Denmark[1] | 91 | 92 | 107 | 94 | 105 | 105 | 97 | 88 | 102 | 92 | 102 | 97 | 93 | 93 | 130 | 98 | 110 | 74 |
| | Estonia | 114 | 93 | 94 | 106 | 98 | 94 | 107 | 95 | 101 | 93 | 114 | 142 | 99 | 100 | 86 | 94 | 113 | 164 |
| | Finland | 96 | 101 | 99 | 101 | 99 | 98 | 95 | 102 | 101 | 93 | 104 | 96 | 99 | 101 | 101 | 94 | 103 | 95 |
| | France | 99 | 99 | 100 | 100 | 100 | 102 | 98 | 98 | 98 | 96 | 101 | 105 | 97 | 101 | 106 | 99 | 100 | 99 |
| | Germany | 94 | 100 | 98 | 103 | 98 | 94 | 92 | 101 | 105 | 92 | 104 | 109 | 92 | 105 | 123 | 100 | 99 | 89 |
| | Greece | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Hungary[2, 3] | 113 | 94 | 105 | 102 | 99 | 93 | 111 | 95 | 112 | 110 | 117 | 85[d] | 114 | 107 | 92 | 97 | 109 | 92 |
| | Iceland | 115 | 103 | 110 | 100 | 100 | 99 | 115 | 103 | 111 | 114 | 97 | 121 | 94 | 103 | 102 | 121 | 94 | 118 |
| | Ireland | 91 | 96 | 90 | m | 101 | 106 | m | 96 | 85 | 95 | 94 | 82 | m | 100 | 108 | m | 94 | 76 |
| | Israel | 92 | 111 | 126 | 96 | 102 | 109 | 96 | 109 | 115 | 92 | 111 | 115 | 87 | 101 | 100 | 106 | 110 | 115 |
| | Italy[1] | 108 | 96 | 98 | 100 | 101 | 101 | 108 | 95 | 97 | 101 | 102 | 97 | 102 | 99 | 93 | 99 | 103 | 104 |
| | Japan[2] | 98 | 100 | 102 | 101 | 99 | 97 | 96 | 101 | 106 | 99 | 104 | 105[d] | 101 | 100 | 99[d] | 98 | 104 | 106 |
| | Korea | 82 | 103 | 103 | 105 | 97 | 87 | 78 | 106 | 118 | 92 | 105 | 106 | 101 | 101 | 100 | 92 | 104 | 106 |
| | Latvia | 130 | 96 | 114 | 109 | 96 | 91 | 119 | 100 | 126 | 128 | 116 | 119 | 112 | 95 | 86 | 114 | 123 | 138 |
| | Luxembourg[1] | 87 | 95 | 98 | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Mexico | 93 | 104 | 112 | 98 | 101 | 104 | 94 | 103 | 108 | 89 | 97 | 118 | 92 | 105 | 119 | 97 | 92 | 99 |
| | Netherlands | 93 | 99 | 97 | 100 | 100 | 98 | 93 | 99 | 99 | 92 | 104 | 109 | 93 | 103 | 108 | 99 | 101 | 100 |
| | New Zealand | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Norway | 89 | 95 | 100 | 100 | 101 | 102 | 89 | 94 | 98 | 90 | 97 | 111 | 94 | 103 | 111 | 96 | 94 | 100 |
| | Poland[2] | 95 | 98 | 105[d] | 107 | 98 | 93[d] | 89 | 101 | 112 | 77 | 93 | 98 | 102 | 98 | 89 | 76 | 95 | 110 |
| | Portugal[1, 2] | 89 | 94 | 112 | 101 | 98 | 92 | 88 | 96 | 122 | 94 | 94 | 91[d] | 95 | 103 | 94[d] | 99 | 91 | 97 |
| | Slovak Republic[1] | 86 | 93 | 101 | 107 | 97 | 89 | 80 | 96 | 113 | 97 | 111 | 129 | 100 | 98 | 88 | 97 | 113 | 146 |
| | Slovenia | 101 | 98 | 91 | 103 | 99 | 99 | 98 | 99 | 92 | 96 | 104 | 89 | 98 | 98 | 89 | 97 | 106 | 100 |
| | Spain | 97 | 98 | 90 | 97 | 101 | 106 | 100 | 96 | 85 | 94 | 98 | 93 | 95 | 103 | 107 | 99 | 95 | 86 |
| | Sweden | 101 | 100 | 104 | 106 | 99 | 103 | 95 | 101 | 100 | 90 | 102 | 108 | 91 | 103 | 99 | 99 | 99 | 109 |
| | Switzerland[1] | m | m | m | 102 | 99 | 98 | m | m | m | m | m | m | 90 | 106 | 106 | m | m | m |
| | Turkey[1, 3] | 84 | 118 | 147 | 96 | 110 | 113 | 87 | 108 | 130 | 80 | 195 | 230 | 84 | 116 | 151 | 95 | 168 | 152 |
| | United Kingdom | 91 | 102 | 120 | 99 | 101 | 103 | 92 | 101 | 117 | m | m | m | 96 | 105 | 109 | m | m | m |
| | United States | 102 | 98 | 97 | 102 | 101 | 101 | 100 | 97 | 96 | 96 | 104 | 106 | 90 | 104 | 100 | 107 | 100 | 106 |
| | **OECD average** | 97 | 99 | 104 | 101 | 100 | 99 | 95 | 99 | 105 | 94 | 107 | 111 | 95 | 102 | 105 | 99 | 105 | 106 |
| | **EU22 average** | 99 | 97 | 102 | 102 | 99 | 98 | 96 | 98 | 103 | 96 | 104 | 104 | 98 | 101 | 101 | 98 | 103 | 103 |
| Partners | Argentina | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Brazil[1] | 88 | 104 | 106 | 105 | 97 | 67 | 83 | 106 | 158 | 83 | 113 | 107 | 89 | 120 | 134 | 93 | 94 | 80 |
| | China | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Colombia | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Costa Rica | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | India | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Indonesia | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Lithuania | m | 94 | 90 | 109 | 95 | 86 | m | 100 | 105 | 96 | 119 | 120 | 106 | 98 | 97 | 91 | 121 | 124 |
| | Russian Federation[1] | 105 | 104 | 117 | 101 | 101 | 104 | 104 | 103 | 113 | 99 | 93 | 95 | m | 94 | 81 | m | 99 | 116 |
| | Saudi Arabia | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | South Africa | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | **G20 average** | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |

**Note:** See *Definitions* and *Methodology* sections for more information. Data and more breakdowns available at http://stats.oecd.org/, Education at a Glance Database.
1. Public institutions only (for Italy, for primary and secondary education; for Canada and Luxembourg, for tertiary education; for the Russian Federation, for primary, secondary and post-secondary non-tertiary education; for the Slovak Republic, for bachelor's, master's and doctoral degrees).
2. Some levels of education are included with others. Refer to "x" code in Table B1.1 for details.
3. Public expenditure only.

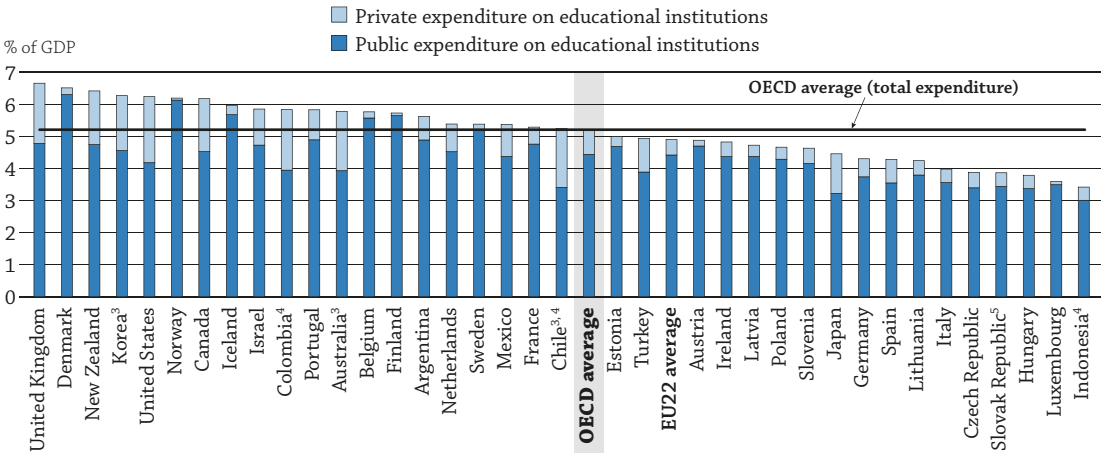
**Source:** OECD/UIS/Eurostat (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).
*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*
StatLink http://dx.doi.org/10.1787/888933560073

# WHAT PROPORTION OF NATIONAL WEALTH IS SPENT ON EDUCATIONAL INSTITUTIONS?

- In 2014, OECD countries spent an average of 5.2% of their gross domestic product (GDP) on educational institutions (from primary to tertiary levels), ranging from 3.3% in the Russian Federation to 6.6% in the United Kingdom across OECD and partner countries.
- Between 2005 and 2014, 21 of the 30 countries for which data are available increased the share of their GDP spent on educational institutions from primary to tertiary education. The average expenditure on educational institutions as a percentage of GDP, however, remained largely stable, increasing by only 0.2 percentage points over the nine-year period.
- From the beginning of the economic crisis in 2008 up until 2010, while GDP fell in real terms in 23 of the 41 countries with available data, public expenditure on educational institutions fell in only 9 of the 33 countries with available data. As a result, public expenditure on educational institutions as a percentage of GDP decreased only in four countries over this period. Between 2010 and 2014, however the increase in public expenditure did not keep pace with the increase in GDP resulting in a 2% decrease in public expenditure on educational institutions as a percentage of GDP across the OECD.

## Figure B2.1. Expenditure on educational institutions as a percentage of GDP (2014)

*From public[1] and private[2] sources, including undistributed programmes, from primary to tertiary levels of education*




1. Including public subsidies to households attributable for educational institutions, and direct expenditure on educational institutions from international sources.
2. Net of public subsidies attributable for educational institutions.
3. Public does not include international sources.
4. Year of reference 2015.
5. Expenditure on public institutions for bachelor's, master's and doctoral degrees.

*Countries are ranked in descending order of expenditure from both public and private sources on educational institutions.*

**Source**: OECD/UIS/Eurostat (2017), Table B2.3. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933557850

## Context

Countries invest in educational institutions to help foster economic growth, enhance productivity, contribute to personal and social development and reduce social inequality, among other reasons. However, the level of expenditure on educational institutions is affected by the size of a country's school-age population, enrolment rates, level of teachers' salaries, and the organisation and delivery of instruction. At the primary and lower secondary levels of education (corresponding broadly to the 5-14 year-old population), enrolment rates are close to 100% in most OECD countries; changes in the

number of students are therefore closely related to demographic changes. This is not as much the case in upper secondary and tertiary education, as part of the concerned population has left the education system (see Indicator C1).

In order to account for these issues, this indicator measures expenditure on educational institutions relative to a nation's wealth. National wealth is based on GDP, while expenditure on education includes spending by governments, enterprises, and individual students and their families. The proportion of education expenditure relative to GDP depends partly on the different preferences of various public and private actors, though it largely comes from public budgets and is closely scrutinised by governments. During economic downturns, even core sectors like education can be subject to budget cuts.

## Other findings

- Primary, secondary and post-secondary non-tertiary education accounts for 70% of expenditure on primary to tertiary educational institutions, or 3.6% of GDP, on average across OECD countries. Denmark, Iceland, New Zealand, Norway, Portugal and the United Kingdom allocate the highest share of their GDP to these levels of education, at 4.5% or more. The Czech Republic, Lithuania and the Russian Federation spend less than 2.7% of their GDP on these levels.
- Tertiary educational institutions cost 1.6% of GDP in 2014 on average across OECD countries, which represents a moderate increase from 2005, when it was 1.4% on average. The countries which spend the most at this level – Canada, Chile, Korea and the United States – allocate between 2.3% and 2.7% of their GDP to tertiary institutions.
- Private expenditure on educational institutions as a percentage of GDP is highest at the tertiary level on average across OECD countries. In Australia, Canada, Chile, Colombia, Japan, Korea, the United Kingdom and the United States, over half of the expenditure on tertiary education comes from private sources, accounting for at least 0.5% of GDP.

## Analysis

### Overall investment relative to GDP

The share of national wealth devoted to educational institutions is substantial in all OECD and partner countries. In 2014, OECD countries spent on average 5.2% of their GDP on educational institutions from primary to tertiary levels (see Table C2.3 for the share of GDP devoted to early childhood education), taking into account both public and private sources of funds.

Within individual countries, expenditure on primary to tertiary educational institutions relative to GDP reached 6% or more in Canada, Denmark, Iceland, Korea, New Zealand, Norway, the United Kingdom and the United States. At the other end of the spectrum were the Czech Republic, Hungary, Indonesia, Luxembourg, the Russian Federation and the Slovak Republic, who spent less than 4% of their GDP on education (Figure B2.1 and Table B2.1).

### Expenditure on educational institutions, by level of education

In all OECD and partner countries with available data, the share of national resources devoted to educational institutions in primary, secondary and post-secondary non-tertiary education combined is much larger than the share devoted to tertiary education (Table B2.3). In fact, more than two-thirds on average of the expenditure on educational institutions in all OECD countries (excluding early childhood education) are devoted to primary, secondary and post-secondary non-tertiary education, and nearly one-third to tertiary education. The share of resources devoted to educational institutions in primary, secondary and post-secondary non-tertiary levels exceeds 50% of educational expenditure in all countries, and in Argentina, Belgium, Brazil, Iceland, Indonesia, Ireland, Italy, Luxembourg, Portugal and Slovenia it accounts for over 75%. In terms of expenditure as a percentage of GDP, Denmark, Iceland and the United Kingdom spend the highest share on primary, secondary and post-secondary non-tertiary education combined (at least 4.7% of GDP), while in the Czech Republic, Indonesia, Lithuania, the Russian Federation and the Slovak Republic, expenditure on those levels accounts for less than 2.8% of GDP.

At the primary education level, expenditure on educational institutions amounts to 1.5% of GDP on average across OECD countries, while lower secondary receives 1%. However, the share of expenditure on educational institutions is strongly influenced by the demographic composition of the country. Countries with relatively high fertility rates are more likely to spend a larger share of their wealth on primary and lower secondary education. On the other hand, all the countries where investment in primary education is below 1% of GDP are Central and Eastern European countries with low birth rates, namely Austria, the Czech Republic, Germany, Hungary, Lithuania and the Slovak Republic (Table B2.3 and see Indicator C1).

Expenditures on educational institutions at the upper secondary level, vocational and general programmes take up on average 0.6% of GDP each. However, these figures vary widely between countries. Of the 29 countries for which data are available, 15 spend more on general programmes and 14 spend more on vocational programmes. Post-secondary non-tertiary education, which often has vocational components, is the object of considerably less expenditure across the OECD, representing about 0.1% of GDP on average.

Finally, tertiary education accounts for 1.5% of GDP on average, although there is greater variation among countries at this level, depending, for example, on research and development (R&D) expenditure (see Indicator B1). Moreover, as it is not a compulsory level of education, enrolment in and, therefore expenditure on, tertiary education are less linked to demographic pressures than are lower levels of education. Tertiary education is also the origin of most of the variation in primary to tertiary expenditure on educational institutions over time, mainly between 2005 and 2011 (Table B2.2). The countries where the largest share of GDP is spent on tertiary educational institutions in 2014 (above 2% of GDP) are Canada, Chile, Korea and the United States. Unsurprisingly, these countries also have some of the strongest participation by private sources of educational funding at this level (for instance, 1.3% of GDP for Chile and Canada and 1.7% for the United States; Table B2.3 and Figure B2.2).

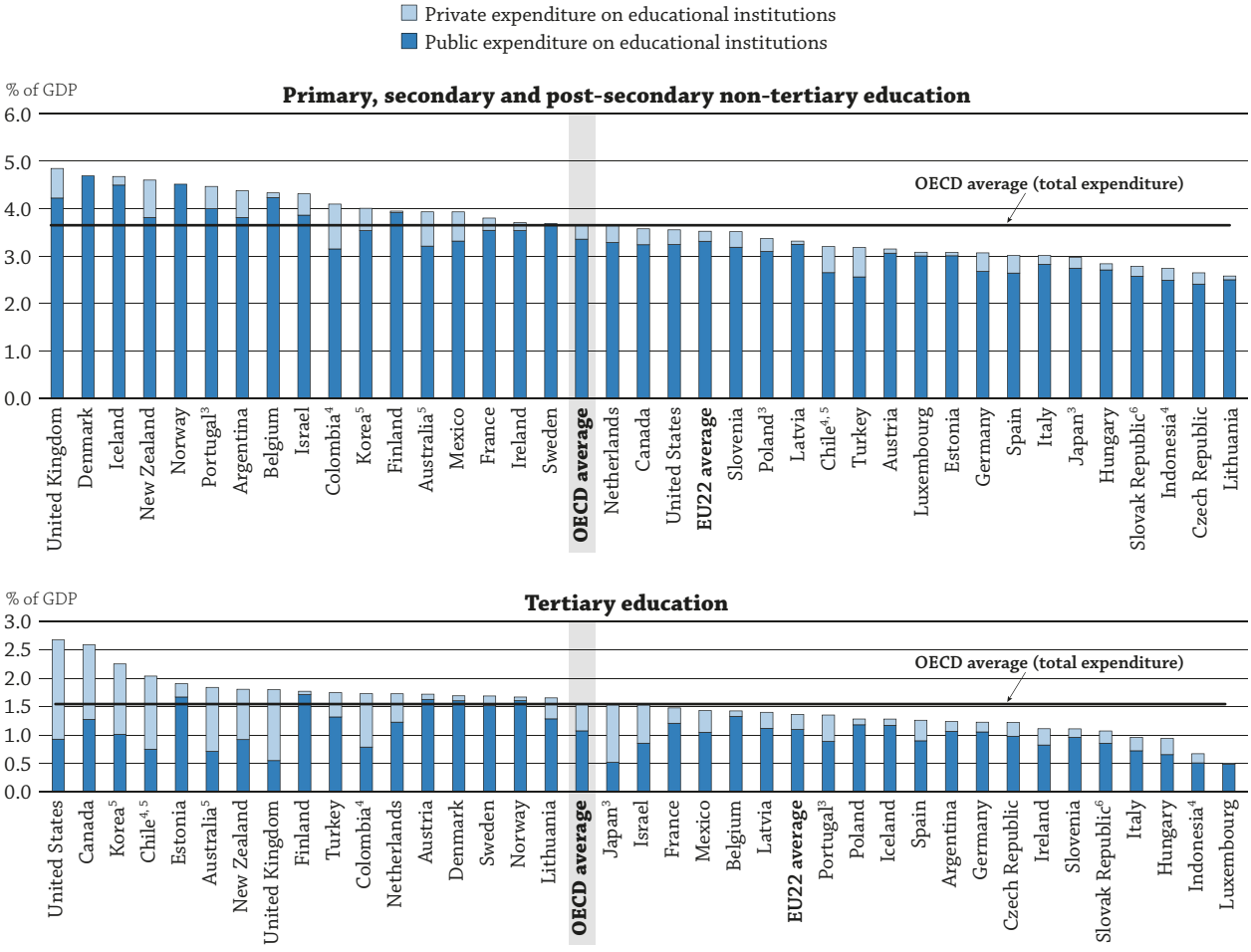
### Share of public and private expenditure as a percentage of GDP

Public sources in OECD countries spend on average 4.4% of GDP on educational institutions (from primary to tertiary levels), while only 0.8% is funded by private sources (Figure B2.1). However, large differences in private spending are observed across countries. In Australia, Chile, Colombia, the United Kingdom and the United States, private expenditure on educational institutions represent a relatively large proportion of their GDP compared to other countries (1.8% or more). On the other hand, Austria, Belgium, Denmark, Finland, Luxembourg, Norway and Sweden have the smallest share of private expenditure (0.2% or below).

At sub-tertiary levels of education (Figure B2.2), private investment is low and accounts for a combined total of 0.3% of GDP on average for primary, secondary and post-secondary non-tertiary education. Australia, at 0.7% of GDP, Colombia (0.9%) and New Zealand (0.8%) have the largest relative shares of private funds for primary, secondary and post-secondary non-tertiary education. In New Zealand, this is influenced by a relatively large vocational sector at upper secondary and post-secondary non-tertiary levels. Compared with compulsory schooling, a much higher proportion of institutional expenditure in New Zealand comes from private household sources via tuition fees, much of which are paid on the student's behalf directly to institutions from public sources via subsidised student loans. In Australia, private sources are relatively evenly spread between primary, secondary and post-secondary non-tertiary levels, while in Colombia private educational investment is more heavily present in primary education, where it accounts for roughly one-quarter of total expenditure.

## Figure B2.2. Public and private expenditure on educational institutions as a percentage of GDP, by level of education (2014)

*From public[1] and private[2] sources, by level of education and source of funds*




1. Including public subsidies to households attributable for educational institutions, and direct expenditure on educational institutions from international sources.

2. Net of public subsidies attributable for educational institutions.

3. Some levels of education are included with others. Refer to "x" code in Table B2.1 for details.

4. Year of reference 2015.

5. Public does not include international sources.

6. Expenditure on public institutions for bachelor's, master's and doctoral degrees.

*Countries are ranked in descending order of expenditure from both public and private sources on educational institutions.*

**Source**: OECD/UIS/Eurostat (2017), Table B2.3. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933557869

In tertiary education (Figure B2.2), however, private sources (including tuition fee loans) play a more crucial role, accounting for around 31% of expenditure on average, or 0.5% of GDP. In some countries, private sources are very important in relative and absolute terms to assure that a large percentage of national wealth goes into tertiary education. As mentioned above, Canada, Chile, Korea and the United States stand out for spending the largest percentage of GDP on tertiary educational institutions. This is partly driven by having the highest shares of private sources. Among the countries spending more than 1.9% of GDP on tertiary education, only Estonia has a small percentage of private sources, at 0.2% of GDP.

### Changes in educational expenditure between 2005 and 2014

Combining all educational levels from primary to tertiary, average expenditure on educational institutions as a percentage of GDP across OECD countries increased by around 0.2 percentage points between 2005 and 2014 (Table B2.2). Over the same period of time, countries like Brazil, Portugal and the Russian Federation displayed the largest increases by far in expenditure as a percentage of GDP. This was more a result of an increase in expenditure than a decrease in GDP. Brazil and Portugal added 1 percentage point to their shares of GDP spent on educational institutions, while the Russian Federation added 0.8 percentage points.

Although average expenditure on primary, secondary and post-secondary non-tertiary educational institutions remained stable between 2005 and 2014, this masks significant changes in some countries. In Chile, Hungary, Iceland and Slovenia, for example, expenditure on primary, secondary and post-secondary non-tertiary education as a percentage of GDP decreased by at least 0.5 percentage points over the nine-year period. On the other hand, Brazil and Portugal both increased the share of expenditure on these educational levels by 0.9 percentage point over the same period.

At the tertiary level, all countries except Hungary, Israel, Poland and Slovenia spent a larger percentage of their GDP on educational institutions in 2014 than they did in 2005. The average increase across the OECD was 0.1 percentage points, although Estonia's increased by 0.8 percentage points.

### Public expenditure on educational institutions relative to GDP after the 2008 crisis

The global economic crisis that began in 2008 had major adverse effects on various sectors of the economy. Data from 2008 to 2014 show clearly the impact of the crisis on the funding of educational institutions, especially when comparing the periods 2008-10 and 2010-14 (Table B2.4, available on line).

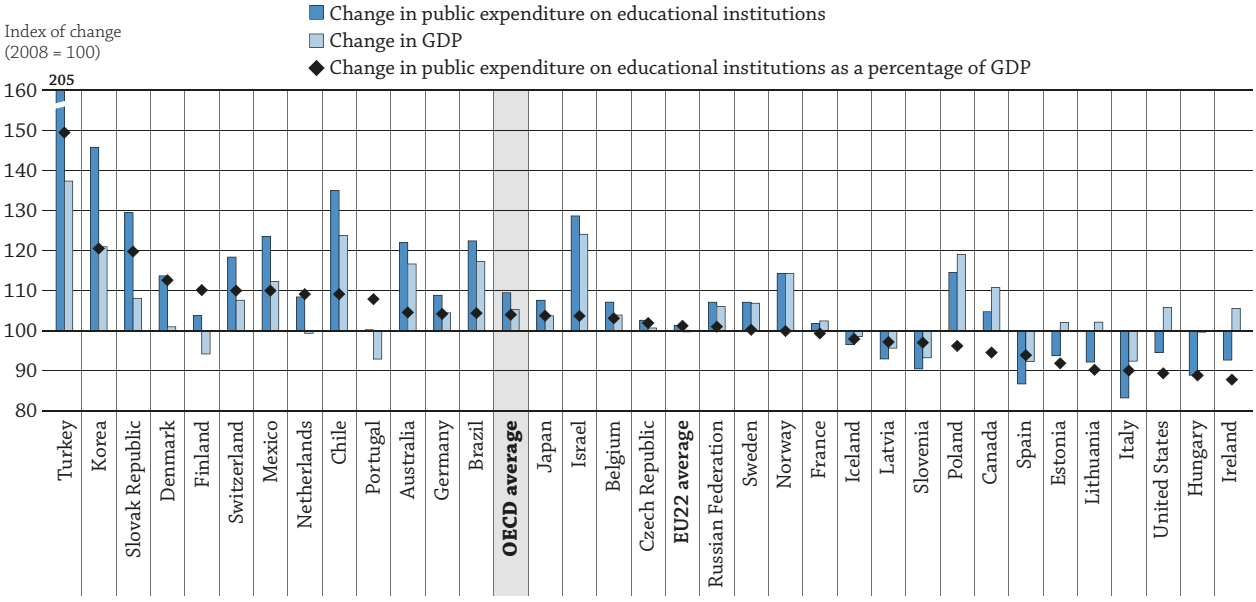
Between 2008 and 2010, GDP (expressed in constant prices) fell in 22 out of 35 OECD countries – by 2% on average across all OECD countries, and by 6% or more in Estonia, Greece, Iceland, Latvia and Slovenia. Despite this fall, and the fact that over three-quarters of education expenditure in most countries comes from public sources, available data show that expenditure in the educational institutions from primary to tertiary levels remained relatively untouched by early budget cuts. Since public budgets in most countries are approved many months before the funds are actually spent, there are certain built-in rigidities to education funding. Moreover, most governments try to protect education from dramatic reductions in public investment. In fact, among the 33 countries with available data for the period between 2008 and 2010, only 8 countries cut public expenditure on educational institutions (in real terms): Estonia (by 11%), Hungary (by 11%), Iceland (by 13%), Italy (by 6%), Latvia (by 26%), Lithuania (by 8%), the Russian Federation (by 4%) and the United States (by 1%). In Hungary, Iceland, Italy and Latvia, this translated into a decrease in expenditure on educational institutions as a percentage of GDP (as the reduction in expenditure was larger than the decrease in GDP, or as GDP increased at the same time). In Estonia, Lithuania, the Russian Federation and the United States, the share of GDP devoted to educational institutions did not change or even increased, as the decrease in expenditure was moderated or cancelled out by similar or larger decreases in GDP. In all other countries, public expenditure on educational institutions increased or remained stable, even though GDP decreased in some of them. As a result, the share of GDP devoted to education rose by 6% on average across OECD countries between 2008 and 2010.

Between 2010 and 2014, however, the crisis had a stronger impact on public expenditure on educational institutions. While GDP decreased between 2008 and 2010 in 22 of the 35 OECD countries with available data, between 2010 and 2014 it stayed constant or increased in all countries except 4 (Greece, experienced a reduction of 18%, 4% in Italy, 6% in Portugal and 4% in Spain). On average, GDP increased by 7% across the OECD between 2010 and 2014. On the other hand, public expenditure on educational institutions increased by 5% between 2010 and 2014 on average across OECD countries. The combination of these two trends resulted in a decrease in public expenditure as a percentage of GDP in all but 12 countries for which data are available (34 OECD and partner countries). The average decrease across the OECD was 2%.

In summary, in the six years following the crisis (from 2008 to 2014), public expenditure on educational institutions increased by 9% (Figure B2.3). Yet, in a context of initial GDP decreases (between 2008 and 2010), followed by stronger growth between 2010 and 2014, public expenditure on educational institutions as a percentage of GDP increased by 6% between 2008 and 2010 followed by a reduction of 2% between 2010 and 2014. All countries, except Chile, Iceland, Israel, Latvia, the Russian Federation and Turkey, observed a more negative trend in the share of public expenditure on educational institutions as a percentage of GDP between 2010 and 2014 than between 2008 and 2010.

## Figure B2.3. Index of change in public expenditure on educational institutions and in GDP (2008 to 2014)

*Index of change between 2008 and 2014 in public[1] expenditure on education institutions as a percentage of GDP, from primary to tertiary levels of education (2008 = 100, 2014 constant prices)*




1. Excluding subsidies attributable to payments to educational institutions received from public sources.

*Countries are ranked in descending order of the change in public expenditure on educational institutions as a percentage of GDP.*

**Source**: OECD/UIS/Eurostat (2017), Table B2.4 (available on line). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933557888

## Definitions

Expenditure on educational institutions refers to public or private expenditures on entities that provide instructional services to individuals or education-related services to individuals and other educational institutions.

## Methodology

**Expenditure on educational institutions as a percentage of GDP** at a particular level of education is calculated by dividing total expenditure by educational institutions at that level by GDP. Expenditure and GDP values in national currency are converted into equivalent USD by dividing the national currency figure by the purchasing power parity (PPP) index for GDP. The PPP conversion factor is used because the market exchange rate is affected by many factors (interest rates, trade policies, expectations of economic growth, etc.) that have little to do with current relative domestic purchasing power in different OECD countries (see Annex 2 for further details).

## Source

Data refer to the financial year 2014 (unless otherwise specified) and are based on the UNESCO, the OECD and Eurostat (UOE) data collection on education statistics administered by the OECD in 2016 (for details see Annex 3 at www.oecd.org/education/education-at-a-glance-19991487.htm). Data from Argentina, China, Colombia, India, Indonesia, Saudi Arabia, South Africa are from the UNESCO Institute of Statistics (UIS).

**Note regarding data from Israel**

The statistical data for Israel are supplied by and are under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

## Indicator B2 Tables

StatLink http://dx.doi.org/10.1787/888933560225

| | |
|---|---|
| Table B2.1 | Expenditure on educational institutions as a percentage of GDP, by level of education (2014) |
| Table B2.2 | Trends in expenditure on educational institutions as a percentage of GDP, by level of education (2005, 2010 to 2014) |
| Table B2.3 | Expenditure on educational institutions as a percentage of GDP, by source of funding and level of education (2014) |
| WEB Table B2.4 | Change in public expenditure on educational institutions as a percentage of GDP (2008, 2010, 2014) |

Cut-off date for the data: 19 July 2017. Any updates on data can be found on line at http://dx.doi.org/10.1787/eag-data-en. More breakdowns can also be found at http://stats.oecd.org/, Education at a Glance Database.

## Table B2.1. Expenditure on educational institutions as a percentage of GDP, by level of education (2014)

*From public and private sources of funds*[1]

| | | Primary | Secondary | | | | | Post-secondary non-tertiary | Tertiary (including R&D activities) | | | Primary to tertiary |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Lower secondary | Upper secondary | | | All secondary | | Short-cycle tertiary | Bachelor's, master's and doctoral degrees | All tertiary | |
| | | | | General programmes | Vocational programmes | All programmes | | | | | | |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) |
| OECD | Australia | 1.8 | 1.2 | 0.6 | 0.2 | 0.8 | 2.0 | 0.1 | 0.3 | 1.6 | 1.8 | **5.8** |
| | Austria | 0.9 | 1.2 | 0.3 | 0.7 | 1.0 | 2.2 | 0.0 | 0.3 | 1.5 | 1.7 | **4.9** |
| | Belgium | 1.6 | 0.9 | 0.8[d] | 1.1[d] | 1.8[d] | 2.8[d] | x(4, 5, 6) | 0.0 | 1.4 | 1.4 | **5.8** |
| | Canada[2] | 2.1[d] | x(1) | x(5) | x(5) | 1.5 | 1.5 | m | 0.9 | 1.7 | 2.6 | **6.2** |
| | Chile[3] | 1.5 | 0.6 | 0.8 | 0.3 | 1.1 | 1.7 | a | 0.3 | 1.7 | 2.0 | **5.2** |
| | Czech Republic | 0.8 | 0.9 | 0.2 | 0.7 | 0.9 | 1.9 | 0.0 | 0.0 | 1.2 | 1.2 | **3.9** |
| | Denmark[4] | 2.1 | 1.3 | x(5) | x(5) | 1.4 | 2.7 | a | x(10) | x(10) | 1.7 | **6.5** |
| | Estonia | 1.4 | 0.7 | 0.4 | 0.3 | 0.7 | 1.4 | 0.2 | a | 1.9 | 1.9 | **5.0** |
| | Finland | 1.4 | 1.1 | 0.4 | 1.1[d] | 1.5[d] | 2.6[d] | x(4, 5, 6) | a | 1.8 | 1.8 | **5.7** |
| | France | 1.2 | 1.3 | 0.8 | 0.5 | 1.3 | 2.6 | 0.0 | 0.3 | 1.2 | 1.5 | **5.3** |
| | Germany | 0.6 | 1.3 | 0.4 | 0.5 | 0.9 | 2.2 | 0.2 | 0.0 | 1.2 | 1.2 | **4.3** |
| | Greece | m | m | m | m | m | m | m | m | m | m | **m** |
| | Hungary | 0.6 | 0.6 | 1.1 | 0.3 | 1.4 | 2.0 | 0.2 | 0.0 | 0.9 | 0.9 | **3.8** |
| | Iceland | 2.3 | 1.1 | 0.7 | 0.5 | 1.2 | 2.3 | 0.1 | 0.0 | 1.3 | 1.3 | **6.0** |
| | Ireland | 1.8 | 0.8 | 0.7 | a | 0.7 | 1.6 | 0.3 | x(10) | x(10) | 1.1 | **4.8** |
| | Israel | 2.3 | x(3, 4, 5) | 1.2[d] | 0.8[d] | 2.0[d] | 2.0 | 0.0 | 0.2 | 1.3 | 1.5 | **5.8** |
| | Italy | 1.1 | 0.7 | x(5) | x(5) | 1.2 | 1.9 | 0.1 | 0.0 | 1.0 | 1.0 | **4.0** |
| | Japan | 1.3 | 0.8 | x(5) | x(5) | 0.9[d] | 1.7[d] | x(5, 6, 8, 9, 10) | 0.2[d] | 1.3[d] | 1.5[d] | **4.4** |
| | Korea | 1.7 | 1.0 | x(5) | x(5) | 1.3 | 2.3 | a | 0.3 | 2.0 | 2.3 | **6.3** |
| | Latvia | 1.6 | 0.8 | 0.5 | 0.4 | 0.9 | 1.6 | 0.1 | 0.2 | 1.2 | 1.4 | **4.7** |
| | Luxembourg | 1.3 | 0.8 | 0.3 | 0.6 | 0.9 | 1.8 | 0.0 | 0.0 | 0.5 | 0.5 | **3.6** |
| | Mexico | 2.0 | 1.0 | 0.6 | 0.4 | 1.0 | 2.0 | a | x(10) | x(10) | 1.4 | **5.4** |
| | Netherlands | 1.2 | 1.2 | 0.3 | 0.9 | 1.2 | 2.4 | 0.0 | 0.0 | 1.7 | 1.7 | **5.4** |
| | New Zealand | 1.6 | 1.4 | 1.1 | 0.4 | 1.4 | 2.8 | 0.2 | 0.2 | 1.6 | 1.8 | **6.4** |
| | Norway | 2.1 | 1.0 | 0.7 | 0.8 | 1.5 | 2.4 | 0.0 | 0.0 | 1.6 | 1.7 | **6.2** |
| | Poland[4] | 1.6 | 0.8 | 0.3 | 0.5 | 0.9 | 1.7 | 0.1 | 0.0 | 1.3 | 1.3 | **4.7** |
| | Portugal | 1.8 | 1.3 | x(5) | x(5) | 1.4[d] | 2.7[d] | x(5, 6, 9, 10) | a | 1.4[d] | 1.4[d] | **5.8** |
| | Slovak Republic[5] | 0.9 | 1.0 | 0.2 | 0.6 | 0.9 | 1.9 | 0.1 | 0.0 | 1.1 | 1.1 | **3.9** |
| | Slovenia | 1.7 | 0.9 | 0.4 | 0.6 | 1.0 | 1.9 | a | 0.0 | 1.1 | 1.1 | **4.6** |
| | Spain | 1.3 | 0.8 | 0.5 | 0.3[d] | 0.9[d] | 1.7[d] | x(4, 5, 6) | 0.2 | 1.1 | 1.3 | **4.3** |
| | Sweden | 1.7 | 0.8 | 0.5 | 0.6 | 1.1 | 1.9 | 0.0 | 0.0 | 1.7 | 1.7 | **5.4** |
| | Switzerland[6] | 1.5 | 1.0 | 0.4 | 0.5 | 0.9 | 1.9 | x(4, 5, 6) | x(9, 10) | 1.3[d] | 1.3[d] | **4.7** |
| | Turkey | 1.2 | 0.9 | 0.5 | 0.5 | 1.0 | 2.0 | a | x(10) | x(10) | 1.8 | **4.9** |
| | United Kingdom | 2.0 | 1.1 | 1.2 | 0.5 | 1.7 | 2.8 | a | m | m | 1.8 | **6.6** |
| | United States | 1.6 | 0.9 | x(5) | x(5) | 1.0 | 1.9 | 0.0 | x(10) | x(10) | 2.7 | **6.2** |
| | OECD average | 1.5 | 1.0 | 0.6 | 0.6 | 1.2 | 2.1 | 0.1 | 0.2 | 1.4 | 1.5 | **5.2** |
| | EU22 average | 1.4 | 1.0 | 0.5 | 0.6 | 1.1 | 2.1 | 0.1 | 0.1 | 1.3 | 1.4 | **4.9** |
| Partners | Argentina | 1.9 | 1.5 | 1.0 | a | 1.0 | 2.5 | a | x(10) | x(10) | 1.2 | **5.6** |
| | Brazil[6] | 1.6 | 1.4 | x(5) | x(5) | 1.0[d] | 2.5[d] | x(5, 6) | x(10) | x(10) | 0.8 | **4.9** |
| | China | m | m | m | m | m | m | m | m | m | m | **m** |
| | Colombia[3] | 2.1 | 1.5 | x(5) | x(5) | 0.5 | 2.0 | m | x(10) | x(10) | 1.7[d] | **5.8** |
| | Costa Rica[3] | m | m | m | m | m | m | a | m | m | m | **m** |
| | India | m | m | m | m | m | m | m | a | m | m | **m** |
| | Indonesia[3] | 1.6 | 0.5 | 0.4 | 0.2 | 0.6 | 1.2 | a | x(10) | x(10) | 0.7 | **3.4** |
| | Lithuania | 0.7 | 1.2 | 0.4 | 0.2 | 0.6 | 1.7 | 0.2 | a | 1.7 | 1.7 | **4.2** |
| | Russian Federation | x(3, 4, 5) | x(3, 4, 5) | 1.9[d] | 0.2[d] | 2.1[d] | 2.1[d] | x(5, 6) | 0.2 | 1.1 | 1.3 | **3.3** |
| | Saudi Arabia | m | m | m | m | m | m | m | m | m | m | **m** |
| | South Africa | m | m | m | m | m | m | m | m | m | m | **m** |
| | G20 average | m | m | m | m | m | m | m | m | m | m | **m** |

**Note:** Data on expenditure on early childhood education are available in Indicator C2. Public expenditure figures presented here exclude undistributed programmes. See *Definitions* and *Methodology* sections for more information. Data and more breakdowns available at http://stats.oecd.org, Education at a Glance Database.

1. Including international sources.
2. Primary education contains information from pre-primary and lower secondary education.
3. Year of reference 2015.
4. Vocational programmes in upper secondary education include information from vocational programmes in lower secondary education.
5. Expenditure on public institutions for bachelor's, master's and doctoral degrees.
6. Public expenditure only.

**Source:** OECD/UIS/Eurostat (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

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B2

## Table B2.2. Trends in expenditure on educational institutions as a percentage of GDP, by level of education (2005, 2010 to 2014)

*From public and private sources, by year*

| | | Primary, secondary and post-secondary non-tertiary | | | | | | Tertiary | | | | | | Primary to tertiary | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2005 | 2010 | 2011 | 2012 | 2013 | 2014 | 2005 | 2010 | 2011 | 2012 | 2013 | 2014 | 2005 | 2010 | 2011 | 2012 | 2013 | 2014 |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) | (17) | (18) |
| OECD | Australia | 3.7 | 4.3 | 4.1 | 4.0 | 3.9 | 3.9 | 1.5 | 1.6 | 1.6 | 1.6 | 1.7 | 1.8 | **5.2** | **5.9** | **5.7** | **5.6** | **5.6** | **5.8** |
| | Austria | m | m | m | 3.1 | 3.2 | 3.1 | m | m | m | 1.8 | 1.8 | 1.7 | **m** | **m** | **m** | **4.9** | **5.0** | **4.9** |
| | Belgium | 4.1 | 4.3 | 4.3 | 4.3 | 4.4 | 4.3 | 1.2 | 1.3 | 1.3 | 1.4 | 1.4 | 1.4 | **5.3** | **5.6** | **5.6** | **5.7** | **5.8** | **5.8** |
| | Canada | 3.5 | 4.0 | 3.7 | 3.6 | 3.6 | 3.6 | 2.4 | 2.8 | 2.6 | 2.6 | 2.6 | 2.6 | **5.9** | **6.7** | **6.3** | **6.2** | **6.2** | **6.2** |
| | Chile | 3.6 | 3.4 | 3.4 | 3.8 | 3.4 | 3.1 | 1.9 | 2.3 | 2.4 | 2.5 | 2.4 | 2.3 | **5.5** | **5.7** | **5.7** | **6.2** | **5.8** | **5.5** |
| | Czech Republic | 2.8 | 2.7 | 2.7 | 2.8 | 2.7 | 2.6 | 1.0 | 1.2 | 1.4 | 1.4 | 1.3 | 1.2 | **3.7** | **3.9** | **4.1** | **4.2** | **4.0** | **3.9** |
| | Denmark[1] | 4.3 | 4.6 | 4.1 | 4.5 | 4.4 | 4.7 | 1.6 | 1.7 | 1.7 | 1.5 | 1.6 | 1.6 | **5.9** | **6.2** | **5.8** | **6.0** | **6.1** | **6.3** |
| | Estonia | 3.4 | 3.8 | 3.3 | 3.2 | 3.2 | 3.1 | 1.1 | 1.6 | 1.7 | 1.6 | 2.0 | 1.9 | **4.6** | **5.4** | **4.9** | **4.8** | **5.2** | **5.0** |
| | Finland | 3.7 | 4.0 | 3.9 | 3.9 | 3.9 | 3.9 | 1.7 | 1.8 | 1.9 | 1.8 | 1.8 | 1.8 | **5.4** | **5.8** | **5.8** | **5.8** | **5.7** | **5.7** |
| | France | 3.9 | 3.9 | 3.8 | 3.8 | 3.8 | 3.8 | 1.3 | 1.5 | 1.5 | 1.4 | 1.5 | 1.5 | **5.2** | **5.4** | **5.3** | **5.2** | **5.3** | **5.3** |
| | Germany | 3.3 | 3.3 | 3.2 | 3.1 | 3.1 | 3.1 | 1.0 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | **4.3** | **4.5** | **4.4** | **4.3** | **4.3** | **4.3** |
| | Greece | 2.7 | m | m | m | m | m | 1.5 | m | m | m | m | m | **4.2** | **m** | **m** | **m** | **m** | **m** |
| | Hungary | 3.4 | m | m | 2.6 | 2.5 | 2.8 | 1.1 | m | m | 1.2 | 1.3 | 0.9 | **4.5** | **m** | **m** | **3.8** | **3.8** | **3.8** |
| | Iceland | 5.2 | 4.7 | 4.7 | 4.6 | 4.6 | 4.7 | 1.2 | 1.2 | 1.1 | 1.3 | 1.3 | 1.3 | **6.4** | **5.8** | **5.8** | **6.0** | **5.8** | **6.0** |
| | Ireland | 3.2 | 4.5 | 4.3 | 4.3 | 4.0 | 3.7 | 1.1 | 1.5 | 1.4 | 1.4 | 1.2 | 1.1 | **4.3** | **5.9** | **5.7** | **5.7[d]** | **5.2** | **4.8** |
| | Israel | 3.7 | 4.0 | 4.2 | 4.3 | 4.3 | 4.3 | 1.6 | 1.5 | 1.6 | 1.4 | 1.6 | 1.5 | **5.3** | **5.5** | **5.8** | **5.7** | **5.8** | **5.8** |
| | Italy | 3.0 | 3.0 | 2.8 | 3.0 | 3.0 | 3.0 | 0.8 | 1.0 | 1.0 | 0.9 | 1.0 | 1.0 | **3.9** | **3.9** | **3.8** | **3.9** | **4.0** | **4.0** |
| | Japan[2] | 2.9 | 3.0 | 3.0 | 2.9 | 2.9 | 2.9 | 1.4 | 1.5 | 1.6 | 1.5 | 1.6 | 1.5 | **4.3** | **4.5** | **4.5** | **4.5** | **4.4** | **4.4** |
| | Korea | 3.8 | 4.4 | 4.4 | 4.3 | 4.2 | 4.0 | 2.1 | 2.4 | 2.4 | 2.3 | 2.3 | 2.3 | **6.0** | **6.8** | **6.8** | **6.7** | **6.5** | **6.3** |
| | Latvia | 3.3 | 3.4 | 3.0 | 2.9 | 3.1 | 3.3 | 1.4 | 1.4 | 1.5 | 1.4 | 1.4 | 1.4 | **4.7** | **4.7** | **4.5** | **4.2** | **4.5** | **4.7** |
| | Luxembourg | m | 3.5 | 3.3 | 3.3 | 2.9 | 3.1 | m | m | m | 0.4 | 0.5 | 0.5 | **m** | **3.5** | **3.3** | **3.7** | **3.5** | **3.6** |
| | Mexico | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 | 1.2 | 1.4 | 1.3 | 1.3 | 1.3 | 1.4 | **5.0** | **5.3** | **5.2** | **5.2** | **5.2** | **5.4** |
| | Netherlands | 3.6 | 3.8 | 3.7 | 3.8 | 3.8 | 3.6 | 1.5 | 1.6 | 1.6 | 1.7 | 1.7 | 1.7 | **5.0** | **5.4** | **5.4** | **5.4** | **5.5** | **5.4** |
| | New Zealand | m | m | m | 4.9 | 4.6 | 4.6 | m | m | m | 1.8 | 1.7 | 1.8 | **m** | **m** | **m** | **6.7** | **6.4** | **6.4** |
| | Norway[2] | 4.9 | 4.9 | 4.7 | 4.6 | 4.7 | 4.5 | m | 1.6 | 1.6 | 1.6 | 1.6 | 1.7 | **m** | **6.5** | **6.4** | **6.2** | **6.3** | **6.2** |
| | Poland | 3.7 | 3.6 | 3.4 | 3.4 | 3.4 | 3.4 | 1.6 | 1.5 | 1.3 | 1.3 | 1.4 | 1.3 | **5.3** | **5.0** | **4.6** | **4.8** | **4.7** | **4.7** |
| | Portugal[2] | 3.6 | 3.7 | 3.6 | 4.5 | 4.7 | 4.5 | 1.3 | 1.4 | 1.3 | 1.3 | 1.4 | 1.4 | **4.8** | **5.1** | **4.9** | **5.8** | **6.1** | **5.8** |
| | Slovak Republic[3] | 2.8 | 3.0 | 2.7 | 2.7 | 2.7 | 2.8 | 0.9 | 0.9 | 1.0 | 1.0 | 1.1 | 1.1 | **3.7** | **3.9** | **3.7** | **3.7** | **3.8** | **3.9** |
| | Slovenia | 4.1 | 3.8 | 3.7 | 3.7 | 3.7 | 3.5 | 1.3 | 1.2 | 1.3 | 1.2 | 1.2 | 1.1 | **5.3** | **5.1** | **5.0** | **4.9** | **4.8** | **4.6** |
| | Spain | 2.8 | 3.2 | 3.2 | 3.1 | 3.1 | 3.0 | 1.1 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | **3.9** | **4.5** | **4.5** | **4.4** | **4.3** | **4.3** |
| | Sweden | 4.0 | 3.8 | 3.7 | 3.7 | 3.7 | 3.7 | 1.5 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | **5.5** | **5.4** | **5.3** | **5.4** | **5.4** | **5.4** |
| | Switzerland[1] | 3.5 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 1.3 | 1.2 | 1.3 | 1.3 | 1.3 | 1.3 | **4.8** | **4.6** | **4.7** | **4.7** | **4.7** | **4.7** |
| | Turkey | m | m | 3.0 | 3.1 | 3.1 | 3.2 | m | m | 2.0 | 1.8 | 1.7 | 1.8 | **m** | **m** | **5.0** | **4.9** | **4.8** | **4.9** |
| | United Kingdom | 4.1 | 4.3 | 4.4 | 4.4 | 4.8 | 4.8 | m | m | m | 1.8 | 1.8 | 1.8 | **m** | **m** | **m** | **6.2** | **6.7** | **6.6** |
| | United States | 3.8 | 3.9 | 3.8 | 3.7 | 3.6 | 3.5 | 2.5 | 2.7 | 2.8 | 2.8 | 2.6 | 2.7 | **6.3** | **6.7** | **6.6** | **6.5** | **6.2** | **6.2** |
| | OECD average | 3.6 | 3.8 | 3.7 | 3.7 | 3.7 | 3.6 | 1.4 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | **5.0** | **5.3** | **5.2** | **5.2** | **5.2** | **5.2** |
| | EU22 average | 3.5 | 3.7 | 3.5 | 3.5 | 3.5 | 3.5 | 1.3 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | **4.7** | **5.0** | **4.8** | **4.9** | **4.9** | **4.8** |
| Partners | Argentina | m | m | m | 4.2 | 4.5 | 4.4 | m | m | m | m | 1.2 | 1.2 | **m** | **m** | **m** | **m** | **5.6** | **5.6** |
| | Brazil[1] | 3.2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.1 | 0.7 | 0.9 | 0.9 | 0.9 | 0.9 | 0.8 | **3.9** | **5.1** | **5.3** | **5.0** | **5.0** | **4.9** |
| | China | m | m | m | m | m | m | m | m | m | m | m | m | **m** | **m** | **m** | **m** | **m** | **m** |
| | Colombia | m | m | m | m | 4.3 | 4.1 | m | m | m | m | 1.8 | 1.6 | **m** | **m** | **m** | **m** | **6.1** | **5.7** |
| | Costa Rica | m | m | m | m | 5.6 | m | m | m | m | m | 2.4 | m | **m** | **m** | **m** | **m** | **8.0** | **m** |
| | India | m | m | m | m | m | m | m | m | m | m | m | m | **m** | **m** | **m** | **m** | **m** | **m** |
| | Indonesia | m | m | m | 2.8 | 2.3 | m | m | m | m | 0.8 | 0.5 | m | **m** | **m** | **m** | **3.6** | **2.8** | **m** |
| | Lithuania | m | 3.4 | 3.0 | 2.8 | 2.7 | 2.6 | 1.3 | 1.6 | 1.8 | 1.7 | 1.7 | 1.7 | **m** | **5.0** | **4.8** | **4.5** | **4.4** | **4.2** |
| | Russian Federation | 1.8 | 1.9 | 1.9 | 2.1 | 2.2 | 2.1 | 0.7 | 1.5 | 1.3 | 1.3 | 1.3 | 1.3 | **2.5** | **3.4** | **3.2** | **3.4** | **3.5** | **3.3** |
| | Saudi Arabia | m | m | m | m | m | m | m | m | m | m | m | m | **m** | **m** | **m** | **m** | **m** | **m** |
| | South Africa | m | m | m | m | m | m | m | m | m | m | m | m | **m** | **m** | **m** | **m** | **m** | **m** |
| | G20 average | m | m | m | m | m | m | m | m | m | m | m | m | **m** | **m** | **m** | **m** | **m** | **m** |

**Note:** Public expenditure data presented here exclude undistributed programmes. See *Definitions* and *Methodology* sections for more information. Data and more breakdowns available at http://stats.oecd.org, Education at a Glance Database.

1. Public expenditure only.

2. Some levels of education are included with others. Refer to "x" code in Table B1.1 for details.

3. Expenditure on public institutions for bachelor's, master's and doctoral degrees.

**Source:** OECD/UIS/Eurostat (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933560168

## Table B2.3. Expenditure on educational institutions as a percentage of GDP, by source of funding and level of education (2014)

*From public and private sources of funds*

| | | Primary | | | Lower secondary | | | Upper secondary and post-secondary non-tertiary | | | Tertiary | | | Primary to tertiary | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Public[1] | Private[2] | Total | Public[1] | Private[2] | Total | Public[1] | Private[2] | Total | Public[1] | Private[2] | Total | Public[1] | Private[2] | Total |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) |
| OECD | Australia[3] | 1.6 | 0.2 | **1.8** | 0.9 | 0.3 | **1.2** | 0.7 | 0.2 | **0.9** | 0.7 | 1.1 | **1.8** | 3.9 | 1.8 | **5.8** |
| OECD | Austria | 0.9 | 0.0 | **0.9** | 1.2 | 0.0 | **1.2** | 1.0 | 0.1 | **1.0** | 1.6 | 0.1 | **1.7** | 4.7 | 0.2 | **4.9** |
| OECD | Belgium | 1.5 | 0.0 | **1.6** | 0.9 | 0.0 | **0.9** | 1.8 | 0.0 | **1.8** | 1.3 | 0.1 | **1.4** | 5.6 | 0.2 | **5.8** |
| OECD | Canada | 1.9[d] | 0.2[d] | **2.1[d]** | x(1) | x(2) | **x(3)** | 1.3 | 0.1 | **1.5** | 1.3 | 1.3 | **2.6** | 4.5 | 1.6 | **6.2** |
| OECD | Chile[3, 4] | 1.3 | 0.3 | **1.5** | 0.5 | 0.1 | **0.6** | 0.9 | 0.2 | **1.1** | 0.8 | 1.3 | **2.0** | 3.4 | 1.8 | **5.2** |
| OECD | Czech Republic | 0.7 | 0.1 | **0.8** | 0.8 | 0.1 | **0.9** | 0.8 | 0.1 | **1.0** | 1.0 | 0.2 | **1.2** | 3.4 | 0.5 | **3.9** |
| OECD | Denmark | 2.1 | 0.0 | **2.1** | 1.2 | 0.1 | **1.3** | 1.4 | 0.0 | **1.4** | 1.6 | 0.1 | **1.7** | 6.3 | 0.2 | **6.5** |
| OECD | Estonia | 1.4 | 0.0 | **1.4** | 0.7 | 0.0 | **0.7** | 1.0 | 0.0 | **1.0** | 1.7 | 0.2 | **1.9** | 4.7 | 0.3 | **5.0** |
| OECD | Finland | 1.4 | 0.0 | **1.4** | 1.1 | 0.0 | **1.1** | 1.5 | 0.0 | **1.5** | 1.7 | 0.1 | **1.8** | 5.6 | 0.1 | **5.7** |
| OECD | France | 1.1 | 0.1 | **1.2** | 1.2 | 0.1 | **1.3** | 1.2 | 0.1 | **1.3** | 1.2 | 0.3 | **1.5** | 4.8 | 0.5 | **5.3** |
| OECD | Germany | 0.6 | 0.0 | **0.6** | 1.2 | 0.0 | **1.3** | 0.8 | 0.3 | **1.2** | 1.1 | 0.2 | **1.2** | 3.7 | 0.6 | **4.3** |
| OECD | Greece | m | m | **m** | m | m | **m** | m | m | **m** | m | m | **m** | m | m | **m** |
| OECD | Hungary | 0.5 | 0.0 | **0.6** | 0.6 | 0.0 | **0.6** | 1.6 | 0.0 | **1.6** | 0.7 | 0.3 | **0.9** | 3.4 | 0.4 | **3.8** |
| OECD | Iceland | 2.3 | 0.0 | **2.3** | 1.1 | 0.0 | **1.1** | 1.1 | 0.1 | **1.3** | 1.2 | 0.1 | **1.3** | 5.7 | 0.3 | **6.0** |
| OECD | Ireland | 1.8 | 0.1 | **1.8** | 0.8 | 0.1 | **0.8** | 1.0 | 0.1 | **1.0** | 0.8 | 0.3 | **1.1** | 4.4 | 0.5 | **4.8** |
| OECD | Israel | 2.2 | 0.1 | **2.3** | x(7) | x(8) | **x(9)** | 1.7[d] | 0.4[d] | **2.0[d]** | 0.9 | 0.7 | **1.5** | 4.7 | 1.1 | **5.8** |
| OECD | Italy | 1.0 | 0.1 | **1.1** | 0.7 | 0.0 | **0.7** | 1.1 | 0.1 | **1.2** | 0.7 | 0.2 | **1.0** | 3.6 | 0.4 | **4.0** |
| OECD | Japan[5] | 1.2 | 0.0 | **1.3** | 0.7 | 0.0 | **0.8** | 0.7 | 0.2 | **0.9** | 0.5 | 1.0 | **1.5** | 3.2 | 1.2 | **4.4** |
| OECD | Korea[3] | 1.6 | 0.1 | **1.7** | 0.9 | 0.0 | **1.0** | 1.0 | 0.3 | **1.3** | 1.0 | 1.2 | **2.3** | 4.6 | 1.7 | **6.3** |
| OECD | Latvia | 1.6 | 0.0 | **1.6** | 0.7 | 0.0 | **0.8** | 0.9 | 0.0 | **0.9** | 1.1 | 0.3 | **1.4** | 4.4 | 0.3 | **4.7** |
| OECD | Luxembourg | 1.3 | 0.0 | **1.3** | 0.8 | 0.0 | **0.8** | 0.9 | 0.0 | **0.9** | 0.5 | 0.0 | **0.5** | 3.5 | 0.1 | **3.6** |
| OECD | Mexico | 1.7 | 0.3 | **2.0** | 0.9 | 0.1 | **1.0** | 0.8 | 0.2 | **1.0** | 1.1 | 0.4 | **1.4** | 4.4 | 1.0 | **5.4** |
| OECD | Netherlands | 1.2 | 0.0 | **1.2** | 1.2 | 0.1 | **1.2** | 0.9 | 0.3 | **1.2** | 1.2 | 0.5 | **1.7** | 4.5 | 0.9 | **5.4** |
| OECD | New Zealand | 1.5 | 0.1 | **1.6** | 1.2 | 0.2 | **1.4** | 1.2 | 0.5 | **1.6** | 0.9 | 0.9 | **1.8** | 4.7 | 1.7 | **6.4** |
| OECD | Norway | 2.1 | 0.0 | **2.1** | 1.0 | 0.0 | **1.0** | 1.5 | 0.0 | **1.5** | 1.6 | 0.1 | **1.7** | 6.1 | 0.1 | **6.2** |
| OECD | Poland[5] | 1.5 | 0.1 | **1.6** | 0.7 | 0.1 | **0.8** | 0.8 | 0.1 | **0.9** | 1.2 | 0.1 | **1.3** | 4.3 | 0.4 | **4.7** |
| OECD | Portugal[5] | 1.6 | 0.2 | **1.8** | 1.2 | 0.1 | **1.3** | 1.2 | 0.2 | **1.4** | 0.9 | 0.5 | **1.4** | 4.9 | 0.9 | **5.8** |
| OECD | Slovak Republic[6] | 0.8 | 0.1 | **0.9** | 0.9 | 0.1 | **1.0** | 0.9 | 0.1 | **0.9** | 0.9 | 0.2 | **1.1** | 3.4 | 0.4 | **3.9** |
| OECD | Slovenia | 1.5 | 0.1 | **1.7** | 0.8 | 0.1 | **0.9** | 0.9 | 0.1 | **1.0** | 1.0 | 0.1 | **1.1** | 4.1 | 0.5 | **4.6** |
| OECD | Spain | 1.1 | 0.2 | **1.3** | 0.7 | 0.1 | **0.8** | 0.8 | 0.1 | **0.9** | 0.9 | 0.4 | **1.3** | 3.5 | 0.7 | **4.3** |
| OECD | Sweden | 1.7 | 0.0 | **1.7** | 0.8 | 0.0 | **0.8** | 1.1 | 0.0 | **1.1** | 1.5 | 0.2 | **1.7** | 5.2 | 0.2 | **5.4** |
| OECD | Switzerland | 1.5 | m | **m** | 1.0 | m | **m** | 0.9 | m | **m** | 1.3 | m | **m** | 4.7 | m | **m** |
| OECD | Turkey | 1.0 | 0.2 | **1.2** | 0.8 | 0.2 | **0.9** | 0.8 | 0.3 | **1.0** | 1.3 | 0.4 | **1.8** | 3.9 | 1.0 | **4.9** |
| OECD | United Kingdom | 1.8 | 0.2 | **2.0** | 1.0 | 0.1 | **1.1** | 1.4 | 0.3 | **1.7** | 0.6 | 1.3 | **1.8** | 4.8 | 1.9 | **6.6** |
| OECD | United States | 1.5 | 0.1 | **1.6** | 0.8 | 0.1 | **0.9** | 0.9 | 0.1 | **1.0** | 0.9 | 1.7 | **2.7** | 4.2 | 2.1 | **6.2** |
| | OECD average | 1.4 | 0.1 | **1.5** | 0.9 | 0.1 | **1.0** | 1.1 | 0.1 | **1.2** | 1.1 | 0.5 | **1.6** | 4.4 | 0.8 | **5.2** |
| | EU22 average | 1.3 | 0.1 | **1.4** | 0.9 | 0.1 | **1.0** | 1.1 | 0.1 | **1.2** | 1.1 | 0.3 | **1.4** | 4.4 | 0.5 | **4.9** |
| Partners | Argentina | 1.6 | 0.3 | **1.9** | 1.3 | 0.2 | **1.5** | 0.9 | 0.1 | **1.0** | 1.1 | 0.2 | **1.2** | 4.9 | 0.7 | **5.6** |
| Partners | Brazil | 1.6 | m | **m** | 1.4 | m | **m** | 1.0 | m | **m** | 0.8 | m | **m** | 4.9 | m | **m** |
| Partners | China | m | m | **m** | m | m | **m** | m | m | **m** | m | m | **m** | m | m | **m** |
| Partners | Colombia[4] | 1.6 | 0.5 | **2.1** | 1.2 | 0.3 | **1.5** | 0.4 | 0.1 | **0.5** | 0.8 | 0.9 | **1.7** | 3.9 | 1.9 | **5.8** |
| Partners | Costa Rica | m | m | **m** | m | m | **m** | m | m | **m** | m | m | **m** | m | m | **m** |
| Partners | India | m | m | **m** | m | m | **m** | m | m | **m** | m | m | **m** | m | m | **m** |
| Partners | Indonesia[4] | 1.5 | 0.0 | **1.6** | 0.5 | 0.0 | **0.5** | 0.5 | 0.2 | **0.6** | 0.5 | 0.2 | **0.7** | 3.0 | 0.4 | **3.4** |
| Partners | Lithuania | 0.7 | 0.0 | **0.7** | 1.1 | 0.0 | **1.2** | 0.7 | 0.0 | **0.7** | 1.3 | 0.4 | **1.7** | 3.8 | 0.4 | **4.2** |
| Partners | Russian Federation | x(9) | x(9) | **x(9)** | x(9) | x(9) | **x(9)** | m | m | **2.1[d]** | m | m | **1.3** | m | m | **3.3** |
| Partners | Saudi Arabia | m | m | **m** | m | m | **m** | m | m | **m** | m | m | **m** | m | m | **m** |
| Partners | South Africa | m | m | **m** | m | m | **m** | m | m | **m** | m | m | **m** | m | m | **m** |
| | G20 average | m | m | **m** | m | m | **m** | m | m | **m** | m | m | **m** | m | m | **m** |

**Note:** Public expenditure data presented here exclude undistributed programmes. See *Definitions* and *Methodology* sections for more information. Data and more breakdowns available at http://stats.oecd.org, Education at a Glance Database.

1. Including public subsidies to households attributable for educational institutions, and direct expenditure on educational institutions from international sources.
2. Net of public subsidies attributable for educational institutions.
3. Public does not include international sources.
4. Year of reference 2015.
5. Some levels of education are included with others. Refer to "x" code in Table B2.1 for details.
6. Expenditure on public institutions for bachelor's, master's and doctoral degrees.

**Source:** OECD/UIS/Eurostat (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

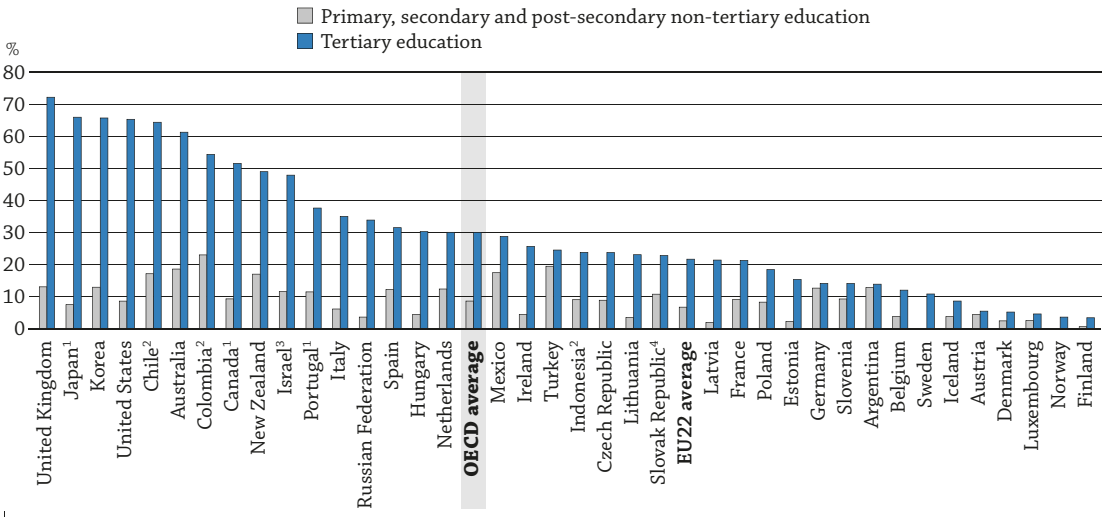
*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933560187

# HOW MUCH PUBLIC AND PRIVATE INVESTMENT ON EDUCATIONAL INSTITUTIONS IS THERE?

- On average, across OECD countries, public funding accounts for 85% of all funds for educational institutions, from primary to tertiary education.
- Nearly 91% of the funds for primary, secondary and post-secondary non-tertiary educational institutions come from public sources, on average across OECD countries compared to 70% at the tertiary level.
- Between 2010 and 2014, private sources of expenditure on primary, secondary and post-secondary non-tertiary educational institutions increased by 13%, while public sources increased by only 3%, on average across OECD countries.

## Figure B3.1. Share of private expenditure on educational institutions (2014)




**How to read this figure**

The figure shows private spending on educational institutions as a percentage of total spending on educational institutions. This includes all money transferred to educational institutions from private sources, including public funding via subsidies to households, private fees for educational services or other private spending (e.g. on accommodation) which goes through the institution.

**Note**: Including subsidies attributable to payments to educational institutions received from public sources. Excluding international funds. Tuition fee payments that are made by students supported by student loans are presented as private expenditure and no adjustment has been made to account for the public cost of repayments not made.

1. Some levels of education are included with others. Refer to "x" code in Table B1.1 for details.
2. Year of reference 2015.
3. Private expenditure on government-dependent private institutions is included under public institutions.
4. Expenditure on public institutions for bachelor's, master's and doctoral degrees.

*Countries are ranked in descending order of the share of private expenditure on educational institutions for tertiary education.*

**Source**: OECD/UIS/Eurostat (2017), Table B3.1b. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933557907

## Context

Today, more than ever before, more people are participating in a wider range of educational programmes offered by an increasing number of providers. As a result, the question of who should support an individual's efforts to acquire more education – governments or the individuals themselves – is becoming increasingly important. In the current economic environment, many governments are finding it difficult to provide the necessary resources to support the increased demand for education through public funds alone. In addition, some policy makers assert that those who benefit the most from education, the individuals who receive it, should bear at least some of the costs. While public funding still represents a large part of countries' investment in education, the role of private sources of funding is becoming increasingly prominent at some educational levels.

Public sources dominate much of the funding of primary and secondary education, which are usually compulsory in most countries. At the pre-primary (see Indicator C2) and tertiary levels of education, the balance between public and private financing varies more across OECD countries, as full or nearly full public funding is less common. At these levels, private funding comes mainly from households, raising concerns about equity in access to education. The debate is particularly intense over funding for tertiary education. Some stakeholders are concerned that the balance between public and private funding should not become so tilted as to discourage potential students from entering tertiary education. Others believe that countries should significantly increase public support to students, while still others support efforts to increase the amount of funding to tertiary education provided by private enterprises.

## Other findings

- In most countries, the share of public sources in expenditure on educational institutions is slightly higher at primary level than at lower secondary level. Conversely, upper secondary education is less publicly funded than lower secondary education in all countries except Hungary and Poland. Tertiary education receives a higher share of private funding than lower educational levels in all countries.
- In primary, secondary and post-secondary non-tertiary education, public sources fund over 85% of expenditure in all countries except Australia (81%), Chile (83%), Colombia (77%), Mexico (82%), New Zealand (83%) and Turkey (80%). They are the only source of expenditure in Sweden. However, there is great variation in the share of public sources at tertiary level. While it corresponds to less than 40% in Australia, Chile, Japan, Korea, the United Kingdom and the United States, it is over 95% in Finland, Luxembourg and Norway.
- In all countries, except Canada and the Netherlands, households contribute the largest share of private funding for education at primary, secondary and post-secondary non-tertiary levels. In tertiary education, households also contribute the largest share of private expenditure in all but three countries (the Czech Republic, Finland and Sweden).
- At primary level, annual public expenditure per student is on average across OECD countries much higher in public institutions (USD 8 660) than in private institutions (USD 4 855). However, at tertiary level, the differential is higher, with government expenditure standing at USD 12 656 for public institutions and only USD 4 900 for private institutions.

## Analysis

### Public versus private expenditure on educational institutions

Educational institutions in OECD countries are mainly publicly funded, although private funding at the tertiary level is substantial. On average across OECD countries, 85% of all funds from primary to tertiary educational institutions come directly from public sources (Table B3.1b).

However, within this overall average the share of public and private funding varies widely among countries. Comparing expenditure on primary up to tertiary combined, the share of private funds exceeds 30% in Australia, Chile, Colombia, Korea and the United States. By contrast, in Austria, Denmark, Finland, Iceland, Luxembourg, Norway and Sweden, 5% or less of expenditure on education comes from private sources (Table B3.1b).

#### *Public versus private expenditure from primary to post-secondary non-tertiary educational institutions*

Public funding dominates primary, secondary and post-secondary non-tertiary education in all countries. Less than 10% of funding for these levels of education comes from private sources, except for Argentina, Australia, Chile, Colombia, Germany, Israel, Korea, Mexico, the Netherlands, New Zealand, Portugal, the Slovak Republic, Spain, Turkey and the United Kingdom (Table B3.1b and Figure B3.1). In most countries, the largest share of private expenditure at these levels comes from households and goes mainly towards tuition. In the Netherlands, however, most private expenditure takes the form of contributions from the business sector to the dual system of apprenticeship in upper secondary and post-secondary non-tertiary education (see Box B3.1 in OECD, 2011).

At primary level, on average, 93% of expenditure on educational institutions comes from public sources. In Finland, Norway and Sweden, all educational funding for this level is public, while in Chile and Colombia 18% and 23% of funding comes from private sources – the highest of all countries for which data are available.

At lower secondary level, public funding corresponds to 93% of total educational expenditure on average. In 25 of the 31 OECD countries for which data are available, public expenditure accounts for over 90% of the total. However, Australia and Colombia source over one-fifth of expenditure from private sources at this level.

In upper secondary education, private sources play a slightly stronger role in vocational programmes (making up 14% of expenditure) than in general programmes (11%). In Germany, the Netherlands and New Zealand, vocational upper secondary education receives at least 25 percentage points more private funding than their general tracks. It is unsurprising that Germany has some of the highest shares of students enrolled in combined school- and work-based programmes (40%; see Indicator C1). For New Zealand, this strong private role is influenced by a larger vocational sector at upper secondary and post-secondary non-tertiary levels. At these non-compulsory levels, a much higher proportion of institutional expenditure comes from private households via tuition fees, much of which is paid on the student's behalf directly to institutions from public sources via subsidised student loans. On the other hand, in Chile and Turkey the share of public funding in vocational programmes exceeds that of general programmes by 15 or more percentage points. Overall, upper secondary education relies on more private funding than primary and lower secondary levels.

The level of public funding also decreases in post-secondary non-tertiary education, where it stands at only 77% on average. Unlike the three lower levels presented above, in post-secondary non-tertiary education, two countries (New Zealand and the United States) rely more on private than public sources of funding.

Most countries spent more public money on primary, secondary and post-secondary non-tertiary education in 2014 than they did in 2005 (Table B3.2a). On average, public funding of primary, secondary and post-secondary non-tertiary education increased by 7 percentage points in the years leading up to the 2008 crisis (2005-08) and also increased by the same amount afterwards (2008-14). While private sources saw a similar rise before the crisis (9 percentage points), they saw a much higher surge in the six years following it, totalling 14 percentage-point difference. Between 2008 and 2014, private expenditure at those levels of education increased by 80 percentage points in Estonia and by 108 percentage points in Israel. Despite some variation in absolute public and private expenditure, the share of public expenditure on primary, secondary and post-secondary non-tertiary in all OECD countries remained largely unchanged, varying from 92% to 91 % between 2005 and 2014.

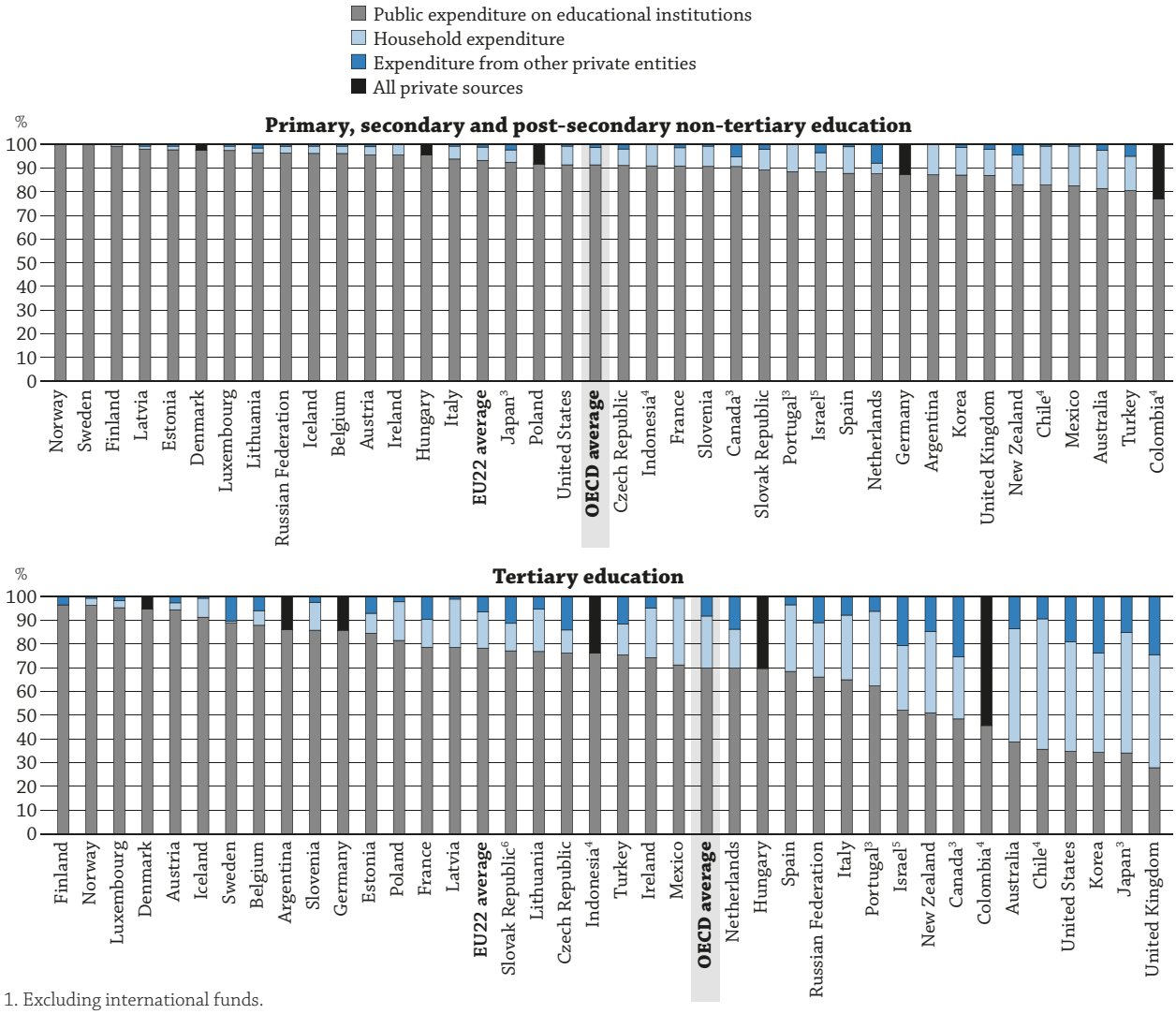
#### *Public versus private expenditure on tertiary educational institutions*

High private returns to tertiary education (see Indicator A7) suggest that a greater contribution to the costs of education by individuals and other private entities may be justified, as long as there are ways to ensure that funding is available to students regardless of their economic backgrounds (see Indicator B5). In all countries, the proportion of private expenditure on education is far higher for tertiary education – an average of nearly 30% of total expenditure at this level – than it is for primary, secondary and post-secondary non-tertiary education (Figure B3.1 and Table B3.1b).

The proportion of expenditure on tertiary institutions covered by individuals, businesses and other private sources, including subsidised private payments such as tuition fee loans, ranges from less than 10% in Austria, Denmark, Finland, Iceland, Luxembourg and Norway (where tuition fees charged by tertiary institutions are low or negligible) to more than 60% in Australia, Chile, Japan, Korea, the United Kingdom and the United States. These proportions may be related to the level of tuition fees charged by tertiary institutions (Figure B3.2 and Table B3.1b, and see Indicator B5). In Korea, for example, 80% of students are enrolled in private institutions, and more than 42% of the education budget comes from tuition fees. On average across the OECD, household expenditure accounts for more than two-thirds of private expenditure. In the majority of countries, household expenditure is the biggest source of private funds, but in Finland and Sweden, almost all private funding come from other private entities (mainly for research and development), and the share of household expenditure is either zero or very low.

## Figure B3.2. Distribution of public[1] and private[2] expenditure on educational institutions (2014)

*By level of education*




1. Excluding international funds.
2. Including subsidies attributable to payments to educational institutions received from public sources.
3. Some levels of education are included with others. Refer to "x" code in Table B1.1 for details.
4. Year of reference 2015.
5. Private expenditure on government-dependent private institutions is included under public institutions.
6. Expenditure on public institutions for bachelor's, master's and doctoral degrees.

*Countries are ranked in descending order of the proportion of public expenditure on educational institutions by level of education.*

**Source**: OECD/UIS/Eurostat (2017), Table B3.1b. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

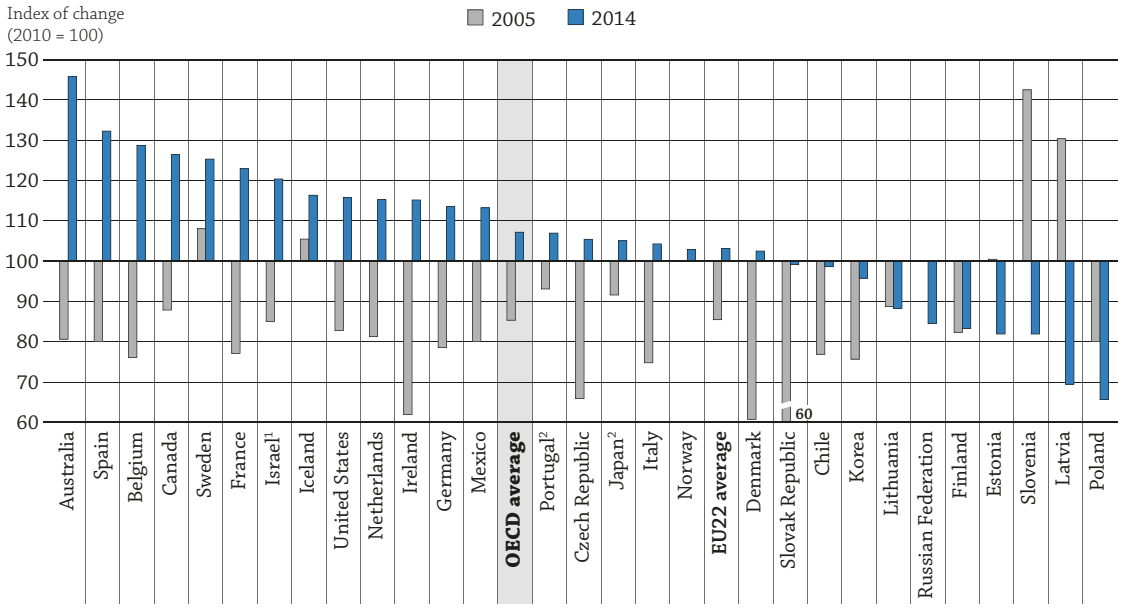
StatLink http://dx.doi.org/10.1787/888933557926

In many OECD countries, greater participation in tertiary education (see Indicator C1) reflects strong individual and social demand. The increases in enrolment have been accompanied by increases in investment from both public and private sources and changes in the proportions of public and private expenditure (Table B3.2b). Unlike in primary, secondary and post-secondary non-tertiary education, the increase between 2005 and 2014 was stronger for public sources (29 percentage points) than for private sources (22 percentage points). Despite the faster increase of public funding in comparison to private funding, a change of only 0.1 percentage point is seen between 2005 and 2014 in the share of public expenditure on educational institutions. These figures, however, are strongly influenced by outliers like Chile, Latvia and Turkey, where public funding for tertiary education increased by more than 50% between 2010 and 2014. Also large increases were observed from private sources, notably in Australia, Belgium, Canada, France, Israel, Spain and Sweden (20% or more).

Although public funding for tertiary education increased in most countries, some are still behind their 2008 peak. This is the case for example for Canada, the Czech Republic, Hungary, Ireland, Italy, Portugal, the Russian Federation, Slovenia, Spain and the United States, where in 2014 public expenditure was lower than in 2008. As for private sources, in Estonia, Finland, Korea, Latvia, Lithuania, Poland, Portugal, the Russian Federation and Slovenia they spent less in 2014 than they did in 2008 (Table B3.2b and Figure B3.3).

## Figure B3.3. Change in private expenditure on tertiary educational institutions

*2010 = 100 (2005 and 2014)*




**Note**: Including subsidies attributable to payments to educational institutions received from public sources.
1. Private expenditure on government-dependent private institutions is included under public institutions.
2. Some levels of education are included with others. Refer to "x" code in Table B1.1 for details.
*Countries are ranked in descending order of the share of private expenditure on tertiary educational institutions in 2014.*
**Source**: OECD/UIS/Eurostat (2017), Table B3.2b. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).
StatLink http://dx.doi.org/10.1787/888933557945

### Public expenditure on educational institutions per student, by type of institution

The level of public expenditure partly reflects the degree to which governments value education (see Indicators B2 and B4). Naturally, most public funds go to public institutions, but in some cases a significant part of the public budget may also be devoted to private educational institutions (government-dependent private institutions and independent private institutions). Table B3.3 (available on line) shows public investment in educational institutions relative to the size of the education system. The data focus on public expenditure per student in both public and private educational institutions, excluding public student loans. This measure complements data on public expenditure relative to national income (see Indicator B2).

On average across OECD countries, from primary to tertiary levels of education combined, public expenditure per student on public institutions (USD 9 841) is 48% higher than on private institutions (USD 6 652). However, the difference varies according to the level of education (Table B3.3, available on line). At primary level, public expenditure per student on public institutions (USD 8 660) is around 78% more than on private institutions (USD 4 855), while at the lower secondary level, public expenditure per student on public institutions (USD 10 208) is 46% higher than on private institutions (USD 6 981). The gap in public funds received by private and public institutions widens more at upper secondary level, where public institutions receive 50% more money from the government. However, the largest difference is at tertiary level, where public expenditure per student is three times as high for public institutions (on average USD 12 656 ) as it is for private institutions (USD 4 900).

These averages mask large OECD country differences. At primary level, public expenditure per student in public institutions varies widely, from USD 21 154 in Luxembourg to USD 2 721 in Mexico. However, there is even greater variation in private institutions, as countries like Ireland, the Netherlands and Turkey do not spend any public money on private institutions at primary level, while in Denmark, Finland and Sweden, the expenditure per primary student in private institutions is over USD 9 500. In lower and upper secondary levels, the picture is similar to the primary level, although the difference in funding to public and private institutions becomes larger. All countries except Finland, Israel, Norway, Poland and Sweden spend much more per student on public institutions than on private institutions in upper secondary education. The highest public expenditure per student is in tertiary education, however, where OECD countries spend on average USD 10 830 per year. The funding gap between types of institution widens at this level, as private institutions receive, on average, more than one-third of the sum transferred to public institutions. The only countries where government funds are larger for private institutions are Israel and Latvia.

## Definitions

**Other private entities** include private businesses and non-profit organisations (e.g. religious organisations, charitable organisations, and business and labour associations).

**Private institutions** include independent private institutions and government-dependent private institutions.

**Private spending** includes all direct expenditure on educational institutions, whether partially covered by public subsidies or not. Expenditure by private companies on the work-based element of school- and work-based training of apprentices and students is also taken into account.

The **public and private proportions of expenditure on educational institutions** are the percentages of total spending originating in, or generated by, the public and private sectors.

**Public expenditure** is related to all students at public and private institutions, whether these institutions receive public funding or not.

## Methodology

Not all spending on instructional goods and services occurs within educational institutions. For example, families may purchase commercial textbooks and materials or seek private tutoring for their children outside educational institutions. At the tertiary level, students' living expenses and foregone earnings can also account for a significant proportion of the costs of education. All expenditure outside educational institutions, even if publicly subsidised, is excluded from this indicator. Public subsidies for educational expenditure outside institutions are discussed in Indicators B4 and B5.

A portion of the budgets of educational institutions is related to ancillary services offered to students, including student welfare services (student meals, housing and transport). Part of the cost of these services is covered by fees collected from students and is included in the indicator.

Expenditure on educational institutions is calculated on a cash-accounting basis and, as such, represents a snapshot of expenditure in the reference year. Many countries operate a loan payment/repayment system at the tertiary level. While public loan payments are taken into account, loan repayments from private individuals are not, and so the private contribution to education costs may be under-represented.

## Source

Data refer to the financial year 2014 (unless otherwise specified) and are based on the UNESCO, the OECD and Eurostat (UOE) data collection on education statistics administered by the OECD in 2016 (for details see Annex 3

at www.oecd.org/education/education-at-a-glance-19991487.htm). Data from Argentina, China, Colombia, India, Indonesia, Saudi Arabia, South Africa are from the UNESCO Institute of Statistics (UIS).

The data on expenditure for 2005, 2008, 2011 to 2014 were updated based on a survey in 2016-17, and expenditure for 2005 to 2013 were adjusted to the methods and definitions used in the current UOE data collection.

**Note regarding data from Israel**

The statistical data for Israel are supplied by and are under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

## References

OECD (2011), "Box B3.1. Private expenditure for the work-based component of educational programmes", in OECD, *Education at a Glance 2011: OECD Indicators*, OECD Publishing, Paris, http://dx.doi.org/10.1787/eag-2011-en.

## Indicator B3 Tables

StatLink http://dx.doi.org/10.1787/888933560339

| | |
|---|---|
| **Table B3.1a** | **Relative proportions of public and private expenditure on educational institutions, by level of education (2014)** |
| **Table B3.1b** | **Relative proportions of disaggregated public and private expenditure on educational institutions, by level of education (2014)** |
| **Table B3.2a** | **Trends in the relative proportion of public expenditure on educational institutions and index of change in public and private expenditure, at primary, secondary, post-secondary non-tertiary level (2005, 2008, 2011 to 2014)** |
| **Table B3.2b** | **Trends in the relative proportion of public expenditure on tertiary educational institutions and index of change in public and private expenditure (2005, 2008, 2011 to 2014)** |
| WEB **Table B3.3** | **Annual public expenditure on educational institutions per student, by type of institution (2014)** |

Cut-off date for the data: 19 July 2017. Any updates on data can be found on line at http://dx.doi.org/10.1787/eag-data-en. More breakdowns can also be found at http://stats.oecd.org/, Education at a Glance Database.

## Table B3.1a. Relative proportions of public and private expenditure on educational institutions, by level of education (2014)

*Distribution of public[1] and private[2] sources of funds for educational institutions after transfers from public sources*

| | | Primary | | Lower secondary | | Upper secondary | | | | | | Post-secondary non-tertiary education | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | General programmes | | Vocational programmes | | All programmes | | | |
| | | Public sources | Private sources | Public sources | Private sources | Public sources | Private sources | Public sources | Private sources | Public sources | Private sources | Public sources | Private sources |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
| OECD | Australia | 88 | 12 | 76 | 24 | 73 | 27 | 82 | 18 | 76 | 24 | 82 | 18 |
| | Austria | 96 | 4 | 97 | 3 | 93 | 7 | 95 | 5 | 95 | 5 | 51 | 49 |
| | Belgium | 97 | 3 | 96 | 4 | 96[d] | 4[d] | 96[d] | 4[d] | 96[d] | 4[d] | x(5, 7, 9) | x(6, 8, 10) |
| | Canada[3] | 91[d] | 9[d] | x(1) | x(2) | x(9) | x(10) | x(9) | x(10) | 91[d] | 9[d] | m | m |
| | Chile[4] | 82 | 18 | 85 | 15 | 78 | 22 | 93 | 7 | 82 | 18 | a | a |
| | Czech Republic | 93 | 7 | 93 | 7 | 88 | 12 | 88 | 12 | 88 | 12 | 65 | 35 |
| | Denmark | 98 | 2 | 94 | 6 | x(9) | x(10) | x(9) | x(10) | 100 | 0 | a | a |
| | Estonia | 97 | 3 | 98 | 2 | 97 | 3 | 99 | 1 | 98 | 2 | 98 | 2 |
| | Finland | 100 | 0 | 100 | 0 | 100 | 0 | 98[d] | 2[d] | 99[d] | 1[d] | x(7, 9) | x(8, 10) |
| | France | 93 | 7 | 91 | 9 | 91 | 9 | 84 | 16 | 88 | 12 | 81 | 19 |
| | Germany | 98 | 2 | 97 | 3 | 96 | 4 | 61 | 39 | 76 | 24 | 51 | 49 |
| | Greece | m | m | m | m | m | m | m | m | m | m | m | m |
| | Hungary | 92 | 8 | 93 | 7 | 97 | 3 | 98 | 2 | 98 | 2 | 98 | 2 |
| | Iceland | 99 | 1 | 99 | 1 | 89 | 11 | 89 | 11 | 89 | 11 | 89 | 11 |
| | Ireland | 97 | 3 | 93 | 7 | 93 | 7 | a | a | 93 | 7 | 99 | 1 |
| | Israel[5] | 95 | 5 | x(5, 7, 9) | x(6, 8, 10) | 86[d] | 14[d] | 74[d] | 26[d] | 81[d] | 19[d] | a | a |
| | Italy | 94 | 6 | 95 | 5 | x(9) | x(10) | x(9) | x(10) | 92[d] | 8[d] | 100 | 0 |
| | Japan | 99 | 1 | 94 | 6 | x(9) | x(10) | x(9) | x(10) | 82[d] | 18[d] | x(9) | x(10) |
| | Korea | 93 | 7 | 95 | 5 | x(9) | x(10) | x(9) | x(10) | 74 | 26 | a | a |
| | Latvia | 99 | 1 | 98 | 2 | 98 | 2 | 94 | 6 | 97 | 3 | 93 | 7 |
| | Luxembourg | 97 | 3 | 97 | 3 | 95 | 5 | 99 | 1 | 98 | 2 | 100 | 0 |
| | Mexico | 86 | 14 | 84 | 16 | 74 | 26 | 74 | 26 | 74 | 26 | a | a |
| | Netherlands | 99 | 1 | 94 | 6 | 92 | 8 | 61 | 39 | 69 | 31 | 56 | 44 |
| | New Zealand | 92 | 8 | 86 | 14 | 83 | 17 | 57 | 43 | 76 | 24 | 42 | 58 |
| | Norway | 100 | 0 | 100 | 0 | 100 | 0 | 100 | 0 | 100 | 0 | 100 | 0 |
| | Poland[6] | 93 | 7 | 90 | 10 | 91 | 9 | 93[d] | 7[d] | 92[d] | 8[d] | 50 | 50 |
| | Portugal | 88 | 12 | 93 | 7 | x(9) | x(10) | x(9) | x(10) | 85[d] | 15[d] | x(9) | x(10) |
| | Slovak Republic | 89 | 11 | 90 | 10 | 84 | 16 | 91 | 9 | 89 | 11 | 91 | 9 |
| | Slovenia | 91 | 9 | 91 | 9 | 88 | 12 | 90 | 10 | 90 | 10 | a | a |
| | Spain | 84 | 16 | 91 | 9 | 87 | 13 | 95[d] | 5[d] | 90[d] | 10[d] | x(7, 9) | x(8, 10) |
| | Sweden | 100 | 0 | 100 | 0 | 100 | 0 | 100 | 0 | 100 | 0 | 100 | 0 |
| | Switzerland | m | m | m | m | m | m | 55[d] | 45[d] | m | m | x(7) | x(8) |
| | Turkey | 85 | 15 | 82 | 18 | 61 | 39 | 86 | 14 | 74 | 26 | a | a |
| | United Kingdom | 90 | 10 | 87 | 13 | 81 | 19 | 88 | 12 | 83 | 17 | a | a |
| | United States | 93 | 7 | 92 | 8 | x(9) | x(10) | x(9) | x(10) | 91 | 9 | 17 | 83 |
| | OECD average | 93 | 7 | 93 | 7 | 89 | 11 | 86 | 14 | 88 | 12 | 77 | 23 |
| | EU22 average | 94 | 6 | 94 | 6 | 93 | 7 | 90 | 10 | 91 | 9 | 81 | 19 |
| Partners | Argentina | 85 | 15 | 89 | 11 | 88 | 12 | a | a | 88 | 12 | a | a |
| | Brazil | m | m | m | m | m | m | m | m | m | m | m | m |
| | China | m | m | m | m | m | m | m | m | m | m | m | m |
| | Colombia[4] | 77 | 23 | 78 | 22 | x(9) | x(10) | x(9) | x(10) | 74 | 26 | x(9) | x(10) |
| | Costa Rica | m | m | m | m | m | m | m | m | m | m | a | a |
| | India | m | m | m | m | m | m | m | m | m | m | m | m |
| | Indonesia[4] | 97 | 3 | 92 | 8 | 74 | 26 | 75 | 25 | 74 | 26 | a | a |
| | Lithuania | 97 | 3 | 97 | 3 | 97 | 3 | 94 | 6 | 96 | 4 | 94 | 6 |
| | Russian Federation | x(5, 7, 9) | x(6, 8, 10) | x(5, 7, 9) | x(6, 8, 10) | 97[d] | 3[d] | 92[d] | 8[d] | 96[d] | 4[d] | x(5, 7, 9) | x(6, 8, 10) |
| | Saudi Arabia | m | m | m | m | m | m | m | m | m | m | m | m |
| | South Africa | m | m | m | m | m | m | m | m | m | m | m | m |
| | G20 average | m | m | m | m | m | m | m | m | m | m | m | m |

**Note:** Private expenditure figures include tuition fee loans. Loan repayments from private individuals are not taken into account, and so the private contribution to education costs may be under-represented. See *Definitions* and *Methodology* sections for more information. Data and more breakdowns available at http://stats.oecd.org/, Education at a Glance Database.

1. Excluding international funds.
2. Including subsidies attributable to payments to educational institutions received from public sources.
3. Primary education contains information from pre-primary and lower secondary education.
4. Year of reference 2015.
5. Private expenditure on government-dependent private institutions is included under public institutions.
6. Vocational programmes in upper secondary education include information from vocational programmes in lower secondary education.

**Source:** OECD/UIS/Eurostat (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

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B3

## Table B3.1b. Relative proportions of disaggregated public and private expenditure on educational institutions, by level of education (2014)

*Distribution of disaggregated public[1] and private[2] sources of funds for educational institutions after transfers from public sources*

| | | Primary, secondary and post-secondary non-tertiary education | | | | Tertiary education | | | | Primary to tertiary education | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Private sources | | | | Private sources | | | | Private sources | | |
| | | Public sources | Household expenditure | Expenditure of other private entities | All private sources | Public sources | Household expenditure | Expenditure of other private entities | All private sources | Public sources | Household expenditure | Expenditure of other private entities | All private sources |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
| OECD | Australia | 81 | 16 | 3 | 19 | 39 | 48 | 14 | 61 | 68 | 26 | 6 | 32 |
| | Austria | 95 | 3 | 1 | 5 | 94 | 3 | 3 | 6 | 95 | 3 | 2 | 5 |
| | Belgium | 96 | 4 | 0 | 4 | 88 | 6 | 6 | 12 | 94 | 4 | 2 | 6 |
| | Canada[3] | 91 | 4 | 5 | 9 | 48 | 26 | 25 | 52 | 73 | 13 | 14 | 27 |
| | Chile[4] | 83 | 17 | 0 | 17 | 36 | 55 | 9 | 64 | 64 | 32 | 4 | 36 |
| | Czech Republic | 91 | 7 | 2 | 9 | 76 | 10 | 14 | 24 | 87 | 8 | 5 | 13 |
| | Denmark | 97 | x(4) | x(4) | 3 | 95 | x(8) | x(8) | 5 | 97 | x(12) | x(12) | 3 |
| | Estonia | 98 | 2 | 1 | 2 | 85 | 8 | 7 | 15 | 93 | 4 | 3 | 7 |
| | Finland | 99 | 1 | 0 | 1 | 96 | 0 | 4 | 4 | 98 | 1 | 1 | 2 |
| | France | 91 | 8 | 1 | 9 | 79 | 12 | 10 | 21 | 87 | 9 | 4 | 13 |
| | Germany | 87 | x(4) | x(4) | 13 | 86 | x(8) | x(8) | 14 | 87 | x(12) | x(12) | 13 |
| | Greece | m | m | m | m | m | m | m | m | m | m | m | m |
| | Hungary | 95 | x(4) | x(4) | 5 | 70 | x(8) | x(8) | 30 | 89 | x(12) | x(12) | 11 |
| | Iceland | 96 | 4 | 0 | 4 | 91 | 8 | 1 | 9 | 95 | 5 | 0 | 5 |
| | Ireland | 95 | 5 | a | 5 | 74 | 21 | 5 | 26 | 91 | 8 | 1 | 9 |
| | Israel[5] | 88 | 8 | 4 | 12 | 52 | 27 | 21 | 48 | 79 | 13 | 8 | 21 |
| | Italy | 94 | 6 | 0 | 6 | 65 | 27 | 8 | 35 | 87 | 11 | 2 | 13 |
| | Japan[3] | 92 | 5 | 2 | 8 | 34 | 51 | 15 | 66 | 72 | 21 | 7 | 28 |
| | Korea | 87 | 12 | 1 | 13 | 34 | 42 | 24 | 66 | 68 | 23 | 9 | 32 |
| | Latvia | 98 | 2 | 0 | 2 | 79 | 20 | 1 | 21 | 92 | 7 | 0 | 8 |
| | Luxembourg | 97 | 2 | 0 | 3 | 95 | 3 | 2 | 5 | 97 | 2 | 0 | 3 |
| | Mexico | 82 | 17 | 0 | 18 | 71 | 29 | 0 | 29 | 79 | 20 | 0 | 21 |
| | Netherlands | 88 | 5 | 8 | 12 | 70 | 16 | 14 | 30 | 82 | 8 | 10 | 18 |
| | New Zealand | 83 | 12 | 5 | 17 | 51 | 34 | 15 | 49 | 74 | 19 | 7 | 26 |
| | Norway | 100 | 0 | 0 | 0 | 96 | 3 | 0 | 4 | 99 | 1 | 0 | 1 |
| | Poland | 92 | x(4) | x(4) | 8 | 81 | 16 | 2 | 19 | 89 | x(12) | x(12) | 11 |
| | Portugal[3] | 88 | 12 | 0 | 12 | 62 | 31 | 6 | 38 | 82 | 16 | 1 | 18 |
| | Slovak Republic[6] | 89 | 9 | 2 | 11 | 77 | 12 | 11 | 23 | 86 | 10 | 5 | 14 |
| | Slovenia | 91 | 9 | 0 | 9 | 86 | 12 | 2 | 14 | 90 | 10 | 1 | 10 |
| | Spain | 88 | 11 | 1 | 12 | 68 | 28 | 3 | 32 | 82 | 16 | 2 | 18 |
| | Sweden | 100 | 0 | 0 | 0 | 89 | 1 | 10 | 11 | 97 | 0 | 3 | 3 |
| | Switzerland | m | m | m | m | m | m | m | m | m | m | m | m |
| | Turkey | 80 | 14 | 5 | 20 | 75 | 13 | 12 | 25 | 79 | 14 | 7 | 21 |
| | United Kingdom | 87 | 11 | 2 | 13 | 28 | 48 | 25 | 72 | 71 | 21 | 8 | 29 |
| | United States | 91 | 9 | 0 | 9 | 35 | 46 | 19 | 65 | 67 | 25 | 8 | 33 |
| | OECD average | 91 | 7 | 2 | 9 | 70 | 22 | 10 | 30 | 85 | 12 | 4 | 15 |
| | EU22 average | 93 | 6 | 1 | 7 | 78 | 15 | 7 | 22 | 89 | 8 | 3 | 11 |
| Partners | Argentina | 87 | 13 | 0 | 13 | 86 | x(8) | x(8) | 14 | 87 | x(12) | x(12) | 13 |
| | Brazil | m | m | m | m | m | m | m | m | m | m | m | m |
| | China | m | m | m | m | m | m | m | m | m | m | m | m |
| | Colombia[4] | 77 | x(4) | x(4) | 23 | 46 | x(8) | x(8) | 54 | 68 | x(12) | x(12) | 32 |
| | Costa Rica | m | m | m | m | m | m | m | m | m | m | m | m |
| | India | m | m | m | m | m | m | m | m | m | m | m | m |
| | Indonesia[4] | 91 | 9 | 0 | 9 | 76 | x(12) | x(12) | 24 | 88 | x(12) | x(12) | 12 |
| | Lithuania | 96 | 2 | 2 | 4 | 77 | 18 | 5 | 23 | 89 | 8 | 3 | 11 |
| | Russian Federation | 96 | 3 | 1 | 4 | 66 | 23 | 11 | 34 | 85 | 10 | 5 | 15 |
| | Saudi Arabia | m | m | m | m | m | m | m | m | m | m | m | m |
| | South Africa | m | m | m | m | m | m | m | m | m | m | m | m |
| | G20 average | m | m | m | m | m | m | m | m | m | m | m | m |

**Note:** Private expenditure figures include tuition fee loans. Loan repayments from private individuals are not taken into account, and so the private contribution to education costs may be under-represented. Public expenditure figures presented here exclude undistributed programmes. See *Definitions* and *Methodology* sections for more information. Data and more breakdowns available at http://stats.oecd.org/, Education at a Glance Database.

1. Excluding international funds.
2. Including subsidies attributable to payments to educational institutions received from public sources.
3. Some levels of education are included with others. Refer to "x" code in Table B1.1 for details.
4. Year of reference 2015.
5. Private expenditure on government-dependent private institutions is included under public institutions.
6. Expenditure on public institutions for bachelor's, master's and doctoral degrees.

**Source:** OECD/UIS/Eurostat (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933560263

## Table B3.2a. Trends in the relative proportion of public expenditure on educational institutions and index of change in public and private expenditure, at primary, secondary, post-secondary non-tertiary level (2005, 2008, 2011 to 2014)

*Index of change of public sources of funds for educational institutions after transfers from public and private sources,[1] by year*

| | | Share of public expenditure[2] on educational institutions (%) | | | | | | Index of change between 2005 and 2014 in expenditure on educational institutions (2010 = 100, constant prices) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Public sources | | | | | | Private sources | | | | | |
| | | 2005 | 2008 | 2011 | 2012 | 2013 | 2014 | 2005 | 2008 | 2011 | 2012 | 2013 | 2014 | 2005 | 2008 | 2011 | 2012 | 2013 | 2014 |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) | (17) | (18) |
| OECD | Australia | 84 | 83 | 84 | 82 | 82 | 81 | 74 | 80 | 97 | 95 | 96 | 98 | 81 | 94 | 105 | 113 | 117 | 124 |
| | Austria | m | m | m | 96 | 96 | 95 | m | m | m | m | m | m | m | m | m | m | m | m |
| | Belgium | 95 | 95 | 96 | 96 | 96 | 96 | 88 | 100 | 101 | 103 | 104 | 105 | 113 | 121 | 95 | 95 | 95 | 101 |
| | Canada | 90 | 89 | 90 | 92 | 91 | 91 | 83 | 91 | 97 | 101 | 101 | 102 | 81 | 97 | 97 | 77 | 91 | 92 |
| | Chile | 69 | 77 | 79 | 78 | 78 | 79 | 78 | 100 | 105 | 123 | 115 | 110 | 125 | 107 | 102 | 122 | 116 | 106 |
| | Czech Republic | 90 | 90 | 91 | 91 | 91 | 91 | 90 | 96 | 103 | 103 | 100 | 101 | 100 | 100 | 101 | 101 | 102 | 99 |
| | Denmark | 98 | 98 | 97 | 97 | 97 | 97 | 93 | 91 | 92 | 101 | 100 | 107 | 80 | 90 | 108 | 120 | 123 | 114 |
| | Estonia | 99 | 99 | 99 | 99 | 98 | 98 | 92 | 114 | 93 | 94 | 94 | 93 | 78 | 92 | 81 | 67 | 131 | 172 |
| | Finland | 99 | 99 | 99 | 99 | 99 | 99 | 90 | 96 | 101 | 101 | 100 | 99 | 96 | 121 | 94 | 95 | 90 | 92 |
| | France | 91 | 91 | 91 | 91 | 91 | 91 | 95 | 99 | 98 | 98 | 98 | 99 | 94 | 98 | 101 | 102 | 105 | 105 |
| | Germany | 86 | 86 | 87 | 87 | 87 | 87 | 92 | 93 | 100 | 98 | 97 | 98 | 102 | 103 | 99 | 103 | 100 | 97 |
| | Greece | 93 | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Hungary | 95 | m | m | 94 | 92 | 95 | 119 | 113 | 94 | 89 | 86 | 105 | m | m | m | m | m | m |
| | Iceland | 96 | 96 | 96 | 96 | 96 | 96 | 107 | 115 | 103 | 102 | 105 | 110 | 107 | 110 | 101 | 106 | 111 | 112 |
| | Ireland | 97 | 98 | 96 | 96 | 95 | 95 | 72 | 93 | 96 | 95 | 89 | 89 | 55 | 52 | 99 | 101 | 99 | 100 |
| | Israel[3] | 94 | 93 | 89 | 90 | 90 | 88 | 78 | 93 | 108 | 114 | 118 | 120 | 57 | 84 | 153 | 148 | 152 | 192 |
| | Italy | 96 | 97 | 96 | 95 | 96 | 94 | 102 | 107 | 95 | 91 | 91 | 88 | 113 | 92 | 108 | 123 | 111 | 168 |
| | Japan | 90 | 90 | 93 | 93 | 93 | 92 | 93 | 95 | 100 | 102 | 100 | 102 | 136 | 141 | 101 | 104 | 106 | 112 |
| | Korea | 77 | 78 | 83 | 86 | 86 | 87 | 68 | 79 | 106 | 112 | 111 | 111 | 84 | 93 | 90 | 74 | 72 | 69 |
| | Latvia | 97 | 98 | 97 | 98 | 98 | 98 | 99 | 131 | 97 | 94 | 106 | 115 | 115 | 102 | 86 | 75 | 77 | 82 |
| | Luxembourg | m | m | 98 | 98 | 97 | 97 | 95 | m | 95 | 92 | 84 | 93 | m | 104 | 90 | 99 | 121 | 118 |
| | Mexico | 83 | 83 | 83 | 83 | 83 | 82 | 90 | 93 | 104 | 107 | 110 | 112 | 89 | 92 | 105 | 106 | 111 | 114 |
| | Netherlands | 87 | 87 | 87 | 87 | 87 | 88 | 88 | 92 | 99 | 99 | 100 | 98 | 86 | 95 | 101 | 101 | 95 | 92 |
| | New Zealand | m | m | m | 83 | 83 | 83 | m | m | m | m | m | m | m | m | m | m | m | m |
| | Norway | 100 | 100 | 100 | 100 | 100 | 100 | 91 | 89 | 95 | 95 | 99 | 100 | a | a | a | a | a | a |
| | Poland[4] | 98 | 94 | 94 | 92 | 92 | 92 | 86 | 95 | 99 | 99 | 99 | 101 | 24 | 93 | 97 | 129 | 128 | 139 |
| | Portugal | m | m | m | 85 | 88 | 88 | 93 | 89 | 94 | 89 | 94 | 90 | m | m | m | m | m | m |
| | Slovak Republic | 86 | 85 | 89 | 88 | 89 | 89 | 72 | 82 | 94 | 93 | 97 | 102 | 85 | 107 | 89 | 92 | 92 | 91 |
| | Slovenia | 92 | 92 | 91 | 91 | 91 | 91 | 98 | 101 | 98 | 94 | 92 | 91 | 91 | 97 | 100 | 98 | 98 | 99 |
| | Spain | 93 | 93 | 91 | 89 | 88 | 88 | 85 | 98 | 97 | 90 | 86 | 86 | 67 | 81 | 106 | 129 | 134 | 135 |
| | Sweden | 100 | 100 | 100 | 100 | 100 | 100 | 98 | 101 | 100 | 101 | 102 | 104 | a | a | a | a | a | a |
| | Switzerland | m | m | m | m | m | m | 92 | 94 | 102 | 104 | 106 | 107 | m | m | m | m | m | m |
| | Turkey | m | m | 84 | 82 | 83 | 80 | 69 | 84 | 118 | 130 | 141 | 147 | m | m | m | m | m | m |
| | United Kingdom | m | m | 86 | 84 | 84 | 87 | 96 | 90 | 111 | 112 | 124 | 132 | m | m | m | m | m | m |
| | United States | 92 | 92 | 91 | 91 | 91 | 91 | 91 | 101 | 97 | 95 | 95 | 96 | 98 | 109 | 110 | 111 | 109 | 110 |
| | OECD average | 92 | 92 | 92 | 91 | 91 | 91 | 89 | 97 | 100 | 100 | 101 | 103 | 90 | 99 | 101 | 104 | 107 | 113 |
| | EU22 average | 94 | 94 | 94 | 93 | 93 | 93 | 92 | 99 | 98 | 97 | 97 | 100 | 87 | 97 | 97 | 102 | 106 | 113 |
| Partners | Argentina | m | m | m | 92 | 87 | 87 | m | m | m | m | m | m | m | m | m | m | m | m |
| | Brazil | m | m | m | m | m | m | 61 | 88 | 104 | 105 | 108 | 106 | m | m | m | m | m | m |
| | China | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Colombia | m | m | m | m | 78 | 77 | m | m | m | m | m | m | m | m | m | m | m | m |
| | Costa Rica | m | m | m | m | 85 | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | India | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Indonesia | m | m | m | 91 | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Lithuania | m | m | 97 | 97 | 97 | 96 | m | m | m | m | m | m | m | m | 117 | 116 | 135 | 139 |
| | Russian Federation | m | 97 | 96 | 97 | 96 | 96 | 79 | 105 | 103 | 119 | 123 | 117 | m | 109 | 139 | 129 | 144 | 143 |
| | Saudi Arabia | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | South Africa | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | G20 average | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |

**Note:** See *Definitions* and *Methodology* sections for more information. Data and more breakdowns available at http://stats.oecd.org/, Education at a Glance Database.

1. Excluding international funds.
2. Including subsidies attributable to payments to educational institutions received from public sources.
3. Private expenditure on government-dependent private institutions is included under public institutions.
4. Some levels of education are included with others. Refer to "x" code in Table B1.1 for details.

**Source:** OECD/UIS/Eurostat (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933560282

B3

## Table B3.2b. Trends in the relative proportion of public expenditure on tertiary educational institutions and index of change in public and private expenditure (2005, 2008, 2011 to 2014)

*Index of change of public sources of funds for educational institutions after transfers from public and private sources,[1] by year*

| | | Share of public expenditure[2] on educational institutions (%) | | | | | | Index of change between 2005 and 2014 in expenditure on educational institutions (2010 = 100, constant prices) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Public sources | | | | | | Private sources | | | | | |
| | | 2005 | 2008 | 2011 | 2012 | 2013 | 2014 | 2005 | 2008 | 2011 | 2012 | 2013 | 2014 | 2005 | 2008 | 2011 | 2012 | 2013 | 2014 |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) | (17) | (18) |
| OECD | Australia | 45 | 45 | 46 | 45 | 42 | 39 | 77 | 85 | 100 | 101 | 103 | 106 | 81 | 91 | 104 | 108 | 121 | 146 |
| | Austria | m | m | m | 95 | 95 | 94 | m | m | m | m | m | m | m | m | m | m | m | m |
| | Belgium | 91 | 90 | 90 | 90 | 89 | 88 | 85 | 93 | 101 | 102 | 106 | 107 | 76 | 92 | 100 | 104 | 110 | 129 |
| | Canada | 55 | 63 | 57 | 52 | 50 | 48 | 80 | 97 | 97 | 91 | 89 | 88 | 88 | 77 | 97 | 111 | 122 | 126 |
| | Chile | 15 | 14 | 22 | 24 | 35 | 38 | 46 | 48 | 104 | 124 | 178 | 194 | 77 | 87 | 112 | 119 | 103 | 99 |
| | Czech Republic | 81 | 79 | 81 | 79 | 77 | 76 | 76 | 97 | 124 | 111 | 97 | 91 | 66 | 96 | 108 | 108 | 108 | 105 |
| | Denmark | 97 | 96 | 95 | m | 94 | 95 | 94 | 93 | 102 | 88 | 94 | 97 | 61 | 82 | 112 | m | 114 | 103 |
| | Estonia | 70 | 79 | 80 | 78 | 82 | 85 | 76 | 102 | 118 | 100 | 136 | 146 | 100 | 84 | 88 | 85 | 94 | 82 |
| | Finland | 96 | 95 | 96 | 96 | 96 | 96 | 86 | 92 | 104 | 102 | 99 | 97 | 82 | 105 | 105 | 96 | 95 | 83 |
| | France | 84 | 82 | 81 | 80 | 79 | 79 | 87 | 95 | 99 | 98 | 99 | 100 | 77 | 97 | 107 | 112 | 120 | 123 |
| | Germany | 87 | 87 | 87 | 86 | 86 | 86 | 81 | 92 | 105 | 105 | 105 | 108 | 79 | 91 | 103 | 110 | 112 | 114 |
| | Greece | 97 | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Hungary[3] | 78 | m | m | 54 | 63 | 70 | 104 | 110 | 117 | 82 | 97 | 85 | m | m | m | m | m | m |
| | Iceland | 91 | 92 | 91 | 92 | 91 | 91 | 98 | 115 | 97 | 111 | 114 | 118 | 105 | 101 | 104 | 103 | 113 | 116 |
| | Ireland | 84 | 83 | 80 | 84 | 78 | 74 | 75 | 97 | 93 | 97 | 79 | 77 | 62 | 89 | 98 | 82 | 98 | 115 |
| | Israel[4] | 53 | 51 | 49 | 57 | 53 | 52 | 81 | 87 | 100 | 106 | 112 | 111 | 85 | 98 | 124 | 94 | 120 | 120 |
| | Italy | 73 | 71 | 66 | 66 | 67 | 65 | 98 | 106 | 99 | 94 | 96 | 93 | 75 | 92 | 104 | 101 | 97 | 104 |
| | Japan[3] | 34 | 33 | 34 | 34 | 35 | 34 | 89 | 96 | 104 | 103 | 109 | 104 | 92 | 101 | 104 | 104 | 105 | 105 |
| | Korea | 24 | 22 | 27 | 29 | 33 | 34 | 64 | 75 | 104 | 111 | 124 | 132 | 76 | 99 | 105 | 100 | 97 | 96 |
| | Latvia | 56 | 65 | 63 | 64 | 68 | 79 | 109 | 149 | 130 | 128 | 136 | 168 | 130 | 123 | 117 | 110 | 98 | 69 |
| | Luxembourg | m | m | m | 95 | 98 | 95 | m | m | m | m | m | m | m | m | m | m | m | m |
| | Mexico | 69 | 70 | 67 | 70 | 68 | 71 | 77 | 89 | 93 | 105 | 98 | 121 | 80 | 88 | 106 | 106 | 109 | 113 |
| | Netherlands | 73 | 71 | 71 | 71 | 70 | 70 | 86 | 91 | 102 | 103 | 103 | 105 | 81 | 93 | 107 | 109 | 111 | 115 |
| | New Zealand | m | m | m | 52 | 52 | 51 | m | m | m | m | m | m | m | m | m | m | m | m |
| | Norway | m | 97 | 96 | 96 | 96 | 96 | 98 | 91 | 97 | 98 | 102 | 111 | m | 70 | 99 | 94 | 101 | 103 |
| | Poland | 74 | 71 | 76 | 78 | 80 | 81 | 91 | 80 | 99 | 103 | 114 | 115 | 80 | 80 | 81 | 75 | 69 | 66 |
| | Portugal[3] | 68 | 62 | 69 | 54 | 58 | 62 | 89 | 86 | 92 | 69 | 76 | 80 | 93 | 117 | 94 | 130 | 121 | 107 |
| | Slovak Republic | 77 | 73 | 77 | 74 | 76 | 77 | 86 | 98 | 121 | 125 | 136 | 142 | 60 | 86 | 86 | 105 | 104 | 99 |
| | Slovenia | 77 | 84 | 85 | 86 | 87 | 86 | 84 | 96 | 101 | 97 | 92 | 90 | 142 | 102 | 97 | 86 | 75 | 82 |
| | Spain | 78 | 79 | 77 | 73 | 69 | 68 | 79 | 95 | 97 | 85 | 81 | 80 | 80 | 91 | 101 | 113 | 129 | 132 |
| | Sweden | 88 | 89 | 90 | 89 | 90 | 89 | 84 | 88 | 101 | 102 | 104 | 106 | 108 | 105 | 114 | 119 | 117 | 125 |
| | Switzerland | m | m | m | m | m | m | 98 | 89 | 105 | 109 | 111 | 118 | m | m | m | m | m | m |
| | Turkey | m | m | 81 | 75 | 76 | 75 | 70 | 80 | 195 | 201 | 215 | 230 | m | m | m | m | m | m |
| | United Kingdom | m | m | m | m | m | 28 | m | m | m | m | m | m | m | m | m | m | m | m |
| | United States | 42 | 41 | 39 | 38 | 36 | 35 | 90 | 99 | 101 | 101 | 94 | 92 | 83 | 94 | 105 | 110 | 109 | 116 |
| | OECD average | 70 | 70 | 70 | 70 | 71 | 70 | 85 | 94 | 107 | 105 | 110 | 114 | 85 | 94 | 103 | 104 | 106 | 107 |
| | EU22 average | 80 | 80 | 80 | 78 | 80 | 78 | 87 | 98 | 106 | 99 | 103 | 105 | 85 | 96 | 101 | 103 | 104 | 103 |
| Partners | Argentina | m | m | m | m | 93 | 86 | m | m | m | m | m | m | m | m | m | m | m | m |
| | Brazil | m | m | m | m | m | m | 70 | 83 | 113 | 107 | 110 | 107 | m | m | m | m | m | m |
| | China | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Colombia | m | m | m | m | 43 | 50 | m | m | m | m | m | m | m | m | m | m | m | m |
| | Costa Rica | m | m | m | m | 59 | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | India | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Indonesia | m | m | m | 71 | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Lithuania | 64 | 68 | 74 | 75 | 75 | 77 | 74 | 94 | 128 | 129 | 128 | 134 | 89 | 97 | 99 | 95 | 92 | 88 |
| | Russian Federation | m | 64 | 63 | 64 | 65 | 66 | 69 | 102 | 94 | 97 | 102 | 100 | m | 93 | 92 | 92 | 91 | 85 |
| | Saudi Arabia | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | South Africa | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | G20 average | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |

**Note:** See *Definitions* and *Methodology* sections for more information. Data and more breakdowns available at http://stats.oecd.org/, Education at a Glance Database.

1. Excluding international funds.
2. Including subsidies attributable to payments to educational institutions received from public sources.
3. Some levels of education are included with others. Refer to "x" code in Table B1.1 for details.
4. Private expenditure on government-dependent private institutions is included under public institutions.

**Source:** OECD/UIS/Eurostat (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

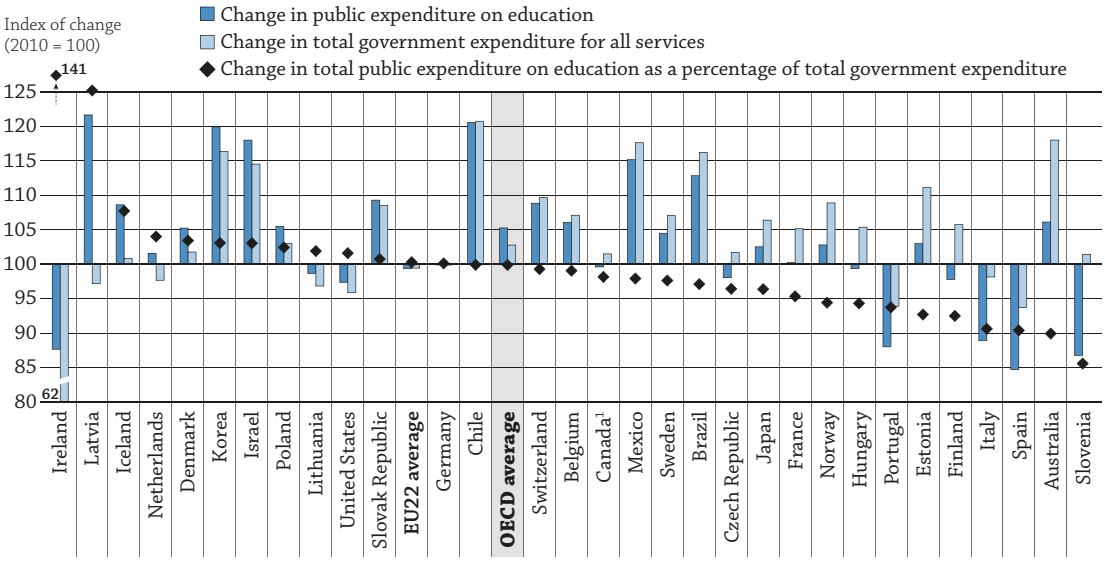
StatLink http://dx.doi.org/10.1787/888933560301

## WHAT IS THE TOTAL PUBLIC SPENDING ON EDUCATION?

- Across OECD countries, total public spending on primary to tertiary education averages 11.3% of total government expenditure, ranging in OECD and partner countries from less than 8% in the Czech Republic, Hungary, Italy and the Russian Federation to at least 16% in Brazil, Costa Rica, Indonesia, Mexico, New Zealand and South Africa.
- While the average share of total public expenditure across OECD countries on primary to tertiary education in total government expenditure remained stable (11%) between 2010 and 2014, in 18 OECD and partner countries the share decreased. Others, such as Ireland and Latvia, saw an increase of more than 20% over the four-year period (Figure B4.1).
- In tertiary education, on average 85% of final public funds (after transfers between levels of government) come from the central government. In primary, secondary and post-secondary non-tertiary education, spending is much more decentralised, with 58% of final funds managed by regional and local governments.

### Figure B4.1. Change in total public expenditure on education as a share of total government expenditure between 2010 and 2014

*Primary to tertiary education (2010 = 100, constant prices)*




1. Includes pre-primary education.

*Countries are ranked in descending order of the change in total public expenditure on primary to tertiary education as a percentage of total government expenditure.*

**Source**: OECD/UIS/Eurostat (2017), Table B4.2. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933557964

### Context

Decisions concerning budget allocations to various sectors – including education, healthcare, social security and defence – depend on countries' priorities and on the options for private provision of these services. Government funding is necessary in situations where the public benefit is high, but where private costs are greater than private benefits.

In the years following the economic crisis, various OECD countries adopted austerity measures, which led to sharp budget cuts, including in the education sector. As a result, expenditure per student decreased after the crisis in many countries (see Indicator B1). Although cuts can be the result of better allocation of government funds, gains in efficiency and economic dynamism, they can also affect the quality of government-provided education, particularly at a time when investment in education

is important to resume economic growth. For example, during a crisis there may be an increasing demand to provide education and training for young and unemployed people who find it harder to compete in a more restricted labour market.

This indicator compares total public spending on education with total government spending across OECD and partner countries. In addition, it includes data on the different sources of public funding invested in education (central, regional and local governments) and on the transfers of funds between these levels of government.

## Other findings

- Most OECD and partner countries with available data (38 out of 43 countries) spend more than twice as much on primary, secondary and post-secondary non-tertiary education combined as they do on tertiary education.
- The proportion of government expenditure devoted to primary to tertiary education decreased between 2005 and 2014 in more than two-thirds of the countries with available data for both years. It remained stable in most others and in a number of countries it increased, most notably in Chile and Korea, where the increase was higher than 2 percentage points.
- On average across OECD countries, central governments provide 55% of public expenditure's initial funds for primary, secondary and post-secondary non-tertiary education. This share is higher in tertiary education with 87% of the initial funds coming from central government.

B4

## Analysis

### Overall level of public resources invested in education

In 2014, in OECD countries, the share of total public expenditure on primary to tertiary education in total government expenditure on all services averaged 11.3%, ranging in OECD and partner countries, from less than 8% in the Czech Republic, Hungary, Italy and the Russian Federation to at least 16% in Brazil, Costa Rica, Indonesia, Mexico, New Zealand and South Africa (Figure B4.2 and Table B4.1).

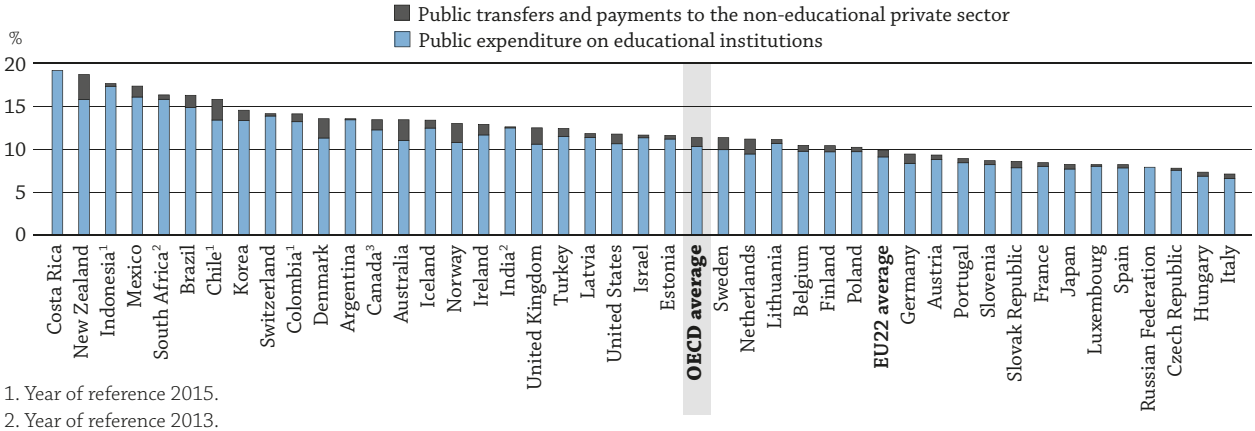
In most countries, and on average across OECD countries, roughly one-third of the total public expenditure on primary to tertiary education was devoted to primary education. This is largely explained by the near-universal enrolment rates at this level of education (see Indicator C1) and the demographic structure of the population. Total public expenditure on secondary education takes up 4.6% of total government expenditure, evenly split between lower and upper secondary education.

On average across OECD countries, 28% of total public expenditure on education was devoted to tertiary education. Country shares ranged from about 20% or less in Indonesia, Israel, Portugal and South Africa to over 35% in Austria, Norway and Turkey (Table B4.1).[1]

Total public expenditure on education includes direct expenditure on institutions (such as operating costs of public schools) and both transfers to the non-educational private sector that are attributable to educational institutions and public subsidies to households for living costs, which are not spent in educational institutions.[2] The level of these transfers and payments for primary to tertiary education is relatively small in OECD countries. In 2014, these public expenditures only represented 1% of total government expenditure and accounted for 9% of public expenditure on education with the remaining 91% corresponding to direct expenditure on educational institutions. However the percentage varies by country. Public transfers and payments to the non-educational private sector represent more than 2% of total government expenditure in countries like Australia, Chile, Denmark, New Zealand and Norway, and less than 0.3% in Argentina, the Czech Republic, India, Luxembourg and Switzerland.

**Figure B4.2. Composition of total public expenditure on education as a percentage of total government expenditure (2014)**

*Primary to tertiary education*




1. Year of reference 2015.
2. Year of reference 2013.
3. Includes pre-primary education.

*Countries are ranked in descending order of total public expenditure on primary to tertiary education as a percentage of total government expenditure.*

**Source**: OECD/UIS/Eurostat (2017), Table B4.1. See Source section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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When public expenditure on education is considered as a proportion of total government spending, the relative size of public budgets must be taken into account. Total public expenditure on education relative to GDP (including public student loans and subsidies to households for living costs that are not spent in educational institutions – contrary to Indicator B2) presents a very different picture from public expenditure on education relative to total government expenditure. In 2014, public expenditure on primary to tertiary education as a proportion of GDP was on average across OECD countries 4.8%, ranging in OECD and partner countries from less than 3.5% in the Czech Republic, India, Indonesia, Japan and the Russian Federation to 7.4% or more in Denmark and Norway.

Total government expenditure on all services (including education, health, social security and the environment) as a proportion of GDP varies greatly among countries (Table B4.1). In 2014, one in four countries with available data reported that total government expenditure on all services was more than 50% of GDP, including Finland, where it accounts for the highest share (58%). A high share of public expenditure on education in total government expenditure does not necessarily translate into a high share of public expenditure on education in GDP. For example, Chile and Indonesia allocate at least 15% of their total government expenditure to education (i.e. more than the OECD average of 11%); however public expenditure on education is relatively low if considered as a share of GDP (4% in Chile and 3.1% in Indonesia, lower than the OECD average of 4.8%). This can be explained by the relatively low size of total government expenditure compared to GDP (25% in Chile and 17% in Indonesia).

### Changes in total public expenditure on education as a percentage of total government expenditure between 2005 and 2014

Between 2005 and 2014, the percentage of total public expenditure on primary to tertiary education decreased in 23 of the 30 countries with available data. The decrease was especially substantial (2.5 percentage points or more) in Mexico and Slovenia, while it increased by more than 2 percentage points in Chile and Korea (Table B4.2).

The share of public expenditure on education in total government expenditure decreased slightly between 2005 and 2010 on average across the OECD. In Ireland, which was severely hit at the beginning of the financial crisis, the share fell by 4 percentage points.

In the years following the crisis, from 2010 to 2014, 19 of the 32 countries with available data increased their public expenditure on education. In Chile, Korea, Latvia and Turkey, it rose by one-fifth or more in the four-year period. On the other hand, in nine countries public expenditure on education decreased between 2010 and 2014: Spain (-15%), Slovenia (-13%), Ireland and Portugal (-12%) as well as Italy (-11%) experienced the strongest decrease. With the exception of the Czech Republic, Finland, Hungary and Slovenia, all countries that reduced their level of public expenditure on education also reduced their overall government spending. In most countries, however, total government expenditure increased (on average by 3% across the OECD). Despite this increase, the overall share of total public expenditure on education in total government spending remained stable over the period 2010 to 2014 (at 11%) (Table B4.2). Although the share decreased in 18 countries, in others – such as Ireland and Latvia – it increased by more than 20% over the four-year period (Figure B4.1): in Ireland this was the result of a sharper decrease in total government spending on all services (-38%) than in public expenditure on education (-12%).

### Sources of public funding invested in education

The government sources of expenditure on education (apart from international sources) can be classified into three different levels of government: central, regional and local. In some countries, education funding is centralised, while in others it can be decentralised following fund transfers among the different levels of government. Additionally, in recent years, many schools have become more autonomous and decentralised. They have also become more accountable to students, parents and the public at large for their outcomes. The results of the OECD Programme for International Student Assessment (PISA) suggest that when autonomy and accountability are intelligently combined, they tend to be associated with better student performance (OECD, 2016).

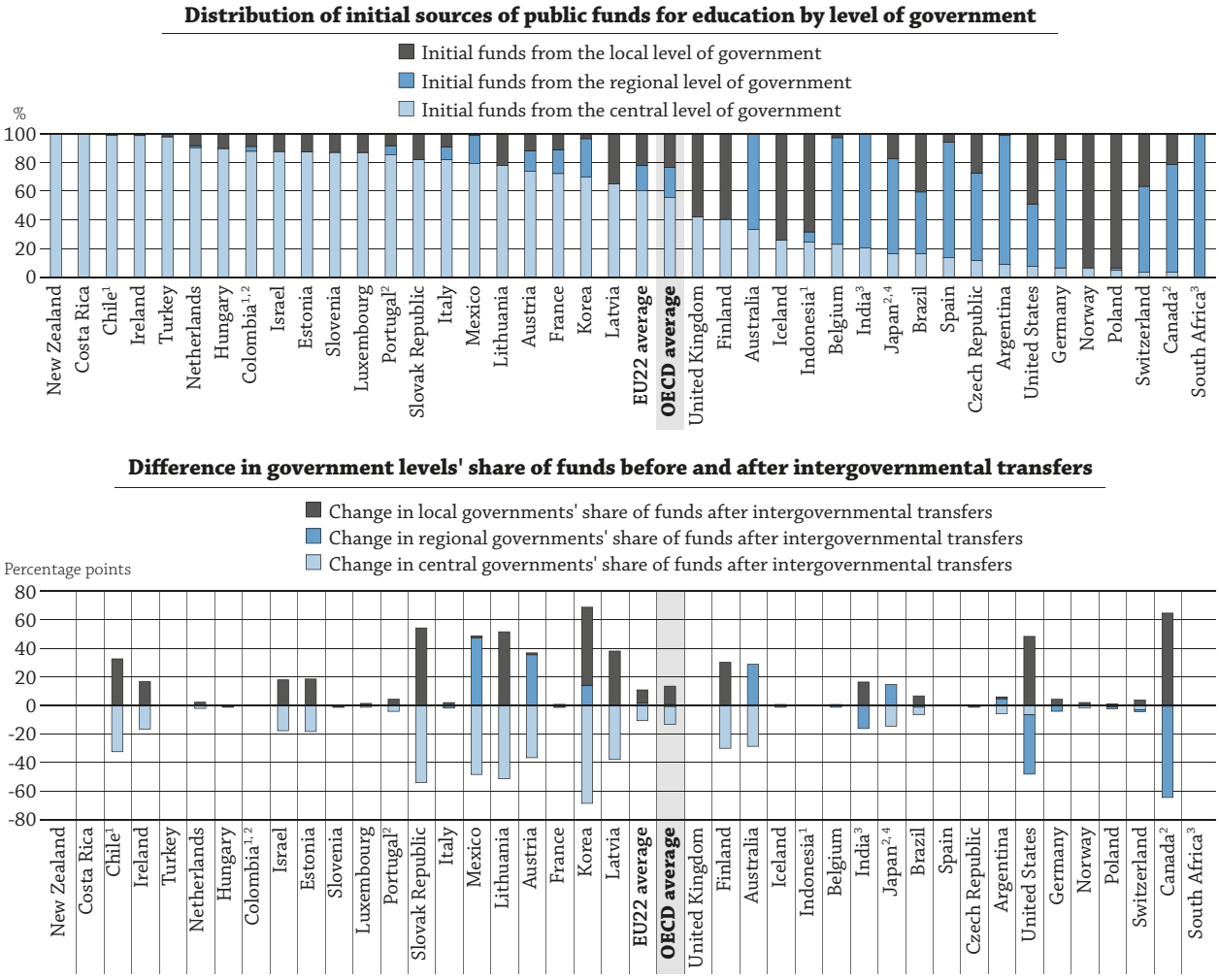
Public funding is more centralised at the tertiary level than at lower levels of education. In 2014, on average across OECD countries, 55% of the public funds for primary, secondary and post-secondary non-tertiary education combined came from central government, before being transferred to the various levels of government (referred to as initial funding). This compares to 87% for tertiary education (Table B4.3).

For primary, secondary and post-secondary non-tertiary education combined, the share of initial public funds from central government differs greatly among countries (Figure B4.3). Eight countries reported a share of less than 10%, namely Argentina, Canada, Germany, Norway, Poland, South Africa, Switzerland and the United States. At the other extreme, public funds come almost exclusively from central government in Chile, Costa Rica, Ireland, New Zealand and Turkey, while more than 90% of initial public funds come from central government in Hungary and the Netherlands. Nevertheless, this picture changes when transfers among levels of government are taken into account. After these transfers, 5% or less of public funds come from central sources in Australia, Canada, Japan and Korea as well as for other countries like Argentina, Norway, Poland, South Africa, Switzerland and the United States, where the share of central funding is low even before accounting for intergovernmental transfers. Only Costa Rica and New Zealand had an entirely centralised funding system. Although 16 countries do not have regional governments, in countries that do – such as Argentina, Canada, Germany, India, South Africa and Spain – three-quarters or more of public expenditure's initial funds in primary, secondary and post-secondary non-tertiary education come from regional governments. Local governments account for 90% or more of funds in Finland, Norway, Poland and the United States, after transfers.

B4

## Figure B4.3. Distribution of initial sources of public funds for education and change in government levels' share of funds after intergovernmental transfers (2014)

*Primary, secondary and post-secondary non-tertiary education*




1. Year of reference 2015.
2. Some levels of education are included with others. Refer to "x" code in Table B4.1 for details.
3. Year of reference 2013.
4. Regional transfers to local governments are included in the regional rather than local final funds.

*Countries are ranked in descending order of the share of initial sources of funds from the central level of government.*

**Source**: OECD/UIS/Eurostat (2017), Table B4.3. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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On average across OECD countries, the funds transferred from central to regional and local levels of government at the primary, secondary and post-secondary non-tertiary levels combined are larger than at tertiary level. This extends the scope for decentralisation at these levels of education. On average across OECD countries, in fact, the 55% of public funds for primary, secondary and post-secondary non-tertiary education observed from the central government before transfers drops to 42% after transfers, while the share of regional and local funds rises from 21% to 22% and from 24% to 36%, from before to after transfers respectively. For these educational levels combined (from primary to post-secondary non-tertiary), there is great variation among countries in the differences after transfers from central to lower levels of government. In Korea, Lithuania, Mexico and the Slovak Republic the difference is more than 40 percentage points in the central level of government after transfers to regional and local governments, while in Austria, Chile, Finland and Latvia, the difference is between 30 and 40 percentage points. In Canada and the United States, the share of regional funding decreased by over 40 percentage points after transfers to local levels of government (Figure B4.3).

Tertiary education, however, is much more centralised than the lower levels since the proportions of public funds coming from the central government are relatively large, both before and after transfers among levels of government. Across the OECD, on average, 87% of funds before transfers and 85% of funds after transfers are managed by central government. In 17 countries, central government is the only source of initial funding for tertiary education, and in all those countries (except Ireland and the Slovak Republic), there are no transfers to regional or local governments at the tertiary level. In contrast, in five countries (Belgium, Germany, India, Spain and Switzerland), over half of tertiary-level funding has its source in regional governments, and very little is transferred to local governments. Local governments, however, do not account for much of the funding at tertiary level, unlike in primary, secondary and post-secondary non-tertiary education. Public funds from local sources represent, on average across OECD countries, less than 3% of the funds before and after transfers. The only exceptions are Finland, Ireland and the United States, where local governments fund over 10% of tertiary education after transfers.

## Definitions

**Intergovernmental transfers** are transfers of funds designated for education from one level of government to another. They are defined as net transfers from a higher level to a lower level of government. Therefore, initial funds refer to the funds before transfers between levels of government, while final funds refer to the funds after transfers.

**Public expenditure on education** covers expenditure on educational institutions and support for students' living costs and for other private expenditure outside institutions. It includes expenditure by all public entities, including ministries other than ministries of education, local and regional governments and other public agencies. OECD countries differ in the ways in which they use public money for education. Public funds may flow directly to institutions or may be channelled to institutions via government programmes or via households. They may also be restricted to the purchase of educational services or be used to support students' living costs.

All government sources of expenditure on education, apart from international sources, can be classified into three levels: central (national) government, regional government (province, state, *Bundesland*, etc.) and local government (municipality, district, commune, etc.). The terms "regional" and "local" apply to governments whose responsibilities are exercised within certain geographical subdivisions of a country. They do not apply to government bodies whose roles are not geographically circumscribed but are defined in terms of responsibility for particular services, functions or categories of students.

**Total government expenditure** corresponds to the non-repayable current and capital expenditure on all functions (including education) of all levels of government (central, regional and local), non-market institutions that are controlled by government units and social security funds. It does not include expenditure derived from public corporations such as publicly owned banks, harbours and airports. It includes direct public expenditure on educational institutions (as defined above) as well as public support to households (e.g. scholarships and loans to students for tuition fees and student living costs) and to other private entities for education (e.g. subsidies to companies or labour organisations that operate apprenticeship programmes).

## Methodology

Figures for total government expenditure and GDP have been taken from the OECD National Accounts Database (see Annex 2).

Public expenditure on education is expressed as a percentage of a country's total government expenditure. The statistical concept of total government expenditure by function is defined by the National Accounts' Classification of the Functions of Government (COFOG). There are strong links between COFOG classification and the UNESCO, OECD and Eurostat (UOE) data collection, although the underlying statistical concepts differ to some extent (European Commission, Eurostat, 2011).

Although expenditure on debt servicing (e.g. interest payments) is included in total government expenditure, it is excluded from public expenditure on education. The reason is that some countries cannot separate interest payments for education from those for other services. This means that public expenditure on education as a percentage of total government expenditure may be underestimated in countries in which interest payments represent a large proportion of total government expenditure on all services.

## Source

Data refer to the financial year 2014 (unless otherwise specified) and are based on the UOE data collection on education statistics administered by the OECD in 2016 (for details see Annex 3 at www.oecd.org/education/education-at-a-glance-19991487.htm). Data from Argentina, China, Colombia, India, Indonesia, Saudi Arabia, South Africa are from the UNESCO Institute of Statistics (UIS).

## Notes

1. Luxembourg is not listed, as spending on tertiary education excludes funds spent abroad and cannot be compared with other countries.

2. Public transfers to the non-educational private sector include public student loans, grants, scholarships and subsidies to private student loans.

**Note regarding data from Israel**

The statistical data for Israel are supplied by and are under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

## References

European Commission, Eurostat, (2011), *Manual on Sources and Methods for the Compilation of COFOG Statistics, Classification of the Functions of Government (COFOG) – 2011 edition*, Eurostat Methodologies and Working Papers, Luxembourg, http://dx.doi.org/10.2785/16355.

OECD (2016), *PISA 2015 Results (Volume II): Policies and Practices for Successful Schools*, PISA, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264267510-en.

## Indicator B4 Tables

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| | |
|---|---|
| Table B4.1 | Total public expenditure on education (2014) |
| Table B4.2 | Trends in total public expenditure on primary to tertiary education (2005, 2008, 2010 to 2014) |
| Table B4.3 | Share of sources of public funds by level of government (2014) |

Cut-off date for the data: 19 July 2017. Any updates on data can be found on line at http://dx.doi.org/10.1787/eag-data-en.

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## Table B4.1. Total public expenditure on education (2014)

*Direct public expenditure on educational institutions plus public subsidies to households and other private entities,[1] as a percentage of total government expenditure, by level of education*

| | | Public expenditure[1] on education as a percentage of total public expenditure | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Secondary | | | | Tertiary (including R&D activities) | | | | Primary to tertiary (including R&D activities) | |
| | | Primary | Lower secondary | Upper secondary | All secondary | Post-secondary non-tertiary | Short-cycle tertiary | Bachelor's, master's and doctoral degrees | All tertiary | All tertiary (excluding R&D activities) | Total | Of which: public transfers and payments to the non-educational private sector |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) |
| OECD | Australia | 4.7 | 2.8 | 1.8 | 4.7 | 0.2 | 0.7 | 3.1 | 3.8 | 2.2 | 13.4 | **2.4** |
| | Austria | 1.7 | 2.3 | 1.9 | 4.2 | 0.0 | 0.5 | 2.8 | 3.4 | 2.5 | 9.3 | **0.5** |
| | Belgium | 2.8 | 1.6 | 3.4[d] | 5.0[d] | x(3, 4) | 0.1 | 2.6 | 2.6 | 1.9 | 10.4 | **0.7** |
| | Canada[2] | 5.2[d] | x(1) | 3.6 | 3.6 | m | 1.6 | 3.1 | 4.6 | 3.4 | 13.4 | **1.2** |
| | Chile[3] | 5.0 | 2.1 | 3.6 | 5.7 | a | 0.6 | 4.4 | 5.0 | 4.6 | 15.8 | **2.4** |
| | Czech Republic | 1.8 | 2.1 | 2.0 | 4.1 | 0.0 | 0.0 | 1.9 | 1.9 | 1.2 | 7.8 | **0.2** |
| | Denmark | 3.8 | 2.2 | 3.3 | 5.5 | a | x(8) | x(8) | 4.2 | m | 13.5 | **2.2** |
| | Estonia | 3.5 | 1.8 | 1.9 | 3.7 | 0.6 | a | 3.7 | 3.7 | 2.4 | 11.6 | **0.4** |
| | Finland | 2.4 | 1.9 | 2.7[d] | 4.6[d] | x(3, 4) | a | 3.4 | 3.4 | 2.4 | 10.4 | **0.7** |
| | France | 2.0 | 2.2 | 2.0 | 4.2 | 0.0 | 0.5 | 1.7 | 2.2 | 1.5 | 8.4 | **0.4** |
| | Germany | 1.4 | 2.8 | 1.9 | 4.7 | 0.4 | 0.0 | 3.0 | 3.0 | 2.0 | 9.4 | **1.1** |
| | Greece | m | m | m | m | m | m | m | m | m | m | **m** |
| | Hungary | 1.2 | 1.2 | 2.9 | 4.1 | 0.5 | 0.1 | 1.5 | 1.6 | 1.3 | 7.3 | **0.5** |
| | Iceland | 5.1 | 2.4 | 2.5 | 4.9 | 0.1 | 0.1 | 3.2 | 3.3 | m | 13.4 | **0.9** |
| | Ireland | 4.8 | 2.2 | 2.2 | 4.4 | 1.0 | x(8) | x(8) | 2.7 | 2.0 | 12.9 | **1.2** |
| | Israel | 5.4 | x(3) | 4.1[d] | 4.1 | 0.0 | 0.3 | 1.8 | 2.2 | m | 11.6 | **0.3** |
| | Italy | 2.0 | 1.4 | 2.0 | 3.4 | 0.2 | 0.0 | 1.6 | 1.6 | 0.9 | 7.1 | **0.5** |
| | Japan | 3.0 | 1.8 | 1.7[d] | 3.5[d] | x(3, 4, 6, 7, 8) | 0.2[d] | 1.6[d] | 1.8[d] | m | 8.2 | **0.5** |
| | Korea | 5.0 | 3.0 | 3.2 | 6.2 | a | 0.4 | 2.9 | 3.3 | 2.5 | 14.5 | **1.2** |
| | Latvia | 4.2 | 2.0 | 2.4 | 4.4 | 0.2 | 0.4 | 2.6 | 3.0 | 2.4 | 11.8 | **0.5** |
| | Luxembourg | 3.0 | 1.9 | 2.1 | 4.0 | 0.0 | 0.1 | 1.1 | 1.2 | 0.8 | 8.2 | **0.2** |
| | Mexico | 6.6 | 3.4 | 3.0 | 6.4 | a | x(8) | x(8) | 4.3 | 3.1 | 17.3 | **1.3** |
| | Netherlands | 2.7 | 2.6 | 2.3 | 4.8 | 0.0 | 0.0 | 3.6 | 3.7 | 2.6 | 11.2 | **1.7** |
| | New Zealand | 4.9 | 3.9 | 3.9 | 7.8 | 0.5 | 0.6 | 4.8 | 5.4 | 4.7 | 18.7 | **2.9** |
| | Norway | 3.6 | 1.7 | 2.8 | 4.5 | 0.0 | 0.1 | 4.7 | 4.8 | 3.8 | 13.0 | **2.2** |
| | Poland | 3.7 | 1.8 | 1.9[d] | 3.7[d] | 0.1 | 0.0 | 2.8 | 2.8 | 2.3 | 10.2 | **0.5** |
| | Portugal | 3.0 | 2.3 | 1.9[d] | 4.2[d] | x(3, 4, 7, 8, 9) | a | 1.8[d] | 1.8[d] | 0.8[d] | 8.9 | **0.5** |
| | Slovak Republic | 1.9 | 2.2 | 2.0 | 4.2 | 0.1 | 0.0 | 2.3 | 2.3 | 1.5 | 8.6 | **0.7** |
| | Slovenia | 3.0 | 1.6 | 1.9 | 3.5 | a | 0.1 | 2.0 | 2.1 | 1.8 | 8.7 | **0.5** |
| | Spain | 2.5 | 1.7 | 1.9[d] | 3.5[d] | x(3, 4) | 0.4 | 1.8 | 2.2 | 1.5 | 8.2 | **0.4** |
| | Sweden | 3.4 | 1.6 | 2.5 | 4.1 | 0.1 | 0.2 | 3.6 | 3.8 | 2.4 | 11.3 | **1.4** |
| | Switzerland | 4.5 | 3.0 | 2.7[d] | 5.7[d] | x(3, 4) | x(8) | x(8) | 4.0 | 2.3 | 14.1 | **0.3** |
| | Turkey | 3.1 | 2.4 | 2.4 | 4.7 | a | x(8) | x(8) | 4.6 | 3.9 | 12.4 | **0.9** |
| | United Kingdom | 4.2 | 2.2 | 3.2 | 5.3 | a | x(8) | x(8) | 3.0 | 2.4 | 12.5 | **1.9** |
| | United States | 3.9 | 2.1 | 2.2 | 4.3 | 0.1 | x(8) | x(8) | 3.5 | 3.0 | 11.8 | **1.1** |
| | OECD average | 3.5 | 2.2 | 2.5 | 4.6 | 0.2 | 0.3 | 2.7 | 3.1 | 2.3 | 11.3 | **1.0** |
| | EU22 average | 2.8 | 2.0 | 2.3 | 4.3 | m | 0.2 | 2.4 | 2.7 | 1.8 | 9.9 | **0.8** |
| Partners | Argentina | 4.4 | 3.6 | 2.5 | 6.1 | a | x | x | 3.0 | m | 13.5 | **0.1** |
| | Brazil | 4.9 | 4.4 | 3.4[d] | 7.9[d] | x(3, 4) | x(8) | x(8) | 3.5 | m | 16.3 | **1.4** |
| | China | m | m | m | m | m | m | m | m | m | m | **m** |
| | Colombia[3] | 5.5 | 4.0 | 1.3 | 5.3 | x(8) | x(8) | x(8) | 3.2[d] | m | 14.1 | **0.9** |
| | Costa Rica | 7.6 | 4.6 | 2.4 | 7.0 | a | x(8) | x(8) | 4.5 | m | 19.1 | **m** |
| | India[4] | 3.6 | 1.7 | 3.5 | 5.3 | 0.0 | a | 3.6 | 3.6 | 3.6 | 12.6 | **0.1** |
| | Indonesia[3] | 8.8 | 2.9 | 2.7 | 5.6 | a | x(8) | x(8) | 3.3 | a | 17.6 | **0.3** |
| | Lithuania | 2.0 | 3.3 | 1.6 | 4.9 | 0.5 | a | 3.8 | 3.8 | 3.2 | 11.1 | **0.4** |
| | Russian Federation | x(3, 4) | x(3, 4) | 5.6[d] | 5.6[d] | x(3, 4) | 0.4 | 1.9 | 2.3 | 2.2 | 7.9 | **m** |
| | Saudi Arabia | m | m | m | m | m | m | m | m | m | m | **m** |
| | South Africa[4] | 7.4 | 5.9[d] | x(2, 4) | 5.9 | 0.7 | x(8) | x(8) | 2.3 | m | 16.3 | **0.5** |
| | G20 average | 4.3 | 2.8 | 2.8 | 5.1 | m | m | m | 3.1 | m | 12.3 | **m** |

1. Public expenditure presented in this table includes both public transfers/payments to the non-educational private sector which are attributable to educational institutions and those to households for living costs, which are not spent in educational institutions. Therefore, the data presented here (before transfers) exceed those for public spending on institutions found in Table B2.3.

2. Primary education includes pre-primary programmes.

3. Year of reference 2015.

4. Year of reference 2013.

**Source:** OECD/UIS/Eurostat (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933560358

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## Table B4.2. Trends in total public expenditure on primary to tertiary education (2005, 2008, 2010 to 2014)

*Direct public expenditure on educational institutions plus public subsidies to households[1] and other private entities, as a percentage of total government expenditure, for primary to tertiary levels of education combined, by year*

| | | Public expenditure[1] on primary to tertiary education as a percentage of total government expenditure | | | | | | | Index of change between 2010 and 2014 (2010 = 100, constant prices) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2005 | 2008 | 2010 | 2011 | 2012 | 2013 | 2014 | Public expenditure on education | Total government expenditure for all services | Total public expenditure on education as a percentage of total government expenditure |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
| OECD | Australia | 13.7 | 13.0 | 14.9 | 14.0 | 13.1 | 13.6 | 13.4 | 106 | 118 | 90 |
| | Austria | m | m | m | m | 9.7 | 9.8 | 9.3 | m | 104 | m |
| | Belgium | 10.2 | 11.0 | 10.5 | 10.3 | 10.2 | 10.4 | 10.4 | 106 | 107 | 99 |
| | Canada[2] | m | 13.7 | 13.7 | 13.2 | 12.4 | 13.4 | 13.4 | 100 | 101 | 98 |
| | Chile | 13.3 | 15.4 | 15.4 | 15.4 | 16.9 | 16.6 | 15.4 | 121 | 121 | 100 |
| | Czech Republic | 8.2 | 8.2 | 8.1 | 8.5 | 8.1 | 8.0 | 7.8 | 98 | 102 | 96 |
| | Denmark | 14.1 | 13.3 | 13.1 | 12.4 | 12.2 | 12.8 | 13.5 | 105 | 102 | 103 |
| | Estonia | 13.1 | 12.5 | 12.5 | 12.3 | 10.9 | 11.7 | 11.6 | 103 | 111 | 93 |
| | Finland | 11.6 | 11.4 | 11.3 | 11.2 | 10.9 | 10.5 | 10.4 | 98 | 106 | 92 |
| | France | 9.1 | 9.1 | 8.8 | 8.6 | 8.5 | 8.4 | 8.4 | 100 | 105 | 95 |
| | Germany | 8.9 | 9.2 | 9.4 | 9.7 | 9.6 | 9.4 | 9.4 | 100 | 100 | 100 |
| | Greece | 8.7 | m | m | m | m | m | m | m | 79 | m |
| | Hungary | 8.9 | 8.3 | 7.8 | 7.6 | 6.9 | 6.7 | 7.3 | 99 | 105 | 94 |
| | Iceland | 15.6 | 11.1 | 12.4 | 13.1 | 13.3 | 13.5 | 13.4 | 109 | 101 | 108 |
| | Ireland | 13.6 | 13.0 | 9.1 | 12.4 | 13.5 | 13.2 | 12.9 | 88 | 62 | 141 |
| | Israel | 9.9 | 10.9 | 11.3 | 11.6 | 11.7 | 11.8 | 11.6 | 118 | 114 | 103 |
| | Italy | 8.1 | 8.2 | 7.9 | 7.5 | 7.2 | 7.3 | 7.1 | 89 | 98 | 91 |
| | Japan | 8.7 | 8.6 | 8.5 | 8.4 | 8.4 | 8.1 | 8.2 | 102 | 106 | 96 |
| | Korea | 12.0 | 11.7 | 14.1 | 13.7 | 14.4 | 14.8 | 14.5 | 120 | 116 | 103 |
| | Latvia | 12.2 | 12.3 | 9.4 | 10.5 | 10.4 | 11.0 | 11.8 | 122 | 97 | 125 |
| | Luxembourg | m | m | m | m | 8.3 | 7.8 | 8.2 | m | 106 | m |
| | Mexico | 20.4 | 17.5 | 17.7 | 17.3 | 17.5 | 17.3 | 17.3 | 115 | 118 | 98 |
| | Netherlands | 11.3 | 10.9 | 10.7 | 10.9 | 10.8 | 11.3 | 11.2 | 102 | 98 | 104 |
| | New Zealand | m | m | m | m | 18.5 | 18.4 | 18.7 | m | 96 | m |
| | Norway | 15.0 | 14.4 | 13.8 | 13.4 | 13.4 | 13.2 | 13.0 | 103 | 109 | 94 |
| | Poland | 11.0 | 9.8 | 10.0 | 9.8 | 10.0 | 10.3 | 10.2 | 105 | 103 | 102 |
| | Portugal | 9.7 | 9.4 | 9.5 | 9.3 | 9.2 | 9.6 | 8.9 | 88 | 94 | 94 |
| | Slovak Republic | 8.2 | 8.1 | 8.5 | 8.4 | 8.4 | 8.6 | 8.6 | 109 | 108 | 101 |
| | Slovenia | 11.5 | 10.5 | 10.1 | 9.9 | 9.6 | 7.5 | 8.7 | 87 | 101 | 86 |
| | Spain | 9.4 | 9.4 | 9.1 | 8.8 | 7.9 | 8.2 | 8.2 | 85 | 94 | 90 |
| | Sweden | 11.5 | 11.4 | 11.6 | 11.5 | 11.3 | 11.2 | 11.3 | 104 | 107 | 98 |
| | Switzerland | 14.4 | 14.3 | 14.2 | 14.4 | 14.4 | 14.0 | 14.1 | 109 | 110 | 99 |
| | Turkey | m | 8.1 | 8.6 | 11.6 | 12.0 | 12.1 | 12.4 | 170 | m | m |
| | United Kingdom | m | m | m | m | 11.5 | 12.1 | 12.5 | m | 98 | m |
| | United States | 12.7 | 12.3 | 11.6 | 11.6 | 11.7 | 11.6 | 11.8 | 97 | 96 | 102 |
| | OECD average | 11.6 | 11.2 | 11.1 | 11.3 | 11.2 | 11.3 | 11.3 | 105 | 103 | 100 |
| | EU22 average | 10.5 | 10.3 | 9.9 | 10.0 | 9.8 | 9.8 | 9.9 | 99 | 99 | 100 |
| Partners | Argentina | m | m | m | m | 14.1 | 14.0 | 13.5 | m | m | m |
| | Brazil | 14.7 | 16.1 | 16.7 | 17.7 | 17.5 | 16.1 | 16.3 | 113 | 116 | 97 |
| | China | m | m | m | m | m | m | m | m | m | m |
| | Colombia | m | m | m | m | m | 14.8 | 14.9 | m | 129 | m |
| | Costa Rica | m | m | m | m | m | 19.0 | 19.1 | m | m | m |
| | India | m | m | m | m | m | 12.6 | m | m | 123 | m |
| | Indonesia | m | m | m | m | m | m | m | m | m | m |
| | Lithuania | 12.6 | 11.3 | 10.9 | 10.4 | 11.5 | 11.3 | 11.1 | 99 | 97 | 102 |
| | Russian Federation | m | m | m | m | 8.3 | m | 7.9 | m | 109 | m |
| | Saudi Arabia | m | m | m | m | m | m | m | m | m | m |
| | South Africa | m | m | m | m | m | 16.3 | m | m | 111 | m |
| | G20 average | m | m | m | m | m | 12.2 | m | m | m | m |

1. Public expenditure presented in this table includes both public subsidies to the non-educational private sector which are attributable to educational institutions and public subsidies to households for living costs, which are not spent in educational institutions. Therefore, the data presented here (before transfers) exceed those for public spending on institutions found in Table B2.3.

2. Includes pre-primary education.

**Source:** OECD/UIS/Eurostat (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

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## Table B4.3. Share of sources of public funds by level of government (2014)

*Before and after transfers, by level of education*

| | | Primary, secondary and post-secondary non-tertiary | | | | | | Tertiary | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Initial funds (before transfers between levels of government) | | | Final funds (after transfers between levels of government) | | | Initial funds (before transfers between levels of government) | | | Final funds (after transfers between levels of government) | | |
| | | Central | Regional | Local | Central | Regional | Local | Central | Regional | Local | Central | Regional | Local |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
| OECD | Australia | 33 | 67 | 0 | 5 | 95 | 0 | 95 | 5 | 0 | 93 | 7 | 0 |
| | Austria | 74 | 14 | 12 | 37 | 50 | 13 | 97 | 3 | 0 | 97 | 3 | 0 |
| | Belgium | 23 | 74 | 3 | 24 | 74 | 3 | 22 | 77 | 1 | 21 | 78 | 1 |
| | Canada[1] | 4 | 75 | 21 | 3 | 11 | 86 | m | m | m | m | m | m |
| | Chile[2] | 100 | a | 0 | 68 | a | 32 | 100 | a | 0 | 100 | a | 0 |
| | Czech Republic | 12 | 61 | 27 | 11 | 61 | 27 | 97 | 2 | 2 | 97 | 2 | 2 |
| | Denmark | m | m | m | m | m | m | 100 | 0 | 0 | 100 | 0 | 0 |
| | Estonia | 87 | a | 13 | 69 | a | 31 | 100 | a | 0 | 100 | a | 0 |
| | Finland | 40 | a | 60 | 10 | a | 90 | 88 | a | 12 | 87 | a | 13 |
| | France | 72 | 16 | 11 | 72 | 17 | 12 | 86 | 10 | 5 | 86 | 10 | 5 |
| | Germany | 7 | 75 | 18 | 6 | 72 | 22 | 25 | 73 | 2 | 20 | 78 | 2 |
| | Greece | m | m | m | m | m | m | m | m | m | m | m | m |
| | Hungary | 90 | a | 10 | 89 | a | 11 | 100 | a | 0 | 100 | a | 0 |
| | Iceland | 26 | a | 74 | 25 | a | 75 | 100 | a | 0 | 100 | a | a |
| | Ireland | 99 | a | 1 | 82 | a | 18 | 100 | a | 0 | 86 | a | 14 |
| | Israel | 88 | a | 12 | 70 | a | 30 | 99 | a | 1 | 99 | a | 1 |
| | Italy | 82 | 9 | 9 | 81 | 7 | 11 | 84 | 15 | 0 | 83 | 17 | 0 |
| | Japan[3, 4] | 16 | 66 | 18 | 2 | 81 | 18 | 92 | 7 | 0 | 92 | 8 | 0 |
| | Korea | 70 | 27 | 3 | 1 | 40 | 58 | 97 | 2 | 1 | 97 | 2 | 1 |
| | Latvia | 65 | a | 35 | 27 | a | 73 | 100 | a | 0 | 100 | a | 0 |
| | Luxembourg | 87 | a | 13 | 86 | a | 14 | 100 | a | 0 | 100 | a | 0 |
| | Mexico | 79 | 21 | 0 | 31 | 69 | 0 | 79 | 21 | 0 | 77 | 23 | 0 |
| | Netherlands | 92 | 0 | 8 | 89 | 0 | 11 | 100 | 0 | a | 100 | 0 | a |
| | New Zealand | 100 | a | a | 100 | a | a | 100 | a | a | 100 | a | a |
| | Norway | 7 | 0 | 93 | 5 | a | 95 | 99 | 0 | 1 | 99 | a | 1 |
| | Poland | 5 | 2 | 94 | 4 | 2 | 95 | 99 | 1 | 0 | 99 | 1 | 0 |
| | Portugal[4] | 85 | 6 | 8 | 81 | 6 | 13 | 100 | 0 | 0 | 100 | 0 | 0 |
| | Slovak Republic | 82 | a | 18 | 28 | a | 72 | 100 | a | 0 | 99 | a | 1 |
| | Slovenia | 87 | a | 13 | 87 | a | 13 | 99 | a | 1 | 99 | a | 1 |
| | Spain | 14 | 80 | 6 | 14 | 80 | 6 | 19 | 80 | 1 | 19 | 80 | 1 |
| | Sweden | m | m | m | m | m | m | 97 | 3 | 0 | 97 | 3 | 0 |
| | Switzerland | 4 | 60 | 37 | 0 | 59 | 40 | 32 | 68 | 0 | 15 | 85 | 0 |
| | Turkey | 98 | a | 2 | 98 | a | 2 | 100 | a | 0 | 100 | a | 0 |
| | United Kingdom | 42 | a | 58 | 42 | a | 58 | 100 | a | 0 | 100 | a | 0 |
| | United States | 8 | 43 | 49 | 1 | 2 | 97 | 50 | 39 | 11 | 50 | 39 | 11 |
| | OECD average | 55 | 21 | 24 | 42 | 22 | 36 | 87 | 12 | 1 | 85 | 13 | 2 |
| | EU22 average | 60 | 18 | 22 | 49 | 19 | 31 | 86 | 12 | 1 | 85 | 13 | 2 |
| Partners | Argentina | 9 | 90 | 1 | 3 | 96 | 1 | 77 | 23 | 0 | 75 | 25 | 0 |
| | Brazil | 16 | 43 | 41 | 10 | 43 | 47 | 81 | 19 | 1 | 80 | 19 | 1 |
| | China | m | m | m | m | m | m | m | m | m | m | m | m |
| | Colombia[2] | 88 | 3 | 9 | 88 | 3 | 9 | 97 | 3 | 0 | 97 | 3 | 0 |
| | Costa Rica | 100 | a | a | 100 | a | a | 100 | a | a | 100 | a | a |
| | India[5] | 21 | 79 | 0 | 21 | 63 | 16 | 43 | 57 | 0 | 43 | 57 | 0 |
| | Indonesia[2] | 24 | 7 | 68 | 24 | 7 | 68 | 100 | 0 | 0 | 100 | 0 | 0 |
| | Lithuania | 78 | a | 22 | 26 | a | 74 | 99 | a | 1 | 99 | a | 1 |
| | Russian Federation | m | m | m | m | m | m | m | m | m | m | m | m |
| | Saudi Arabia | m | m | m | m | m | m | m | m | m | m | m | m |
| | South Africa[5] | 1 | 99 | a | 1 | 99 | a | 100 | 0 | a | 100 | 0 | a |
| | G20 average | 35 | m | m | 24 | m | m | 77 | m | m | 76 | m | m |

1. Primary education includes pre-primary programmes.
2. Year of reference 2015.
3. Regional transfers to local governments are included in the regional rather than local final funds.
4. Some levels of education are included with others. Refer to "x" code in Table B4.1 for details.
5. Year of reference 2013.

**Source:** OECD/UIS/Eurostat (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

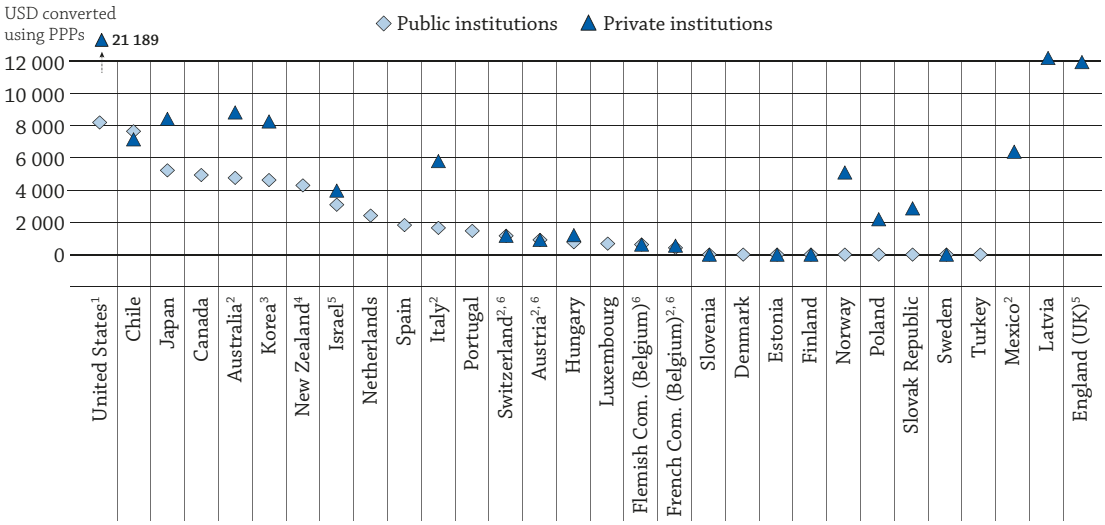
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# HOW MUCH DO TERTIARY STUDENTS PAY AND WHAT PUBLIC SUPPORT DO THEY RECEIVE?

- In about one-third of the countries with available data, public institutions do not charge tuition fees at all at bachelor's or equivalent level. In addition, in 10 countries annual tuition fees[1] are less than USD 4 000, while in Australia, Canada, Chile, Japan, Korea, New Zealand and the United States they are much higher – they can exceed USD 4 000 and reach over USD 8 000 per year.
- Private institutions that are less bound by government regulations and less supported by government funding are more dependent on tuition fees as a revenue source. Private institutions in Australia, Italy and the United States have much higher tuition fees than public institutions offering bachelor's or equivalent programmes (excluding countries where tuition fee is free in public institutions): private institutions in these three countries charge at least USD 4 000 per year more than public institutions.
- Half of the countries that charge tuition fees also differentiate them by field of study. Engineering, manufacturing, construction, social sciences, journalism and information together with health and welfare tend to have the highest tuition fees, while education and information and communication technologies (ICT) tend to have the lowest for the countries with available data.

## Figure B5.1. Tuition fees charged by public and private institutions at bachelor's or equivalent level (2015/16)

*Average annual tuition fees charged to full-time national students, converted in USD using PPPs for GDP*




**Note**: For countries and economies for which only a range was available, this figure plots the average between the minimum and maximum tuition fee levels: Flemish Com. (Belgium), Latvia, Luxembourg and Portugal.

1. Year of reference 2011/12.
2. Year of reference 2014/15.
3. Year of reference 2016.
4. Estimates include short-cycle tertiary and bachelor's or equivalent programmes in universities only and exclude second programmes at ISCED 6, such as postgraduate certificates and diplomas. Data include goods and services tax (15%).
5. Year of reference 2013/14.
6. Private institutions cover government-dependent private institutions only.

*Countries and economies are ranked in descending order of the tuition fees charged by public institutions.*

**Source**: OECD (2017), Table B5.1. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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## Context

OECD and partner countries have different approaches to sharing tertiary education's costs among governments, students and their families, and other private entities, and to providing financial support to students. All countries want students to be able to afford to attend tertiary education, but some prefer to invest the resources they dedicate to this goal in lower tuition fees, while others decide to offer student loans and grants to cover tuition fees and/or living costs.

Tuition fees bridge the gap between the costs incurred by tertiary educational institutions and the revenues they receive from sources other than students and their families. Many factors may influence the level of costs, including: teachers' and researchers' salaries (especially for institutions competing to hire the best in a global academic market); development of digital learning and non-teaching services (e.g. employment services, relations with companies); changes in demand for tertiary education; investments to support internationalisation; and the amount and type of research activities undertaken by faculty and staff. Tertiary educational institutions partly cover their costs through internal resources (endowments) or revenue from private sources other than students and their families (see Indicator B3). The remainder of the costs is covered by student tuition fees or by public sources.

Hence, policy decisions on tuition fees can affect not only the cost to students of tertiary education, but also the resources available to tertiary institutions. Some countries therefore prefer to let tertiary educational institutions charge higher tuition fees, while providing financial support to students in other ways, particularly through grants and public loans. Public loans are often available to students at better conditions than they could find on the private market, typically with lower interest rates and/or conditions under which the loan is remitted or forgiven.

Public support to students and their families enables governments to encourage participation in education, while also indirectly funding tertiary institutions. Channelling funding to institutions through students may also help increase competition among institutions and better respond to student needs. Students' support comes in many forms, including means-based subsidies, family allowances for students, tax allowances for students or their parents, or other household transfers. The trade-offs between different ways to fund tertiary education have been widely discussed in the literature, from different points of view (e.g. Barr, 2004; Borck and Wimbersky, 2014). Governments strive to strike the right balance among these different subsidies, especially in periods of financial crisis. Based on a given amount of subsidies, public support, such as tax reductions or family allowances, may provide less support for low-income students than means-tested subsidies, as tax reductions or family allowances are not targeted specifically to low-income students. However, they may still help to reduce financial disparities between households with and without children in education.

## Other findings

- In most countries (except Australia, Chile, Korea, Spain and the United States), the tuition fees charged by public institutions for national students in master's and doctoral or equivalent programmes are generally not much higher than those charged for bachelor's programmes.
- Financial support helps offset the burden of high tuition fees charged by certain institution. Tuition fees in Australia, England (United Kingdom) and the United States are among the highest across OECD countries, but at least 75% of students in these countries benefit from public loans or scholarships/grants. In Austria, the Flemish and French Communities of Belgium, Italy and Switzerland – where tuition fees are more moderate – the public sector provides more limited support to students, only targeting specific groups.

## Analysis

### Differentiation of tuition fees across tertiary educational institutions, programmes and fields of study

The goal of ensuring an affordable education for everyone and educational institutions' need for financial resources lead to different levels of tuition fees according to the type of institutions and at different levels of education. Independent private institutions are less affected by government regulations; therefore they rely less than public institutions on public funds and may be more pressed by competition in terms of quality of services provided to students. As a result, they may charge higher annual tuition fees than public institutions for bachelor's or equivalent programmes in all OECD and partner countries with available data (Figure B5.1 and Table B5.1).

The difference in fees between public and private institutions tends to be very large in several countries. In Australia, Japan and Korea, the average tuition fee for bachelor's or equivalent programmes is above USD 8 000 in private institutions, compared to between USD 4 500 and USD 5 300 for public institutions. In the United States, the average annual tuition fee charged by independent private institutions for bachelor's or equivalent level is almost USD 21 200, more than two-and-a-half times the average annual tuition fee in public institutions (around USD 8 200). Tuition fees are about three times as high in private institutions as in public institutions in Italy, and 30% to 60% higher in the French Community of Belgium, Hungary and Israel. In Norway, the average annual tuition fee in private institutions is about USD 5 100, in Poland about USD 2 200, and close to USD 2 900 in the Slovak Republic, while tuition is free in public institutions in all three countries.

However, in some countries the difference between fees for national students in public versus private institutions at the bachelor's or equivalent level is much smaller. Neither public nor private institutions charge tuition fees in Finland, Slovenia and Sweden, and private and public institutions on average charge similar tuition fees in the Flemish Community of Belgium and Switzerland. In Austria, tuition fees are capped in public and government-dependent private institutions, whereas in independent private ones they are at the discretion of individual institutions.

In all OECD countries with available data, graduates with a master's, doctoral or equivalent degree have higher salaries and better employment opportunities than those with only a bachelor's degree (see Indicators A5 and A6). Continued education after bachelor's level can lead to better labour outcomes. Tuition fees charged by public institutions for national students in master's and doctoral or equivalent programmes are not always much higher than those charged for bachelor's programmes. One-third of OECD countries charge similar tuition fees to full-time students in public institutions regardless of the level of the programme (Table B5.1). There are no tuition fees in public institutions in Denmark, Estonia,[2] Finland, Norway, Poland, the Slovak Republic, Slovenia (except for doctoral programmes), Sweden (for national students) or Turkey. In another group of countries, similar tuition fees are charged across the different levels of tertiary education: in Austria (about USD 920), Canada (about USD 5 000 for bachelor's and master's programmes), England (United Kingdom) (about USD 12 800, in government-dependent private institutions), Hungary (between USD 600 and USD 800 for bachelor's to doctoral or equivalent programmes), Italy (from USD 1 700 to 1 800 for bachelor's and master's or equivalent programmes), Japan (about USD 5 200), Luxembourg (about USD 450 after the first two semesters), the Netherlands (USD 2 400 for bachelor's and master's programmes) and Switzerland (about USD 1 170).

However, the difference between tuition fees for bachelor's and master's programmes can be substantial in some countries. In Chile, Korea and the United States tuition fees for master's programmes in public institutions are about 30% higher than for bachelor's programmes, and in Australia and Spain they are over 50% higher. Expressed in United States dollars, these differences range between USD 1 000 and USD 3 100 (Table B5.1). In a few countries, tuition fees charged by public institutions for national students in doctoral programmes are much lower than for bachelor's and master's programmes. These include Australia, Hungary, Italy and Switzerland. In Australia, for example, annual tuition fees in public institutions amount to USD 317 for a doctoral programme, compared with USD 4 763 for a bachelor's programme. In fact, very few national doctoral students pay any fee in Australia (less than 5% of doctoral students in public institutions). However, in Chile, Korea, New Zealand, Slovenia and the United States,[3] tuition fees for doctoral programmes in public institutions are higher than for bachelor's and master's programmes.

In all the countries with data available with the exception of the Netherlands, tuition fees for short-cycle tertiary programmes in public institutions are much lower, and in most cases amount to half the tuition fees in bachelor's programmes or less (Table B5.1). For example, in the United States and Chile, the difference in the average annual tuition fee between a short-cycle and a bachelor's programme is about USD 6 000 and USD 4 000 respectively, while it ranges between USD 1 400 and USD 2 000 in Japan, Korea and Spain. In the French Community of Belgium, there is no tuition fee for short-cycle tertiary programmes, but there is a moderate tuition fee for bachelor's and master's or

equivalent programmes. In no country with available data are the average tuition fees for short-cycle tertiary education programmes higher than for the bachelor's, master's or doctoral levels of education. In the Netherlands they are the same, as well as in those countries where higher education is generally free (Denmark, Estonia, Norway, Poland, Slovenia, Sweden and Turkey).

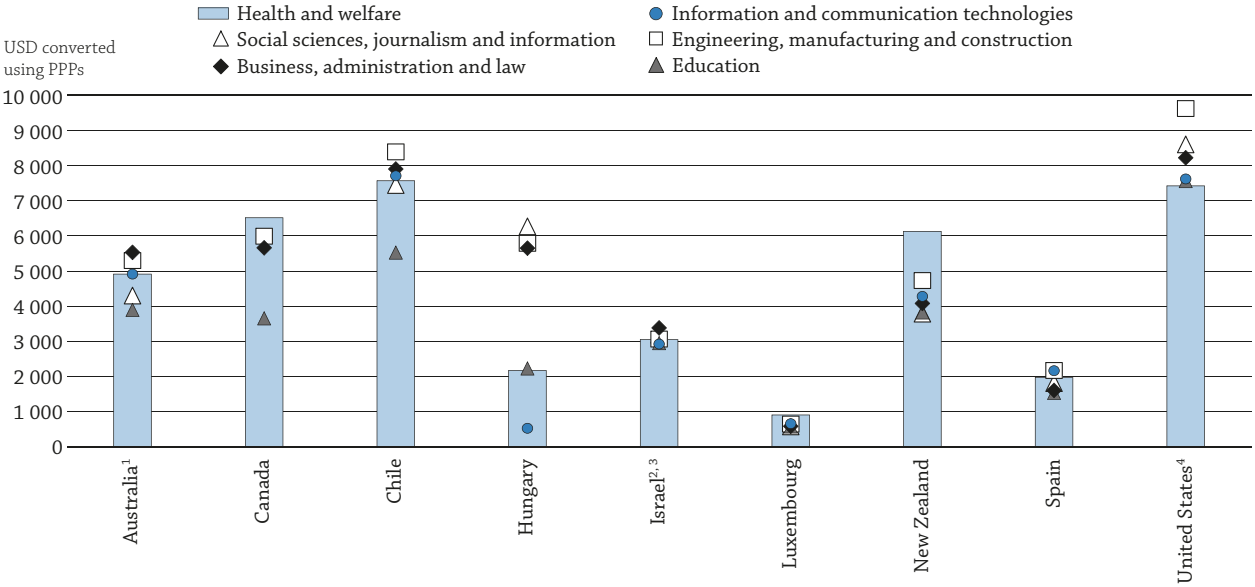
In half the countries where tertiary institutions charge tuition fees to students, these fees are also differentiated by field of study (Table B5.3). This is often done to improve equity in access to tertiary education, and to account for differences in costs to provide education and labour market opportunities (OECD, 2015). The latter is the main reason to introduce differentiated fees, although in the United States, for example, differences in tuition fees between fields of study result from differences in tuition fees between institutions rather than differences within institutions.

The difference in fee is limited in public institutions in Israel (public and government-dependent private institutions), the Slovak Republic[4] and Spain, while in Canada, Chile and Hungary the range of tuition fees paid by students in different fields of study is larger. Hungary shows the highest variation in public institutions' tuition fees by field of study: students enrolled in the fields of engineering, manufacturing, construction, social sciences, journalism and information are expected to pay up to USD 4 000 more per year than education, health and welfare students. However, in New Zealand students in this latter field of study face the highest charges (Figure B5.2).

Students enrolled in the field of education in public institutions pay among the lowest fees in almost all the countries with data available. Engineering, manufacturing, construction, health and welfare are amongst the most expensive fields of study, as they often have the highest market returns. On the other hand, fields such as agriculture, forestry, fisheries and veterinary, which demand high fees in public institutions in Australia, Chile and New Zealand, have the lowest tuition in Hungary. Natural sciences, mathematics and statistics have relatively high tuition fees in public institutions in Chile and Spain.

## Figure B5.2. Average tuition fees charged by public institutions at bachelor's or equivalent level for selected fields of study (2015/16)

*Average annual tuition fees charged to full-time national students, converted into USD using PPPs for GDP*




**Note**: Countries that do not differentiate tuition fees by field of study are not reported in this figure.

1. Year of reference 2014/15.

2. Year of reference 2013/14.

3. Public and government-dependent private institutions.

4. Year of reference 2011/12. Differences in tuition fees by field of study are a result of differences in tuition charged at different institutions, not differences in tuition fees charged within an institution for different fields of study. Generally, within an institution tuition fees charged are the same for all fields of study within an ISCED level.

**Source**: OECD (2017), Table B5.3. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933558040

### Tuition fees for non-national students

National policies on tuition fees and financial aid to students generally cover all students studying in the country's educational institutions. Countries' policies also take into account non-national students (those coming from abroad, either international or foreign, as defined in Indicator C4). Differences between national and non-national students in fees or financial support can have an impact on the international flows of students, as can other factors, such as public support from their home countries. These differences can attract students to study in some countries and discourage them from studying in others (see Indicator C4), especially in a context where an increasing number of OECD countries are charging higher tuition fees for non-national students than for national students.

In about half of the countries with available data, the tuition fees charged by public educational institutions may differ for national and foreign students enrolled in the same programme (Table B5.1), although countries in the European Union (EU) and the European Economic Area (EEA) charge the same tuition fees for nationals and students from other EU and EEA countries. In Austria, the average tuition fees charged by public institutions to students who are not citizens of EU or EEA countries are twice those for citizens (for bachelor's, master's and doctoral or equivalent programmes). Foreign students pay on average over USD 10 000 per year more than national students in Australia, Canada, New Zealand and the United States.[5] In public institutions in Poland and Sweden, tuition is free for national students while non-EU students pay over USD 4 500 at bachelor's level. By contrast, national and foreign students generally pay the same tuition fees in Chile, Israel, Italy, Japan, Korea, Latvia,[6] Luxembourg, Mexico, Portugal and Switzerland, and in other countries that charge no tuition fees to national or international students (Finland, Norway, the Slovak Republic, Slovenia) (Tables B5.1 and B5.3).

### Grants and loans to students

A robust financial support system and the type of aid on which this is based are key factors in ensuring good outcomes for students in higher education (OECD, 2008). A key question in many OECD countries is whether financial support for students in tertiary education should be provided primarily in the form of grants or loans. OECD governments support students' living or educational costs through different combinations of these two types of support.

On the one hand, advocates of student loans argue that they allow for the scaling up of the number of students that can benefit from the available resources (OECD, 2014). If the amount spent on scholarships/grants were used to guarantee and subsidise loans instead, the financial aid would be available to more students, and overall access to higher education would increase. Loans also shift some of the cost of education to those who benefit most from higher education, the individual student, reflecting the high private returns of completing tertiary education (see Indicator A7).

On the other hand, student loans are less effective than grants in encouraging low-income students to access tertiary education. Opponents of loans argue that high levels of student debt at graduation may have adverse effects both for students and for governments, if large numbers of students are unable to repay their loans (OECD, 2014).

At least 75% of students in bachelor's or equivalent level programmes in Australia, England (United Kingdom), Norway, and the United States benefit from public loans or scholarships/grants (Figure B5.3). With the exception of Norway where tuition is free in public institutions and public support covers students' living costs, these countries also have some of the highest tuitions fees amongst OECD countries. In Austria, the Flemish and French Communities of Belgium, Italy and Switzerland, tuition fees are moderate, and most students in these countries do not benefit from financial support. Those who do, usually receive such support in the form of scholarships and grants. In Finland and Turkey, public institutions do not charge tuition fees, and most students benefit from scholarships/grants (Finland) or from loans (Turkey) (Table B5.4 and Figure B5.3).

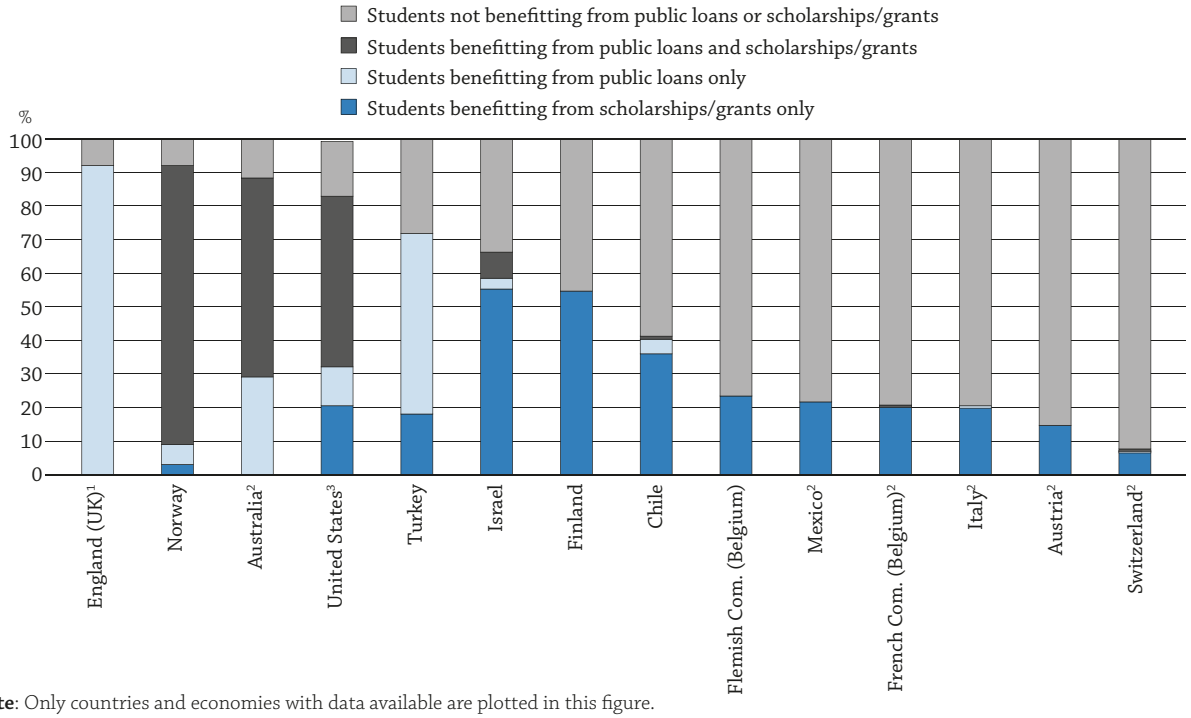
### Country approaches to funding tertiary education

OECD countries have different and evolving approaches to providing financial support to students enrolled in tertiary education. Governments frequently implement reforms to change the level of tuition fees, and the availability of scholarships, grants and loans, often in combination, in order to improve or adjust the way the public and private sectors, including students and their families, share the costs of tertiary education.

National financing systems for higher education can be grouped and classified according to a number of common characteristics, despite the policy changes over time within individual countries and differences across countries.

## Figure B5.3. Distribution of financial support to students at bachelor's or equivalent level (2015/16)

*National students, based on full-time students*




**Note**: Only countries and economies with data available are plotted in this figure.

1. Excluding independent private institutions. Students benefitting from scholarships/grants are included with students benefitting from public loans only.

2. Year of reference 2014/15.

3. Based on combination estimations on the academic year 2011/12 applied to enrolment data from 2013/14. Estimates referring to public loans include students receiving private loans.

*Countries and economies are ranked in descending order of the share of students benefiting from scholarships/grants and/or loans only.*

**Source**: OECD (2017), Table B5.4. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933558059

Countries can be roughly divided into four groups according to two factors: level of tuition fees and financial support available through the country's student financial aid system for tertiary education (see OECD, 2015):

- Group one comprises the Nordic European countries (Finland and Norway), where students are not charged any tuition fee and the majority of them benefit from public financial support when enrolled in higher education.[7] In these countries, 55% of students or more benefit from public grants, scholarships and/or loans. Luxembourg is very similar, with low tuition fees for students and high financial support from the state. However, Finland (as of 2017) has decided to introduce tuition fees for students coming from outside the EEA. This change may discourage international students from entering tertiary education in these countries (see Box C4.1).

- Group two is composed of Australia, Canada, England (United Kingdom), and the United States. Here annual tuition fees charged by public and private institutions for bachelor's programmes are relatively high, exceeding USD 4 000. On the other hand, in Australia, England (United Kingdom) and the United States (the three countries with data available), at least 80% of tertiary students receive support in the form of public loans or scholarships/grants (Table B5.4). Since 1995, England (United Kingdom) has moved to this group from the group of countries with lower tuition fees and less-developed student-support systems. The Netherlands can be considered as moving to this group from the first group (Nordic countries) as tuition fees have increased while the student-support system has developed (see Figure B5.1 in OECD, 2014). Despite the high tuition fees and also thanks to the financial support to students, entry rates to bachelor's or equivalent programmes are above the OECD average for this group of countries.

- Group three comprises Chile, Japan and Korea (OECD, 2015), where most students pay high tuition fees for bachelor's programmes in public institutions, but student-support systems are somewhat less developed than in the groups listed above. Tuition fees range from around USD 4 600 in Korea to around USD 5 200 in Japan and USD 7 700 in Chile. However, Japan has recently implemented reforms to improve the financial support system to students, including a grant-type scholarship scheme, increased interest-free student loans, and the introduction of an income-based repayment system (a flexible monthly repayment system after graduation).
- Group four includes Austria, Belgium, Italy and Switzerland: public institutions in these countries charge lower tuition fees than most other countries (lower than USD 1 700 on average), but offer only limited public sector financial support to students, targeting only specific groups (OECD, 2015, Tables B5.1 and B5.3). Turkey is moving from group 4 to group 1, as no tuition fees have been charged as from academic year 2012/13. Despite the lower tuition fees, in two of these countries (in Austria and Italy), the average entry rate into bachelor's programmes is lower than the OECD average.

## Definitions

In this chapter, **national students** are defined as the citizens of a country who are studying within that country. **Foreign and international students** are defined in Indicator C4. For countries that are EU members, citizens from other EU countries usually have to pay the same fees as national students. In these cases, foreign students refer to students that are citizens from countries outside the EU.

## Methodology

Data refer to the school year 2015/16 and are based on a special survey administered by the OECD in 2017 (for details see Annex 3 at www.oecd.org/education/education-at-a-glance-19991487.htm).

Amounts of tuition fees and amounts of loans in national currency are converted into equivalent USD by dividing the national currency by the purchasing power parity (PPP) index for GDP. Amounts of tuition fees and associated proportions of students should be interpreted with caution as they represent the weighted average of the main tertiary programmes and do not cover all educational institutions.

This indicator presents average tuition fees charged in public and private tertiary institutions based on full-time students and distinguishes tuition fees between short-cycle, bachelor's, master's, and doctoral or equivalent programmes. This indicator gives an overview of tuition fees at each level by type of institution and shows the proportions of students who do or do not receive scholarships/grants that fully or partially cover tuition fees. Levels of tuition fees and associated proportions of students should be interpreted with caution, as they are derived from the weighted average of the main programmes.

Student loans include the full range of student loans in order to provide information on the level of support received by students. The gross amount of loans provides an appropriate measure of the financial aid to current participants in education. Interest payments and repayments of principal by borrowers should be taken into account when assessing the net cost of student loans to public and private lenders. In most countries, loan repayments do not flow to education authorities, and the money is not available to them to cover other expenditures on education.

OECD indicators take the full amount of scholarships and loans (gross) into account when discussing financial aid to current students. Some OECD countries have difficulty quantifying the amount of loans to students. Therefore, data on student loans should also be treated with caution.

### Notes

1. Average tuition fees refer to full-time students. See *Methodology* section.
2. For programmes in Estonian only.
3. Some of these differences may be due to the more prestigious nature and location of the institutions that offer the doctoral programmes compared to those institutions that only offer bachelor's and master's degree programmes.
4. No tuition fees in public institutions.
5. International students in public institutions are classified as "out-of-state" and pay the same price that national out-of-state students would pay. See Annex 3 for more details.
6. In Latvia, this depends on the type of study programme.
7. Student loans and grants are for living costs in Norway.

**Note regarding data from Israel**

The statistical data for Israel are supplied by and are under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

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## Indicator B5 Tables

StatLink http://dx.doi.org/10.1787/888933560529

| | | |
|---|---|---|
| | Table B5.1 | Estimated annual average tuition fees charged by tertiary educational institutions (2015/16) |
| WEB | Table B5.2 | Estimated index of change in the tuition fees charged by educational institutions (ISCED levels 5 to 8) and reforms related to tuition fees implemented in recent years on tertiary education (2015/16) |
| | Table B5.3 | Average tuition fees charged by tertiary public institutions, by field of study (2015/16) |
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Cut-off date for the data: 19 July 2017. Any updates on data can be found on line at http://dx.doi.org/10.1787/eag-data-en. More breakdowns can also be found at http://stats.oecd.org/, Education at a Glance Database.

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## Table B5.1. [1/2] Estimated annual average tuition fees charged by tertiary educational institutions (2015/16)

*In equivalent USD converted using PPPs, by type of institutions and degree structure, based on full-time students*

| | Percentage of full-time national students (tertiary education) enrolled in: | | | Annual average tuition fees for full-time national students charged by institutions | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Public institutions | | | Private institutions | | |
| | | | | All tertiary | | | All tertiary | | |
| | Public institutions | Government-dependent private institutions | Independent private institutions | Total | Of which: bachelor's or equivalent level | Of which: master's or equivalent level | Total | Of which: bachelor's or equivalent level | Of which: master's or equivalent level |
| | (1) | (2) | (3) | (4) | (7) | (8) | (10) | (13) | (14) |
| OECD **Countries** | | | | | | | | | |
| Australia[1, 2] | 94 | 2 | 4 | 4 841 | 4 763 | 7 897 | 8 691 | 8 827 | 7 659 |
| Austria[1, 3] | m | m | m | 914 | 914 | 914 | 914 | 914 | 914 |
| Canada[4] | m | m | m | 4 963 | 4 939 | 5 132 | m | m | m |
| Chile | 15 | 12 | 72 | 7 695 | 7 654 | 10 359 | 6 275 | 7 156 | 11 432 |
| Denmark[5] | m | m | m | 0 | 0 | 0 | m | m | m |
| Estonia | m | m | m | 0 | 0 | 0 | 0 | 0 | 0 |
| Finland | 53 | 47 | a | 0 | 0 | 0 | 0 | 0 | 0 |
| Hungary | 90 | 6 | 4 | 753 | 766 | 799 | 1 164 | 1 210 | 1 137 |
| Israel[6] | 15 | 65 | 20 | 3 095 | 3 095 | m | 3 976 | 3 976 | m |
| Italy[1] | 90 | a | 10 | 1 650 | 1 658 | 1 828 | 5 777 | 5 807 | 6 408 |
| Japan | 26 | a | 74 | 5 215 | 5 229 | 5 226 | 8 269 | 8 428 | 6 956 |
| Korea[7] | m | m | m | 2 635 to 6 846 | 4 578 | 6 024 | 6 664 to 11 769 | 8 205 | 11 040 |
| Latvia | 7 | 70 | 24 | 1 010 to 4 344 | a | a | 1 802 to 27 823 | 1 802 to 22 612[d] | 2 025 to 27 823 |
| Luxembourg | m | m | m | 227 to 3 629 | 454 to 907 | 454 to 3 629 | m | m | m |
| Mexico[1] | 70 | a | 30 | m | m | m | 6 390 | 6 390[d] | x(13) |
| Netherlands | m | m | m | 2 420 | 2 420 | 2 420 | m | m | m |
| New Zealand[8] | m | m | m | m | 4 295[d] | m | m | m | m |
| Norway | 84 | 6 | 10 | 0 | 0 | 0 | 5 099 | 5 099[d] | x(13) |
| Poland[9] | 93 | a | 7 | 0 | 0 | 0 | 1 683 | 2 196 | 664 |
| Portugal | m | m | m | 1 124 to 10 661 | 1 124 to 1 821 | 1 124 to 10 661 | m | m | m |
| Slovak Republic | 95 | a | m | 0 | 0 | 0 | 3 180 | 2 872 | 3 559 |
| Slovenia | 94 | 5 | 1 | 68 | 0 | 0 | m | 0 | 0 |
| Spain | 82 | x(3) | 18[d] | m | 1 830 | 2 858 | m | m | m |
| Sweden[5] | 87 | 13 | a | 0 | 0 | 0 | 0 | 0 | 0 |
| Switzerland[1, 3] | 83 | 7 | 10 | 1 097 | 1 168[d] | 1 168 | 1 168 | 1 168[d] | 1 168 |
| Turkey | m | a | m | 0 | 0 | 0 | m | m | m |
| United States[10] | 67 | a | 33 | 6 347 | 8 202 | 11 064 | 19 127 | 21 189 | 17 084 |
| **Economies** | | | | | | | | | |
| England (UK)[3, 11] | m | m | m | a | a | a | m | 11 951 | m |
| Flemish Com. (Belgium)[3] | m | m | m | 0 to 1 115 | 132 to 1 115 | 132 to 1 115 | 0 to 1 115 | 132 to 1 115 | 132 to 1 115 |
| French Com. (Belgium)[1, 3] | 40 | 60 | a | 420 | 420[d] | x(7) | 559 | 559[d] | x(13) |

**Note:** Tuition fees should be interpreted with caution as they result from the weighted average of the main tertiary programmes and do not cover all educational institutions. However, the data reported can be considered as good proxies and show the difference among countries in tuition fees charged by main educational institutions and for the majority of students.

Additional data breakdowns by ISCED level and type of institution are available on line (see *StatLink* below).

1. Year of reference 2014/15.
2. Averages over ISCED levels exclude short-cycle tertiary programmes.
3. Private institutions cover government-dependent private institutions only.
4. Averages over ISCED levels exclude short-cycle tertiary, and doctoral and equivalent programmes.
5. Tuition fees for foreign students refer to students from outside the European Economic Area.
6. Year of reference 2013/14. Averages over ISCED levels exclude short-cycle tertiary, master's, doctoral and equivalent programmes.
7. Year of reference 2016.
8. Estimates include universities only and exclude ISCED 7 and second programmes at ISCED 6, such as postgraduate certificates and diplomas. Data include goods and services tax (15%).
9. Tuition fees for foreign students refer to students from countries outside the European Union.
10. Year of reference 2011/12.
11. Excluding master's and equivalent programmes.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933560434

## Table B5.1. [2/2] Estimated annual average tuition fees charged by tertiary educational institutions (2015/16)

*In equivalent USD converted using PPPs, by type of institutions and degree structure, based on full-time students*

| | Annual average tuition fees for full-time foreign students charged by institutions | | | | | |
|---|---|---|---|---|---|---|
| | Public institutions | | | Private institutions | | |
| | All tertiary | | | All tertiary | | |
| | Total | Of which: bachelor's or equivalent level | Of which: master's or equivalent level | Total | Of which: bachelor's or equivalent level | Of which: master's or equivalent level |
| | (24) | (27) | (28) | (30) | (33) | (34) |
| **OECD Countries** | | | | | | |
| Australia[1, 2] | 15 096 | 15 678 | 14 426 | 10 407 | 10 108 | 10 918 |
| Austria[1, 3] | 1 826 | 1 826 | 1 826 | 1 826 | 1 826 | 1 826 |
| Canada[4] | 15 793 | 17 498 | 12 809 | m | m | m |
| Chile | No differentiation for foreign students. | | | | | |
| Denmark[5] | 1 099 to 2 060 | | | | | |
| Estonia | Differentiation of tuition fees based on the language of the programmes: tuition fees may be charged in programmes taught in languages other than Estonian. | | | | | |
| Finland | No differentiation for foreign students. | | | | | |
| Hungary | 4 011 | 1 331 | 5 463 | 2 356 | 2 791 | 2 032 |
| Israel[6] | No differentiation for foreign students. | | | | | |
| Italy[1] | No differentiation for foreign students. | | | | | |
| Japan | No differentiation for foreign students. | | | | | |
| Korea[7] | No differentiation for foreign students. | | | | | |
| Latvia | No differentiation for foreign students. | | | | | |
| Luxembourg | No differentiation based on nationality. | | | | | |
| Mexico[1] | No differentiation for foreign students. | | | | | |
| Netherlands | m | m | m | m | m | m |
| New Zealand[8] | m | 18 524[d] | m | m | m | m |
| Norway | No differentiation for foreign students. | | | | | |
| Poland[9] | 3 907 | 4 590 | 2 443 | 3 028 | 3 112 | 2 608 |
| Portugal | No differentiation for foreign students. | | | | | |
| Slovak Republic | No differentiation for foreign students. | | | | | |
| Slovenia | m | 0 | 0 | m | 0 | 0 |
| Spain | No differentiation for foreign students. | | | | | |
| Sweden[5] | 8 968 | 14 010 | 14 459 | 10 480 | 14 010 | 14 459 |
| Switzerland[1, 3] | No differentiation for foreign students. | | | | | |
| Turkey | m | m | m | m | m | m |
| United States[10] | 14 091 | 16 066 | 16 489 | 27 327 | 29 234 | 24 095 |
| **Economies** | | | | | | |
| England (UK)[3, 11] | a | a | a | m | m | m |
| Flemish Com. (Belgium)[3] | For students from outside the European Economic Area, institutions have the autonomy to fix the amount of the tuition fee, except for some categories of students (e.g. refugees, asylum seekers). | | | | | |
| French Com. (Belgium)[1, 3] | m | 1 487 | 1 984 | m | x(27) | x(28) |

**Note:** Tuition fees should be interpreted with caution as they result from the weighted average of the main tertiary programmes and do not cover all educational institutions. However, the data reported can be considered as good proxies and show the difference among countries in tuition fees charged by main educational institutions and for the majority of students.

Additional data breakdowns by ISCED level and type of institution are available on line (see *StatLink* below).

1. Year of reference 2014/15.
2. Averages over ISCED levels exclude short-cycle tertiary programmes.
3. Private institutions cover government-dependent private institutions only.
4. Averages over ISCED levels exclude short-cycle tertiary, and doctoral and equivalent programmes.
5. Tuition fees for foreign students refer to students from outside the European Economic Area.
6. Year of reference 2013/14. Averages over ISCED levels exclude short-cycle tertiary, master's, doctoral and equivalent programmes.
7. Year of reference 2016.
8. Estimates include universities only and exclude ISCED 7 and second programmes at ISCED 6, such as postgraduate certificates and diplomas. Data include goods and services tax (15%).
9. Tuition fees for foreign students refer to students from countries outside the European Union.
10. Year of reference 2011/12.
11. Excluding master's and equivalent programmes.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

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## Table B5.3. Average tuition fees charged by tertiary public and private institutions, by field of study (2015/16)

*Tuition fees in equivalent USD converted using PPPs, for bachelor's, master's, doctoral or equivalent level, based on full-time students*

| | | | Annual average tuition fees charged by public institutions (for full-time national students) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | All fields of study | Education | Arts and humanities | Social sciences, journalism and information | Business, administration and law | Natural sciences, mathematics and statistics | Information and communication technologies | Engineering, manufacturing and construction | Agriculture, forestry, fisheries and veterinary | Health and welfare | Services |
| | | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) |
| OECD | Australia[1] | Short-cycle tertiary | m | m | m | m | m | m | m | m | m | m | m |
| | | Bachelor's or equivalent level | 4 763 | 3 895 | 3 992 | 4 304 | 5 533 | 5 005 | 4 915 | 5 300 | 5 852 | 4 915 | 5 217 |
| | | Master's or equivalent level | 7 897 | 4 174 | 5 597 | 7 561 | 12 379 | 5 627 | 7 631 | 5 754 | 8 581 | 8 308 | 7 528 |
| | | Doctoral or equivalent level | 317 | 161 | 119 | 399 | 349 | 116 | 421 | 355 | 261 | 662 | 60 |
| | Canada[2] | Short-cycle tertiary | m | m | m | m | m | m | m | m | m | m | m |
| | | Bachelor's or equivalent level | 4 939 | 3 655 | 4 280 | m | 5 662 | m | m | 5 993 | 4 583 | 6 518 | m |
| | | Master's or equivalent level | 5 132 | 4 611 | 3 799 | m | 7 915 | m | m | 5 224 | 4 296 | 5 065 | m |
| | | Doctoral or equivalent level | m | m | m | m | m | m | m | m | m | m | m |
| | Chile | Short-cycle tertiary | 3 312 | 3 047 | 3 158 | 0 | 3 115 | 3 994 | 3 318 | 3 515 | 3 085 | 3 231 | 3 314 |
| | | Bachelor's or equivalent level | 7 654 | 5 526 | 7 260 | 7 449 | 7 904 | 8 277 | 7 711 | 8 392 | 9 173 | 7 570 | 5 816 |
| | | Master's or equivalent level | 10 359 | 4 381 | 5 136 | 8 314 | 12 341 | 6 960 | 9 727 | 7 202 | 6 687 | 12 137 | 5 004 |
| | | Doctoral or equivalent level | 9 297 | 7 498 | 7 934 | 9 692 | 12 769 | 9 169 | 12 859 | 10 283 | 8 854 | 8 650 | 0 |
| | Hungary | Short-cycle tertiary | 399 | 447 | 422 | 961 | 3 470 | 1 148 | 1 560 | 3 662 | 1 573 | 592 | 320 |
| | | Bachelor's or equivalent level | 766 | 2 230 | 4 280 | 6 272 | 5 652 | 3 101 | 528 | 5 791 | 1 615 | 2 173 | 3 427 |
| | | Master's or equivalent level | 799 | 1 013 | 6 366 | 3 128 | 3 842 | 3 921 | 944 | 7 523 | 2 640 | 5 012 | 1 221 |
| | | Doctoral or equivalent level | 632 | 1 158 | 5 803 | 3 845 | 1 005 | 2 911 | 507 | 3 203 | 986 | 654 | 675 |
| | Israel[3] | Short-cycle tertiary | m | m | m | m | m | m | m | m | m | m | m |
| | | Bachelor's or equivalent level | 3 095 | 3 095 | a | a | a | a | a | a | a | a | a |
| | | Master's or equivalent level | m | m | m | m | m | m | m | m | m | m | m |
| | | Doctoral or equivalent level | m | m | m | m | m | m | m | m | m | m | m |
| | Luxembourg[2] | Short-cycle tertiary | 227 | a | 227 | 227 | 227 | a | a | 227 | a | 227 | a |
| | | Bachelor's or equivalent level | 454 to 907 | 581 | 676 | 581 | 586 | 654 | 659 | 648 | a | 907 | a |
| | | Master's or equivalent level | 454 to 3 629 | 454 | 454 | 857 | 3 511 | 454 | 454 | 454 | 454 | a | a |
| | | Doctoral or equivalent level | 454 | 454 | 454 | 454 | 454 | 454 | 454 | 454 | a | a | a |
| | New Zealand | Short-cycle tertiary | Included with bachelor's and equivalent programmes. | | | | | | | | | | |
| | | Bachelor's or equivalent level | 4 295 | 3 824 | 3 838 | 3 789 | 4 080 | 4 163 | 4 281 | 4 731 | 5 064 | 6 131 | 3 824 |
| | | Master's or equivalent level | m | m | m | m | m | m | m | m | m | m | m |
| | | Doctoral or equivalent level | 4 662 | m | m | m | m | m | m | m | m | m | m |
| | Spain[1] | Short-cycle tertiary | 163 | 163 | 163 | 163 | 163 | 163 | 163 | 163 | 163 | 163 | 163 |
| | | Bachelor's or equivalent level | 1 830 | 1 534 | 1 732 | 1 813 | 1 606 | 2 072 | 2 167 | 2 173 | 2 054 | 1 972 | 1 782 |
| | | Master's or equivalent level | 2 858 | 2 492 | 3 957 | 4 277 | 3 940 | 4 181 | 4 165 | 2 777 | 2 363 | 2 387 | 3 265 |
| | | Doctoral or equivalent level | | | | | | | | | | | |
| | United States[4, 5] | Short-cycle tertiary | 2 276 | 2 121 | 2 332 | 2 102 | 2 308 | 2 255 | 2 206 | 2 578 | 2 975 | 2 202 | 2 260 |
| | | Bachelor's or equivalent level | 8 202 | 7 560 | 8 110 | 8 604 | 8 224 | 8 595 | 7 622 | 9 624 | 8 372 | 7 425 | 7 497 |
| | | Master's or equivalent level | 11 064 | 7 153 | 12 023 | 9 268 | 13 232 | 10 488 | | 11 555 | | 12 230 | 9 521 |
| | | Doctoral or equivalent level | 13 264 | 12 223 | 14 476 | 11 971 | 11 158 | 13 327 | | 15 755 | | 14 494 | 11 676 |

**Note:** Only countries which differentiate tuition fees by field of study are reported in this table. Data on private institutions are available on line (see *StatLink* below).

1. Year of reference 2014/15.
2. Public institutions only.
3. Year of reference 2013/14.
4. Year of reference 2011/12.
5. Differences in tuition fees by field of study are primarily a result of differences in tuition charged at different public and private institutions, not differences in tuition fees charged within an institution for different fields of study. Generally, within an institution tuition fees charged are the same for all fields of study within an ISCED level.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

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## Table B5.4. Distribution of financial support to students (2015/16)

*National students, based on full-time students*

**Bachelor's or equivalent level**

| | Distribution of scholarships/grants in support of tuition fees. Percentage of students who: | | | | Distribution of financial aid to students. Percentage of students who: | | | |
|---|---|---|---|---|---|---|---|---|
| | ...receive scholarships/ grants that are **higher** than the tuition fees | ...receive scholarships/ grants whose amount is **equivalent** to the tuition fees | ...receive scholarships/ grants that **partially cover** the tuition fees | **...do not** receive scholarships/ grants in support of tuition fees | ...benefit from public **loans only** | ...benefit from **scholarships/ grants only** | ...benefit from **public loans and scholarships/ grants** | **...do not** benefit from public **loans or scholarships/ grants** |
| | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) |
| **Countries** | | | | | | | | |
| **Australia**[1] | x(11) | x(11) | 59[d] | 41 | 29 | 0 | 59 | 12 |
| **Austria**[1] | 14 | 0[d] | x(10) | 85 | a | 15 | a | 85 |
| **Chile** | 0 | 17 | 20 | 63 | 4 | 36 | 1 | 59 |
| **Denmark** | 91 | m | m | m | m | m | 38 | m |
| **Finland** | 55[d] | a | a | 45[d] | a | 55[d] | a | 45[d] |
| **Israel** | 7 | 8 | 49 | 37 | 3[d] | 55[d] | 8[d] | 34[d] |
| **Italy**[1] | 9[d] | 4[d] | 7[d] | 80[d] | 0[d] | 20[d] | 0[d] | 80[d] |
| **Luxembourg**[2] | a | a | 100 | 0 | a | 100 | a | 0 |
| **Mexico**[1] | 0 | 1 | 0 | 99 | 0 | 22 | 0 | 78 |
| **Norway** | m | m | m | m | 6 | 3 | 83 | 8 |
| **Spain** | 27 | 6 | 15 | 53 | 0 | 47 | 0 | 53 |
| **Switzerland**[1] | 7[d] | 0[d] | 0[d] | 93[d] | 0[d] | 7[d] | 0[d] | 92[d] |
| **Turkey** | 18 | 0 | 0 | 82 | 54 | 18 | 0 | 28 |
| **United States**[3] | m | m | m | 29 | 12 | 20 | 51 | 16 |
| **Economies** | | | | | | | | |
| **England (UK)**[4] | m | m | m | m | 92 | x(13) | x(13) | 8 |
| **Flemish Com. (Belgium)** | 23[d] | a | a | 77[d] | a | 23[d] | a | 77[d] |
| **French Com. (Belgium)**[1] | 21[d] | 0[d] | 0[d] | 79[d] | 0[d] | 21[d] | 0[d] | 79[d] |

**Master's or equivalent level**

| | Distribution of scholarships/grants in support of tuition fees. Percentage of students who: | | | | Distribution of financial aid to students. Percentage of students who: | | | |
|---|---|---|---|---|---|---|---|---|
| | ...receive scholarships/ grants that are **higher** than the tuition fees | ...receive scholarships/ grants whose amount is **equivalent** to the tuition fees | ...receive scholarships/ grants that **partially cover** the tuition fees | **...do not** receive scholarships/ grants in support of tuition fees | ...benefit from public **loans only** | ...benefit from **scholarships/ grants only** | ...benefit from **public loans and scholarships/ grants** | **...do not** benefit from public **loans or scholarships/ grants** |
| | (17) | (18) | (19) | (20) | (21) | (22) | (23) | (24) |
| **Countries** | | | | | | | | |
| **Australia**[1] | 1 | x(19) | 99[d] | 0 | 0 | 24 | 76 | 0 |
| **Austria**[1] | 7 | 0[d] | x(18) | 93 | a | 7 | a | 93 |
| **Chile** | 0 | 5 | 7 | 88 | 1 | 11 | 1 | 87 |
| **Denmark** | 76 | m | m | m | m | m | 59 | m |
| **Finland** | x(9) | a | a | x(12) | a | x(14) | a | x(16) |
| **Israel** | x(9) | x(10) | x(11) | x(12) | x(13) | x(14) | x(15) | x(16) |
| **Italy**[1] | x(9) | x(10) | x(11) | x(12) | x(13) | x(14) | x(15) | x(16) |
| **Luxembourg**[2] | a | a | 100 | 0 | a | 100 | a | 0 |
| **Mexico**[1] | 0 | 3 | 0 | 97 | 17 | 0 | 0 | 83 |
| **Norway** | m | m | m | m | 4 | 2 | 83 | 11 |
| **Spain** | 21 | 2 | 2 | 76 | 0 | 24 | 0 | 76 |
| **Switzerland**[1] | 6 | 0 | 0 | 94 | 1 | 5 | 0 | 94 |
| **Turkey** | 1 | 0 | 0 | 99 | 4 | 1 | 0 | 95 |
| **United States**[3] | m | m | m | 64 | 43 | 12 | 25 | 21 |
| **Economies** | | | | | | | | |
| **England (UK)**[4] | m | m | m | m | m | m | m | m |
| **Flemish Com. (Belgium)** | x(9) | a | a | x(12) | a | x(14) | a | x(16) |
| **French Com. (Belgium)**[1] | x(9) | x(10) | x(11) | x(12) | x(13) | x(14) | x(15) | x(16) |

**Note:** The distribution of financial aid to students and scholarships/grants in support of tuition fees in short-cycle tertiary and doctoral or equivalent programmes is available on line (see *StatLink* below).

1. Year of reference 2014/15.
2. The percentages presented refer to the number of students in each category as a share of the students entitled to apply for public support.
3. Estimation based on the academic year 2011/12. Estimates referring to public loans include students receiving private loans.
4. Exluding independent private institutions.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

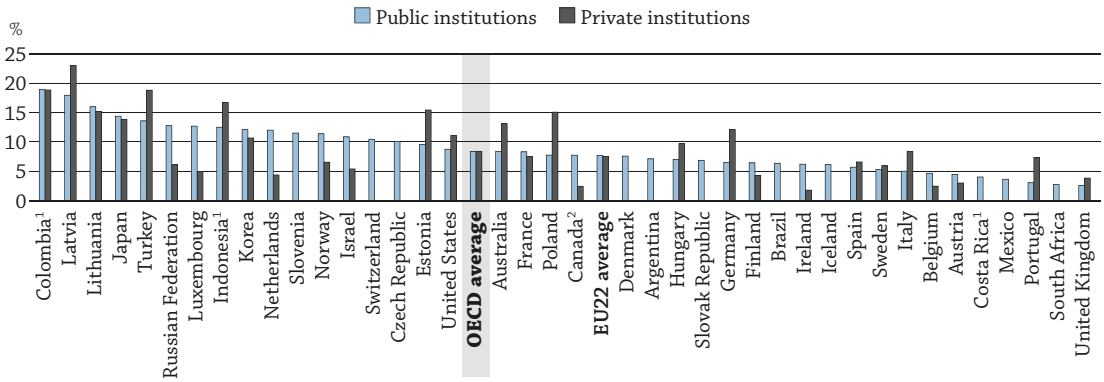
StatLink http://dx.doi.org/10.1787/888933560491

# ON WHAT RESOURCES AND SERVICES IS EDUCATION FUNDING SPENT?

- From primary up to tertiary education, 91% of educational institutions' spending is devoted to current expenditure (goods and services consumed within the current year).
- On average for OECD countries, 79% of current expenditure by public educational institutions in primary, secondary and post-secondary non-tertiary education goes on staff compensation compared to 67% in tertiary education.
- OECD countries allocate on average 9% of their total education spending to capital expenditure. The share is higher in tertiary education (11%) than at non-tertiary levels. Shares vary considerably across countries, as well as between public and private educational institutions within the same country (Figure B6.1).

## Figure B6.1. Share of capital expenditure as a percentage of total expenditure in public and private institutions (2014)

*Primary to tertiary education*




1. Year of reference 2015.
2. Includes pre-primary education.

*Countries are ranked in descending order of the share of capital expenditure in public institutions.*

**Source**: OECD/UIS/Eurostat (2017), Education at a Glance Database, http://stats.oecd.org/. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933558078

## Context

Decisions about how resources are allocated affect the material conditions under which instruction takes place, and can also influence the nature of instruction. Savings can be made by cutting capital expenditure (e.g. not building new schools) and some current expenditure (e.g. not purchasing certain teaching materials), but when pressures on education budgets increase, changes in spending on staff have the greatest impact on overall spending. However, saving money by reducing salaries and benefits or cutting the number of teachers and other staff is unpopular politically and possibly counterproductive, in that it discourages good teachers from wanting to enter or remain in the profession. In fact, in addition to managing material resources more efficiently, human resources must also be well-managed to improve the quality of education systems. Deferring expenditure, such as not hiring new teachers or not increasing salaries, is a temporary measure in response to pressures on public budgets.

This indicator describes the resources and services on which money for education from all funding sources (governments, international sources and private sector) is spent. It shows the difference between current and capital expenditure. Capital expenditure can be affected by expanding enrolments, which often require new buildings to be constructed. The indicator also presents details on how current expenditure is allocated, looking particularly at staff salaries and other aspects.

Current expenditure is mainly affected by teachers' salaries (see Indicator D3), but also by the age distribution of teachers and the size of the non-teaching staff employed in education. Educational institutions do not only offer instruction – they also provide other services, such as meals, transport, housing and/or research activities. All these expenditures are measured in this indicator.

## Other findings

- The share of current expenditure spent on staff compensation is similar in both public and private institutions at all levels of education. Four-fifths of staff compensation go to teachers at primary, secondary and post-secondary non-tertiary levels while the remainder goes to other staff. These percentages are slightly different in tertiary education, where three-fifths of staff compensation are allocated to teaching staff and the remaining two-fifths to other non-teaching staff.
- The share of non-staff current expenditure varies in public primary, secondary and post-secondary non-tertiary institutions, from a high of around 30% or more in the Czech Republic, Estonia, Finland, the Slovak Republic and Sweden to less than 10% in Argentina, Colombia, Mexico and Portugal.

B6

## Analysis

### Distribution of educational institutions' current and capital expenditure by level

Expenditure by educational institutions is composed of current and capital expenditure: current expenditure includes spending on school resources used each year, while capital expenditure refers to spending on assets that last longer than one year (see *Definitions* section). Given education's labour-intensive nature, the largest expense is current expenditure (mainly staff compensation). In 2014, an average of 91% of total expenditure by educational institutions in OECD countries was on current expenditure across all education levels from primary to tertiary. No country spends less than 81% of its educational institutions' budget on current expenditures.

Looking across all education levels, from primary to tertiary, the share of current expenditure varies from 81% in Colombia and Latvia to 97% in Belgium, South Africa and the United Kingdom (Table B6.1). At primary level, shares vary from 82% (Latvia) to 98% (Mexico and Portugal); the OECD average is 93% across lower secondary and upper secondary education, and 92% at post-secondary non-tertiary level, with shares varying from 74% (Lithuania, post-secondary non-tertiary) to 100% (Luxembourg and South Africa, post-secondary non-tertiary). Lastly, within tertiary education, the average share of current expenditure is generally lower, at 89% across OECD countries, while individual countries' allocations vary from 58% (Colombia) to 97% (Argentina, Finland and Sweden). As noted above, the share of current expenditure does not differ by more than 4 percentage points, on average, across all education levels. In most countries, the share of current expenditure at primary and secondary levels is greater than at tertiary level; the only countries where the share of current expenditure is greater at tertiary than primary or secondary levels are Argentina, Finland, Israel, Norway, South Africa and Sweden.

Country differences are likely to reflect how the various levels of education are organised, as well as the degree to which expansion in enrolments requires the construction of new buildings, especially at tertiary level. As presented in Table B6.1, the share of capital expenditure is generally higher in tertiary institutions (OECD average of 11%) than non-tertiary (8% in primary and post-secondary non-tertiary and 7% in secondary). Capital expenditure on tertiary education reaches highs of 42% in Colombia and 31% in Luxembourg. In non-tertiary education, Estonia, Lithuania (at upper secondary and post-secondary non-tertiary levels) as well as Latvia and Norway (from primary to post-secondary non-tertiary educational) allocate the highest budget shares to capital expenditures across countries with data available. The ways countries report expenditure on university buildings may partly explain differences in the share of current and capital expenditure at the tertiary level. For example, the buildings and land used for education may be owned, used free of charge or rented by the institutions; therefore the amount of current and capital expenditure partly depends on the type of real estate management used in the country (see Box B6.1 in OECD, 2012).

### How current expenditure is allocated

Current expenditure by educational institutions can be further subdivided into three broad functional categories: compensation of teachers, compensation of other staff, and other current expenditure (teaching materials and supplies, maintenance of school buildings, providing students' meals and renting school facilities). Although the shares within these categories do not change much from year to year, current and projected changes in enrolments, changes to salaries of education personnel, and the costs of maintenance of education facilities can affect not only the amounts allocated, but also the shares allotted to each category.

At primary and secondary levels, OECD countries spend on average between 61% and 63% of the total amount of current expenditure on teacher compensation and between 15% and 16% on paying other staff, leaving between 22% and 23% for other current expenditure. For tertiary education, 41% of current expenditures go to pay teachers, 26% to other staff, leaving 33% to devote to other expenditures (Table B6.2). OECD public institutions allocate 79% of their current expenditure to staff compensation in primary and secondary education (Figure B6.2) and 67% at tertiary level. On average, public institutions allocate to staff compensation 5 percentage points more than private institutions in primary education, 6 percentage points in secondary education, while this difference is lower for tertiary institutions (3 percentage points). Especially at primary and secondary level in Colombia, Italy, Portugal and Turkey as well as at tertiary level in Portugal, Slovenia, Spain and Turkey, public institutions have higher shares of all staff compensation than private institutions. By contrast, private institutions allocate much larger shares of current expenditure than public institutions to compensating staff at primary and secondary levels in Norway and in tertiary education in Australia.

There is significant variation within countries in how current expenditure is allocated across primary, secondary, and tertiary levels. Brazil and Colombia are the only countries to report a greater share of current expenditure allocated to staff compensation at the tertiary level than at any other level. In addition, Iceland allocates equal

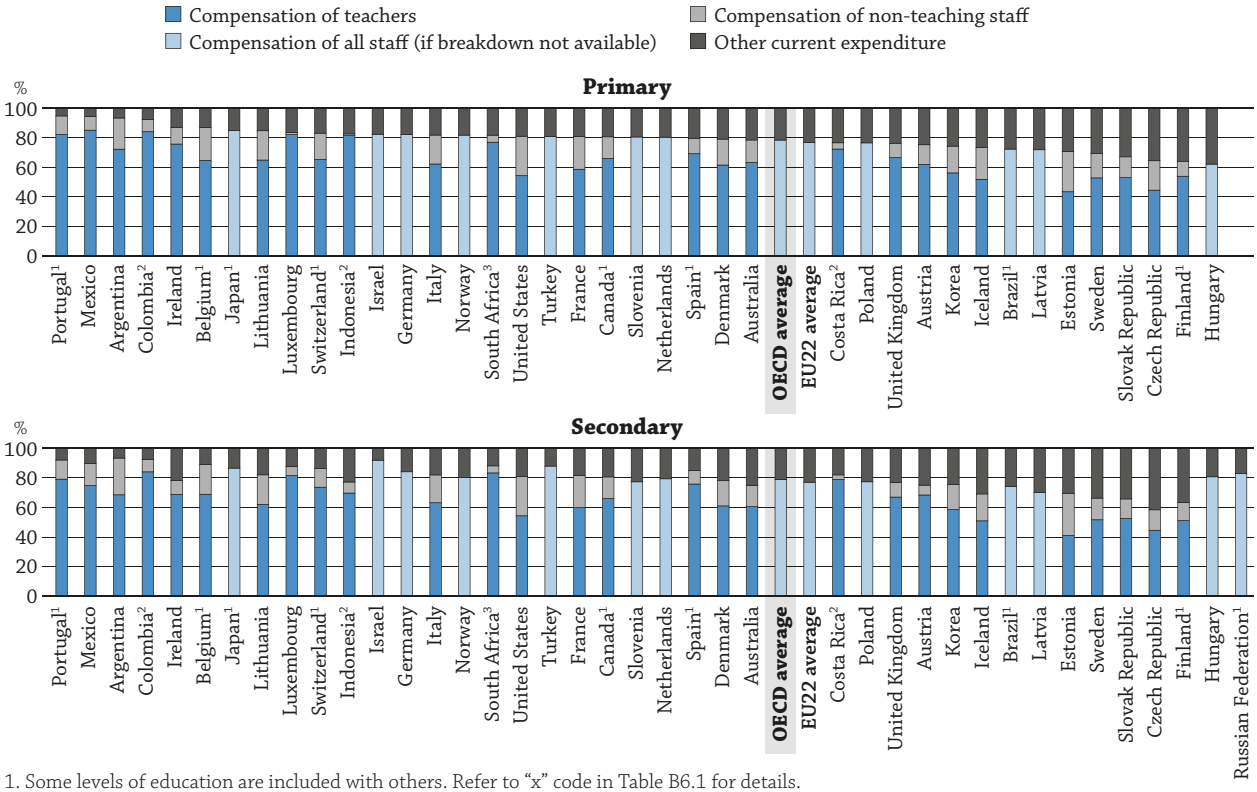
shares to staff compensation (73%) at primary and tertiary levels and France devotes between 80% and 81% across primary, secondary and tertiary education. For all other countries, tertiary education receives the lowest share of total current spending allocated to staff compensation at that level. In Indonesia, Italy and Japan the differences between tertiary and non-tertiary categories exceed 20 percentage points.

Public institutions allocate 21% of their current expenditure on non-tertiary education and 33% on tertiary education for purposes other than compensating staff, which include expenses such as maintaining school buildings, providing students' meals, or renting school buildings and other facilities. These shares are higher in private institutions, reaching 28% at non-tertiary levels and 36% in tertiary education.

In only three countries, public and private institutions allocate more than one-third of their current spending on primary education to the other current expenditure category: Hungary (39%), Finland (36%) and the Czech Republic (35%). Similarly, at lower secondary level only the Czech Republic (38%), Finland (36%) and Hungary (35%) reached this threshold, as well as at upper secondary level the Czech Republic (46%), Finland, the Slovak Republic and Sweden (37% for the latter three countries). On the other hand, at tertiary level, 16 of the 36 countries with data available allocate more than one-third of their current spending to the other current expenditure category.

## Figure B6.2. Composition of current expenditure in public educational institutions (2014)

*Primary and secondary education*




1. Some levels of education are included with others. Refer to "x" code in Table B6.1 for details.
2. Year of reference 2015.
3. Year of reference 2013.

*Countries are ranked in descending order of the share of all staff compensation in primary education.*

**Source**: OECD/UIS/Eurostat (2017), Education at a Glance Database, http://stats.oecd.org/. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933558097

The variation between levels of education in shares of current expenditure allocated to the other current expenditure category partially reflects differences in the size of administrative systems (for instance, the number of employees or the equipment available to the administrative staff across these levels). The cost of facilities and equipment is generally higher in tertiary education than at other levels. Additionally, in some countries tertiary educational institutions may be more likely to rent premises, which could account for a substantial share of current expenditure.

The differences among countries in their share allocated to paying non-teaching staff likely reflect the degree to which education personnel, such as principals, guidance counsellors, bus drivers, school nurses, janitors and maintenance workers are included in the category "non-teaching staff". Compensation of staff involved in research and development at the tertiary level may also explain some of the differences between countries and between levels of education in this share of current expenditure.

### *Distribution of current and capital expenditure by public versus private educational institutions*

Across OECD countries, the average share of current expenditure in private institutions (91%) is very close to that of public institutions (92%) at primary, secondary and post-secondary non-tertiary levels. However, it is 2 percentage points higher for private institutions than public institutions at the tertiary level (91% compared to 89%). Public and private institutions allocate their spending to either current or capital expenditure in different ways, though the differences are less marked in tertiary education than at non-tertiary levels.

Public and private institutions also differ in how current expenditure is distributed (Table B6.3). On average, across OECD countries, the share of current expenditure devoted to staff compensation at primary, secondary, and post-secondary non-tertiary levels is 7 percentage points higher in public institutions than in private ones (79% versus 72%). This gap is most pronounced in Indonesia, Italy, Portugal and Turkey, with differences of 30 percentage points or more between the two sectors. The trend is reversed in Australia, the Czech Republic, Denmark, Finland, the Netherlands and the Slovak Republic, where private institutions allocate a greater share of their current expenditure than public institutions to staff compensation. At tertiary level, private institutions allocate a higher share of their spending to the current expenditure category (91% on average across OECD countries) than do public institutions (89%). This difference is more marked in Colombia and Israel. In Estonia, Finland, Hungary, Indonesia, Italy, Norway and Portugal, the share of current expenditure is higher in public institutions.

The fact that private institutions typically devote a lower share of current expenditure to paying staff could be explained by factors inherent to each country's educational system. A few possible explanations, however, include that private institutions may be more likely to contract services from external providers; they may more often rent school buildings and other facilities (as opposed to functioning in state-owned properties); and they may be at a disadvantage when purchasing teaching materials, given their lower economies of scale than when the state purchases materials.

Public and private institutions allocate a very similar share of their total expenditure to capital investment (around 8%). However, the share may vary to a large extent by country and between public and private institutions (Figure B6.1). Public institutions in Colombia, Latvia and Lithuania allocate the highest shares of spending to capital, reaching more than 15% of total expenditure from primary to tertiary education. Public institutions spend the lowest share on capital in Austria, Costa Rica, Mexico, Portugal, South Africa and the United Kingdom. The variance across countries is even higher for private institutions, with private institutions in Colombia, Estonia, Indonesia, Latvia, Lithuania, Poland and Turkey spending more than 15% of their total expenditure on capital. The difference between public and private institutions in the share of their allocations to capital expenditure is below 4 percentage points for two-thirds of the countries with data available. However, in a few countries this difference is more pronounced: for example, in the Czech Republic, Luxembourg and the Netherlands the difference between public and private institutions is more than 7 percentage points. Estonia, Germany, Poland and Turkey have the largest differences in the share of capital expenditure and their private institutions spend proportionally more than their public institutions.

## Definitions

**Capital expenditure** refers to spending on assets that last longer than one year, including construction, renovation or major repair of buildings, and new or replacement equipment. The capital expenditure reported here represents the value of educational capital acquired or created during the year in question – that is, the amount of capital formation – regardless of whether the capital expenditure was financed from current revenue or through borrowing. Neither current nor capital expenditure includes debt servicing.

**Current expenditure** refers to spending on goods and services consumed within the current year and requiring recurrent production in order to sustain educational services. Other current expenditure (i.e. not on paying staff) by educational institutions includes expenditure on subcontracted services such as support services (e.g. maintenance of school buildings), ancillary services (e.g. preparation of meals for students) and rental of school buildings and other facilities. These services are obtained from outside providers, unlike the services provided by education authorities or by educational institutions using their own personnel.

**Staff compensation** (including teachers and non-teaching staff, see below) includes salaries (i.e. gross salaries of educational personnel, before deduction of taxes, contributions for retirement or healthcare plans, and other contributions or premiums for social insurance or other purposes), expenditure on retirement (actual or imputed expenditure by employers or third parties to finance retirement benefits for current educational personnel) and expenditure on other non-salary compensation (healthcare or health insurance, disability insurance, unemployment compensation, maternity and childcare benefits, other forms of social insurance). The "teachers" category includes only personnel who participate directly in the instruction of students. The "non-teaching staff" category includes other pedagogical, administrative, and professional personnel as well as support personnel (e.g. head-teachers, other administrators of schools, supervisors, counsellors, school psychologists and health personnel, librarians, building operations and maintenance staff).

## Source

Data refer to the financial year 2014 (unless otherwise specified) and are based on the UOE data collection on education statistics administered by the OECD in 2016 (for details see Annex 3 at www.oecd.org/education/education-at-a-glance-19991487.htm). Data from Argentina, China, Colombia, India, Indonesia, Saudi Arabia, South Africa are from the UNESCO Institute of Statistics (UIS).

Calculations cover expenditure by public institutions or, where available, by both public and private institutions.

**Note regarding data from Israel**

The statistical data for Israel are supplied by and are under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

### References

OECD (2012), *Education at a Glance 2012: OECD Indicators*, OECD Publishing, Paris, http://dx.doi.org/10.1787/eag-2012-en.

## Indicator B6 Tables

StatLink http://dx.doi.org/10.1787/888933560605

| | |
|---|---|
| Table B6.1 | Share of current and capital expenditure by education level (2014) |
| Table B6.2 | Current expenditure by resource category (2014) |
| Table B6.3 | Share of current expenditure by resource category and type of institution (2014) |

Cut-off date for the data: 19 July 2017. Any updates on data can be found on line at http://dx.doi.org/10.1787/eag-data-en.

## Table B6.1. Share of current and capital expenditure by education level (2014)

*Distribution of current and capital expenditure by public and private educational institutions*

| | | Primary | | Lower secondary | | Upper secondary | | Post-secondary non-tertiary | | Tertiary | | From primary to tertiary | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Current | Capital | Current | Capital | Current | Capital | Current | Capital | Current | Capital | Current | Capital |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
| OECD | Australia | 92 | 8 | 91 | 9 | 91 | 9 | 96 | 4 | 88 | 12 | 90 | 10 |
| | Austria | 96 | 4 | 97 | 3 | 98 | 2 | 99 | 1 | 93 | 7 | 96 | 4 |
| | Belgium[1] | 96 | 4 | 98 | 2 | 97[d] | 3[d] | x(5) | x(6) | 95 | 5 | 97 | 3 |
| | Canada[2] | 93[d] | 7[d] | x(1) | x(2) | 93 | 7 | m | m | 92 | 8 | 93 | 7 |
| | Chile | m | m | m | m | m | m | a | a | m | m | m | m |
| | Czech Republic | 86 | 14 | 87 | 13 | 94 | 6 | m | m | m | m | m | m |
| | Denmark | 91 | 9 | 93 | 7 | 92 | 8 | a | a | m | m | m | m |
| | Estonia | 93 | 7 | 92 | 8 | 86 | 14 | 83 | 17 | 86 | 14 | 88 | 12 |
| | Finland | 92 | 8 | 92 | 8 | 93[d] | 7[d] | x(5) | x(6) | 97 | 3 | 94 | 6 |
| | France | 93 | 7 | 92 | 8 | 92 | 8 | 91 | 9 | 91 | 9 | 92 | 8 |
| | Germany | 94 | 6 | 95 | 5 | 90 | 10 | 93 | 7 | 91 | 9 | 92 | 8 |
| | Greece | m | m | m | m | m | m | m | m | m | m | m | m |
| | Hungary | 93 | 7 | 95 | 5 | 95 | 5 | 95 | 5 | 86 | 14 | 92 | 8 |
| | Iceland | m | m | m | m | m | m | m | m | m | m | m | m |
| | Ireland | 92 | 8 | 95 | 5 | 95 | 5 | 95 | 5 | 94 | 6 | 94 | 6 |
| | Israel | 89 | 11 | x(5) | x(6) | 93[d] | 7[d] | 93 | 7 | 94 | 6 | 92 | 8 |
| | Italy | 96 | 4 | 96 | 4 | 98 | 2 | 83 | 17 | 90 | 10 | 95 | 5 |
| | Japan | 85 | 15 | 85 | 15 | 88[d] | 12[d] | x(5, 9) | x(6, 10) | 86[d] | 14[d] | 86 | 14 |
| | Korea | 88 | 12 | 90 | 10 | 89 | 11 | a | a | 87 | 13 | 88 | 12 |
| | Latvia | 82 | 18 | 82 | 18 | 84 | 16 | 86 | 14 | 76 | 24 | 81 | 19 |
| | Luxembourg[3] | 93 | 7 | 89 | 11 | 89 | 11 | 100 | 0 | 69 | 31 | 87 | 13 |
| | Mexico[3] | 98 | 2 | 98 | 2 | 97 | 3 | a | a | 92 | 8 | 96 | 4 |
| | Netherlands | 88 | 12 | 89 | 11 | 91 | 9 | 93 | 7 | 88 | 12 | 89 | 11 |
| | New Zealand | m | m | m | m | m | m | m | m | m | m | m | m |
| | Norway | 88 | 12 | 88 | 12 | 88 | 12 | 88 | 12 | 91 | 9 | 89 | 11 |
| | Poland[4] | 93 | 7 | 97 | 3 | 95[d] | 5[d] | 95 | 5 | 85 | 15 | 92 | 8 |
| | Portugal | 98 | 2 | 98 | 2 | 95[d] | 5[d] | x(5, 9) | x(6, 10) | 94[d] | 6[d] | 96 | 4 |
| | Slovak Republic[3] | 97 | 3 | 97 | 3 | 98 | 2 | 98 | 2 | 83 | 17 | 93 | 7 |
| | Slovenia | 89 | 11 | 89 | 11 | 92 | 8 | a | a | 86 | 14 | 89 | 11 |
| | Spain | 96 | 4 | 97 | 3 | 96[d] | 4[d] | x(5) | x(6) | 88 | 12 | 94 | 6 |
| | Sweden | 94 | 6 | 94 | 6 | 92 | 8 | 94 | 6 | 97 | 3 | 95 | 5 |
| | Switzerland[3] | 88 | 12 | 90 | 10 | 94[d] | 6[d] | x(5) | x(6) | 89 | 11 | 90 | 10 |
| | Turkey | 88 | 12 | 90 | 10 | 89 | 11 | a | a | 78 | 22 | 85 | 15 |
| | United Kingdom | 97 | 3 | 98 | 2 | 98 | 2 | a | a | 94 | 6 | 97 | 3 |
| | United States | 92 | 8 | 92 | 8 | 92 | 8 | 88 | 12 | 89 | 11 | 91 | 9 |
| | OECD average | 92 | 8 | 93 | 7 | 93 | 7 | 92 | 8 | 89 | 11 | 91 | 9 |
| | EU22 average | 93 | 7 | 93 | 7 | 93 | 7 | m | m | 89 | 11 | 92 | 8 |
| Partners | Argentina[3] | 95 | 5 | 89 | 11 | 88 | 12 | a | a | 97 | 3 | 93 | 7 |
| | Brazil[3] | 94 | 6 | 94 | 6 | 93[d] | 7[d] | x(5) | x(6) | 92 | 8 | 94 | 6 |
| | China | m | m | m | m | m | m | m | m | m | m | m | m |
| | Colombia[5] | 90 | 10 | 93 | 7 | 93 | 7 | x(9) | x(10) | 58[d] | 42[d] | 81 | 19 |
| | Costa Rica[3] | 94 | 6 | 95 | 5 | 96 | 4 | a | a | m | m | m | m |
| | India[6] | m | m | m | m | m | m | m | m | m | m | m | m |
| | Indonesia[5] | 87 | 13 | 94 | 6 | 91 | 9 | a | a | 78 | 22 | 87 | 13 |
| | Lithuania | 94 | 6 | 93 | 7 | 87 | 13 | 74 | 26 | 74 | 26 | 84 | 16 |
| | Russian Federation | x(5) | x(6) | x(5) | x(6) | 92[d] | 8[d] | x(5) | x(6) | 80 | 20 | 87 | 13 |
| | Saudi Arabia | m | m | m | m | m | m | m | m | m | m | m | m |
| | South Africa[3, 6] | 96 | 4 | 97[d] | 3[d] | x(3) | x(4) | 100 | 0 | 100 | 0 | 97 | 3 |
| | G20 average | m | m | m | m | m | m | m | m | m | m | m | m |

1. Public and government-dependent private institutions only.
2. Primary education includes pre-primary programmes.
3. Public institutions only. For Luxembourg and the Slovak Republic, tertiary education only.
4. Upper secondary education includes information from vocational programmes in lower secondary education.
5. Year of reference 2015.
6. Year of reference 2013.

**Source:** OECD/UIS/Eurostat (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933560548

## Table B6.2. Current expenditure by resource category (2014)

*Distribution of current expenditure by public and private educational institutions as a percentage of total current expenditure*

| | | Primary | | | | Lower secondary | | | | Upper secondary | | | | Tertiary | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Compensation of all staff | | | Other current expenditure | Compensation of all staff | | | Other current expenditure | Compensation of all staff | | | Other current expenditure | Compensation of all staff | | | Other current expenditure |
| | | Compensation of teachers | Compensation of other staff | Total | | Compensation of teachers | Compensation of other staff | Total | | Compensation of teachers | Compensation of other staff | Total | | Compensation of teachers | Compensation of other staff | Total | |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) |
| OECD | Australia | 63 | 16 | **78** | 22 | 61 | 16 | **77** | 23 | 57 | 16 | **73** | 27 | 34 | 29 | **63** | 37 |
| | Austria | 62 | 13 | **74** | 26 | 69 | 7 | **77** | 23 | 68 | 5 | **73** | 27 | 61 | 5 | **66** | 34 |
| | Belgium[1, 2] | 66 | 21 | **87** | 13 | 73 | 16 | **89** | 11 | 69 | 18 | **87** | 13 | 48 | 29 | **77** | 23 |
| | Canada[2] | 65[d] | 15[d] | **80[d]** | 20[d] | x(1) | (x2) | **x(3)** | x(4) | 65 | 15 | **80** | 20 | 38 | 29 | **66** | 34 |
| | Chile | m | m | **m** | m | m | m | **m** | m | m | m | **m** | m | m | m | **m** | m |
| | Czech Republic | 45 | 20 | **65** | 35 | 45 | 18 | **62** | 38 | 44 | 10 | **54** | 46 | m | m | **m** | m |
| | Denmark | 61 | 17 | **79** | 21 | 61 | 18 | **79** | 21 | 61 | 17 | **77** | 23 | m | m | **m** | m |
| | Estonia | 44 | 26 | **70** | 30 | 43 | 28 | **71** | 29 | 39 | 28 | **67** | 33 | 44 | 17 | **61** | 39 |
| | Finland[2] | 54 | 10 | **64** | 36 | 55 | 10 | **64** | 36 | 48 | 16 | **63** | 37 | 34 | 29 | **63** | 37 |
| | France | 58 | 22 | **81** | 19 | 57 | 23 | **80** | 20 | 60 | 20 | **80** | 20 | 43 | 38 | **81** | 19 |
| | Germany | x(3) | x(3) | **82** | 18 | x(7) | x(7) | **84** | 16 | x(11) | x(11) | **80** | 20 | x(15) | x(15) | **67** | 33 |
| | Greece | m | m | **m** | m | m | m | **m** | m | m | m | **m** | m | m | m | **m** | m |
| | Hungary | x(3) | x(3) | **61** | 39 | x(7) | x(7) | **65** | 35 | x(11) | x(11) | **82** | 18 | x(15) | x(15) | **62** | 38 |
| | Iceland | 52 | 21 | **73** | 27 | 48 | 20 | **68** | 32 | 54 | 16 | **70** | 30 | 44 | 29 | **73** | 27 |
| | Ireland[3] | 76 | 11 | **87** | 13 | 69 | 10 | **79** | 21 | 68 | 9 | **77** | 23 | 44 | 26 | **71** | 29 |
| | Israel | x(3) | x(3) | **82** | 18 | x(11) | x(11) | **x(11)** | x(12) | x(11) | x(11) | **84** | 16 | x(15) | x(15) | **70** | 30 |
| | Italy | 62 | 19 | **81** | 19 | 64 | 19 | **83** | 17 | 62 | 17 | **79** | 21 | 35 | 21 | **57** | 43 |
| | Japan[2] | x(3) | x(3) | **85** | 15 | x(7) | x(7) | **84** | 16 | x(11) | x(11) | **84** | 16 | x(15) | x(15) | **59** | 41 |
| | Korea | 56 | 18 | **74** | 26 | 60 | 17 | **77** | 23 | 57 | 16 | **73** | 27 | 37 | 22 | **59** | 41 |
| | Latvia | x(3) | x(3) | **72** | 28 | x(7) | x(7) | **72** | 28 | x(11) | x(11) | **69** | 31 | x(15) | x(15) | **66** | 34 |
| | Luxembourg[3] | 82 | 1 | **84** | 16 | 81 | 6 | **87** | 13 | 81 | 6 | **88** | 12 | 20 | 55 | **75** | 25 |
| | Mexico[3] | 85 | 9 | **94** | 6 | 84 | 11 | **95** | 5 | 65 | 19 | **84** | 16 | 55 | 13 | **68** | 32 |
| | Netherlands | x(3) | x(3) | **80** | 20 | x(7) | x(7) | **81** | 19 | x(11) | x(11) | **79** | 21 | x(15) | x(15) | **71** | 29 |
| | New Zealand | m | m | **m** | m | m | m | **m** | m | m | m | **m** | m | m | m | **m** | m |
| | Norway | x(3) | x(3) | **82** | 18 | x(7) | x(7) | **82** | 18 | x(11) | x(11) | **83** | 17 | x(15) | x(15) | **68** | 32 |
| | Poland[2] | x(3) | x(3) | **77** | 23 | x(7) | x(7) | **77** | 23 | x(11) | x(11) | **77[d]** | 23[d] | x(15) | x(15) | **69** | 31 |
| | Portugal[2] | 78 | 12 | **90** | 10 | 76 | 13 | **89** | 11 | 72 | 12 | **84** | 16 | x(15) | x(15) | **69** | 31 |
| | Slovak Republic[3] | 53 | 14 | **67** | 33 | 55 | 13 | **68** | 32 | 49 | 14 | **63** | 37 | 32 | 23 | **55** | 45 |
| | Slovenia | x(3) | x(3) | **80** | 20 | x(7) | x(7) | **80** | 20 | x(11) | x(11) | **74** | 26 | x(15) | x(15) | **69** | 31 |
| | Spain[2] | 68 | 10 | **79** | 21 | 76 | 9 | **84** | 16 | 74 | 9 | **83** | 17 | 53 | 20 | **73** | 27 |
| | Sweden | 53 | 16 | **69** | 31 | 53 | 16 | **69** | 31 | 51 | 12 | **63** | 37 | x(15) | x(15) | **65** | 35 |
| | Switzerland[2, 3] | 65 | 18 | **83** | 17 | 73 | 12 | **85** | 15 | 74 | 13 | **88** | 12 | 50 | 25 | **76** | 24 |
| | Turkey | x(3) | x(3) | **79** | 21 | x(7) | x(7) | **85** | 15 | x(11) | x(11) | **80** | 20 | x(15) | x(15) | **69** | 31 |
| | United Kingdom | 67 | 10 | **76** | 24 | 66 | 10 | **76** | 24 | 62 | 12 | **74** | 26 | 35 | 28 | **63** | 37 |
| | United States | 54 | 27 | **81** | 19 | 54 | 27 | **81** | 19 | 54 | 27 | **81** | 19 | 30 | 35 | **64** | 36 |
| | OECD average | 62 | 16 | **78** | 22 | 63 | 15 | **78** | 22 | 61 | 15 | **77** | 23 | 41 | 26 | **67** | 33 |
| | EU22 average | 62 | 15 | **76** | 24 | m | m | **77** | 23 | 61 | 14 | **75** | 25 | m | m | **67** | 33 |
| Partners | Argentina | 72 | 21 | **93** | 7 | 69 | 24 | **93** | 7 | 68 | 25 | **93** | 7 | 57 | 29 | **86** | 14 |
| | Brazil[2, 3] | x(3) | x(3) | **72** | 28 | x(7) | x(7) | **75** | 25 | x(11) | x(11) | **74[d]** | 26[d] | x(15) | x(15) | **80** | 20 |
| | China | m | m | **m** | m | m | m | **m** | m | m | m | **m** | m | m | m | **m** | m |
| | Colombia[4] | 78 | 8 | **86** | 14 | 84 | 6 | **90** | 10 | 85 | 5 | **90** | 10 | 97 | 0 | **97** | 3 |
| | Costa Rica[3, 4] | 72 | 4 | **77** | 23 | 78 | 3 | **82** | 18 | 80 | 3 | **82** | 18 | m | m | **m** | m |
| | India | m | m | **m** | m | m | m | **m** | m | m | m | **m** | m | m | m | **m** | m |
| | Indonesia[4] | 78 | 1 | **79** | 21 | 66 | 7 | **73** | 27 | 59 | 7 | **66** | 34 | 31 | 6 | **37** | 63 |
| | Lithuania | 65 | 20 | **84** | 16 | 65 | 19 | **84** | 16 | 56 | 21 | **78** | 22 | 32 | 34 | **66** | 34 |
| | Russian Federation[2] | x(11) | x(11) | **x(11)** | x(12) | x(11) | x(11) | **x(11)** | x(12) | x(11) | x(11) | **83[d]** | 17[d] | x(15) | x(15) | **67** | 33 |
| | Saudi Arabia | m | m | **m** | m | m | m | **m** | m | m | m | **m** | m | m | m | **m** | m |
| | South Africa[3, 5] | 77 | 5 | **82** | 18 | 83[d] | 5[d] | **88[d]** | 12[d] | x(5) | x(6) | **x(7)** | x(8) | m | m | **m** | m |
| | G20 average | m | m | **m** | m | m | m | **m** | m | m | m | **m** | m | m | m | **m** | m |

1. Public and government-dependent private institutions only.
2. Some levels of education are included with others. Refer to "x" code in Table B6.1 for details.
3. Public institutions only. For Luxembourg and the Slovak Republic, tertiary education only.
4. Year of reference 2015.
5. Year of reference 2013.

**Source:** OECD/UIS/Eurostat (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933560567

B6

## Table B6.3. Share of current expenditure by resource category and type of institution (2014)

*Distribution of current expenditure by educational institutions*

| | | Primary, secondary and post-secondary non-tertiary | | | | | | | | Tertiary | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Share of current expenditure in total expenditure | | Compensation of staff as a percentage of current expenditure | | | | | | Share of current expenditure in total expenditure | | Compensation of staff as a percentage of current expenditure | | | | | |
| | | | | Compensation of teachers | | Compensation of other staff | | Total | | | | Compensation of teachers | | Compensation of other staff | | Total | |
| | | Public | Private | Public | Private | Public | Private | Public | Private | Public | Private | Public | Private | Public | Private | Public | Private |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) |
| OECD | Australia | 94 | 87 | 61 | 58 | 15 | 18 | **76** | **77** | 88 | 93 | 33 | 42 | 28 | 39 | **62** | **81** |
| | Austria | 97 | 99 | 66 | 66 | 9 | 4 | **75** | **70** | 93 | 95 | 61 | 59 | 6 | 4 | **67** | **63** |
| | Belgium | 95 | 98 | 67 | 70 | 21 | 17 | **88** | **87** | 95 | 95 | 50 | 47 | 28 | 30 | **78** | **77** |
| | Canada[1] | 93 | 94 | 66 | 52 | 15 | 20 | **81** | **71** | 91 | 100 | 38 | 38 | 30 | 24 | **67** | **62** |
| | Chile | m | m | m | m | m | m | **m** | **m** | m | m | m | m | m | m | **m** | **m** |
| | Czech Republic | 88 | 25 | 45 | 49 | 16 | 26 | **60** | **75** | 93 | m | 30 | m | 22 | m | **52** | **m** |
| | Denmark | 90 | m | 61 | 61 | 17 | 17 | **78** | **79** | 97 | m | x(15) | m | x(15) | m | **77** | **m** |
| | Estonia | 90 | 91 | 41 | 50 | 29 | 13 | **69** | **63** | 95 | 84 | 0 | 53 | 55 | 9 | **55** | **62** |
| | Finland | 92 | 96 | 52 | 49 | 11 | 18 | **64** | **67** | 97 | 96 | 32 | 41 | 30 | 25 | **62** | **65** |
| | France | 92 | 93 | 59 | 53 | 22 | 20 | **81** | **74** | 91 | 91 | 41 | 55 | 41 | 22 | **82** | **77** |
| | Germany | 95 | 87 | x(7) | x(8) | x(7) | x(8) | **83** | **76** | 91 | 94 | x(15) | x(16) | x(15) | x(16) | **67** | **63** |
| | Greece | m | m | m | m | m | m | **m** | **m** | m | m | m | m | m | m | **m** | **m** |
| | Hungary | 95 | 93 | x(7) | x(8) | x(7) | x(8) | **78** | **59** | 87 | 80 | x(15) | x(16) | x(15) | x(16) | **61** | **68** |
| | Iceland | 94 | 100 | 51 | 53 | 20 | 17 | **71** | **70** | 95 | 100 | 44 | 44 | 29 | 29 | **73** | **73** |
| | Ireland | 94 | 100 | 70 | m | 10 | m | **80** | **m** | 94 | 94 | 44 | m | 26 | m | **71** | **m** |
| | Israel | 89 | 95 | x(7) | x(8) | x(7) | x(8) | **86** | **74** | 76 | 94 | x(15) | x(16) | x(15) | x(16) | **54** | **70** |
| | Italy | 96 | 94 | 62 | 50 | 19 | 0 | **81** | **50** | 91 | 88 | 36 | 29 | 22 | 18 | **58** | **47** |
| | Japan[1] | 86 | 85 | x(7) | x(8) | x(7) | x(8) | **86** | **74** | 84 | 87 | x(15) | x(16) | x(15) | x(16) | **55** | **62** |
| | Korea | 88 | 94 | 57 | 57 | 18 | 15 | **75** | **72** | 87 | 87 | 29 | 41 | 25 | 20 | **54** | **61** |
| | Latvia | 82 | 83 | x(7) | x(8) | x(7) | x(8) | **71** | **71** | 74 | 77 | x(15) | x(16) | x(15) | x(16) | **68** | **66** |
| | Luxembourg | 91 | 95 | 82 | 70 | 4 | 13 | **86** | **83** | 69 | a | 20 | a | 55 | a | **75** | **a** |
| | Mexico | 98 | m | 80 | m | 12 | m | **92** | **m** | 92 | m | 55 | m | 13 | m | **68** | **m** |
| | Netherlands | 88 | 97 | x(7) | x(8) | x(7) | x(8) | **80** | **86** | 87 | 93 | x(15) | x(16) | x(15) | x(16) | **70** | **78** |
| | New Zealand | m | m | m | m | m | m | **m** | **m** | m | m | m | m | m | m | **m** | **m** |
| | Norway | 87 | 100 | x(7) | m | x(7) | m | **81** | **m** | 92 | 80 | x(15) | x(16) | x(15) | x(16) | **68** | **65** |
| | Poland | 96 | 80 | x(7) | x(8) | x(7) | x(8) | **77**[d] | **76**[d] | 85 | 92 | x(15) | x(16) | x(15) | x(16) | **68** | **78** |
| | Portugal[1] | 98 | 92 | 80 | 54 | 13 | 9 | **93** | **63** | 94 | 93 | x(15) | x(16) | x(15) | x(16) | **75** | **48** |
| | Slovak Republic | 97 | 100 | 53 | 61 | 14 | 13 | **66** | **75** | 83 | m | 32 | m | 23 | m | **55** | **m** |
| | Slovenia | 90 | m | x(7) | x(8) | x(7) | x(8) | **79** | **70** | 85 | m | x(15) | x(16) | x(15) | x(16) | **72** | **41** |
| | Spain | 97 | 94 | 73 | 69 | 10 | 8 | **83** | **77** | 88 | 91 | 57 | 36 | 21 | 15 | **77** | **51** |
| | Sweden | 94 | 93 | 38 | 32 | 12 | 8 | **68** | **66** | 97 | 97 | x(15) | x(16) | x(15) | x(16) | **65** | **63** |
| | Switzerland | 90 | m | 70 | m | 15 | m | **85** | **m** | 89 | m | 50 | m | 25 | m | **76** | **m** |
| | Turkey | 91 | 81 | x(7) | x(8) | x(7) | x(8) | **85** | **55** | 77 | 82 | x(15) | x(16) | x(15) | x(16) | **76** | **53** |
| | United Kingdom | 97 | 98 | 67 | 62 | 10 | 12 | **76** | **74** | a | 94 | a | 35 | a | 28 | **a** | **63** |
| | United States | 92 | 92 | 54 | 52 | 27 | 26 | **81** | **77** | 89 | 88 | 31 | 28 | 35 | 34 | **66** | **62** |
| | OECD average | 92 | 91 | 62 | 56 | 15 | 15 | **79** | **72** | 89 | 91 | 38 | m | 29 | m | **67** | **64** |
| | EU22 average | 93 | 90 | 61 | m | 14 | m | **77** | **72** | 89 | 92 | m | m | m | m | **68** | **63** |
| Partners | Argentina | 92 | m | 70 | m | 23 | m | **93** | **m** | 97 | m | 57 | m | 29 | m | **86** | **m** |
| | Brazil | 94 | m | x(7) | m | x(7) | m | **73** | **m** | 92 | m | x(15) | m | x(15) | m | **80** | **m** |
| | China | m | m | m | m | m | m | **m** | **m** | m | m | m | m | m | m | **m** | **m** |
| | Colombia[1, 2] | 94 | 88 | 84 | 78 | 8 | 4 | **92** | **81** | 46 | 70 | 92 | m | 0 | m | **92** | **m** |
| | Costa Rica[2] | 95 | m | 75 | m | 4 | m | **79** | **m** | m | m | m | m | m | m | **m** | **m** |
| | India[3] | m | m | m | m | m | m | **m** | **m** | m | m | m | m | m | m | **m** | **m** |
| | Indonesia[2] | 90 | 85 | 77 | 22 | 3 | 2 | **80** | **25** | 78 | 77 | 30 | 34 | 5 | 11 | **36** | **45** |
| | Lithuania | 91 | 89 | 61 | 59 | 20 | 16 | **82** | **76** | 73 | 82 | 33 | 28 | 34 | 31 | **67** | **59** |
| | Russian Federation | 92 | 96 | x(7) | x(8) | x(7) | x(8) | **83** | **64** | 79 | 93 | x(15) | x(16) | x(15) | x(16) | **67** | **60** |
| | Saudi Arabia | m | m | m | m | m | m | **m** | **m** | m | m | m | m | m | m | **m** | **m** |
| | South Africa[3] | m | m | m | m | m | m | **m** | **m** | m | m | m | m | m | m | **m** | **m** |
| | G20 average | m | m | m | m | m | m | **m** | **m** | m | m | m | m | m | m | **m** | **m** |

1. Some levels of education are included with others. Refer to "x" code in Table B6.1 for details.
2. Year of reference 2015.
3. Year of reference 2013.

**Source:** OECD/UIS/Eurostat (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

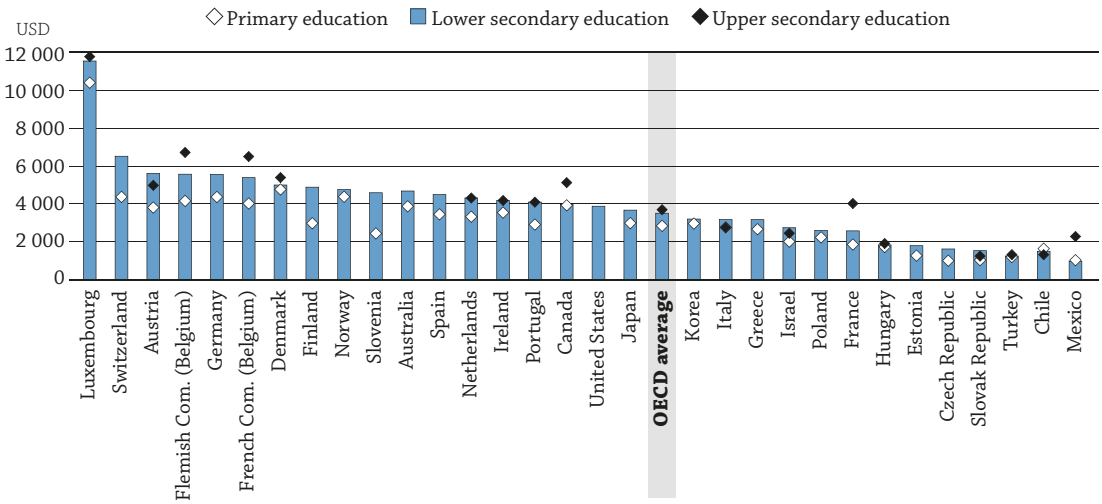
StatLink http://dx.doi.org/10.1787/888933560586

## WHICH FACTORS INFLUENCE THE LEVEL OF EXPENDITURE ON EDUCATION?

- Teachers' compensation usually accounts for the largest share of expenditure on education. Four factors influence the salary cost of teachers per student: teachers' salaries, instruction time of students, teaching time of teachers and estimated class size (see Box B7.1 and *Definitions* section). Variations in the salary cost of teachers per student result from the various combinations of these four factors.
- On average across OECD countries, the salary cost of teachers per student increases with the level of education. This general increase is partly due to increases in teachers' salaries and in students' instruction time at higher educational levels.
- Between 2010 and 2015, the salary cost of teachers per student increased in a majority of countries at both primary and lower secondary levels of education.

**Figure B7.1. Annual salary cost of teachers per student in public institutions, by level of education (2015)**

*In USD converted using PPPs for private consumption*




*Countries and economies are ranked in descending order of the salary cost of teachers per student in lower secondary education.*

**Source**: OECD (2017), Table B7.1. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933558116

### Context

Governments have become increasingly interested in the relationship between the amount of resources devoted to education and student learning outcomes. They seek to provide more and better education for their population, while at the same time ensuring that public funding is used efficiently, particularly when public budgets are tight. Teachers' compensation usually accounts for the largest share of expenditure on education and thus of expenditure per student (see Indicator B6). The salary cost of teachers, as calculated in this indicator, is a function of students' instruction time, teachers' teaching time, teachers' salaries and the number of teachers needed to teach students (which depends on estimated class size) (see *Definitions* section and Box B7.1).

Differences among countries in these four factors may explain differences in the level of expenditure per student. Similarly, a given level of expenditure may be associated with different combinations of these factors. This indicator examines the choices countries make when investing their resources in primary and secondary education and explores how changes in policy choices between 2010 and 2015 related to these four factors have affected the salary cost of teachers. Some of these choices

do not reflect policy decisions, but instead demographic changes that led to a change in the number of students. For example, in countries where enrolments have been declining in recent years, class size would also shrink (assuming all other factors remain constant), unless there is a simultaneous drop in the number of teachers as well.

## Other findings

- Similar levels of expenditure among countries can mask a variety of contrasting policy choices. For example, in their lower secondary general programmes, Australia and Slovenia had similar salary costs of teachers per student in 2015 (both above the OECD average). In Slovenia, this was the result of below-average teachers' salaries and instruction time pushing costs down, and below-average teaching time and estimated class size pushing costs up. In Australia, teachers' salaries and instruction time are above average, but the salary cost per student is pushed down by the above-average teaching time.
- The ranking of countries by salary cost of teachers per student changes considerably when done as a percentage of GDP per capita rather than by value in USD. For example, while Luxembourg has by far the highest salary cost in lower secondary education (at USD 11 532 per student, compared to USD 6 515 for Switzerland, the second highest country), its salary cost as a share of GDP (11.2%) ranks it in only tenth place.
- Teachers' salaries generally have the biggest influence on the extent to which the absolute (USD) salary cost of teachers per student varies at each level of education; estimated class size has the second largest impact. However, when taking into account differences in countries' wealth (i.e. analysing salaries over GDP per capita), teachers' salaries are less often the primary factor.

B7

## Analysis

### Variation in the salary cost of teachers per student by level of education

Per-student expenditure reflects structural and institutional factors – the organisation of schools and curricula. Current expenditure on educational institutions can be broken down into compensation of staff and other expenditures (i.e. maintenance of school buildings, providing students' meals or the rental of school buildings and other facilities). Teacher compensation usually constitutes the largest part of current expenditure, and therefore of expenditure on education (see Indicator B6). As a result, the level of teacher compensation relative to the number of students (referred to here as "salary cost of teachers per student") is the largest share of expenditure per student.

#### Box B7.1. Calculating the salary cost of teachers per student

One way to analyse the factors that have an impact on expenditure per student and the extent of their impact is to compare the differences between national figures and the OECD average. This analysis computes the differences in expenditure per student among countries and the OECD average, and then calculates the contribution of these different factors to the variation from the OECD average.

This exercise is based on a mathematical relationship between the various factors and follows the method presented in the Canadian publication *Education Statistics Bulletin* (Quebec Ministry of Education, Recreation and Sports, 2003) (see explanations in Annex 3). Educational expenditure is mathematically linked to three factors related to a country's school context (number of hours of instruction time for students, number of teaching hours for teachers, estimated class size) and one factor relating to teachers (statutory salary).

Expenditure is broken down into compensation of teachers and other expenditure (defined as all expenditure other than compensation of teachers). The salary cost of teachers per student (CCS) is calculated using the following equation:

$$CCS = SAL \times instT \times \frac{1}{teachT} \times \frac{1}{ClassSize} = \frac{SAL}{Ratiostud/teacher}$$

*SAL:* teachers' salaries (estimated by annual statutory salary after 15 years of experience)
*instT:* instruction time of students (estimated as the annual intended instruction time, in hours, for students)
*teachT:* teaching time of teachers (estimated as the annual number of teaching hours for teachers)
*ClassSize:* a proxy for class size
*Ratiostud/teacher:* the ratio of students to teaching staff

With the exception of estimated class size, values for these variables can be obtained from the indicators published in *Education at a Glance* (Chapter D). For the purpose of the analysis in this indicator, an "estimated" class size or proxy class size is computed based on the ratio of students to teaching staff and the number of teaching hours and instruction hours. As a proxy, this estimated class size should be interpreted with caution.

Using this mathematical relationship and comparing a country's values for the four factors to the OECD averages makes it possible to measure both the direct and indirect contribution of each of these four factors to the variation in salary cost per student between that country and the OECD average (for more details, see Annex 3). For example, in the case where only two factors interact, if a worker receives a 10% increase in the hourly wage and increases the number of hours of work by 20%, his/her earnings will increase by 32% as a result of the direct contribution of each of these variations (0.1 + 0.2) and the indirect contribution of these variations due to the combination of the two factors (0.1 * 0.2). To account for differences in countries' level of wealth, salary cost per student, as well as teachers' salaries, can be divided by GDP per capita (on the assumption that GDP per capita is an estimate of countries' level of wealth). This makes it possible to compare countries' "relative" salary cost per student (Table B7.1).

As the salary cost of teachers per student is estimated based on values for statutory salaries of teachers after 15 years of experience, theoretical instruction time of students, statutory teaching time of teachers and estimated class size, this measure may differ from the actual salary cost of teachers resulting from the combination of actual average values for these four factors. This also explains part of the differences between this indicator and Indicators B1, B2, B3 and B6, which are based on actual expenditure and student populations at each level of education.

The salary cost of teachers per student is based on the instruction time of students, the teaching time of teachers, teachers' salaries and the number of teachers needed to teach students (which depends on estimated class size) (Box B7.1). As a consequence, differences in these four factors among countries and educational levels may explain differences in expenditure.

Salary costs of teachers per student show a common pattern across OECD countries: they usually rise between primary and lower secondary education (Figure B7.1). The only exceptions are Chile and Mexico, where the higher salary cost per student at primary level is at least in part due to smaller estimated class sizes at that level. On average across OECD countries, the salary cost increases from USD 2 848 per primary student to USD 3 514 per lower secondary student. Although the average salary cost per student also increases in general upper secondary education, to USD 3 700, this is only true in half of the countries with available data.

The general increase in the salary cost of teachers per student as the level of education increases is partly the result of increases in teachers' salaries and in the instruction time of students at higher educational levels. In 2015, the OECD average statutory salary for teachers with 15 years of experience was USD 42 017 at primary level, USD 44 658 at lower secondary level and USD 49 101 in general programmes in upper secondary education. Meanwhile, the OECD average annual instruction time increased from 796 hours at primary level, to 920 hours at lower secondary level and 929 hours at upper secondary level. The increase is also related to the fact that teaching time generally decreases as the level of education increases, implying that more teachers are needed to teach a given number of pupils (the OECD average annual teaching time in 2015 decreases from 788 hours at the primary level to 707 hours at the lower secondary level and 674 hours in general programmes at the upper secondary level). Higher levels of education also tend to have larger classes, which reduces the salary cost per student (the OECD average estimated class size increases from 15 students at primary, to 17 students at lower secondary and 18 students at upper secondary). However, this decrease is generally offset by the increases in the other three factors (Tables B7.4a, B7.4b and B7.4c, available on line).

In some countries there is only minimal variation between levels of education in the salary cost of teachers per student. In 2015, for example, there was a difference of less than USD 100 in Canada, Mexico, and Turkey between primary and lower secondary education. The greatest difference was over USD 1 800 in Finland, Slovenia and Switzerland (Table B7.1).

### *Variation in the salary cost of teachers per student after accounting for countries' wealth*

The level of teachers' salaries and thus the level of the salary cost of teachers per student depend on a country's relative wealth. To control for differences in wealth among countries, the levels of teachers' salaries (and salary cost per student) relative to GDP per capita were analysed. On average, the salary cost of teachers per student represents 7% of GDP per capita at primary level, 8.6% at lower secondary level and 8.7% in general programmes at upper secondary level (Table B7.1).

Comparing countries by their salary cost of teachers per student using this analysis, instead of comparing them by salary cost of teachers per student in USD, changes the ranking of a few countries. For example, because of Luxembourg's high teacher salaries, it has by far the highest salary costs in lower secondary education: USD 11 532 per student, compared to USD 6 515 for the second highest country. However, when differences in countries' wealth are taken into account, Luxembourg falls to tenth position for its salary cost, which is 11.2% of GDP per capita.

### *Variations in salary costs of teachers per student between 2010 and 2015*

The salary costs of teachers per student also vary over time for each level of education. These changes are only analysed at the primary and lower secondary levels of education because trend data are not available at the upper secondary level. This analysis is also limited to countries with all data available for both 2010 and 2015.

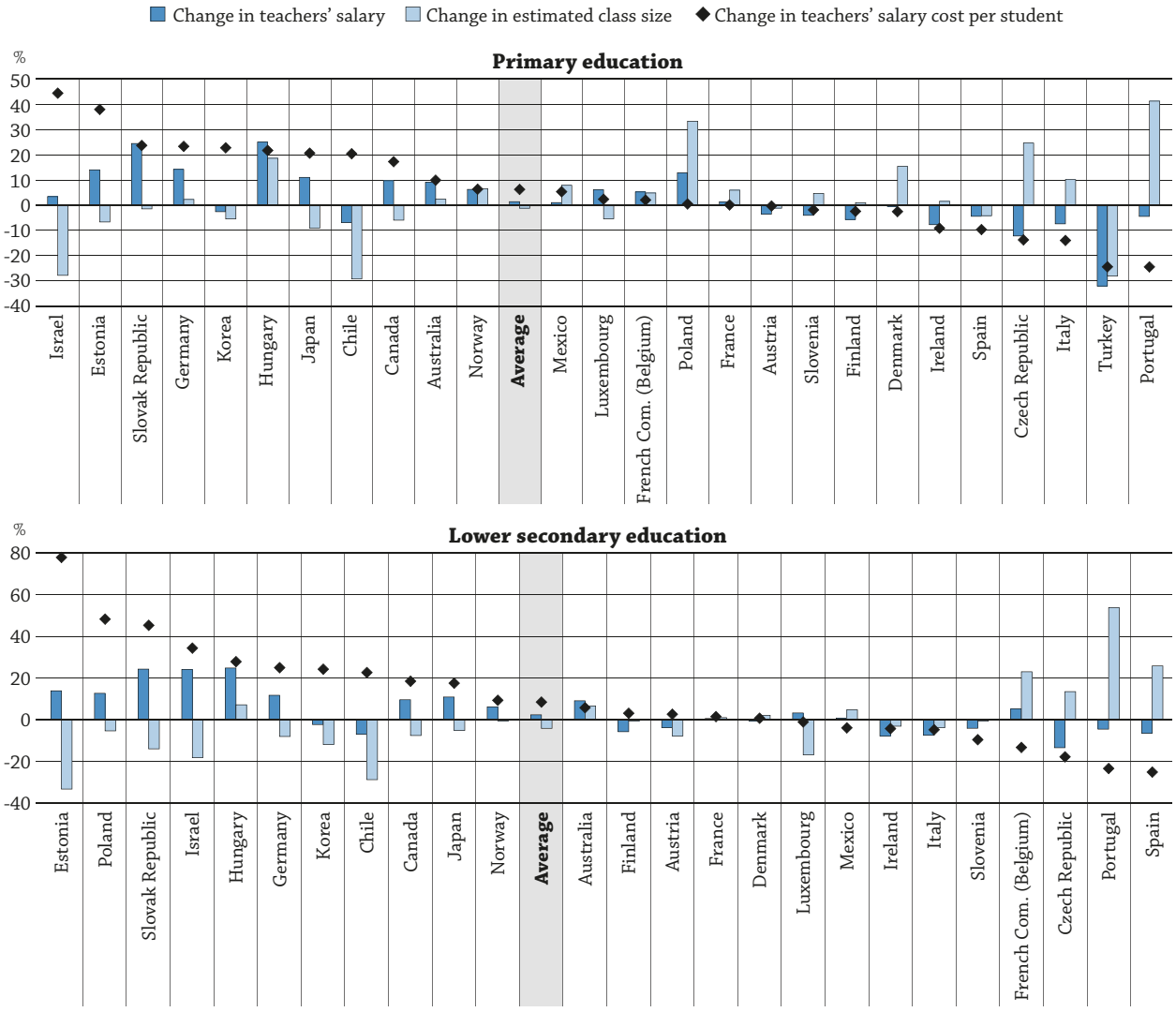
Between 2010 and 2015, the salary cost of teachers per student (expressed in constant prices) increased by 6.3% (from USD 2 628 to USD 2 793) at primary level and by 8.6% (from USD 3 211 to USD 3 487) at lower secondary level, on average across the countries with available data for both years (Tables B7.4a and B7.4b, available on line). Indeed, the salary cost of teachers per student at both levels of education increased in most countries in that period. The increase exceeded 40% in Israel at primary level and 45% in Estonia, Poland and the Slovak Republic at lower secondary level (Figure B7.2).

However, the salary cost of teachers per student also fell between 2010 and 2015 in a considerable number of countries, most notably in Portugal (by over 20% at both levels) and Spain (by around 10% at the primary level and 25% at the lower secondary level). Decreases of at least 10% in the salary cost of teachers per student were also observed at the primary level in the Czech Republic, Italy and Turkey, and at the lower secondary level in the French Community of Belgium and the Czech Republic.

B7

## Figure B7.2. Change in the salary cost of teachers per student, teachers' salaries and estimated class size in primary and lower secondary education (2010 and 2015)

*Percentage change between 2010 and 2015, public institutions*




*Countries and economies are ranked in descending order of the change in the salary cost of teachers per student between 2010 and 2015.*

**Source**: OECD (2017), Tables B7.4a and B7.4b (available on line). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933558135

### *Variations in the factors influencing the salary cost of teachers between 2010 and 2015*

Of the four factors that determine teachers' salary cost per student, two are largely responsible for wide variations in this cost: teachers' salaries and estimated class size. These two factors have opposing effects: an increase in salaries and a decrease in class size both push up the salary cost of teachers per student. Between 2010 and 2015 among countries with available data, average teachers' salaries (expressed in constant prices) increased by 1.4% at primary level and 2.5% at lower secondary level, while estimated class size decreased by 1.2% at primary level and by 4.0% at lower secondary level (Figure B7.2). Together, these two effects contributed to an increase in the average salary cost of teachers per student at both levels during that period.

Teachers' salaries decreased most notably (by 10% or more) in the Czech Republic, Greece and Turkey at both the primary and lower secondary levels over the same period. Portugal also experienced an increase in the estimated class size at both levels, which together with the lower salaries led to a considerable decrease in salary costs of teachers per student (Figure B7.2).

Among countries with data for both 2010 and 2015, the change in average estimated class size at primary and lower secondary levels resulted from decreases and increases in a similar number of countries. At the primary and lower secondary levels, the largest reductions were observed in countries that had relatively large estimated classes in 2010 (Chile, Turkey and Israel at primary level, and Chile and Estonia at lower secondary level). The reduction in the estimated class size led to an increase in the per-student salary cost of teachers in both Chile and Israel, despite the decrease in teachers' salaries in Chile.

Changes in instruction time and teaching time, the two other factors influencing the salary cost of teachers, tend to be smaller, with teaching time varying the least of all four factors. In the majority of countries, teaching time varied by less than 2% between 2010 and 2015 at both levels of education. The fact that these factors tend to vary less over time may reflect the political sensitivity of implementing reforms in these areas (OECD, 2012).

Nevertheless, in a small number of countries, instruction time and/or teaching time did change significantly. For example in Norway, Poland and Portugal, reforms have been introduced to increase instruction time in reading and mathematics. Between 2010 and 2015, instruction time in these three countries increased by 6% to 7% at the primary level and continued to increase by above-average rates at the lower secondary level. The country that experienced the largest change in instruction time during this period was Denmark, where it increased by over 36% in primary education and 24% in lower secondary education. This increase was the result of a reform of the Danish primary and lower secondary school system in 2014/2015 which gave students a longer and more varied school day and led to a considerable increase in teaching time as well – over 20% at both levels. In the period between 2010 and 2015, teaching time changed most significantly in England (United Kingdom) – which saw an increase from 684 to 942 hours at primary level – and in Greece, where the increase was from 415 to 528 hours at lower secondary level.

### *Relationship between expenditure on education and policy choices*

Higher levels of expenditure on education cannot automatically be equated with better performance by education systems. This is not surprising, as countries spending similar amounts on education do not necessarily have similar education policies and practices. For example, Australia and Slovenia had similar levels of salary cost of teachers per student in 2015 in their lower secondary general programmes, in both cases above the OECD average. In Slovenia, this was the result of below-average teachers' salaries and instruction time pushing the cost down, and below-average teaching time and estimated class size pushing the cost up. In Australia, teachers' salaries and instruction time are above average, but the salary cost per student is pushed down by the above-average teaching time.

In addition, even though countries may make similar policy choices, those choices can result in different levels of salary costs of teachers per student. For example, both Finland and Hungary have below-average teaching time, estimated class sizes, teachers' salaries and instruction time in lower secondary education. However, the salary cost of teachers per student resulting from this combination is very different for each country: USD 1 372 above the OECD average in Finland and USD 1 668 below the OECD average in Hungary (Table B7.3 and Figure B7.3).

### *Main factors influencing the salary cost of teachers per student, by level of education*

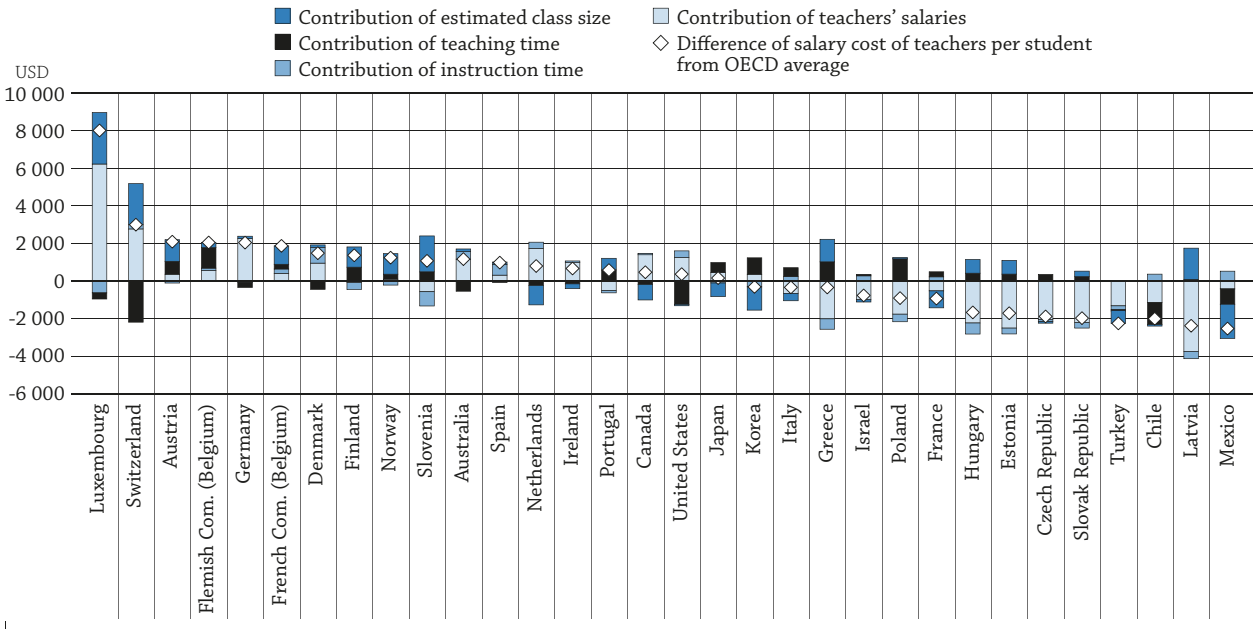
Comparing the salary cost of teachers per student to the OECD average and the relative contribution of the four factors gives a deeper insight into how each factor affects country and level differences in education expenditures. At each level of education, teachers' salaries generally have the largest impact on the degree to which the average salary cost of teachers per student diverges from the OECD average. Among countries with available data in 2015, teachers' salaries were the primary factor in 23 of 31 countries at the primary level, in 19 of 32 countries at the lower secondary level, and in 12 of 17 countries at the upper secondary level (Table B7.a).

Estimated class size is the second most influential factor on the difference in salary cost of teachers per student at each level of education (for 5 of 31 countries and economies at the primary level, 9 of 33 countries and economies at the lower secondary level, and 3 of 17 countries and economies at the upper secondary level).

When taking into account differences in countries' wealth (i.e. analysing salaries over GDP per capita), however, teachers' salaries are less often the primary factor in the divergence from the average salary cost of teachers per student. Nevertheless, teachers' salaries and estimated class size continue to be the main factors influencing variations from the average salary cost of teachers per student at each level of education (Table B7.b, available on line).

## Figure B7.3. Contribution of various factors to salary cost of teachers per student in public institutions, lower secondary education (2015)

*In USD converted using PPPs for private consumption*




**How to read this figure**

This figure shows the contribution (in USD) of the factors influencing the difference between salary cost of teachers per student in the country and the OECD average. For example, in Slovenia, the salary cost of teachers per student is USD 1 028 higher than the OECD average. Slovenia has below-average teachers' salaries (- USD 661) and below-average instruction time (- USD 781), both of which push the salary cost of teachers down. However, this is more than compensated for by a lower estimated class size (+ USD 1973) and lower teaching time (+ USD 497) than the OECD average.

*Countries and economies are ranked in descending order of the difference between the salary cost of teachers per student and the OECD average.*

**Source**: OECD (2017), Table B7.3. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933558154

## Table B7.a. Main factors influencing salary cost of teacher per student in USD, by level of education (2015)

| | Primary education | Lower secondary education | Upper secondary education |
|---|---|---|---|
| **Salary** | **23 countries**<br>AUS (+), BFL (+), BFR (+), CAN (+), CHL (-), CZE (-), DNK (+), LVA (-), EST (-), DEU (+), GRC (-), HUN (-), IRL (+), ISR (-), ITA (-), JPN (+), LUX (+), NLD (+), POL (-), PRT (-), SVK (-), CHE (+), TUR (-) | **19 countries**<br>AUS (+), CAN (+), CZE (-), DNK (+), LVA (-), EST (-), DEU (+), GRC (-), HUN (-), IRL (+), ISR (-), ITA (-), LUX (+), NLD (+), POL (-), SVK (-), CHE (+), TUR (-), USA (+) | **12 countries**<br>BFL (+), CAN (+), CHL (-), FRA (-), HUN (-), IRL (+), ISR (-), ITA (-), LUX (+), NLD (+), SVK (-), TUR (-) |
| **Instruction time** | **2 countries**<br>FIN (-), KOR (-) | **1 country**<br>ESP (+) | **0 country** |
| **Teaching time** | **1 country**<br>SVN (+) | **2 countries**<br>BFL (+), CHL (-) | **2 countries**<br>AUT (+), DNK (+) |
| **Estimated class size** | **5 countries**<br>AUT (+), FRA (+), MEX (-), NOR (+), ESP (+) | **10 countries**<br>AUT (+), BFR (+) FIN (+), FRA (-), JPN (-), KOR (-), MEX (-), NOR (+), PRT (+), SVN (+) | **3 countries**<br>BFR (+), MEX (-), PRT (+) |

**Note**: For each level of education, countries are included in the cell corresponding to the factor which has the largest impact (measured in USD) on the salary cost of teachers' per student. The positive or negative signs show whether the factor increases or decreases the salary cost of teacher per student.

**Sources**: OECD (2017), Tables B7.2, B7.3 and B7.5 (available on line). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933560757

## Box B7.2. Salary cost of teachers per child in pre-primary education

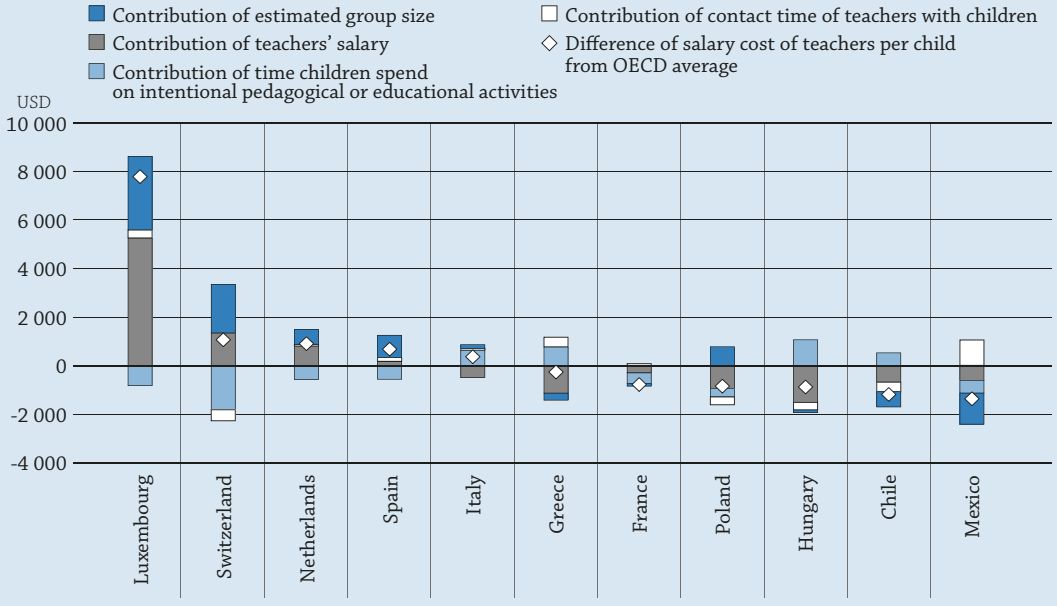
The tables and figures in this indicator present the salary cost of teachers per student for primary, lower secondary and upper secondary education – levels which are generally considered to be compulsory in OECD countries. However, how countries choose to allocate their education budget for pre-primary education may also be particularly interesting, as this level has been rapidly evolving in many countries.

The analysis at the pre-primary level uses similar factors to other education levels, but they require some specifications. Instruction time is the time children spend on intentional pedagogical or educational activity in the last year of pre-primary education; teaching time is described as the contact time of teachers with children, while estimated class size is described as estimated group size (OECD, 2017a). Because the estimated group size depends on the countries' definition of full-time equivalent students and teachers, which may vary considerably across countries at this level of education, the results should be interpreted with some caution.

In most countries with available data, the salary cost of teachers per child in pre-primary education is smaller than the salary cost per student at higher levels of education. This is mostly due to lower teacher salaries at this level. However, in some countries, the salary cost of teachers per child in pre-primary education is similar to or even higher than the salary cost per student in primary education. This is the case in Italy, Mexico and the Netherlands – all countries where teachers' salaries are the same for the two education levels.

### Figure B7.a. Contribution of various factors to salary cost of teachers per child in public institutions, pre-primary education (2015)

*In USD converted using PPPs for private consumption*




**How to read this figure**

This figure shows the contribution (in USD) of the factors influencing the difference between salary cost of teachers per student in the country and the OECD average. For example, in Switzerland, the salary cost of teachers per student is USD 1 055 higher than the OECD average. Children in Switzerland spend a below-average amount of time on intentional pedagogical or educational activities (- USD 1 831) and have above-average contact time with teachers (- USD 454), both of which push the salary cost of teachers down. However, this is more than compensated for by above-average teachers' salaries (+ USD 1 337) and below-average estimated group size (+ USD 2 003).

**Note**: Data on time children spend on intentional pedagogical or educational activities for pre-primary education come from the Early Childhood Education and Care (ECEC) network data collection on transitions.
*Countries are ranked in descending order of the difference between the salary cost of teachers per child and the OECD average.*

**Source**: OECD (2017), Table B7.3. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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...

Figure B7.a shows how each factor (teachers' salaries, estimated group size, time children spend on intentional pedagogical or educational activity and contact time of teachers with children) contributes to the difference between the country's teacher salary cost per child and the OECD average at the pre-primary level. As is the case at other education levels, it is clear that countries make very different policy choices, even if the total level of expenditure is similar. For example, Poland and Hungary have similar teachers' salary costs per child, both below the OECD average. In Poland, this is the result of the combination of below-average teachers' salaries, time children spend on intentional pedagogical or educational activity and estimated group size, and above-average contact time of teachers with children. In Hungary, teachers' salaries are also below average, but the estimated group size is similar to the average and the time children spend on intentional pedagogical or educational activity is longer than the OECD average.

## Definitions

**Instruction time** refers to the time a public school is expected to provide instruction to students on all the subjects integrated into the compulsory and non-compulsory curriculum, on school premises or in before- or after-school activities that are formal parts of the compulsory programme.

**Teachers' teaching time** is the annual average number of hours that full-time teachers teach a group or class of students including all extra hours, such as overtime.

## Methodology

**Salary cost of teachers per student** is calculated based on teachers' salaries, the number of hours of instruction for students, the number of hours of teaching for teachers, and the estimated class size (a proxy for class size). In most cases, the values for these variables are derived from *Education at a Glance* (see below). Annual teachers' salaries in national currencies are converted into equivalent USD by dividing the national currency figure by the purchasing power parity (PPP) index for private consumption (following the methodology used in Indicator D3 on teachers' salaries), which results in the salary cost per student expressed in equivalent USD. Further details on the analysis of these factors are available in Annex 3 at www.oecd.org/education/education-at-a-glance-19991487.htm.

## Source

Data referring to the 2015 school year, as well as 2010 data relating to salaries of teachers and teaching time, are based on the UOE data collection on education statistics and on the Survey on Teachers and the Curriculum, which were both administered by the OECD in 2015. Teachers' salary refers to the statutory salary of teachers after 15 years of experience, converted to USD using PPPs for private consumption. Other data referring to the 2010 school year are based on the UOE data collection on education statistics, and on the Survey on Teachers and the Curriculum, which were both administered by the OECD and published in the 2007 and 2015 editions of *Education at a Glance* (data on ratio of student to teaching staff and instruction time). Data for 2015 instruction time refer to 2015 data from the 2015 edition of *Education at a Glance*. The consistency of 2010 and 2015 data has been validated (for details, see Annex 3 at www.oecd.org/education/education-at-a-glance-19991487.htm).

For more information please see the *OECD Handbook for Internationally Comparative Education Statistics: Concepts, Standards, Definitions and Classifications* (OECD, 2017b) and Annex 3 for country-specific notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

**Note regarding data from Israel**

The statistical data for Israel are supplied by and are under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

### References

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## Indicator B7 Tables

StatLink http://dx.doi.org/10.1787/888933560795

| | | |
|---|---|---|
| | Table B7.1 | Salary cost of teachers per student, by level of education (2010 and 2015) |
| | Table B7.2 | Contribution of various factors to salary cost of teachers per student in primary education (2015) |
| | Table B7.3 | Contribution of various factors to salary cost of teachers per student in lower secondary education (2015) |
| WEB | Table B7.4a | Factors used to compute the salary cost of teachers per student in public institutions, in primary education (2010 and 2015) |
| WEB | Table B7.4b | Factors used to compute the salary cost of teachers per student in public institutions, in lower secondary education (2010 and 2015) |
| WEB | Table B7.4c | Factors used to compute the salary cost of teachers per student in public institutions, in general programmes of upper secondary education (2015) |
| WEB | Table B7.5 | Contribution of various factors to salary cost of teachers per student in general programmes of upper secondary education (2015) |
| | Table B7.a | Main factors influencing salary cost of teacher per student, by level of education (2015) |
| WEB | Table B7.b | Main factors influencing salary cost of teachers per student as a percentage of per capita GDP, by level of education (2015) |

Cut-off date for the data: 19 July 2017. Any updates on data can be found on line at http://dx.doi.org/10.1787/eag-data-en.

B7

## Table B7.1. Salary cost of teachers per student, by level of education (2010 and 2015)

*Annual salary cost of teachers per student in public institutions, in equivalent USD, converted using PPPs for private consumption, and in percentage of per capita GDP*

| | Salary cost of teachers per student (in USD, 2015 constant prices) | | | | Salary cost of teachers per student (in percentage of GDP per capita) | |
|---|---|---|---|---|---|---|
| | Primary | | Lower secondary | | Primary | Lower secondary |
| | 2015 | 2010 | 2015 | 2010 | 2015 | 2015 |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| **OECD Countries** | | | | | | |
| Australia | 3 877 | 3 527 | 4 684 | 4 423 | 8.1 | 9.8 |
| Austria | 3 813 | 3 824 | 5 612 | 5 460 | 7.7 | 11.3 |
| Canada | 3 930 | 3 351 | 3 985 | 3 360 | 8.8 | 8.9 |
| Chile | 1 646 | 1 367 | 1 509 | 1 228 | 7.1 | 6.5 |
| Czech Republic | 1 014 | 1 175 | 1 630 | 1 981 | 3.0 | 4.8 |
| Denmark | 4 765 | 4 888 | 5 000 | 4 958 | 9.7 | 10.2 |
| Estonia | 1 280 | 928 | 1 803 | 1 012 | 4.4 | 6.2 |
| Finland | 2 985 | 3 059 | 4 886 | 4 734 | 7.1 | 11.5 |
| France | 1 865 | 1 862 | 2 584 | 2 542 | 4.5 | 6.3 |
| Germany | 4 369 | 3 543 | 5 561 | 4 444 | 9.0 | 11.5 |
| Greece | 2 671 | m | 3 174 | m | 10.2 | 12.1 |
| Hungary | 1 732 | 1 423 | 1 846 | 1 442 | 6.6 | 7.0 |
| Iceland | m | 3 444 | m | 3 444 | m | m |
| Ireland | 3 545 | 3 900 | 4 184 | 4 366 | 5.2 | 6.1 |
| Israel | 2 017 | 1 397 | 2 750 | 2 043 | 5.5 | 7.4 |
| Italy | 2 766 | 3 214 | 3 180 | 3 336 | 7.4 | 8.6 |
| Japan | 2 992 | 2 480 | 3 676 | 3 123 | 7.8 | 9.6 |
| Korea | 2 970 | 2 419 | 3 206 | 2 577 | 8.7 | 9.3 |
| Latvia | 753 | m | 1 136 | m | 3.0 | 4.6 |
| Luxembourg | 10 391 | 10 150 | 11 532 | 11 642 | 10.1 | 11.2 |
| Mexico | 1 040 | 987 | 987 | 1 026 | 5.8 | 5.5 |
| Netherlands | 3 331 | m | 4 317 | m | 6.7 | 8.7 |
| New Zealand | m | m | m | m | m | m |
| Norway | 4 381 | 4 119 | 4 762 | 4 350 | 8.4 | 9.1 |
| Poland | 2 241 | 2 229 | 2 609 | 1 757 | 8.4 | 9.7 |
| Portugal | 2 917 | 3 859 | 4 100 | 5 348 | 9.8 | 13.8 |
| Slovak Republic | 1 042 | 843 | 1 541 | 1 059 | 3.5 | 5.2 |
| Slovenia | 2 450 | 2 495 | 4 592 | 5 072 | 7.7 | 14.4 |
| Spain | 3 453 | 3 821 | 4 497 | 6 000 | 10.0 | 13.0 |
| Sweden | m | m | m | m | m | m |
| Switzerland | 4 376 | 3 989 | 6 515 | 5 736 | 7.0 | 10.4 |
| Turkey | 1 206 | 1 595 | 1 261 | m | 5.0 | 5.2 |
| United States | m | m | 3 883 | m | m | 6.9 |
| **Economies** | | | | | | |
| Flemish Com. (Belgium) | 4 161 | m | 5 569 | m | 9.1 | 12.2 |
| French Com. (Belgium) | 4 027 | 3 945 | 5 389 | 6 208 | 8.8 | 11.8 |
| England (UK) | m | 2 190 | m | 6 037 | m | m |
| Scotland (UK) | m | 2 052 | m | 5 061 | m | m |
| OECD average[1] | 2 848 | 2 648 | 3 514 | 3 217 | 7.0 | 8.6 |

**Note:** The teachers' salaries used in the calculation of this indicator refer to the statutory salary of teachers with typical qualifications and 15 years of experience (Indicator D3). Instruction time refers to the average number of hours per year of compulsory instruction time (Indicator D1) and teaching time (Indicator D4) refers to the statutory net teaching hours over the school year.

1. The OECD average for salary costs is calculated as the average teachers' salary for OECD countries divided by the average student-teacher ratio. It only includes countries and economies with information for all factors used to calculate salary cost and does not correspond to the average of the salary costs presented in the table.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933560624

## Table B7.2. Contribution of various factors to salary cost of teachers per student in primary education (2015)

*In equivalent USD, converted using PPPs for private consumption*

| | | Salary cost of teachers per student (2015) | Difference (in USD) from the 2015 OECD average of **USD 2 848** | Contribution of the underlying factors to the difference from the OECD average | | | |
|---|---|---|---|---|---|---|---|
| | | | | Effect (in USD) of teachers' salary below/above the 2015 OECD average of **USD 42 017** | Effect (in USD) of instruction time (for students) below/above the 2015 OECD average of **796 hours** | Effect (in USD) of teaching time (for teachers) below/above the 2015 OECD average of **788 hours** | Effect (in USD) of estimated class size below/above the 2015 OECD average of **15 students per class** |
| | | (1) | (2) = (3)+(4)+(5)+(6) | (3) | (4) | (5) | (6) |
| OECD | **Countries** | | | | | | |
| | Australia | 3 877 | **1 029** | 1 164 | 803 | - 319 | - 619 |
| | Austria | 3 813 | **965** | 213 | - 408 | 38 | 1 122 |
| | Canada | 3 930 | **1 081** | 1 516 | 493 | - 38 | - 890 |
| | Chile | 1 646 | **-1 202** | - 927 | 609 | - 854 | - 30 |
| | Czech Republic | 1 014 | **-1 835** | -1 353 | - 272 | - 79 | - 130 |
| | Denmark | 4 765 | **1 917** | 1 004 | 676 | 21 | 216 |
| | Estonia[1] | 1 280 | **-1 568** | -1 763 | - 388 | 516 | 67 |
| | Finland | 2 985 | **137** | - 106 | - 678 | 449 | 473 |
| | France | 1 865 | **- 983** | - 428 | 192 | - 308 | - 439 |
| | Germany | 4 369 | **1 521** | 1 732 | - 451 | - 50 | 290 |
| | Greece | 2 671 | **- 177** | -1 465 | - 37 | 639 | 685 |
| | Hungary | 1 732 | **-1 116** | -1 804 | - 496 | 626 | 559 |
| | Iceland | m | **m** | m | m | m | m |
| | Ireland | 3 545 | **697** | 1 002 | 447 | - 481 | - 271 |
| | Israel | 2 017 | **- 831** | - 838 | 490 | - 222 | - 260 |
| | Italy | 2 766 | **- 82** | - 618 | 318 | 132 | 86 |
| | Japan | 2 992 | **144** | 547 | - 126 | 178 | - 455 |
| | Korea | 2 970 | **122** | 487 | - 607 | 531 | - 289 |
| | Latvia | 753 | **-2 095** | -2 572 | - 548 | 275 | 749 |
| | Luxembourg | 10 391 | **7 543** | 5 414 | 922 | - 167 | 1 374 |
| | Mexico | 1 040 | **-1 808** | - 706 | 235 | - 28 | -1 309 |
| | Netherlands | 3 331 | **483** | 845 | 517 | - 516 | - 363 |
| | New Zealand | m | **m** | m | m | m | m |
| | Norway | 4 381 | **1 533** | 307 | - 226 | 223 | 1 230 |
| | Poland | 2 241 | **- 607** | -1 311 | - 593 | 842 | 455 |
| | Portugal | 2 917 | **69** | - 205 | 36 | 173 | 65 |
| | Slovak Republic | 1 042 | **-1 806** | -1 518 | - 316 | - 103 | 131 |
| | Slovenia | 2 450 | **- 398** | - 202 | - 481 | 613 | - 328 |
| | Spain | 3 453 | **605** | 95 | - 13 | - 348 | 872 |
| | Sweden | m | **m** | m | m | m | m |
| | Switzerland[2] | 4 376 | **1 528** | 1 762 | 102 | -1 144 | 807 |
| | Turkey | 1 206 | **-1 642** | -1 032 | - 196 | - 258 | - 156 |
| | United States | m | **m** | m | m | m | m |
| | **Economies** | | | | | | |
| | Flemish Com. (Belgium) | 4 161 | **1 313** | 646 | 108 | 183 | 376 |
| | French Com. (Belgium) | 4 027 | **1 179** | 524 | 220 | 271 | 163 |
| | England (UK) | m | **m** | m | m | m | m |
| | Scotland (UK) | m | **m** | m | m | m | m |

**Note:** The teachers' salaries used in the calculation of this indicator refer to the statutory salary of teachers with typical qualifications and 15 years of experience (Indicator D3). Instruction time refers to the average number of hours per year of compulsory instruction time (Indicator D1) and teaching time (Indicator D4) refers to the statutory net teaching hours over the school year.

1. Teachers' statutory salaries at the start of the career instead of after 15 years of experience.

2. Teachers' statutory salaries after 10 years of experience instead of 15 years.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933560643

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## Table B7.3. Contribution of various factors to salary cost of teachers per student in lower secondary education (2015)

*In equivalent USD, converted using PPPs for private consumption*

| | Salary cost of teacher per student (2015) | Difference (in USD) from the 2015 OECD average of **USD 3 514** | Contribution of the underlying factors to the difference from the OECD average | | | |
|---|---|---|---|---|---|---|
| | | | Effect (in USD) of teachers' salary below/above the 2015 OECD average of **USD 44 658** | Effect (in USD) of instruction time (for students) below/above the 2015 OECD average of **920 hours** | Effect (in USD) of teaching time (for teachers) below/above the 2015 OECD average of **707 hours** | Effect (in USD) of estimated class size below/above the 2015 OECD average of **17 students per class** |
| | (1) | (2) = (3) + (4) + (5) + (6) | (3) | (4) | (5) | (6) |
| OECD **Countries** | | | | | | |
| Australia | 4 684 | **1 170** | 1 166 | 402 | - 540 | 142 |
| Austria | 5 612 | **2 098** | 364 | - 104 | 688 | 1 150 |
| Canada | 3 985 | **472** | 1 459 | 17 | - 183 | - 821 |
| Chile | 1 509 | **-2 005** | -1 143 | 369 | -1 176 | - 55 |
| Czech Republic | 1 630 | **-1 884** | -2 057 | - 94 | 356 | - 89 |
| Denmark | 5 000 | **1 486** | 955 | 830 | - 440 | 141 |
| Estonia[1] | 1 803 | **-1 710** | -2 504 | - 310 | 371 | 732 |
| Finland | 4 886 | **1 372** | - 84 | - 362 | 741 | 1 077 |
| France | 2 584 | **- 930** | - 521 | 227 | 267 | - 904 |
| Germany | 5 561 | **2 048** | 2 262 | - 70 | - 270 | 125 |
| Greece | 3 174 | **- 340** | -2 010 | - 554 | 1 025 | 1 199 |
| Hungary | 1 846 | **-1 668** | -2 231 | - 589 | 420 | 732 |
| Iceland | m | **m** | m | m | m | m |
| Ireland | 4 184 | **671** | 1 009 | 63 | - 149 | - 252 |
| Israel | 2 750 | **- 764** | - 992 | 335 | 15 | - 121 |
| Italy | 3 180 | **- 334** | - 652 | 246 | 467 | - 394 |
| Japan | 3 676 | **162** | 454 | - 102 | 534 | - 725 |
| Korea | 3 206 | **- 307** | 363 | - 305 | 876 | -1 241 |
| Latvia | 1 136 | **-2 378** | -3 744 | - 388 | 86 | 1 667 |
| Luxembourg | 11 532 | **8 018** | 6 232 | - 628 | - 327 | 2 741 |
| Mexico | 987 | **-2 527** | - 415 | 527 | - 818 | -1 820 |
| Netherlands | 4 317 | **803** | 1 738 | 332 | - 236 | -1 031 |
| New Zealand | m | **m** | m | m | m | m |
| Norway | 4 762 | **1 248** | 102 | - 213 | 265 | 1 095 |
| Poland | 2 609 | **- 905** | -1 762 | - 402 | 1 196 | 64 |
| Portugal | 4 100 | **587** | - 506 | - 120 | 594 | 618 |
| Slovak Republic | 1 541 | **-1 972** | -2 205 | - 296 | 236 | 293 |
| Slovenia | 4 592 | **1 078** | - 565 | - 760 | 494 | 1 909 |
| Spain | 4 497 | **983** | 316 | 558 | - 33 | 142 |
| Sweden | m | **m** | m | m | m | m |
| Switzerland[2] | 6 515 | **3 001** | 2 776 | 232 | -2 187 | 2 181 |
| Turkey | 1 261 | **-2 253** | -1 318 | - 207 | - 41 | - 687 |
| United States | 3 883 | **369** | 1 254 | 354 | -1 237 | - 3 |
| **Economies** | | | | | | |
| Flemish Com. (Belgium) | 5 569 | **2 055** | 563 | 127 | 1 093 | 272 |
| French Com. (Belgium) | 5 389 | **1 875** | 409 | 235 | 250 | 981 |
| England (UK) | m | **m** | m | m | m | m |
| Scotland (UK) | m | **m** | m | m | m | m |

**Note:** The teachers' salaries used in the calculation of this indicator refer to the statutory salary of teachers with typical qualifications and 15 years of experience (Indicator D3). Instruction time refers to the average number of hours per year of compulsory instruction time (Indicator D1) and teaching time (Indicator D4) refers to the statutory net teaching hours over the school year.

1. Teachers' statutory salaries at the start of the career instead of after 15 years of experience.

2. Teachers' statutory salaries after 10 years of experience instead of 15 years.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

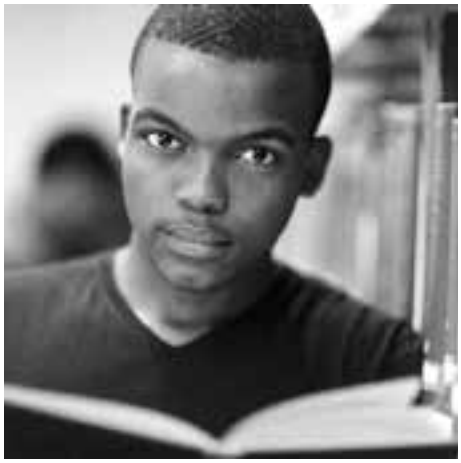
*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

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Chapter

C

# Access to Education, Participation and Progression




**Indicator C1** Who participates in education?
StatLink http://dx.doi.org/10.1787/888933560871

**Indicator C2** How do early childhood education systems differ around the world?
StatLink http://dx.doi.org/10.1787/888933560985

**Indicator C3** Who is expected to enter tertiary education?
StatLink http://dx.doi.org/10.1787/888933561061

**Indicator C4** What is the profile of internationally mobile students?
StatLink http://dx.doi.org/10.1787/888933561137

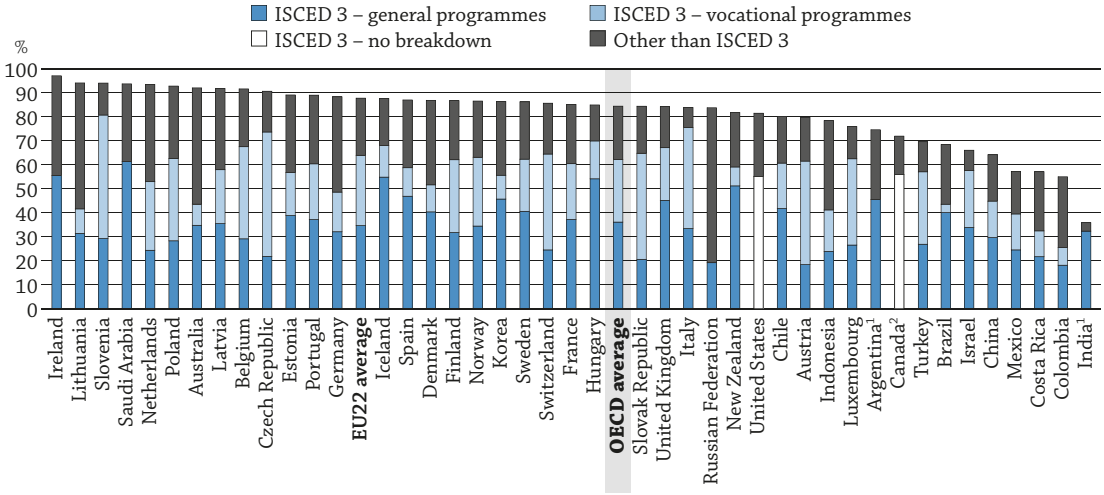
**Indicator C5** Transition from school to work: Where are the 15-29 year-olds?
StatLink http://dx.doi.org/10.1787/888933561194

**Indicator C6** How many adults participate in education and learning?
StatLink http://dx.doi.org/10.1787/888933561422

# WHO PARTICIPATES IN EDUCATION?

- Across the OECD, at least 90% of students can expect to be in education for an average duration of 14 years, although this ranges from 10 years in Mexico and Turkey to 17 years in Norway.
- Young adults spend more time studying: between 2005 and 2015, the enrolment of 20-year-olds in education increased by 7 percentage points on average across OECD countries with available data for both years.
- In 2015, 85% of 15-19 year-olds were still in education on average across OECD countries: 37% of them were enrolled in general upper secondary education programmes, 25% in vocational upper secondary education programmes and 23% in a level other than upper secondary (Figure C1.1).

## Figure C1.1. Enrolment rates of 15-19 year-olds, by programme level and orientation (2015)




1. Year of reference 2014.
2. Excludes post-secondary non-tertiary education.

*Countries are ranked in descending order of total enrolment.*

**Source**: OECD (2017), Education at a Glance Database, http://stats.oecd.org/. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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## Context

Paths through the education system can be diverse, both across countries and for different individuals within the same country. Experiences in primary and lower secondary are probably the most similar across countries. At this stage, education is usually compulsory and not very differentiated as pupils progress through primary and lower secondary education. But as people have different abilities, needs and preferences, most education systems try to offer different types of education programmes and modes of participation, especially at the more advanced levels of education (upper secondary and beyond) and for adults.

Ensuring that people have suitable opportunities to attain adequate levels of education is a critical challenge and depends on their capacity to progress through the different levels of an educational system. Successful completion of upper secondary programmes is vital to address equity issues (see Indicator A9), but graduation rates still vary widely among OECD countries (see Indicator A2). Developing and strengthening both general and vocational education (see *Definitions* section) at upper secondary level can make education more inclusive and appealing to individuals with different preferences and inclinations. In many education systems, vocational education and training (VET) enables some adults to reintegrate into a learning environment and develop skills that will increase their employability. In addition, VET programmes are often chosen by students who found it difficult

to progress through earlier levels of education and are thus more at risk of not completing upper secondary education. A strong upper secondary system therefore ensures flexible pathways for students to either pursue higher education or enter directly into the labour market.



## Other findings

- In the large majority of OECD and partner countries, enrolment rates for children aged 5 to 14 were at least 97% in 2015. This pattern is broadly consistent with typical regulatory requirements where students begin compulsory education at the age of 6 and finish around the age of 16 or 17.
- Public institutions continue to dominate the overall share of enrolments in tertiary education in OECD countries, accounting for an average of 68% of tertiary students across OECD countries.
- The share of upper secondary students enrolled in vocational programmes varies significantly among countries. It is 60% or above in Austria, Belgium, the Czech Republic, Finland, Luxembourg, the Netherlands, the Slovak Republic, Slovenia and Switzerland, but less than 10% in Brazil, Canada and India. In some countries, combined school- and work-based programmes (see *Definitions* section) are a prominent type of vocational education, particularly in Denmark, Germany, Hungary, Latvia and Switzerland, where they represent more than 85% of such programmes.
- On average across OECD countries, almost three-quarters (71%) of older-than-average upper secondary students (i.e. older than 24) are enrolled in vocational programmes. In Finland, France, Germany, the Netherlands and Slovenia, virtually all adults over 24 who are enrolled at this level of education are in vocational programmes.

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## Analysis

### Enrolment in education at early ages

In about half of OECD countries with available data, the enrolment rate in 2015 exceeds 90% for 3- and 4-year-olds, a situation defined in this chapter as full enrolment. Enrolment at even earlier ages is relatively common in some countries, with Denmark, Iceland and Norway achieving full enrolment for two-year-olds (see Indicator C2). In other countries, full enrolment is achieved for children between the ages of 5 and 6, except in the Russian Federation (7) and Estonia (8). Across most OECD countries, full enrolment ends when students are around 17 or 18 years old, but it ends substantially earlier in Mexico (14) and Turkey (14). There is no country in which more than 90% of 19-year-olds are enrolled in education.

To some extent, this pattern follows countries' regulatory requirements. In most OECD countries, compulsory education starts at the age of 6 and ends at the age of 16 or 17. The typical starting age for compulsory education ranges from 4 in Brazil, Luxembourg and Mexico to 7 in Estonia, Finland, Indonesia, the Russian Federation, South Africa and Sweden. In the United Kingdom, the starting age ranges between 4 and 5, and in the United States between 4 and 6.

In all OECD countries compulsory education comprises primary and lower secondary programmes; upper secondary education is also included in most of them, depending on the theoretical age ranges associated with the different levels of education in each country. Enrolment rates among 5-14 year-olds are higher than 95% (i.e. there is universal coverage of basic education) in nearly all OECD countries with available data, with the exception of Estonia and the Slovak Republic.

### Participation of 15-19 year-olds in education

In recent years, countries have increased the diversity of their upper secondary programmes. This diversification is both a response to the growing demand for upper secondary education and a result of changes in curricula and labour market needs. Curricula have gradually evolved from separating general and vocational programmes to offering more comprehensive programmes that include both types of learning, leading to more flexible pathways into further education or the labour market.

Based on 2015 data, enrolment rates among 15-16 year-olds (i.e. those typically in upper secondary programmes) reached at least 95% on average across OECD countries with available data. At 17, 92% of individuals are enrolled in education on average across the OECD, reaching 100% in Ireland, Slovenia and the United Kingdom. In contrast, fewer than 80% of 17-year-olds are enrolled in education in Canada and Turkey, with the lowest rate in Mexico (59%).

Enrolment patterns start dropping significantly at 18: 75% of 18-year-olds are enrolled in secondary, post-secondary non-tertiary, or tertiary education on average across OECD countries. Declines in enrolment for this age group coincide with the end of upper secondary education. The drop in enrolment between the ages of 17 and 18 is at least 25 percentage points in Canada, Chile, Korea, Turkey and the United Kingdom. Israel sees the sharpest fall, with enrolment rates declining by 65 percentage points, largely due to conscription. By the time students reach the age of 19, enrolment rates decrease to 63% on average across OECD countries (Table C1.2).

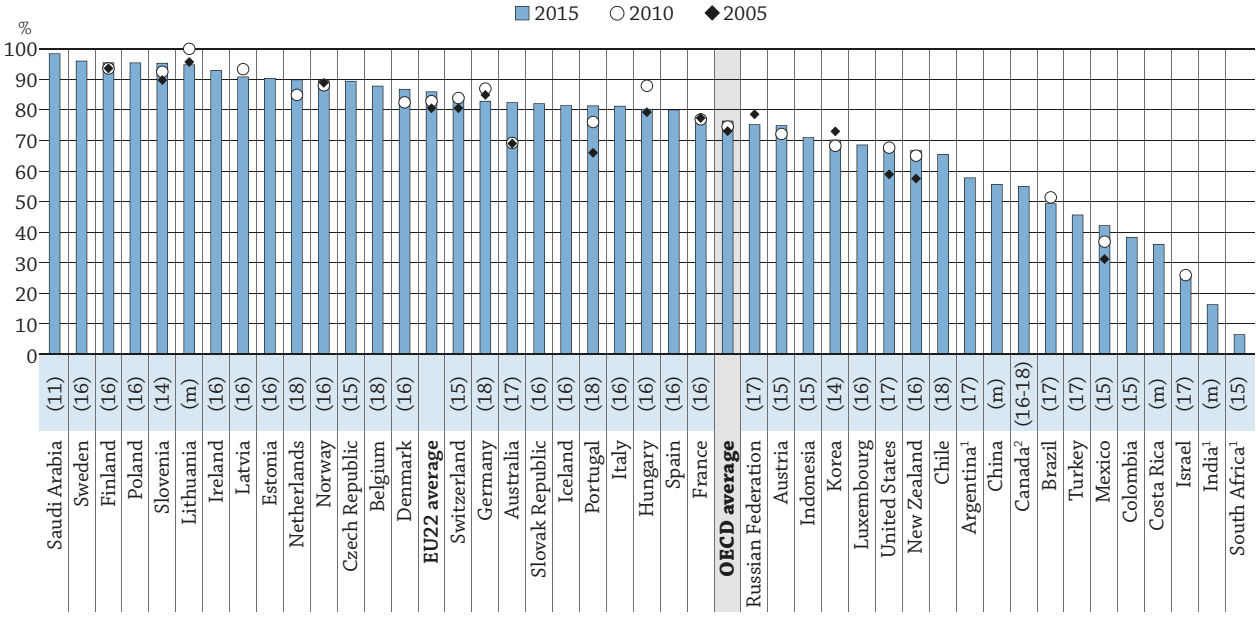
The share of students enrolled in each education level and at each age is illustrative of the different educational systems and pathways in countries. As they get older, students move on to higher educational levels or types of programmes, and the enrolment rate in upper secondary education (combined general and vocational) decreases. Depending on the structure of the educational system, students across the OECD may start enrolling in post-secondary non-tertiary or tertiary education from the age of 17. However this is still the exception for this age group, with 90% of 17 year-olds still enrolled in secondary education on average across OECD countries. Students start diversifying their pathways significantly from 18, although the age of transition between upper secondary and tertiary education varies substantially among countries. While more than 90% of 18-year-olds are still enrolled in upper secondary in Finland, Poland, Slovenia and Sweden, 61% of Koreans are already starting their tertiary education at that age. On average across OECD countries, 26% of 19-year-olds are still enrolled in secondary education; however, in the Czech Republic, Denmark, Iceland, Luxembourg, the Netherlands, Poland and Switzerland more than 40% of 19-year-olds are still enrolled. These high shares may partly be explained by the strength of the labour opportunities offered by vocational upper secondary programmes in these countries, making them more attractive than tertiary education. Enrolment of 19-year-olds in tertiary education averages 33% across OECD countries, ranging from 3% in Luxembourg (the low share in large part due to the high number of students studying abroad) and Iceland, to 73% in Korea.

Enrolment of 18-, 19- and 20-year-olds has been increasing since 2005, although the extent of the increase for each age varies across countries. Among OECD and partner countries with available data, Portugal has had the most striking increases in the enrolment of 18-year-olds since 2005 with a rise of 15 percentage points. Other countries have seen a more moderate increase: while enrolment of 18-year-olds has increased by about 10 percentage points in New Zealand and the United States in the past decade, the current enrolment rate of 67% in both countries in 2015 is still below the OECD average of 75%. While most countries with available data have seen enrolment levels of 18-year-olds rise since 2010, some countries have witnessed a decline: by 8 percentage points in Hungary, 5 percentage points in Lithuania, 4 percentage points in Germany, 3 percentage points in Latvia and 2 percentage points in Brazil (Figure C1.2).



## Figure C1.2. Enrolment rate at age 18 (2005, 2010 and 2015)

*Secondary, post-secondary non-tertiary and tertiary programmes*




**Note**: The number in parentheses corresponds to the ending age of compulsory education.

1. Year of reference 2014.

2. Excludes post-secondary non-tertiary education.

*Countries are ranked in descending order of the enrolment rate at age 18 in 2015.*

**Source**: OECD (2017), Education at a Glance Database, http://stats.oecd.org/. See Source section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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Post-secondary non-tertiary education programmes (see *Reader's Guide*) play a smaller role in most OECD countries. In Chile, Denmark, Korea, Mexico, the Netherlands, Slovenia, Turkey and the United Kingdom, these types of programmes are not offered at all. On average across OECD countries, 1% to 4% of young adults between the age of 17 and 19 are enrolled in either general or vocational programmes at this level. However, in some countries enrolment at this level is more substantial. The proportion of 19-year-olds enrolled in post-secondary non-tertiary programmes is 16% in Germany, 18% in Hungary and 19% in Ireland (Table C1.2).

### Participation of 20-29 year-olds in education

For 20-year-olds, enrolment rates drop to 55% on average across OECD countries, as students start to enter the labour market. Rates vary from 26% in Israel to 70% or higher in Australia, Ireland, the Netherlands and Slovenia. Levels of enrolment at this age depend on the structure of the education system, and the labour market outcomes expected from the programmes. More than half of enrolled 20-year-olds are in secondary or post-secondary non-tertiary programmes in Denmark, Germany, Iceland, Luxembourg and Switzerland, while tertiary education constitutes the typical level of enrolment of most 20-year-olds in other OECD countries, even exceeding 90% in Chile, Ireland, Israel, Korea and the United States.

Young adults in 2015 are enrolled in education longer than they were ten years ago, mostly due to the greater participation in tertiary education, which tends to keep students in education longer. On average across countries with available data for both years, enrolment of 20-year-olds increased by 7 percentage points between 2005 and 2015.

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The enrolment rate of 20-24 year-olds in education follows the same patterns of increase as for other age groups. Among the countries with available data, the largest increase between 2005 and 2015 was in Australia (15 percentage points). Other countries, however, witnessed a decrease in enrolment rates over this ten-year span of up to 3 percentage points: Finland, Hungary, Lithuania, New Zealand, Norway and the Russian Federation (Table C1.1).

The sharpest decline in enrolment across age groups occurs between the age groups 20-24 and 25-29 on average across OECD and partner countries. In OECD countries in 2015, an average of 42% of 20-24 year-olds, but only 16% of 25-29 year-olds, were enrolled in upper secondary, post-secondary non-tertiary education or tertiary education programmes. The largest proportions of 25-29 year-olds enrolled in education (more than 30%) were found in Australia, Denmark and Finland. Meanwhile, in France, Luxembourg, Mexico, the Slovak Republic and some of partner countries, fewer than 10% of young adults in this age group were enrolled (Table C1.1).

### *Participation of adults over 30 years of age*

It is crucial to ensure that adults have access to organised learning opportunities beyond initial formal education. Such opportunities can help adults who need to adapt to changes throughout their working careers, those who want to enter the labour force but feel that they lack the necessary qualifications, or those who feel they need to improve their skills and knowledge to participate more actively in social life. Adult education aims to improve people's technical or professional qualifications, develop their abilities and enrich their knowledge. Participants in adult education may or may not complete a level of formal education, but they stand to gain from acquiring or updating knowledge, skills and competencies. Adult learning takes many forms, including formal and non-formal education, on-the-job training and informal education. This section deals with formal educational programmes (i.e. institutional, intentional and planned education provided by public organisations and recognised private bodies). A broader view of adult education, including non-formal education, is found in Indicator C6.

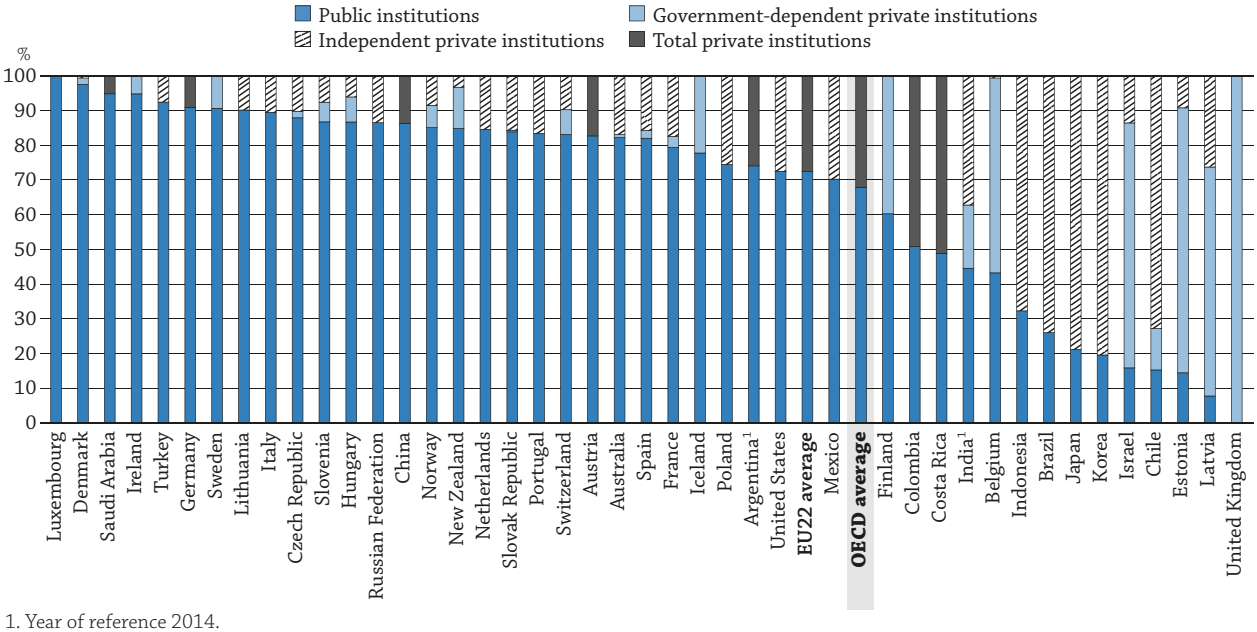
For adults older than 30, enrolment in formal educational programmes can be still considerable. While on average across OECD countries, only 6% of adults between 30 and 39 are enrolled in education, it can be as high as 20% in Australia and 16% in Finland. Since 2005, enrolment rates for this age group have also been increasing on average across OECD countries, with a maximum increase of 7 percentage points in Australia. In other countries, however, enrolment has been decreasing – for example Slovenia (-4 percentage points) and New Zealand (-3 percentage points).

The enrolment rate of adults over the age of 40 was 2% on average across the OECD countries with available data in 2015. However they are still relatively high in Australia (10%) and Finland (5%), as well as New Zealand (also 5%). The higher enrolment rates for these age groups in certain countries may be explained by more part-time enrolments or the prevalence of lifelong learning programmes. For instance, credit-based systems in Sweden allow adults to study selected parts of a programme in formal education as a way to upgrade their skills in a specific area.

### *Participation by type of institution*

Public institutions continue to dominate the overall share of enrolments across education levels, although their share tends to decrease with increasing levels of education. This is most apparent at tertiary level, where the type of institutions selected by students depends on their course-level emphasis, the fees and the perceived student profiles they cater to. On average across OECD countries in 2015, around 68% of tertiary students were enrolled in public institutions. Among all OECD and partner countries, only Brazil, Chile, Indonesia, Japan and Korea have more than 50% of all tertiary students enrolled in independent private institutions. This is due to a combination of rising education costs and limited government resources, leaving the private sector to support the rapid expansion of tertiary education (Kim, Seung-Bo and Sunwoong Kim, 2004; Knobel and Verhine, 2017). Government-dependent private institutions are mostly prevalent in Belgium, Estonia, Israel, Latvia and the United Kingdom, where they represent more than 50% of enrolled tertiary students.

## Figure C1.3. Share of students enrolled in tertiary education, by type of institution (2015)




1. Year of reference 2014.

*Countries are ranked in descending order of the share of students enrolled in public institutions in tertiary education.*

**Source**: OECD (2017), Education at a Glance Database, http://stats.oecd.org/. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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### *Vocational education and training programmes*

Many countries have recently renewed their interest in vocational education and training programmes, as these programmes are seen to be effective for developing skills among those who would otherwise lack the qualifications to ensure a smooth and successful transition into the labour market (OECD, 2010). Countries with well-established VET and apprenticeship programmes have been more effective in holding the line on youth unemployment (see Indicator C5). At the same time, some countries consider vocational education a less attractive option than academic education, and some research suggests that participation in vocational education increases the risk of unemployment at later ages (Hanushek, Woessmann and Zhang, 2011).

Vocational programmes in OECD countries offer different combinations of vocational studies along with apprenticeship programmes. Upper secondary students in many education systems can enrol in vocational programmes, but some OECD countries delay vocational training until students graduate from upper secondary education. For instance, while vocational programmes are offered as upper secondary education in Austria, Hungary and Spain, similar programmes are typically offered as post-secondary education in Canada (see Indicator A2).

On average across OECD countries, 37% of 15-19 year-olds were enrolled in general upper secondary education programmes in 2015, while 25% were enrolled in vocational upper secondary education programmes (Table C1.3). Among all 15-19 year-olds enrolled in upper secondary education, 43% were in a vocational programme on average across OECD countries (Table C1.3). The distribution of secondary students enrolled in vocational versus general programmes largely depends on the education programmes available, as well as the labour market outcomes of these programmes. In about one-third of the countries with available data, a larger share of upper secondary students is enrolled in vocational programmes than general programmes: at least 70% in Austria, the Czech Republic and Finland. In contrast, in Argentina, Brazil, Canada, India, Ireland, more than 90% of upper secondary students are enrolled in general programmes (Table C1.3).

In combined school- and work-based programmes, between 10% and 75% of the curriculum is presented in the school environment or through distance education (see *Definitions* section). On average across the 21 OECD countries that offer these types of programmes and for which data are available, about one-third of the students enrolled in vocational programmes in upper secondary education are in school- and work-based programmes. In Denmark, Hungary and Latvia, all vocational programmes are combined school- and work-based programmes.

Almost three-quarters (71%) of 25-64 year-old upper secondary students are enrolled in vocational programmes on average across OECD countries. This share is similar to that of 20-24 year-olds (68%), but much larger than among 15-19 year-olds (43%) (Table C1.3). In one-third of countries with data, more than 90% of adults over 24 years of age and enrolled in upper secondary education follow vocational programmes; in France and the Netherlands the figure is 100% (Table C1.3).

The high rate of adult enrolment in vocational programmes in some countries can be explained by the fact that, in many education systems, VET is a way for some adults to reintegrate into a learning environment and develop skills that will increase their employability. In many countries, VET is flexible enough to satisfy different needs at different stages of people's lives, whether they are preparing for a first career, seeking additional skills to assist in their work or catching up on educational attainment. The larger share of older students enrolled in vocational programmes is also partially explained by the tendency of VET programmes to cater to students who had difficulty completing earlier levels of education and graduating from them at a later age.

### Subnational variations in enrolment

Subnational variation in enrolment patterns reveals the equality of access to education across a country, as well as labour market opportunities and perceptions on lifelong learning for levels beyond compulsory education. On average across all countries with subnational data and across all age groups, the largest variation in enrolment at subnational level can be observed for early childhood education before the age of 5. While there is almost no regional difference in enrolment levels in this age group in countries such as Belgium, countries such as Brazil or the United States have a ratio of more than two between the highest and lowest enrolment levels in their regions.

Between the ages of 5 and 14 – corresponding to compulsory education in many countries – subnational differences recede significantly, varying only between 94% and 100% across all regions in all countries. Subnational variations in enrolment increase again between the ages of 15-19 as students start selecting alternate pathways for study or choose to enter the labour market. At least 80% of students are still enrolled in this age group in all subnational entities in Belgium, Germany and the United States, but the highest disparities are observed in Brazil, reaching an 18 percentage-point difference between the subnational regions with the highest and lowest values (OECD/NCES, 2017).

## Definitions

The data in this chapter cover formal education programmes that represent at least the equivalent of one semester (or one-half of a school/academic year) of full-time study, and that take place entirely in educational institutions or are delivered as a combined school- and work-based programme.

**General education programmes** are designed to develop learners' general knowledge, skills and competencies, often to prepare them for other general or vocational education programmes at the same or a higher education level. General education does not prepare people for employment in a particular occupation, trade or class of occupations or trades.

**Vocational education and training (VET) programmes** prepare participants for direct entry into specific occupations without further training. Successful completion of such programmes leads to a vocational or technical qualification that is relevant to the labour market. Vocational programmes are further divided into two categories (school-based programmes and combined school- and work-based programmes), determined by the amount of training provided in school as opposed to the workplace. The degree to which a programme has a vocational or general orientation does not necessarily determine whether participants have access to tertiary education. In several OECD countries, vocationally-oriented programmes are designed to prepare students for further study at the tertiary level, and in some countries general programmes do not always provide direct access to further education.

In **combined school- and work-based programmes**, between 10% and 75% of the curriculum is presented in the school environment or through distance education. Therefore, the work-based component of a school- and work-based programme would be a minimum of 25% and a maximum of 90%. These programmes can be organised in conjunction with education authorities or institutions. They include apprenticeship programmes that involve concurrent school-based and work-based training, as well as programmes that involve alternating periods of attendance at educational institutions and participation in work-based training (sometimes referred to as "sandwich" programmes).

**Government-dependent private institutions** are institutions that receive more than 50% of their core funding from government agencies. The term "government-dependent" refers only to the degree of a private institution's dependence on funding from government sources; it does not refer to the degree of government direction or regulation.

**Independent private institutions** are classified as private if they are controlled and managed by a non-governmental organisation (e.g. a church, trade union or business enterprise), or if their governing board consists mostly of members not selected by a public agency.

## Methodology

Except where otherwise noted, figures are based on head counts, because of the difficulty for some countries to quantify part-time study. Net enrolment rates are calculated by dividing the number of students of a particular age group enrolled in all levels of education by the size of the population of that age group. While enrolment and population figures refer to the same period in most cases, mismatches may occur due to data availability in some countries resulting in enrolment rates exceeding 100%.

For more information, please see the *OECD Handbook for Internationally Comparative Education Statistics: Concepts, Standards, Definitions and Classifications* (OECD, 2017) and Annex 3 for country-specific notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

## Source

Data on enrolments are for the school year 2014/15 (unless otherwise specified) and are based on the UOE data collection on education systems administered annually by UNESCO, the OECD and Eurostat for all OECD and partner countries. Data from Argentina, China, Colombia, India, Indonesia, Saudi Arabia and South Africa are from the UNESCO Institute of Statistics (UIS).

Data on subnational regions for selected indicators have been released by the OECD, with support from the US National Centre for Education Statistics (NCES) and are currently available for four countries: Belgium, Brazil, Germany and the United States. Subnational estimates were provided by countries using national data sources.

**Note regarding data from Israel**

The statistical data for Israel are supplied by and are under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

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## Indicator C1 Tables

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| | |
|---|---|
| Table C1.1 | Enrolment rates by age group (2015) |
| Table C1.2 | Students enrolled as a percentage of the population between the ages of 15 and 20 (2005 and 2015) |
| Table C1.3 | Enrolment in upper secondary education, by programme orientation and age group (2015) |

Cut-off date for the data: 19 July 2017. Any updates on data can be found on line at http://dx.doi.org/10.1787/eag-data-en. More breakdowns can also be found at http://stats.oecd.org/, Education at a Glance Database.

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## Table C1.1. Enrolment rates by age group (2005 and 2015)

*Students in full-time and part-time programmes in both public and private institutions*

| | | Number of years for which at least 90% of the population of school age are enrolled | Age range at which at least 90% of the population of school age are enrolled | Students as a percentage of the population of a specific age group | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | 2005 | | |
| | | | | Ages 5 to 14 | Ages 15 to 19 | Ages 20 to 24 | Ages 25 to 29 | Ages 30 to 39 | Ages 40 to 65 | Ages 20 to 24 | Ages 25 to 29 | Ages 30 to 39 |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) |
| OECD | Australia | 14 | 4-17 | 100 | 92 | 59 | 31 | 20 | 10 | 44 | 21 | 13 |
| OECD | Austria | 13 | 4-16 | 99 | 80 | 34 | 18 | 6 | 1 | m | m | m |
| OECD | Belgium | 15 | 3-17 | 98 | 92 | 46 | 14 | 7 | 4 | m | m | m |
| OECD | Canada[1] | 12 | 5-16 | 100 | 72 | 34 | 11 | 5 | 1 | m | m | m |
| OECD | Chile | 13 | 5-17 | 98 | 80 | 43 | 16 | 6 | 1 | m | m | m |
| OECD | Czech Republic | 13 | 5-17 | 98 | 91 | 42 | 10 | 3 | 1 | m | m | m |
| OECD | Denmark | 16 | 2-17 | 99 | 87 | 57 | 33 | 9 | 2 | m | m | m |
| OECD | Estonia | 11 | 8-18 | 73 | 89 | 42 | 17 | 7 | 1 | m | m | m |
| OECD | Finland | 13 | 6-18 | 96 | 87 | 52 | 31 | 16 | 5 | 55 | 30 | 13 |
| OECD | France | 15 | 3-17 | 99 | 85 | 36 | 7 | 2 | 0 | 32 | 7 | 1 |
| OECD | Germany | 15 | 3-17 | 99 | 88 | 49 | 21 | 5 | 0 | 41 | 18 | 2 |
| OECD | Greece | m | m | m | m | m | m | m | m | m | m | m |
| OECD | Hungary | 14 | 4-16 | 96 | 85 | 37 | 10 | 3 | 1 | 38 | 13 | 6 |
| OECD | Iceland | 16 | 2-16 | 99 | 88 | 48 | 27 | 13 | 4 | m | m | m |
| OECD | Ireland | 14 | 5-18 | 100 | 97 | 52 | 12 | 6 | 2 | m | m | m |
| OECD | Israel | 15 | 3-17 | 97 | 66 | 22 | 21 | 6 | 2 | m | m | m |
| OECD | Italy | 15 | 3-17 | 98 | 84 | 34 | 11 | 2 | 0 | m | m | m |
| OECD | Japan[2] | 14 | 4-17 | 100 | m | m | m | m | m | m | m | m |
| OECD | Korea | 14 | 3-17 | 98 | 86 | 51 | 10 | 2 | 1 | 46 | 9 | 2 |
| OECD | Latvia | 15 | 4-18 | 98 | 92 | 43 | 14 | 5 | 1 | m | m | m |
| OECD | Luxembourg | 12 | 4-15 | 97 | 76 | 21 | 7 | 2 | 0 | m | m | m |
| OECD | Mexico | 10 | 5-14 | 100 | 57 | 22 | 7 | 3 | 2 | 17 | 5 | 2 |
| OECD | Netherlands | 15 | 4-17 | 100 | 94 | 53 | 18 | 5 | 2 | m | m | m |
| OECD | New Zealand | 14 | 4-16 | 99 | 82 | 39 | 18 | 10 | 5 | 41 | 21 | 14 |
| OECD | Norway | 17 | 2-17 | 99 | 87 | 44 | 18 | 7 | 2 | 46 | 20 | 7 |
| OECD | Poland | 14 | 5-18 | 95 | 93 | 51 | 10 | 4 | 1 | m | m | m |
| OECD | Portugal | 14 | 4-17 | 99 | 89 | 37 | 10 | 4 | 1 | 34 | 11 | 4 |
| OECD | Slovak Republic | 11 | 6-16 | 93 | 84 | 34 | 7 | 2 | 1 | m | m | m |
| OECD | Slovenia | 14 | 5-18 | 97 | 94 | 55 | 13 | 2 | 0 | 50 | 17 | 6 |
| OECD | Spain | 15 | 3-16 | 97 | 87 | 49 | 16 | 5 | 2 | m | m | m |
| OECD | Sweden | 16 | 3-18 | 98 | 86 | 42 | 27 | 15 | 4 | m | m | m |
| OECD | Switzerland | 13 | 5-17 | 100 | 86 | 39 | 16 | 4 | 1 | 31 | 13 | 4 |
| OECD | Turkey | 10 | 6-14 | 96 | 70 | 50 | 26 | 11 | 2 | m | m | m |
| OECD | United Kingdom | 15 | 3-17 | 98 | 84 | 32 | 10 | 5 | 2 | m | m | m |
| OECD | United States | 13 | 5-17 | 98 | 82 | 35 | 15 | 7 | 2 | 32 | 13 | 6 |
| | OECD average | 14 | ~ | 97 | 85 | 42 | 16 | 6 | 2 | m | m | m |
| | EU22 average | 14 | ~ | 97 | 88 | 43 | 15 | 6 | 2 | m | m | m |
| Partners | Argentina[3] | 11 | 5-15 | 100 | 75 | 39 | 20 | 6 | 1 | m | m | m |
| Partners | Brazil | 10 | 5-13 | 95 | 68 | 29 | 15 | 8 | 2 | m | m | m |
| Partners | China | 2 | m | m | 64 | 18 | 1 | 0 | 0 | m | m | m |
| Partners | Colombia | 7 | 5-12 | 90 | 55 | 25 | 12 | 6 | 2 | m | m | m |
| Partners | Costa Rica | m | 5-15 | 95 | 57 | m | m | m | m | m | m | m |
| Partners | India[3] | 5 | m | 83 | m | m | m | m | m | m | m | m |
| Partners | Indonesia | 8 | 8-15 | 96 | 78 | 16 | 1 | 0 | 0 | m | m | m |
| Partners | Lithuania | 13 | 6-18 | 99 | 94 | 47 | 13 | 5 | 1 | 49 | 18 | 6 |
| Partners | Russian Federation | 11 | 7-17 | 95 | 84 | 32 | 8 | 3 | 0 | 35 | 14 | 1 |
| Partners | Saudi Arabia | 10 | 6-17 | 93 | 94 | 39 | 10 | 2 | 1 | m | m | m |
| Partners | South Africa | m | m | m | m | m | m | m | m | m | m | m |
| | G20 average | 12 | ~ | 97 | 80 | 37 | 13 | 5 | 2 | m | m | m |

1. Excludes post-secondary non-tertiary education.
2. Breakdown by age not available after 15 years old.
3. Year of reference 2014.

**Source:** OECD/UIS/Eurostat (2017). See *Source* section for more information and Annex 3 for notes (http:/www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933560814

## Table C1.2. Students enrolled as a percentage of the population between the ages of 15 and 20 (2005 and 2015)

*Percentage of the population enrolled in full-time and part-time programmes by age and level of education*

| | | 2015 | | | | | | | | | | | | | 2005 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Age 15 | Age 16 | Age 17 | | | Age 18 | | | Age 19 | | | Age 20 | | | Age 18 | Age 19 | Age 20 |
| | | Secondary | Secondary | Secondary | Post-secondary non-tertiary | Tertiary | Secondary | Post-secondary non-tertiary | Tertiary | Secondary | Post-secondary non-tertiary | Tertiary | Secondary | Post-secondary non-tertiary | Tertiary | All levels of education | All levels of education | All levels of education |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) | (17) |
| OECD | Australia | 100 | 100 | 89 | 1 | 6 | 39 | 4 | 39 | 23 | 5 | 50 | 19 | 5 | 51 | 69 | 63 | 59 |
| | Austria | 95 | 91 | 75 | 1 | 14 | 44 | 1 | 29 | 20 | 2 | 32 | 9 | 2 | 31 | m | m | m |
| | Belgium | 98 | 97 | 95 | 0 | 1 | 49 | 2 | 37 | 26 | 3 | 50 | 13 | 3 | 53 | m | m | m |
| | Canada | 92 | 92 | 77 | m | 3 | 22 | m | 32 | 8 | m | 40 | 6 | m | 41 | m | m | m |
| | Chile | 93 | 94 | 90 | a | 0 | 36 | a | 30 | 11 | a | 46 | 4 | a | 50 | m | m | m |
| | Czech Republic | 99 | 98 | 95 | x(3) | 0 | 88 | x(6) | 2 | 49 | x(9) | 24 | 15 | x(12) | 41 | m | m | m |
| | Denmark | 99 | 95 | 91 | a | 0 | 86 | a | 1 | 57 | a | 8 | 30 | a | 23 | m | m | m |
| | Estonia | 99 | 97 | 94 | 0 | 0 | 89 | 0 | 1 | 36 | 5 | 26 | 13 | 8 | 36 | m | m | 42 |
| | Finland | 98 | 96 | 96 | 0 | 0 | 95 | 0 | 1 | 36 | 0 | 16 | 20 | 0 | 28 | 94 | 53 | 50 |
| | France | 97 | 93 | 88 | 0 | 3 | 36 | 1 | 40 | 13 | 1 | 50 | 6 | 0 | 47 | 77 | 64 | 51 |
| | Germany | 99 | 96 | 89 | 4 | 0 | 71 | 5 | 7 | 36 | 16 | 19 | 22 | 15 | 28 | 85 | 70 | 54 |
| | Greece | 93 | 93 | 95 | 0 | m | 16 | 9 | m | 10 | 9 | m | 8 | 8 | m | m | m | m |
| | Hungary | 97 | 93 | 89 | 0 | 0 | 69 | 6 | 5 | 30 | 18 | 20 | 12 | 16 | 29 | 79 | 68 | 59 |
| | Iceland | 99 | 96 | 90 | 0 | 0 | 81 | 0 | 0 | 70 | 0 | 3 | 32 | 0 | 18 | m | m | m |
| | Ireland | 100 | 100 | 91 | 6 | 4 | 46 | 16 | 31 | 3 | 19 | 61 | 1 | 15 | 65 | m | m | m |
| | Israel | 97 | 96 | 90 | 0 | 1 | 17 | 0 | 8 | 2 | 1 | 13 | 1 | 1 | 15 | m | m | m |
| | Italy | 98 | 95 | 92 | 0 | 0 | 79 | 0 | 2 | 21 | 0 | 32 | 7 | 0 | 37 | m | m | m |
| | Japan | 100 | 96 | 96 | 0 | 0 | 3 | m | m | 1 | 0[d] | m | m | m | m | m | m | m |
| | Korea | 97 | 98 | 95 | a | 1 | 9 | a | 61 | 0 | a | 73 | 0 | a | 69 | 73 | 75 | 66 |
| | Latvia | 98 | 98 | 95 | 0 | 1 | 87 | 0 | 4 | 38 | 3 | 37 | 14 | 3 | 45 | m | m | m |
| | Luxembourg | 95 | 89 | 84 | 0 | 0 | 68 | 0 | 0 | 42 | 0 | 3 | 25 | 0 | 7 | m | m | m |
| | Mexico | 77 | 71 | 56 | a | 3 | 24 | a | 19 | 11 | a | 25 | 6 | a | 25 | 31 | 42 | 24 |
| | Netherlands | 100 | 99 | 90 | a | 8 | 64 | a | 26 | 43 | a | 39 | 28 | a | 45 | m | m | m |
| | New Zealand | 97 | 98 | 85 | 2 | 2 | 28 | 7 | 32 | 10 | 6 | 42 | 6 | 5 | 44 | 58 | 52 | 52 |
| | Norway | 100 | 95 | 93 | 0 | 0 | 89 | 0 | 0 | 38 | 1 | 18 | 19 | 1 | 35 | 89 | 59 | 55 |
| | Poland | 95 | 96 | 95 | 0 | 1 | 93 | 0 | 2 | 42 | 4 | 36 | 11 | 8 | 46 | 92 | 46 | 26 |
| | Portugal | 97 | 98 | 98 | 0 | 0 | 54 | 1 | 26 | 28 | 2 | 35 | 15 | 2 | 39 | 66 | 53 | 46 |
| | Slovak Republic | 97 | 93 | 89 | 0 | 0 | 76 | 3 | 3 | 33 | 5 | 24 | 5 | 3 | 35 | m | m | m |
| | Slovenia | 97 | 98 | 100 | a | 0 | 92 | a | 3 | 28 | a | 53 | 12 | a | 59 | 90 | 79 | 58 |
| | Spain | 96 | 95 | 90 | 0 | 0 | 43 | 0 | 36 | 27 | 0 | 46 | 17 | 0 | 49 | m | m | m |
| | Sweden | 99 | 99 | 98 | 0 | 0 | 95 | 0 | 1 | 26 | 1 | 16 | 15 | 1 | 24 | m | m | m |
| | Switzerland | 98 | 93 | 91 | 1 | 0 | 80 | 1 | 4 | 50 | 1 | 12 | 25 | 1 | 21 | 81 | 57 | 39 |
| | Turkey | 90 | 84 | 74 | a | 1 | 28 | a | 18 | 14 | a | 39 | 10 | a | 47 | m | m | m |
| | United Kingdom | 99 | 100 | 98 | a | 1 | 39 | a | 21 | 19 | a | 38 | 12 | a | 41 | m | m | m |
| | United States | 100 | 90 | 89 | 0 | 1 | 28 | 1 | 38 | 6 | 2 | 52 | 0 | 2 | 47 | 59 | 54 | 45 |
| | OECD average | 97 | 95 | 90 | 1 | 2 | 56 | 2 | 17 | 26 | 4 | 33 | 13 | 4 | 38 | m | m | m |
| | EU22 average | 97 | 96 | 92 | 1 | 2 | 67 | 3 | 13 | 30 | 5 | 32 | 14 | 5 | 38 | m | m | m |
| Partners | Argentina[1] | 93 | 87 | 78 | a | 0 | 38 | a | 18 | 18 | a | 31 | 9 | a | 34 | m | m | m |
| | Brazil[2] | 88 | 86 | 66 | 1 | 5 | 32 | 2 | 14 | 18 | 2 | 19 | 10 | 2 | 21 | m | m | m |
| | China | 77 | 77 | 71 | m | 3 | 36 | m | 19 | 10 | m | 32 | 3 | m | 32 | m | m | m |
| | Colombia | 83 | 67 | 38 | 0 | 7 | 19 | 0 | 19 | 9 | 0 | 25 | 5 | 0 | 27 | m | m | m |
| | Costa Rica | 90 | 80 | 58 | a | m | 35 | a | m | 21 | a | m | 15 | a | m | m | m | m |
| | India[1] | 62 | 52 | 34 | m | m | 16 | m | m | 7 | m | m | 3 | m | m | m | m | m |
| | Indonesia | 96 | 87 | 74 | a | 0 | 50 | a | 21 | 38 | a | 21 | 10 | a | 19 | m | m | m |
| | Lithuania | 100 | 100 | 98 | 0 | 0 | 86 | 1 | 8 | 23 | 7 | 50 | 6 | 8 | 54 | 96 | 81 | 68 |
| | Russian Federation | 86 | 56 | 40 | 13 | 41 | 3 | 12 | 61 | 0 | 5 | 60 | 0 | 2 | 53 | 79 | 62 | 56 |
| | Saudi Arabia | 100 | 99 | 100 | a | 0 | 36 | a | 50 | 20 | a | 49 | 17 | a | 36 | m | m | m |
| | South Africa[1] | m | m | m | m | 1 | m | m | 7 | m | m | 10 | m | m | 10 | m | m | m |
| | G20 average | 92 | 87 | 79 | m | 4 | 33 | m | 27 | 15 | m | 38 | 9 | m | 38 | m | m | m |

1. Year of reference 2014.

2. Enrolments in upper secondary vocational programmes (ISCED 3-Vocational) are partially included in indicators for post-secondary non-tertiary and tertiary education.

**Source:** OECD/UIS/Eurostat (2017). See *Source* section for more information and Annex 3 for notes (http://www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933560833

C1

## Table C1.3. Enrolment in upper secondary education, by programme orientation and age group (2015)

*Enrolment rate and share of students by programme orientation, for selected age groups*

| | | Enrolment rate of 15-19 year-olds | | Enrolment rate of 20-24 year-olds | | Share of students by programme orientation, all ages | | | Share of students in vocational programmes, by age group | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | General | Vocational | General | Vocational | General | Vocational | Combined school- and work-based programmes | 15-19 year-olds | 20-24 year-olds | 25 years and older |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
| OECD | Australia | 35 | 9 | 1.3 | 9.8 | 42 | 58 | x(6) | 20 | 88 | 97 |
| | Austria | 18 | 43 | 0.4 | 3.5 | 30 | 70 | 33 | 70 | 89 | 88 |
| | Belgium | 29 | 38 | 1.4 | 3.4 | 40 | 60 | 3 | 57 | 71 | 59 |
| | Canada | 56[d] | x(1) | 3.9[d] | x(3) | 92 | 8 | m | m | m | m |
| | Chile | 42 | 19 | 1.7 | 0.3 | 71 | 29 | 2 | 31 | 17 | 18 |
| | Czech Republic | 22 | 52 | 0.2 | 5.3 | 27 | 73 | 6 | 70 | 96 | |
| | Denmark | 40 | 11 | 5.9 | 13.1 | 58 | 42 | 42 | 22 | 69 | 75 |
| | Estonia | 39 | 18 | 1.8 | 2.9 | 64 | 36 | 0 | 32 | 62 | 49 |
| | Finland | 32 | 30 | 1.1 | 15.3 | 29 | 71 | 10 | 49 | 93 | 98 |
| | France | 37 | 23 | 0.1 | 2.7 | 59 | 41 | 10 | 38 | 96 | 100 |
| | Germany | 32 | 17 | 1.2 | 9.4 | 53 | 47 | 40 | 34 | 89 | 98 |
| | Greece | 44 | 14 | 1 | 3 | 70 | 30 | a | m | m | m |
| | Hungary | 54 | 16 | 2.7 | 1.7 | 77 | 23 | 23 | 23 | 38 | 23 |
| | Iceland | 55 | 13 | 9.6 | 8.4 | 67 | 33 | 14 | m | m | m |
| | Ireland | 56 | a | 1.3 | a | 100 | a | a | a | a | a |
| | Israel | 34 | 24 | 0.1 | 0.0 | 59 | 41 | 3 | 41 | 12 | |
| | Italy | 33 | 42 | 0.3 | 2.4 | 44 | 56 | a | 56 | 80 | 93 |
| | Japan | 46[d] | 13[d] | x(1) | x(2) | 77 | 23 | a | m | m | m |
| | Korea | 46 | 10 | 0.0 | 0.0 | 82 | 18 | a | 18 | 17 | m |
| | Latvia | 35 | 23 | 2.2 | 3.0 | 60 | 40 | 40 | 39 | 58 | 27 |
| | Luxembourg | 27 | 36 | 0.8 | 9.3 | 39 | 61 | 14 | 58 | 92 | 88 |
| | Mexico | 25 | 15 | 0.9 | 0.7 | 62 | 38 | a | 38 | 46 | 48 |
| | Netherlands | 24 | 29 | 0.3 | 13.6 | 31 | 69 | m | 54 | 98 | 100 |
| | New Zealand | 51 | 8 | 0.4 | 3.8 | 68 | 32 | m | 13 | 91 | 95 |
| | Norway | 34 | 29 | 2.1 | 6.3 | 50 | 50 | 16 | 45 | 75 | 68 |
| | Poland | 28 | 34 | 3.2 | 0.9 | 50 | 50 | 8[d] | 55 | 22 | 4 |
| | Portugal | 37 | 23 | 1.1 | 5.6 | 55 | 45 | a | 38 | 83 | 79 |
| | Slovak Republic | 21 | 44 | 0.2 | 1.4 | 31 | 69 | 6 | 68 | 90 | 92 |
| | Slovenia | 29 | 52 | 0.8 | 6.0 | 33 | 67 | a | 64 | 88 | 99 |
| | Spain | 47 | 12 | 2.6 | 5.6 | 65 | 35 | 0 | 20 | 69 | 90 |
| | Sweden | 41 | 22 | 6.9 | 4.1 | 62 | 38 | 1 | 35 | 37 | 49 |
| | Switzerland | 25 | 40 | 2.4 | 8.4 | 35 | 65 | 59 | 62 | 78 | 88 |
| | Turkey | 27 | 30 | 5.0 | 1.8 | 51 | 49 | a | 53 | 27 | 16 |
| | United Kingdom | 45 | 22 | 0.3 | 7.0 | 60 | 40 | 22 | 33 | 95 | 96 |
| | United States | m | m | m | m | m | m | m | m | m | m |
| | OECD average | 36 | 25 | 1.9 | 5.1 | 56 | 46 | 17 | 43 | 68 | 71 |
| | EU22 average | 35 | 29 | 1.6 | 5.7 | 52 | 51 | 17 | 46 | 76 | 74 |
| Partners | Argentina | 46 | a | 3.0 | a | 100 | a | m | m | m | m |
| | Brazil | 40 | 3 | 4.4 | 0.5 | 91 | 9 | a | 8 | 9 | 14 |
| | China | 30 | 15 | 0.2 | 1.8 | 58 | 42 | m | m | m | m |
| | Colombia | 18 | 7 | 1.4 | 0.1 | 73 | 27 | m | m | m | m |
| | Costa Rica | 22 | 11 | 3.8 | 1.8 | 67 | 33 | m | m | m | m |
| | India[1] | 32 | m | 0.8 | m | 97 | 3 | m | m | m | m |
| | Indonesia | 24 | 17 | 1.5 | 1.1 | 58 | 42 | 0 | m | m | m |
| | Lithuania | 31 | 10 | 0.9 | 1.2 | 73 | 27 | a | 24 | 56 | 33 |
| | Russian Federation | 19 | m | 0.0 | m | 46 | 54 | m | m | m | m |
| | Saudi Arabia | 61 | m | 6.0 | m | m | m | m | m | m | m |
| | South Africa[1] | m | m | m | m | 88 | 12 | m | m | m | m |
| | G20 average | 37 | 18 | 1.7 | 3.6 | 68 | 34 | m | m | m | m |

1. Year of reference 2014.

**Source:** OECD/UIS/Eurostat (2017). See *Source* section for more information and Annex 3 for notes (http://www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

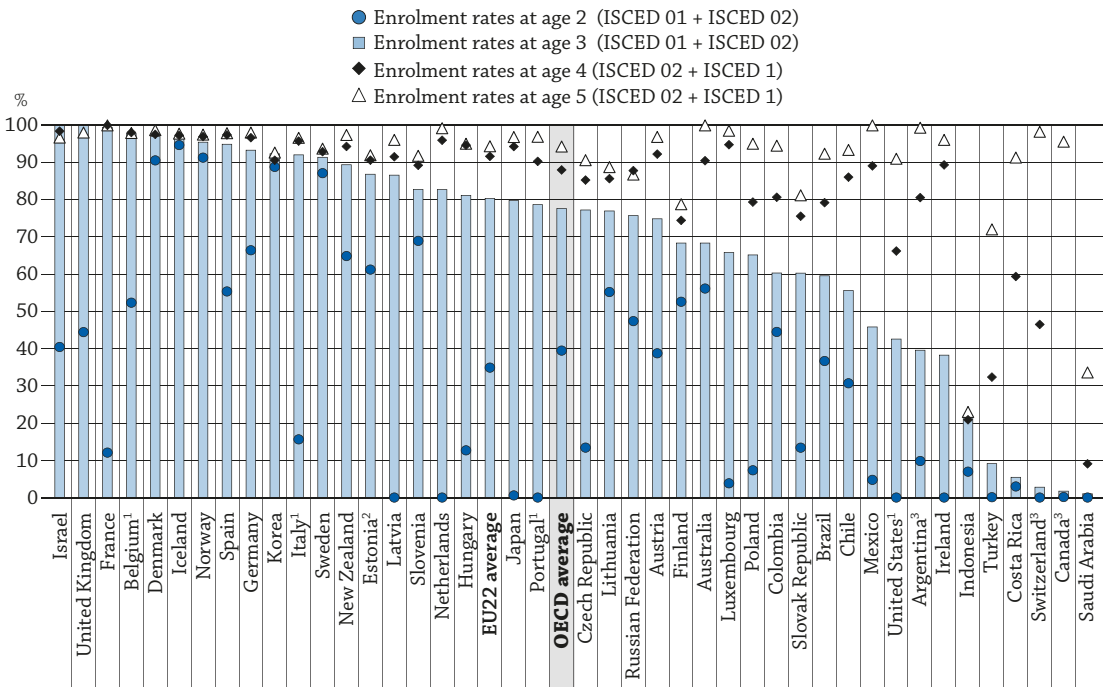
StatLink http://dx.doi.org/10.1787/888933560852

# HOW DO EARLY CHILDHOOD EDUCATION SYSTEMS DIFFER AROUND THE WORLD?

- In a majority of OECD countries, education now begins for most children well before they are five years old – 78% of three-year-olds are enrolled in early childhood education across OECD countries. In OECD countries that are part of the European Union, 80% of three-year-olds are enrolled.
- The proportion of children enrolled in private early childhood education programmes is considerably greater than the private enrolment shares at primary and secondary levels. On average, 55% of children in early childhood educational development programmes attend private institutions, compared to 33% for pre-primary programmes (see Figure C2.2).
- Expenditure on early childhood education accounts for an average of 0.8% of GDP, of which 0.6% is allocated to pre-primary education. Public expenditure accounts for 83% of all resources allocated for pre-primary education and 71% of funding for early childhood educational development (82% for early childhood education overall).

## Figure C2.1. Enrolment rates at ages 2 to 5 in early childhood and primary education (2015)

*Early childhood educational development programmes = ISCED 01, pre-primary education = ISCED 02, primary education = ISCED 1*




1. Includes only pre-primary education at the ages of 2 and 3 (ISCED 02).
2. Includes early childhood development programmes at the ages of 4 and 5 (ISCED 01).
3. Year of reference 2014.

*Countries are ranked in descending order of the enrolment rates of 3-year-olds.*

**Source**: OECD (2017), Table C2.1. See Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933558249

## Context

As parents are more likely to be in the workforce today, there is a growing need for early childhood education and care. In addition, there is increasing awareness of the key role that early childhood education (ECE) plays for children's well-being and cognitive and social-emotional development. As a result, ensuring the quality of ECE has become a policy priority in many countries.

There are many different early childhood education and care systems and structures within OECD countries. Consequently, there is also a range of different approaches to identifying the boundary between ECE and childcare. These differences should be taken into account when drawing conclusions from international comparisons. Though the present indicator collects data only on ECE, roughly three-quarters of OECD countries have integrated programmes available nationwide that combine ECE with a care component (Tables C2.4 and C2.5, available on line).

In a majority of OECD countries, early childhood education and care policy has developed in parallel to increases in women's labour-force participation. More and more women have become salaried employees since the 1970s, as the service- and knowledge-based economies have expanded. Because economic prosperity depends on maintaining a high employment-to-population ratio, encouraging more women to enter the labour market has prompted greater government interest in expanding early childhood education and care services. In the 1970s and 1980s, European governments in particular put in place family and childcare policies to encourage couples to have children and ensure that it is feasible for women to combine work and family responsibilities (OECD, 2016a; OECD, 2011a).

Many of the inequalities found in education systems are already evident when children enter formal schooling; these persist (or increase) as they progress through the school system. Enrolling children in ECE helps prepare them to enter and succeed in formal schooling, mitigates social inequalities and promotes better student outcomes. There is a growing body of evidence that shows that children who have a strong start in their development, learning and well-being will have better outcomes when they grow older (Duncan and Magnuson, 2013). Such evidence has prompted policy makers to design early interventions and rethink their education spending patterns to gain "value for money".

Currently, over half of OECD countries have integrated their early childhood education and care systems in terms of curricula and governing authorities (see *Definitions* section at the end of this indicator for a breakdown of early childhood education programmes and corresponding ISCED levels). Such integration has been found to be associated with better quality of education, more affordable access, better-qualified staff, and smoother transitions to subsequent education for children (OECD, 2017a). ECE can also be provided in more school-like settings or in integrated early childhood provision, as is more common in the Nordic countries and Germany, for example. The recognised educational benefits of early childhood education and care for children, combined with the need to provide childcare services to support parental labour-force participation, has incited an increasing number of countries to consider moving towards these types of integrated systems (OECD, 2017a).

## Other findings

- Across OECD countries almost nine out of ten four-year-olds (87%) are enrolled in pre-primary education (or in primary education in a few countries).
- Some 75% of children enrolled in pre-primary programmes in European OECD countries attend public institutions, compared to an overall OECD average of 67%.
- The ratio of children to teaching staff is an indicator of the resources devoted to ECE. The child-teacher ratio at the pre-primary level for OECD countries, excluding teachers' aides, ranges from 25 children per teacher in Chile and Mexico to fewer than 7 in Iceland, New Zealand and Sweden.
- Some countries make extensive use of teachers' aides in pre-primary education, which is indicated by smaller ratios of children to contact staff than of children to teaching staff. For instance, Norway – which has 16 children per teaching staff member – has just 7 children per contact staff once teachers' aides are included.
- Two years of ECE is the minimum duration required to boost academic performance at age 15, according to data from the 2015 OECD Programme for International Student Assessment (PISA) (OECD, 2016b; OECD, 2017a).

## Analysis

While primary and lower secondary enrolment patterns are fairly similar throughout OECD countries, enrolment varies significantly among OECD and other G20 countries for both early childhood educational development programmes (ISCED 01) and pre-primary programmes (ISCED 02). Variation between countries also encompasses financing, the overall level of participation in programmes, the typical starting age for children and the duration of programmes (Table C2.5, available on line).

### Enrolment in early childhood education

In most OECD countries, ECE now begins for most children well before they are five years old. Almost nine out of ten four-year-olds (87%) are enrolled in pre-primary and primary education across OECD countries. In the OECD countries that are part of the European Union, 90% of four-year-olds are enrolled. OECD enrolment rates in pre-primary education at this age vary from 98% or higher in Belgium, Denmark, France, Israel and the United Kingdom, to less than 50% in Greece, Switzerland and Turkey. ECE programmes for even younger children are not as extensive: while 39% of two-year-olds are enrolled in ECE across all OECD countries, this rises to 78% for three-year-olds. The highest enrolment rates of three-year-olds in ECE are found in Denmark, France, Iceland, Israel, Norway, Spain and the United Kingdom, exceeding 96% (Table C2.1, Figure C2.1 and OECD, 2017a).

Over the past decade, many countries have expanded ECE. This increased focus has resulted in the extension of compulsory education to lower ages in some countries, free ECE, universal provision and the creation of programmes that integrate care with formal pre-primary education. Between 2005 and 2015, average enrolment in pre-primary education among OECD countries rose from 54% of three-year-olds in 2005 to 73% in 2015. Enrolment in pre-primary or primary education for four-year-olds also rose, from 76% to 87%, over the same period. The enrolment rates of four-year-olds increased by over 30 percentage points in Australia, Chile, Korea, Poland and the Russian Federation.

### Enrolment in early childhood education and PISA performance at age 15

Data from the 2015 OECD Programme for International Student Assessment (PISA) of 15-year-old students suggest that ECE has a positive impact on outcomes later on in life: indeed, the PISA data suggest that two years of ECE is the minimum duration required to boost science performance at age 15. While students who reported having received between two and three years of ECE scored higher than those who had attended between one and two years, even after controlling for socio-economic status, the same effect is not found when comparing students who received three to four years and two to three years of ECE, respectively (OECD, 2017a).

However, the relationship between performance and ECE attendance tends to be curvilinear for enrolments of less than a year: students having attended between two and three years of pre-primary school have a higher score than students who did not attend pre-primary education at all or who attended for less than a year (OECD, 2016b). This perhaps counterintuitive result may be partly explained by the fact that the benefits of early childhood education and care depend heavily on its quality. PISA research shows that the relationship between pre-primary attendance and performance tends to be stronger in school systems with longer-duration pre-primary education, smaller child-to-teacher ratios in pre-primary education, and higher public expenditure per child at the pre-primary level (OECD, 2016b: Table II.6.51). Among all input variables, duration of early childhood education and care is one of the strongest predictors of performance in PISA tests (OECD, 2017a). It is not possible to ascertain, however, to what extent this is a corollary of early childhood learning opportunities or merely the result of individuals with certain characteristics selecting disproportionately into these programmes.

### Early childhood education, by type of institution

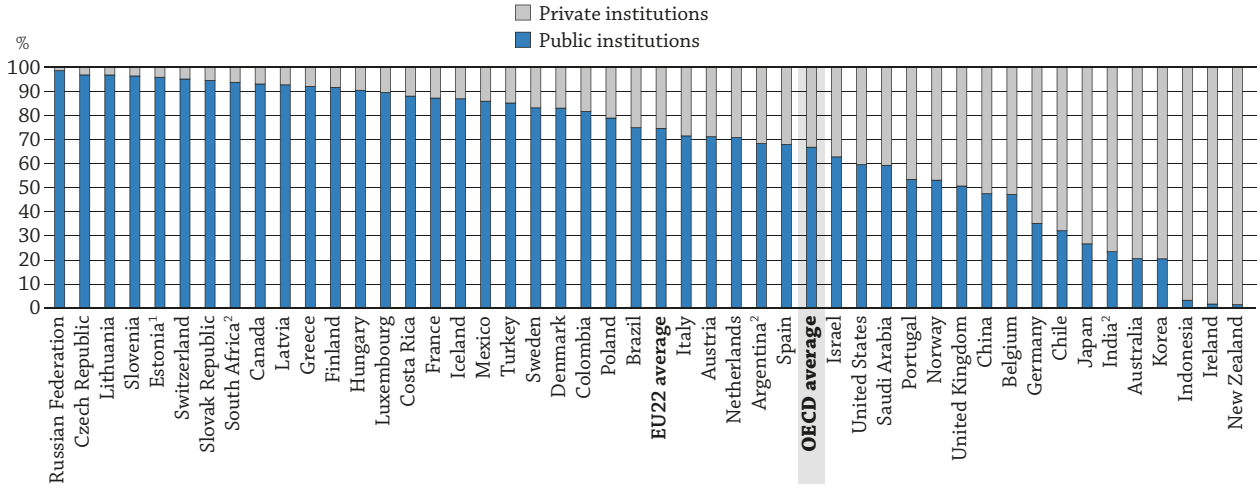
Parents' needs and expectations regarding accessibility, cost, programme and staff quality, and accountability are all important in assessing the expansion of ECE programmes and the type of providers. When parents' needs for quality, accessibility or accountability are not met by public institutions, some parents may be more inclined to send their children to private pre-primary institutions (Shin, Jung and Park, 2009).

In most countries, the proportions of children enrolled in private ECE institutions are considerably larger than in primary and secondary education. Private institutions can be classified into two different types: government-dependent and independent private. Independent private institutions are controlled by a non-governmental organisation or by a governing board not selected by a government agency, and receive less than 50% of their core funding from government agencies. Although government-dependent private institutions have similar governance structures, they rely on government agencies for more than 50% of their core funding.

For just over half of countries with available data, at least 50% of children in early childhood educational development programmes are enrolled in private institutions. On average across all OECD countries, 55% of children in early childhood educational development programmes and 33% of children in pre-primary education are enrolled in private institutions (Figure C2.2). For pre-primary education, approximately one-third of children enrolled in private institutions (i.e. 12% of all children) are enrolled in independent private institutions.

In New Zealand, 99% of children enrolled in pre-primary education attend government-dependent private institutions, while Ireland has the highest share of children enrolled in independent private pre-primary institutions, at 98%. Regarding private early childhood educational development programmes, 100% of children in Turkey and Indonesia attend independent private institutions, while 99% of children in New Zealand attend government-dependent institutions. On the other hand, in Colombia, the Russian Federation and Slovenia, over 95% of children in early childhood educational development programmes attend public institutions.

## Figure C2.2. Percentage of children enrolled in public and private institutions in pre-primary education (2015)




1. Pre-primary includes early childhood development programmes.

2. Year of reference 2014.

*Countries are ranked in descending order of the percentage of children enrolled in public institutions in pre-primary education.*

**Source**: OECD (2017), Table C2.2. See Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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### *Variation in child-teacher ratios across OECD countries*

Research demonstrates that enriched, stimulating environments and high-quality pedagogy are fostered by better-qualified practitioners, and that better-quality staff-child interactions facilitate better learning outcomes. Qualifications indicate how much specialised and practical training is included in initial staff education, what types of professional development and education are available and taken up by staff, and how many years of experience staff have accumulated. While qualifications are one of the strongest predictors of staff quality, the level of qualification tells only part of the story. Working conditions can also influence professional satisfaction, which is likely to affect the ability and willingness of professionals to build relationships and interact attentively with children. High turnover disrupts the continuity of care, undermines professional development efforts, lowers overall quality and adversely affects child outcomes (OECD, 2017a).

The ratio of children to teaching staff is an important indicator of the resources devoted to education. It is obtained by dividing the number of full-time equivalent children at a given level of education by the number of full-time equivalent teachers at that level and in similar types of institutions (see Indicator D2).

Table C2.2 shows the ratio of children to teaching staff and also the ratio of children to contact staff (e.g. teachers and teachers' aides) in ECE. On average across OECD countries, there are 14 children for every teacher in pre-primary education. The child-teacher ratio, excluding teachers' aides, ranges from more than 20 children per teacher in Brazil, Chile, Colombia, France, Mexico and South Africa to fewer than 10 in Iceland, New Zealand, Slovenia and Sweden (Table C2.2).

Many countries make very limited use of teachers' aides, and ten of the countries with available data do not make use of teachers' aides at all (Belgium, Czech Republic, Hungary, Italy, Korea, Luxembourg, Mexico, Slovak Republic, Slovenia and Sweden). However, Chile employs one teacher's aide per 19 children, and Norway employs one for every 11. Thus, for these two countries, there are more aides per child than there are teachers. Contrasting pre-primary education with early childhood educational development programmes, we see that there is a smaller average ratio of children to teaching staff in early childhood educational development programmes than in pre-primary education (8 children compared to 14 children per teacher, respectively).

In countries where data are available, early childhood educational development programmes typically make far greater use of teachers' aides than pre-primary programmes. Chile and Norway each employ more teachers' aides than teachers at this level, as is the case in Mexico, where teachers' aides are not employed at all in pre-primary education. The greater use of teachers' aides at this level is quite possibly driven by the fact that younger children require more attention than those at the pre-primary level, and may also be an ancillary effect of the higher share of privately-run early childhood educational development institutions, which may have different relationships both with parents and with teachers' unions.

### Financing early childhood education

Sustained public financial support is critical for the growth and quality of ECE programmes. Appropriate funding helps to recruit professional staff who are qualified to support children's cognitive, social and emotional development. Investment in early childhood facilities and materials also helps support the development of child-centred environments for well-being and learning. In countries that do not channel sufficient public funding towards achieving both broad access and high-quality programmes, some parents may be more inclined to send their children to private ECE services, which implies heavier financial burdens on households, and where the ability to pay significantly influences the quality of services (OECD, 2017a). These issues may be compounded in countries where public funding for parental leave is limited, and parents must therefore choose between looking to the private market for childcare; relying on informal arrangements with family, friends and neighbours; or else decreasing professional activity altogether (OECD, 2011a).

At the level of early childhood educational development, annual expenditure per child – from both public and private sources and for both public and private institutions – averages USD 13 536 in OECD countries with available data. In almost all of these countries, expenditure per child is much higher in early childhood educational development than in pre-primary education. Public educational expenditure at the pre-primary level is mainly channelled through public institutions, but in some countries it also funds private institutions to varying degrees. For instance, virtually all ECE programmes are in government-dependent private institutions in New Zealand, which by definition receive more than 50% of their funding through public sources. Annual ECE expenditure per child from both public and private sources averages USD 8 858 across OECD countries. However, expenditure varies from less than USD 2 500 in Indonesia, South Africa and Turkey to more than USD 13 000 in Denmark, Iceland, Luxembourg, Norway and Sweden (Table C2.3).

In early childhood educational development, public sources account for 71% of total expenditure on average across OECD countries. Of the 13 countries for which data are available, the proportion of public funding is at least 80% in 6 countries, and exceeds 90% for just 2 (Finland and Sweden). Conversely, in Colombia, Israel, Spain and the United Kingdom, the proportion of public spending is less than 60%. Public funding is generally more significant in pre-primary education, where it contributes to 83% of total expenditure on average for OECD countries; for two-thirds of countries, 80% or more of expenditure comes from the government. The share of pre-primary education provided by public sources exceeds 97% in Ireland, Latvia and Luxembourg. The only countries where private sources account for more than 50% of total expenditure at pre-primary level are Japan (54%) and the United Kingdom (52%).

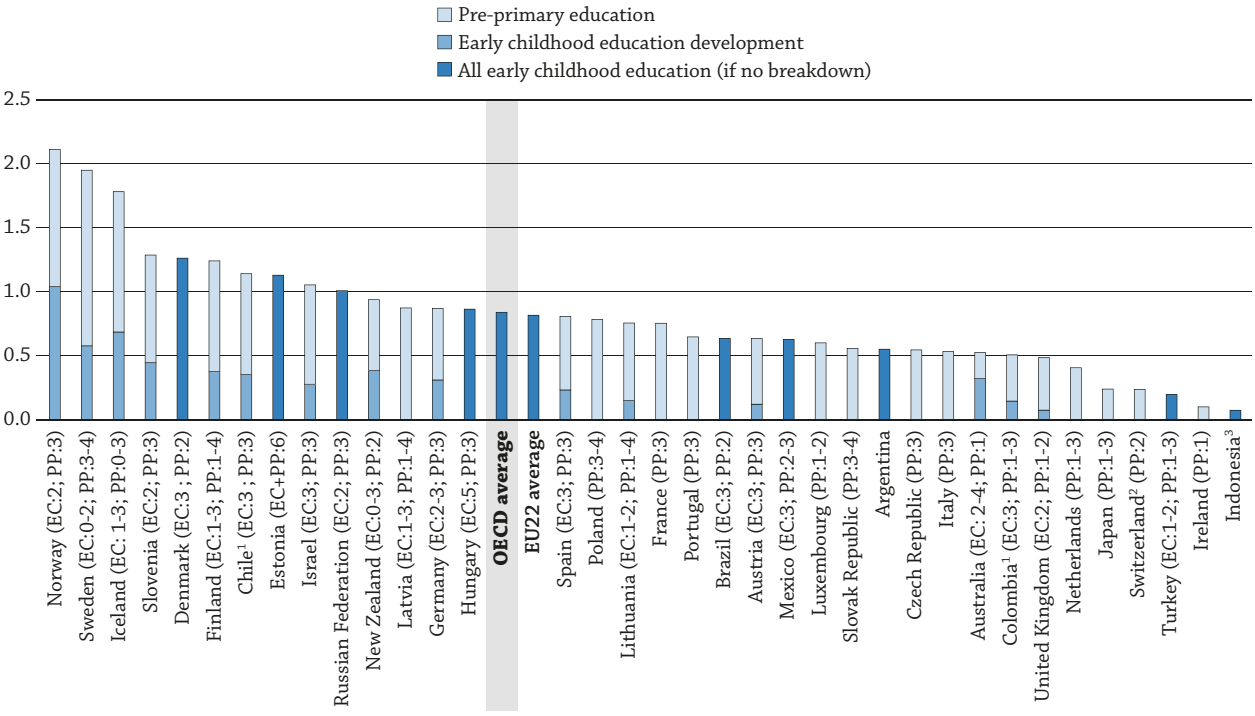
In ECE, many governments delegate responsibilities to local authorities and public funding is more decentralised in early childhood education than at any other level of education. Local governments contribute 100% of public ECE funding in Norway, Denmark and Iceland. Once transfers are taken into account, the same is also true of Latvia, Poland and Estonia. For 10 countries, at least one-fifth of total public ECE expenditures are transferred to local governments to be administered. There are advantages and disadvantages to the devolution of expenditure and other policy making, however. It can make services better-adapted to the needs and circumstances of local families, and improve co-ordination with parents and communities. However, devolution can also have drawbacks, including widening differences in access and quality between regions. In the devolution process, it is important to ensure that

early childhood services are part of a well-conceptualised national policy, with devolved powers to local authorities on the one hand, and a national approach to goal setting, legislation and regulation, financing, staffing criteria, and programme standards on the other (OECD, 2017a).

Expenditure on all ECE accounts for an average of 0.8% of GDP across OECD countries, of which 0.6% is allocated to pre-primary education (Figure C2.3). Differences between countries are significant. For example, while less than 0.3% of GDP is spent on ECE in Indonesia, Ireland, Japan, Switzerland and Turkey, countries such as Iceland, Norway and Sweden spend over 1.7% of GDP (Table C2.3). These differences are largely explained by enrolment rates, legal entitlements and costs, and the different starting age for primary education. These estimates are also influenced by the non-negligible effect of missing data on private institutions for some countries. Moreover, certain key programmes fall outside ISCED classifications; for instance, investment in childcare programmes in France amounted to 0.6% of GDP in 2013. Finally, comparison of different countries' relative expenditure on ECE can be complicated by the shorter duration of pre-primary education resulting from early transitions to primary education, as is the case in Australia and Ireland. The theoretical duration of countries' ECE programmes is summarised in Table C2.3.

## Figure C2.3. Expenditure on early childhood educational institutions (2014)

*As a percentage of GDP, by category*




**Note**: The number in parentheses corresponds to the theoretical duration of early childhood educational development (EC) and pre-primary (PP).

1. Year of reference 2015.

2. Public expenditure only.

3. Year of reference 2013.

*Countries are ranked in descending order of public and private expenditure on educational institutions.*

**Source**: OECD (2017), Table C2.3. See Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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Generally speaking, countries with a shorter theoretical duration for ECE programmes allocate a smaller share of GDP to them. For example, countries such as Switzerland and Turkey spend relatively small fractions of GDP on ECE, partly explained by the comparatively shorter theoretical duration of their ECE programmes (both pre-primary and early childhood development). Estonia, Poland, the Slovak Republic and Sweden have the longest pre-primary ECE programmes, though here expenditure as a share of GDP varies significantly, from 0.6% of GDP in the Slovak Republic to 1.4% in Sweden.

### Subnational variation in early childhood education

The OECD average enrolment rate in early childhood education for three-year-olds is 78%, though enrolment rates vary significantly across subnational regions, ranging from 4% to 100% in the 13 countries with subnational data. While in Belgium, Germany and Sweden subnational averages for enrolment are 92% or higher, with no region falling below 90%, there is much greater regional variation in larger federal countries such as the Russian Federation and the United States. In these two countries, subnational enrolment rates range from 12% to 100% (the Russian Federation) and 12% to 67% (the United States). Data for overall enrolment rates in early childhood education or primary education by age show that subnational variation diminishes as children grow older (OECD/NCES, 2017).

## Definitions

**Education-only programmes** in early childhood education are those that primarily offer education services for a short period of the day. Working parents usually have to use additional care services in the morning and/or afternoon.

**Integrated programmes** in early childhood education are those that provide both early childhood education and care in the same programme.

**Integrated system** refers to systems where the responsibilities for early childhood education and care services are under one (leading) authority (at the national and/or regional level), e.g. the education ministry, ministry of social welfare or another authority. Those responsibilities may stretch from curriculum development to standard-setting, monitoring or financing.

**ISCED level 0** refers to early childhood programmes that have an intentional education component. ISCED level 0 programmes cover early childhood education (ECE) for all ages and target children below the age of entry into primary education (ISCED level 1), are institutionalised, and meet the minimum intensity of 2 hours per day over a duration of at least 100 days per year (OECD, European Union, UNESCO, 2015).

There are two categories of ISCED level 0 programmes, which are classified depending on age and the level of complexity of the educational content:

**ISCED level 01** refers to early childhood educational development programmes, typically aimed at children under 3 years old. The learning environment is visually stimulating and language rich, and fosters self-expression with an emphasis on language acquisition and the use of language for meaningful communication. There are opportunities for active play so that children can exercise their co-ordination and motor skills under supervision and in interaction with staff.

**ISCED level 02** refers to pre-primary education programmes, aimed at children in the years immediately prior to starting compulsory schooling, typically aged between 3 and 5 years old. Through interaction with peers and educators, children improve their use of language and their social skills, start to develop logical and reasoning skills, and talk through their thought processes. They are also introduced to alphabetical and mathematical concepts, understanding and use of language, and are encouraged to explore their surrounding world and environment. Supervised gross motor activities (i.e. physical exercise through games and other activities) and play-based activities can be used as learning opportunities to promote social interactions with peers and to develop skills, autonomy and school readiness.

Please see Indicators B1 and B2 for definitions on *Expenditure per student by educational institution* and *Expenditure per student by educational institutions relative to per capita GDP*.

## Methodology

ISCED level 0 programmes are usually school-based or otherwise institutionalised for a *group* of children. As the institutions authorised to provide ISCED level 0 programmes vary between jurisdictions (e.g. centre-based, community-based, home-based), to be reported in the UOE collection both the *programme* and the *mode or institution of delivery* should be recognised within the country's early childhood education system. Particular care is given to programmes delivered from home-based settings: if the programme meets the criteria as set out above *and* is recognised under the country's regulations, it is included in reporting.

Programmes that provide childcare only are excluded from this indicator. However in some countries, institutions providing early childhood education also provide extended day or evening childcare programmes. Education programmes traditionally provided during the day may now be provided outside these hours to offer further flexibility to parents and carers of children. These are given special consideration in reporting.

The concepts used to define full-time and part-time participation at other ISCED levels, such as study load, child participation, and the academic value or progress that the study represents, are not easily applicable to ISCED level 0. In addition, the number of daily or weekly hours that represent a typical full-time enrolment in an education programme at ISCED level 0 varies widely between countries. Because of this, full-time-equivalents cannot be calculated for ISCED level 0 programmes in the same way as for other ISCED levels.

For data-reporting purposes, countries separate ISCED level 0 data into ISCED 01 and ISCED 02 by age only, as follows: data from age-integrated programmes designed to include children younger and older than 3 are allocated to 01 and 02 according to the age of the children, as described above. This may involve estimation of expenditures and personnel at levels 01 and 02.

Please see Indicators B1 and B2 for methodology relating to the calculation of *Expenditure per student by educational institution* and *Expenditure per student by educational institutions relative to per capita GDP.*

For more information please see the *OECD Handbook for Internationally Comparative Education Statistics: Concepts, Standards, Definitions and Classifications* (OECD, 2017b) and Annex 3 for country-specific notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

## Source

Data are for the school year 2014/15 (unless otherwise specified) and are based on the UOE data collection on education systems administered annually by UNESCO, the OECD and Eurostat for all OECD and partner countries. Data from Argentina, China, Columbia, India, Indonesia, Saudi Arabia and South Africa are from the UNESCO Institute of Statistics (UIS).

Data on subnational regions for selected indicators have been released by the OECD, with the support from the US National Centre for Education Statistics (NCES) and are currently available for 13 countries: Belgium, Finland, Germany, Greece, Ireland, Italy, Poland, the Russian Federation, Slovenia, Spain, Sweden, Turkey and the United States. Subnational estimates were provided by countries using national data sources or were calculated by Eurostat based on data for Level 2 of the Nomenclature of Territorial Units for Statistics (NUTS 2).

**Note regarding data from Israel**

The statistical data for Israel are supplied by and are under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

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## Indicator C2 Tables

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| | | |
|---|---|---|
| | Table C2.1 | Enrolment rates in early childhood and primary education, by age (2005 and 2015) |
| | Table C2.2 | Characteristics of early childhood educational development programmes and pre-primary education (2015) |
| | Table C2.3 | Expenditure on early childhood educational institutions (2014) |
| WEB | Table C2.4 | Profile of education-only and integrated pre-primary programmes (2015) |
| WEB | Table C2.5 | Characteristics of early childhood education programmes in OECD and partner countries |

Cut-off date for the data: 19 July 2017. Any updates on data can be found on line at http://dx.doi.org/10.1787/eag-data-en. More breakdowns can also be found at http://stats.oecd.org/, Education at a Glance Database.

## Table C2.1. Enrolment rates in early childhood and primary education, by age (2005 and 2015)

*Early childhood educational development programmes = ISCED 01, pre-primary education = ISCED 02*

| | | Enrolment rates (2015) | | | | | | | | | | | | | | | Enrolment rates (2005) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Age 2 | | | Age 3 | | | Age 4 | | | Age 5 | | | Age 6 | | | Age 3 | Age 4 | | |
| | | ISCED 01 | ISCED 02 | Total | ISCED 01 | ISCED 02 | Total | ISCED 02 | ISCED 1 | Total | ISCED 02 | ISCED 1 | Total | ISCED 02 | ISCED 1 | Total | ISCED 02 | ISCED 02 | ISCED 1 | Total |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) | (17) | (18) | (19) |
| OECD | Australia | 56 | 0 | 56 | 47 | 21 | 68 | 89 | 2 | 90 | 19 | 82 | 100 | 0 | 100 | 100 | 17 | 51 | 2 | 53 |
| | Austria | 32 | 7 | 39 | 11 | 64 | 75 | 92 | 0 | 92 | 97 | 0 | 97 | 41 | 58 | 99 | 47 | 85 | 0 | 85 |
| | Belgium | m | 52 | m | m | 98 | m | 98 | 0 | 98 | 97 | 1 | 98 | 4 | 94 | 98 | m | m | 0 | m |
| | Canada | m | m | m | m | m | m | m | m | m | x(12) | x(12) | 95 | x(15) | x(15) | 100 | m | m | m | m |
| | Chile | 29 | 1 | 31 | 6 | 49 | 56 | 86 | 0 | 86 | 93 | 0 | 93 | 15 | 82 | 98 | 23 | 30 | 12 | 42 |
| | Czech Republic | a | 13 | 13 | a | 77 | 77 | 85 | 0 | 85 | 91 | 0 | 91 | 45 | 49 | 94 | 66 | 91 | 0 | 91 |
| | Denmark | 90 | 1 | 91 | 5 | 92 | 97 | 98 | 0 | 98 | 97 | 2 | 99 | 8 | 91 | 99 | m | m | m | m |
| | Estonia[1] | x(3) | x(3) | 61 | x(6) | x(6) | 87 | 91[d] | 0 | 91[d] | 92[d] | 0 | 92[d] | 91[d] | 1 | 92[d] | 80 | 84 | 0 | 84 |
| | Finland | 53 | 0 | 53 | 0 | 68 | 68 | 74 | 0 | 74 | 79 | 0 | 79 | 97 | 1 | 98 | 62 | 69 | 0 | 69 |
| | France | a | 12 | 12 | a | 99 | 99 | 100 | 0 | 100 | 99 | 1 | 100 | 1 | 100 | 100 | 100 | 100 | 0 | 100 |
| | Germany | 66 | 0 | 66 | 0 | 93 | 93 | 97 | 0 | 97 | 98 | 0 | 98 | 34 | 65 | 99 | 80 | 89 | 0 | 89 |
| | Greece | m | a | m | m | a | m | 48 | a | 48 | 94 | 0 | 94 | 3 | 96 | 99 | 0 | 56 | 0 | 56 |
| | Hungary | 13 | 0 | 13 | 1 | 80 | 81 | 95 | 0 | 95 | 95 | 0 | 95 | 59 | 32 | 91 | 73 | 91 | 0 | 91 |
| | Iceland | 95 | 0 | 95 | 0 | 97 | 97 | 97 | 0 | 97 | 98 | 0 | 98 | 0 | 98 | 98 | m | m | m | m |
| | Ireland | a | 0 | 0 | a | 38 | 38 | 56 | 33 | 89 | 0 | 96 | 96 | 0 | 99 | 99 | m | m | 44 | m |
| | Israel | 40 | 0 | 40 | 0 | 100 | 100 | 98 | 0 | 98 | 96 | 0 | 97 | 13 | 84 | 97 | 66 | 84 | 0 | 84 |
| | Italy | m | 16 | m | m | 92 | m | 96 | 0 | 96 | 88 | 8 | 97 | 1 | 96 | 98 | 99 | 100 | 0 | 100 |
| | Japan | a | 1 | 1 | a | 80 | 80 | 94 | 0 | 94 | 97 | 0 | 97 | 0 | 100 | 100 | 69 | 95 | 0 | 95 |
| | Korea | 89 | 0 | 89 | 0 | 92 | 92 | 91 | 0 | 91 | 92 | 0 | 93 | 0 | 98 | 98 | 15 | 30 | 0 | 30 |
| | Latvia | a | 0 | 0 | a | 87 | 87 | 92 | 0 | 92 | 96 | 0 | 96 | 93 | 4 | 97 | 66 | 73 | 0 | 73 |
| | Luxembourg | a | 4 | 4 | a | 66 | 66 | 95 | 0 | 95 | 94 | 5 | 99 | 5 | 93 | 99 | 62 | 95 | 0 | 95 |
| | Mexico | 5 | 0 | 5 | 4 | 42 | 46 | 89 | 0 | 89 | 84 | 27 | 100 | 1 | 100 | 100 | 23 | 69 | 0 | 69 |
| | Netherlands | a | 0 | 0 | a | 83 | 83 | 96 | 0 | 96 | 99 | 0 | 99 | 0 | 100 | 100 | m | 98 | 0 | 98 |
| | New Zealand | 65 | 0 | 65 | 0 | 89 | 89 | 94 | 0 | 94 | 3 | 95 | 97 | 0 | 98 | 98 | m | m | m | m |
| | Norway | 91 | 0 | 91 | 0 | 95 | 95 | 97 | 0 | 97 | 98 | 0 | 98 | 1 | 99 | 100 | 85 | 88 | 0 | 88 |
| | Poland | a | 7 | 7 | a | 65 | 65 | 79 | 0 | 79 | 95 | 0 | 95 | 50 | 45 | 95 | 28 | 38 | 0 | 38 |
| | Portugal | m | 0 | m | m | 79 | m | 90 | 0 | 90 | 97 | 0 | 97 | 7 | 91 | 98 | 61 | 84 | 0 | 84 |
| | Slovak Republic | a | 13 | 13 | a | 60 | 60 | 76 | 0 | 76 | 81 | 0 | 81 | 40 | 50 | 90 | m | m | 0 | m |
| | Slovenia | 69 | 0 | 69 | 0 | 83 | 83 | 89 | 0 | 89 | 92 | 0 | 92 | 7 | 93 | 99 | 67 | 76 | 0 | 76 |
| | Spain | 55 | 0 | 55 | 0 | 95 | 95 | 97 | 0 | 97 | 98 | 0 | 98 | 1 | 96 | 97 | 94 | 99 | 0 | 99 |
| | Sweden | 87 | 0 | 87 | 0 | 91 | 91 | 93 | 0 | 93 | 94 | 0 | 94 | 97 | 1 | 98 | 84 | 89 | 0 | 89 |
| | Switzerland | m | 0 | m | m | 3 | m | 46 | 0 | 47 | 98 | 1 | 98 | 56 | 44 | 100 | 9 | 39 | 0 | 39 |
| | Turkey | 0 | 0 | 0 | 0 | 9 | 9 | 32 | 0 | 32 | 51 | 21 | 72 | 0 | 96 | 96 | 2 | 5 | 0 | 5 |
| | United Kingdom | 44 | 0 | 44 | 0 | 100 | 100 | 100 | 3 | 100 | 0 | 98 | 98 | 0 | 99 | 99 | m | m | 32 | m |
| | United States | m | 0 | m | m | 43 | m | 66 | 0 | 66 | 85 | 6 | 91 | 21 | 77 | 98 | 39 | 68 | 0 | 68 |
| | OECD average[2] | 54 | 4 | 39 | 4 | 73 | 78 | 86 | 1 | 87 | 82 | 13 | 95 | 23 | 74 | 98 | 54 | 73 | 3 | 76 |
| | EU22 average[2] | 57 | 6 | 35 | 2 | 81 | 80 | 88 | 2 | 90 | 85 | 10 | 95 | 31 | 66 | 97 | 67 | 83 | 4 | 83 |
| Partners | Argentina[3] | 10 | 0 | 10 | 1 | 38 | 40 | 81 | 0 | 81 | 99 | 1 | 99 | 1 | 99 | 100 | m | m | m | m |
| | Brazil | 36 | 0 | 37 | 50 | 10 | 60 | 79 | 0 | 79 | 85 | 8 | 92 | 9 | 89 | 99 | m | m | m | m |
| | China | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Colombia | 44 | 1 | 44 | 0 | 60 | 60 | 80 | 1 | 81 | 75 | 20 | 95 | 7 | 77 | 84 | m | m | m | m |
| | Costa Rica | 3 | 0 | 3 | 5 | 0 | 5 | 59 | 0 | 59 | 91 | 0 | 91 | 6 | 88 | 94 | m | m | m | m |
| | India[3] | a | m | m | a | m | m | m | 4 | m | m | 33 | m | m | 86 | m | m | m | m | m |
| | Indonesia | 7 | 0 | 7 | 10 | 12 | 22 | 21 | 0 | 21 | 21 | 2 | 23 | 62 | 32 | 94 | m | m | m | m |
| | Lithuania | 55 | 0 | 55 | 0 | 77 | 77 | 86 | 0 | 86 | 89 | 0 | 89 | 93 | 5 | 98 | 53 | 58 | 0 | 58 |
| | Russian Federation | 47 | 0 | 47 | 0 | 76 | 76 | 88 | 0 | 88 | 86 | 1 | 87 | 77 | 11 | 89 | 42 | 42 | 0 | 42 |
| | Saudi Arabia | a | 0 | 0 | a | 1 | 1 | 9 | 0 | 9 | 33 | 1 | 34 | 9 | 84 | 93 | m | m | m | m |
| | South Africa[3] | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | G20 average | m | m | m | m | m | m | m | 1 | m | m | 17 | m | m | 84 | m | m | m | m | m |

**Note:** Early childhood education targets children aged below the age of entry into ISCED level 1. There are two categories of ISCED level 0 programmes: early childhood educational development (ISCED 01) and pre-primary education (ISCED 02). Enrolment rates at young ages should be interpreted with care; mismatches between the coverage of the population data and the enrolment data mean that the participation rates may be underestimated.

1. Pre-primary (ISCED 02) includes early childhood development (ISCED 01).

2. The OECD and EU22 averages for ISCED 01 are calculated only for countries in which these programmes exist and are not comparable to averages from previous editions of *Education at a Glance*.

3. Year of reference 2014.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

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C2

## Table C2.2. Characteristics of early childhood educational development programmes and pre-primary education (2015)

*Early childhood educational development programmes = ISCED 01, pre-primary education = ISCED 02*

| | | Children enrolled in pre-primary education (ISCED 02) as a percentage of total enrolment in early childhood education (ISCED 01 + ISCED 02) | Distribution of children in ISCED 01, by type of institution | | | | Distribution of children in ISCED 02, by type of institution | | | | Ratio of children to teaching staff in full-time equivalents | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Private | | | | Private | | | ISCED 01 | | ISCED 02 | | Total (ISCED 0) | |
| | | | Public | Government-dependent private | Independent private | Total | Public | Government-dependent private | Independent private | Total | Children to contact staff (teachers and teachers aides) | Children to teaching staff | Children to contact staff (teachers and teachers aides) | Children to teaching staff | Children to contact staff (teachers and teachers aides) | Children to teaching staff |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) |
| OECD | Australia | 44 | m | m | a | m | 21 | 79 | a | 79 | m | m | m | m | m | m |
| | Austria | 85 | 33 | x(5) | x(5) | 67 | 71 | x(9) | x(9) | 29 | 6 | 9 | 9 | 13 | 9 | 13 |
| | Belgium | m | m | m | m | m | 47 | 53 | 0 | 53 | m | m | 15 | 15 | m | m |
| | Canada | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Chile | 80 | 69 | 29 | 2 | 31 | 32 | 61 | 7 | 68 | 5 | 12 | 11 | 25 | 11 | 25 |
| | Czech Republic | 100 | a | a | a | a | 97 | 3 | a | 3 | a | a | 13 | 13 | 13 | 13 |
| | Denmark | 64 | 50 | 10 | 39 | 50 | 83 | 17 | 0 | 17 | m | m | m | m | m | m |
| | Estonia | m | x(6) | a | x(8) | x(9) | 96[d] | a | 4[d] | 4[d] | m | x(15) | m | x(15) | m | 9 |
| | Finland | 80 | 88 | 12 | a | 12 | 92 | 8 | a | 8 | m | m | m | 10 | m | m |
| | France[1] | 100 | a | a | a | a | 87 | 12 | 0 | 13 | a | a | 15 | 22 | 15 | 22 |
| | Germany | 74 | 27 | x(5) | x(5) | 73 | 35 | x(9) | x(9) | 65 | 5 | 5 | 9 | 10 | 7 | 8 |
| | Greece | m | m | m | m | m | 92 | a | 8 | 8 | m | m | m | m | m | m |
| | Hungary | 96 | 86 | 7 | 7 | 14 | 90 | 7 | 3 | 10 | 10 | 10 | 12 | 12 | 12 | 12 |
| | Iceland | 69 | 82 | 18 | 0 | 18 | 87 | 13 | 0 | 13 | m | 3 | m | 5 | m | 4 |
| | Ireland | 100 | a | a | a | a | 2 | 0 | 98 | 98 | a | a | m | m | m | m |
| | Israel | 78 | a | 67 | 33 | 100 | 63 | 29 | 8 | 37 | m | m | m | m | m | m |
| | Italy | m | m | m | m | m | 72 | 0 | 28 | 28 | a | a | 13 | 13 | 13 | 13 |
| | Japan | 100 | a | a | a | a | 27 | a | 73 | 73 | a | a | 14 | 15 | 14 | 15 |
| | Korea | 65 | 8 | 92 | 0 | 92 | 21 | 79 | 0 | 79 | 5 | 5 | 13 | 13 | 9 | 9 |
| | Latvia | 100 | a | a | a | a | 93 | a | 7 | 7 | m | a | m | 10 | m | 10 |
| | Luxembourg | 100 | a | a | a | a | 90 | 0 | 10 | 10 | a | a | 11 | 11 | 11 | 11 |
| | Mexico | 95 | 37 | a | 63 | 63 | 86 | a | 14 | 14 | 5 | 15 | 25 | 25 | 21 | 24 |
| | Netherlands | 100 | a | a | a | a | 71 | a | 29 | 29 | a | a | 14 | 16 | 14 | 16 |
| | New Zealand | 61 | 1 | 99 | 0 | 99 | 1 | 99 | 0 | 99 | m | 4 | m | 6 | m | 5 |
| | Norway | 65 | 49 | 51 | a | 51 | 53 | 47 | a | 47 | 4 | 9 | 7 | 16 | 5 | 13 |
| | Poland | 100 | a | a | a | a | 79 | 2 | 19 | 21 | a | a | m | 15 | m | 15 |
| | Portugal | m | m | m | m | m | 53 | 31 | 16 | 47 | m | m | m | 17 | m | m |
| | Slovak Republic | 100 | a | a | a | a | 95 | 5 | a | 5 | a | a | 12 | 12 | 12 | 12 |
| | Slovenia | 71 | 95 | 5 | 0 | 5 | 96 | 3 | 0 | 4 | 6 | 6 | 9 | 9 | 8 | 8 |
| | Spain | 76 | 51 | 15 | 33 | 49 | 68 | 28 | 4 | 32 | m | 9 | m | 15 | m | 13 |
| | Sweden | 74 | 81 | 19 | 0 | 19 | 83 | 17 | 0 | 17 | 5 | 5 | 6 | 6 | 6 | 6 |
| | Switzerland | m | m | m | m | m | 95 | 1 | 4 | 5 | a | a | m | m | m | m |
| | Turkey | 100 | a | a | 100 | 100 | 85 | a | 15 | 15 | m | m | m | m | m | m |
| | United Kingdom | 82 | 10 | 87 | 3 | 90 | 51 | 44 | 5 | 49 | m | m | m | m | m | m |
| | United States | m | m | m | m | m | 60 | a | 40 | 40 | m | m | 10 | 12 | m | m |
| | OECD average | 84 | 45 | m | m | 55 | 67 | 21 | 12 | 33 | 6 | 8 | m | 14 | 11 | 13 |
| | EU22 average | 88 | 58 | m | m | 42 | 75 | 13 | 12 | 25 | 6 | 7 | m | 13 | 11 | 11 |
| Partners | Argentina[2] | 93 | 44 | x(5) | x(5) | 56 | 68 | x(9) | x(9) | 32 | m | m | m | m | m | m |
| | Brazil | 62 | 64 | a | 36 | 36 | 75 | a | 25 | 25 | 8 | 14 | 18 | 21 | 13 | 18 |
| | China | 100 | a | a | a | a | 48 | x(9) | x(9) | 52 | a | a | m | 20 | m | 20 |
| | Colombia | 72 | 100 | x(5) | x(5) | m | 82 | x(9) | x(9) | 18 | m | m | m | 38 | m | m |
| | Costa Rica | 93 | 22 | x(5) | x(5) | 78 | 88 | x(9) | x(9) | 12 | m | 5 | m | 13 | m | 12 |
| | India[2] | 100 | a | a | a | a | 23 | 5 | 72 | 77 | a | a | m | m | m | m |
| | Indonesia | 72 | 0 | 0 | 100 | 100 | 3 | 0 | 97 | 97 | m | 20 | m | 15 | m | 15 |
| | Lithuania | 84 | 94 | a | 6 | 6 | 97 | a | 3 | 3 | 7 | 10 | 7 | 11 | 7 | 11 |
| | Russian Federation | 85 | 99 | a | 1 | 1 | 99 | a | 1 | 1 | m | m | m | m | 7 | 11 |
| | Saudi Arabia | 100 | a | a | a | a | 59 | x(9) | x(9) | 41 | a | a | m | 11 | m | 11 |
| | South Africa[2] | m | m | m | m | m | 94 | x(9) | x(9) | 6 | m | m | m | 30 | m | m |
| | G20 average | 84 | m | m | m | m | 57 | m | m | 43 | m | m | m | 17 | m | 14 |

**Note:** Columns listing the characteristics of early childhood education programmes (Columns 16-22) are available for consultation on line (see *StatLink* below).

1. Data for Columns 12 to 15 represent public and government-dependent private institutions only.

2. Year of reference 2014.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933560909

## Table C2.3. Expenditure on early childhood educational institutions (2014)

| | | Theoretical duration of the programme (years) | | Expenditure on educational institutions as a percentage of GDP | | | Annual expenditure by educational institutions per student (in USD using PPPs) | | | Proportion of total expenditure from public sources | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Early childhood educational development | Pre-primary | Early childhood educational development | Pre-primary | All early childhood education | Early childhood educational development | Pre-primary | All early childhood education | Early childhood educational development | Pre-primary | All early childhood education |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) |
| OECD | Australia | 2-4 | 1 | 0.3 | 0.2 | 0.5 | 12 498 | 12 613 | 12 542 | 63 | 72 | 67 |
| | Austria | 3 | 3 | 0.1 | 0.5 | 0.6 | 11 729 | 9 122 | 9 525 | 77 | 87 | 85 |
| | Belgium[1] | 2.5-3 | 3 | m | 0.7 | m | m | 7 807 | m | m | 97 | m |
| | Canada | 1-3 | 1-2 | m | m | m | m | m | m | m | m | m |
| | Chile[2] | 3 | 3 | 0.4 | 0.8 | 1.1 | 9 524 | 5 309 | 6 153 | 86 | 83 | 84 |
| | Czech Republic | a | 3 | a | 0.5 | 0.5 | a | 5 031 | 5 031 | a | 92 | 92 |
| | Denmark[3] | 3 | 2 | x(5) | x(5) | 1.3 | x(8) | x(8) | 16 298 | x(11) | x(11) | 81 |
| | Estonia | x(2) | 6[d] | x(5) | x(5) | 1.1 | x(8) | x(8) | 6 162 | x(11) | x(11) | 91 |
| | Finland | 1-3 | 1 - 4 | 0.4 | 0.9 | 1.2 | 19 083 | 10 546 | 12 205 | 91 | 89 | 89 |
| | France | a | 3 | a | 0.8 | 0.8 | a | 7 758 | 7 758 | a | 93 | 93 |
| | Germany | 2-3 | 3 | 0.3 | 0.6 | 0.9 | 15 573 | 9 569 | 11 094 | 77 | 79 | 78 |
| | Greece | 1-3 | 1-2 | m | m | m | m | m | m | m | m | m |
| | Hungary | 5 | 3 | x(5) | x(5) | 0.9 | x(8) | x(8) | 6 829 | x(11) | x(11) | 94 |
| | Iceland | 1-3 | 0 - 3 | 0.7 | 1.1 | 1.8 | 16 683 | 11 517 | 13 074 | 89 | 85 | 87 |
| | Ireland | a | 1 | a | 0.1 | 0.1 | a | 6 579 | 6 579 | a | 100 | 100 |
| | Israel | 3 | 3 | 0.3 | 0.8 | 1.1 | 4 475 | 4 432 | 4 443 | 15 | 90 | 70 |
| | Italy | a | 3 | a | 0.5 | 0.5 | a | 6 468 | 6 468 | a | 84 | 84 |
| | Japan | a | 1-3 | a | 0.2 | 0.2 | a | 6 572 | 6 572 | a | 46 | 46 |
| | Korea | 1-3 | 1-3 | m | 0.5 | m | m | 7 461 | m | m | 83 | m |
| | Latvia | 1-3 | 1-4 | a | 0.9 | 0.9 | a | 5 352 | 5 352 | a | 98 | 98 |
| | Luxembourg | a | 1 - 2 | a | 0.6 | 0.6 | a | 21 210 | 21 210 | a | 99 | 99 |
| | Mexico | 3 | 2-3 | x(5) | x(5) | 0.6 | x(8) | x(8) | 2 668 | x(11) | x(11) | 83 |
| | Netherlands | a | 1 - 3 | a | 0.4 | 0.4 | a | 8 482 | 8 482 | a | 89 | 89 |
| | New Zealand | 0-3 | 2 | 0.4 | 0.6 | 0.9 | 14 050 | 12 178 | 12 882 | 73 | 87 | 81 |
| | Norway | 2 | 3 | 0.9 | 0.9 | 1.8 | 24 564 | 13 650 | 17 468 | 85 | 85 | 85 |
| | Poland | a | 3 - 4 | a | 0.8 | 0.8 | a | 6 211 | 6 211 | a | 79 | 79 |
| | Portugal | a | 3 | a | 0.6 | 0.6 | a | 6 349 | 6 349 | a | 66 | 66 |
| | Slovak Republic | a | 3 - 4 | a | 0.6 | 0.6 | a | 5 596 | 5 596 | a | 86 | 86 |
| | Slovenia | 2 | 3 | 0.4 | 0.8 | 1.3 | 12 587 | 8 839 | 9 913 | 78 | 78 | 78 |
| | Spain | 3 | 3 | 0.2 | 0.6 | 0.8 | 8 121 | 6 224 | 6 674 | 57 | 83 | 75 |
| | Sweden | 0-2 | 3 - 4 | 0.6 | 1.4 | 1.9 | 15 473 | 13 198 | 13 796 | 94 | 95 | 94 |
| | Switzerland[3, 4] | a | 2 | a | 0.2 | 0.2 | a | 6 171 | 6 171 | a | m | m |
| | Turkey | 1-2 | 1-3 | x(5) | x(5) | 0.2 | x(8) | x(8) | 2 395 | x(11) | x(11) | 66 |
| | United Kingdom | 2 | 1-2 | 0.1 | 0.4 | 0.5 | 11 605 | 9 586 | 9 849 | 40 | 48 | 47 |
| | United States | a | 1 - 3 | m | 0.4 | m | m | 10 427 | m | m | 74 | m |
| | **OECD average** | | | m | 0.6 | 0.8 | 13 536 | 8 723 | 8 858 | 71 | 83 | 82 |
| | **EU22 average** | | | m | 0.6 | 0.8 | 13 453 | 8 551 | 9 069 | 73 | 86 | 85 |
| Partners | Argentina | m | m | x(5) | x(5) | 0.6 | x(8) | x(8) | 2 747 | x(11) | x(11) | 78 |
| | Brazil[3] | 3 | 2 | x(5) | x(5) | 0.6 | x(8) | x(8) | 3 768 | m | m | m |
| | China | m | m | m | m | m | m | m | m | m | m | m |
| | Colombia[2] | 3 | 1-3 | 0.1 | 0.4 | 0.5 | m | 1 011 | m | 12 | 71 | 54 |
| | Costa Rica[2, 3] | m | m | m | m | m | x(8) | x(8) | 4 011 | m | m | m |
| | India | m | m | a | m | m | a | m | m | a | m | m |
| | Indonesia[2, 3] | m | m | x(5) | x(5) | 0.1 | x(8) | x(8) | 2 261 | x(11) | x(11) | 89 |
| | Lithuania | 1-2 | 1-4 | 0.2 | 0.6 | 0.8 | 6 300 | 4 973 | 5 191 | 80 | 83 | 83 |
| | Russian Federation | 2 | 3 | x(5) | x(5) | 1.0 | x(8) | x(8) | 5 541 | x(11) | x(11) | 90 |
| | Saudi Arabia | m | m | m | m | m | m | m | m | m | m | m |
| | South Africa[3, 5] | m | m | a | m | m | a | 824 | 824 | a | m | m |
| | **G20 average** | | | m | m | m | m | m | m | m | m | m |

1. Theoretical duration of early childhood educational development refers to the Flemish Community.
2. Year of reference 2015.
3. Public institutions only for annual expenditure by educational institutions per student.
4. Public expenditure only for expenditure on educational institutions as a percentage of GDP.
5. Year of reference 2013.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

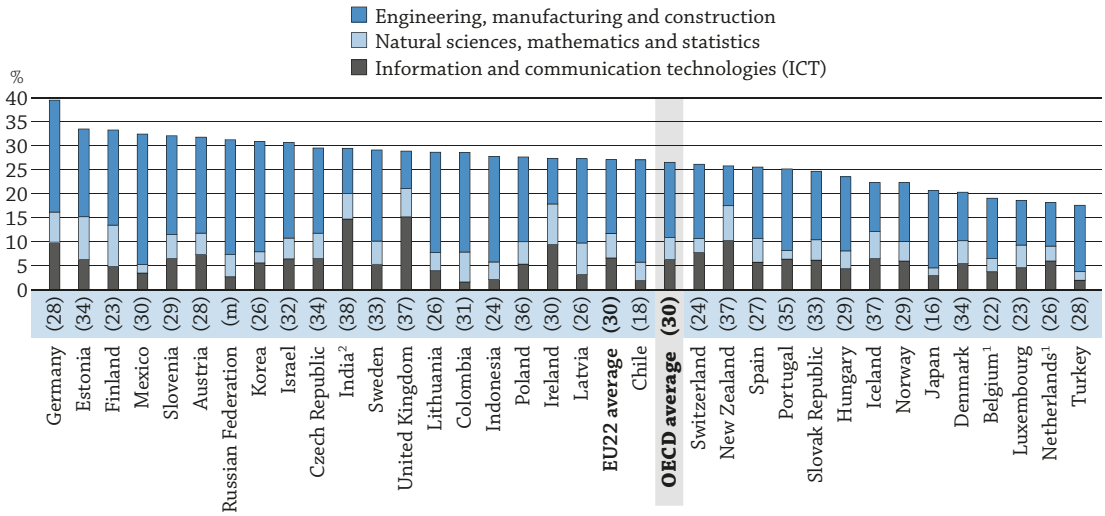
*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

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## WHO IS EXPECTED TO ENTER TERTIARY EDUCATION?

- In 2015, on average across OECD countries, 27% of new entrants selected a field of study in one of the science, technology, engineering and mathematics (STEM) fields, with the largest share selecting engineering, manufacturing and construction.
- Women are under-represented in these fields. In 2015, only 24% of new entrants in engineering, manufacturing and construction were women on average across OECD countries. However, women are over-represented in the fields of education; arts and humanities; social sciences, journalism and information; and health and welfare.
- Men fall behind in the share of entrants into tertiary education in almost all OECD countries, and this trend is likely to carry on in the future. The first-time entry rate to tertiary education for women under 25 is 11 percentage points higher on average than for men.
- On average across OECD countries, 82% of new entrants into tertiary education are under 25 years old; the average age varies between 18 and 25 across OECD countries.

### Figure C3.1. Distribution of new entrants to tertiary education, by STEM field of study and share of women in these fields (2015)




**Note**: The number in parentheses corresponds to the share of female new entrants in STEM (science, technology, engineering and mathematics) fields of study.

1. Excludes new entrants at doctoral level.

2. Year of reference 2014.

*Countries are ranked in descending order of the share of new entrants to tertiary education in STEM fields.*

**Source**: OECD/UIS/Eurostat (2017), Table C3.1a. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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### Context

Entry rates estimate the proportion of people who are expected to enter a specific type of tertiary education programme (including short-cycle tertiary, bachelor's degrees, master's degrees, long first degrees and doctoral programmes) at some point during their life. They provide some indication on the accessibility of tertiary education and the degree to which a population is acquiring high-level skills and knowledge. High entry and enrolment rates in tertiary education imply that a highly educated labour force is being developed and maintained.

Tertiary education is seen to play an essential role in fostering the knowledge and innovation key to sustaining economic growth. Several OECD governments have placed a particular emphasis on improving the quality of education in science, technology, engineering and mathematics, reflecting the critical importance of these disciplines for modern society in driving economic progress, supporting

innovation and providing the foundations for true prosperity. In addition, science-relevant skills and advanced knowledge of scientific literacy – such as critical thinking, problem solving and creativity – are seen as critical for success in the labour market, regardless of students' final occupation. Tertiary institutions not only have to meet growing demand by expanding the number of places they offer, they also have to adapt their programmes and fields of study to match the diverse needs of a new generation of students and ensure that they have the skills, knowledge and training to build tomorrow's society.

## Other findings

- Based on current patterns, it is estimated that an average of 57% of young adults in OECD countries will enter a bachelor's degree or equivalent programme in their lifetime; 23% are expected to enter a master's degree or equivalent programme.
- International students represent a large number of new entrants into tertiary education in Luxembourg (45%) and New Zealand (33%), well above the OECD average of 11%.
- Between 2005 and 2015, entry rates increased across all OECD and partner countries with available data. The only exception is Finland and Poland, which have seen entry rates decline by 3 and 1 percentage points respectively.

## Note

Compared to enrolment, entry rates measure the inflow to education during a specific period and represent the percentage of an age cohort that is expected to enter a tertiary programme over a lifetime. The estimates in this indicator are based on the number of new entrants in 2015 and the age distribution of this group. Therefore, the entry rates are based on a "synthetic cohort" assumption, according to which the current pattern of entry constitutes the best estimate of the behaviour of today's young adults over their lifetime.

International students are a significant share of the total student population in some countries, and their numbers can artificially inflate the proportion of today's young adults who are expected to enter a tertiary programme. When international students are excluded from the calculation, the percentage of expected new entrants into tertiary programmes can change significantly.

Entry rates are sensitive to changes in the education system, such as the introduction of new programmes. They can be very high, and even greater than 100% (thus clearly indicating that the synthetic cohort assumption is implausible) during a period when there is an unexpectedly high number of entrants. In some countries, high entry rates may reflect a temporary phenomenon, such as the effects of economic cycles and crises, university reforms driven by the Bologna Process or a surge in the number of international students. Government efforts to encourage older students to rejoin education through second-chance programmes can also boost entry rates.

## Analysis

### Profile of new entrants into tertiary education

#### *Field of study*

In almost all OECD countries, the largest share of students pursues tertiary programmes in the fields of business, administration and law, with one out of four students entering these fields of study in 2015. In general across countries with available data, STEM disciplines are less attractive to students than other fields of study, with an average 16% of new entrants selecting engineering, manufacturing and construction; 6% for natural sciences, mathematics and statistics; and 5% for information and communication technologies (ICT) (Table C3.1). The largest shares of new entrants into STEM fields of study are in Germany (40%), Estonia (33%) and Finland (33%), compared to the OECD average of 27% (Figure C3.1).

The selection of which field to study is strongly gender-biased. While the share of women participating in tertiary studies has now surpassed that of men, women are still under-represented in engineering, manufacturing and construction, with the strongest gender gap observed in information and communication technologies. On average in 2015, only 24% of new entrants to engineering, manufacturing and construction and 19% of new entrants to ICT are women. Natural sciences, mathematics and statistics are the only STEM field of study where gender parity is achieved, with 50% of women on average across OECD countries, although it ranges from 25% in Japan to 68% in Indonesia.

At the other end of the spectrum, other fields of study are still largely dominated by women, especially education and health and welfare. Women make up 78% of new entrants in education and 76% of new entrants in health and welfare. The gender ratio in education studies was highest in Estonia, Latvia and Slovenia, where there were close to nine women for every man entering an education programme. In the Czech Republic, Estonia, Finland, Iceland, Latvia, Lithuania, Norway and Sweden, at least four times as many women as men study health and welfare. In no OECD countries do men make up the majority of new entrants in either of these fields. Previous studies suggest this gender gap starts well before entry into tertiary education (see Box C3.1)

**Box C3.1 Career expectations at 15 and first-time entry rates by field of study**

As policy makers become more attentive to increasing science-related competencies in the workplace, more attention has focused on whether the school environment succeeds in nurturing motivation and interest in science at an age when students start to think about their careers. Students' future engagement in science is partly a reflection of their beliefs in what they see as important, but also of their capability to succeed in these fields. Volume I of the PISA 2015 results (OECD, 2016) examines students' engagement in science and their expectations in pursuing a career in science. On average across OECD countries, 24% of 15-year-old students reported that they expect to work in science-related occupations when they are 30. Data measured from this indicator yield similar results: 66% of young adults are expected to enter tertiary education if 2015 enrolment patterns persist, and about 40% of them are expected to enter a science-related field of study (engineering, construction and manufacturing; natural sciences, mathematics and statistics; ICT; and health and welfare), resulting in 26% of the total population entering a science-related field of study at tertiary level for the first time.

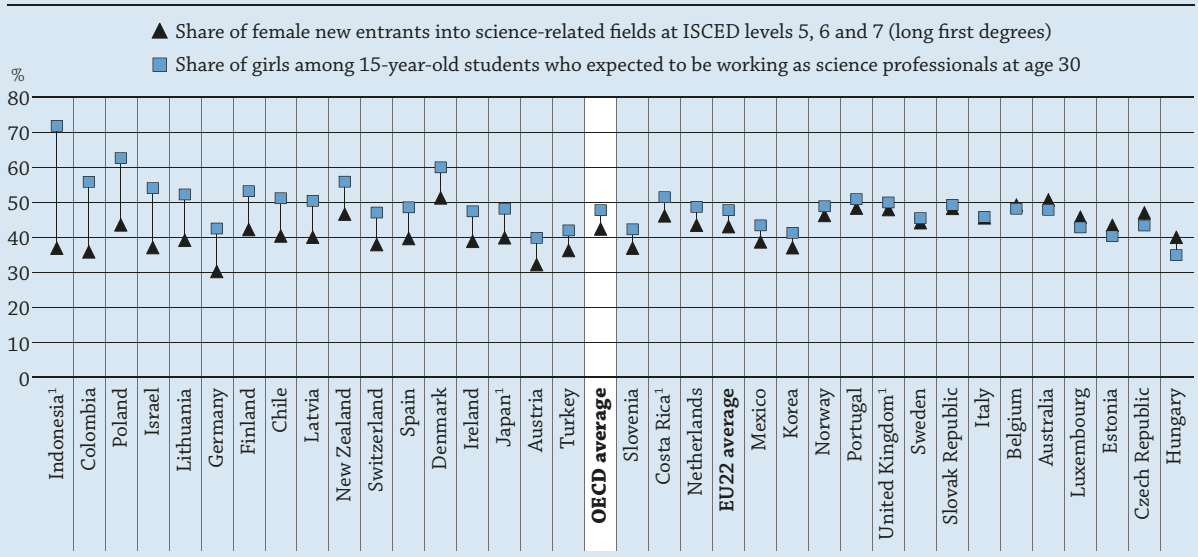
However, comparing career expectations with actual entry rates by gender shows different results. Figure C3.a compares the share of 15-year-old girls among students who expected to work as science professionals at the age of 30 with the actual share of female new entrants into science-related fields at short-cycle tertiary, bachelor's and long first master's degrees, all considered as the first degree for the vast majority of young adults.

In all countries except Hungary, more than 40% of 15-year-old students expecting to pursue a career in science are girls, and the average among OECD countries with available data achieves near male-female parity at 48%. However the gender imbalance widens when students are actually confronted with the selection of a field of study upon entry to tertiary education. The share of women actually entering a science-related field of study is about 5 percentage points lower, on average across OECD countries, than the share of girls with career expectations in the same fields. This difference reaches a maximum of 35 percentage points in Indonesia.

...

While different cohorts were considered for this analysis, explanations for the general increase in gender imbalance by field of study by the time girls enter higher education may be explained by gender gaps in beliefs in one's own abilities and a masculine culture associated with science-related fields, reinforced by gender stereotypes reflected by the students' environment (Cheryan et al., 2017).

**Figure C3.a. Career expectations of 15-year-old girls and share of female new entrants into science-related fields**




**Note**: Sciences-related fields include the fields of natural sciences, mathematics and statistics, information and communication technologies, engineering, manufacturing and construction, and health.
1. Sciences-related fields include welfare.

*Countries are ranked in descending order of the difference between 15-year-old girls' career expectations and the share of female new entrants into science-related fields.*

**Source**: OECD/UIS/Eurostat (2017), Education at a Glance Database, http://stats.oecd.org/. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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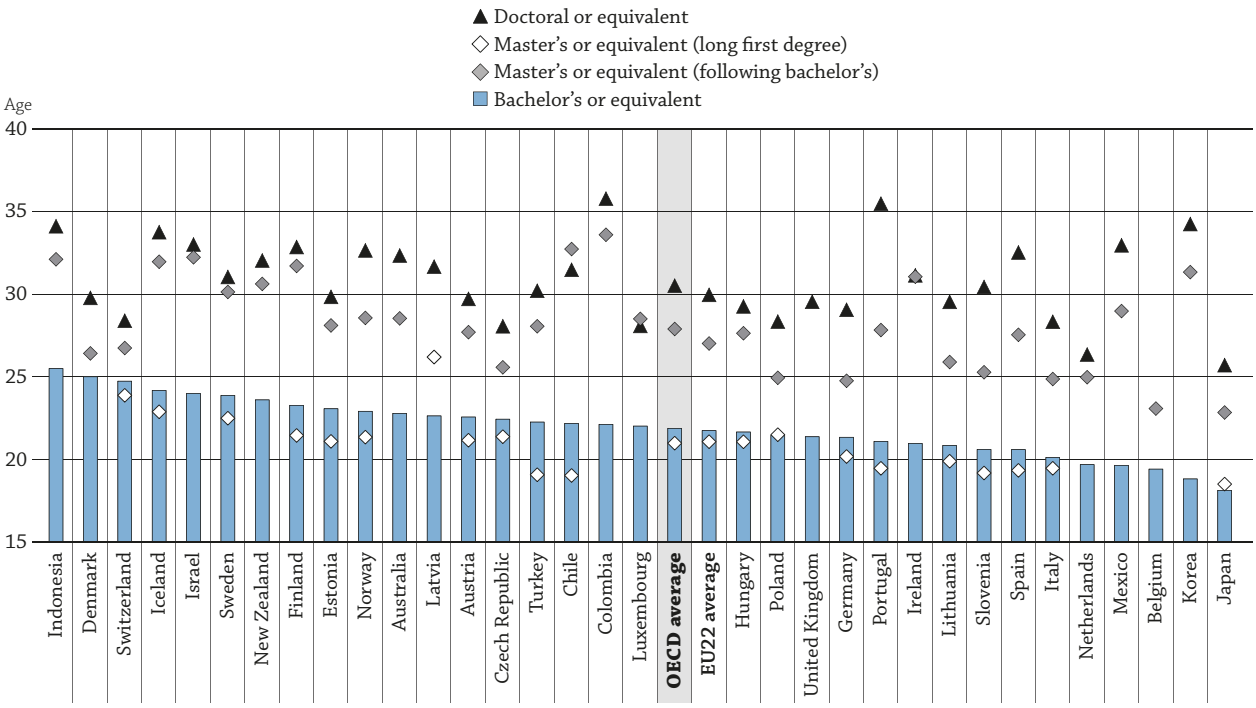
### *Age of new entrants into tertiary education*

National differences in education systems – in particular the age at which young people transfer from upper secondary education to tertiary, as well as the intake capacity of institutions (admissions with *numerus clausus*, one of many methods used to limit the number of students who may study at a tertiary institution) – result in significant variations in the age of new entrants into tertiary education among OECD countries.

Traditionally, students enter tertiary programmes immediately after completing upper secondary education, and this remains true in many countries. On average across OECD countries, 82% of new entrants are under 25, with the share reaching 90% or more in Belgium, Italy, Lithuania, Mexico, the Netherlands, Portugal, Slovenia and the United States (Table C3.2).

On average across OECD countries, the vast majority of young adults will enter a bachelor's programme or equivalent before age 25. In Belgium, Japan, Korea, Mexico and the Netherlands, young adults enter a bachelor's programme or equivalent on average before turning 20. In other OECD countries, the transition from upper secondary to tertiary education may occur at a later age because of time spent in the labour force or the military. The average age of new entrants may also reflect the value placed on work experience before entering higher education. This is common in Denmark, Iceland, New Zealand, Sweden and Switzerland, where sizeable proportions of new entrants are older than the typical age at entry (Figure C3.2). It may also reflect different systems, policies and cultural perceptions within countries towards adult and lifelong learning.

## Figure C3.2. Average age of new entrants at tertiary level, by level of education (2015)




*Countries are ranked in descending order of the average age of new entrants to bachelor's degrees.*

**Source**: OECD/UIS/Eurostat (2017), Education at a Glance Database, http://stats.oecd.org/. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance- 19991487.htm).

StatLink http://dx.doi.org/10.1787/888933558325

On average across OECD countries, new entrants in master's or equivalent programmes (long first degree; see Box C3.2) are 21 years old, one year younger on average than those entering a bachelor's programme. New entrants in long first degrees are youngest in Chile, Italy, Japan, Portugal, Slovenia, Spain and Turkey, with an average age of 19.

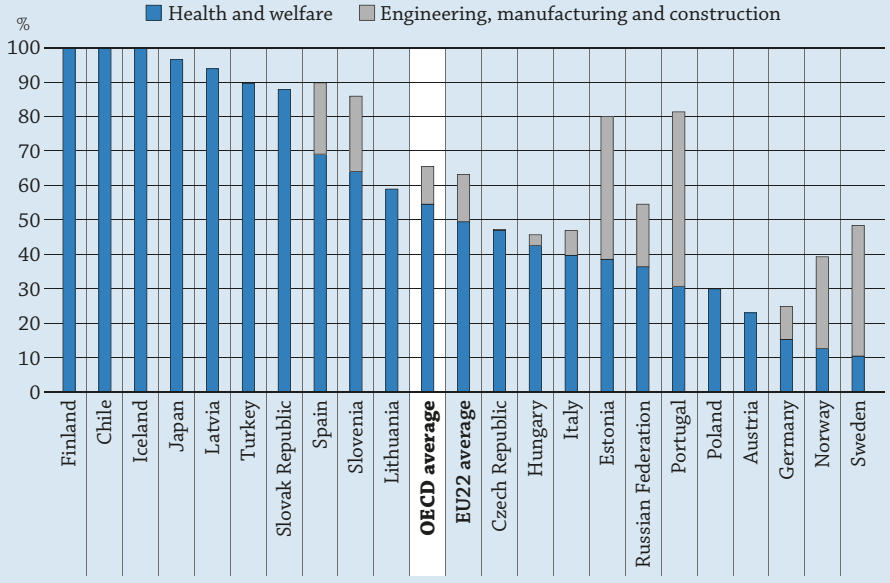
The average age of entry across OECD countries is 28 for a master's programme and 31 for a doctoral programme, although this varies considerably among countries. The difference between the ages at which students enter doctoral programmes compared to master's programmes is indicative of student pathways in and out of educational systems and into the workforce. In Portugal, for example, the eight-year difference between the average age of entrants to doctoral and master's programmes is indicative of re-entry to the educational system from the labour market. Conversely, in countries such as Israel and Sweden, the one-year gap between the two programmes suggests that students wanting to pursue a doctoral degree do so straight after completing their master's.

### Box C3.2 Long first degree

Programmes at ISCED level 7 (master's or equivalent) are designed to provide participants with advanced academic and/or professional knowledge, skills and competencies leading to a second degree or equivalent qualification. Programmes of at least five years' duration preparing for a long first degree/qualification are included at this level if they are equivalent to master's-level programmes in terms of their complexity of content. Highly specialised professional studies in subjects such as medicine, dentistry, law or engineering, which have similar or greater cumulative duration, are also included in this category. Across OECD countries, the majority of new entrants into a long first degree go either into health and welfare; or into engineering, manufacturing and construction. In Chile, Finland and Iceland, all new entrants in a long first degree go into health and welfare. In Estonia, Portugal, Norway and Sweden, entrants into a long first degree in engineering, manufacturing and construction outnumber entrants into health and welfare.

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**Figure C3.b. Share of new entrants into a long first degree (master's), in the field of health and engineering (2015)**




*Countries are ranked in descending order of the share of new entrants into a long first degree in health and welfare.*

**Source**: OECD/UIS/Eurostat (2017), Education at a Glance Database, http://stats.oecd.org/. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance- 19991487.htm).

StatLink http://dx.doi.org/10.1787/888933562980

### Entry rates to tertiary education

It is estimated that, on average across OECD countries, 66% of young adults will enter tertiary education for the first time in their life, if current patterns of entry continue. Chile (86%), Denmark (84%) and New Zealand (97%) have the highest first-time tertiary entry rates among OECD countries. In these countries these rates are typically inflated by a larger population of older students and international students, or a high entry rate into short-cycle tertiary education (Table C3.3).

On average across OECD countries with available data, first-time tertiary entry rates in 2015 increased in almost all countries compared to 2005, with the sharpest increase observed in Germany (20 percentage points). Finland and Poland are the only countries among those with available data where first-time entry rates decreased over last 10 years, albeit by a maximum of 3 percentage points (Figure C3.3).

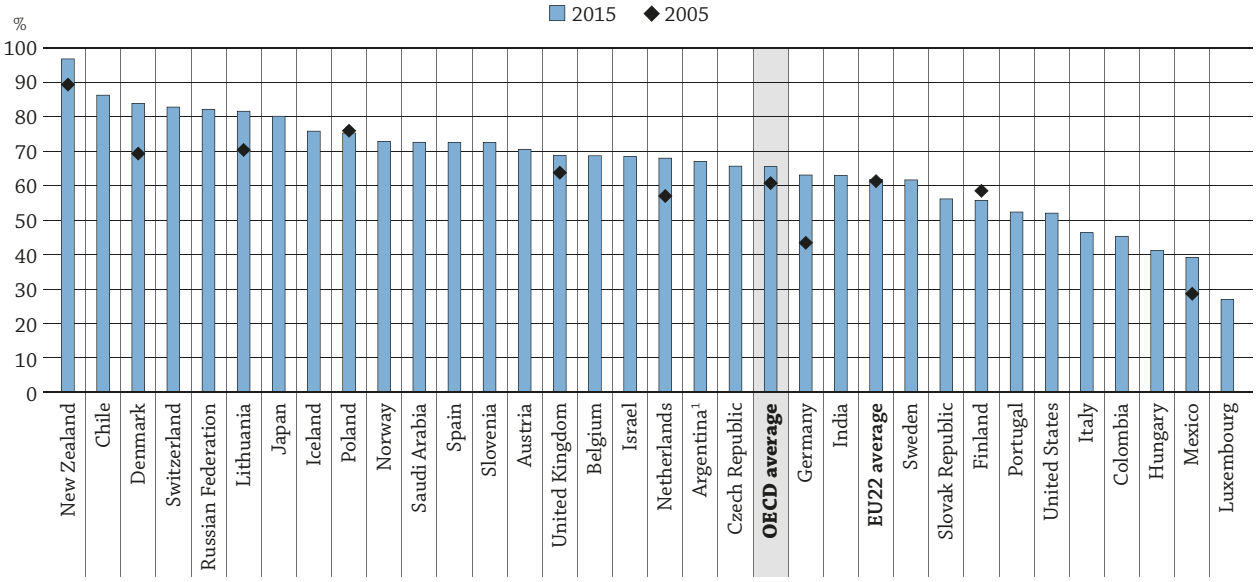
Comparing first-time entry rate of adults younger than 25 with total first-time entry rates for a population (excluding international students) provides a sense of general accessibility versus delayed entrance into tertiary education. For example, first-time entry rates of adults younger than 25 are similar in Italy and Sweden (41%, compared to the OECD average of 48%), but the total first-time entry rate in Sweden is 15 percentage points higher than in Italy, suggesting that the lower entry rate at age 25 is more a question of deferred entrance for Sweden than of access for Italy. This is also corroborated by the average age at entry displayed in Figure C3.2.

While 48% of young adults are likely to enter tertiary education for the first time below the age of 25, the trend to enter higher education at an earlier age is driven by women in most OECD countries with data (Figure C3.4). The difference between the first-time entry rates of women and men under 25 years old is 11 percentage points on average across OECD countries, but is equal to or higher than 17 percentage points in the Czech Republic, Denmark, Iceland, Norway and Poland. Only in Colombia, Germany, Luxembourg, Mexico and Turkey do entry rates of men and women below age 25 differ by 5 percentage points or less. While men may choose to enter higher education at a later age, this suggests that the already established trend for women to outnumber men in higher education is likely to continue.

Bachelor's degrees are the most popular tertiary education programmes in all countries. In 2015, students were more likely to enter this level of education than any other level of tertiary education. On average across OECD countries, 57% of young people are expected to enter a bachelor's programme or equivalent, compared to 16% for short tertiary programmes, 23% for master's programmes and 2.4% for doctoral programmes.

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## Figure C3.3. First-time tertiary entry rates (2005, 2015)



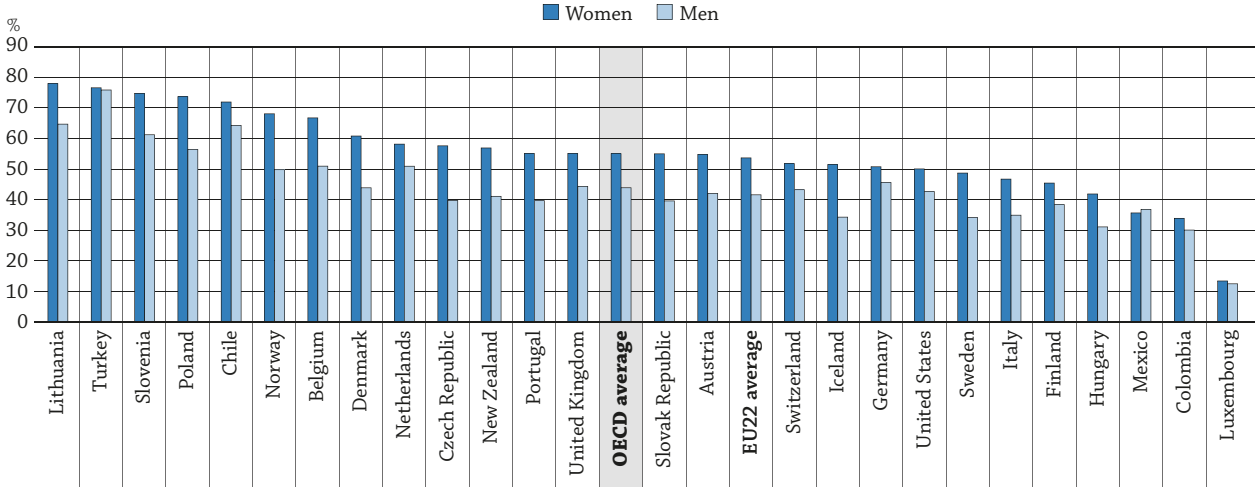

1. Year of reference 2014 instead of 2015.

*Countries are ranked in descending order of first-time tertiary entry rates in 2015.*

**Source**: OECD/UIS/Eurostat (2017), Education at a Glance Database, http://stats.oecd.org/. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance- 19991487.htm).

StatLink http://dx.doi.org/10.1787/888933558344

## Figure C3.4. First-time tertiary entry rates below the age of 25 (excluding international students), by gender (2015)




*Countries are ranked in descending order of the first-time entry rates of female students younger than 25 years old (excluding international students).*

**Source**: OECD/UIS/Eurostat (2017), Education at a Glance Database, http://stats.oecd.org/. See Source section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance- 19991487.htm).

StatLink http://dx.doi.org/10.1787/888933558363

A large share of international students enters programmes at bachelor's level, which can significantly affect the entry rates in certain countries. Australia, a strong destination country for international students, sees its entry rate drop from 95% to 79% when international students are excluded. Conversely, Luxembourg, a common sending country, has the lowest entry rate across OECD countries due to the large proportion of its citizens that study abroad.

Graduate-level research, particularly at doctoral level, plays a crucial role in innovation and economic growth and contributes significantly to the national and international knowledge base. International doctoral students tend to study in countries investing substantial resources in R&D in tertiary educational institutions. For example, Switzerland, the country with the highest level of expenditure on R&D per student in tertiary educational institutions (around USD 15 229, see Indicator B1), has an entry rate close to double the OECD average (4.8%, compared to 2.4%), although more than half accounts for international students.



### Box C3.3 Inequality in access to tertiary education

Equity and inequality have come to the forefront of the tertiary education policy discussion. Across OECD and partner countries, governments are keen to ensure that every person has an equal opportunity to access tertiary education and to benefit from the consequent better labour market and social outcomes. Equity in tertiary education implies that "access to, participation in and outcomes of tertiary education are based only on individuals' innate ability and study effort" (OECD, 2008). The fact that innate ability and study effort are difficult to measure makes it difficult to assess equity directly. Nonetheless, existing data can provide ways to assess inequality in tertiary education, i.e. the extent to which access, participation and outcomes differ across demographic groups.

The OECD launched in 2016 an initiative across member and partner countries to gather data on socio-economic characteristics, including immigrant background (proxied by foreign-born parents); and family education background (proxied by parents who did not attain tertiary education) of graduates and new entrants. The data come from various sources, including surveys, administrative (register) sources and censuses, and may refer to different years (see *StatLink* and Annex 3 for more methodological information). They provide information on the current state of inequality in tertiary education, complementing alternative data sources on the attainment of the adult population who potentially entered tertiary education several decades ago (see Indicator A4).

Figure C3.c provides a measure of inequality in access to tertiary education by looking at the share of 18-24 year-olds from critical demographic groups (lower-educated parents in Panel 1; immigrant origin in Panel 2) in various tertiary programmes. In a perfectly equal society, the three data series in the figure would coincide: that is, the share of individuals from the critical demographic groups in a population should match their share among new entrants to each level of tertiary education. Differences across series for a single country highlight inequality in tertiary participation.

The results show that young people from the selected critical demographic groups differentially access tertiary education (with the partial exception of short-cycle tertiary programmes). In all countries with available data, the proportion of 18-24 year-olds without tertiary-educated parents is substantially lower among new entrants in bachelor's or long first degree programmes than in the overall population: On average across OECD countries with data, while 65% of the population does not have tertiary-educated parents, the share of this group among entrants to these programmes drops to 47%.

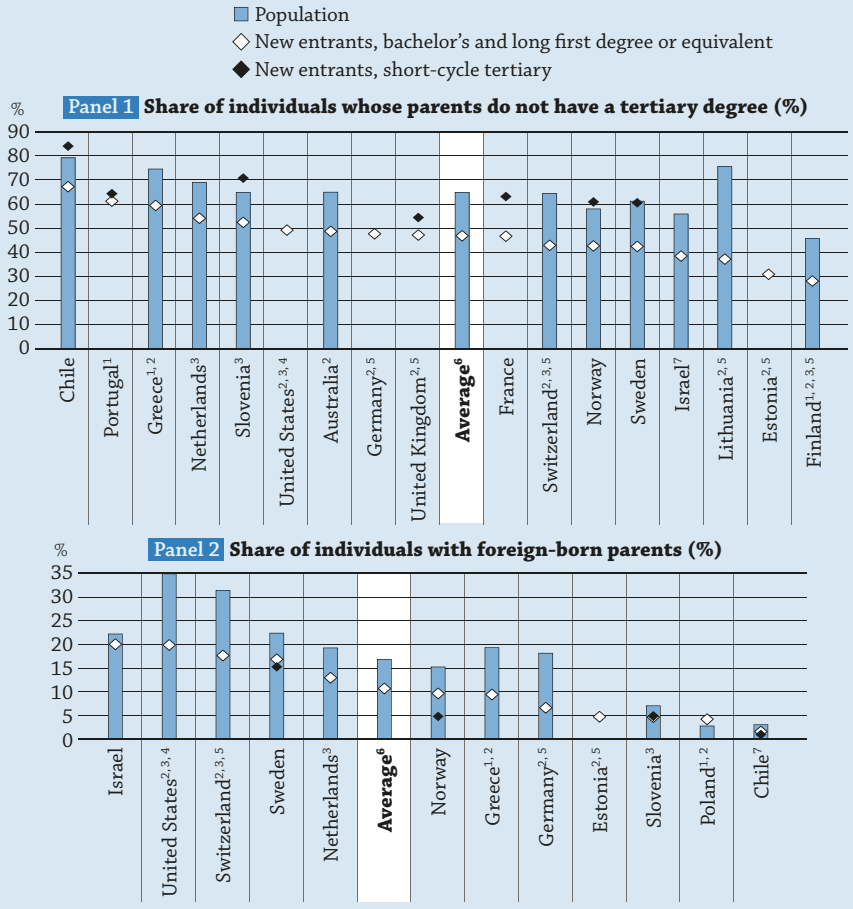
The proportion of individuals without tertiary-educated parents among new entrants in short-cycle tertiary programmes is consistently higher than among entrants to bachelor's and long first degree or equivalent programmes across all countries with available data and it is equal or slightly larger to their proportion in the overall population. Short-cycle tertiary programmes are typically shorter and more vocationally oriented than other tertiary programmes, which may explain their ability to cater to students less interested in other forms of tertiary education. However, the potential for these programmes to contribute to improving educational equality will also relate to their ability to provide students with the relevant skillset to succeed in the labour market or in their further education.

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Children of foreign-born parents represent 17% of all 18-24 year-olds in the population, but only 11% of new entrants of the same age group to bachelor's and long first degree or equivalent programmes, on average across countries with available data. This pattern is consistent across countries, except for Poland where the proportion of young individuals with foreign-born parents is just 3%. Contrary to individuals without tertiary-educated parents, the proportion of children from foreign parents in short-cycle programmes is not higher than in bachelor's and long first degree programmes in any of the four countries with available data.

## Figure C3.c. Inequality in access to tertiary education among 18-24 year-olds (2015)




### How to read this figure

**Panel 1:** In Chile, 79% of all 18-24 year-olds have no tertiary-educated parent, compared to 67% of 18-24 year-old new entrants in bachelor's and long first degree or equivalent programmes, and 84% of 18-24 year-old new entrants in short-cycle tertiary programmes.
**Panel 2:** In Norway, for 15% of all 18-24 year-olds neither parent was born in the country, compared to 10% of 18-24 year-old new entrants in bachelor's and long first degree or equivalent programmes, and 5% of 18-24 year-old new entrants in short-cycle tertiary programmes.

1. International students are included in new entrants data. See *StatLink* (Table C3.a) for more details.
2. The year of reference is not 2015 for all series. See *StatLink* (Table C3.a) for more details.
3. International students are included in population data. See *StatLink* (Table C3.a) for more details.
4. Short-cycle tertiary programmes are included in bachelor's and long-cycle or equivalent programmes.
5. Data do not refer to new entrants but to a proxy concept. See *StatLink* (Table C3.a) for more details.
6. The average is computed across those countries for which data are available for both population and new entrants at the bachelor's and long-cycle or equivalent levels.
7. The definition of critical demographic group is different than for the other countries. See *StatLink* (Table C3.a) for more details.

*Countries are ranked in descending order of the proportion of individuals potentially at disadvantage among the 18-24 year-old population of new entrants in bachelor's and long first degree or equivalent tertiary programmes.*

**Source**: OECD (2017), special data collection from national ministries and statistical offices. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance- 19991487.htm).

StatLink http://dx.doi.org/10.1787/888933562999

## Definitions

**Entry rate** is the sum of age-specific entry rates, calculated by dividing the number of entrants of a certain age in a certain education level by the total population of that age.

**Entry rate adjusted for international students** is the entry rate when calculated excluding international students in the numerator of each age-specific entry rate.

**First-time tertiary-level entry rate** is an estimated probability, based on current entry patterns, that a young adult will enter tertiary education for the very first time.

**International students** are those students who left their country of origin and moved to another country for the purpose of study. International students enrolling for the first time in a programme are considered first-time entrants.

**New entrants** are students who enrol at the relevant level of education for the first time.

**Tertiary-level entry rate** is an estimated probability, based on current entry patterns, that a young adult will enter tertiary education during his or her lifetime.

## Methodology

The net entry rate for a specific age is obtained by dividing the number of first-time entrants of that age for each type of tertiary education by the total population in the corresponding age group. The sum of net entry rates is calculated by adding the rates for each year of age. The result represents an estimate of the probability that a young person will enter tertiary education in his/her lifetime if current age-specific entry rates continue.

For more information, please see the *OECD Handbook for Internationally Comparative Education Statistics: Concepts, Standards, Definitions and Classifications* (OECD, 2017) and Annex 3 for country-specific notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

## Source

Data on entrants refer to the school year 2014/15 (unless otherwise specified) and are based on the UOE data collection on education systems administered annually by UNESCO, the OECD and Eurostat for all OECD and partner countries. Data from Argentina, China, Colombia, India, Indonesia, Saudi Arabia, South Africa are from the UNESCO Institute of Statistics (UIS).

**Note regarding data from Israel**

The statistical data for Israel are supplied by and are under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

### References

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OECD (2008), *Tertiary Education for the Knowledge Society – Vol. 2 Special Features: Equity, Innovation, Labour Market, Internationalisation,* OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264046535-en.

## Indicator C3 Tables

StatLink http://dx.doi.org/10.1787/888933561061

| | |
|---|---|
| Table C3.1 | Share of new entrants to tertiary education, by field of study and gender (2015) |
| Table C3.2 | Profile of first-time entrants into tertiary education (2015) |
| Table C3.3 | First-time entry rates, by tertiary ISCED level (2015) |

Cut-off date for the data: 19 July 2017. Any updates on data can be found on line at http://dx.doi.org/10.1787/eag-data-en. More breakdowns can also be found at http://stats.oecd.org/, Education at a Glance Database.

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## Table C3.1. Share of new entrants to tertiary education, by field of study and gender (2015)

| | | Distribution of new entrants by field[1] | | | | | | | | Percentage of female new entrants by field | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Education | Arts and humanities | Social sciences, journalism and information | Business, administration and law | Natural sciences, mathematics and statistics | Information and communication technologies (ICT) | Engineering, manufacturing and construction | Health and welfare | Education | Arts and humanities | Social sciences, journalism and information | Business, administration and law | Natural sciences, mathematics and statistics | Information and communication technologies (ICT) | Engineering, manufacturing and construction | Health and welfare |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) |
| OECD | Australia | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Austria | 12 | 10 | 9 | 23 | 7 | 4 | 20 | 6 | 78 | 67 | 63 | 57 | 49 | 17 | 23 | 69 |
| | Belgium[2] | 8 | 11 | 11 | 22 | 4 | 3 | 13 | 25 | 73 | 60 | 67 | 50 | 39 | 7 | 21 | 72 |
| | Canada | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Chile | 9 | 4 | 5 | 22 | 2 | 4 | 21 | 19 | 80 | 53 | 70 | 56 | 47 | 10 | 17 | 78 |
| | Czech Republic | 9 | 9 | 9 | 20 | 6 | 5 | 18 | 12 | 82 | 67 | 67 | 63 | 58 | 16 | 31 | 81 |
| | Denmark | 6 | 12 | 10 | 29 | 5 | 5 | 10 | 19 | 68 | 64 | 62 | 52 | 54 | 21 | 30 | 76 |
| | Estonia | 6 | 13 | 8 | 21 | 6 | 9 | 18 | 10 | 87 | 71 | 68 | 65 | 61 | 27 | 28 | 86 |
| | Finland | 4 | 9 | 5 | 20 | 5 | 9 | 20 | 22 | 81 | 71 | 71 | 58 | 53 | 18 | 18 | 83 |
| | France | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Germany | 7 | 11 | 8 | 24 | 10 | 6 | 23 | 6 | 80 | 69 | 65 | 54 | 46 | 21 | 22 | 71 |
| | Greece | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Hungary | 12 | 11 | 10 | 22 | 4 | 4 | 15 | 11 | 79 | 64 | 67 | 62 | 51 | 21 | 25 | 70 |
| | Iceland | 11 | 14 | 14 | 23 | 6 | 6 | 10 | 12 | 77 | 61 | 72 | 59 | 54 | 18 | 37 | 86 |
| | Ireland | 7 | 16 | 6 | 21 | 9 | 8 | 10 | 15 | 70 | 58 | 61 | 47 | 50 | 19 | 19 | 79 |
| | Israel | 20 | 8 | 17 | 15 | 6 | 4 | 20 | 8 | 84 | 63 | 66 | 56 | 48 | 28 | 27 | 78 |
| | Italy | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Japan[3] | 9 | 15 | 7 | 20 | 3 | 2 | 16 | 16 | 71 | 66 | 51 | 35 | 25 | 21 | 13 | 63 |
| | Korea | 7 | 17 | 6 | 14 | 6 | 2 | 23 | 14 | 77 | 64 | 59 | 48 | 45 | 28 | 21 | 68 |
| | Latvia | 6 | 8 | 8 | 30 | 3 | 7 | 18 | 12 | 89 | 72 | 72 | 60 | 56 | 20 | 22 | 80 |
| | Luxembourg | 6 | 13 | 12 | 37 | 5 | 5 | 9 | 13 | 79 | 67 | 50 | 51 | 46 | 14 | 16 | 74 |
| | Mexico | 8 | 4 | 9 | 31 | 3 | 2 | 27 | 12 | 74 | 55 | 65 | 54 | 49 | 28 | 27 | 66 |
| | Netherlands[2] | 10 | 8 | 12 | 29 | 6 | 3 | 9 | 16 | 76 | 55 | 68 | 44 | 42 | 11 | 21 | 76 |
| | New Zealand | 7 | 14 | 11 | 24 | 10 | 7 | 8 | 11 | 82 | 61 | 65 | 51 | 53 | 26 | 27 | 79 |
| | Norway | 10 | 13 | 13 | 17 | 6 | 4 | 12 | 15 | 75 | 61 | 62 | 55 | 50 | 16 | 23 | 81 |
| | Poland | 9 | 10 | 12 | 23 | 5 | 5 | 18 | 9 | 80 | 69 | 65 | 62 | 63 | 13 | 34 | 78 |
| | Portugal | 6 | 11 | 12 | 24 | 6 | 2 | 17 | 13 | 79 | 60 | 66 | 57 | 59 | 23 | 28 | 79 |
| | Slovak Republic | 13 | 7 | 12 | 19 | 6 | 4 | 14 | 16 | 79 | 68 | 68 | 63 | 62 | 12 | 26 | 75 |
| | Slovenia | 8 | 8 | 9 | 20 | 6 | 5 | 21 | 8 | 87 | 66 | 63 | 62 | 56 | 16 | 24 | 77 |
| | Spain | 11 | 12 | 8 | 20 | 6 | 5 | 15 | 14 | 79 | 59 | 63 | 55 | 49 | 12 | 24 | 72 |
| | Sweden | 12 | 13 | 11 | 15 | 5 | 5 | 19 | 16 | 75 | 59 | 65 | 61 | 51 | 25 | 29 | 80 |
| | Switzerland | 8 | 8 | 7 | 29 | 8 | 3 | 15 | 14 | 72 | 62 | 70 | 46 | 43 | 13 | 17 | 73 |
| | Turkey | 6 | 14 | 9 | 36 | 2 | 2 | 14 | 10 | 74 | 59 | 51 | 44 | 52 | 29 | 25 | 67 |
| | United Kingdom | 8 | 16 | 12 | 21 | 15 | 6 | 8 | 12 | 76 | 63 | 63 | 53 | 53 | 16 | 25 | 77 |
| | United States | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | OECD average | 9 | 11 | 10 | 23 | 6 | 5 | 16 | 13 | 78 | 63 | 64 | 54 | 50 | 19 | 24 | 76 |
| | EU22 average | 9 | 11 | 10 | 23 | 6 | 5 | 15 | 13 | 79 | 65 | 65 | 57 | 52 | 17 | 25 | 77 |
| Partners | Argentina | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Brazil | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | China | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Colombia | 7 | 4 | 9 | 39 | 2 | 6 | 21 | 6 | 66 | 48 | 70 | 60 | 48 | 22 | 32 | 72 |
| | Costa Rica | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | India[2, 4] | 7 | 6 | 36 | 18 | 15 | 5 | 9 | 3 | 59 | 55 | 52 | 43 | 48 | 44 | 28 | 58 |
| | Indonesia | 14 | 1 | 22 | 20 | 2 | 4 | 22 | 10 | 61 | 58 | 41 | 44 | 68 | 20 | 21 | 74 |
| | Lithuania | 4 | 9 | 11 | 30 | 4 | 4 | 21 | 12 | 72 | 70 | 70 | 61 | 58 | 14 | 22 | 82 |
| | Russian Federation | 9 | 4 | 14 | 22 | 3 | 5 | 24 | 8 | m | m | m | m | m | m | m | m |
| | Saudi Arabia | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | South Africa | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | G20 average | 9 | 10 | 13 | 23 | 6 | 4 | 18 | 10 | 72 | 61 | 57 | 48 | 48 | 24 | 23 | 68 |

**Note:** This table refers to the sum of all students entering a given tertiary level for the first time.

1. The distribution excludes two fields (Agriculture, forestry, fisheries and veterinary, and Services) which tend to represent a lower share of new entrants into tertiary education. The data for all fields are available in Education at a Glance Database, http://stats.oecd.org/.

2. Excludes new entrants at doctoral level.

3. Data for Information and communication technologies (ICT) only concerns short-term programmes. Data on ICT for the other levels of tertiary education are included in other fields of study.

4. Year of reference 2014.

**Source:** OECD/UIS/Eurostat (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933561004

## Table C3.2. Profile of first-time entrants into tertiary education (2015)

| | | Percentage of female new entrants | Percentage of new entrants younger than 25 years old | Average age | Percentage of international new entrants | Share of new entrants by level of education | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Short-cycle tertiary (2-3 years) | Bachelor's or equivalent | Master's or equivalent |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| OECD | Australia | m | m | m | m | m | m | m |
| OECD | Austria | 54 | 79 | 22 | 20 | 46 | 37 | 17 |
| OECD | Belgium | 57 | 95 | 20 | 13 | 1 | 96 | 2 |
| OECD | Canada | m | m | m | m | m | m | m |
| OECD | Chile | 52 | 79 | 22 | 0 | 47 | 51 | 1 |
| OECD | Czech Republic | 58 | 85 | 22 | 14 | 1 | 89 | 10 |
| OECD | Denmark | 56 | 72 | 25 | 15 | 21 | 72 | 7 |
| OECD | Estonia | m | m | m | m | m | m | m |
| OECD | Finland | 53 | 82 | 22 | 11 | a | 94 | 6 |
| OECD | France | m | m | m | m | m | m | m |
| OECD | Germany | 50 | 85 | 21 | 12 | 0 | 82 | 18 |
| OECD | Greece | m | m | m | m | m | m | m |
| OECD | Hungary | 56 | 87 | 22 | 9 | 11 | 74 | 16 |
| OECD | Iceland | 59 | 70 | 25 | 20 | 6 | 88 | 7 |
| OECD | Ireland | m | m | m | m | m | m | m |
| OECD | Israel | 57 | 73 | 24 | m | 25 | 75 | a |
| OECD | Italy | 55 | 96 | 20 | 4 | 1 | 84 | 15 |
| OECD | Japan | 51 | m | 18 | m | 36 | 62 | 2 |
| OECD | Korea | m | m | m | m | m | m | m |
| OECD | Latvia | m | m | m | m | m | m | m |
| OECD | Luxembourg | 52 | 65 | 24 | 45 | 18 | 48 | 34 |
| OECD | Mexico | 49 | 94 | 20 | 0 | 10 | 90 | a |
| OECD | Netherlands | 52 | 92 | 20 | 16 | 1 | 92 | 6 |
| OECD | New Zealand | 54 | 74 | 23 | 33 | 32 | 68 | a |
| OECD | Norway | 55 | 81 | 23 | 4 | 7 | 82 | 11 |
| OECD | Poland | 55 | 88 | 21 | 4 | m | m | m |
| OECD | Portugal | 56 | 91 | 20 | 3 | 1 | 84 | 16 |
| OECD | Slovak Republic | 57 | 85 | 22 | 6 | 2 | 98[d] | x(6) |
| OECD | Slovenia | 54 | 94 | 20 | 3 | 17 | 78 | 5 |
| OECD | Spain | 53 | 85 | 21 | m | 35 | 55 | 10 |
| OECD | Sweden | 57 | 72 | 24 | 11 | 13 | 62 | 25 |
| OECD | Switzerland | 49 | 63 | 25 | 15 | 5 | 68 | 27 |
| OECD | Turkey | 48 | 76 | 23 | 1 | 45 | 53 | 2 |
| OECD | United Kingdom | 56 | 81 | 22 | 12 | 21 | 78 | 1 |
| OECD | United States | 52 | 92 | 20 | 3 | 45 | 55 | a |
| | OECD average | 54 | 82 | 22 | 11 | 17 | 74 | 9 |
| | EU22 average | 55 | 84 | 22 | 12 | 12 | 76 | 12 |
| Partners | Argentina[1] | 56 | 67 | 24 | m | m | m | a |
| Partners | Brazil | m | m | m | m | m | m | m |
| Partners | China | m | m | m | m | m | m | m |
| Partners | Colombia | 52 | 75 | 22 | m | m | m | a |
| Partners | Costa Rica | m | m | m | m | m | m | m |
| Partners | India | 46 | m | m | m | a | 100 | 0 |
| Partners | Indonesia | m | m | m | m | m | m | m |
| Partners | Lithuania | 53 | 90 | 21 | 4 | a | 95 | 5 |
| Partners | Russian Federation | 52 | m | m | m | 42 | 49 | 9 |
| Partners | Saudi Arabia | 46 | 80 | 22 | m | m | m | a |
| Partners | South Africa | m | m | m | m | m | m | m |
| | G20 average | 51 | m | m | m | m | m | m |

**Note:** This table refers to students entering tertiary education for the first time regardless of tertiary level.

1. Year of reference 2014.

**Source:** OECD/UIS/Eurostat (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

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C3

## Table C3.3. First-time entry rates, by tertiary level (2015)

*Sum of age-specific entry rates, by demographic groups*

| | | Short-cycle tertiary (2-3 years) | | | Bachelor's or equivalent | | | Master's or equivalent | | | Doctoral or equivalent | | | First-time tertiary | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Excluding international students | | | Excluding international students | | | Excluding international students | | | Excluding international students | | | Excluding international students | |
| | | Total | Total | Younger than 25 years | Total | Total | Younger than 25 years | Total | Total | Younger than 30 years | Total | Total | Younger than 30 years | Total | Total | Younger than 25 years |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) |
| OECD | Australia | m | m | m | 95 | 79 | 62 | 32 | 16 | 8 | 3.5 | 2.2 | 0.9 | m | m | m |
| | Austria | 36 | 35 | 30 | 43 | 35 | 29 | 26 | 19 | 16 | 3.4 | 2.2 | 1.5 | 71 | 57 | 48 |
| | Belgium | 1 | 1 | 1 | 71 | 63 | 62 | 27 | 24 | 23 | m | m | m | 69 | 60 | 59 |
| | Canada | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Chile | 49 | 49 | 33 | 57 | 57 | 45 | 11 | 11 | 6 | 0.5 | 0.4 | 0.2 | 86 | 86 | 68 |
| | Czech Republic | 0 | 0 | 0 | 60 | 52 | 45 | 31 | 27 | 23 | 3.4 | 2.8 | 2.3 | 66 | 56 | 49 |
| | Denmark | 26 | 23 | 9 | 71 | 65 | 47 | 34 | 27 | 23 | 3.2 | 1.9 | 1.0 | 84 | 72 | 52 |
| | Estonia | a | a | a | 59 | 56 | 46 | 26 | 23 | 17 | 1.9 | 1.5 | 1.0 | m | m | m |
| | Finland | a | a | a | 55 | 52 | 42 | 12 | 9 | 4 | 2.3 | 1.6 | 0.7 | 56 | 49 | 42 |
| | France | m | m | m | m | m | m | m | m | m | 2.4 | m | m | m | m | m |
| | Germany | 0 | 0 | 0 | 51 | 48 | 41 | 30 | 22 | 21 | 3.9 | 3.3 | 2.7 | 63 | 56 | 48 |
| | Greece | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Hungary | 4 | 4 | 4 | 30 | 29 | 27 | 16 | 13 | 14 | 1.7 | 1.5 | 1.2 | 41 | 38 | 36 |
| | Iceland | 6 | 4 | 1 | 69 | 58 | 42 | 36 | 31 | 16 | 2.7 | 1.5 | 0.3 | 76 | 61 | 43 |
| | Ireland | 14 | 14 | 11 | 80 | 77 | 68 | 34 | 28 | 17 | 3.3 | 2.3 | 1.4 | m | m | m |
| | Israel | 21 | m | m | 52 | 49 | 35 | 22 | 21 | 9 | 2.0 | 1.8 | 0.7 | 68 | m | m |
| | Italy | 0 | 0 | 0 | 39 | 37 | 34 | 24 | 23 | 21 | 1.4 | 1.2 | 0.9 | 46 | 44 | 41 |
| | Japan | 29 | m | m | 50 | m | m | 8 | m | m | 1.2 | 1.0 | 0.7 | 80 | m | m |
| | Korea | 32 | m | m | 56 | m | m | 14 | m | m | 3.5 | m | m | m | m | m |
| | Latvia | 25 | m | m | 72 | m | m | 25 | m | m | 1.9 | m | m | m | m | m |
| | Luxembourg | 8 | 8 | 7 | 14 | 10 | 9 | 10 | 2 | 2 | 0.6 | 0.1 | 0.1 | 27 | 15 | 13 |
| | Mexico | 4 | 4 | 4 | 35 | 35 | 33 | 4 | 4 | 2 | 0.4 | 0.4 | 0.1 | 39 | 39 | 36 |
| | Netherlands | 2 | 2 | 1 | 63 | 56 | 54 | 21 | 16 | 15 | 1.3 | 0.8 | 0.7 | 68 | 57 | 54 |
| | New Zealand | 40 | 27 | 12 | 77 | 56 | 41 | 11 | 8 | 4 | 3.0 | 1.3 | 0.6 | 97 | 65 | 49 |
| | Norway | 6 | 6 | 3 | 66 | 63 | 52 | 29 | 26 | 21 | 2.5 | 1.8 | 0.6 | 73 | 70 | 59 |
| | Poland | 0 | 0 | 0 | 69 | m | m | 43 | m | m | 3.2 | m | m | 75 | 72 | 65 |
| | Portugal | 0 | 0 | 0 | 46 | 45 | 40 | 33 | 30 | 25 | 3.3 | 2.3 | 1.0 | 52 | 51 | 47 |
| | Slovak Republic | 1 | 1 | 1 | 55 | 52 | m | 38 | 36 | m | 2.4 | 2.2 | 1.7 | 56 | 53 | 47 |
| | Slovenia | 25 | 25 | 19 | 73 | 72 | 67 | 32 | 30 | 28 | 2.2 | 2.0 | 1.3 | 73 | 71 | 68 |
| | Spain | 26 | m | m | 48 | 47 | 43 | 15 | 12 | 11 | 3.4 | 2.7 | 1.6 | 73 | m | m |
| | Sweden | 9 | 9 | 4 | 44 | 42 | 31 | 29 | 24 | 18 | 2.4 | 1.5 | 0.7 | 62 | 55 | 41 |
| | Switzerland | 5 | 5 | 3 | 60 | 54 | 38 | 22 | 15 | 13 | 4.8 | 2.1 | 1.6 | 83 | 71 | 47 |
| | Turkey | 46 | 46 | 32 | 55 | 54 | 43 | 9 | 8 | 6 | 1.0 | 0.9 | 0.5 | m | m | m |
| | United Kingdom | 14 | 13 | 7 | 63 | 53 | 45 | 26 | 14 | 9 | 4.1 | 2.3 | 1.4 | 69 | 61 | 50 |
| | United States | 38 | 38 | 26 | m | m | m | 13 | 11 | 7 | 1.2 | 0.6 | 0.4 | 52 | 50 | 46 |
| | OECD average | 16 | 13 | 9 | 57 | 52 | 43 | 23 | 19 | 14 | 2.4 | 1.6 | 1.0 | 66 | 57 | 48 |
| | EU22 average | 11 | 9 | 6 | 55 | 49 | 43 | 27 | 21 | 17 | 2.6 | 1.9 | 1.2 | 62 | 54 | 48 |
| Partners | Argentina[1] | 56 | m | m | 53 | m | m | 5 | m | m | 0.7 | m | m | 67 | m | m |
| | Brazil | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | China | 37 | m | m | 33 | m | m | 4 | m | m | 0.3 | m | m | m | m | m |
| | Colombia | 18 | 18 | 12 | 28 | 28 | 20 | 7 | 7 | 2 | 0.1 | 0.1 | 0.0 | 45 | 45 | 32 |
| | Costa Rica | 6 | m | m | 44 | m | m | m | m | m | m | m | m | m | m | m |
| | India | a | a | a | 50 | m | m | 10 | m | m | m | m | m | 63 | m | m |
| | Indonesia | 0 | m | m | 7 | m | m | 1 | m | m | 0.0 | m | m | m | m | m |
| | Lithuania | a | a | a | 78 | 76 | 68 | 23 | 21 | 18 | 1.6 | 1.6 | 1.0 | 82 | 79 | 71 |
| | Russian Federation | 42 | 40 | m | 65 | 60 | m | 13 | 13 | m | 1.4 | 1.4 | m | 82 | m | m |
| | Saudi Arabia | 13 | m | m | 59 | m | m | 3 | m | m | 0.4 | m | m | 73 | m | m |
| | South Africa | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | G20 average | 24 | m | m | 51 | m | m | 13 | m | m | 1.8 | m | m | 64 | m | m |

**Note:** Mismatches between the coverage of the population data and the new-entrant data mean that the entry rates for those countries that are net exporters of students may be underestimated and those that are net importers may be overestimated. The adjusted entry rates seek to compensate for that. Please refer to Annex 3 for further specific information by country.

1. Year of reference 2014.

**Source:** OECD/UIS/Eurostat (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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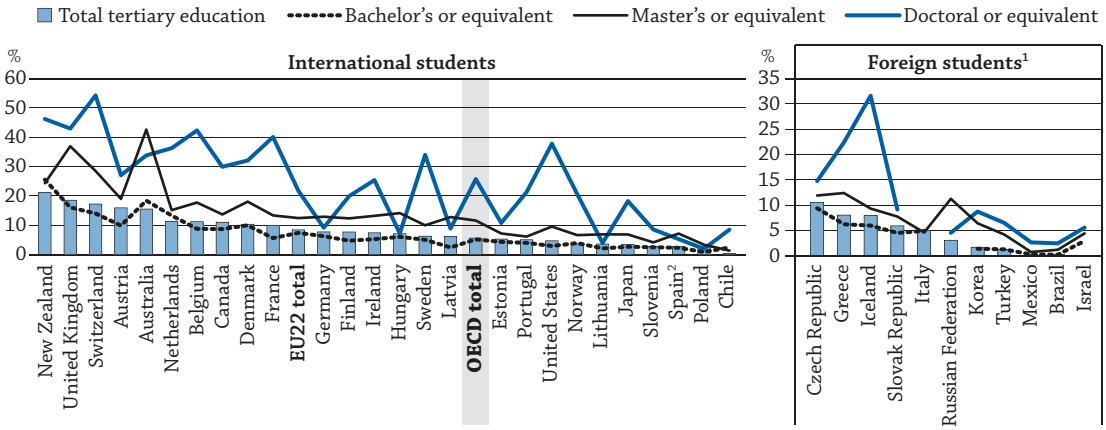
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## WHAT IS THE PROFILE OF INTERNATIONALLY MOBILE STUDENTS?

- Students become more mobile as they reach higher education levels. International students account for only 5.6% of total enrolment in tertiary programmes, but over a quarter of enrolments at doctoral level. Although mobility increases steadily with educational level, mobility patterns at doctoral level differ substantially from lower tertiary levels, as some countries become more attractive than others.
- International tertiary students favour science, technology, engineering and mathematics (STEM) fields of study, as well as business, administration and law. This is explained by the central role these disciplines play in innovation and creating job opportunities. About one-third of mobile students in the OECD area are enrolled in STEM fields of study, broken down as follows: engineering, manufacturing and construction (17%); natural sciences, mathematics and statistics (10%); and information and communication technologies (6%). A further 28% are enrolled in business, administration and law. However mobile students converge towards STEM disciplines more markedly at doctoral level, with these fields of study accounting for 59% of OECD mobile students at this level.
- Some countries are more deeply engaged in brain circulation than others. This is the case for English-speaking countries like Australia and New Zealand, which serve as regional educational hubs and count more than 18 international students on their soil for every 100 national students at home and abroad. Several small innovation leaders also perform well in attracting talent: Austria (18 international students per 100), Belgium (12 per 100), Luxembourg (22 per 100) and Switzerland (20 per 100). Some Eastern European countries (Estonia, Latvia, Lithuania and the Slovak Republic) are less well integrated into mobility networks, however, and are experiencing a greater outward mobility as they have more national students studying abroad than international students studying in their countries.

### Figure C4.1. Incoming student mobility in tertiary education, by ISCED level (2015)

*International or foreign student enrolment as a percentage of total tertiary education*




**Note**: Luxembourg (25.5% at bachelor's level, 71.1% at master's level and 87% at doctoral level) is an outlier and is not presented on the figure.

1. Foreign students are defined on the basis of their country of citizenship. In general, international students are a subset of foreign students. Data on foreign students are not comparable with data on international students and are therefore presented separately in the figure.

2. Total tertiary education excludes doctoral students.

*Countries are ranked in descending order of the percentage of international (or foreign) students enrolled in tertiary education.*

**Source**: OECD (2017), Table C4.1. See Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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### Context

Studying abroad has become a key differentiating experience for young adults enrolled in tertiary education, and international student mobility has received increasing policy attention in recent years.

Studying abroad is an opportunity to access quality education, acquire skills that may not be taught at home and get closer to local labour markets that offer higher returns on education. Studying

abroad is also seen as a way to improve employability in increasingly globalised labour markets. Other motivations include the desire to expand knowledge of other societies and to improve language skills, particularly English.

For host countries, mobile students may be an important source of income and have a disproportionate impact on economic and innovation systems (OECD, 2016a). In the short-run, international students often provide tuition fees, and in some countries incur higher registration fees than domestic students (see Indicator B5). They also contribute through their living expenses to the local economy. According to the US Department of Commerce, international students brought more than USD 35 billion to the US economy in 2015 (IIE, 2016). In the longer-run, highly educated mobile students are likely to integrate into domestic labour markets, contributing to knowledge creation, innovation and economic performance.

Attracting mobile students, especially if they stay permanently, is therefore a way to tap into a global pool of talent, compensate weaker educational capacity at lower educational levels, support the development of innovation and production systems and mitigate the impact of an ageing population on future skills supply in many countries (OECD, 2016b). There is however a risk of squeezing-out qualified national students from domestic tertiary educational institutions which differentiate tuition fees by student origin as they may tend to enrol international students who generate higher revenues with higher tuition fees.

For the countries of origin, mobile students might be viewed as lost talent. Yet mobile students can contribute to knowledge absorption, technology upgrading and capacity building in their home country, provided they return home after studies or maintain strong linkages with nationals at home. Mobile students gain tacit knowledge that is often shared through direct personal interactions and that enables their home country to integrate into global knowledge networks. Recent data suggest that students leaving to study overseas are a good predictor of future scientist flows in the opposite direction, providing evidence of a significant brain circulation effect (Appelt et al., 2016). In addition, student's mobility appears to more deeply shape future international scientific co-operation networks than a common language, or geographical or scientific proximity.

For increasingly autonomous educational institutions, competition for talent has become more intense and global, prompting them to access a wider pool of high-potential students with a view to increasing their reputation and revenues, and promoting cross-faculty fertilisation (OECD, 2012; 2016b). In that respect the popularity of university league tables and other institutional rankings have reinforced a perception of cross-institution difference in quality and the value of enrolling at prestigious institutions (Perkins and Neumayer, 2014). As part of their internationalisation strategy, more and more institutions have been creating offshore satellite campuses or double degrees, changing admission rules for foreign students, revising curricula to encourage teaching in foreign languages, or offering Internet courses and international internships. Massive open online courses (MOOCs) have for instance expanded the reach of existing campuses (see Box C6.1 in Chapter C6). As a consequence, the international activities of tertiary educational institutions have not only expanded in volume and scope, but also in complexity.

## Other findings

- The number of foreign students engaged in tertiary education programmes worldwide has exploded within a generation, rising from 0.8 million in the late 1970s to 4.6 million 45 years later (Box C4.2, foreign student definition). In 2015, there were 3.3 million students travelling across the OECD area for study purposes (international student definition).
- Pools and flows of mobile talent remain very concentrated and migration flows are heavily rooted in historical patterns and shaped by proximity factors. The top five OECD destination countries host almost 70% of mobile students in the OECD area, whereas the top five sending countries (worldwide) account for just under 40% of total migration towards the OECD area. The largest host countries are the advanced English-speaking economies: the United States (30% of total international students in the OECD area), the United Kingdom (14%) and Australia (10%). However, France, Germany and the Russian Federation also attract significant numbers of students. Most mobile students in OECD countries originate from China (20%), followed by India (7%), Germany (4%), Korea, France and Saudi Arabia (ranging between 2-3%).

## Analysis

### Profiles of internationally mobile students

Internationally mobile students show some trends in terms of their chosen field of study and level of education.

#### *Student mobility patterns: the case of doctoral programmes*

The relative concentration of international and foreign students in different levels of tertiary education gives a fair indication of the attractiveness of educational programmes across countries.

The more advanced education programmes are, the more internationally open they are likely to be. Save for a few country exceptions, the share of international students enrolled in tertiary programmes increases gradually with education level. On average across OECD countries, international students account for 5.6% of total enrolment in tertiary programmes, but over 25% of all enrolments at doctoral level (Figure C4.1. and Table C.4.1.).

Several factors could account for these trends: capacity constraints in the countries of origin may be particularly severe as education levels increase; returns on investing in international studies, especially in prestigious institutions, may be higher at higher levels of tertiary education; and students who are more likely to travel and live abroad because of their socio-economic background are also more likely to access more advanced educational programmes. For host countries, there are strong incentives to invest in these later education stages, especially doctoral level, because graduates from this education level make a large contribution to research and development (R&D) and innovation, and to addressing socio-economic challenges.

International enrolments in bachelor programmes remain relatively low (below 5% in half of the countries for which data are available and below 10% in over 80% of the countries under review; Figure C4.1). Yet a few countries show a more international profile at these earlier educational stages: Australia (13.3%), Austria (18.4%), Luxembourg (25.5%), New Zealand (16.0%) and the United Kingdom (14.0%).

International enrolments increase significantly at master's level. Across the OECD area, there is on average more than one international student for every ten students enrolled in the country at this level. The proportion of incoming students at least doubles between bachelor's and master's levels in two-thirds of the countries. Sweden hosts four times more international students at master's than bachelor's level (9.9% compared to 2.4%), while Australia (42.6% vs. 13.3%), Denmark (18.0% vs. 5.6%) and Norway (6.6% vs. 2.0%) host three times more. The most striking increases in master's students' inflows occur in Australia and the United Kingdom (36.9% vs. 14.0%) as both were already large recipients of international students at bachelor's level. Austria on the other hand seems relatively less attractive to master's students as its inflows are fairly similar to those at bachelor's level. Data based on foreign students' citizenship show a similar trend. In Korea (6.4% compared to 1.4%) and Turkey (4.2% vs. 1.3%), increase in student's inflows is noticeable between bachelor's and master's programmes.

International enrolments boom at doctoral level in the OECD area is mainly due to the United States, which leads the field as the largest recipient of international doctoral students: the proportion of international students in US doctoral programmes is four times larger than in master's programmes (37.8% versus 9.5% of total enrolments). However, the increase of student inflows from master's to doctoral programmes is much less homogenous across countries than for bachelor's to master's programmes. This is particularly striking in Australia (dropping from 42.6% to 33.8%), Germany (from 12.9% to 9.1%), Hungary (from 14.1% to 7.2%), Latvia (from 12.7 to 8.8%) and Lithuania (from 6.8% to 3.9%). In addition to the United States, doctoral programmes in small R&D and innovation leaders – such as Belgium, Ireland, Norway and Sweden – draw a large share of international students. In Luxembourg and Switzerland, there are more international students in doctoral programmes than nationals (87% and 54% of their enrolments come from overseas at this level). France and Portugal hosts three times more students from abroad in their doctoral schools than in their master's programmes (Figure C4.1).

#### *Preferences for science technology, engineering and mathematics studies*

International students tend to mainly enrol in science, technology, engineering and mathematics (STEM) fields of study, as well as in business, administration and law. About one-third of OECD mobile students at all tertiary levels are enrolled in STEM fields of study - broken down as follows: engineering, manufacturing and construction (17%); natural sciences, mathematics and statistics (10%); information and communication technologies (6%), and business, administration and law (27%) (Table C.4.2). This compares to only 22% of national students who are enrolled either in STEM disciplines or business, administration and law. Conversely, mobile students are less likely than national students to pursue tertiary studies in humanities (13%), social sciences (11%) or other non-STEM disciplines.

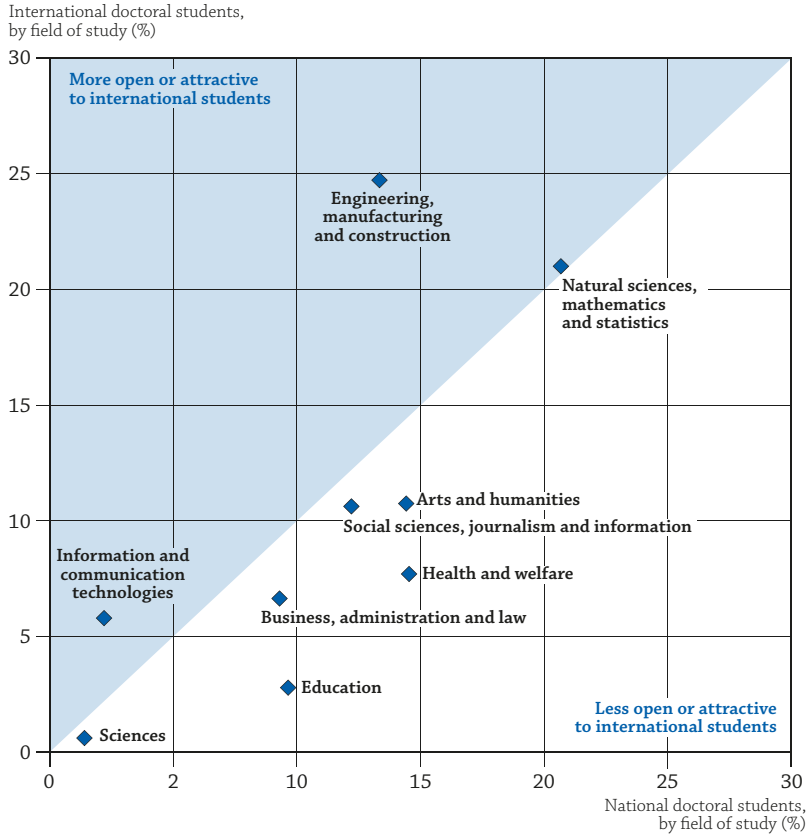
The lower language proficiency required to perform in STEM could partly explain the internationalisation of these fields of study. But of greater importance is probably the central role played by science, engineering and business management in innovation processes and value creation (OECD, 2012; 2014), and the wage premium and better career opportunities associated with graduating in these disciplines (see Indicator A5).

At doctoral level, mobile students' preferences for STEM disciplines become even more pronounced: 25% of international students enrolled across the OECD area are pursuing advanced research programmes in engineering, manufacturing and construction; 28% are enrolled in natural sciences, mathematics and statistics research; and 6% in information and communication technologies (ICT) (Figure C.4.2). Business, administration and law are much less popular among students at this level than at lower education levels (7%).



## Figure C4.2. Doctoral student mobility by field of study, OECD average (2015)

*International and domestic students enrolled in tertiary education at ISCED 8 as a share of total enrolment, by field of study*




**Source**: OECD (2017), Table C4.2. See Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).
StatLink http://dx.doi.org/10.1787/888933558401

The most internationally open countries for engineering doctorals are Denmark (international students account for 35% of total enrolments), Korea (33%), Canada (30%) and Sweden (30%) (OECD, 2017a). The most international places for natural sciences and mathematics research are Israel (49%), Slovenia (47%) and Norway (43%), while Luxembourg (20%), Estonia (18%) and Finland (12%) draw the most international ICT doctoral candidates.

### *International student circulation in tertiary education*

In 2015, there were 3.3 million international students enrolled in OECD tertiary education programmes. The pools and flows of this mobile talent remain very concentrated worldwide, however, and mobility pathways are deeply rooted in historical patterns.

### *Origin and destination of mobile students studying in OECD countries*

Data on international student flows illustrate the strength of proximity factors, e.g. language, historical ties, geographical distance, and political framework conditions (e.g. the European Higher Education Area) as key determinants for mobility. Data also show the concentration of flows around dyadic relationships.

Students from Asia form the largest group of international students enrolled in OECD tertiary education programmes at all levels (1.56 million in 2015; OECD, 2017b). Of these, 612 000 come from China. Three-quarters of Asian students converge towards only three countries: the United States (44%), Australia (16%) and the United Kingdom (15%).

The second major region of origin of international students is Europe, with 782 000 European students crossing borders for the purpose of studying. European students prefer to circulate within Europe: 82% of them enrol in tertiary studies in another European country.

Africa (254 000) and the Americas (265 000) remain far behind as sending regions. Three-quarters of African students enrolled in OECD countries study in Europe, especially France (42%), the United Kingdom (14%) and Germany (8%), whereas North and Latin American students are divided between the United States (42%) and Europe (49%). 16% of Latin American students in OECD countries study in Spain. This reflects their stronger cultural, linguistic and historical connections, as does North American students' tendency to gravitate towards the United Kingdom (25%).

In turn, the United States is the top OECD destination country for mobile tertiary students. Of the 3 million international students in the OECD area, 907 000 enrol in US programmes. English-speaking countries overall are the most attractive, with four countries receiving over half the mobile students. After the United States, the United Kingdom counts 431 000 international students, Australia 294 000 and Canada 172 000. International students in these countries mainly originate from Asia, accounting for 87% of international students in Australia, 76% in the United States and 54% in the United Kingdom (Table C4.1).

The European Union is another key geographical area of inward mobility, with 1.52 million international students enrolled in European programmes. France (239 000) and Germany (229 000) are major host countries, far ahead of the Netherlands (86 000) and Spain (75 000). But mobility channels differ significantly between these two large players. While a majority of mobile students entering France come from Africa (41%), other European countries remain the main source of foreign talent for Germany (42%). For both countries, Asia comes in second as a region of origin, accounting for 23% and 35% of total incoming students respectively. International students in the Netherlands are also mainly European (57%), while inflows from Latin American countries make a significant contribution to Spanish tertiary cohorts (37%). Small European countries rely on intra-European mobility in particular. More than 80% of students entering Austria, the Czech Republic, Denmark, Luxembourg, Poland, Slovenia and the Slovak Republic are travelling from inside Europe (OECD, 2017b).

The Russian Federation is also a major destination country, with 226 000 students enrolled from abroad. It is also a regional catalyst of student inflows, two-thirds of whom come from neighbouring countries with historical links with the former Soviet Union, i.e. Kazakhstan (26%), Ukraine (9%), Belarus (8%), Turkmenistan (7%), Uzbekistan (7%) and Azerbaijan (6%) (OECD, 2017b).

### *Brain circulation: the state of play*

The growth in international student mobility and its impact on national talent pools also vary significantly across countries.

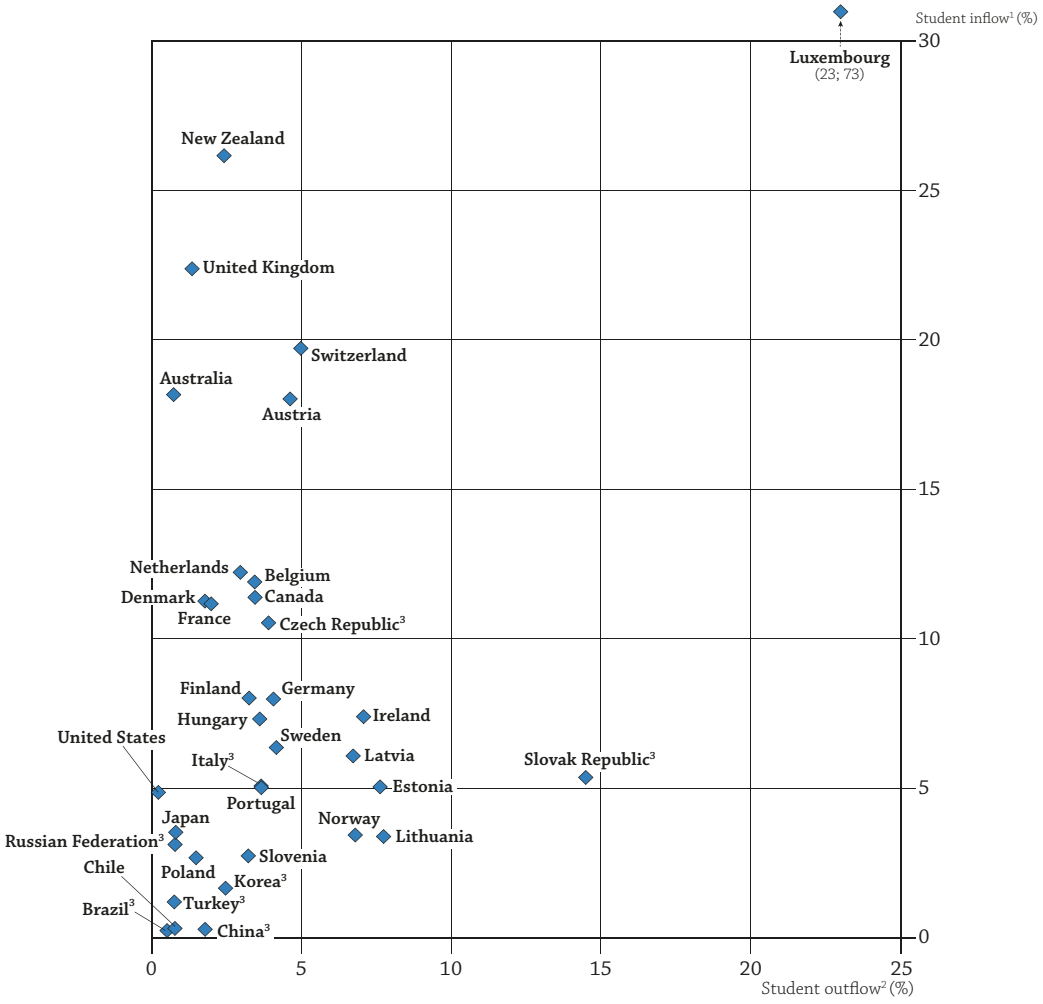
Some countries experience an outward flow of students, measured by the percentage of all national students studying abroad (Figure C.4.3). This is the case for several Eastern European countries, such as the Slovak Republic (14.5%), Lithuania (7.7%), Estonia (7.6%), and Latvia (6.7%); as well as for small European countries, such as Ireland (7.1%) and Norway (6.8%). Luxembourg is a particularly stark example, with three-quarters of its students enrolled in foreign tertiary programmes. In these countries the percentage of national students enrolled abroad significantly exceeds the share of international students enrolled in national institutions.

In some countries large cohorts of international students outnumber their own national talent. This inflow of students is measured by the number of international (or foreign) students on a country's soil in every 100 national students enrolled in tertiary education programmes abroad. The top destination countries for international students are mainly the English-speaking countries: Australia (18%), New Zealand (26%) and the United Kingdom (22%) top the list; followed by small innovation leaders, such as Switzerland (20%), Austria (18%) and Belgium (12%).

C4

## Figure C4.3. International student circulation in total tertiary education (2015)

*International or foreign students studying in the country and national students studying abroad as a percentage of total national students studying home and abroad*




1. Student inflow represents the number of international students on a country's soil for every 100 national students studying home or abroad in the OECD area (y-axis).

2. Student outflow represents the percentage of national students studying abroad (x-axis).

3. Data refer to foreign students instead of international students.

**Source**: OECD (2017), Table C4.3. See Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*StatLink* http://dx.doi.org/10.1787/888933558420

### Determinants of international mobility

Identifying the determinants of international student mobility is key for designing efficient policies to encourage brain circulation.

Student migration is mainly driven by differentials in education capacity, i.e. a lack of educational facilities in the country of origin, or the prestige of educational institutions in the country of destination. It is also driven by differentials in the returns to or rewards for education and skills between the origin and destination country. Economic factors include higher economic performance in the host country; exchange rate differentials that could influence mobility and education cost differentials; and more affordable mobility and education costs in the host country, for instance due to higher education subsidies. In addition, the decision to study abroad may be determined by non-economic factors, such political stability and the robustness of institutions in the receiving country, or cultural and religious proximity between origin and destination countries (Guha, 1977; UNESCO, 2013; Weisser, 2016).

### *Mobility costs and network effects*

It is widely assumed that student mobility costs mainly include travel and communication and tend to be linked to the distance from home to destination country. Several variables are used in the literature to measure distance, including geographical distance, shared borders, time zone differences, topographical features (landlocked, continent, size of the country, etc.), languages spoken, and colonial and historical ties. These variables are sometimes combined into gravity models that predict the degree of interaction and bilateral flows between two places (Abbott and Silles, 2016; Mayer and Zignago, 2011). In practice, however, physical distance is often used to proxy migration costs.

Mobility costs, of a financial or psychological nature (Perkins and Neumayer, 2013), can however be mitigated, especially through the use of Internet and digital tools (e.g. email, social media platforms). Networks of family, friends or communities already installed in the host country are also strong facilitators. The diaspora can provide assistance and help lower informational and living costs for newcomers. Recent work argues that pre-existing stocks of migrants may actually be influential in shaping mobilities and that network effects could even be stronger within higher skilled diaspora (Beine et al., 2014; Perkins and Neumayer, 2014).

### *Education costs and tuition fees*

Fixing appropriate tuition fees remains one of the most debated topics in the education policy domain, in a context in which policy makers aim to increase participation in higher education and achieve greater equity in education.

The cost of education for individuals differs substantially across countries, as a result of different systems of tuition fees and ancillary services costs, combined with different levels of public allocations for tertiary education and public support for students (see Indicators B3 and B5). Tuition fees typically bridge the gap between the cost incurred by educational institutions and the revenues they receive from public endowments and private sources (e.g. contracts, donations). The levels of tuition fees have been increasingly defined by tertiary educational institutions themselves as they become more autonomous. But governments can modulate or cap fees through regulation or by increasing public appropriations to educational institutions. They can also reduce the financial impact on individuals by subsidising students (e.g. loans, scholarship, etc.). Consequently, although they make up a substantial part of the cost of studying for students (see Indicator A7), tuition fees should be analysed in the context of the student financial aid system in place.

Data collected for some OECD countries suggest that students take tuition fees into consideration when deciding where to study abroad (see Indicator B5; and Box C4.2. in OECD, 2016c), especially since fees can vary substantially across countries (Box C4.1). However, the academic literature remains inconclusive on the impact of tuition fees on students' decisions to migrate and their mobility patterns. Some argue that higher tuition fees could boost the numbers of incoming students as they signal a higher quality of host institutions and potentially higher returns on education (Van Bouwel and Veugelers, 2010; Beine et al., 2014).

In some countries, tuition fees are the same for both national and international students (Box C4.1). For example, within the European Higher Education Area, international students from other EU countries are treated as domestic students with respect to tuition fees (EC, 2010). Outside Europe, Brazil, Colombia, Israel and Korea, to name a few, also charge the same fees for domestic and foreign students.

However, some countries differentiate students according to their origins and charge international students higher tuition fees (Box C4.1). One of the main rationales for doing so is to avoid placing an extra burden on local taxpayers. Another reason is to increase revenues from the international trade of educational services, since the General Agreement on Trade in Services (GATS) provides a supportive regulatory framework for free trade (Altbach and Knight, 2007).

#### Box C4.1. **International mobility and tuition fees**

The amount of tuition fees that international students have to pay to enrol in tertiary education can vary substantially across countries. For example, in 2015 international students, whatever their country of origin, could enrol in a public institution free of charge in Finland, Germany, Iceland, Norway and the Slovak Republic. This was also the case in Slovenia up to doctoral level (under certain conditions of origin and tax residence, see Table C4.a) and in Estonia for programmes taught in Estonian.

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On the other hand, average annual tuition fees for international students in public institutions exceed USD 14 000 PPP in Australia, Canada, New Zealand and the United States (see Indicator B5). The maximum average annual fees among countries for which data are available, are reported for private institutions in the United States (USD 27 300) and public institutions in New Zealand (USD 18 500, excluding PhD. programmes). Yet, the large number of students moving to these two countries for studying seems to indicate that these high tuition fees are not preventing students from enrolling (Table C4.a). Indeed, several countries in the Asia-Pacific region have made international education an explicit part of their socio-economic development strategy and have initiated policies to attract international students on a revenue-generating or at least a cost-recovery basis.

In many countries, tuition fees paid by international students are higher than those paid by nationals. The gap is particularly striking in Australia and Canada, where international students pay three times more than nationals; and in Sweden, where international students pay between USD 9 000 (public) and USD 10 400 (private) annually, while national students enrol for free.

## Table C4.a. Tuition fees for international students

| Tuition fee structure | Students' origin | Host countries (OECD and G20) | |
|---|---|---|---|
| | | EU countries | Non-EU countries |
| Differentiated tuition fees (as compared to domestic students) | All countries of origin | Estonia (for some programmes not taught in Estonian), Greece, Ireland, Latvia | Canada, Chile, New Zealand (except students from Australia), Russian Federation, Turkey |
| | Non-European Union or non-European Economic Area students | Austria, Belgium,[1] Czech Republic, Denmark, Netherlands, Poland, United Kingdom | |
| Same tuition fees (as compared to domestic students) | All countries of origin | Estonia (except for some programmes not taught in Estonian), France, Hungary, Italy, Luxembourg, Portugal, Slovenia (doctoral's level), Spain. | Australia (most public institutions),[2] Brazil, Colombia, Israel, Japan (public institutions only), Korea, Mexico (to some exceptions), New Zealand (doctoral's level), Switzerland, United States[3] |
| | European Union or European Economic Area students | Austria, Belgium,[1] Czech Republic, Denmark, Netherlands, Poland, United Kingdom. | |
| | Countries with bi- or multilateral agreements with the host country | | Australia (students from New Zealand), New Zealand (students from Australia) |
| No tuition fee (for both international and domestic students) | All countries of origin | Finland, Germany, Slovak Republic | Iceland, Norway |
| | European Union or European Economic Area students | Slovenia (bachelor's and master's levels), Sweden | |
| | Countries with bi- or multilateral agreements with the host country | Slovenia (bachelor's and master's levels) | |
| | Tax resident in the host country | Slovenia (bachelor's and master's levels) | |

1. In the Flemish Community of Belgium, the institutions have autonomy over setting tuition fees for non-EEA students, except for some categories of students (e.g. refugees, asylum seekers).

2. International students (except from New Zealand) are not eligible for government-subsidised places in Australia. This typically results in higher tuition fees for international students than domestic students, who are usually given subsidised places. Some domestic students in public universities and all students in independent-private universities are full-fee paying and pay the same tuition fees as international students.

3. In public US institutions, international students pay the same fees as domestic out-of-state students. However, since most domestic students are enrolled in-state, international students in practice pay higher tuition fees than domestic students.

**Source**: OECD (2017), Table B5.1. See Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

### *Quality of programmes and institutional prestige*

The perceived quality of instruction abroad and the perceived value of host institutions are key criteria for international students when selecting their country of destination (Abbott and Silles, 2016; Beine et al., 2014; Marconi, 2013). Top destinations for internationally mobile students include a large number of top-ranked higher educational institutions.

Students worldwide are increasingly aware of quality differences in tertiary education systems as university league tables and other international university rankings are widely diffused. Quality at a country level is assessed through a variety of indicators, including the number of domestic institutions ranked in top international university rankings (e.g. Shanghai ranking), bibliometrics, educational opportunities, total government budget earmarked, etc.

At the same time, ability to attract international students has become a criterion in assessing institutions' performance and quality. As they seek to encourage the internationalisation of higher education, governments have revised performance agreements with domestic institutions, for example by taking into account the inflows of international students into university funding formula. Finland, for example, adopted a new funding model in 2013 that combines various performance indicators, including the share of doctoral degrees awarded to foreigners (EC/OECD, forthcoming).

### *Language of instruction*

The language of instruction is a strong determinant of students' choice of destination. Countries whose language of instruction is widely spoken and read, such as English, French, German, Russian and Spanish, can be particularly attractive to international students.

English is the *lingua franca* of the globalised world, with one in four people using it globally (OECD, 2016b based on Sharifian, 2013). Not surprisingly, countries where English is an official language (either legally or *de facto*) – such as Australia, Canada, New Zealand, South Africa, the United Kingdom and the United States – are top OECD destination countries for international students (Table C4.1 and UOE data collection 2016). English has increasingly been included in the mandatory school curriculum, even at early education levels, and many students aim to improve their English-language skills through immersion in a native context. In addition, an increasing number of institutions in non-English-speaking countries offer tertiary education programmes taught in English. In Europe, the diffusion of English as a medium of instruction is especially noticeable in the Nordic countries (see Wächter and Maiworm, 2014; and Box C4.1 in OECD, 2015).

### *Accreditation, multilateral agreements and quality assurance frameworks*

Increasing compatibility and comparability across national education systems is a prerequisite for international student mobility. Educational accreditation standards and information play an important role in removing barriers to student exchanges and supporting the global market for advanced skills. International co-operation in this field is essential. The Bologna Process is an example of such efforts made at the European Union level. It has played an important role for increasing mobility at the European level by harmonising degree structures, strengthening quality assurance and easing the recognition of qualifications and periods of study across EU countries and promoting mobility instruments such as European Credit Transfer and Accumulation System and diploma supplements. Similar international recognition arrangements exist on a bilateral basis (e.g. Switzerland with Austria, Germany, Italy and France, at university level), on a regional basis (e.g. the Regional Convention on the Recognition of Studies, Diplomas and Degrees in Higher Education in Asia and the Pacific) and at government or institution level (EC/OECD, forthcoming).

### *Immigration policy*

Immigration restrictions and complex related procedures can deter students from enterying a country. OECD countries continue to rework their legal and administrative framework for attracting and retaining international students (OECD, 2016a; 2016d). Reforms mainly consist of issuing student visas, amending or simplifying immigration procedures and easing restrictions on short-term work permit for students.

Australia has announced the implementation of a simplified student visa framework as from 2016 (OECD, 2016d). Canada revised its International Student Program in 2014 and streamlined work permit access for international students enrolled in a Canadian institution so as to allow them to work part time off campus (EC/OECD, forthcoming). Korea has increased the number of weekly hours of employment allowed during study from 20 to 25 for international students who have been certified according to the International Education Quality Assurance system (OECD, 2016d).

## Box C4.2. Long-term trends in the global number of students enrolled abroad (foreign students definition)

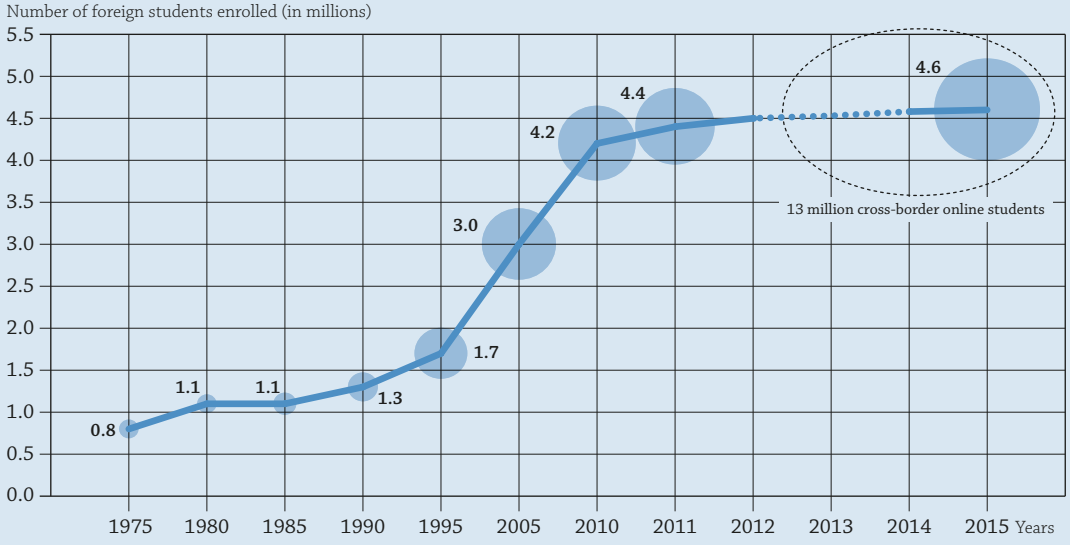
Over the past four decades, the number of foreign students (see *Definitions* section) enrolled in tertiary education programmes worldwide has exploded, rising from 0.8 million in the late 1970s to 4.6 million 45 years later. This increase was exponential until early 2010 when data show an historical levelling off in long-term trends (Figure C4.a).

The increase in foreign enrolment has been driven by a variety of domestic and external, push (encouraging outward mobility) and pull (encouraging inward mobility) factors (UNESCO, 2013). The skills' needs of increasingly knowledge-based and innovation-driven economies have spurred demand for tertiary education worldwide, while local education capacities have not always evolved fast enough to meet a growing domestic demand. Rising wealth in emerging economies has further prompted the children in a growing middle class to look for educational opportunities abroad (OECD, 2016b). At the same time, factors such as economic (e.g. costs of international flights), technological (e.g. the spread of the Internet and social media to maintain contacts across borders) and cultural (e.g. use of English as a common working and teaching language) have contributed to making international mobility substantially more affordable and less irreversible than in the past.

Initiatives at national, regional, local, supranational or institutional level have also contributed to cross-border mobility. In 2011, the European Union set the ambitious goal of increasing the proportion of EU graduates from higher education completing a study or training abroad to 20% by 2020 (Council of the European Union, 2011).

### Figure C4.a. Long-term growth in foreign enrolment in tertiary education worldwide, 1975-2015

*Total foreign students enrolled in tertiary programmes, whole world (millions)*




**Note**: Data on foreign enrolment worldwide come from both the OECD (2016 figures) and the UNESCO Institute for Statistics (UIS) (2015 figures). The UIS provided the data on all countries for 1975-95 and most of the non-OECD countries for 2000, 2005, 2010 and all years up to 2015. The OECD provided the data on OECD countries and the other non-OECD economies in 2000, 2011 and all years up to 2016. Both sources use similar definitions, thus making their combination possible. Missing data were imputed with the closest data reports to ensure that breaks in data coverage do not result in breaks in time series. From 2012, many countries started reporting on international students only and internationally comparable data on foreign students may not be available after this date.
The estimated number of cross-border online students is drawn from OECD (2016c) based on private sources.

**Source**: OECD (2017), Table B5.1. See Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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The Nordic and Baltic countries operate the Nordplus Higher Education Programme, a broad mobility and network programme that aims at reinforcing collaboration, joint curriculum planning, student and teacher mobility and the sharing of best practices between institutions. Most countries have implemented reforms aiming to lower barriers to the migration of the highly skilled, beyond education purposes, and most countries operate funding programmes to support inward, outward or return mobility. While these programmes differ on the conditions of migration (e.g. short-term vs. long-term settlement), their most common target populations are pre-doctoral students and early stage – including doctoral and postdoctoral – researchers. Recent policy data indicate that many countries tend to favour outward mobility of students at advanced education levels, and inward return mobility of more experienced researchers, signalling efforts to appropriate external knowledge spillovers (Kergroach et al., forthcoming; OECD, 2016a) (see also the section on the determinants of international mobility).

Student migration into the OECD area remains dynamic, but new migration poles are consolidating in developing economies. Data on the students who cross borders with the sole purpose of study (also defined as international students – see *Definitions* section) between 2013 and 2015 show an estimated 6.4% increase in international student flows towards the OECD area. Flows towards the largest destination regions have been sustained: inflows towards European countries and the United States increased by 5.0% and 7.5% respectively. Yet trends data also show a polarisation of student flows around new locations, signalling growing educational capacities worldwide. The largest increases in incoming student numbers have been observed in Estonia, Latvia, Poland and the Russian Federation, where the number of international students enrolled in national tertiary programmes increased by between 20% and 27% over the period. Other attracting poles include Brazil (+25%), Chile (13%) and Turkey (+15%). Conversely, Austria, Israel, Japan, Korea and Slovenia experienced a slight decline in the number of international enrolments between 2013 and 2015. Similar shifts in international student flows have taken place in the Asia-Pacific region, with several education hubs developing in Hong Kong (China), Malaysia and Singapore, and universities from Australia, the United Kingdom and the United States setting up branch campuses or signing collaborative agreements with Asian-based providers (UNESCO, 2013).

International enrolment has not grown at the same rate at all education levels, however. This is a consequence of attractiveness gaps across different tertiary education segments in a single country, catching-up effects in lagging segments and a potential specialisation of national tertiary education systems. Between 2013 and 2015, enrolment of international students in the United States increased at the master's and doctoral levels, whereas the strongest increases in enrolments in European countries took place at bachelor's level. International enrolments have increased much faster at doctoral level than at lower educational levels in Israel and Korea, the world's top two R&D intensive countries (as measured as a percentage of GDP). Similarly in emerging poles, Estonia and Poland have created more extra capacity for international students at bachelor's level, and Latvia and the Russian Federation at master's level. Largest enrolment increases occurred in doctoral programmes in Brazil and Chile, and in doctoral and master's programmes in Turkey.

The global marketplace for tertiary education is likely to expand further as global demographic trends and a rising global middle-class spur demand and spending on educational products and services. Information and communication technologies (ICT) are also instrumental to this expansion. ICT not only reduce migration costs, but also increase the reach of domestic education. There are already an estimate 13 million cross-border online students (Sharifian, 2013), though the impact on the scope and patterns of international student mobility remains unclear.

## Definitions

**Foreign students** are those who are not citizens of the country in which they are enrolled and where the data are collected. Although they are counted as internationally mobile, they may be long-term residents or even be born in the "host" country. While pragmatic and operational, this classification may be inappropriate for capturing student mobility because of differing national policies regarding the naturalisation of immigrants. For instance, Australia has a greater propensity than Switzerland to grant permanent residence to its immigrant populations. This implies that even when the proportion of foreign students in tertiary enrolment is similar for both countries, the proportion of international students in tertiary education is smaller in Switzerland than in Australia.

Therefore, for student mobility and bilateral comparisons, interpretations of data based on the concept of foreign students should be made with caution. In general, international students are a subset of foreign students.

**International students** are those who left their country of origin and moved to another country for the purpose of study. The country of origin of a tertiary student is defined according to the criterion of "country of prior education" or "country of usual residence" (see below). Depending on country-specific immigration legislation, mobility arrangements (such as the free mobility of individuals within the EU and the EEA) and data availability, international students may be defined as students who are not permanent or usual residents of their country of study, or alternatively as students who obtained their prior education in a different country.

The **country of prior education** is the country in which students obtained the qualification required to enrol in their current level of education. Where countries are unable to operationalise this definition, it is recommended that they use the country of usual or permanent residence to determine the country of origin. Where this too is not possible and no other suitable measure exists, the country of citizenship may be used.

**Permanent** or **usual residence** in the reporting country is defined according to national legislation. In practice, this means holding a student visa or permit, or electing a foreign country of domicile in the year prior to entering the education system of the country reporting the data. Country-specific operational definitions of international students are indicated in the tables as well as in Annex 3 (www.oecd.org/education/education-at-a-glance-19991487.htm).

## Methodology

Defining and identifying mobile students, as well as their types of learning mobility, is a key challenge for developing international education statistics since current international and national statistical systems only report domestic educational activities undertaken within national boundaries (OECD, 2017c).

Data on international and foreign students are therefore obtained from enrolments in their countries of destination. This is the same method used for collecting data on total enrolments, i.e. records of regularly enrolled students in an education programme. Students enrolled in countries that did not report to the OECD or to the UNESCO Institute for Statistics are not included and, for their countries of origin, the total number of national students enrolled abroad may be underestimated.

The total number of students enrolled abroad refers to the count of international students, unless data are not available and the count of foreign students is used instead. Enrolment numbers are computed using a snapshot method, i.e. counting enrolled students at a given period of time (e.g. a specific day or period of the year).

This methodology has some limits, however. OECD international statistics on education tend to overlook the impact of distance and e-learning, especially fast-developing MOOCs, students who commute from one country to another on a daily basis and short-term exchange programmes that take place within an academic year and therefore go under the radar. Other concerns arise from the classification of students enrolled in foreign campus and European schools in host countries' student cohorts.

Current data for international students can only help track student flows involving OECD and partner countries as receiving countries. It is not possible to assess extra-OECD flows and in particular the contributions of South-South exchanges to global brain circulation.

For more information please see the *OECD Handbook for Internationally Comparative Education Statistics: Concepts, Standards, Definitions and Classifications* (OECD, 2017c) and Annex 3 for country-specific notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

## Source

Data on international and foreign students refer to the academic year 2015/16 unless otherwise indicated and are based on the UNESCO/OECD/Eurostat (UEO) data collection on education statistics administered by the OECD in 2016. Additional data from the UNESCO Institute for Statistics are also included.

**Note regarding data from Israel**

The statistical data for Israel are supplied by and are under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

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## Indicator C4 Tables

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| | | |
|---|---|---|
| | Table C4.1 | International student mobility and foreign students in tertiary education (2015) |
| | Table C4.2 | Share of tertiary students enrolled in broad fields of study, by mobility status (2015) |
| | Table C4.3 | Mobility patterns of foreign and international students (2015) |
| WEB | Table C4.4 | Distribution of international and foreign students in master's and doctoral or equivalent programmes, by country of origin (2015) |
| WEB | Table C4.5 | Students abroad in master's and doctoral or equivalent programmes, by country of destination (2015) |

Cut-off date for the data: 19 July 2017. Any updates on data can be found on line at http://dx.doi.org/10.1787/eag-data-en. More breakdowns can also be found at http://stats.oecd.org/, Education at a Glance Database.

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## Table C4.1. International student mobility and foreign students in tertiary education (2015)

*International and foreign students enrolled as a percentage of all students (international plus domestic)*

**Reading the first column of the upper section of the table (international):** 16% of all students in tertiary education in Australia are international students and 17% of all students in tertiary education in Switzerland are international students. The data presented in this table on international student mobility represent the best available proxy of student mobility for each country.

**Reading the first column of the lower section of the table (foreign):** 10% of all students in tertiary education in the Czech Republic are not Czech citizens, and 2% of all students in tertiary education in Korea are not Korean citizens.

| | | Share of international or foreign students by level of tertiary education | | | | | |
|---|---|---|---|---|---|---|---|
| | | Total tertiary education | Short-cycle tertiary programmes | Bachelor's or equivalent level | Master's or equivalent level | Doctoral or equivalent level | Number of international or foreign students (in thousands) |
| | | (1) | (2) | (3) | (4) | (5) | (6) |
| | | **International students** | | | | | |
| OECD | Australia | 15.5 | 6.6 | 13.3 | 42.6 | 33.8 | 294 |
| OECD | Austria | 15.9 | 1.1 | 18.4 | 19.0 | 27.0 | 68 |
| OECD | Belgium | 11.2 | 2.4 | 8.6 | 17.7 | 42.3 | 56 |
| OECD | Canada | 6.4 | 2.6 | 4.8 | 11.9 | 24.4 | 172 |
| OECD | Chile | 0.3 | 0.3 | 0.2 | 1.3 | 8.4 | 4 |
| OECD | Denmark | 10.3 | 14.1 | 5.6 | 18.0 | 32.1 | 32 |
| OECD | Estonia | 5.2 | a | 3.9 | 7.1 | 10.7 | 3 |
| OECD | Finland | 7.7 | a | 5.2 | 12.3 | 19.9 | 23 |
| OECD | France | 9.9 | 4.7 | 7.3 | 13.3 | 40.1 | 239 |
| OECD | Germany | 7.7 | 0.0 | 4.7 | 12.9 | 9.1 | 229 |
| OECD | Hungary | 7.1 | 0.5 | 5.0 | 14.1 | 7.2 | 22 |
| OECD | Iceland | 8.0 | 25.4 | 6.0 | 9.3 | 31.6 | 2 |
| OECD | Ireland | 7.4 | 1.9 | 6.0 | 13.2 | 25.4 | 16 |
| OECD | Japan | 3.4 | 4.0 | 2.4 | 6.8 | 18.2 | 132 |
| OECD | Latvia | 6.1 | 1.9 | 5.1 | 12.7 | 8.8 | 5 |
| OECD | Luxembourg | 45.9 | 10.4 | 25.5 | 71.1 | 87.0 | 3 |
| OECD | Mexico | 0.3 | 0.0 | 0.2 | 0.7 | 2.6 | 10 |
| OECD | Netherlands | 11.2 | 0.0 | 8.7 | 15.1 | 36.2 | 86 |
| OECD | New Zealand | 21.1 | 32.3 | 16.0 | 24.3 | 46.2 | 57 |
| OECD | Norway | 3.6 | 0.7 | 2.0 | 6.6 | 20.5 | 10 |
| OECD | Poland | 2.6 | 0.0 | 2.4 | 3.3 | 1.9 | 44 |
| OECD | Portugal | 5.0 | 3.0 | 2.9 | 6.1 | 21.2 | 17 |
| OECD | Slovenia | 2.7 | 0.9 | 2.3 | 4.1 | 8.5 | 2 |
| OECD | Spain[1] | 2.7 | 5.0 | 0.8 | 7.1 | m | 75 |
| OECD | Sweden | 6.2 | 0.2 | 2.4 | 9.9 | 34.0 | 27 |
| OECD | Switzerland | 17.2 | 0.0 | 9.8 | 28.5 | 54.3 | 51 |
| OECD | United Kingdom | 18.5 | 5.2 | 14.0 | 36.9 | 42.9 | 431 |
| OECD | United States | 4.6 | 2.2 | 3.8 | 9.5 | 37.8 | 907 |
| | OECD total | 5.6 | 2.5 | 4.3 | 11.5 | 25.7 | 3 296 |
| | EU22 total | 8.4 | 4.6 | 6.2 | 12.4 | 21.7 | 1 522 |
| Partner | Lithuania | 3.5 | a | 2.6 | 6.8 | 3.9 | 5 |
| | | **Foreign students** | | | | | |
| OECD | Czech Republic | 10.5 | 5.0 | 9.4 | 11.9 | 14.8 | 42 |
| OECD | Greece | m | m | m | m | m | m |
| OECD | Israel | m | m | 2.9 | 4.4 | 5.5 | 10 |
| OECD | Italy[1] | 5.0 | 6.9 | 4.9 | 4.6 | m | 90 |
| OECD | Korea | 1.7 | 0.2 | 1.4 | 6.4 | 8.7 | 55 |
| OECD | Slovak Republic | 5.9 | 0.9 | 4.5 | 7.7 | 9.1 | 11 |
| OECD | Turkey | 1.2 | 0.2 | 1.3 | 4.2 | 6.5 | 72 |
| Partners | Argentina | m | m | m | m | m | m |
| Partners | Brazil | 8.4 | 4.6 | 6.2 | 12.4 | 22.4 | 20 |
| Partners | China | m | m | m | m | m | m |
| Partners | Colombia | m | m | m | m | m | m |
| Partners | Costa Rica | m | m | m | m | m | m |
| Partners | India | m | m | m | m | m | m |
| Partners | Indonesia | m | m | m | m | m | m |
| Partners | Russian Federation | 3.0 | 1.5 | x(4) | 11.2[d] | 4.5 | 226 |
| Partners | Saudi Arabia | m | m | m | m | m | m |
| Partners | South Africa | m | m | m | m | m | m |

1. Total tertiary education excludes doctoral students.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

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## Table C4.2. Share of tertiary students enrolled in broad fields of study, by mobility status (2015)

| | | Total tertiary education | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Education | | Arts and humanities | | Social sciences, journalism and information | | Business, administration and law | | Natural sciences, mathematics and statistics | | Information and communication technologies | | Engineering, manufacturing and construction | | Health and welfare | | Services | |
| | | International students | National students | International students | National students | International students | National students | International students | National students | International students | National students | International students | National students | International students | National students | International students | National students | International students | National students |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) | (17) | (18) |
| | | **International students** | | | | | | | | | | | | | | | | | |
| OECD | Australia | 2 | 11 | 6 | 11 | 3 | 7 | 51 | 30 | 6 | 5 | 9 | 3 | 13 | 8 | 9 | 20 | 1 | 3 |
| OECD | Austria | 6 | 15 | 16 | 10 | 21 | 10 | 16 | 22 | 10 | 7 | 5 | 4 | 16 | 17 | 8 | 7 | 1 | 5 |
| OECD | Belgium | 4 | 13 | 13 | 10 | 12 | 9 | 12 | 22 | 6 | 3 | 1 | 3 | 12 | 11 | 34 | 26 | 2 | 1 |
| OECD | Canada | 1 | 6 | 12 | 14 | 14 | 15 | 29 | 23 | 11 | 9 | 6 | 3 | 18 | 11 | 4 | 16 | 1 | 2 |
| OECD | Chile | 6 | 10 | 9 | 4 | 9 | 6 | 26 | 21 | 7 | 2 | 3 | 4 | 18 | 20 | 13 | 22 | 7 | 10 |
| OECD | Denmark | 2 | 9 | 12 | 13 | 9 | 10 | 28 | 23 | 6 | 5 | 6 | 4 | 19 | 9 | 9 | 23 | 5 | 3 |
| OECD | Estonia | 0 | 7 | 14 | 13 | 10 | 8 | 44 | 23 | 3 | 6 | 9 | 8 | 10 | 17 | 4 | 11 | 0 | 6 |
| OECD | Finland | 2 | 5 | 10 | 13 | 5 | 7 | 22 | 16 | 6 | 6 | 17 | 8 | 20 | 19 | 11 | 19 | 5 | 4 |
| OECD | France | 2 | 4 | 18 | 13 | 11 | 8 | 30 | 29 | 11 | 9 | 6 | 2 | 15 | 13 | 6 | 17 | 1 | 4 |
| OECD | Germany | 2 | 8 | 18 | 14 | 8 | 8 | 18 | 23 | 8 | 11 | 8 | 6 | 29 | 20 | 7 | 7 | 1 | 2 |
| OECD | Hungary | 3 | 11 | 11 | 9 | 9 | 8 | 12 | 26 | 2 | 4 | 2 | 4 | 9 | 20 | 42 | 8 | 2 | 7 |
| OECD | Iceland | 8 | 12 | 39 | 11 | 9 | 16 | 14 | 22 | 14 | 5 | 2 | 7 | 7 | 9 | 4 | 14 | 1 | 3 |
| OECD | Ireland | 1 | 6 | 11 | 16 | 6 | 6 | 19 | 20 | 9 | 10 | 8 | 7 | 12 | 11 | 29 | 16 | 2 | 5 |
| OECD | Japan[1] | 2[d] | 9[d] | 25[d] | 16[d] | 36[d] | 8[d] | 8[d] | 22[d] | 2[d] | 3[d] | x | x | 20[d] | 16[d] | 3[d] | 17[d] | 2[d] | 6[d] |
| OECD | Latvia | 2 | 7 | 6 | 8 | 11 | 8 | 36 | 32 | 1 | 3 | 4 | 6 | 8 | 16 | 26 | 12 | 6 | 7 |
| OECD | Luxembourg | 6 | 21 | 9 | 14 | 12 | 12 | 48 | 26 | 8 | 4 | 8 | 4 | 5 | 10 | 3 | 9 | 0 | 0 |
| OECD | Mexico | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| OECD | Netherlands[2] | 2 | 12 | 14 | 8 | 15 | 11 | 12 | 28 | 11 | 5 | 8 | 3 | 12 | 8 | 6 | 18 | 11 | 6 |
| OECD | New Zealand | 3 | 9 | 7 | 14 | 7 | 13 | 38 | 19 | 8 | 9 | 10 | 5 | 10 | 8 | 5 | 17 | 9 | 3 |
| OECD | Norway | 5 | 15 | 17 | 10 | 12 | 11 | 14 | 18 | 16 | 5 | 6 | 4 | 15 | 11 | 11 | 18 | 3 | 6 |
| OECD | Poland | 2 | 10 | 10 | 9 | 22 | 11 | 22 | 23 | 2 | 4 | 6 | 4 | 8 | 19 | 17 | 10 | 11 | 8 |
| OECD | Portugal | 7 | 4 | 12 | 10 | 11 | 11 | 25 | 21 | 8 | 6 | 2 | 2 | 19 | 22 | 10 | 16 | 5 | 6 |
| OECD | Slovenia | 6 | 9 | 12 | 8 | 15 | 10 | 15 | 19 | 9 | 6 | 6 | 4 | 21 | 18 | 10 | 12 | 5 | 9 |
| OECD | Spain[2] | 1 | 12 | 2 | 11 | 2 | 9 | 3 | 21 | 1 | 5 | 3 | 5 | 3 | 16 | 5 | 14 | 3 | 6 |
| OECD | Sweden | 3 | 13 | 12 | 14 | 13 | 12 | 12 | 15 | 14 | 5 | 7 | 1 | 26 | 18 | 12 | 19 | 1 | 2 |
| OECD | Switzerland | 5 | 10 | 15 | 9 | 12 | 8 | 21 | 26 | 17 | 6 | 3 | 3 | 17 | 14 | 7 | 16 | 2 | 5 |
| OECD | United Kingdom | 2 | 8 | 12 | 17 | 12 | 11 | 34 | 15 | 11 | 16 | 4 | 4 | 15 | 8 | 7 | 16 | 0 | 1 |
| OECD | United States[3] | 3 | 8 | 13[d] | 19[d] | 11 | 11 | 24 | 17 | 13 | 6 | 6 | 4 | 17 | 7 | 9[d] | 20[d] | 2 | 7 |
| | **OECD total** | 3 | 8 | 14 | 15 | 12 | 10 | 27 | 23 | 10 | 6 | 6 | 3 | 17 | 12 | 9 | 16 | 2 | 5 |
| | **EU22 total** | 3 | 8 | 15 | 13 | 12 | 10 | 26 | 22 | 9 | 8 | 5 | 4 | 17 | 15 | 11 | 14 | 2 | 4 |
| Partner | Lithuania | 3 | 6 | 15 | 8 | 20 | 11 | 29 | 31 | 1 | 4 | 2 | 3 | 11 | 19 | 17 | 13 | 1 | 3 |
| | | **Foreign students** | | | | | | | | | | | | | | | | | |
| OECD | Czech Republic | 2 | 11 | 10 | 9 | 11 | 9 | 22 | 20 | 7 | 6 | 9 | 4 | 14 | 16 | 18 | 12 | 4 | 8 |
| OECD | Greece | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| OECD | Israel | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| OECD | Italy | 2 | 5 | 26 | 16 | 15 | 14 | 16 | 20 | 5 | 8 | 6 | 5 | 16 | 13 | 13 | 18 | 0 | 0 |
| OECD | Korea | 3 | 6 | 21 | 17 | 14 | 6 | 30 | 15 | 4 | 6 | 1 | 3 | 17 | 25 | 4 | 12 | 6 | 9 |
| OECD | Slovak Republic | 8 | 12 | 7 | 8 | 4 | 12 | 13 | 20 | 1 | 6 | 1 | 4 | 5 | 14 | 56 | 16 | 2 | 6 |
| OECD | Turkey | 6 | 6 | 13 | 12 | 15 | 10 | 20 | 43 | 6 | 3 | 1 | 1 | 24 | 13 | 11 | 7 | 3 | 3 |
| Partners | Argentina | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| Partners | Brazil | 9 | 6 | 8 | 5 | 8 | 20 | 20 | 16 | 8 | 2 | 4 | 8 | 23 | 12 | 11 | 5 | 4 | 1 |
| Partners | China | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| Partners | Colombia | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| Partners | Costa Rica | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| Partners | India | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| Partners | Indonesia | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| Partners | Russian Federation | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| Partners | Saudi Arabia | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| Partners | South Africa | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |

**Note:** The distribution excludes one field (Agriculture, forestry, fisheries and veterinary) which tends to represent a lower share of international enrollees into tertiary education. The data for all fields are available at http://stats.oecd.org/, Education at a Glance Database.

1. Data on Information and communication technologies are included in the other fields.

2. Excludes doctoral level.

3. Health and welfare includes all inter-disciplinary programmes, including those without a specific arts and humanities component.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933561099

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## Table C4.3. Mobility patterns of foreign and international students (2015)

*Percentage of national students enrolled abroad, balance on mobility and cross-border mobility in total tertiary education*

| | | Percentage of national tertiary students enrolled abroad | Number of international or foreign students per national student abroad | Number of international or foreign students for every hundred national students home and abroad | Percentage of international or foreign students coming from neighbouring countries[1] |
|---|---|---|---|---|---|
| | | (1) | (2) | (3) | (4) |
| OECD | Australia | 0.7 | 24.6 | 18.2 | 5 |
| OECD | Austria | 4.6 | 3.9 | 18.0 | 61 |
| OECD | Belgium | 3.0 | 4.1 | 12.2 | 64 |
| OECD | Canada | 3.4 | 3.5 | 11.9 | 6 |
| OECD | Chile | 0.8 | 0.4 | 0.3 | 41 |
| OECD | Czech Republic[2] | 3.5 | 3.3 | 11.4 | 57 |
| OECD | Denmark | 1.8 | 6.3 | 11.3 | 39 |
| OECD | Estonia | 7.6 | 0.7 | 5.0 | 59 |
| OECD | Finland | 3.3 | 2.5 | 8.0 | 20 |
| OECD | France | 3.9 | 2.7 | 10.5 | 17 |
| OECD | Germany | 4.1 | 2.0 | 8.0 | 18 |
| OECD | Greece[2] | m | m | m | 79 |
| OECD | Hungary | 3.6 | 2.0 | 7.3 | 27 |
| OECD | Iceland | 13.2 | 0.6 | 7.5 | 12 |
| OECD | Ireland | 7.1 | 1.0 | 7.4 | 11 |
| OECD | Israel[2] | 3.5 | 0.8 | 2.7 | 3 |
| OECD | Italy[2] | 3.7 | 1.4 | 5.0 | 23 |
| OECD | Japan | 0.8 | 4.4 | 3.5 | 69 |
| OECD | Korea[2] | 2.5 | 0.7 | 1.7 | 67 |
| OECD | Latvia | 6.7 | 0.9 | 6.1 | 20 |
| OECD | Luxembourg | 73.0 | 0.3 | 22.9 | 63 |
| OECD | Mexico | 0.9 | 0.3 | 0.3 | 98 |
| OECD | Netherlands | 2.0 | 5.6 | 11.2 | 45 |
| OECD | New Zealand | 2.4 | 10.8 | 26.2 | 6 |
| OECD | Norway | 6.8 | 0.5 | 3.4 | 21 |
| OECD | Poland | 1.5 | 1.8 | 2.7 | 74 |
| OECD | Portugal | 3.7 | 1.4 | 5.1 | 5 |
| OECD | Slovak Republic[2] | 14.5 | 0.4 | 5.4 | 57 |
| OECD | Slovenia | 3.2 | 0.8 | 2.7 | 53 |
| OECD | Spain[3] | 1.8 | 2.2 | 3.9 | 33 |
| OECD | Sweden | 4.2 | 1.5 | 6.4 | 26 |
| OECD | Switzerland | 5.0 | 4.0 | 19.7 | 58 |
| OECD | Turkey[2] | 0.8 | 1.6 | 1.2 | 44 |
| OECD | United Kingdom | 1.4 | 16.5 | 22.4 | 13 |
| OECD | United States | 0.2 | 21.3 | 4.9 | 6 |
| | OECD average[4] | 5.9 | 4.0 | 8.7 | |
| | EU22 average[4] | 7.5 | 2.9 | 9.2 | |
| Partners | Argentina | m | m | m | 86 |
| Partners | Brazil | 0.5 | 0.5 | 0.2 | 37 |
| Partners | China | 1.8 | 0.2 | 0.3 | m |
| Partners | Colombia | 1.2 | 0.2 | m | 3 |
| Partners | Costa Rica | 1.1 | m | m | 44 |
| Partners | India | m | m | m | 0 |
| Partners | Indonesia | m | m | m | 88 |
| Partners | Lithuania | 7.7 | 0.4 | 3.4 | 10 |
| Partners | Russian Federation[5] | 0.8 | 4.0 | 3.1 | 62 |
| Partners | Saudi Arabia | m | m | m | 32 |
| Partners | South Africa | m | m | m | 50 |

1. Neighbouring countries are considered to be those with land or maritime borders with the host country.
2. Domestic tertiary students are calculated as total enrolment minus foreign students instead of total enrolment minus international students.
3. Data exclude students in doctoral or equivalent programmes.
4. OECD average and EU22 average are not directly relevant for Column 4. The number of students studying in neighbouring countries is included in the statistics for the individual member states.
5. The percentage of foreign students coming from neighbouring countries includes those from former Soviet Union countries, mostly in central Asia.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

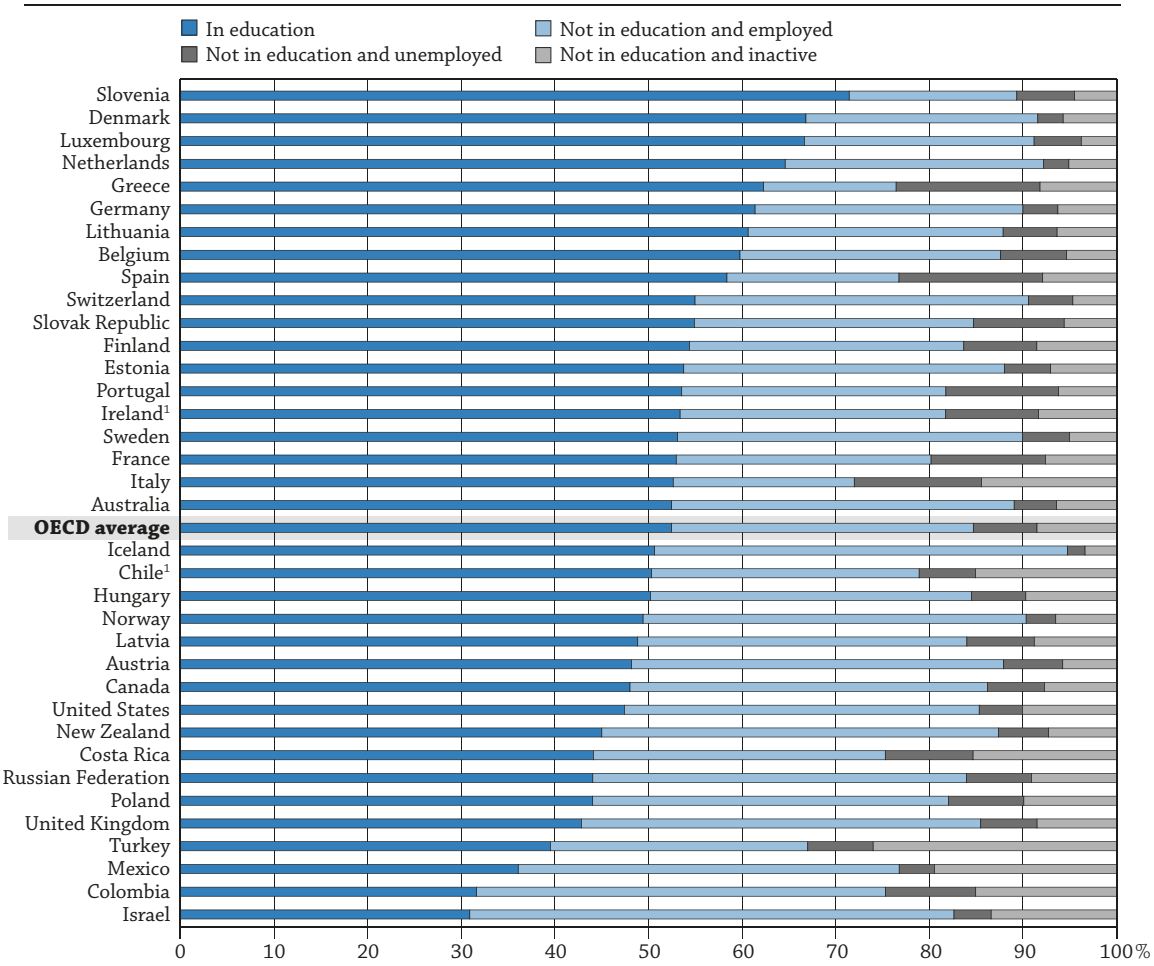
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INDICATOR C5

# TRANSITION FROM SCHOOL TO WORK: WHERE ARE THE 15-29 YEAR-OLDS?

- On average across OECD countries, about half (53%) of 18-24 year-olds are in education, one-third (32%) are not in education but employed, and 15% are neither employed nor in education or training (NEET).
- In Chile, Colombia, Costa Rica, Mexico and Turkey, the share of NEETs among 18-24 year-olds exceeds 20% and can be mainly attributed to a high share of women that are inactive NEETs. The share of unemployed NEETs is about 10% or less among both men and women.
- In general, the higher a country's percentage of low-performing students at age 15 in the Programme for International Student Assessment (PISA), the higher the percentage of NEETs at a later age. For instance, the share of NEETs is lowest in countries with only a small share of young adults with low literacy proficiency (below PISA Level 2) – such as Estonia, Finland or Japan – while it is highest in countries with the highest share of low-skilled students, such as Costa Rica, Mexico and Turkey.

**Figure C5.1. Percentage of 18-24 year-olds in education/not in education, employed, unemployed or inactive (2016)**




1. Year of reference differs from 2016. Refer to the source table for details.

*Countries are ranked in descending order of the percentage of 18-24 year-olds in education.*

**Source**: OECD (2017), Table C5.1. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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## Context

The length and the quality of the schooling that individuals receive have an impact on their transition from education to work, as do labour market conditions, the economic environment and culture. For example, in some countries young people traditionally complete schooling before they look for work, while in others, education and employment are concurrent. In some countries, there is little difference between how young women and young men experience the transition from school to work, while in other countries significant proportions of young women raise families full time after leaving the education system and do not enter the labour force. When labour market conditions are unfavourable, young people often tend to stay in education longer, because high unemployment rates drive down the opportunity costs of education and they can improve their skills for when the labour market situation improves.

To improve the transition from school to work, regardless of the economic climate, education systems should aim to ensure that individuals have the skills required in the labour market. During recessions, public investment in education could be a sensible way to counterbalance unemployment and invest in future economic growth by building the needed skills. In addition, public investment could be directed towards potential employers in the form of incentives to hire young people.

## Other findings

- The share of 20-24 year-olds not in education but employed has decreased on average across the OECD by about 5 percentage points, from 43% in 2005 to 39% in 2016. This reflects not only unfavourable employment prospects, but also a general trend of increased access to higher education among young adults.
- On average across the OECD, the share of 20-24 year-olds in education has increased by 5 percentage points – from 40% in 2005 to 45% in 2016. In the Czech Republic, Greece, Luxembourg, the Slovak Republic, Slovenia, Spain and Turkey, the percentage of young adults still in education has increased by more than 10 percentage points.
- In 11 of the 14 countries reporting subnational data on the transition from school to work, the share of NEETs in the capital city region is lower than the country average.

## Note

This indicator analyses the situation of young people in transition from school to work: those in education, those employed, and those neither employed nor in education or training. The latter group includes not only those who have not managed to find a job (unemployed NEETs), but also those who are not actively seeking employment (inactive NEETs). The analysis focuses on 18-24 year-olds, as compulsory education does not affect the proportion of inactive or unemployed at this age when a significant proportion of young people are continuing their studies after compulsory education.

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## Analysis

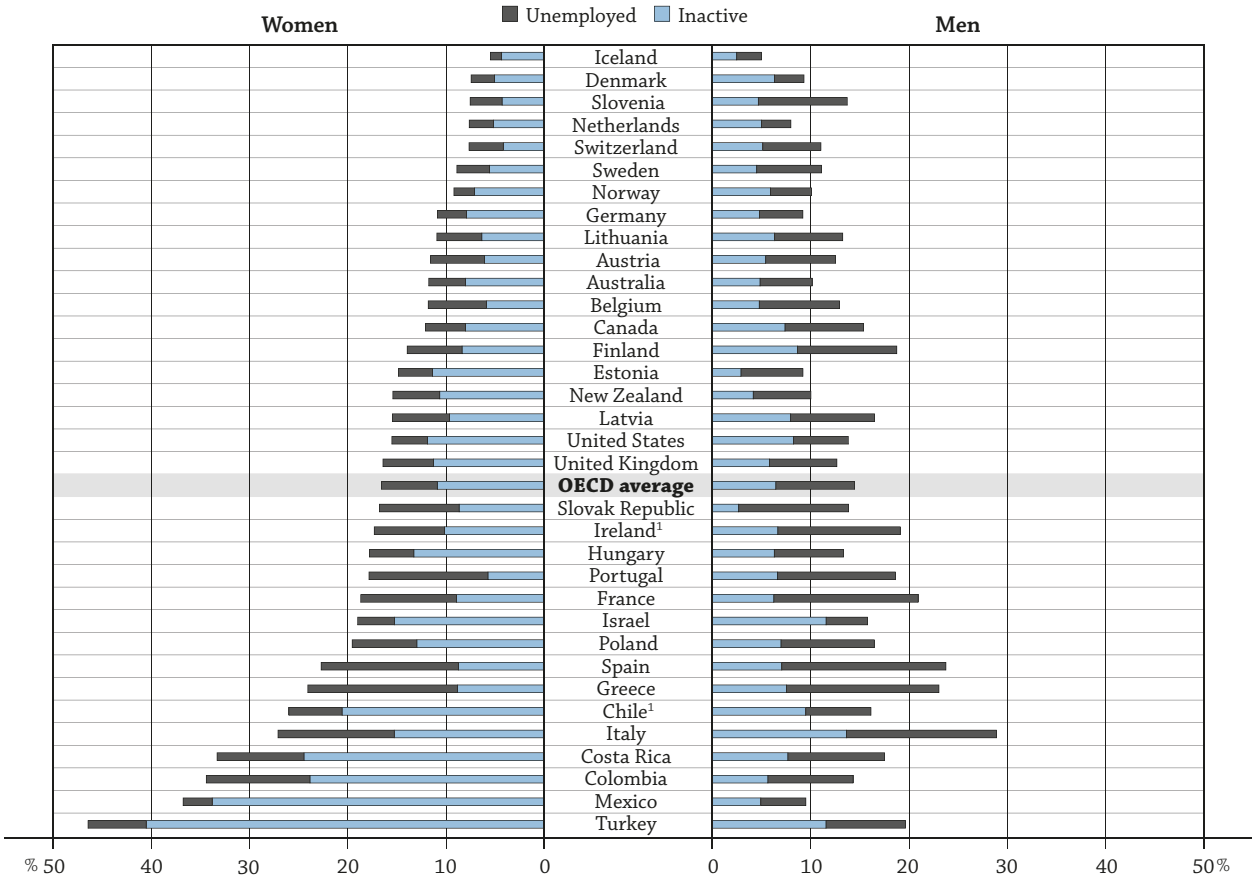
### How do young people fare in the labour market once they leave education?

Across OECD countries on average, more than 90% of 17-year-olds are still enrolled in education. From the age of 18, the enrolment rate drops below 90% and decreases further with increasing age. Among 25-29 year-olds, only 16% are still in education. This suggests that the age group of 18-24 is a good reference age group for capturing young adults' transition from education to work (see Indicator C1 and Education at a Glance Database).

Figure C5.1 shows that, on average across OECD countries, about half (53%) of 18-24 year-olds are in education. In Belgium, Denmark, Germany, Greece, Lithuania, Luxembourg, the Netherlands and Slovenia the proportion of 18-24 year-olds in education is at least 60%, while in Colombia, Israel, Mexico and Turkey the share is 40% or less. Among 25-29 year-olds the average share of young adults in education decreases to 16% and remains above 30% only in Denmark (Figure C5.1 and Education at a Glance Database).

Young adults no longer in education may be employed, unemployed or inactive. On average across OECD countries, two-thirds (68%) of 18-24 year-olds not in education are employed. This figure is above 75% in about one-quarter of OECD countries, including Australia, Austria, Iceland and the Netherlands, New Zealand, Norway, Sweden and Switzerland. In the other countries young people have more difficulty entering the labour market when they leave the education system. For instance, in Italy, Greece, Spain and Turkey more than half of 18-24 year-olds have not found employment since leaving education.

### Figure C5.2. Percentage of 18-24 year-old unemployed or inactive NEETs, by gender (2016)




**Note**: NEET refers to young people neither in employment nor in education or training.
1. Year of reference differs from 2016. Refer to Table C5.1 for details.

*Countries are ranked in ascending order of the percentage of 18-24 year-old NEET women.*

**Source**: OECD (2017), Education at a Glance Database. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933558458

A common measure of the smoothness of the transition from school to work is the proportion of young people neither employed nor in education or training (NEET). Figure C5.1 shows that across OECD countries on average, 15% of 18-24 year-olds are NEETs. In Denmark, Germany, Iceland, Luxembourg, the Netherlands, Norway, Sweden and Switzerland the share of NEETs is 10% or less, while it is more than 20% in Chile, Colombia, Costa Rica, Greece, Italy, Mexico, Spain and Turkey (Figure C5.1).

The percentage of NEETs includes not only those who have not managed to find a job (unemployed), but also those who are not actively seeking employment (inactive). Figure C5.2 shows that in most countries, the inactive account for the majority of female NEETs, and the unemployed account for a larger share of male NEETs. On average across OECD countries, 11% of women aged 18-24 are inactive and no longer in education, compared to only 7% of men, while the share of the unemployed and not in education is 5.7% for women, compared to 8.0% for men (Figure C5.2).

Various factors contribute to people being inactive and not seeking employment. Among women, the main reasons for inactivity are childcare responsibilities, while health and other factors are more prevalent among men (OECD, 2016a). When interpreting the share of NEETs, it should be noted that a small share of inactive NEETs are only temporarily inactive and may soon re-enter employment, education or training. Some young adults become discouraged and stop looking for work because they believe that there are no job opportunities for them (Eurofound, 2016).

The gender gap in the share of inactive NEETs is largest in Colombia, Costa Rica, Mexico and Turkey, where the share of inactive NEETs is more than 10 percentage points higher among women than among men. In Turkey, the country with the largest share of NEETS among all OECD countries (46% of 18-24 year-olds), about 40% of women are inactive NEETs compared to only 12% of men. In all these countries, the overall share of NEETs exceeds 30% and can be mainly attributed to the high share of inactive female NEETs. The share of unemployed NEETs is about 10% or less among all men and women aged 18-24 (Figure C5.2).

In Belgium, Canada, Ireland, Finland and France, where the share of NEETs ranges between 12% and 20%, a higher percentage of men than women are unemployed. For example, in France about 15% of men are not in education and unemployed, while the respective share among women is 10%. In all these countries, the shares of NEETs can be attributed more to unemployment than to inactivity (Figure C5.2).

In the Netherlands and Portugal, the differences in the shares of inactive NEETs or unemployed NEETs among 18-24 year-old women and men are negligible (less than 1 percentage point). In Portugal the share of unemployed NEETs (12%) is double the respective share of inactive NEETs (6%), while in the Netherlands most NEETs are inactive and not unemployed (Figure C5.2).

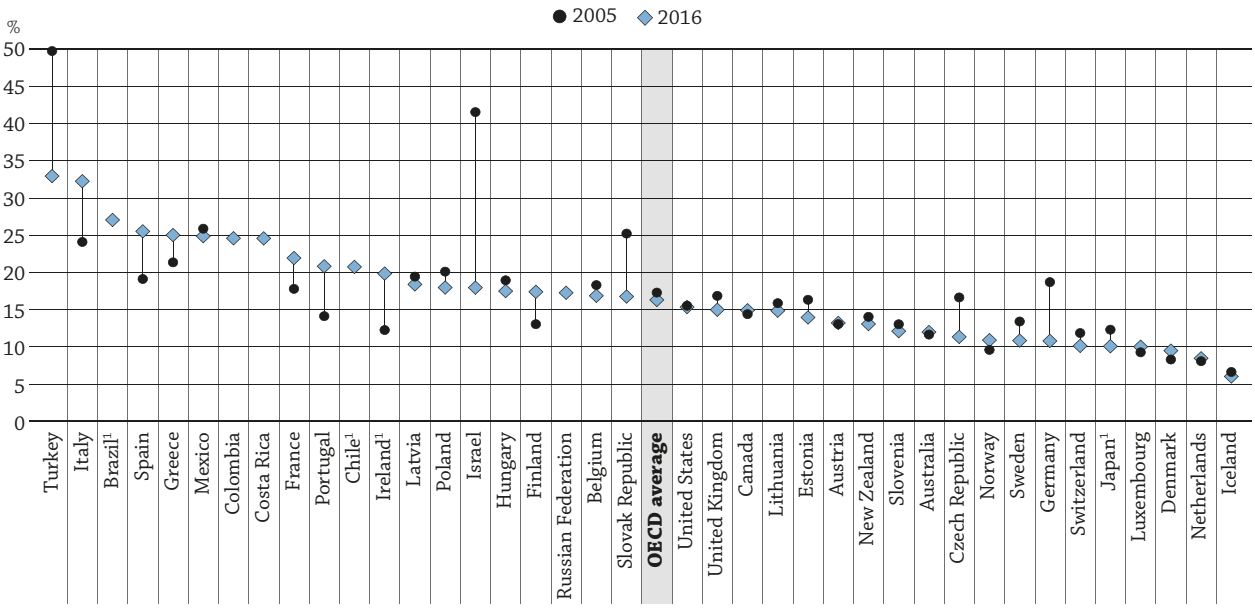
### *Trends in the transition from school to work*

Between 2005 and 2016, the share of 20-24 year-olds not in education and employed has fallen by about 5 percentage points on average across the OECD, from 43% to 39%. This reflects not only unfavourable employment prospects, but also a general trend of increased access to higher education among young adults (see Indicator C1). In Greece and Spain, the share of employed adults not in education is about 20 percentage points lower than in 2005. Some countries have not followed this general tendency though: in Belgium, Estonia, Hungary, Iceland, Israel and Poland, employment rates have increased by at least 5 percentage points among 20-24 year-olds over the past decade (Table C5.2).

Figure C5.3 shows that in many countries, the share of NEETs among 20-24 year-olds has fallen back to 2005 levels, and several countries have been able to reduce the number of NEETs considerably. In Turkey, almost one in two young adults was a NEET in 2005, but the ratio fell to one in three in 2016. The decrease was also large in Germany, where the share of NEETs has dropped by almost half over the last decade: in 2005, the share of NEETs (18.7%) was above the OECD average (17.3%), but by 2016, it fell to 10.8%, well below the OECD average (16.3%) (Figure C5.3).

In both Turkey and Germany, the reduction is due to increased access to further education among the young. In Turkey, the share of 20-24 year-olds in education has increased by 20 percentage points from 15% in 2005 to 36% in 2016. In the Czech Republic, Greece, Luxembourg, the Slovak Republic, Slovenia, Spain and Turkey the percentage of young adults still in education increased by more than 10 percentage points between 2005 and 2016 (Figure C5.2 and Table C5.2). Further education comprises different types of programmes, including short-cycle vocational training combined with practical training to equip young adults with the necessary skills needed in the labour market, and higher educational programmes.

## Figure C5.3. Trends in the percentage of 20-24 year-old NEETs (2005 and 2016)




**Note**: NEET refers to young people neither in employment nor in education or training.
1. Year of reference differs from 2016. Refer to the source table for details.
*Countries are ranked in descending order of the percentage of the 20-24 year-old NEET population in 2016.*
**Source**: OECD (2017), Tables C5.1 and C5.2. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).
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However, despite their efforts, in Ireland, Italy, Portugal and Spain the share of NEETs is still over 5 percentage points higher in 2016 than it was in 2005 before the financial crisis (Figure C5.3). These countries, affected severely by the crisis, also have many long-term NEETs (OECD, 2016a).

### *Basic skills and future labour market outcomes among 15-19 year-olds*

In most OECD countries compulsory education lasts until at least the age of 16 (see Indicator C1 and Table X1.3). As shown above, in most countries, the majority of students continue education well beyond the age of 16. Among those who have left education at an early age, many have difficulties finding employment.

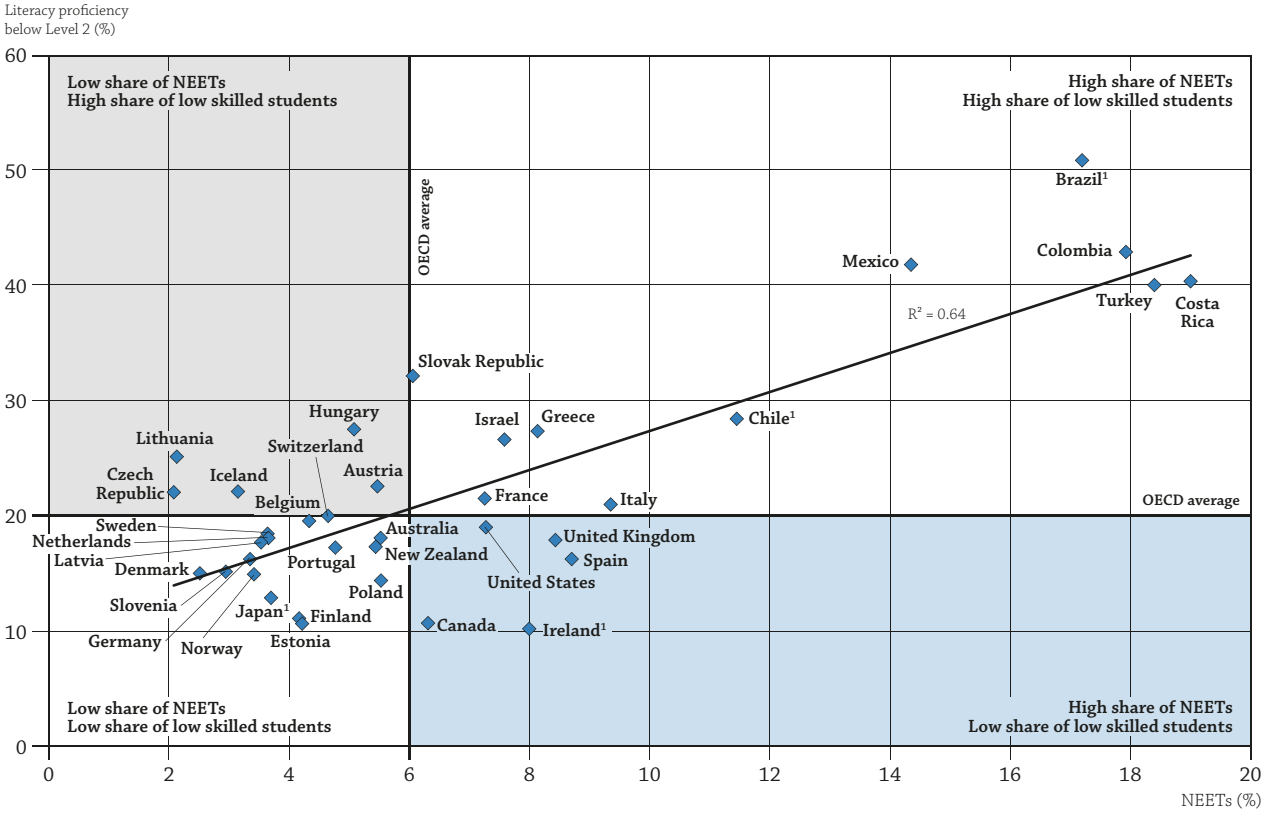
Figure C5.4 shows that the OECD average of NEETs among 15-19 year-olds is 6%. However, it is more than 10% in Brazil, Chile, Colombia, Costa Rica, Mexico and Turkey. On the other hand, the share of NEETs is lowest (less than 3%) in the Czech Republic, Denmark, Lithuania and Slovenia. Among all 15-19 year-olds not in education, about 50% are NEETs. In Greece, Italy and Spain, about three-quarters of 15-19 year-olds no longer in education are not employed (Figure C5.4 and Education at a Glance Database).

To what extent are shares of NEETs related to skills levels among young people? The OECD Programme for International Student Assessment (PISA) measures the proficiency in literacy, mathematics and science of 15-year-old students. PISA results show that in many countries a large share of students have not even reached Level 2 on the PISA scale of 6 levels. Such students lack the elementary skills required to read and understand simple texts, or to master basic mathematical and scientific concepts and procedures (OECD, 2016b).

The literature shows that low skills among 15-year-old students have a negative impact on the economy as a whole, as well as on the labour market outcomes of individuals (OECD et al., 2015). Moreover, a Canadian study has shown that 15-year-old students with a higher PISA score stay longer in education and attain higher qualifications (OECD, 2010).

Figure C5.4 shows that on average across OECD countries, 20% of 15-year-old students have low literacy skills, measured as having a literacy proficiency below Level 2. The percentage of students with low literacy skills is about 10% in Canada, Estonia and Ireland, but is at least 40% in Colombia, Costa Rica, Mexico and Turkey. The share is highest in Brazil (51%) (Figure C5.4).

## Figure C5.4. Percentage of 15-19 year-old NEETs (2016) and percentage of 15-year-old students with low literacy skills (2015)




**Note**: NEET refers to young people neither in employment nor in education or training. Low skilled students refer to 15 year-old students with below Level 2 in reading proficiency in PISA 2015.

1. Year of reference differs from 2016 for NEET rates. Refer to Table C5.1 for details.

**Source**: NEETs: OECD (2017), Education at a Glance Database. Literacy proficiency level: OECD (2016), PISA 2015 Database, Table I.4.2a. See Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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Figure C5.4 compares the share of 15-year-old students with literacy proficiency below Level 2 with the share of NEETs among 15-19 year-olds. Data suggest that there is a relationship between the share of low-skilled 15-year-old students and the percentage of NEETs among 15-19 year-olds ($R^2 = 0.64$). In general, the higher the percentage of low-performing 15-year-old students in PISA, the higher the percentage of NEETs among 15-19 year-olds. The share of NEETs is lowest in countries with a small share of young adults with literacy proficiency below Level 2, such as Estonia, Finland and Japan, and highest in countries with the highest share of low-skilled students, such as Brazil, Colombia, Costa Rica, Mexico and Turkey (Figure C5.4).

Canada, Ireland and Spain are examples of outliers in terms of this relationship: their share of NEETs is much higher than the regression relationship would suggest given their small share of low-skilled students. The Slovak Republic is an outlier on the other end, because despite having a high share of low-skilled people (32%), its share of NEETs is rather low and largely below the OECD average (Figure C5.4).

A similarly close relationship to the one described for literacy can be found when comparing the share of low-performing students in mathematics or in science with the share of NEETs ($R^2 = 0.80$ and $R^2 = 0.71$ respectively).

### *Subnational variations in the transition from school to work*

On average across OECD countries, 48% of young adults aged 15-29 are enrolled in education, irrespective of labour market status (i.e. young adults employed or not). However, the percentage varies within and across countries.

In 7 out of the 14 OECD and partner countries that reported subnational data on the transition from school to work, the share of NEETs is over twice as large in the subnational region with the highest share of NEETs as in the subnational region with the lowest share of NEETs. The ratio between the highest and lowest shares within a country is 3 in Canada: the distribution is skewed by one region with a small population but a very high rate of NEETs (OECD/NCES, 2017).

In 11 of the 14 countries reporting subnational data on transition from school to work, the share of NEETs in the capital city region is lower than the country average. In contrast, in Belgium, Germany and the United Kingdom, the share of NEETs is higher in the region including the capital city compared to the country average (OECD/NCES, 2017).

## Definitions

**Educational attainment** refers to the highest level of education reached by a person.

**Employed, inactive and unemployed individuals:** See *Definitions* section in Indicator A5.

**Individuals in education** are those who had received formal education and/or training in the regular educational system in the four weeks prior to the survey.

**Levels of education:** See the *Reader's Guide* at the beginning of this publication for a presentation of all ISCED 2011 levels.

**NEET:** Neither employed nor in education or training.

**Work-study programmes** are formal education/training programmes combining interrelated study and work periods for which the student/trainee receives earnings.

## Methodology

Data usually refer to the second quarter of the studies, as this is the most relevant period for knowing if the young person is really studying or has left the education for the labour force. This second quarter corresponds in most countries to the first three months of the calendar year, but in some countries to the spring quarter (i.e. March, April and May).

Education or training corresponds to formal education, therefore someone not working but following non-formal studies is considered a NEET.

For information on the methodology for subnational entities, see Indicator A1.

Please see the *OECD Handbook for Internationally Comparative Education Statistics: Concepts, Standards, Definitions and Classifications* (OECD, 2017) for more information and Annex 3 for country-specific notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

## Source

For information on the sources, see Indicator A1.

Data on subnational regions for selected indicators have been released by the OECD, with the support from the US National Centre for Education Statistics (NCES), and are currently available for 14 countries: Belgium, Brazil, Canada, Finland, Germany, Greece, Ireland, Poland, Slovenia, Spain, Sweden, Turkey, the United Kingdom and the United States. Subnational estimates were provided by countries using national data sources or by Eurostat based on data for Level 2 of the Nomenclature of Territorial Units for Statistics (NUTS 2) with the exception of the United Kingdom using data based on NUTS 1.

**Note regarding data from Israel**

The statistical data for Israel are supplied by and are under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

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## Indicator C5 Tables

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| | |
|---|---|
| **Table C5.1** | **Percentage of 18-24 year-olds in education/not in education, by work status (2016)** |
| **Table C5.2** | **Trends in the percentage of young adults in education/not in education, employed or not, by age (2000, 2005, 2010, 2015 and 2016)** |

Cut-off date for the data: 19 July 2017. Any updates on data can be found on line at http://dx.doi.org/10.1787/eag-data-en. More breakdowns can also be found at http://stats.oecd.org/, Education at a Glance Database.

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## Table C5.1. Percentage of 18-24 year-olds in education/not in education, by work status (2016)

| | | In education | | | | | | Not in education | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Employed | | | | | | | NEET | | | | |
| | | Students in work-study programmes | Other employed | Total employed | Unemployed | Inactive | Total in education | Employed | Unemployed | Inactive | Total NEET | Total not in education | Total in education/not in education |
| | | (1) | (2) | (3)=(1)+(2) | (4) | (5) | (6)=(3)+(4)+(5) | (7) | (8) | (9) | (10)=(8)+(9) | (11)=(7)+(10) | (12)=(6)+(11) |
| OECD | Australia | 5.9 | 26.8 | 32.8 | 3.4 | 16.3 | 52.5 | 36.6 | 4.5 | 6.4 | 10.9 | 47.5 | 100 |
| | Austria | 7.7 | 12.0 | 19.8 | 1.5 | 26.9 | 48.2 | 39.8 | 6.3 | 5.7 | 12.1 | 51.8 | 100 |
| | Belgium | c | 3.6 | 4.0 | c | 55.0 | 59.8 | 27.8 | 7.0 | 5.3 | 12.4 | 40.2 | 100 |
| | Canada | x(2) | 21.8 | 21.8 | 2.3 | 23.9 | 48.0 | 38.2 | 6.1 | 7.7 | 13.8 | 52.0 | 100 |
| | Chile[1] | x(2) | 9.3 | 9.3 | 2.8 | 38.2 | 50.3 | 28.6 | 6.0 | 15.1 | 21.1 | 49.7 | 100 |
| | Czech Republic | m | m | m | m | m | m | m | m | m | m | m | m |
| | Denmark | x(2) | 37.8 | 37.8 | 4.1 | 25.0 | 66.8 | 24.8 | 2.7 | 5.7 | 8.4 | 33.2 | 100 |
| | Estonia | c | 15.9 | 15.9 | 2.0 | 35.8 | 53.8 | 34.3 | 4.9 | 7.0 | 12.0 | 46.2 | 100 |
| | Finland | x(2) | 18.9 | 18.9 | 4.7 | 30.7 | 54.4 | 29.3 | 7.8 | 8.5 | 16.3 | 45.6 | 100 |
| | France | 5.8 | 5.2 | 11.0 | 1.0 | 41.0 | 53.0 | 27.2 | 12.2 | 7.6 | 19.8 | 47.0 | 100 |
| | Germany | 15.8 | 13.6 | 29.4 | 0.9 | 31.1 | 61.4 | 28.6 | 3.7 | 6.3 | 10.0 | 38.6 | 100 |
| | Greece | a | 3.1 | 3.1 | 2.5 | 56.7 | 62.3 | 14.2 | 15.4 | 8.2 | 23.5 | 37.7 | 100 |
| | Hungary | a | 2.4 | 2.4 | 0.2 | 47.6 | 50.2 | 34.3 | 5.8 | 9.7 | 15.5 | 49.8 | 100 |
| | Iceland | a | 37.4 | 37.4 | 2.6 | 10.6 | 50.7 | 44.1 | 1.9 | 3.4 | 5.2 | 49.3 | 100 |
| | Ireland[1] | a | 12.0 | 12.0 | 1.0 | 40.4 | 53.4 | 28.4 | 9.9 | 8.3 | 18.2 | 46.6 | 100 |
| | Israel | x(2) | 12.3 | 12.3 | 1.0 | 17.7 | 30.9 | 51.7 | 4.0 | 13.4 | 17.4 | 69.1 | 100 |
| | Italy | a | 2.0 | 2.0 | 0.7 | 49.9 | 52.6 | 19.3 | 13.6 | 14.4 | 28.0 | 47.4 | 100 |
| | Japan | m | m | m | m | m | m | m | m | m | m | m | m |
| | Korea | m | m | m | m | m | m | m | m | m | m | m | m |
| | Latvia | a | 11.7 | 11.7 | 1.3 | 35.9 | 48.9 | 35.2 | 7.2 | 8.8 | 16.0 | 51.1 | 100 |
| | Luxembourg | a | 11.2 | 11.2 | c | 53.4 | 66.7 | 24.5 | 5.0 | 3.8 | 8.8 | 33.3 | 100 |
| | Mexico | a | 9.1 | 9.1 | 0.7 | 26.3 | 36.1 | 40.7 | 3.8 | 19.4 | 23.2 | 63.9 | 100 |
| | Netherlands | x(2) | 38.9 | 38.9 | 3.9 | 21.8 | 64.6 | 27.6 | 2.7 | 5.1 | 7.8 | 35.4 | 100 |
| | New Zealand | a | 23.7 | 23.7 | 2.1 | 19.2 | 45.0 | 42.4 | 5.3 | 7.2 | 12.6 | 55.0 | 100 |
| | Norway | 0.8 | 19.3 | 20.2 | 3.2 | 26.1 | 49.4 | 40.9 | 3.2 | 6.5 | 9.7 | 50.6 | 100 |
| | Poland | a | 10.4 | 10.4 | 1.3 | 32.4 | 44.0 | 38.0 | 8.1 | 9.9 | 18.0 | 56.0 | 100 |
| | Portugal | a | 4.8 | 4.8 | 2.7 | 46.1 | 53.6 | 28.2 | 12.0 | 6.2 | 18.2 | 46.4 | 100 |
| | Slovak Republic | c | 2.1 | 2.2 | 0.4 | 52.3 | 54.9 | 29.8 | 9.7 | 5.6 | 15.3 | 45.1 | 100 |
| | Slovenia | x(2) | 16.7 | 16.7 | 1.7 | 53.1 | 71.5 | 17.9 | 6.2 | 4.5 | 10.6 | 28.5 | 100 |
| | Spain | x(2) | 5.9 | 5.9 | 5.4 | 47.0 | 58.4 | 18.4 | 15.3 | 7.9 | 23.2 | 41.6 | 100 |
| | Sweden | a | 15.9 | 15.9 | 7.2 | 30.0 | 53.1 | 36.9 | 5.0 | 5.0 | 10.0 | 46.9 | 100 |
| | Switzerland | 19.1 | 16.5 | 35.7 | 1.7 | 17.6 | 55.0 | 35.6 | 4.7 | 4.7 | 9.4 | 45.0 | 100 |
| | Turkey | a | 13.6 | 13.6 | 3.1 | 22.8 | 39.5 | 27.5 | 7.0 | 26.0 | 33.0 | 60.5 | 100 |
| | United Kingdom | 4.8 | 14.0 | 18.8 | 2.3 | 21.8 | 42.8 | 42.7 | 6.0 | 8.5 | 14.5 | 57.2 | 100 |
| | United States | x(2) | 19.9 | 19.9 | 1.4 | 26.2 | 47.4 | 37.9 | 4.6 | 10.1 | 14.7 | 52.6 | 100 |
| | OECD average | m | 14.6 | 16.5 | 2.3 | 33.7 | 52.5 | 32.2 | 6.8 | 8.5 | 15.3 | 47.5 | 100 |
| | EU22 average | m | 12.3 | 13.9 | 2.4 | 39.7 | 55.9 | 28.9 | 7.9 | 7.2 | 15.2 | 44.1 | 100 |
| Partners | Argentina | m | m | m | m | m | m | m | m | m | m | m | m |
| | Brazil | a | m | m | m | m | m | m | m | m | m | m | m |
| | China | m | m | m | m | m | m | m | m | m | m | m | m |
| | Colombia | a | 12.0 | 12.0 | 3.3 | 16.4 | 31.6 | 43.7 | 9.6 | 15.0 | 24.7 | 68.4 | 100 |
| | Costa Rica | a | 13.6 | 13.6 | 3.4 | 27.1 | 44.1 | 31.2 | 9.4 | 15.3 | 24.7 | 55.9 | 100 |
| | India | m | m | m | m | m | m | m | m | m | m | m | m |
| | Indonesia | m | m | m | m | m | m | m | m | m | m | m | m |
| | Lithuania | a | 12.2 | 12.2 | 0.8 | 47.7 | 60.7 | 27.2 | 5.8 | 6.3 | 12.1 | 39.3 | 100 |
| | Russian Federation | m | c | c | c | 41.2 | 44.1 | 39.9 | 6.9 | 9.1 | 16.0 | 55.9 | 100 |
| | Saudi Arabia | m | m | m | m | m | m | m | m | m | m | m | m |
| | South Africa | m | m | m | m | m | m | m | m | m | m | m | m |
| | G20 average | m | m | m | m | m | m | m | m | m | m | m | m |

**Note:** NEET refers to young people neither in employment nor in education or training. See *Definitions* and *Methodology* sections for more information. Data and more breakdowns available at http://stats.oecd.org/, Education at a Glance Database.

1. Year of reference 2015.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

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## Table C5.2. [1/2] Trends in the percentage of young adults in education/not in education, employed or not, by age (2000, 2005, 2010, 2015 and 2016)

| | | 20-24 year-olds | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2000 | | | 2005 | | | 2010 | | | 2015 | | | 2016 | | |
| | | In education | Not in education | | In education | Not in education | | In education | Not in education | | In education | Not in education | | In education | Not in education | |
| | | | Employed | NEET | | Employed | NEET | | Employed | NEET | | Employed | NEET | | Employed | NEET |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) |
| OECD | Australia | 35.9[b] | 50.9[b] | 13.3[b] | 39.4[b] | 49.0[b] | 11.6[b] | 41.5[b] | 47.3[b] | 11.2[b] | 44.5 | 42.4 | 13.1 | 46.1 | 41.9 | 12.0 |
| | Austria | m | m | m | 31.3 | 55.6 | 13.1 | 34.6 | 52.0 | 13.4 | 41.4 | 46.9 | 11.7 | 39.0 | 47.8 | 13.2 |
| | Belgium | 43.8[b] | 40.2[b] | 16.0[b] | 38.1[b] | 43.6[b] | 18.3[b] | 43.0[b] | 38.9[b] | 18.0[b] | 45.3 | 38.9 | 15.8 | 28.9 | 54.2 | 16.9 |
| | Canada | 35.7 | 48.5 | 15.8 | 39.3 | 46.4 | 14.4 | 39.4 | 45.1 | 15.6 | 41.6 | 44.0 | 14.4 | 41.3 | 43.8 | 14.9 |
| | Chile[1] | m | m | m | m | m | m | 36.1[b] | 36.5[b] | 27.5[b] | 44.7 | 34.6 | 20.7 | m | m | m |
| | Czech Republic | 19.7[b] | 60.0[b] | 20.3[b] | 35.9[b] | 47.5[b] | 16.6[b] | 48.4[b] | 38.1[b] | 13.6[b] | 47.9 | 40.5 | 11.6 | 47.6 | 41.0 | 11.3 |
| | Denmark | 54.8[b] | 38.6[b] | 6.6[b] | 54.4[b] | 37.2[b] | 8.3[b] | 53.4[b] | 34.5[b] | 12.1[b] | 59.1 | 28.5 | 12.4 | 61.5 | 29.0 | 9.5 |
| | Estonia | m | m | m | 50.9 | 32.7 | 16.3 | 50.2 | 27.3 | 22.4 | 43.6 | 41.4 | 15.0 | 43.7 | 42.4 | 13.9 |
| | Finland | m | m | m | 52.8[b] | 34.1[b] | 13.0[b] | 52.0[b] | 32.2[b] | 15.8[b] | 47.8 | 33.9 | 18.3 | 47.8 | 34.8 | 17.4 |
| | France | 39.4 | 43.0 | 17.6 | 42.5 | 39.7 | 17.8 | 40.4 | 38.9 | 20.6 | 44.4 | 34.7 | 20.9 | 42.7 | 35.4 | 21.9 |
| | Germany | 34.1[b] | 49.0[b] | 16.9[b] | 44.2[b] | 37.1[b] | 18.7[b] | 47.5[b] | 38.8[b] | 13.7[b] | 54.4 | 36.3 | 9.3 | 53.5 | 35.7 | 10.8 |
| | Greece | 30.7[b] | 43.4[b] | 25.9[b] | 40.9[b] | 37.7[b] | 21.3[b] | 47.6[b] | 31.3[b] | 21.1[b] | 52.3 | 19.6 | 28.1 | 56.9 | 18.1 | 25.0 |
| | Hungary | 32.3 | 45.7 | 22.0 | 46.6 | 34.5 | 18.9 | 48.1 | 30.4 | 21.5 | 42.2 | 39.4 | 18.4 | 40.1 | 42.4 | 17.5 |
| | Iceland | m | m | m | 51.7 | 41.7 | 6.6 | 50.2 | 37.7 | 12.2 | 50.6 | 42.8 | 6.6 | 44.9 | 49.1 | 6.0 |
| | Ireland | 26.7[b] | 63.6[b] | 9.7[b] | 27.7[b] | 60.0[b] | 12.3[b] | 36.9[b] | 37.0[b] | 26.1[b] | 43.9 | 36.3 | 19.8 | m | m | m |
| | Israel | m | m | m | 26.6[b] | 31.9[b] | 41.5[b] | 29.8[b] | 32.8[b] | 37.4[b] | 28.1 | 53.4 | 18.6 | 30.3 | 51.8 | 17.9 |
| | Italy | 36.0[b] | 36.5[b] | 27.5[b] | 38.6[b] | 37.3[b] | 24.1[b] | 40.8[b] | 32.1[b] | 27.1[b] | 43.3 | 22.9 | 33.9 | 42.9 | 24.8 | 32.2 |
| | Japan[2] | m | m | m | 31.9[b] | 55.8[b] | 12.3[b] | 34.6[b] | 53.1[b] | 12.4[b] | 36.0 | 53.9 | 10.1 | m | m | m |
| | Korea | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Latvia | m | m | m | 40.3 | 40.3 | 19.4 | 40.0 | 29.6 | 30.4 | 43.1 | 43.7 | 13.3 | 38.2 | 43.4 | 18.4 |
| | Luxembourg | 42.8[b] | 48.9[b] | 8.2[b] | 47.4[b] | 43.3[b] | 9.3[b] | 63.1[b] | 29.4[b] | 7.5[b] | 57.2 | 33.4 | 9.3 | 60.9 | 29.1 | 10.0 |
| | Mexico | 17.7[b] | 55.2[b] | 27.1[b] | 25.0 | 49.1 | 25.9 | 25.6 | 48.3 | 26.1 | 28.4 | 46.3 | 25.3 | 28.9 | 46.2 | 24.9 |
| | Netherlands[3] | 50.7[b] | 42.5[b] | 6.7[b] | 48.8[b] | 43.1[b] | 8.1[b] | 55.3[b] | 37.3[b] | 7.4[b] | 57.7 | 33.5 | 8.8 | 57.6 | 34.0 | 8.5 |
| | New Zealand | m | m | m | 39.2 | 46.7 | 14.0 | 38.9 | 43.3 | 17.8 | 38.3 | 46.8 | 14.9 | 40.2 | 46.7 | 13.1 |
| | Norway | 41.7 | 50.3 | 8.0 | 41.5 | 48.9 | 9.6 | 42.2 | 48.8 | 9.0 | 42.1 | 47.7 | 10.2 | 44.0 | 45.1 | 10.9 |
| | Poland | 34.9[b] | 34.3[b] | 30.8[b] | 62.7[b] | 17.2[b] | 20.1[b] | 52.9[b] | 29.5[b] | 17.6[b] | 46.8 | 34.7 | 18.5 | 44.0 | 38.0 | 18.0 |
| | Portugal | 36.5 | 52.6 | 11.0 | 37.4 | 48.4 | 14.1 | 39.6 | 44.1 | 16.4 | 45.5 | 33.6 | 20.9 | 43.3 | 35.9 | 20.8 |
| | Slovak Republic | 18.1[b] | 48.8[b] | 33.1[b] | 31.0[b] | 43.8[b] | 25.2[b] | 44.8[b] | 33.0[b] | 22.1[b] | 44.2 | 37.0 | 18.8 | 45.7 | 37.6 | 16.8 |
| | Slovenia | m | m | m | 55.7[b] | 31.3[b] | 13.0[b] | 65.3[b] | 25.5[b] | 9.3[b] | 58.5 | 24.3 | 17.2 | 66.2 | 21.7 | 12.1 |
| | Spain | 44.9[b] | 39.9[b] | 15.2[b] | 35.2[b] | 45.7[b] | 19.1[b] | 39.7[b] | 33.3[b] | 27.0[b] | 50.2 | 22.6 | 27.2 | 51.0 | 23.5 | 25.5 |
| | Sweden | 42.1[b] | 47.2[b] | 10.7[b] | 42.5[b] | 44.1[b] | 13.4[b] | 46.0[b] | 39.8[b] | 14.2[b] | 46.0 | 42.2 | 11.8 | 46.1 | 43.0 | 10.8 |
| | Switzerland | 37.4[b] | 56.7[b] | 5.9[b] | 37.9[b] | 50.3[b] | 11.9[b] | 44.3[b] | 44.6[b] | 11.0[b] | 46.8 | 41.0 | 12.2 | 45.3 | 44.6 | 10.1 |
| | Turkey | 12.7 | 43.1 | 44.2 | 15.4 | 34.9 | 49.7 | 25.2 | 31.1 | 43.7 | 34.7 | 32.0 | 33.2 | 35.6 | 31.5 | 32.9 |
| | United Kingdom | 32.4[b] | 52.2[b] | 15.4[b] | 32.1[b] | 51.0[b] | 16.8[b] | 33.7[b] | 46.9[b] | 19.3[b] | 33.8 | 50.5 | 15.6 | 33.3 | 51.7 | 15.0 |
| | United States | 32.5 | 53.1 | 14.4 | 36.1 | 48.4 | 15.5 | 38.6 | 42.0 | 19.4 | 38.5 | 45.7 | 15.8 | 39.0 | 45.6 | 15.3 |
| | OECD average | 34.7 | 47.7 | 17.6 | 40.0 | 42.7 | 17.3 | 43.2 | 38.0 | 18.8 | 44.8 | 38.4 | 16.8 | 44.7 | 39.0 | 16.2 |
| | EU22 average | 36.5 | 46.3 | 17.3 | 42.6 | 41.2 | 16.2 | 46.5 | 35.4 | 18.0 | 47.7 | 35.2 | 17.1 | 47.2 | 36.3 | 16.5 |
| Partners | Argentina | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Brazil[1] | m | m | m | m | m | m | 23.9 | 52.8 | 23.3 | 24.9 | 48.1 | 27.0 | m | m | m |
| | China | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Colombia | m | m | m | m | m | m | m | m | m | 25.6 | 49.6 | 24.8 | 26.2 | 49.2 | 24.6 |
| | Costa Rica | m | m | m | m | m | m | m | m | m | 41.5 | 36.0 | 22.5 | 39.0 | 36.4 | 24.6 |
| | India | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Indonesia | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Lithuania | m | m | m | 51.4[b] | 32.7[b] | 15.9[b] | 53.9[b] | 22.0[b] | 24.0[b] | 49.9 | 33.6 | 16.5 | 50.3 | 34.9 | 14.9 |
| | Russian Federation | m | m | m | m | m | m | m | m | m | 35.1 | 48.3 | 16.7 | 34.5 | 48.2 | 17.3 |
| | Saudi Arabia | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | South Africa | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | G20 average | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |

**Note:** NEET refers to young people neither in employment nor in education or training. See *Definitions* and *Methodology* sections for more information. Data and more breakdowns available at http://stats.oecd.org/, Education at a Glance Database.

1. Year of reference 2009 instead of 2010.
2. Year of reference 2014 instead of 2015.
3. Year of reference 1999 instead of 2000.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933561175

C5

## Table C5.2. [2/2] Trends in the percentage of young adults in education/not in education, employed or not, by age (2000, 2005, 2010, 2015 and 2016)

| | | 15-29 year-olds | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2000 | | | 2005 | | | 2010 | | | 2015 | | | 2016 | | |
| | | | Not in education | | | Not in education | | | Not in education | | | Not in education | | | Not in education | |
| | | In education | Employed | NEET | In education | Employed | NEET | In education | Employed | NEET | In education | Employed | NEET | In education | Employed | NEET |
| | | (16) | (17) | (18) | (19) | (20) | (21) | (22) | (23) | (24) | (25) | (26) | (27) | (28) | (29) | (30) |
| OECD | Australia | 42.8[b] | 44.0[b] | 13.2[b] | 45.0[b] | 43.5[b] | 11.4[b] | 45.6[b] | 42.6[b] | 11.8[b] | 47.4 | 40.8 | 11.8 | 48.2 | 40.4 | 11.4 |
| | Austria | m | m | m | 42.0 | 46.6 | 11.4 | 44.9 | 43.4 | 11.7 | 47.3 | 42.3 | 10.4 | 45.8 | 43.3 | 10.9 |
| | Belgium | 46.9[b] | 40.2[b] | 12.9[b] | 44.4[b] | 41.4[b] | 14.2[b] | 46.8[b] | 39.0[b] | 14.2[b] | 47.2 | 39.0 | 13.8 | 48.8 | 38.2 | 13.0 |
| | Canada | 42.4 | 43.9 | 13.7 | 44.1 | 43.6 | 12.3 | 44.1 | 42.3 | 13.6 | 44.0 | 42.8 | 13.2 | 43.3 | 43.5 | 13.2 |
| | Chile[1] | m | m | m | m | m | m | 44.4[b] | 32.0[b] | 23.6[b] | 48.5 | 33.5 | 18.0 | m | m | m |
| | Czech Republic | 31.7[b] | 49.7[b] | 18.5[b] | 39.5[b] | 44.6[b] | 15.9[b] | 48.1[b] | 38.7[b] | 13.2[b] | 45.4 | 42.3 | 12.2 | 45.4 | 43.0 | 11.6 |
| | Denmark | 57.7[b] | 36.5[b] | 5.8[b] | 55.5[b] | 36.3[b] | 8.2[b] | 57.2[b] | 32.3[b] | 10.5[b] | 60.5 | 29.0 | 10.5 | 62.1 | 29.7 | 8.2 |
| | Estonia | m | m | m | 54.0 | 31.3 | 14.8 | 48.7 | 32.2 | 19.1 | 46.3 | 40.9 | 12.8 | 44.2 | 41.2 | 14.5 |
| | Finland | m | m | m | 55.4[b] | 33.7[b] | 10.9[b] | 56.0[b] | 31.3[b] | 12.6[b] | 53.2 | 32.5 | 14.3 | 53.4 | 33.3 | 13.2 |
| | France | 44.1 | 40.9 | 15.0 | 46.8 | 38.7 | 14.5 | 44.0 | 39.4 | 16.6 | 47.5 | 35.3 | 17.2 | 47.5 | 35.3 | 17.2 |
| | Germany | 44.9[b] | 41.8[b] | 13.3[b] | 52.2[b] | 33.1[b] | 14.7[b] | 51.3[b] | 36.7[b] | 12.0[b] | 53.8 | 37.7 | 8.6 | 52.5 | 37.9 | 9.6 |
| | Greece | 39.0[b] | 39.4[b] | 21.5[b] | 39.5[b] | 40.9[b] | 19.5[b] | 44.8[b] | 37.2[b] | 18.1[b] | 49.3 | 24.6 | 26.1 | 51.8 | 24.6 | 23.5 |
| | Hungary | 40.7 | 39.1 | 20.2 | 46.3 | 36.5 | 17.2 | 48.3 | 32.8 | 18.9 | 44.1 | 40.0 | 15.9 | 43.0 | 41.8 | 15.2 |
| | Iceland | m | m | m | 50.6 | 44.0 | 5.5 | 50.8 | 37.8 | 11.4 | 52.4 | 41.4 | 6.2 | 45.7 | 49.0 | 5.3 |
| | Ireland | 37.9[b] | 53.2[b] | 9.0[b] | 36.2[b] | 53.4[b] | 10.5[b] | 41.1[b] | 38.1[b] | 20.8[b] | 48.7 | 35.1 | 16.2 | m | m | m |
| | Israel | m | m | m | 37.9[b] | 31.3[b] | 30.8[b] | 42.6[b] | 29.6[b] | 27.8[b] | 43.5 | 42.5 | 14.1 | 44.5 | 41.8 | 13.8 |
| | Italy | 39.9[b] | 36.8[b] | 23.3[b] | 41.5[b] | 37.5[b] | 21.1[b] | 45.3[b] | 31.7[b] | 23.0[b] | 47.1 | 25.5 | 27.4 | 47.6 | 26.4 | 26.0 |
| | Japan[2] | m | m | m | 38.8[b] | 48.8[b] | 12.4[b] | 41.1[b] | 47.0[b] | 12.0[b] | 42.9 | 47.2 | 9.8 | m | m | m |
| | Korea | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Latvia | m | m | m | 49.5 | 33.2 | 17.2 | 45.9 | 31.3 | 22.8 | 40.7 | 46.4 | 13.0 | 41.3 | 44.2 | 14.4 |
| | Luxembourg | 45.3[b] | 46.6[b] | 8.1[b] | 48.5[b] | 44.2[b] | 7.3[b] | 54.7[b] | 38.1[b] | 7.1[b] | 52.7 | 38.8 | 8.4 | 54.7 | 37.7 | 7.6 |
| | Mexico | 25.4[b] | 50.0[b] | 24.6[b] | 33.1 | 43.2 | 23.7 | 34.1 | 42.2 | 23.7 | 37.0 | 41.1 | 21.9 | 37.1 | 41.1 | 21.8 |
| | Netherlands[3] | 51.8[b] | 41.4[b] | 6.8[b] | 52.4[b] | 40.4[b] | 7.3[b] | 55.4[b] | 37.9[b] | 6.8[b] | 55.9 | 35.9 | 8.3 | 55.8 | 36.4 | 7.8 |
| | New Zealand | m | m | m | 46.3 | 41.7 | 12.0 | 46.1 | 38.6 | 15.3 | 44.4 | 42.3 | 13.3 | 46.2 | 42.5 | 11.3 |
| | Norway | 48.4 | 44.6 | 7.0 | 48.6 | 43.4 | 8.1 | 46.2 | 45.4 | 8.4 | 45.6 | 45.3 | 9.2 | 45.4 | 45.2 | 9.4 |
| | Poland | 43.8[b] | 34.1[b] | 22.1[b] | 55.7[b] | 26.0[b] | 18.4[b] | 50.2[b] | 34.8[b] | 15.0[b] | 45.0 | 39.3 | 15.6 | 43.3 | 41.7 | 15.1 |
| | Portugal | 38.2 | 51.2 | 10.5 | 38.9 | 48.2 | 12.9 | 43.1 | 43.5 | 13.5 | 49.8 | 34.9 | 15.3 | 49.3 | 35.1 | 15.6 |
| | Slovak Republic | 29.3[b] | 40.3[b] | 30.4[b] | 41.1[b] | 38.3[b] | 20.5[b] | 45.9[b] | 35.2[b] | 18.8[b] | 42.7 | 40.1 | 17.2 | 43.2 | 40.9 | 15.9 |
| | Slovenia | m | m | m | 55.5[b] | 34.4[b] | 10.1[b] | 60.6[b] | 30.7[b] | 8.8[b] | 54.3 | 31.1 | 14.6 | 58.0 | 30.5 | 11.6 |
| | Spain | 44.4[b] | 39.9[b] | 15.6[b] | 35.9[b] | 46.9[b] | 17.1[b] | 39.7[b] | 36.6[b] | 23.6[b] | 49.7 | 27.5 | 22.8 | 50.5 | 27.8 | 21.7 |
| | Sweden | 50.2[b] | 41.9[b] | 7.9[b] | 52.9[b] | 38.0[b] | 9.2[b] | 54.5[b] | 35.2[b] | 10.3[b] | 51.1 | 39.8 | 9.1 | 50.2 | 41.6 | 8.2 |
| | Switzerland | 45.1[b] | 46.6[b] | 8.3[b] | 44.4[b] | 45.2[b] | 10.4[b] | 48.5[b] | 41.7[b] | 9.8[b] | 49.0 | 42.5 | 8.5 | 48.9 | 42.4 | 8.7 |
| | Turkey | 18.5 | 43.7 | 37.8 | 22.4 | 34.0 | 43.6 | 31.4 | 32.0 | 36.6 | 40.6 | 30.6 | 28.8 | 41.2 | 30.6 | 28.2 |
| | United Kingdom | 40.0[b] | 46.6[b] | 13.3[b] | 41.2[b] | 44.6[b] | 14.2[b] | 42.1[b] | 42.0[b] | 15.9[b] | 41.0 | 45.2 | 13.7 | 40.2 | 46.6 | 13.2 |
| | United States | 43.1 | 44.6 | 12.2 | 45.2 | 41.7 | 13.1 | 46.1 | 37.8 | 16.1 | 44.9 | 40.8 | 14.4 | 44.8 | 41.1 | 14.1 |
| | OECD average | 41.3 | 43.2 | 15.5 | 44.9 | 40.3 | 14.9 | 46.7 | 37.3 | 16.0 | 47.5 | 38.0 | 14.5 | 47.6 | 38.5 | 13.9 |
| | EU22 average | 42.7 | 42.3 | 15.0 | 46.6 | 39.5 | 14.0 | 48.6 | 36.3 | 15.2 | 48.8 | 36.5 | 14.7 | 49.0 | 37.0 | 14.0 |
| Partners | Argentina | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Brazil[1] | m | m | m | m | m | m | 35.6 | 44.9 | 19.6 | 36.6 | 40.9 | 22.5 | m | m | m |
| | China | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Colombia | m | m | m | m | m | m | m | m | m | 35.7 | 43.3 | 21.0 | 35.7 | 43.1 | 21.2 |
| | Costa Rica | m | m | m | m | m | m | m | m | m | 47.3 | 32.6 | 20.1 | 44.9 | 33.0 | 22.1 |
| | India | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Indonesia | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Lithuania | m | m | m | 56.0[b] | 32.6[b] | 11.4[b] | 55.5[b] | 26.5[b] | 18.0[b] | 48.9 | 37.3 | 13.7 | 52.0 | 36.6 | 11.4 |
| | Russian Federation | m | m | m | m | m | m | m | m | m | 33.6 | 52.3 | 14.0 | 32.9 | 53.0 | 14.1 |
| | Saudi Arabia | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | South Africa | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | G20 average | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |

**Note:** NEET refers to young people neither in employment nor in education or training. See *Definitions* and *Methodology* sections for more information. Data and more breakdowns available at http://stats.oecd.org/, Education at a Glance Database.

1. Year of reference 2009 instead of 2010.
2. Year of reference 2014 instead of 2015.
3. Year of reference 1999 instead of 2000.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

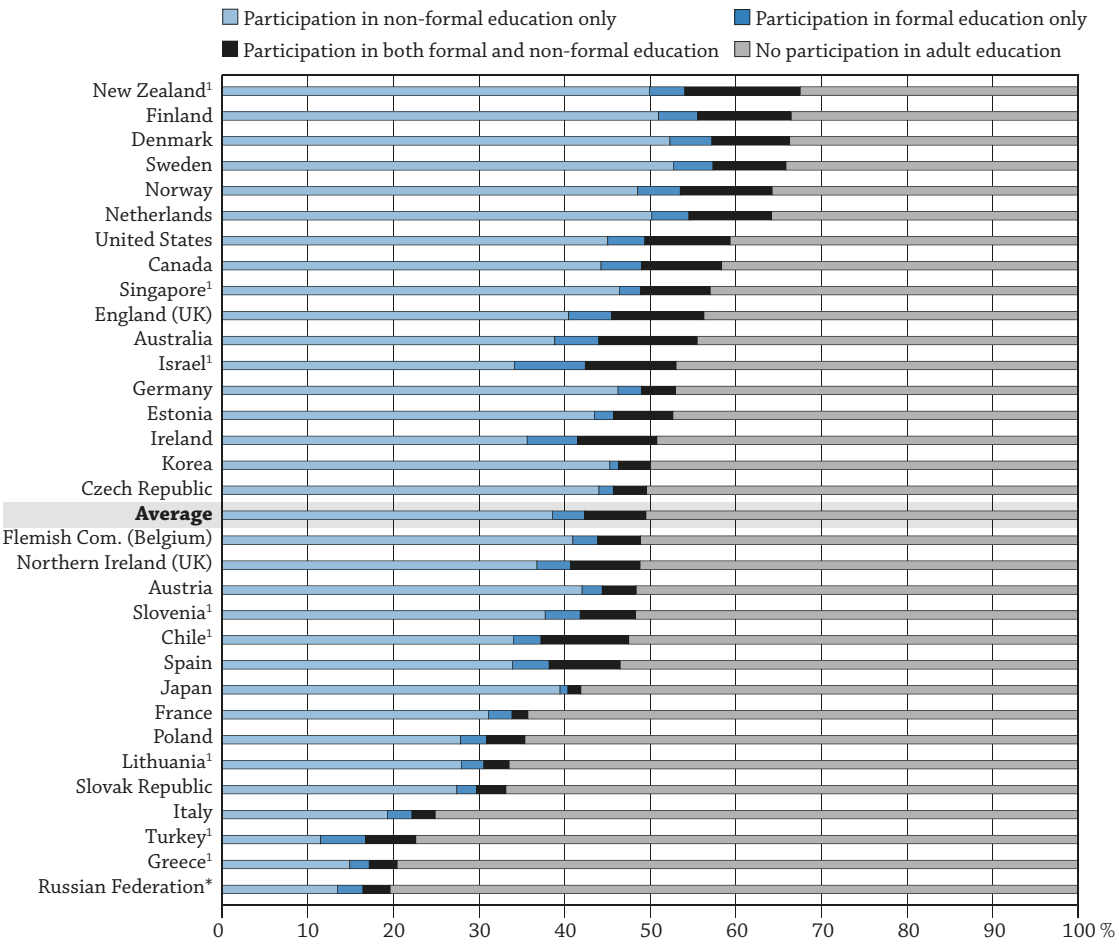
StatLink http://dx.doi.org/10.1787/888933561175

## HOW MANY ADULTS PARTICIPATE IN EDUCATION AND LEARNING?

- Across OECD countries and economies that participated in the Survey of Adult Skills (PIAAC), about half of adults (25-64 year-olds) participate in adult education and most of them opt for non-formal education.
- On average across OECD countries and economies, 35-64 year-olds who live in households with young children are more likely to participate in adult education than those who do not. Among younger adults (25-34 years of age) the pattern reverses: 51% of those living with young children participate compared to 67% of those who do not.
- In the majority of OECD countries and economies, adults who volunteer at least once a month participate more in formal and/or non-formal education than adults who do not volunteer. In countries with a low overall participation rate in adult education, volunteers tend to participate more than non-volunteers, while this is less evident in countries with a high overall participation rate.

### Figure C6.1. Adults' participation in formal and/or non-formal education, by type (2012 or 2015)

*Survey of Adult Skills (PIAAC), 25-64 year-olds*




1. Reference year is 2015; for all other countries and economies the reference year is 2012.

* See note on data for the Russian Federation in the *Source* section.

*Countries and economies are ranked in descending order of the share of the population participating in formal and/or non-formal education.*

**Source**: OECD (2017), Table C6.1a. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933558515

## Context

Adult learning can play an important role in helping adults to develop and maintain key information-processing skills, and acquire other knowledge and skills, throughout their lives. It is crucial to provide, and ensure access to, organised learning opportunities for adults beyond initial formal education, especially for workers who need to adapt to changes throughout their careers (OECD, 2013).

Lifelong learning can also contribute to non-economic goals, such as personal fulfilment, improved health, civic participation and social inclusion. Social integration requires individuals to have the basic skills and knowledge needed to exercise their rights and responsibilities as citizens, and to enjoy the benefits of community life. The large variation in adult learning activities and participation among OECD countries at similar levels of economic development, however, suggests that there are significant differences in learning cultures, learning opportunities at work, and adult-education systems (Borkowsky, 2013).

## Other findings

- On average across OECD countries and economies, 24% of adults wanted to participate in learning activities in the 12 months preceding the survey in which they had not yet enrolled. Among these potential participants, the most common reason for not enrolling was that they were too busy at work (29%). Cost (too expensive) and family responsibilities were the next most common reasons, both cited by 15% of potential participants.
- Social participation in the form of volunteering at least once a month is associated with a higher participation in adult education among inactive, older or low-educated adults – a group which generally has low participation rates.

## Analysis

### Participation in adult education and barriers to participation

Adults in countries and economies that participated in the Survey of Adult Skills (PIAAC) (see *Source* section) differ in the extent to which they take part in the formal education system to meet their education and training needs. On average during the 12 months preceding the survey, 11% of adults (25-64 year-olds) had participated in formal education. These proportions range from 2% in Japan to 19% in Israel. In Australia, England (United Kingdom), Finland, Ireland, Israel, New Zealand and Norway, the share is above 15%, but it is 5% or less in France, Japan and Korea. These results may be affected by the fact that students may still be in tertiary education even when they are 25 years old or older (Table C6.1a).

In general, countries with high rates of adult participation in formal education also tend to have high rates of adult participation in non-formal education (see *Definitions* section). On average across OECD countries and economies, about two out of three adult participants in formal education also participate in non-formal education, an indication that these adults take advantage of a variety of learning opportunities (Table C6.1a).

As part of the survey, adults were asked whether they had wanted to participate in formal or non-formal learning activities during the previous 12 months but had not enrolled. All adults were asked this question, regardless of whether or not they had participated in adult education in the previous 12 months. On average across OECD countries and economies, 24% of adults were interested in participating (more – i.e. either they did not participate but wished to participate or they participated and wanted to participate in more adult learning) but were not able to do so. In countries where participation in adult learning is high, adults tend to indicate more often that they had wished to participate (more) but had not been able to do so. In these countries the system for adult learning already performs well, which encourages people to want to participate more. Conversely, in countries where few adults participate in formal and/or non-formal education, fewer respondents expressed a wish to do so. In New Zealand and the United States, more than 35% of adults would like to participate in (more) formal or non-formal learning activities. In Greece, Poland, the Russian Federation, the Slovak Republic and Turkey, fewer than 15% of adults stated wanting to participate (more) in adult education (Table C6.1b).

On average across OECD countries and economies, 17% of adults who had participated in formal or non-formal learning activities during the 12 months prior to the survey were also interested in participating further. Only a small minority (7%) of adults had been interested in participating but did not do so during the previous 12 months, and could thus be considered as potential new participants. In Chile, Estonia, Ireland, Korea and Spain at least 10% of adults can be considered potential new participants, while in Poland, the Slovak Republic and Turkey the percentage is below 4% (Table C6.1b).

Adults who wanted to take up a learning activity were asked to state why they did not enrol. For their answer they could choose from seven options and the category "other". Figure C6.2 shows that on average across OECD countries and economies, the most common reason (cited by 29% of respondents) was that they were too busy at work. A further 15% of respondents never started the activity because of childcare or family responsibilities. Thus, for 44% of respondents, the burden of work or family seemed to leave no time for learning activities (Figure C6.2).

Factors related to how the learning activities were organised prevented a total of 30% of the respondents from participating: for example, the time or place for the delivery of the course was inconvenient (12%), the education or training was too expensive (15%), or they lacked the prerequisites (3%). Some 7% of respondents cited lack of support by their employer, while for 4% something unexpected had come up that prevented them from enrolling (Figure C6.2 and Table C6.1b).

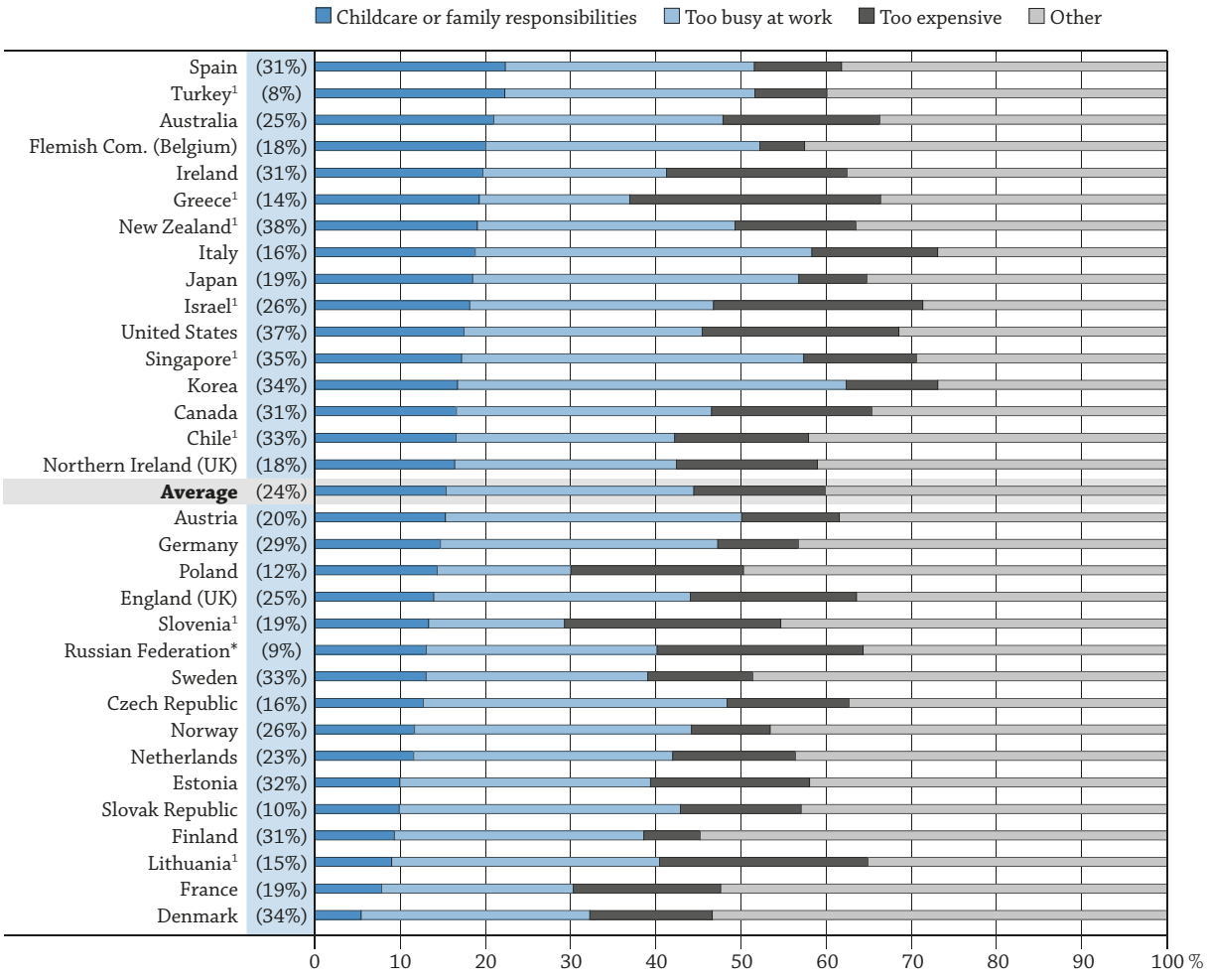
Childcare and family responsibilities were cited as the reason for not taking up a desired learning activity by at least 20% of those not participating in a desired learning activity in Australia, the Flemish Community of Belgium, Spain and Turkey. In Denmark, Estonia, Finland, France, Lithuania and the Slovak Republic on the other hand, such responsibilities were blamed by at most 10% of the relevant population (Figure C6.2).

### The links between participation in adult education and having young children in the household

This indicator looks for the first time at the links between participation in adult education and having young children in the household. It complements the analyses on adult education published in earlier editions *Education at a Glance* (OECD, 2014; 2015; and 2016a). Previous editions have shown that adults with high levels of education, with high literacy and numeracy skills, and those in skilled occupations participate more in adult education than those with low levels of education, low literacy and numeracy skills, and those in elementary occupations. Having young children in the household represents important responsibilities and it is therefore interesting to see whether this status is associated with greater participation in adult education or less – because they may lack the time.

## Figure C6.2. Barriers to participating in formal and/or non-formal education (2012 or 2015)

*Survey of Adult Skills (PIAAC), 25-64 year-olds*




**Note**: Percentage in parentheses represents the share of 25-64 year-olds who wanted to take part in (more) learning activities but did not start.
1. Reference year is 2015; for all other countries and economies the reference year is 2012.

* See note on data for the Russian Federation in the *Source* section.

*Countries and economies are ranked in descending order of the share of adults citing childcare or family responsibilities as a reason for not taking part in learning activities.*

**Source**: OECD (2017), Table C6.1b. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933558534

On average across OECD countries and economies, younger adults (25-34 year-olds) living with young children (under 13) are less likely to participate in formal and/or non-formal education (51%) than those of the same age without children (67%). However, for 35-44 and 45-54 year-olds, the relationship reverses: those living with young children are slightly more likely to participate than those who are not. The age of the children may have an impact on participation in formal and/or non-formal education: younger parents (25-34 year-olds) probably have younger children than older parents (Tables C6.2a and b).

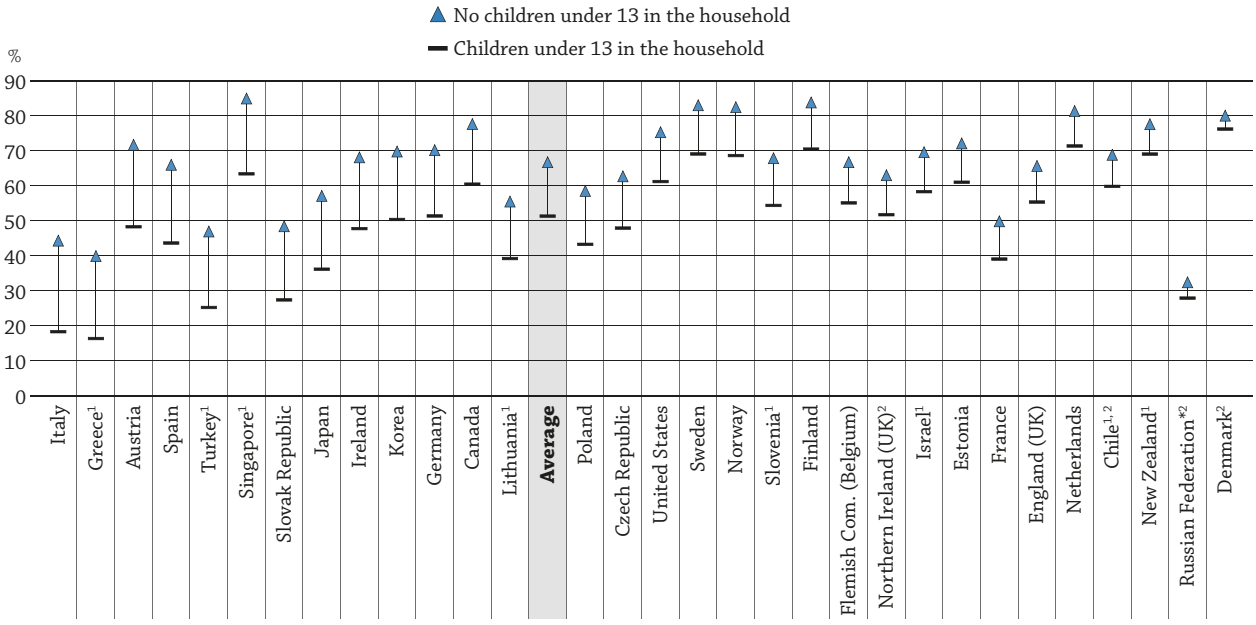
Participation in formal and/or non-formal education by 35-44 year-olds is 55% for those living with children and 52% for those who are not. For 45-54 year-olds, the respective rates are 52% versus 48%. In most countries, the sample of older adults (55-64 years of age) living with young children is too small to show results (Table C6.2 b).

Figure C6.3 shows that in all countries and economies that participated in the Survey of Adult Skills (PIAAC), the presence of young children has a negative effect on the adult learning participation rate for 25-34 year-olds. Chile, Denmark, England (United Kingdom) the Netherlands, New Zealand and the Russian Federation have the smallest

difference in participation rates between those with and without young children (10 percentage points or less), and in Chile, Denmark, Northern Ireland (United Kingdom) and the Russian Federation the difference is not statistically significant. The highest differences (20 percentage points or more) are found in Austria, Greece, Ireland, Italy, Japan, Singapore, the Slovak Republic, Spain and Turkey. In countries with higher participation rates the difference tends to be smaller (Figure C6.3 and Tables C6.1a and C6.2b).

## Figure C6.3. Participation in formal and/or non-formal education among young adults with or without young children in the household (2012 or 2015)

*Survey of Adult Skills (PIAAC), 25-34 year-olds*




1. Reference year is 2015; for all other countries and economies the reference year is 2012.

2. The difference between groups is not statistically significant at 5%.

* See note on data for the Russian Federation in the *Source* section.

*Countries and economies are ranked in descending order of the gap in participation in formal and/or non-formal education between those who have young children in the household and those who do not.*

**Source**: OECD (2017), Table C6.2a. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933558553

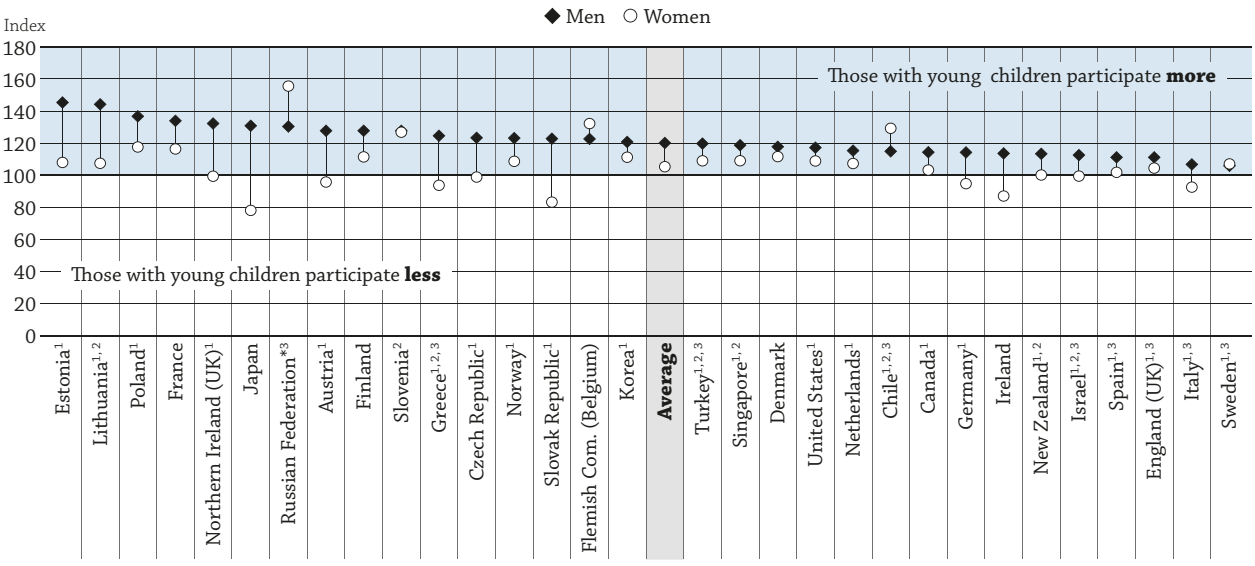
Across the 25-64 year-old age group, both men and women who live with young children in the household participate more in formal and/or non-formal learning than those who do not. However, the effect is stronger for men – 57% for those with children and 47% for those without. The respective participation rates for women are 50% versus 47% (Table C6.2b).

Figure C6.4 shows that in all countries and economies that participated in the Survey of Adult Skills (PIAAC), men with young children in the household participate more in formal and/or non-formal learning than those who do not live with young children (index above 100). The difference is statistically significant in all countries and economies with data, except for Chile, England (United Kingdom), Greece, Israel, Italy, the Russian Federation, Spain, Sweden and Turkey. In contrast, for women, the difference in the participation rates between those living with young children and those not living with young children is statistically significant in only 8 out of the 32 countries and economies: Denmark, Finland, the Flemish Community of Belgium, France, Ireland, Japan, the Russian Federation and Slovenia (Figure C6.4 and Table C6.2b).

In Estonia, France, Japan, Lithuania, Northern Ireland (United Kingdom) and Poland, men with young children in the household are especially likely to participate in adult education (index above 130). For women, the index of relative participation in favour of those living with young children is highest in the Flemish Community of Belgium and the Russian Federation (index above 130) and in these economies the index for women is higher than for men.

## Figure C6.4. Young children in the household and relative participation in formal and/or non-formal education, by gender (2012 or 2015)

*Survey of Adult Skills (PIAAC), relative participation for 25-64 year-olds who have young children in the household compared to those who do not; no young children in the household = 100*




1. The difference in participation in formal and/or non-formal education between women with and women without young children in the household is not statistically significant at 5%.

2. Reference year is 2015; for all other countries and economies the reference year is 2012.

3. The difference in participation in formal and/or non-formal education between men with and men without young children in the household is not statistically significant at 5%.

* See note on data for the Russian Federation in the *Source* section.

*Countries and economies are ranked in descending order of the relative participation of men with young children in the household.*

**Source**: OECD (2017), Table C6.2b. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933558572

The lowest index value is found in Japan, indicating that women who are living with young children participate less than women who are not living with young children (Figure C6.4 and Table C6.2b).

### *Volunteering and participation in adult education*

The previous section has shown that for certain age groups, having young children in the household does not discourage people from participating in adult education – in fact it is associated with greater participation. The relationship between greater responsibilities and participation in adult education can also be measured through social participation. This can evaluate if adults who engage more in social activities such as volunteering are also more likely to engage in adult education.

The Survey of Adult Skills (PIAAC) background questionnaire measures social participation through a question on voluntary work for non-profit organisations. On average across OECD countries and economies, one-third of the population report doing such voluntary work at least once a month, while two-thirds do not (see Indicator A8 in *Education at a Glance 2014*; OECD, 2014). Among adults who volunteer at least once a month, 62% participate in formal and/or non-formal education, compared to 47% of non-volunteers (index of 131) (Table C6.3b).

The difference in participation in formal and/or non-formal education between adults who volunteer and adults who do not is largest in Greece, Poland, the Russian Federation and Turkey (index of 180 or above) and lowest in Denmark, Finland, the Netherlands and New Zealand (index below 115). In countries with a low overall participation rate in formal and/or non-formal education, volunteers tend to participate more than non-volunteers, while this is less evident in countries with a high overall participation rate (Tables C6.1a and C6.3b).

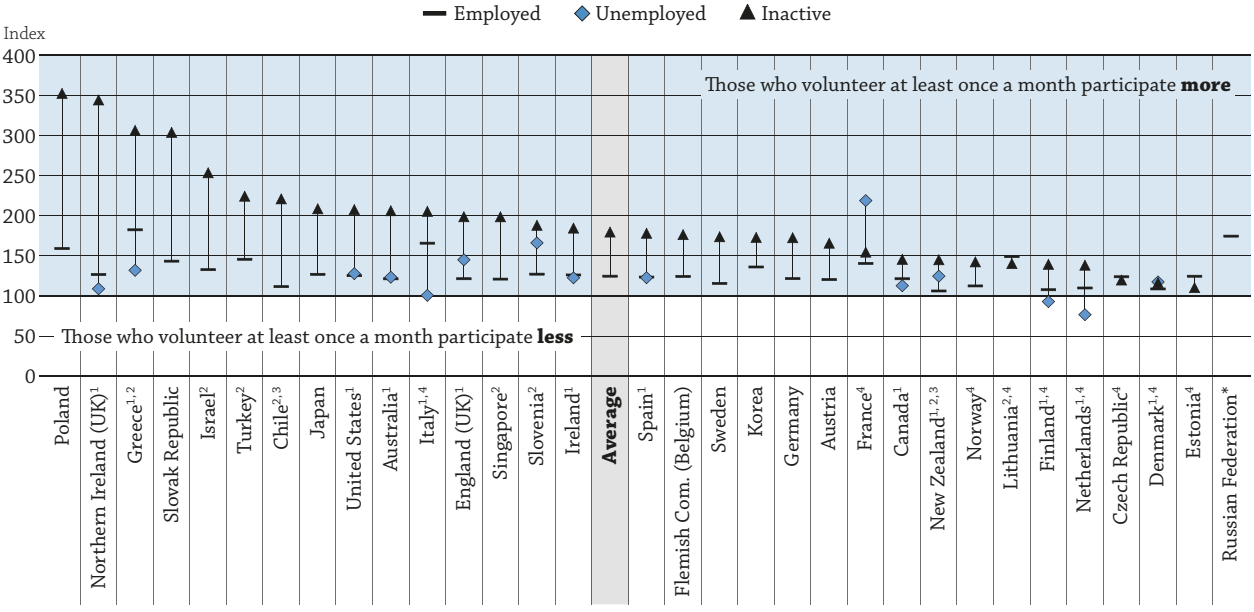
Social participation in the form of volunteering at least once a month is associated with higher participation in adult learning for each labour-force category. On average across OECD countries and economies, employed adults who volunteer have a participation rate of 69%, whereas employed non-volunteers have a participation rate of 56%.

For inactive adults the rates are 35% and 19%. Employed volunteers are thus 1.2 times more likely to participate in formal and/or non-formal education than employed non-volunteers. Among inactive adults, volunteers are 1.8 times more likely to participate than the non-volunteers. Higher participation rates for employed or inactive volunteers can be found in all countries with a few exceptions that are not statistically significant. For unemployed adults, although we generally see the same trend at the country level, there are too few observations to reliably estimate an average for OECD countries and economies (Figure C6.5 and Table C6.3a).

Among the employed in Greece, Italy, Poland and the Russian Federation, volunteers have especially high participation rates in adult education compared to non-volunteers (index above 150), whereas the relative participation index is lowest in Chile, Denmark, Finland, the Netherlands, New Zealand, Norway and Sweden (index below 120). This latter group of countries – with the exception of Chile – are among those with the highest overall participation rates in adult education. Among inactive adults, volunteers are three times more likely to participate in adult education than non-volunteers in Greece, Northern Ireland (United Kingdom), Poland and the Slovak Republic (index above 300) (Figure C6.5 and Table C6.3a).

## Figure C6.5. Volunteering and relative participation in formal and/or non-formal education, by labour-force status (2012 or 2015)

*Survey of Adult Skills (PIAAC), relative participation for 25-64 year-olds who volunteer at least once a month compared to those who do not; not volunteering at least once a month = 100*




**Note**: Values are missing for some countries and economies because there are too few observations to provide a reliable estimate.

1. The difference in participation in formal and/or non-formal education between unemployed 25-64 year-olds who volunteer and do not volunteer is not statistically significant at 5%.

2. Reference year is 2015; for all other countries and economies the reference year is 2012.

3. The difference in participation in formal and/or non-formal education between employed 25-64 year-olds who volunteer and do not volunteer is not statistically significant at 5%.

4. The difference in participation in formal and/or non-formal education between inactive 25-64 year-olds who volunteer and do not volunteer is not statistically significant at 5%.

* See note on data for the Russian Federation in the *Source* section.

*Countries and economies are ranked in descending order of the relative participation of inactive adults who volunteer at least once a month.*

**Source**: OECD (2017), Table C6.3a. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933558591

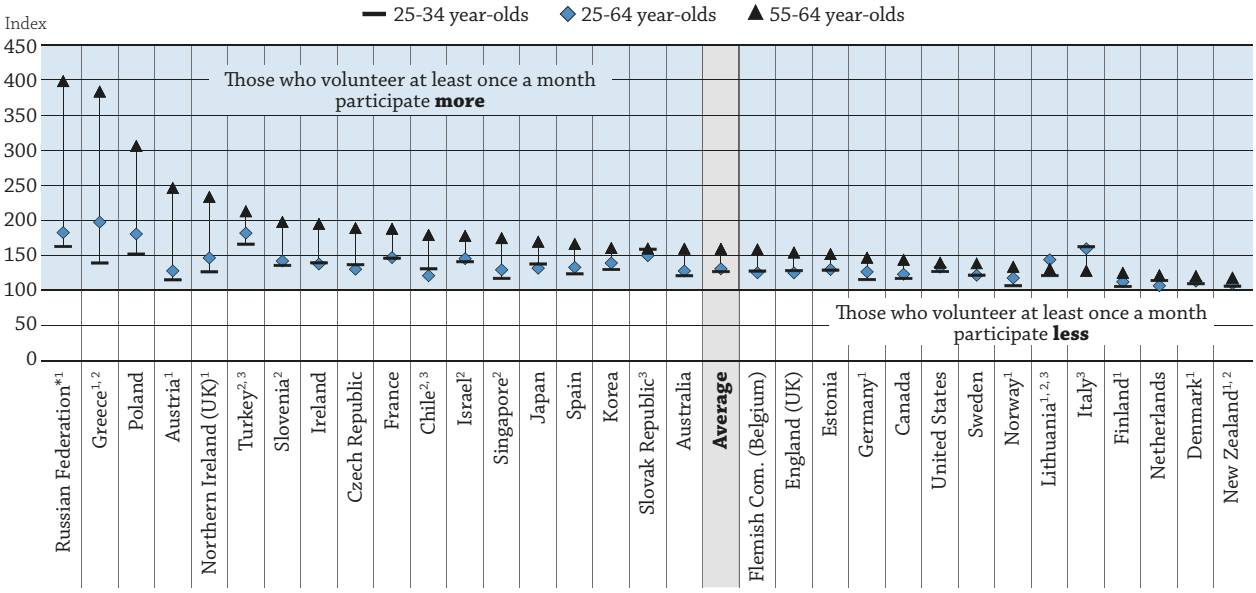
Volunteers of all ages are more likely to participate in adult education than non-volunteers. This is particularly valid for older adults (55-64 year-olds): on average across OECD countries and economies older adult volunteers participate 1.6 times more often in formal and/or non-formal education than do non-volunteers (47% and 30%, respectively). Younger adults (25-34 year-olds) who volunteer participate 1.3 times more than those who do not

volunteer (74% and 58%, respectively). This pattern occurs in all age groups in all countries, with a few exceptions where differences are not statistically significant. In Austria, Greece, Northern Ireland (United Kingdom), Poland, the Russian Federation and Turkey, the older adult volunteers have an adult education participation of more than double that of non-volunteers of the same age group (index above 200). In Denmark, Finland, the Netherlands and New Zealand the index of relative participation of 55-64 year-old volunteers is lowest (index of 125 or below) (Figure C6.6 and Table C6.3b).



## Figure C6.6. Volunteering and relative participation in formal and/or non-formal education, by age group (2012 and 2015)

*Survey of Adult Skills (PIAAC), relative participation for 25-64 year-olds who volunteer at least once a month compared to those who do not; not volunteering at least once a month = 100*




1. The difference in participation in formal and/or non-formal education between 25-34 year-olds who volunteer and do not volunteer is not statistically significant at 5%.

2. Reference year is 2015; for all other countries and economies the reference year is 2012.

3. The difference in participation in formal and/or non-formal education between 55-64 year-olds who volunteer and do not volunteer is not statistically significant at 5%.

* See note on data for the Russian Federation in the *Source* section.

*Countries and economies are ranked in descending order of the relative participation of 55-64 year-olds who volunteer at least once a month.*

**Source**: OECD (2017), Table C6.3b. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933558610

Social participation reduces the difference in participation in adult education between educational levels, but does not eliminate it. On average across OECD countries and economies, for each level of educational attainment, adults who do voluntary work are more likely to participate in formal and/or non-formal education than those who do not volunteer: 38% of the volunteers with below upper secondary education participate in adult education compared to 24% of the non-volunteers. The rates for adults with upper secondary or post-secondary non-tertiary education are 56% for volunteers and 44% for non-volunteers; and 76% for volunteers versus 68% for non-volunteers with tertiary education (Table C6.3c, available on line).

Adults in Israel, Japan, Korea and Northern Ireland (United Kingdom) with below upper secondary education, who volunteer, are especially more likely to participate than non-volunteers (index above 200). The difference is smaller in Austria, Canada, Germany, the Netherlands and New Zealand (index below 130) (Table C6.3c, available on line).

For adults in Greece, Israel, Korea and Poland with upper secondary or post-secondary non-tertiary education as their highest level of educational attainment, volunteers are especially more likely to participate in adult education (index above 150). The effect is small in Chile, Denmark, the Netherlands, New Zealand, Norway and Spain (index below 110) (Table C6.3c, available on line).

For adults with tertiary education, the difference between volunteers and non-volunteers tends to be smaller. However, social participation enhances participation in adult education in particular in Greece, the Slovak Republic, Turkey and the Russian Federation (index above 120), while the effect is small in Chile, Finland, the Netherlands, New Zealand and Singapore (index below 105) (Table C6.3c, available on line).

It is also interesting to analyse the relationship between social participation and participation in adult education and gender. Results show that both men and women volunteers benefit from the positive relationship between social participation and participation in adult education. On average across OECD countries and economies, 63% of male volunteers versus 48% of male non-volunteers participate in formal and/or non-formal education, while among women the rates are 61% for volunteers and 46% for non-volunteers (Table C6.d, available on line).

Finally, when including the presence of young children in the household in the volunteering analysis, results show an even stronger link with participation in adult education compared to when only one of the two elements is analysed. On average across OECD countries and economies, adults who live with children under 13 and who volunteer at least once a month have a participation rate of 66%, whereas adults who lack both elements have a participation rate of 45% (Table C6.3e, available on line).

### Box C6.1 Massive open online courses

Massive open online courses (MOOCs) have become the most visible form of open learning in higher education. Some higher educational institutions and other organisations have made some courses available on line to anyone interested in taking them. Sometimes courses are produced with significant resources, and some courses are taught or designed by the most prestigious researchers or faculty in the world. Compared to the radio or TV broadcasting of university courses that took place in the past, some tutoring can be provided, teaching materials are more easily accessible, and learners can test themselves with quizzes and exams. While certificates of course completion are sometimes awarded, MOOCs remain largely a non-degree-granting activity. MOOCs are generally free of charge, unless the learners want to get some kind of certification of the knowledge and competence they have acquired.

Since the emergence of MOOCs in 2012, the number of registered MOOC users has significantly increased – to 35 million students in 2015, up from an estimated 16-18 million in 2014 (Shah, 2015). In early 2016, 4 200 MOOCs were available (Music, 2016). The large number of sign-ups, however, needs to be interpreted cautiously. Registration is necessary to view the course content, but many users sign up and dropout without engaging much with the course content. For example, the MOOC provider edX reports that 47% of registered users never engaged with the content in 2013-14 (Ho et al., 2015).

In principle, MOOCs make the most recent knowledge available to anyone, wherever they are in the world. In practice, they tend to cater to more educated and affluent students. At least 60% of MOOC students have completed at least a bachelor's degree (Ho et al., 2015). Existing studies also show that MOOC students tend to live in affluent areas; this applies especially for MOOC students who earn a certificate and who live in emerging economies. In Brazil, China, India, the Russian Federation and South Africa, 80% of MOOC students come from the wealthiest and most well-educated 6% of the population (Emanuel, 2013). Most MOOC students are around 30 years old – older than the average higher education student (see Indicator C3), but still young. However, the number of students aged 30 or older enrolled in HarvardX and MITx massive open online courses rose from 40% to 47% between 2012 and 2014 (Ho et al., 2015). Thus, MOOCs may increasingly be utilised by older people keen to pursue continuous education opportunities.

Unlike formal open and distance learning, MOOCs do not usually contribute to the awarding of degrees. However, they are sometimes used as a complement to formal higher education. Some institutions are trying to integrate or recognise certified completion of specific MOOCs in their admission process or in students' study path (Vincent-Lancrin, 2016). The emergence of MOOCs is thus opening up new avenues for the design and delivery of new higher education programmes. While MOOCs in their current format and use have not represented a revolution in the higher education market, they are a new resource that makes higher education learning more accessible to anyone and can open new ways of studying for both traditional students and lifelong learners (Vincent-Lancrin, 2016).

## Definitions

**Age groups: Adults** refer to 25-64 year-olds; **younger adults** refer to 25-34 year-olds; **older adults** refer to 55-64 year-olds.

**Education and training**: **Formal education** is planned education provided in the system of schools, colleges, universities and other formal educational institutions that normally constitutes a continuous "ladder" of full-time education for children and young people. The providers may be public or private. **Non-formal** education is sustained educational activity that does not correspond exactly to the definition of formal education. Non-formal education may take place both within and outside educational institutions and cater to individuals of all ages. Depending on country contexts, it may cover education programmes in adult literacy, basic education for out-of-school children, life skills, work skills, and general culture. The Survey of Adult SKills (PIAAC) uses a list of possible non-formal education activities – including open or distance-learning courses, private lessons, organised sessions for on-the-job training, and workshops or seminars – to prompt respondents to list all of their learning activities during the previous 12 months. Some of these learning activities might be of short duration.

**Levels of education**: **Below upper secondary** corresponds to ISCED-97 levels 0, 1, 2 and 3C short programmes; **upper secondary or post-secondary non-tertiary** corresponds to ISCED-97 levels 3A, 3B, 3C long programmes, and level 4; and **tertiary** corresponds to ISCED-97 levels 5A, 5B and 6.

**Relative participation in adult education (index):** The index of relative participation shows how much more likely group A is to participate in formal and/or non-formal education than group B. It is calculated as:

$$relative\ participation = 100^* \frac{participation\ rate\ A}{participation\ rate\ B}$$

**Social participation or volunteering: Volunteers** refers to adults who volunteer for a non-profit organisation at least once a month. **Non-volunteers** refer to adults who never volunteer for a non-profit organisation or do so less than once a month.

**Young children in the household** refer to adults who have at least one child under age 13 (12 years old or younger) living in the household.

## Methodology

The observations based on a numerator with less than 3 observations or a denominator with less than 30 observations have been replaced by "c" in the tables.

Please see Annex 3 for country-specific notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

## Source

All data are based on the OECD Programme for the International Assessment of Adult Competencies (the Survey of Adult Skills [PIAAC]).

**Note regarding data from Israel**

The statistical data for Israel are supplied by and are under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

**Note regarding data from the Russian Federation in the Survey of Adult Skills (PIAAC)**

The sample for the Russian Federation does not include the population of the Moscow municipal area. The data published, therefore, do not represent the entire resident population aged 16-65 in the Russian Federation but rather the population of the Russian Federation excluding the population residing in the Moscow municipal area. More detailed information regarding the data from the Russian Federation as well as that of other countries can be found in the *Technical Report of the Survey of Adult Skills*, Second Edition (OECD, 2016b).

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## Indicator C6 Tables

StatLink http://dx.doi.org/10.1787/888933561422

| | | |
|---|---|---|
| | **Table C6.1a** | **Participation in formal and/or non-formal education (2012 or 2015)** |
| | **Table C6.1b** | **Willingness to participate in formal and/or non-formal education and barriers to participation (2012 or 2015)** |
| | **Table C6.2a** | **Participation in formal and/or non-formal education, by age group and whether there are young children in the household (2012 or 2015)** |
| | **Table C6.2b** | **Participation in formal and/or non-formal education, by gender and whether there are young children in the household (2012 or 2015)** |
| WEB | **Table C6.2c** | **Participation in formal and/or non-formal education, by educational attainment and whether there are young children in the household (2012 or 2015)** |
| WEB | **Table C6.2d** | **Participation in formal and/or non-formal education, by labour-force status and whether there are young children in the household (2012 or 2015)** |
| | **Table C6.3a** | **Participation in formal and/or non-formal education, by labour-force status and participation in volunteering activities (2012 or 2015)** |
| | **Table C6.3b** | **Participation in formal and/or non-formal education, by age group and participation in volunteering activities (2012 or 2015)** |
| WEB | **Table C6.3c** | **Participation in formal and/or non-formal education, by educational attainment and participation in volunteering activities (2012 or 2015)** |
| WEB | **Table C6.3d** | **Participation in formal and/or non-formal education, by gender and participation in volunteering activities (2012 or 2015)** |
| WEB | **Table C6.3e** | **Participation in formal and/or non-formal education, by whether there are young children in the household and participation in volunteering activities (2012 or 2015)** |

Cut-off date for the data: 19 July 2017. Any updates on data can be found on line at http://dx.doi.org/10.1787/eag-data-en. Data can also be found at http://stats.oecd.org/, Education at a Glance Database.

## Table C6.1a. Participation in formal and/or non-formal education (2012 or 2015)

*Survey of Adult Skills (PIAAC), 25-64 year-olds*

| | | Participation in formal education only | | Participation in non-formal education only | | Participation in both formal and non-formal education | | No participation | | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | | % | S.E. | % | S.E. | % | S.E. | % | S.E. | % |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| OECD | **Countries** | | | | | | | | | |
| | Australia | 5 | (0.4) | 39 | (0.8) | 12 | (0.5) | 44 | (0.7) | 100 |
| | Austria | 2 | (0.2) | 42 | (0.7) | 4 | (0.3) | 52 | (0.7) | 100 |
| | Canada | 5 | (0.3) | 44 | (0.6) | 9 | (0.4) | 42 | (0.6) | 100 |
| | Chile[1] | 3 | (0.4) | 34 | (1.2) | 10 | (1.2) | 53 | (1.9) | 100 |
| | Czech Republic | 2 | (0.3) | 44 | (1.2) | 4 | (0.4) | 50 | (1.2) | 100 |
| | Denmark | 5 | (0.3) | 52 | (0.6) | 9 | (0.4) | 34 | (0.6) | 100 |
| | Estonia | 2 | (0.2) | 44 | (0.7) | 7 | (0.3) | 47 | (0.7) | 100 |
| | Finland | 5 | (0.3) | 51 | (0.7) | 11 | (0.4) | 34 | (0.7) | 100 |
| | France | 3 | (0.2) | 31 | (0.6) | 2 | (0.2) | 64 | (0.6) | 100 |
| | Germany | 3 | (0.3) | 46 | (1.1) | 4 | (0.3) | 47 | (1.0) | 100 |
| | Greece[1] | 2 | (0.3) | 15 | (0.7) | 3 | (0.3) | 80 | (0.8) | 100 |
| | Ireland | 6 | (0.4) | 36 | (0.8) | 9 | (0.4) | 49 | (0.7) | 100 |
| | Israel[1] | 8 | (0.4) | 34 | (0.8) | 11 | (0.5) | 47 | (0.8) | 100 |
| | Italy | 3 | (0.3) | 19 | (0.8) | 3 | (0.3) | 75 | (1.0) | 100 |
| | Japan | 1 | (0.2) | 39 | (0.8) | 2 | (0.2) | 58 | (0.8) | 100 |
| | Korea | 1 | (0.1) | 45 | (0.8) | 4 | (0.3) | 50 | (0.8) | 100 |
| | Netherlands | 4 | (0.4) | 50 | (0.7) | 10 | (0.5) | 36 | (0.6) | 100 |
| | New Zealand[1] | 4 | (0.3) | 50 | (0.9) | 14 | (0.6) | 32 | (0.8) | 100 |
| | Norway | 5 | (0.3) | 49 | (0.7) | 11 | (0.5) | 36 | (0.7) | 100 |
| | Poland | 3 | (0.3) | 28 | (0.7) | 4 | (0.3) | 65 | (0.8) | 100 |
| | Slovak Republic | 2 | (0.2) | 27 | (0.8) | 3 | (0.3) | 67 | (0.8) | 100 |
| | Slovenia[1] | 4 | (0.3) | 38 | (0.8) | 6 | (0.4) | 52 | (0.8) | 100 |
| | Spain | 4 | (0.3) | 34 | (0.7) | 8 | (0.4) | 53 | (0.7) | 100 |
| | Sweden | 5 | (0.4) | 53 | (0.8) | 9 | (0.4) | 34 | (0.8) | 100 |
| | Turkey[1] | 5 | (0.4) | 12 | (0.5) | 6 | (0.5) | 77 | (0.8) | 100 |
| | United States | 4 | (0.4) | 45 | (1.1) | 10 | (0.5) | 41 | (1.1) | 100 |
| | **Economies** | | | | | | | | | |
| | Flemish Com. (Belgium) | 3 | (0.2) | 41 | (0.8) | 5 | (0.4) | 51 | (0.8) | 100 |
| | England (UK) | 5 | (0.4) | 40 | (0.8) | 11 | (0.5) | 44 | (0.9) | 100 |
| | Northern Ireland (UK) | 4 | (0.4) | 37 | (1.0) | 8 | (0.6) | 51 | (0.9) | 100 |
| | Average | 4 | (0.1) | 39 | (0.2) | 7 | (0.1) | 50 | (0.2) | 100 |
| Partners | Lithuania[1] | 3 | (0.3) | 28 | (0.9) | 3 | (0.4) | 66 | (0.8) | 100 |
| | Russian Federation* | 3 | (0.3) | 13 | (1.0) | 3 | (0.5) | 80 | (1.6) | 100 |
| | Singapore[1] | 2 | (0.3) | 46 | (0.8) | 8 | (0.4) | 43 | (0.7) | 100 |

**Note:** See *Definitions* and *Methodology* sections for more information.

1. Reference year is 2015; for all other countries and economies the reference year is 2012.

* See note on data for the Russian Federation in the *Source* section.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933561213

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## Table C6.1b. Willingness to participate in formal and/or non-formal education and barriers to participation (2012 or 2015)

*Survey of Adult Skills (PIAAC), 25-64 year-olds*

| | | Wanting to participate in formal and/or non-formal education | | | | | | | | Reasons preventing participation in (more) formal and/or non-formal education | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Participation | | | | No participation | | | | | | | | | |
| | | Want to participate (more) | | Not want to participate | | Want to participate | | Not want to participate | | Childcare or family responsibilities | | Too expensive | | Too busy at work | |
| | | % | S.E. | % | S.E. | % | S.E. | % | S.E. | % | S.E. | % | S.E. | % | S.E. |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) |
| OECD | **Countries** | | | | | | | | | | | | | | |
| | Australia | 17 | (0.6) | 39 | (0.8) | 8 | (0.5) | 37 | (0.7) | 21 | (1.3) | 18 | (1.5) | 27 | (1.2) |
| | Austria | 13 | (0.5) | 35 | (0.7) | 7 | (0.4) | 45 | (0.7) | 15 | (1.2) | 11 | (1.3) | 35 | (1.6) |
| | Canada | 24 | (0.5) | 35 | (0.5) | 8 | (0.3) | 34 | (0.5) | 17 | (1.0) | 19 | (0.9) | 30 | (0.9) |
| | Chile[1] | 21 | (1.4) | 27 | (1.1) | 12 | (0.5) | 40 | (1.9) | 17 | (1.2) | 16 | (1.5) | 26 | (1.9) |
| | Czech Republic | 12 | (0.6) | 37 | (1.1) | 4 | (0.6) | 46 | (1.3) | 13 | (2.0) | 14 | (1.7) | 36 | (3.5) |
| | Denmark | 26 | (0.7) | 40 | (0.7) | 8 | (0.4) | 26 | (0.6) | 5 | (0.6) | 14 | (0.9) | 27 | (1.2) |
| | Estonia | 22 | (0.5) | 30 | (0.7) | 10 | (0.5) | 38 | (0.6) | 10 | (0.6) | 19 | (0.9) | 29 | (0.9) |
| | Finland | 25 | (0.7) | 41 | (0.7) | 6 | (0.4) | 28 | (0.7) | 9 | (0.8) | 7 | (0.7) | 29 | (1.4) |
| | France | 11 | (0.4) | 25 | (0.5) | 8 | (0.3) | 56 | (0.7) | 8 | (0.7) | 17 | (1.1) | 23 | (1.3) |
| | Germany | 22 | (0.7) | 31 | (0.9) | 7 | (0.5) | 40 | (1.1) | 15 | (1.2) | 9 | (0.9) | 33 | (1.5) |
| | Greece[1] | 9 | (0.6) | 12 | (0.7) | 6 | (0.5) | 74 | (0.9) | 19 | (1.8) | 29 | (2.2) | 18 | (2.1) |
| | Ireland | 19 | (0.6) | 32 | (0.7) | 12 | (0.5) | 38 | (0.8) | 20 | (1.1) | 21 | (1.1) | 22 | (1.1) |
| | Israel[1] | 18 | (0.6) | 35 | (0.8) | 8 | (0.4) | 39 | (0.8) | 18 | (1.2) | 25 | (1.4) | 29 | (1.4) |
| | Italy | 8 | (0.6) | 17 | (0.7) | 8 | (0.6) | 67 | (1.1) | 19 | (1.8) | 15 | (1.6) | 40 | (2.3) |
| | Japan | 14 | (0.6) | 28 | (0.6) | 6 | (0.3) | 52 | (0.8) | 19 | (1.4) | 8 | (1.0) | 38 | (1.9) |
| | Korea | 21 | (0.6) | 29 | (0.7) | 12 | (0.5) | 38 | (0.8) | 17 | (0.8) | 11 | (0.9) | 46 | (1.3) |
| | Netherlands | 18 | (0.5) | 46 | (0.7) | 5 | (0.4) | 31 | (0.6) | 12 | (1.0) | 14 | (1.3) | 30 | (1.7) |
| | New Zealand[1] | 29 | (0.7) | 39 | (0.8) | 9 | (0.5) | 23 | (0.7) | 19 | (1.1) | 14 | (1.1) | 30 | (1.1) |
| | Norway | 20 | (0.6) | 44 | (0.8) | 6 | (0.4) | 30 | (0.7) | 12 | (1.0) | 9 | (0.9) | 33 | (1.3) |
| | Poland | 9 | (0.5) | 27 | (0.7) | 3 | (0.3) | 61 | (0.8) | 14 | (2.1) | 20 | (2.2) | 16 | (1.7) |
| | Slovak Republic | 7 | (0.4) | 26 | (0.8) | 3 | (0.2) | 64 | (0.8) | 10 | (1.7) | 14 | (1.9) | 33 | (2.6) |
| | Slovenia[1] | 14 | (0.6) | 35 | (0.7) | 5 | (0.4) | 47 | (0.8) | 13 | (1.2) | 25 | (1.8) | 16 | (1.3) |
| | Spain | 20 | (0.6) | 27 | (0.6) | 11 | (0.5) | 42 | (0.6) | 22 | (1.0) | 10 | (0.9) | 29 | (1.3) |
| | Sweden | 25 | (0.7) | 41 | (0.9) | 8 | (0.5) | 26 | (0.7) | 13 | (0.9) | 12 | (1.0) | 26 | (1.3) |
| | Turkey[1] | 5 | (0.3) | 18 | (0.7) | 4 | (0.3) | 74 | (0.8) | 22 | (2.7) | 8 | (1.7) | 29 | (2.7) |
| | United States | 27 | (0.8) | 32 | (0.9) | 9 | (0.6) | 31 | (1.1) | 17 | (1.1) | 23 | (1.3) | 28 | (1.5) |
| | **Economies** | | | | | | | | | | | | | | |
| | Flemish Com. (Belgium) | 13 | (0.5) | 36 | (0.7) | 5 | (0.4) | 46 | (0.8) | 20 | (1.4) | 5 | (0.8) | 32 | (1.8) |
| | England (UK) | 18 | (0.8) | 38 | (0.8) | 7 | (0.4) | 37 | (0.9) | 14 | (0.9) | 20 | (1.4) | 30 | (1.6) |
| | Northern Ireland (UK) | 13 | (0.6) | 36 | (1.0) | 5 | (0.4) | 46 | (0.9) | 16 | (1.5) | 17 | (1.8) | 26 | (2.2) |
| | **Average** | 17 | (0.1) | 32 | (0.1) | 7 | (0.1) | 43 | (0.2) | 15 | (0.2) | 15 | (0.3) | 29 | (0.3) |
| Partners | Lithuania[1] | 11 | (0.6) | 22 | (0.8) | 4 | (0.4) | 62 | (0.9) | 9 | (1.4) | 24 | (1.6) | 31 | (2.1) |
| | Russian Federation* | 4 | (0.4) | 15 | (1.2) | 4 | (0.4) | 76 | (1.8) | 13 | (2.8) | 24 | (2.8) | 27 | (2.6) |
| | Singapore[1] | 27 | (0.7) | 30 | (0.7) | 8 | (0.4) | 35 | (0.6) | 17 | (1.1) | 13 | (0.9) | 40 | (1.4) |

**Note:** Columns showing the full distribution of reasons for not participating in formal and/or non-formal education are available for consultation on line (see *StatLink* below). See *Definitions* and *Methodology* sections for more information.

1. Reference year is 2015; for all other countries and economies the reference year is 2012.

* See note on data for the Russian Federation in the *Source* section.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933561232

## Table C6.2a. Participation in formal and/or non-formal education, by age group and whether there are young children in the household (2012 or 2015)

*Survey of Adult Skills (PIAAC), 25-64 year-olds*

| | | 25-34 year-olds | | | | 35-44 year-olds | | | | 45-54 year-olds | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Children under 13 in the household | | No children under 13 in the household | | Children under 13 in the household | | No children under 13 in the household | | Children under 13 in the household | | No children under 13 in the household | |
| | | % | S.E. | % | S.E. | % | S.E. | % | S.E. | % | S.E. | % | S.E. |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
| OECD | **Countries** | | | | | | | | | | | | |
| | Australia | m | m | m | m | m | m | m | m | m | m | m | m |
| | Austria | 48 | (2.9) | 72 | (1.9) | 55 | (2.2) | 54 | (2.3) | 52 | (3.8) | 50 | (1.7) |
| | Canada | 60 | (1.6) | 78 | (1.4) | 64 | (1.4) | 64 | (1.7) | 58 | (3.0) | 57 | (1.2) |
| | Chile[1] | 60 | (3.2) | 69 | (2.9) | 51 | (2.8) | 45 | (5.7) | 43 | (6.3) | 40 | (2.3) |
| | Czech Republic | 48 | (3.3) | 63 | (2.4) | 57 | (3.3) | 54 | (3.3) | 57 | (8.2) | 55 | (3.1) |
| | Denmark | 76 | (2.1) | 80 | (1.8) | 73 | (1.5) | 69 | (2.7) | 64 | (2.6) | 66 | (1.6) |
| | Estonia | 61 | (1.5) | 72 | (1.7) | 62 | (1.7) | 54 | (1.9) | 52 | (3.2) | 50 | (1.5) |
| | Finland | 70 | (2.1) | 84 | (1.5) | 78 | (1.4) | 77 | (2.1) | 75 | (3.3) | 66 | (1.5) |
| | France | 39 | (1.8) | 50 | (1.8) | 43 | (1.5) | 39 | (2.1) | 39 | (2.2) | 38 | (1.5) |
| | Germany | 51 | (2.9) | 70 | (2.3) | 55 | (2.6) | 61 | (2.6) | 58 | (3.7) | 53 | (1.8) |
| | Greece[1] | 16 | (2.9) | 40 | (2.6) | 26 | (2.0) | 23 | (2.1) | 18 | (2.6) | 15 | (1.5) |
| | Ireland | 48 | (2.0) | 68 | (2.0) | 52 | (1.7) | 54 | (2.4) | 52 | (3.3) | 47 | (2.0) |
| | Israel[1] | 58 | (2.1) | 70 | (1.9) | 53 | (2.0) | 51 | (2.4) | 53 | (2.9) | 45 | (2.4) |
| | Italy | 18 | (3.0) | 44 | (2.9) | 27 | (1.8) | 26 | (2.0) | 28 | (3.3) | 23 | (1.8) |
| | Japan | 36 | (2.9) | 57 | (2.4) | 43 | (1.7) | 44 | (2.2) | 53 | (3.6) | 44 | (1.9) |
| | Korea | 50 | (2.7) | 70 | (1.7) | 58 | (1.9) | 51 | (2.4) | 53 | (4.4) | 43 | (1.5) |
| | Netherlands | 71 | (2.5) | 81 | (1.7) | 67 | (1.9) | 70 | (2.5) | 72 | (2.9) | 64 | (1.7) |
| | New Zealand[1] | 69 | (2.0) | 78 | (2.1) | 73 | (1.5) | 67 | (2.5) | 66 | (2.8) | 66 | (2.1) |
| | Norway | 69 | (2.3) | 82 | (2.0) | 73 | (1.6) | 70 | (2.5) | 68 | (2.5) | 62 | (1.7) |
| | Poland | 43 | (2.4) | 59 | (2.2) | 42 | (2.4) | 39 | (2.6) | 30 | (3.6) | 32 | (1.6) |
| | Slovak Republic | 27 | (2.0) | 48 | (2.0) | 39 | (2.0) | 37 | (2.4) | 39 | (4.7) | 36 | (1.6) |
| | Slovenia[1] | 54 | (2.3) | 68 | (1.9) | 60 | (2.4) | 53 | (2.4) | 52 | (4.3) | 47 | (1.6) |
| | Spain | 44 | (2.7) | 66 | (2.0) | 50 | (1.7) | 54 | (2.5) | 52 | (3.1) | 44 | (1.7) |
| | Sweden | 69 | (2.6) | 83 | (1.8) | 69 | (2.0) | 66 | (2.7) | 69 | (3.4) | 67 | (1.9) |
| | Turkey[1] | 25 | (1.9) | 47 | (2.7) | 26 | (1.7) | 24 | (2.6) | 18 | (2.4) | 17 | (1.8) |
| | United States | 61 | (2.3) | 75 | (2.5) | 67 | (2.2) | 55 | (2.7) | 62 | (4.7) | 55 | (2.2) |
| | **Economies** | | | | | | | | | | | | |
| | Flemish Com. (Belgium) | 55 | (2.4) | 67 | (2.5) | 59 | (2.2) | 49 | (2.5) | 59 | (3.6) | 48 | (1.9) |
| | England (UK) | 55 | (2.3) | 66 | (2.5) | 61 | (2.2) | 64 | (2.3) | 61 | (3.2) | 58 | (1.7) |
| | Northern Ireland (UK) | 52 | (3.0) | 63 | (3.1) | 53 | (2.6) | 51 | (2.5) | 57 | (5.2) | 47 | (2.0) |
| | Average | 51 | (0.5) | 67 | (0.4) | 55 | (0.4) | 52 | (0.5) | 52 | (0.7) | 48 | (0.3) |
| Partners | Lithuania[1] | 39 | (2.7) | 56 | (3.1) | 37 | (2.6) | 34 | (2.7) | 37 | (6.3) | 30 | (2.0) |
| | Russian Federation* | 28 | (3.2) | 32 | (3.3) | 22 | (2.0) | 23 | (3.1) | 23 | (6.4) | 15 | (2.5) |
| | Singapore[1] | 63 | (2.5) | 85 | (1.4) | 63 | (1.9) | 64 | (2.2) | 60 | (3.2) | 46 | (1.5) |

**Note:** Data on 55-64 year-olds are available for consultation on line (see *StatLink* below). See *Definitions* and *Methodology* sections for more information.

1. Reference year is 2015; for all other countries and economies the reference year is 2012.

* See note on data for the Russian Federation in the *Source* section.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933561251

## Table C6.2b. Participation in formal and/or non-formal education, by gender and whether there are young children in the household (2012 or 2015)

*Survey of Adult Skills (PIAAC), 25-64 year-olds*

| | | Men and women | | | | Men | | | | Women | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Children under 13 in the household | | No children under 13 in the household | | Children under 13 in the household | | No children under 13 in the household | | Children under 13 in the household | | No children under 13 in the household | |
| | | % | S.E. | % | S.E. | % | S.E. | % | S.E. | % | S.E. | % | S.E. |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
| OECD | **Countries** | | | | | | | | | | | | |
| | Australia | m | m | m | m | m | m | m | m | m | m | m | m |
| | Austria | 52 | (1.6) | 47 | (0.9) | 59 | (2.2) | 46 | (1.3) | 45 | (2.1) | 47 | (1.5) |
| | Canada | 62 | (1.0) | 57 | (0.7) | 65 | (1.5) | 57 | (1.0) | 59 | (1.4) | 57 | (0.9) |
| | Chile[1] | 53 | (2.7) | 44 | (2.1) | 58 | (3.1) | 50 | (2.6) | 48 | (3.4) | 38 | (2.5) |
| | Czech Republic | 53 | (2.1) | 48 | (1.4) | 61 | (3.5) | 50 | (1.9) | 46 | (2.2) | 46 | (1.7) |
| | Denmark | 73 | (1.0) | 63 | (0.8) | 71 | (1.5) | 60 | (1.3) | 74 | (1.5) | 66 | (1.2) |
| | Estonia | 60 | (1.1) | 49 | (0.9) | 61 | (1.6) | 42 | (1.4) | 60 | (1.5) | 55 | (1.1) |
| | Finland | 75 | (1.2) | 63 | (0.8) | 74 | (1.8) | 58 | (1.1) | 76 | (1.9) | 68 | (1.2) |
| | France | 41 | (1.0) | 33 | (0.8) | 43 | (1.7) | 32 | (1.0) | 39 | (1.2) | 34 | (1.0) |
| | Germany | 55 | (1.5) | 52 | (1.2) | 62 | (2.2) | 54 | (1.4) | 48 | (2.0) | 50 | (1.6) |
| | Greece[1] | 22 | (1.2) | 20 | (0.9) | 26 | (2.1) | 21 | (1.3) | 18 | (1.6) | 19 | (1.3) |
| | Ireland | 50 | (1.0) | 51 | (1.0) | 57 | (1.8) | 50 | (1.4) | 45 | (1.4) | 52 | (1.3) |
| | Israel[1] | 55 | (1.3) | 52 | (0.9) | 57 | (1.7) | 51 | (1.6) | 52 | (1.7) | 53 | (1.7) |
| | Italy | 25 | (1.4) | 25 | (1.1) | 28 | (2.4) | 26 | (1.5) | 22 | (1.7) | 23 | (1.2) |
| | Japan | 43 | (1.2) | 42 | (1.0) | 59 | (2.0) | 45 | (1.3) | 30 | (1.8) | 38 | (1.1) |
| | Korea | 56 | (1.6) | 48 | (0.9) | 62 | (2.3) | 51 | (1.3) | 49 | (2.0) | 44 | (1.2) |
| | Netherlands | 69 | (1.4) | 62 | (0.8) | 73 | (1.9) | 64 | (1.2) | 65 | (2.1) | 60 | (1.2) |
| | New Zealand[1] | 70 | (1.1) | 66 | (1.1) | 74 | (1.7) | 65 | (1.5) | 67 | (1.4) | 67 | (1.6) |
| | Norway | 70 | (1.2) | 61 | (1.0) | 72 | (1.6) | 58 | (1.3) | 69 | (1.9) | 64 | (1.4) |
| | Poland | 41 | (1.6) | 33 | (0.9) | 43 | (2.3) | 32 | (1.3) | 39 | (2.2) | 34 | (1.1) |
| | Slovak Republic | 34 | (1.6) | 33 | (0.9) | 40 | (2.2) | 32 | (1.3) | 28 | (2.0) | 34 | (1.3) |
| | Slovenia[1] | 57 | (1.6) | 45 | (1.0) | 55 | (2.0) | 43 | (1.4) | 58 | (2.1) | 46 | (1.3) |
| | Spain | 48 | (1.3) | 46 | (0.8) | 51 | (1.8) | 46 | (1.1) | 46 | (1.7) | 45 | (1.3) |
| | Sweden | 69 | (1.5) | 65 | (0.9) | 66 | (2.1) | 63 | (1.4) | 71 | (2.1) | 66 | (1.3) |
| | Turkey[1] | 25 | (1.3) | 21 | (1.0) | 31 | (1.9) | 26 | (1.4) | 17 | (1.5) | 15 | (1.2) |
| | United States | 64 | (1.6) | 57 | (1.3) | 66 | (2.7) | 56 | (1.6) | 63 | (1.9) | 58 | (1.7) |
| | **Economies** | | | | | | | | | | | | |
| | Flemish Com. (Belgium) | 57 | (1.4) | 45 | (1.0) | 56 | (2.1) | 46 | (1.4) | 59 | (1.8) | 44 | (1.3) |
| | England (UK) | 59 | (1.4) | 55 | (1.0) | 62 | (2.2) | 56 | (1.5) | 56 | (1.6) | 54 | (1.3) |
| | Northern Ireland (UK) | 53 | (1.9) | 47 | (1.3) | 58 | (3.0) | 44 | (1.8) | 49 | (2.3) | 49 | (1.7) |
| | **Average** | 53 | (0.3) | 47 | (0.2) | 57 | (0.4) | 47 | (0.3) | 50 | (0.4) | 47 | (0.3) |
| Partners | Lithuania[1] | 38 | (1.8) | 31 | (1.1) | 38 | (2.9) | 27 | (1.8) | 38 | (2.2) | 35 | (1.5) |
| | Russian Federation* | 25 | (2.3) | 17 | (1.8) | 19 | (2.9) | 15 | (1.9) | 30 | (3.0) | 20 | (2.1) |
| | Singapore[1] | 63 | (1.5) | 55 | (0.9) | 68 | (1.9) | 57 | (1.3) | 57 | (2.1) | 52 | (1.1) |

**Note:** See *Definitions* and *Methodology* sections for more information.

1. Reference year is 2015; for all other countries and economies the reference year is 2012.

* See note on data for the Russian Federation in the *Source* section.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933561270

## Table C6.3a. Participation in formal and/or non-formal education, by labour-force status and participation in volunteering activities (2012 or 2015)

*Survey of Adult Skills (PIAAC), 25-64 year-olds*

| | | Employed | | | | Unemployed | | | | Inactive | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Volunteering at least once a month | | Not volunteering at least once a month | | Volunteering at least once a month | | Not volunteering at least once a month | | Volunteering at least once a month | | Not volunteering at least once a month | |
| | | % | S.E. | % | S.E. | % | S.E. | % | S.E. | % | S.E. | % | S.E. |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
| OECD | **Countries** | | | | | | | | | | | | |
| | Australia | 75 | (2.0) | 62 | (0.8) | 64 | (9.9) | 52 | (5.2) | 35 | (4.1) | 17 | (1.5) |
| | Austria | 64 | (1.7) | 53 | (1.0) | c | c | 48 | (5.6) | 31 | (4.0) | 19 | (1.7) |
| | Canada | 75 | (1.2) | 62 | (0.8) | 55 | (5.8) | 49 | (3.3) | 35 | (2.9) | 24 | (1.3) |
| | Chile[1] | 58 | (3.3) | 52 | (2.1) | c | c | 44 | (7.6) | 44 | (6.2) | 20 | (2.4) |
| | Czech Republic | 73 | (3.7) | 59 | (1.4) | c | c | 32 | (5.4) | 16 | (5.0) | 13 | (1.8) |
| | Denmark | 78 | (1.2) | 72 | (0.9) | 71 | (5.9) | 61 | (4.3) | 39 | (4.1) | 33 | (1.8) |
| | Estonia | 74 | (2.1) | 60 | (0.9) | c | c | 35 | (2.9) | 18 | (4.7) | 16 | (1.1) |
| | Finland | 80 | (1.6) | 74 | (0.8) | 56 | (8.3) | 60 | (4.2) | 40 | (4.3) | 28 | (1.7) |
| | France | 57 | (1.8) | 41 | (0.9) | 54 | (7.9) | 25 | (3.0) | 21 | (2.7) | 13 | (1.1) |
| | Germany | 68 | (1.8) | 56 | (1.2) | c | c | 41 | (4.9) | 37 | (4.8) | 22 | (2.0) |
| | Greece[1] | 48 | (4.4) | 26 | (1.3) | 21 | (9.9) | 16 | (1.8) | 24 | (5.0) | 8 | (0.9) |
| | Ireland | 74 | (1.8) | 58 | (1.1) | 47 | (6.0) | 39 | (2.8) | 42 | (3.7) | 23 | (1.4) |
| | Israel[1] | 76 | (1.9) | 57 | (1.0) | c | c | 39 | (4.8) | 56 | (4.4) | 22 | (1.3) |
| | Italy | 50 | (3.1) | 30 | (1.3) | 18 | (7.6) | 18 | (2.4) | 18 | (3.7) | 9 | (1.1) |
| | Japan | 60 | (2.5) | 48 | (1.0) | c | c | 35 | (7.5) | 31 | (4.3) | 15 | (1.4) |
| | Korea | 73 | (2.7) | 54 | (0.9) | c | c | 48 | (5.0) | 48 | (3.7) | 28 | (1.6) |
| | Netherlands | 78 | (1.4) | 71 | (0.9) | 47 | (7.6) | 61 | (5.8) | 32 | (2.9) | 23 | (2.1) |
| | New Zealand[1] | 76 | (1.6) | 72 | (1.1) | 64 | (6.4) | 51 | (4.8) | 49 | (3.8) | 34 | (2.3) |
| | Norway | 76 | (1.2) | 68 | (1.0) | c | c | 55 | (5.5) | 36 | (4.8) | 25 | (2.2) |
| | Poland | 70 | (3.6) | 44 | (1.1) | c | c | 27 | (2.9) | 30 | (7.5) | 9 | (0.9) |
| | Slovak Republic | 61 | (3.4) | 43 | (1.1) | c | c | 11 | (2.1) | 18 | (4.1) | 6 | (0.7) |
| | Slovenia[1] | 71 | (2.1) | 56 | (1.0) | 72 | (6.6) | 43 | (3.3) | 39 | (3.8) | 20 | (1.4) |
| | Spain | 67 | (2.7) | 54 | (1.0) | 51 | (7.9) | 42 | (2.4) | 40 | (5.1) | 23 | (1.4) |
| | Sweden | 80 | (1.7) | 69 | (1.0) | c | c | 55 | (4.9) | 57 | (6.1) | 33 | (2.4) |
| | Turkey[1] | 49 | (4.4) | 34 | (1.5) | c | c | 27 | (3.6) | 23 | (5.0) | 10 | (0.7) |
| | United States | 79 | (1.4) | 63 | (1.5) | 55 | (6.1) | 43 | (4.4) | 43 | (4.5) | 21 | (1.7) |
| | **Economies** | | | | | | | | | | | | |
| | Flemish Com. (Belgium) | 66 | (1.9) | 53 | (1.0) | c | c | 53 | (7.5) | 31 | (3.1) | 18 | (1.5) |
| | England (UK) | 77 | (2.0) | 63 | (1.2) | 67 | (8.1) | 46 | (4.4) | 36 | (3.7) | 18 | (1.7) |
| | Northern Ireland (UK) | 73 | (2.5) | 58 | (1.4) | 50 | (11.1) | 46 | (7.2) | 38 | (5.5) | 11 | (1.2) |
| | **Average** | 69 | (0.5) | 56 | (0.2) | m | m | 41 | (0.9) | 35 | (0.8) | 19 | (0.3) |
| Partners | Lithuania[1] | 63 | (5.3) | 42 | (1.0) | c | c | 14 | (2.3) | 11 | (5.8) | 8 | (1.2) |
| | Russian Federation* | 40 | (3.6) | 23 | (1.8) | c | c | 24 | (4.1) | c | c | 9 | (1.4) |
| | Singapore[1] | 75 | (2.1) | 62 | (0.9) | c | c | 36 | (4.3) | 49 | (6.5) | 25 | (1.7) |

**Note:** Columns showing data not disaggregated by labour-force status are available for consultation on line (see *StatLink* below). See *Definitions* and *Methodology* sections for more information.

1. Reference year is 2015; for all other countries and economies the reference year is 2012.

* See note on data for the Russian Federation in the *Source* section.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

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## Table C6.3b. Participation in formal and/or non-formal education, by age group and participation in volunteering activities (2012 or 2015)

*Survey of Adult Skills (PIAAC), 25-64 year-olds*

| | | 25-64 year-olds | | | | 25-34 year-olds | | | | 55-64 year-olds | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Volunteering at least once a month | | Not volunteering at least once a month | | Volunteering at least once a month | | Not volunteering at least once a month | | Volunteering at least once a month | | Not volunteering at least once a month | |
| | | % | S.E. | % | S.E. | % | S.E. | % | S.E. | % | S.E. | % | S.E. |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (17) | (18) | (19) | (20) |
| OECD | **Countries** | | | | | | | | | | | | |
| | Australia | 67 | (2.1) | 53 | (0.7) | 73 | (4.4) | 61 | (1.6) | 58 | (3.7) | 36 | (1.4) |
| | Austria | 58 | (1.6) | 46 | (0.8) | 70 | (3.4) | 61 | (1.8) | 40 | (3.1) | 16 | (1.4) |
| | Canada | 68 | (1.1) | 55 | (0.7) | 79 | (2.3) | 68 | (1.2) | 53 | (2.4) | 37 | (1.2) |
| | Chile[1] | 55 | (2.9) | 46 | (1.9) | 80 | (4.2) | 61 | (2.6) | 46 | (8.7) | 25 | (3.4) |
| | Czech Republic | 63 | (3.6) | 48 | (1.3) | 74 | (6.3) | 54 | (2.0) | 53 | (8.3) | 28 | (1.9) |
| | Denmark | 73 | (1.1) | 64 | (0.7) | 84 | (3.0) | 77 | (1.5) | 58 | (2.2) | 48 | (1.2) |
| | Estonia | 66 | (2.1) | 51 | (0.7) | 82 | (3.3) | 64 | (1.2) | 50 | (4.8) | 33 | (1.4) |
| | Finland | 73 | (1.5) | 65 | (0.7) | 82 | (2.5) | 77 | (1.6) | 56 | (2.7) | 44 | (1.5) |
| | France | 49 | (1.5) | 33 | (0.7) | 62 | (3.3) | 42 | (1.3) | 31 | (2.5) | 16 | (1.0) |
| | Germany | 63 | (2.0) | 50 | (1.1) | 70 | (3.7) | 61 | (1.9) | 47 | (4.0) | 32 | (1.8) |
| | Greece[1] | 37 | (3.1) | 19 | (0.8) | 44 | (6.7) | 32 | (2.3) | 24 | (5.1) | 6 | (1.1) |
| | Ireland | 65 | (1.7) | 47 | (0.7) | 78 | (3.5) | 56 | (1.4) | 59 | (3.3) | 30 | (1.9) |
| | Israel[1] | 72 | (1.8) | 49 | (0.9) | 85 | (2.8) | 60 | (1.5) | 65 | (4.5) | 37 | (1.9) |
| | Italy | 37 | (2.3) | 23 | (1.0) | 55 | (6.6) | 34 | (2.3) | 14 | (2.7) | 11 | (1.3) |
| | Japan | 53 | (2.2) | 40 | (0.8) | 66 | (6.2) | 48 | (1.9) | 47 | (3.6) | 27 | (1.5) |
| | Korea | 67 | (2.4) | 48 | (0.8) | 80 | (3.7) | 62 | (1.4) | 48 | (3.8) | 30 | (1.5) |
| | Netherlands | 67 | (1.2) | 63 | (0.8) | 86 | (2.7) | 76 | (1.6) | 51 | (2.5) | 42 | (1.8) |
| | New Zealand[1] | 72 | (1.4) | 66 | (1.0) | 77 | (3.4) | 72 | (1.6) | 66 | (2.6) | 56 | (2.5) |
| | Norway | 72 | (1.2) | 61 | (0.9) | 80 | (3.1) | 75 | (1.7) | 53 | (2.9) | 40 | (1.9) |
| | Poland | 60 | (3.4) | 33 | (0.8) | 74 | (5.9) | 49 | (1.6) | 42 | (6.1) | 14 | (1.3) |
| | Slovak Republic | 48 | (2.6) | 32 | (0.8) | 59 | (5.4) | 37 | (1.5) | 27 | (4.6) | 17 | (1.2) |
| | Slovenia[1] | 64 | (1.7) | 45 | (0.8) | 80 | (2.8) | 59 | (1.5) | 45 | (3.4) | 23 | (1.6) |
| | Spain | 60 | (2.3) | 45 | (0.8) | 71 | (4.9) | 58 | (1.5) | 42 | (4.8) | 25 | (1.5) |
| | Sweden | 77 | (1.7) | 63 | (0.9) | 91 | (3.0) | 75 | (1.6) | 66 | (4.2) | 47 | (2.0) |
| | Turkey[1] | 39 | (3.5) | 22 | (0.8) | 52 | (8.1) | 32 | (1.5) | 10 | (5.6) | 5 | (1.1) |
| | United States | 72 | (1.2) | 54 | (1.3) | 81 | (2.2) | 64 | (2.1) | 63 | (3.1) | 45 | (1.9) |
| | **Economies** | | | | | | | | | | | | |
| | Flemish Com. (Belgium) | 58 | (1.7) | 47 | (0.9) | 74 | (4.0) | 58 | (1.9) | 44 | (3.1) | 28 | (1.5) |
| | England (UK) | 67 | (1.7) | 54 | (1.0) | 76 | (4.5) | 59 | (1.8) | 57 | (3.7) | 37 | (2.0) |
| | Northern Ireland (UK) | 66 | (2.2) | 45 | (1.2) | 71 | (6.1) | 56 | (2.6) | 61 | (4.7) | 26 | (2.1) |
| | **Average** | 62 | (0.4) | 47 | (0.2) | 74 | (0.8) | 58 | (0.3) | 47 | (0.8) | 30 | (0.3) |
| Partners | Lithuania[1] | 48 | (4.9) | 33 | (0.8) | 56 | (10.3) | 46 | (2.2) | 27 | (7.1) | 21 | (1.7) |
| | Russian Federation* | 34 | (3.3) | 19 | (1.6) | 47 | (7.7) | 29 | (3.1) | 25 | (6.3) | 6 | (1.2) |
| | Singapore[1] | 71 | (2.3) | 55 | (0.7) | 90 | (2.8) | 77 | (1.3) | 57 | (4.0) | 33 | (1.6) |

**Note:** Columns showing data for 35-44 year-olds and 45-54 year-olds are available for consultation on line (see *StatLink* below). See *Definitions* and *Methodology* sections for more information.

1. Reference year is 2015; for all other countries and economies the reference year is 2012.

* See note on data for the Russian Federation in the *Source* section.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933561346

Chapter

D

# The Learning Environment and Organisation of Schools




**Indicator D1** How much time do students spend in the classroom?
StatLink http://dx.doi.org/10.1787/888933561764

**Indicator D2** What is the student-teacher ratio and how big are classes?
StatLink http://dx.doi.org/10.1787/888933562106

**Indicator D3** How much are teachers paid?
StatLink http://dx.doi.org/10.1787/888933561840

**Indicator D4** How much time do teachers spend teaching?
StatLink http://dx.doi.org/10.1787/888933562201

**Indicator D5** Who are the teachers?
StatLink http://dx.doi.org/10.1787/888933562277

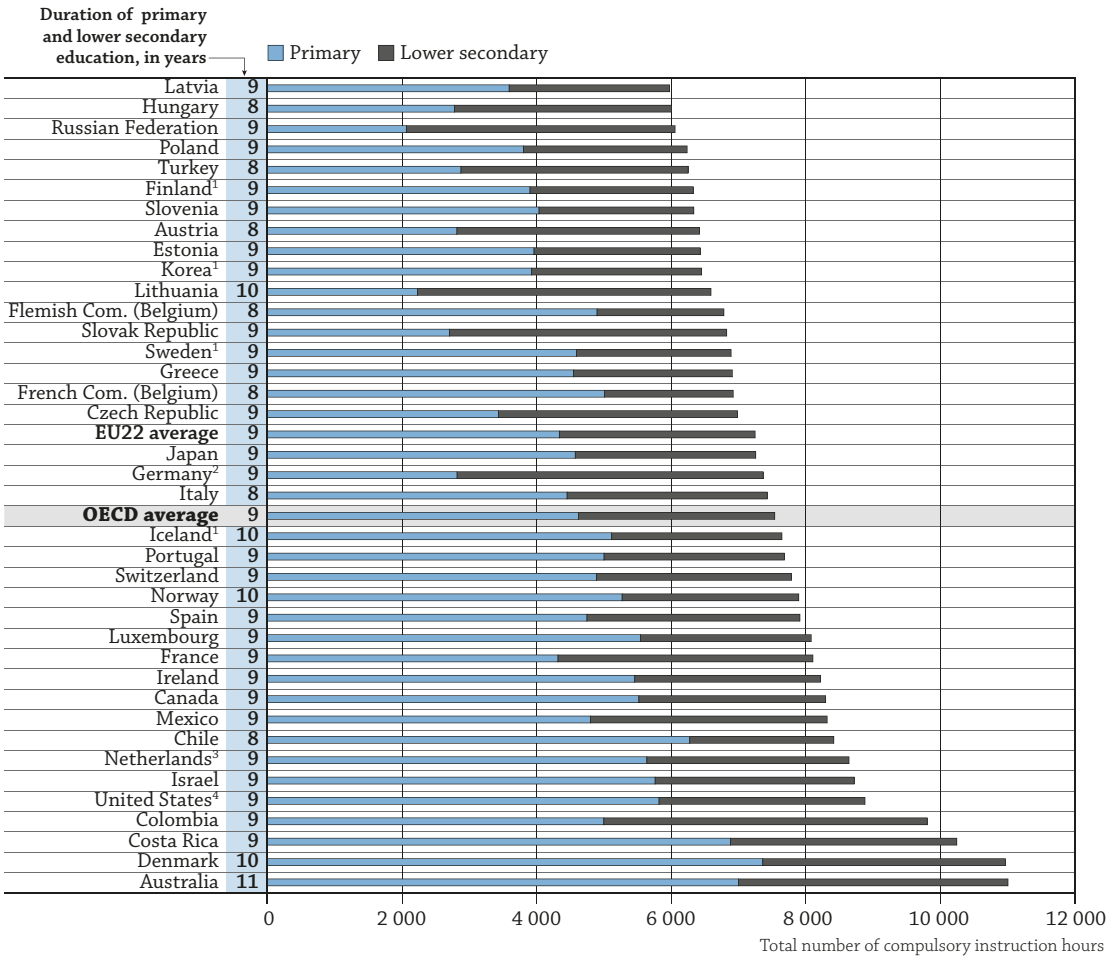
**Indicator D6** What are the national criteria for students to apply to and enter into tertiary education?
StatLink http://dx.doi.org/10.1787/888933562505

# HOW MUCH TIME DO STUDENTS SPEND IN THE CLASSROOM?

- Students in OECD countries and economies receive an average of 7 538 hours of compulsory instruction during their primary and lower secondary education, ranging from 5 976 hours in Latvia to almost double that in Australia (11 000 hours) and Denmark (10 960 hours).
- In OECD countries and economies, compulsory instruction time for primary students averages 800 hours per year, and lower secondary students receive an average of 113 more hours of compulsory education per year than primary students.
- On average across OECD countries and economies, instruction in reading, writing and literature, mathematics, and the arts represents 51% of compulsory instruction time for primary school students, and instruction in reading, writing and literature, second and other languages, and mathematics represents 40% of compulsory instruction time for lower secondary school students.

## Figure D1.1. Compulsory instruction time in general education (2017)

*Primary and lower secondary education, in public institutions*




1. Estimated number of hours by level of education based on the average number of hours per year, as the allocation of instruction time across multiple grades is flexible.

2. Year of reference 2016.

3. The number of grades in lower secondary education is three or four, depending on the track. The fourth year of pre-vocational secondary education (VMBO) was excluded from the calculation.

4. Year of reference 2015.

*Countries and economies are ranked in ascending order of the total number of compulsory instruction hours.*

**Source**: OECD (2017), Table D1.1. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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## Context

Providing instruction in formal classroom settings accounts for a large portion of public investment in education. Countries make various choices concerning the overall amount of time devoted to instruction and which subjects are compulsory. These choices reflect national and/or regional priorities and preferences concerning what material students should be taught and at what age. Almost all countries have statutory or regulatory requirements regarding hours of instruction. These are most often stipulated as the minimum number of hours of instruction a school must offer and are based on the understanding that sufficient time is required for good learning outcomes. Matching resources with students' needs and making optimal use of time are central to education policy. Teachers' salaries, institutional maintenance and provision of other educational resources constitute the main costs of education. The length of time during which these resources are made available to students (as partly shown in this indicator) is an important factor in determining how funds for education are allocated (see Indicator B7, which shows the factors influencing the salary cost of teachers per student). There is growing awareness of the importance of time spent outside the classroom during the school day in activities other than instruction, including recesses and breaks. In addition to formal instruction time, students may participate in extracurricular activities before and/or after the school day or during school holidays, but these activities (as well as examination periods) are outside the scope of this indicator.

## Other findings

- The proportion of the compulsory curriculum for primary students devoted to reading, writing and literature ranges from 18% in Poland to 39% in the Russian Federation; for lower secondary students, it ranges from 9% in Ireland to more than 25% in Greece (and in Italy, including social studies).
- The proportion of the compulsory curriculum devoted to mathematics at the primary level ranges from 12% in Denmark to 27% in Mexico; at the lower secondary level it ranges from 11% in Hungary and Korea to 16% in Chile, Latvia and the Russian Federation (and 20% in Italy, including natural science).
- Except for a few countries where compulsory curriculum is mostly devoted to flexible subjects, in OECD countries and economies, an average of 2% of compulsory instruction time for primary students and lower secondary students is devoted to subjects with a flexible timetable. An average of 5% of compulsory instruction time at the primary level and 6% at the lower secondary level is devoted to flexible subjects chosen by schools.
- In one-third of countries with available data, the allocation of instruction time across grades is flexible (i.e. instruction time for a specific subject is defined for a certain number of grades, or even the whole of compulsory education, without specifying the time to be allocated to each grade).

D1

## Analysis

### Compulsory general education

Both annual instruction time and the length of compulsory education have impacts on the total instruction time during compulsory education. In some countries, the duration of compulsory education is shorter and students could bear a heavier workload based on statutory requirements, while in other countries, the workload is distributed evenly over more years. This indicator focuses on compulsory education at primary and lower secondary levels. However, in some countries such as in Denmark and the Netherlands, pre-primary education is also compulsory, so the starting age for compulsory education is younger than the age at which primary education starts.

In around three out of four countries and economies with available data, students are required to start primary education at age 6. However, in Estonia, Finland, Latvia, Lithuania, Poland, the Russian Federation and Sweden, students are not required to start until age 7. Only in Australia, England (United Kingdom), New Zealand and Scotland (United Kingdom) does primary education start at age 5.

There is also substantial variation in the duration of primary education. On average, primary education lasts six years, but it ranges from four years in Austria, Germany, Hungary, Lithuania, the Russian Federation, the Slovak Republic and Turkey to seven years in Australia, Denmark, Iceland, Norway and Scotland (United Kingdom). Lower secondary education averages three years but ranges from two years in Chile and the Flemish and French Communities of Belgium to five years in Germany, the Russian Federation and the Slovak Republic, and six years in Lithuania. In around three out of five countries and economies with available data, at least one year of upper secondary education is part of compulsory full-time education (Table D1.2).

Countries also allocate annual instruction time differently over the year. The number of instruction days can vary significantly between countries, as can the way these instruction days are distributed across the school year, because countries organise holidays differently (see Box D1.1 in OECD, 2016a). Within instruction days, countries also vary in the way they organise recess and breaks (Box D1.1).

#### Box D1.1. **Recess and breaks during the school day**

Learning in the classroom demands that students be focused and concentrate for long periods of time. Based on annual instruction hours and the number of instruction days per year, primary students have less than four hours of compulsory instruction per school day in two-fifths of countries, but more than five hours a day in a few countries (Canada, Chile, Denmark, France, Luxembourg and the United States). At lower secondary level, the number of compulsory instruction hours per day is usually higher, with all countries having at least four hours of compulsory instruction time per day, over half of countries having between four and five hours per day, and Colombia, Denmark and Spain having six hours or more per day (Tables D1.1 and D1.2).

Research has found that spending some time outside the classroom during the school day in activities other than instruction can help improve students' performance in the classroom. In primary education, breaks in instruction allow pupils to play, rest and freely interact with their peers to further develop cognitive, emotional and social skills. Research suggests that students may then apply those skills in the classroom, thus improving their learning (Pellegrini and Bohn, 2005; Pellegrini et al., 2002). OECD countries increasingly consider recess and breaks as important components of the school day.

How breaks are organised in OECD countries depends on how education systems are governed and the degree of autonomy that individual schools enjoy (see Box D1.1 in OECD, 2015). In most countries, the school day is divided into lessons that last from 45 to 50 minutes, allowing for short breaks between them to make up an entire hour. Across OECD countries, 10-15 minute breaks are generally long enough to allow students to change classrooms and visit the bathroom. These short breaks are different in length and purpose from longer breaks also observed in the majority of countries. During longer breaks, students can have breakfast or lunch and are commonly supervised by a teacher or group of teachers.

In primary education, long breaks are common and, in some cases, are even compulsory. In Spain, for example, breaks in primary school are considered part of compulsory instruction time. Primary students in Spain have a half-hour break every day in the middle of the morning session that is considered part of the five daily instruction hours. In several countries, a lunch break is set as part of the learning process, where students learn about hygiene, healthy eating habits and/or recycling waste.

...

In several countries, long breaks can be found at all levels of education. In Australia, schools at all levels of education tend to have one short morning recess and then a longer lunch break. In Canada, there is a midday break for lunch in primary through upper secondary education. In both countries, long breaks can last around 40 to 60 minutes. Some countries have even longer lunch breaks, such as in France, where they last 90 minutes for primary education. Breaks can also occur throughout the day. In Switzerland, for example, schools usually organise two breaks of between 15 and 30 minutes each and a long lunch break of about 60 to 90 minutes. In Chile, schools with a large number of pupils may divide students up into two or more groups, by grade or age, for their breaks.

Schools can use recess and breaks for different purposes. They can use breaks as a way of helping students who have to commute a long distance to school or to harmonise the end of classes when the duration of lesson periods is different across grades, as in the Czech Republic, where ten-minute breaks can be shortened to five minutes. In Denmark, municipalities often use breaks and recess as an integrated part of daily exercise and physical activities for students at all grade levels. This is also the case in Slovenia, where schools sometimes organise a long break intended for students to practice sports in the gym and on the school's outdoor playing fields.

### Compulsory instruction time

Compulsory instruction time refers to the amount and allocation of instruction time that must be provided in almost every public school and must be attended by almost all public sector students, as per public regulations.

Students in OECD countries and economies attend an average of 4 626 hours of instruction during primary school and 2 911 hours during lower secondary education. While the average total compulsory instruction time for primary and lower secondary students in OECD countries and economies is 7 538 hours (in 9 years on average), formal instruction-time requirements range from 5 976 hours in Latvia (in 9 years) to 11 000 in Australia (in 11 years) (Figure D1.1). In England (United Kingdom), New Zealand and Scotland (United Kingdom), regulations do not prescribe total compulsory instruction time in schools. However, schools are required to be open for instruction for a minimum number of hours per day (New Zealand) or to allow sufficient instruction time to deliver a broad and balanced curriculum that includes all statutory requirements.

Compulsory instruction time can differ from actual instruction time, as it only captures the time spent by students in formal classroom settings. This is only a part of the total time students spend receiving instruction. Instruction also occurs outside compulsory school hours and outside the classroom and/or school. In some countries, secondary school students are encouraged to take after-school classes in subjects already taught in school to help them improve their performance. Students can participate in after-school lessons in the form of remedial catch-up classes or enrichment courses, with individual tutors or in group lessons provided by school teachers, or in other independent courses (see Box D1.2). These lessons can be financed through public funds or by students and their families (see Box D1.1 in OECD, 2011).

This indicator captures intended instruction time (as established in public regulations) as a measure of learning in formal classroom settings. It does not show the actual number of hours of instruction that students receive and does not cover learning outside of the formal classroom setting.

#### Box D1.2. Extracurricular activities at school

In addition to formal instruction time, students may participate in extracurricular activities on school premises before and/or after the school day or during school holidays.

In OECD and partner countries and economies, extracurricular activities are more commonly offered during the school year (before and/or after classes) than during school holidays. Although schools often have the autonomy to decide whether they provide these activities or not, it is sometimes compulsory for all schools to offer extracurricular activities. For example in Slovenia, schools must offer after-school classes for pupils in primary education, where students can study, complete their homework, play, get involved in creative and sport activities and participate in extracurricular activities. In Hungary, not only do primary and lower secondary schools have to organise extracurricular activities until 4:00 pm, but students are required to attend them.

...

These activities can be organised by schools (as in Brazil and Hungary), by municipalities (as in Israel) or by volunteer school staff (as in Ireland). External public partners are also often involved in organising extracurricular activities on school premises, as are private stakeholders, although less commonly so. For example, in Portugal, these activities can be organised by parent associations and non-governmental organisations. In Chile, the Czech Republic, Estonia, Iceland, Italy, Japan and Slovenia, occasional additional payments are offered to teachers in primary to upper secondary education to participate in these extracurricular activities. These activities are compulsory for teachers and paid as part of their statutory salary in some countries such as Hungary, Latvia and Luxembourg (pre-primary and primary) (see Indicator D3).

Before-school and/or after-school activities typically include childcare (at the primary level), tutoring or remedial courses, and sports and/or artistic and cultural activities. In Hungary (upper secondary level) and Turkey, these activities also include community service; in Spain, classes in foreign languages, information and communication technologies (ICT) and reading and writing workshops are offered.

### *Intended instruction time*

Total intended instruction time is the estimated number of hours during which schools are obliged to offer instruction in compulsory and, if applicable, non-compulsory subjects.

Intended and compulsory instruction time are of the same length (i.e. intended instruction time is fully compulsory) for primary and lower secondary students in about three out of four countries with available data. In Finland, France (lower secondary), Greece (primary), Lithuania, Poland, Portugal and Slovenia, the intended instruction time is at least 3% longer than the compulsory instruction time. However intended instruction time could be different from actual instruction time of students (see Box D1.3).

#### Box D1.3. **Compulsory, intended and self-reported actual instruction time of 15-year-olds**

In 2015, the OECD Programme for International Student Assessment (PISA) aimed to evaluate the skills and knowledge of 15-year-old students in science, mathematics and reading (OECD, 2016b). A wide range of information was collected from 15-year-olds, including self-reported (actual) instruction time, which could be used to complement this indicator on instruction time in compulsory education as per public regulations (Indicator D1).

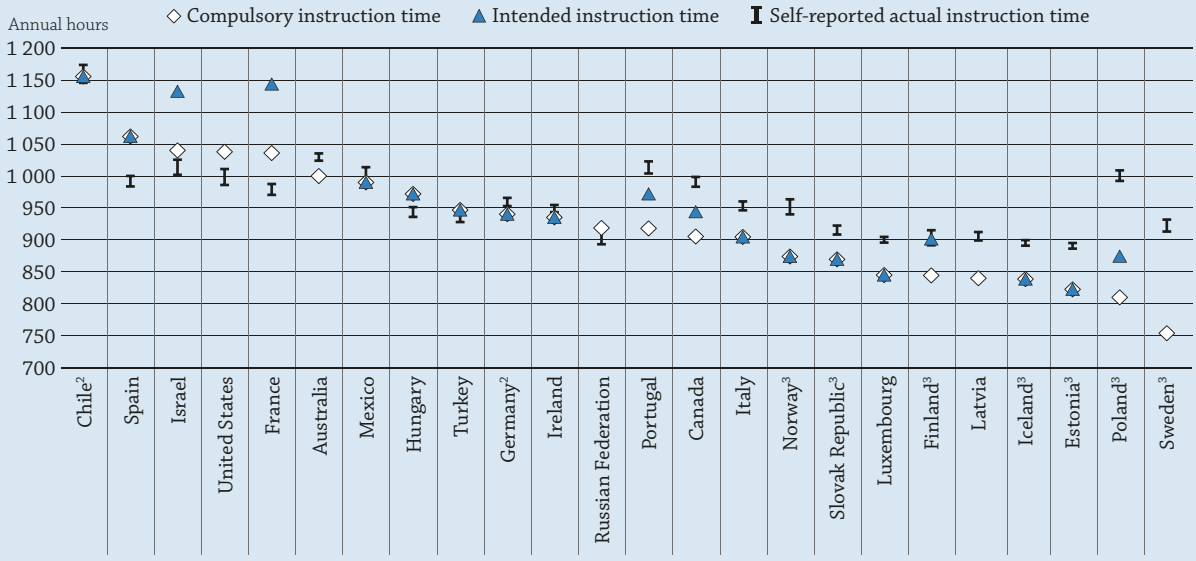
In PISA 2015, 15-year-old students reported the total number of class periods per week (and duration of class periods) they were typically required to attend at school (the questions were "In a normal, full week at school, how many class periods are you required to attend in total?" and "How many minutes, on average, are there in a class period?"), as well as the number of classes for each subject included in the assessment (question: "How many class periods per week are you typically required to attend for the following subjects?"). Combined with the estimated number of weeks of instruction in school year 2015 (based on the number of instruction days per year divided by the number of days per week students attend school, as reported in Table D1.2 of *Education at a Glance 2015* [OECD, 2015]), this can be considered as the self-reported instruction time for 15-year-olds (OECD, 2016c).

In most countries with available data, self-reported instruction time exceeds compulsory and intended instruction time (Figure D1.a). Some of these differences result from the reference population used for these data. Students assessed in PISA at age 15 can be enrolled in different grades or different levels of education (lower or upper secondary), in public and private institutions, and in different pathways (general and vocational programmes). The self-reported instruction time based on PISA data is then an average that can differ from instruction time reported in this indicator (instruction time of 15-year-olds in general programmes in public institutions), even if this refers to compulsory education.

Self-reported actual instruction time also includes non-compulsory instruction hours and can exceed the intended instruction time (compulsory and non-compulsory time) as reported in this indicator when actual non-compulsory instruction time is higher than that noted in official documents.

...

## Figure D1.a. Instruction time for 15-year-olds[1] (2015)




**Note**: Definitions of compulsory and intended instruction time are those used in this indicator. Self-reported actual instruction time refers to instruction time in a normal, full week at school reported by 15-year-olds in PISA 2015, multiplied by the number of weeks of instruction time as estimated from Indicator D1 (Table D1.2).

1. Only if applicable to full-time compulsory education.
2. Year of reference 2014.
3. Estimated instruction time per age, as the allocation of instruction time across multiple grades is flexible.

**Source**: OECD (2017). *Education at a Glance 2015*, Tables D1.2 and D1.4, and PISA 2015 Database.

StatLink http://dx.doi.org/10.1787/888933563037

Another important factor to consider is the flexible distribution of the instruction hours between grades (for example in Estonia, Finland, Iceland, Norway, Poland, the Slovak Republic and Sweden). In these cases, instruction hours in public institutions for a specific grade as reported in compulsory curriculum are estimated as the average instruction hours per grade across the number of grades where instruction time is flexible. These may differ from the actual instruction hours at this grade, when instruction hours are not allocated equally between grades, or when the distribution of instruction hours between grades vary between institutions within the country.

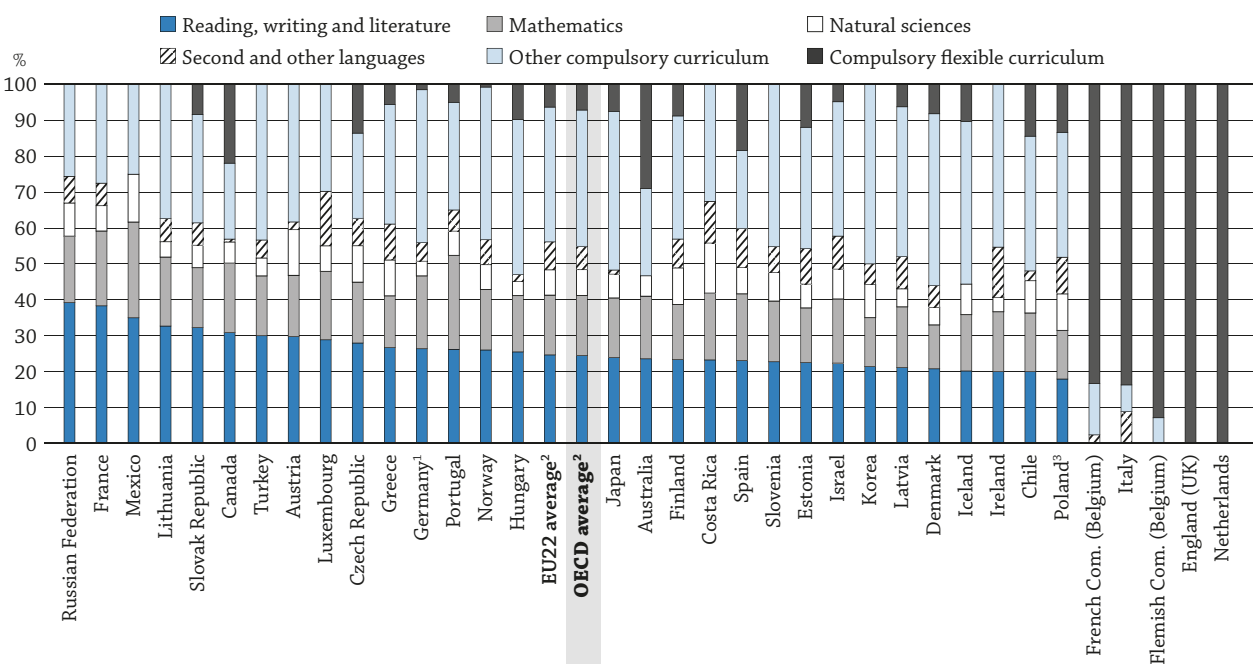
Divergence in methodologies may also explain the differences between compulsory instruction time and self-reported actual instruction time, especially when subnational entities determine education policy (in which case statutory data refer to weighted averages). Finally, flexibility in instruction time across subjects (within the same grade), added to the flexibility between grades, make it more difficult to compare student reported time devoted to the different subjects analysed in PISA with compulsory and intended time reported in Indicator D1, especially as definitions of these fields may differ between the two data sources.

### Instruction time per subject

On average across OECD countries, primary students spend 51% of the compulsory instruction time on three subjects: reading, writing and literature (24%), mathematics (17%) and the arts (10%). Together with physical education and health (9%), natural sciences (7%) and social studies (6%), these six study areas form the major part of the curriculum in all OECD countries where instruction time per subject is specified. Second and other languages, religion, information and communication technologies (ICT), technology, practical and vocational skills, and other subjects make up the remainder of the non-flexible compulsory curriculum at the primary level, representing 19% of the compulsory instruction time on average across OECD countries (Table D1.3a and Figure D1.2a).

## Figure D1.2a. Instruction time per subject in primary education (2017)

*As a percentage of total compulsory instruction time, in public institutions*




1. Year of reference 2016.

2. Excludes England (United Kingdom), Flemish Com. (Belgium), French Com. (Belgium), Italy and the Netherlands.

3. Excludes the first three years of primary education for which a large proportion of the time allocated to compulsory subjects is flexible.

*Countries and economies are ranked in descending order of the proportion of instruction hours devoted to reading, writing and literature.*

**Source**: OECD (2017), Table D1.3a. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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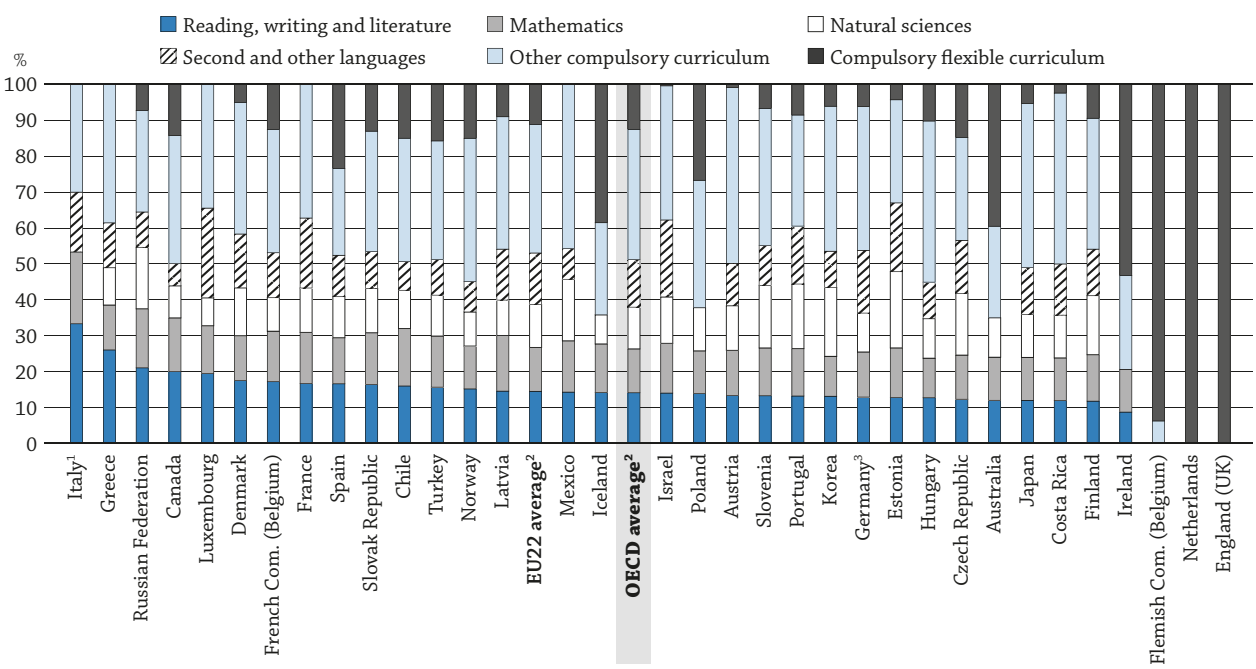
At the lower secondary level, on average across OECD countries and economies, 40% of the compulsory curriculum is composed of three subjects: reading, writing and literature (14%), second and other languages (13%) and mathematics (12%). On average, an additional 12% of the compulsory curriculum is devoted to natural sciences, 10% to social studies, 8% to physical education and health, and 6% to the arts. These seven study areas form the major part of the curriculum for this level of education in all OECD countries where instruction time per subject is specified. Religion, ICT, technology, practical and vocational skills, and other subjects make up the remainder (12%) of the non-flexible compulsory curriculum for students at this level of education (Table D1.3b and Figure D1.2b).

This is a significant shift in the allocation of time from primary schooling. Instruction in reading, writing and literature drops from 24% of the compulsory instruction time to 14% on average across OECD countries and economies. Instruction in mathematics drops from 17% of compulsory instruction time to 12%. Conversely, instruction in natural science climbs from 7% of the compulsory curriculum to 12%, and in social studies from 6% to 10%, while instruction in other languages (second and others) climbs from 6% to 13%. At the national level, instruction in second and other languages accounts for the largest share of the compulsory core curriculum at the lower secondary level in France, Germany, Israel, Japan and Luxembourg (Tables D1.3a and b).

At the lower secondary level, there is substantial variation in how countries allocate time among the different subjects within the compulsory curriculum. For example, reading, writing and literature account for 12% of compulsory instruction time in Australia, Costa Rica, the Czech Republic, Finland and Japan, but more than 25% of compulsory instruction time in Greece and Italy (in Italy, it also includes time devoted to social studies). In Ireland, reading, writing and literature are taught in two national languages, and therefore the actual estimation of the combined percentage can reach about 21% of the total compulsory instruction time. Second-language instruction accounts for 6% of compulsory instruction time in Canada and Greece, and 13% in the French Community of Belgium and in Japan. In addition, in just over half of countries with available data, studying another language in addition to a second language is compulsory for lower secondary students.

## Figure D1.2b. Instruction time per subject in general lower secondary education (2017)

*As a percentage of total compulsory instruction time, in public institutions*




1. Natural sciences included in mathematics.
2. Excludes England (United Kingdom), Flemish Com. (Belgium) and the Netherlands.
3. Year of reference 2016.

*Countries and economies are ranked in descending order of the proportion of instruction hours devoted to reading, writing and literature.*

**Source**: OECD (2017), Table D1.3b. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933558667

As seen at the primary and lower secondary levels, there are significant differences in how time is allocated to school subjects as students grow older. On average across OECD countries, 28% of instruction time for 7-year-olds is devoted to reading, writing and literature, 18% for 11-year-olds and 11% for 15-year-olds. By contrast, while an average of 3% of instruction time for 7-year-olds is devoted to the teaching of a second language, 10% of instruction time for 11-year-olds is spent studying a second language and 2% studying other languages, and for 15-year-olds 9% of instruction time is devoted to the second language and 5% to other languages. The share of instruction time dedicated to natural sciences increases from 6% for 7-year-olds to 9% for 11-year-olds and 11% for 15-year-olds, while instruction time in social studies increases from 5% for 7-year-olds to 9% for 11-year-olds and 15-year-olds. The portion of instruction time dedicated to the arts slips from 11% for 7-year old students and 9% for 11-year-olds to 4% for 15-year-olds, while time dedicated to physical education remains fairly constant at 9% for 7-year-olds and 8% for 11-year-olds, before dropping to 6% for 15-year-olds (Tables D1.5b, f and j, available on line).

### Flexibility in the curriculum

In most countries, central and state authorities establish regulations or recommendations regarding instruction time and the curriculum. However, local authorities, schools, teachers and/or students also have varying degrees of freedom in organising instruction time or in choosing subjects.

In about one-third of countries with available data, the allocation of instruction time across grades is flexible (i.e. instruction time for a specific subject is defined for a certain number of grades or even the whole of compulsory education, without specifying the time to be allocated to each grade). In such cases, schools/local authorities are free to decide how much time should be allocated for each grade (Tables D1.2 and D1.4).

Setting compulsory subjects within a flexible timetable is the practice for most subjects in a few countries. In the Flemish and French Communities of Belgium and Italy, 83% or more of the compulsory curriculum at the primary level is organised within a flexible timetable. In England (United Kingdom) and the Netherlands, the whole

curriculum at the primary level is organised in a flexible timetable. At the lower secondary level, similar patterns occur in the Flemish Community of Belgium, England (United Kingdom) and the Netherlands. In these countries and economies, compulsory subjects and total instruction time are specified, but not the time to be allocated to each subject. Local authorities, schools and/or teachers are free to decide how much time should be allocated to each compulsory subject. In Scotland (United Kingdom), at both primary and lower secondary levels, some compulsory subjects are specified, but there is no regulation on total instruction time, which is the responsibility of local authorities and schools themselves. Excluding these countries, compulsory subjects with flexible timetables account for only 2% of the compulsory instruction time at both the primary and lower secondary levels, even if they could be a significant part of the curriculum in some countries. Flexible timetables account for more than 10% and less than 20% of the compulsory subjects in Canada at the primary level, and in Iceland, Ireland and Poland at the lower secondary level.

Flexibility in the choice of subjects is less common across OECD countries and economies. On average, 5% of compulsory instruction time is allocated to subjects chosen by schools at the primary level. At the lower secondary level, 6% of compulsory instruction time is allocated to subjects chosen by schools and another 5% to subjects chosen by the students. However, some countries allocate a substantial part of the compulsory instruction time to flexible subjects. For example, at least 10% of compulsory instruction time is allocated to subjects chosen by schools in Canada (lower secondary), Chile, the Czech Republic, Estonia (primary), the French Community of Belgium (lower secondary), Hungary, Poland, the Slovak Republic (lower secondary) and Spain (primary). At least 20% of compulsory instruction time is allocated in this way in Australia (29% at the primary level and 22% at lower secondary level), the Flemish Community of Belgium (20% at lower secondary level) and Spain (23% at lower secondary level). In Australia, Iceland and Turkey, at least 16% of compulsory instruction time is allocated to subjects chosen by lower secondary students, and the proportion reaches 40% in Ireland (Tables D1.3a and b).

### Non-compulsory instruction time

Non-compulsory instruction time is rare across OECD countries. Only six countries at primary level and seven countries at lower secondary level devote a known amount of time to non-compulsory instruction. Across OECD countries, non-compulsory instruction time is equivalent to an average of 4% of the total compulsory instruction time for primary students and 2% for lower secondary students. However, a considerable amount of additional non-compulsory instruction time is provided in some countries. At the primary level, additional non-compulsory time accounts for 33% of the total compulsory instruction time in Greece, 25% in Portugal and 21% in Slovenia. At the lower secondary level, non-compulsory instruction time accounts for 11% of the total compulsory instruction time in Finland, 15% in Lithuania and 23% in Slovenia (Tables D1.3a and b).

## Definitions

**Compulsory curriculum** refers to the amount and allocation of instruction time that has to be provided in almost every public school and must be attended by almost all public sector students. The compulsory curriculum may be flexible, as local authorities, schools, teachers and/or pupils may have varying degrees of freedom to choose the subjects and/or the allocation of compulsory instruction time.

**Compulsory flexible subjects chosen by schools** refer to the total amount of compulsory instruction time indicated by the central authorities, which regional authorities, local authorities, schools or teachers allocate to subjects of their choice (or subjects they chose from a list defined by central education authorities). It is compulsory for the school to offer one of these subjects, and students must attend.

**Compulsory options chosen by the students** refer to the total amount of instruction time in one or more subjects that pupils have to select (from a set of subjects that are compulsory for schools to offer) in order to cover part of their compulsory instruction time.

**Compulsory subjects with a flexible timetable** refer to the total amount of instruction time indicated by the central authorities for a given group of subjects, which regional authorities, local authorities, schools or teachers allocate to individual subjects. There is flexibility in the time spent on a subject, but not in the subjects to be taught.

**Flexible allocation of instruction time across multiple grades** refers to the case where the curriculum only indicates the total instruction time for a specific subject for a certain number of grades, or even the whole of compulsory education, without specifying the time to be allocated to each grade. In such cases, schools/local authorities are free to decide how much time should be assigned for each grade.

**Instruction time** refers to the time a public school is expected to provide instruction to students on all the subjects integrated into the compulsory and non-compulsory curriculum, on school premises or in before-school/after-school activities that are formal parts of the compulsory programme. Instruction time excludes breaks between classes or other types of interruptions, non-compulsory time outside the school day, time dedicated to homework activities and individual tutoring or private study.

**Intended instruction time** refers to the number of hours per year of the compulsory and non-compulsory part of the curriculum that students are entitled to receive in public schools. The intended curriculum can be based on regulations or standards of the central (or top-level) education authorities or may be established as a set of recommendations at the regional level.

The **non-compulsory part of the curriculum** refers to the total amount of instruction time to which students are entitled beyond the compulsory hours of instruction and that almost every public school is expected to provide. Subjects can vary from school to school or from region to region and take the form of elective subjects. Students are not required to choose one of the elective subjects, but all public schools are expected to offer this possibility.

## Methodology

This indicator captures intended instruction time (as established in public regulations) as a measure of learning in formal classroom settings. It does not show the actual number of hours of instruction that students receive and does not cover learning outside of the formal classroom setting. Differences may exist across countries between the regulatory minimum hours of instruction and the actual hours of instruction received by students. Given such factors as school timetables, lesson cancellations and teacher absenteeism, schools may not consistently attain the regulatory minimum instruction time (see Box D1.1 in OECD, 2007).

The indicator also illustrates how minimum instruction hours are allocated across different curricular areas. It shows the intended net hours of instruction for those grades that are part of compulsory full-time general education. Although the data are difficult to compare across countries because of different curricular policies, they nevertheless provide an indication of how much formal instruction time is considered necessary for students to achieve the desired educational goals.

When the allocation of instruction time across grades is flexible (i.e. instruction time for a specific subject is defined for a certain number of grades, or even the whole of compulsory education, without specifying the time to be allocated to each grade) instruction time per age or level of education was estimated by dividing the total number of instruction hours per the number of grades.

For more information please see the *OECD Handbook for Internationally Comparative Education Statistics: Concepts, Standards, Definitions and Classifications* (OECD, 2017) and Annex 3 for country-specific notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

## Source

Data on instruction time are from the 2016 Joint Eurydice-OECD Instruction time data collection and refer to instruction time during compulsory primary and full-time (lower and upper) secondary general education for the school year 2016/17.

**Note regarding data from Israel**

The statistical data for Israel are supplied by and are under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

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## Indicator D1 Tables

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| | | |
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| | Table D1.2 | Organisation of compulsory general education (2017) |
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| WEB | Table D1.5a | Instruction time per subject for 6-year-olds (2017) |
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| WEB | Table D1.5c | Instruction time per subject for 8-year-olds (2017) |
| WEB | Table D1.5d | Instruction time per subject for 9-year-olds (2017) |
| WEB | Table D1.5e | Instruction time per subject for 10-year-olds (2017) |
| WEB | Table D1.5f | Instruction time per subject for 11-year-olds (2017) |
| WEB | Table D1.5g | Instruction time per subject for 12-year-olds (2017) |
| WEB | Table D1.5h | Instruction time per subject for 13-year-olds (2017) |
| WEB | Table D1.5i | Instruction time per subject for 14-year-olds (2017) |
| WEB | Table D1.5j | Instruction time per subject for 15-year-olds (2017) |
| WEB | Table D1.5k | Instruction time per subject for 16-year-olds (2017) |
| WEB | Table D1.5l | Instruction time per subject for 17-year-olds (2017) |

Cut-off date for the data: 19 July 2017. Any updates on data can be found on line at http://dx.doi.org/10.1787/eag-data-en.

## Table D1.1. [1/2] Instruction time in compulsory general education[1] (2017)

*By level of education, in public institutions*

| | | Primary | | | | | | | Lower secondary | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Average hours per year | | | Total number of hours | | | | Average hours per year | | |
| | | Number of grades that are part of compulsory education | Compulsory instruction time | Non-compulsory instruction time | Intended instruction time | Compulsory instruction time | Non-compulsory instruction time | Intended instruction time | Number of grades that are part of compulsory education | Compulsory instruction time | Non-compulsory instruction time | Intended instruction time |
| | | (1) | (2) | (3) | (4)=(2)+(3) | (5) | (6) | (7)=(5)+(6) | (8) | (9) | (10) | (11)=(9)+(10) |
| OECD | **Countries** | | | | | | | | | | | |
| | Australia | 7 | 1 000 | m | m | 7 000 | m | m | 4 | 1 000 | m | m |
| | Austria | 4 | 705 | m | m | 2 820 | m | m | 4 | 900 | m | m |
| | Canada | 6 | 920 | a | 920 | 5 521 | a | 5 521 | 3 | 924 | 6 | 930 |
| | Chile | 6 | 1 046 | a | 1 046 | 6 276 | a | 6 276 | 2 | 1 069 | a | 1 069 |
| | Czech Republic | 5 | 687 | m | m | 3 434 | m | m | 4 | 888 | m | m |
| | Denmark | 7 | 1 051 | a | 1 051 | 7 360 | a | 7 360 | 3 | 1 200 | a | 1 200 |
| | Estonia | 6 | 661 | a | 661 | 3 964 | a | 3 964 | 3 | 823 | a | 823 |
| | Finland[2] | 6 | 651 | 33 | 683 | 3 905 | 195 | 4 100 | 3 | 808 | 87 | 894 |
| | France | 5 | 864 | a | 864 | 4 320 | a | 4 320 | 4 | 946 | 63 | 1 009 |
| | Germany[3, 4] | 4 | 705 | a | 705 | 2 822 | a | 2 822 | 5 | 909 | a | 909 |
| | Greece | 6 | 758 | 253 | 1 011 | 4 550 | 1 517 | 6 066 | 3 | 787 | a | 787 |
| | Hungary | 4 | 696 | a | 696 | 2 785 | a | 2 785 | 4 | 805 | a | 805 |
| | Iceland[2] | 7 | 729 | a | 729 | 5 100 | a | 5 100 | 3 | 839 | a | 839 |
| | Ireland | 6 | 910 | a | 910 | 5 460 | a | 5 460 | 3 | 918 | a | 918 |
| | Israel | 6 | 960 | a | 960 | 5 762 | a | 5 762 | 3 | 985 | a | 985 |
| | Italy | 5 | 891 | a | 891 | 4 455 | a | 4 455 | 3 | 990 | a | 990 |
| | Japan[5] | 6 | 763 | a | 763 | 4 576 | a | 4 576 | 3 | 893 | a | 893 |
| | Korea[2] | 6 | 655 | a | 655 | 3 928 | a | 3 928 | 3 | 842 | a | 842 |
| | Latvia | 6 | 599 | m | m | 3 595 | m | m | 3 | 794 | m | m |
| | Luxembourg | 6 | 924 | a | 924 | 5 544 | a | 5 544 | 3 | 845 | a | 845 |
| | Mexico | 6 | 800 | a | 800 | 4 800 | a | 4 800 | 3 | 1 167 | a | 1 167 |
| | Netherlands[6] | 6 | 940 | m | m | 5 640 | m | m | 3 | 1 000 | m | m |
| | New Zealand | 6 | m | m | m | m | m | m | 4 | m | m | m |
| | Norway | 7 | 753 | a | 753 | 5 272 | a | 5 272 | 3 | 874 | a | 874 |
| | Poland | 6 | 635 | 57 | 692 | 3 807 | 343 | 4 150 | 3 | 810 | 64 | 874 |
| | Portugal | 6 | 834 | 205 | 1 039 | 5 004 | 1 231 | 6 235 | 3 | 892 | 27 | 919 |
| | Slovak Republic | 4 | 677 | a | 677 | 2 707 | a | 2 707 | 5 | 823 | a | 823 |
| | Slovenia | 6 | 673 | 140 | 813 | 4 039 | 840 | 4 879 | 3 | 766 | 179 | 944 |
| | Spain | 6 | 792 | a | 792 | 4 750 | a | 4 750 | 3 | 1 054 | a | 1 054 |
| | Sweden[2] | 6 | 766 | m | m | 4 593 | m | m | 3 | 766 | m | m |
| | Switzerland | 6 | 816 | m | m | 4 894 | m | m | 3 | 963 | m | m |
| | Turkey | 4 | 720 | a | 720 | 2 880 | a | 2 880 | 4 | 843 | a | 843 |
| | United States[7] | 6 | 970 | m | m | 5 820 | m | m | 3 | 1 019 | m | m |
| | **Economies** | | | | | | | | | | | |
| | Flemish Com. (Belgium) | 6 | 817 | a | 817 | 4 900 | a | 4 900 | 2 | 941 | a | 941 |
| | French Com. (Belgium) | 6 | 835 | a | 835 | 5 012 | a | 5 012 | 2 | 955 | a | 955 |
| | England (UK) | 6 | m | a | m | m | a | m | 3 | m | a | m |
| | Scotland (UK) | 7 | m | a | m | m | a | m | 3 | m | a | m |
| | **OECD average** | 6 | 800 | m | m | 4 626 | m | m | 3 | 913 | m | m |
| | **EU22 average** | 6 | 776 | m | m | 4 339 | m | m | 3 | 892 | m | m |
| Partners | Argentina | m | m | m | m | m | m | m | m | m | m | m |
| | Brazil | 5 | m | m | m | m | m | m | 4 | m | m | m |
| | China | m | m | m | m | m | m | m | m | m | m | m |
| | Colombia | 5 | 1 000 | m | m | 5 000 | m | m | 4 | 1 200 | m | m |
| | Costa Rica | 6 | 1 147 | a | 1 147 | 6 880 | a | 6 880 | 3 | 1 120 | a | 1 120 |
| | India | m | m | m | m | m | m | m | m | m | m | m |
| | Indonesia | m | m | m | m | m | m | m | m | m | m | m |
| | Lithuania | 4 | 559 | 29 | 588 | 2 236 | 115 | 2 351 | 6 | 726 | 108 | 834 |
| | Russian Federation | 4 | 517 | m | m | 2 068 | m | m | 5 | 798 | m | m |
| | Saudi Arabia | m | m | m | m | m | m | m | m | m | m | m |
| | South Africa | m | m | m | m | m | m | m | m | m | m | m |
| | **G20 average** | m | m | m | m | m | m | m | m | m | m | m |

**Note:** Columns showing instruction time in compulsory upper secondary education (i.e. Columns 19-25) are available for consultation on line. See *Definitions* and *Methodology* sections for more information. Data available at http://stats.oecd.org/, Education at a Glance Database.

1. Refers to full-time compulsory education and excludes pre-primary education, even if compulsory.
2. Estimated number of hours by level of education based on the average number of hours per year, as the allocation of instruction time across multiple grades is flexible.
3. Year of reference 2016.
4. Excludes the last year of compulsory education, which can be classified at either the lower secondary or the upper secondary level.
5. Actual instruction time.
6. The number of grades in lower secondary education is three or four, depending on the track. The fourth year of pre-vocational secondary education (VMBO) was excluded from the calculation.
7. Year of reference 2015.

**Source:** Source: OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

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D1

## Table D1.1. [2/2] Instruction time in compulsory general education[1] (2017)

*By level of education, in public institutions*

| | | Lower secondary | | | Primary and lower secondary | | | |
|---|---|---|---|---|---|---|---|---|
| | | Total number of hours | | | | Total number of hours | | |
| | | Compulsory instruction time | Non-compulsory instruction time | Intended instruction time | Theoretical duration in years | Compulsory instruction time | Non-compulsory instruction time | Intended instruction time |
| | | (12) | (13) | (14)=(12)+(13) | (15) | (16)=(5)+(12) | (17)=(6)+(13) | (18)=(16)+(17) |
| OECD | **Countries** | | | | | | | |
| | Australia | 4 000 | m | m | 11 | **11 000** | **m** | **m** |
| | Austria | 3 600 | m | m | 8 | **6 420** | **m** | **m** |
| | Canada | 2 772 | 17 | 2 790 | 9 | **8 293** | **17** | **8 311** |
| | Chile | 2 138 | a | 2 138 | 8 | **8 414** | **a** | **8 414** |
| | Czech Republic | 3 550 | m | m | 9 | **6 984** | **m** | **m** |
| | Denmark | 3 600 | a | 3 600 | 10 | **10 960** | **a** | **10 960** |
| | Estonia | 2 468 | a | 2 468 | 9 | **6 431** | **a** | **6 431** |
| | Finland[2] | 2 423 | 261 | 2 683 | 9 | **6 327** | **456** | **6 783** |
| | France | 3 784 | 252 | 4 036 | 9 | **8 104** | **252** | **8 356** |
| | Germany[3, 4] | 4 544 | a | 4 544 | 9 | **7 365** | **a** | **7 365** |
| | Greece | 2 360 | a | 2 360 | 9 | **6 909** | **1 517** | **8 426** |
| | Hungary | 3 221 | a | 3 221 | 8 | **6 006** | **a** | **6 006** |
| | Iceland[2] | 2 516 | a | 2 516 | 10 | **7 616** | **a** | **7 616** |
| | Ireland | 2 755 | a | 2 755 | 9 | **8 215** | **a** | **8 215** |
| | Israel | 2 954 | a | 2 954 | 9 | **8 716** | **a** | **8 716** |
| | Italy | 2 970 | a | 2 970 | 8 | **7 425** | **a** | **7 425** |
| | Japan[5] | 2 680 | a | 2 680 | 9 | **7 256** | **a** | **7 256** |
| | Korea[2] | 2 525 | a | 2 525 | 9 | **6 453** | **a** | **6 453** |
| | Latvia | 2 381 | m | m | 9 | **5 976** | **m** | **m** |
| | Luxembourg | 2 535 | a | 2 535 | 9 | **8 079** | **a** | **8 079** |
| | Mexico | 3 500 | a | 3 500 | 9 | **8 300** | **a** | **8 300** |
| | Netherlands[6] | 3 000 | m | m | 9 | **8 640** | **m** | **m** |
| | New Zealand | m | m | m | 10 | **m** | **m** | **m** |
| | Norway | 2 622 | a | 2 622 | 10 | **7 894** | **a** | **7 894** |
| | Poland | 2 430 | 191 | 2 621 | 9 | **6 237** | **534** | **6 771** |
| | Portugal | 2 675 | 80 | 2 756 | 9 | **7 679** | **1 311** | **8 991** |
| | Slovak Republic | 4 117 | a | 4 117 | 9 | **6 824** | **a** | **6 824** |
| | Slovenia | 2 298 | 536 | 2 833 | 9 | **6 336** | **1 376** | **7 712** |
| | Spain | 3 161 | a | 3 161 | 9 | **7 911** | **a** | **7 911** |
| | Sweden[2] | 2 297 | m | m | 9 | **6 890** | **m** | **m** |
| | Switzerland | 2 890 | m | m | 9 | **7 784** | **m** | **m** |
| | Turkey | 3 371 | a | 3 371 | 8 | **6 251** | **a** | **6 251** |
| | United States[7] | 3 057 | m | m | 9 | **8 877** | **m** | **m** |
| | **Economies** | | | | | | | |
| | Flemish Com. (Belgium) | 1 883 | a | 1 883 | 8 | **6 783** | **a** | **6 783** |
| | French Com. (Belgium) | 1 909 | a | 1 909 | 8 | **6 921** | **a** | **6 921** |
| | England (UK) | m | a | m | 9 | **m** | **a** | **m** |
| | Scotland (UK) | m | a | m | 10 | **m** | **a** | **m** |
| | **OECD average** | 2 911 | m | m | 9 | **7 538** | **m** | **m** |
| | **EU22 average** | 2 907 | m | m | 9 | **7 247** | **m** | **m** |
| Partners | Argentina | m | m | m | m | **m** | **m** | **m** |
| | Brazil | m | m | m | 9 | **m** | **m** | **m** |
| | China | m | m | m | m | **m** | **m** | **m** |
| | Colombia | 4 800 | m | m | 9 | **9 800** | **m** | **m** |
| | Costa Rica | 3 360 | a | 3 360 | 9 | **10 240** | **a** | **10 240** |
| | India | m | m | m | m | **m** | **m** | **m** |
| | Indonesia | m | m | m | m | **m** | **m** | **m** |
| | Lithuania | 4 355 | 648 | 5 003 | 10 | **6 591** | **764** | **7 355** |
| | Russian Federation | 3 990 | m | m | 9 | **6 058** | **m** | **m** |
| | Saudi Arabia | m | m | m | m | **m** | **m** | **m** |
| | South Africa | m | m | m | m | **m** | **m** | **m** |
| | **G20 average** | m | m | m | m | **m** | **m** | **m** |

**Note:** Columns showing instruction time in compulsory upper secondary education (i.e. Columns 19-25) are available for consultation on line. See *Definitions* and *Methodology* sections for more information. Data available at http://stats.oecd.org/, Education at a Glance Database.

1. Refers to full-time compulsory education and excludes pre-primary education, even if compulsory.
2. Estimated number of hours by level of education based on the average number of hours per year, as the allocation of instruction time across multiple grades is flexible.
3. Year of reference 2016.
4. Excludes the last year of compulsory education, which can be classified at either the lower secondary or the upper secondary level.
5. Actual instruction time.
6. The number of grades in lower secondary education is three or four, depending on the track. The fourth year of pre-vocational secondary education (VMBO) was excluded from the calculation.
7. Year of reference 2015.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933561441

## Table D1.2. Organisation of compulsory general education[1] (2017)

*By level of education, in public institutions*

| | | Primary | | | | | Lower secondary | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Number of grades that are part of compulsory education | Theoretical starting age | Average number of instruction days per year | Average number of instruction days per school week | Flexible allocation of instruction time across multiple grades | Number of grades that are part of compulsory education | Theoretical starting age | Average number of instruction days per year | Average number of instruction days per school week | Flexible allocation of instruction time across multiple grades |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
| OECD | **Countries** | | | | | | | | | | |
| | Australia | 7 | 5 | 200 | 5.0 | No | 4 | 12 | 200 | 5.0 | No |
| | Austria | 4 | 6 | 180 | 5.0 | No | 4 | 10 | 180 | 5.0 | No |
| | Canada | 6 | 6 | 183 | 5.0 | No | 3 | 12 | 183 | 5.0 | No |
| | Chile | 6 | 6 | 181 | 5.0 | No | 2 | 12 | 181 | 5.0 | No |
| | Czech Republic | 5 | 6 | 194 | 5.0 | Yes | 4 | 11 | 194 | 5.0 | Yes |
| | Denmark | 7 | 6 | 200 | 5.0 | No | 3 | 13 | 200 | 5.0 | No |
| | Estonia | 6 | 7 | 175 | 5.0 | Yes | 3 | 13 | 175 | 5.0 | Yes |
| | Finland[2] | 6 | 7 | 187 | 5.0 | Yes | 3 | 13 | 187 | 5.0 | Yes |
| | France | 5 | 6 | 162 | 4.5 | No | 4 | 11 | 162 | 4.5 | No |
| | Germany[3, 4] | 4 | 6 | 188 | 5.0 | No | 5 | 10 | 188 | 5.0 | No |
| | Greece | 6 | 6 | 175 | 5.0 | No | 3 | 12 | 165 | 5.0 | No |
| | Hungary | 4 | 6 | 182 | 5.0 | No | 4 | 10 | 182 | 5.0 | No |
| | Iceland | 7 | 6 | 170 | 5.0 | Yes | 3 | 13 | 170 | 5.0 | Yes |
| | Ireland | 6 | 6 | 182 | 5.0 | No | 3 | 12 | 164 | 5.0 | No |
| | Israel | 6 | 6 | 219 | 6.0 | No | 3 | 12 | 209 | 6.0 | Yes |
| | Italy | 5 | 6 | 200 | 5.0 | No | 3 | 11 | 200 | 6.0 | No |
| | Japan | 6 | 6 | 201 | 5.0 | No | 3 | 12 | 201 | 5.0 | No |
| | Korea | 6 | 6 | 190 | 5.0 | Yes | 3 | 12 | 190 | 5.0 | Yes |
| | Latvia | 6 | 7 | 169 | 5.0 | No | 3 | 13 | 173 | 5.0 | No |
| | Luxembourg | 6 | 6 | 180 | 5.0 | No | 3 | 12 | 169 | 5.0 | No |
| | Mexico | 6 | 6 | 200 | 5.0 | No | 3 | 12 | 200 | 5.0 | No |
| | Netherlands[5] | 6 | 6 | m | 5.0 | Yes | 3 | 12 | m | 5.0 | Yes |
| | New Zealand | 6 | 5 | 194 | 5.0 | m | 4 | 11 | 192 | 5.0 | m |
| | Norway | 7 | 6 | 190 | 5.0 | Yes | 3 | 13 | 190 | 5.0 | Yes |
| | Poland | 6 | 7 | 179 | 5.0 | Yes | 3 | 13 | 177 | 5.0 | Yes |
| | Portugal | 6 | 6 | 180 | 5.0 | Yes | 3 | 12 | 178 | 5.0 | Yes |
| | Slovak Republic | 4 | 6 | 188 | 5.0 | No | 5 | 10 | 188 | 5.0 | No |
| | Slovenia | 6 | 6 | 190 | 5.0 | No | 3 | 12 | 185 | 5.0 | No |
| | Spain | 6 | 6 | 175 | 5.0 | No | 3 | 12 | 175 | 5.0 | No |
| | Sweden | 6 | 7 | 178 | 5.0 | Yes | 3 | 13 | 178 | 5.0 | Yes |
| | Switzerland | 6 | 6 | 188 | 5.0 | No | 3 | 12 | 188 | 5.0 | No |
| | Turkey | 4 | 6 | 180 | 5.0 | No | 4 | 10 | 180 | 5.0 | No |
| | United States[6] | 6 | 6 | 180 | 5.0 | m | 3 | 12 | 180 | 5.0 | m |
| | **Economies** | | | | | | | | | | |
| | Flemish Com. (Belgium) | 6 | 6 | 175 | 5.0 | No | 2 | 12 | 177 | 5.0 | No |
| | French Com. (Belgium) | 6 | 6 | 179 | 5.0 | No | 2 | 12 | 179 | 5.0 | No |
| | England (UK) | 6 | 5 | 190 | 5.0 | Yes | 3 | 11 | 190 | 5.0 | Yes |
| | Scotland (UK) | 7 | 5 | 190 | 5.0 | Yes | 3 | 12 | 190 | 5.0 | Yes |
| | **OECD average** | 6 | 6 | 185 | 5.0 | m | 3 | 12 | 184 | 5.0 | m |
| | **EU22 average** | 6 | 6 | 183 | 5.0 | m | 3 | 12 | 181 | 5.0 | m |
| Partners | Argentina | m | m | m | m | m | m | m | m | m | m |
| | Brazil | 5 | 6 | 200 | 5.0 | m | 4 | 11 | 200 | 5.0 | m |
| | China | m | m | m | m | m | m | m | m | m | m |
| | Colombia | 5 | 6 | 200 | 5.0 | m | 4 | 11 | 200 | 5.0 | m |
| | Costa Rica | 6 | 6 | 200 | 5.0 | No | 3 | 12 | 200 | 5.0 | No |
| | India | m | m | m | m | m | m | m | m | m | m |
| | Indonesia | m | m | m | m | m | m | m | m | m | m |
| | Lithuania | 4 | 7 | 160 | 5.0 | Yes | 6 | 11 | 168 | 5.0 | Yes |
| | Russian Federation | 4 | 7 | 169 | 5.0 | No | 5 | 11 | 175 | 5.0 | No |
| | Saudi Arabia | m | m | m | m | m | m | m | m | m | m |
| | South Africa | m | m | m | m | m | m | m | m | m | m |
| | **G20 average** | m | m | m | m | m | m | m | m | m | m |

**Note:** Columns showing the organisation of compulsory upper secondary education (i.e. Columns 11-15) are available for consultation on line. See *Definitions* and *Methodology* sections for more information. Data available at http://stats.oecd.org/, Education at a Glance Database.

1. Refers to full-time compulsory education and excludes pre-primary education, even if compulsory.
2. Allocation of instruction time across multiple levels of education is flexible.
3. Year of reference 2016.
4. Excludes the last year of compulsory education, which can be classified at either the lower secondary or the upper secondary level.
5. The number of grades in lower secondary education is three or four, depending on the track. The fourth year of pre-vocational secondary education (VMBO) was excluded from the calculation.
6. Year of reference 2015.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933561460

D1

## Table D1.3a. Instruction time per subject in primary education (2017)

*As a percentage of total compulsory instruction time, in public institutions*

| | | Reading, writing and literature | Mathematics | Natural sciences | Social studies | Second language | Other languages | Physical education and health | Arts | Religion/ Ethics/ Moral education | Information and communication technologies (ICT) | Technology | Practical and vocational skills | Other subjects | Compulsory subjects with flexible timetable | Compulsory options chosen by the students | Compulsory flexible subjects chosen by schools | Total compulsory curriculum | Non-compulsory curriculum |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) | (17) | (18) |
| OECD | **Countries** | | | | | | | | | | | | | | | | | | |
| | Australia | 24 | 17 | 6 | 8[d] | x(16) | x(16) | 8 | 5 | x(4) | x(11) | 4[d] | x(11) | x(16) | x(16) | m | 29[d] | **100** | m |
| | Austria | 30 | 17 | 13[d] | x(3) | 2 | a | 11 | 9 | 9 | x(17) | x(3) | 6 | 4 | a | a | a | **100** | m |
| | Canada | 31 | 19 | 6 | 5 | 1 | a | 10 | 6 | 0 | a | 0 | 0 | 1 | 17 | a | 5 | **100** | a |
| | Chile | 20 | 16 | 9 | 9 | 3 | x(16) | 9 | 10 | 5 | x(16) | 3 | x(16) | 2 | a | a | 14[d] | **100** | a |
| | Czech Republic | 28 | 17 | 10[d] | x(3) | 8 | a | 8 | 10 | x(13) | 1 | 4[d] | x(11) | x(16) | a | x(16) | 14[d] | **100** | m |
| | Denmark | 21 | 12 | 5 | 3 | 5 | 1 | 6 | 8 | 3 | x(14) | a | 4 | 23 | 8[d] | a | a | **100** | a |
| | Estonia | 23 | 15 | 7 | 5 | 8 | 2 | 11 | 15 | x(16) | x(16) | 3 | a | a | a | a | 12[d] | **100** | a |
| | Finland[1] | 23 | 15 | 10 | 4 | 7 | 1 | 9 | 16 | 5 | x(17) | a | a | a | 4 | a | 4 | **100** | 5 |
| | France | 38 | 21 | 7[d] | 3 | 6 | a | 13 | 8 | 4 | x(3) | x(3) | a | a | a | a | a | **100** | a |
| | Germany[2] | 26 | 20 | 4 | 6 | 5 | a | 11 | 14 | 7 | 1 | 1 | 0 | 3 | a | 1 | a | **100** | a |
| | Greece | 27 | 14 | 10 | 8 | 8 | 2 | 9 | 10 | 3 | 3 | a | a | a | a | a | 6 | **100** | 33 |
| | Hungary | 25 | 16 | 4 | a | 2 | a | 20 | 16 | 4 | a | 4 | a | a | a | a | 10 | **100** | a |
| | Iceland | 20 | 16 | 8 | 13[d] | x(14) | x(14) | 9 | 19[d] | x(4) | 3 | a | x(8) | x(15) | 5[d] | 5[d] | x(15) | **100** | a |
| | Ireland[3] | 20 | 17 | 4[d] | 8 | 14 | a | 4 | 12 | 10 | x(17) | x(3) | a | 11 | a | a | a | **100** | a |
| | Israel | 22 | 18 | 8[d] | 8 | 6 | 3 | 6 | 6 | 14 | a | x(3) | 4 | a | a | a | 5 | **100** | a |
| | Italy[4] | x(14) | x(14) | x(14) | x(14) | 9 | a | x(14) | x(14) | 7 | a | x(14) | a | a | 84[d] | a | x(17) | **100** | a |
| | Japan | 24 | 17 | 7 | 6 | 1 | a | 10 | 12 | 3 | a | a | a | 13 | 7 | a | a | **100** | a |
| | Korea | 21 | 14 | 9[d] | 9[d] | 6 | a | 7 | 9 | x(4, 13) | x(13) | x(12) | x(3) | 25[d] | a | a | a | **100** | a |
| | Latvia | 21 | 17 | 5 | 6 | 8 | 1 | 8 | 12 | 2 | 1 | a | 4 | 9 | a | a | 6 | **100** | m |
| | Luxembourg[3] | 29 | 19 | 7 | 2 | 15 | a | 10 | 11 | 7 | a | a | a | a | a | a | a | **100** | a |
| | Mexico | 35 | 27 | 13 | 10 | m | a | 5 | 5 | 5 | a | a | a | a | a | a | a | **100** | a |
| | Netherlands[4] | x(14) | x(14) | x(14) | x(14) | x(14) | a | x(14) | x(14) | x(14) | x(14) | x(14) | x(14) | a | 100[d] | a | a | **100** | m |
| | New Zealand | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | **m** | m |
| | Norway | 26 | 17 | 7 | 7 | 7 | a | 11 | 14 | 8 | a | a | 2 | a | a | a | 1 | **100** | a |
| | Poland[5] | 18 | 14 | 10 | 5 | 10 | a | 14 | 7 | a | 3 | 3 | a | 3 | a | a | 13 | **100** | 9 |
| | Portugal | 26 | 26 | 7 | 7 | 6 | a | 8 | 9 | a | a | 2 | a | 4 | 2 | a | 3 | **100** | 25 |
| | Slovak Republic | 32 | 17 | 6 | 3 | 6 | x(16) | 8 | 10 | 4 | 2 | a | 2 | x(16) | a | x(16) | 8[d] | **100** | a |
| | Slovenia | 23 | 17 | 8 | 7[d] | 7 | a | 14 | 16 | x(4) | x(17) | 6 | 2 | 1 | a | a | a | **100** | 21 |
| | Spain | 23 | 19 | 7 | 7 | 11 | x(16) | 9 | x(16) | 5 | a | a | a | 0 | a | x(16) | 18[d] | **100** | a |
| | Sweden | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | **m** | m |
| | Switzerland | m | m | m | m | a | a | m | m | m | m | m | m | m | a | a | a | **m** | m |
| | Turkey | 30 | 17 | 5 | 13 | 5 | a | 14 | 7 | 2 | a | a | a | 1 | 7 | a | a | a | **100** | a |
| | United States | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | **m** | m |
| | **Economies** | | | | | | | | | | | | | | | | | | |
| | Flemish Com.(Belgium)[4] | x(14) | x(14) | x(14) | x(14) | x(14) | a | x(14) | x(14) | 7 | x(17) | x(3) | a | x(17) | 93[d] | a | x(14) | **100** | a |
| | French Com. (Belgium)[4] | x(14) | x(14) | x(14) | x(14) | 2 | a | 7 | x(14) | 7 | a | x(14) | a | a | 83[d] | a | a | **100** | a |
| | England (UK)[4] | x(14) | x(14) | x(14) | x(14) | x(14) | a | x(14) | x(14) | x(14) | x(14) | x(14) | a | a | 100[d] | a | a | **100** | a |
| | Scotland (UK)[4] | m | m | m | m | m | m | m | m | m | m | m | m | a | a | a | a | **m** | a |
| | OECD average[4] | 24 | 17 | 7 | 6 | 6 | 0 | 9 | 10 | 5 | 1 | 1 | 1 | 5 | 2 | 0 | 5 | **100** | 4 |
| | EU22 average[4] | 25 | 17 | 7 | 5 | 7 | 1 | 10 | 11 | 4 | 1 | 2 | 1 | 4 | 1 | 0 | 5 | **100** | 6 |
| Partners | Argentina | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | **m** | m |
| | Brazil | m | m | m | m | m | a | m | m | m | m | a | a | m | m | m | m | **m** | m |
| | China | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | **m** | m |
| | Colombia | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | **m** | m |
| | Costa Rica | 23 | 19 | 14 | 9 | 12 | a | 5 | 5 | 5 | a | a | a | 9 | a | a | a | **100** | a |
| | India | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | **m** | m |
| | Indonesia | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | **m** | m |
| | Lithuania | 33 | 19 | 4 | 4 | 6 | a | 12 | 17[d] | 4 | a | x(8) | a | a | a | a | a | **100** | 5 |
| | Russian Federation | 39 | 19 | 9 | a | 7 | a | 9 | 9 | a | a | 7 | a | a | a | a | a | **100** | m |
| | Saudi Arabia | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | **m** | m |
| | South Africa | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | **m** | m |
| | G20 average | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | **m** | m |

**Note:** Please refer to Tables D1.5a to D1.5l, available on line, for instruction time per subject for each age (see *StatLink* at the end of the indicator). See *Definitions* and *Methodology* sections for more information. Data available at http://stats.oecd.org/, Education at a Glance Database. The averages were adjusted to add up to 100% and do not correspond exactly to the average of each column.

1. Allocation of instruction time across multiple levels of education is flexible.
2. Year of reference 2016.
3. The second language of instruction includes other national languages taught.
4. England (United Kingdom), Flemish Com. (Belgium), French Com. (Belgium), Italy, the Netherlands and Scotland (United Kingdom) are not included in the averages.
5. Excludes the first three years of primary education for which a large proportion of the time allocated to compulsory subjects is flexible.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933561479

## Table D1.3b. Instruction time per subject in general lower secondary education (2017)

*As a percentage of total compulsory instruction time, in public institutions*

| | | Reading, writing and literature | Mathematics | Natural sciences | Social studies | Second language | Other languages | Physical education and health | Arts | Religion/ Ethics/ Moral education | Information and communication technologies (ICT) | Technology | Practical and vocational skills | Other subjects | Compulsory subjects with flexible timetable | Compulsory options chosen by the students | Compulsory flexible subjects chosen by schools | Total compulsory curriculum | Non-compulsory curriculum |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) | (17) | (18) |
| OECD | **Countries** | | | | | | | | | | | | | | | | | | |
| | Australia[1] | 12 | 12 | 11 | 10[d] | x(16) | x(16) | 8 | 4 | x(4) | x(11) | 4[d] | x(11) | x(16) | x(16) | 18 | 22[d] | **100** | m |
| | Austria | 13 | 13 | 12 | 11 | 12 | a | 12 | 13 | 7 | x(17) | a | 7 | a | a | 1 | a | **100** | m |
| | Canada | 20 | 15 | 9 | 13 | 6 | a | 10 | 6 | 2 | a | 3 | 1 | 1 | 2 | 1 | 11 | **100** | 1 |
| | Chile | 16 | 16 | 11 | 11 | 8 | x(16) | 5 | 8 | 5 | x(16) | 3 | x(16) | 3 | a | a | 15[d] | **100** | a |
| | Czech Republic | 12 | 12 | 17 | 9 | 10 | 5 | 8 | 8 | x(13) | 1 | 2[d] | x(11) | x(16) | a | x(16) | 15[d] | **100** | m |
| | Denmark | 18 | 13 | 13 | 8 | 8 | 8 | 5 | x(15) | 2 | x(15) | x(15) | 2 | 21 | a | 5[d] | a | **100** | a |
| | Estonia | 13 | 14 | 21 | 11 | 10 | 10 | 6 | 6 | x(16) | x(16) | 5 | a | a | a | a | 4[d] | **100** | a |
| | Finland[2] | 12 | 13 | 16 | 8 | 8 | 5 | 12 | 7 | 4 | x(17) | a | 6 | a | 6 | a | 4 | **100** | 11 |
| | France | 17 | 14 | 12 | 12[d] | 12 | 7 | 12 | 8 | x(4) | x(17) | 4 | a | 1 | a | a | a | **100** | 7 |
| | Germany[3] | 13 | 13 | 11 | 11 | 12 | 5 | 8 | 9 | 5 | 1 | 2 | 2 | 2 | a | 6 | a | **100** | a |
| | Greece | 26 | 13 | 10 | 11 | 6 | 6 | 6 | 6 | 6 | 3 | 3 | 2 | a | a | a | a | **100** | a |
| | Hungary | 13 | 11 | 11 | 9 | 10 | a | 17 | 7 | 3 | 3 | 3 | a | 3 | a | a | 10 | **100** | a |
| | Iceland | 14 | 14 | 8 | 8[d] | x(14) | x(14) | 8 | 8[d] | x(4) | 2 | a | x(8) | x(15) | 19[d] | 20[d] | x(15) | **100** | a |
| | Ireland[4] | 9 | 12 | x(15) | 17 | x(14) | x(15) | 7 | x(15) | x(16) | x(15) | x(15) | x(15) | 2 | 13[d] | 40[d] | x(15) | **100** | a |
| | Israel | 14 | 14 | 13[d] | 16 | 11 | 10 | 6 | 4 | 9 | x(3) | x(3) | 3 | a | a | a | 0 | **100** | a |
| | Italy | 33[d] | 20[d] | x(2) | x(1) | 10 | 7 | 7 | 13 | 3 | a | 7 | a | a | a | a | x(17) | **100** | a |
| | Japan | 12 | 12 | 12 | 11 | 13 | a | 10 | 7 | 3 | a | 3 | a | 12 | 5 | a | a | **100** | a |
| | Korea | 13 | 11 | 19[d] | 15[d] | 10 | a | 8 | 8 | x(4) | x(12) | x(12) | x(3) | 9 | a | x(16) | 6[d] | **100** | a |
| | Latvia | 15 | 16 | 10 | 14 | 8 | 6 | 6 | 6 | a | 1 | a | 4 | 7 | a | a | 9 | **100** | m |
| | Luxembourg[4] | 19 | 13 | 8 | 11 | 12 | 13 | 8 | 9 | 7 | a | a | a | a | a | a | a | **100** | a |
| | Mexico | 14 | 14 | 17 | 12 | 9 | a | 6 | 6 | 8 | a | 11 | a | 3 | a | a | a | **100** | a |
| | Netherlands[5] | x(14) | x(14) | x(14) | x(14) | x(14) | x(14) | x(14) | x(14) | x(14) | x(14) | x(14) | x(14) | a | 100[d] | a | a | **100** | m |
| | New Zealand | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | **m** | m |
| | Norway | 15 | 12 | 9 | 9 | 8 | x(15) | 9 | 9 | 6 | a | a | 7 | x(15) | a | 15[d] | x(15) | **100** | a |
| | Poland | 14 | 12 | 12 | 12 | x(14) | x(14) | 12 | 4 | a | 2 | 2 | a | 4 | 14[d] | a | 13 | **100** | 8 |
| | Portugal | 13 | 13 | 18 | 14 | 8 | 8 | 7 | 7 | a | 2 | a | a | a | 6 | a | 2 | **100** | 3 |
| | Slovak Republic | 16 | 14 | 12 | 11 | 10 | x(16) | 7 | 6 | 3 | 3 | x(16) | 3 | x(16) | a | x(16) | 13[d] | **100** | a |
| | Slovenia | 13 | 13 | 17 | 15[d] | 11 | x(15) | 9 | 8 | x(4) | x(17) | 4 | a | 2 | a | 7[d] | a | **100** | 23 |
| | Spain | 17 | 13 | 11 | 10 | 12 | x(16) | 7 | x(16) | 4 | a | x(16) | a | 3 | a | x(16) | 23[d] | **100** | a |
| | Sweden | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | **m** | m |
| | Switzerland | m | m | m | m | m | m | m | m | m | m | m | m | m | a | m | a | **m** | m |
| | Turkey | 16 | 14 | 11 | 8 | 10 | x(15) | 5 | 6 | 8 | 3 | 3 | 1 | a | a | 16[d] | a | **100** | a |
| | United States | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | **m** | m |
| | **Economies** | | | | | | | | | | | | | | | | | | |
| | Flemish Com. (Belgium)[5] | x(14) | x(14) | x(14) | x(14) | x(14) | x(14) | x(14) | x(14) | 6 | a | x(14) | a | a | 73[d] | a | 20 | **100** | a |
| | French Com. (Belgium) | 17 | 14 | 9 | 13 | 13 | a | 9 | 3 | 6 | x(16) | 3 | x(16) | a | a | x(16) | 13[d] | **100** | a |
| | England (UK)[5] | x(14) | x(14) | x(14) | x(14) | x(14) | a | x(14) | x(14) | x(14) | x(14) | x(14) | x(14) | a | 100[d] | a | a | **100** | a |
| | Scotland (UK)[5] | m | m | m | m | m | m | m | m | m | m | m | m | a | a | a | a | **m** | a |
| | OECD average[5] | 14 | 12 | 12 | 10 | 9 | 4 | 8 | 6 | 4 | 1 | 2 | 2 | 3 | 2 | 5 | 6 | **100** | 2 |
| | EU22 average[5] | 15 | 12 | 12 | 10 | 9 | 5 | 8 | 7 | 3 | 1 | 2 | 1 | 2 | 2 | 4 | 6 | **100** | 3 |
| Partners | Argentina | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | **m** | m |
| | Brazil | m | m | m | m | m | a | m | m | m | m | a | m | m | m | m | m | **m** | m |
| | China | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | **m** | m |
| | Colombia | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | **m** | m |
| | Costa Rica | 12 | 12 | 12 | 14 | 7 | 7 | 5 | 10 | 2 | 5 | a | 7 | 5 | a | a | 2 | **100** | a |
| | India | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | **m** | m |
| | Indonesia | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | **m** | m |
| | Lithuania | 18 | 13 | 13 | 14 | 10 | 5 | 5 | 7 | 3 | 3 | 5 | a | 1 | a | a | a | **100** | 15 |
| | Russian Federation | 21 | 16 | 17 | 9 | 10 | a | 7 | 5 | a | 2 | 5 | 1 | a | a | m | 7 | **100** | m |
| | Saudi Arabia | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | **m** | m |
| | South Africa | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | **m** | m |
| | G20 average | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | **m** | m |

**Note:** Please refer to Tables D1.5a to D1.5l, available on line, for instruction time per subject for each age (see *StatLink* at the end of the indicator). See *Definitions* and *Methodology* sections for more information. Data available at http://stats.oecd.org/, Education at a Glance Database. The averages were adjusted to add up to 100% and do not correspond exactly to the average of each column.

1. The intended instruction time derived from the Australian Curriculum assumes that certain subjects, which may be considered compulsory in years 7 and 8, could be delivered to students as electives in years 9 and 10.

2. Allocation of instruction time across multiple levels of education is flexible.

3. Year of reference 2016.

4. The second language of instruction includes other national languages taught.

5. England (United Kingdom), Flemish Com. (Belgium), the Netherlands and Scotland (United Kingdom) are not included in the averages.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

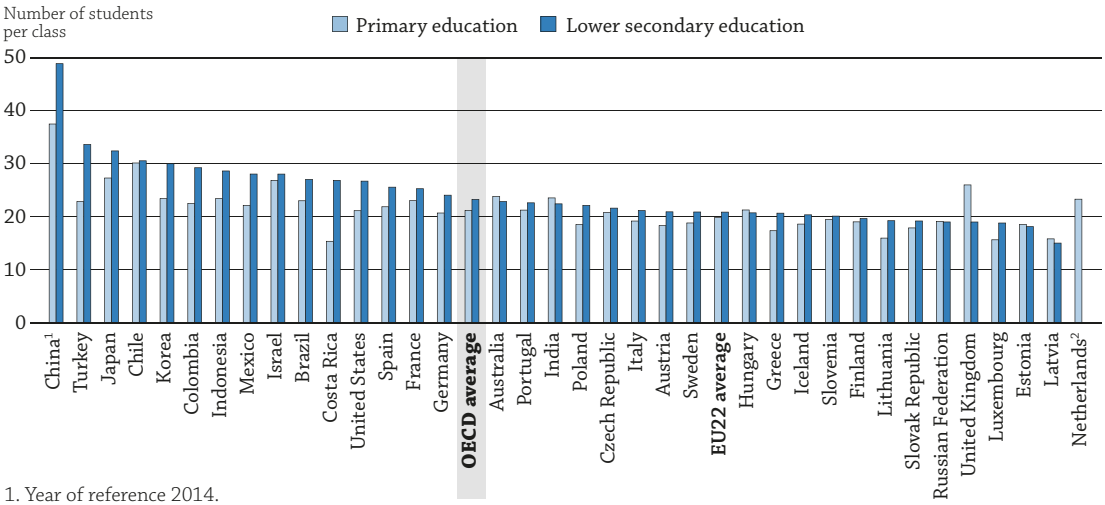
*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

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# WHAT IS THE STUDENT-TEACHER RATIO AND HOW BIG ARE CLASSES?

- The average primary school class in OECD countries in 2015 has 21 students, and this average increases to 23 students in lower secondary education. Since 2005, these average class sizes have fallen for both levels.
- The difference between public and private primary school class sizes varies substantially across OECD countries, but is considerably larger in partner countries.
- There are 15 students per teacher in primary education on average across OECD countries. The figure increases to 16 students per teacher on average at the tertiary level.

## Figure D2.1. Average class size in educational institutions, by level of education (2015)




1. Year of reference 2014.
2. Public institutions only.

*Countries are ranked in descending order of the average class size in lower secondary education.*

**Source**: OECD/UIS/Eurostat (2017), Table D2.1. See *Source* for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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## Context

Class sizes and student-teacher ratios are much-discussed aspects of education and – along with students' instruction time (see Indicator D1), teachers' working time and the division of teachers' time between teaching and other duties (see Indicator D4) – these ratios are among the determinants of the demand for teachers. Together with teachers' salaries (see Indicator D3) and age distribution (see Indicator D5), class size and student-teacher ratios also have a considerable impact on the level of current expenditure on education (see Indicators B6 and B7).

Smaller classes are often seen as beneficial, because they allow teachers to focus more on the needs of individual students and reduce the amount of class time needed to deal with disruptions. Yet, while there is some evidence that smaller classes may benefit specific groups of students, such as those from disadvantaged backgrounds (Piketty and Valdenaire, 2006), overall evidence of the effect of class size on student performance is mixed (see for instance Fredriksson, 2013; OECD, 2016).

The ratio of students to teaching staff is an indicator of how resources for education are allocated. Smaller student-teacher ratios often have to be weighed against higher salaries for teachers, investing in their professional development, greater investment in teaching technology, or more widespread use of assistant teachers and other paraprofessionals, whose salaries are often considerably lower than those of teachers.

## Other findings

- In almost all countries with available data, the student-teacher ratio decreases or stays the same between the primary and lower secondary levels, despite a general increase in class size between these levels. The exceptions are Chile, Colombia, Costa Rica, India and Mexico.
- On average across OECD countries, the student-teacher ratio in lower secondary education is slightly lower in private institutions than in public institutions. This is most striking in Mexico, where at the secondary level there are on average 17 more students per teacher in public institutions than in private institutions.
- Class size varies significantly across countries. The biggest classes in primary education are observed in Chile (30 students per classroom) and China (37 students per classroom), while in Costa Rica, Latvia, Lithuania and Luxembourg, classes have fewer than 17 students on average.

D2

## Analysis

### Average class size in primary and lower secondary education

At the primary level, the average class in OECD countries has 21 pupils. There are fewer than 27 pupils per class in nearly all of the countries with available data, with the exception of Chile, China, Israel and Japan.

At the lower secondary level, the average class in OECD countries has 23 students. Among all countries with available data on lower secondary education, that number varies from fewer than 20 students in Estonia, Latvia, Lithuania, Luxembourg, the Russian Federation, the Slovak Republic and the United Kingdom to 32 students per class in Japan, 34 in Turkey and 49 in China (Figure D2.1 and Table D2.1).

The number of students per class tends to increase between primary and lower secondary education. In China, Costa Rica and Turkey, this increase exceeds ten students. On the other hand, the United Kingdom and, to a lesser extent, Australia, Estonia, India and Latvia, see student numbers per class decrease between these two levels of education.

The indicator on class size is limited to primary and lower secondary education because class size is difficult to define and compare at higher levels, where students often split into several different classes, depending on the subject area.

### Class size in public and private institutions

Class size is one factor that parents may consider when deciding on a school for their children; the difference in average class size between public and private schools (and between different types of private institutions) could influence enrolment.

In most OECD countries, average class size does not differ between public and private institutions by more than two students per class in both primary and lower secondary education. However, in some countries – for example, Brazil, the Czech Republic, Colombia, Latvia, Poland, the Russian Federation and Turkey – the average public primary school class is larger than the average private school class by more than five students (Table D2.1). But, with the exception of Brazil, the private sector is relatively small in all of these countries, representing at most 5% of students at the primary level (see Education at a Glance Database). In contrast, in China and Luxembourg, the average class in private institutions is larger than in public institutions by at least five students.

At the lower secondary level, where private institutions are more prevalent, the comparison of class size between public and private institutions shows a more mixed picture. The average class in lower secondary private institutions is larger than in public institutions in 11 countries, smaller in 17 countries and the same in 6 countries. The differences, however, tend to be smaller than in primary education.

In countries where private (including both government-dependent and independent) institutions are more prevalent at the primary level (i.e. countries where more than 15% of students are enrolled in these institutions), such as Australia, Brazil, Israel and Spain (see Education at a Glance Database), there may be considerable differences in class size between public and private institutions. Among those countries, private institutions tend to have more students per class than public schools in Australia and Spain.

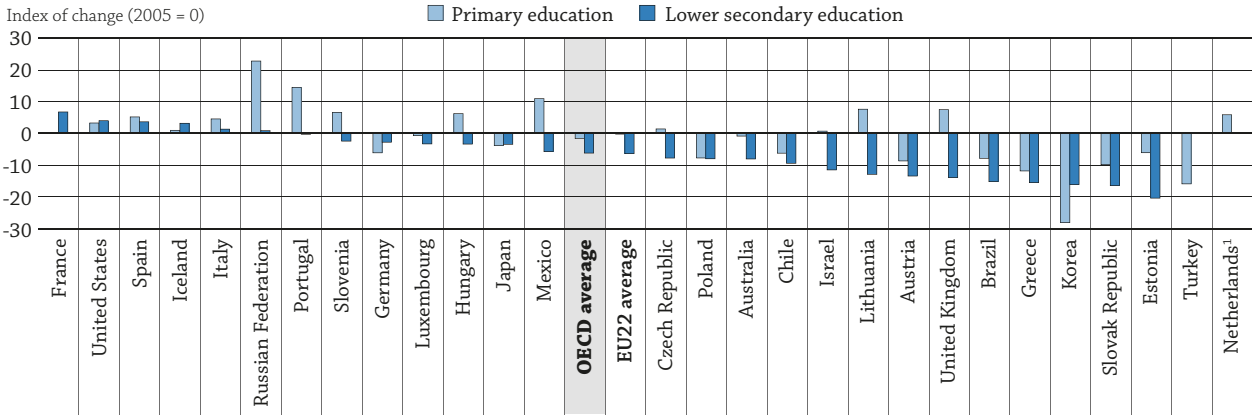
### Trends in average class size

On average across OECD countries, class size decreased between 2005 and 2015 at both primary and lower secondary levels (Figure D2.2). However, while 19 out of 25 countries with available data at the lower secondary level experienced a decrease in average class size, this was only the case for 13 out of the 25 countries at the primary level.

The most significant decrease occurred at the lower secondary level, where the average class size fell by 6% over the period. These averages mask considerably larger changes in individual countries. In Estonia, for example, the average class size in lower secondary education has decreased by 20% over the past decade. In Korea, classes at the primary level are, on average, 28% smaller than in 2005 – the largest decrease among OECD countries in the past decade. Other countries, however, saw an increase in average class sizes: by 15% in Portuguese primary schools, and by 23% in the Russian Federation.

Interestingly, some countries which have seen large decreases in class size over the past decade still have higher class sizes than other countries. For instance, Chile and Korea are among the five countries with the largest class size at the lower secondary level in 2015 (Figure D2.1), even though their average class size decreased by more than 8% between 2005 and 2015 (Figure D2.2).

## Figure D2.2. Change in average class size (2005, 2015)




1. Public institutions only.

*Countries are ranked in descending order of the index of change in average class size in lower secondary education between 2005 and 2015.*

**Source**: OECD/UIS/Eurostat (2017), Education at a Glance Database, http://stats.oecd.org/. See *Source* for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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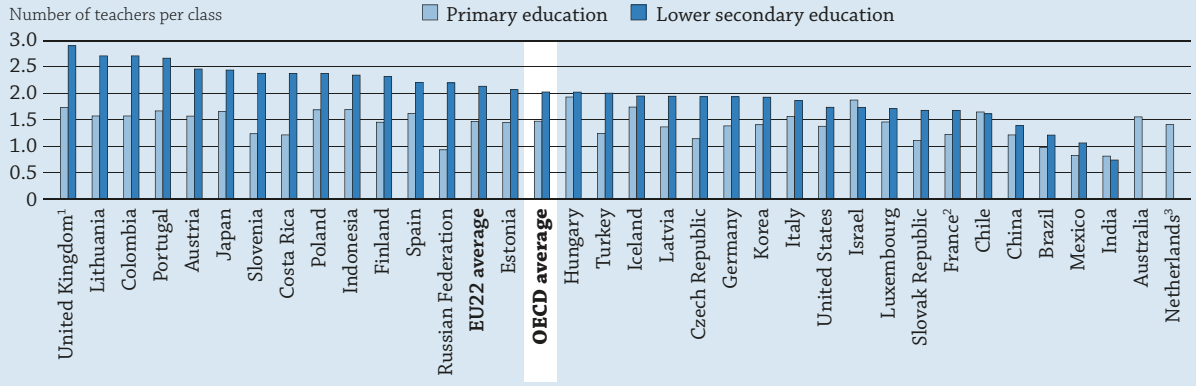
### Box D2.1. Number of teachers per class

The number of teachers per class is an indicator of the extent to which the stock of teachers in a country covers the number of classes, given average class sizes. This may offer insights, for example, into the opportunities for teachers to allocate time to non-teaching activities (when there is more than one teacher per class), or whether non-teachers might be needed to cover lessons.

In all countries with available data, with the exception of Chile, India and Israel, the number of full-time equivalent teachers per class is lower in primary than in lower secondary education (Figure D2.a). On average across the OECD, this number goes from 1.5 teachers per class in primary education to 2 in lower secondary education.

#### Figure D2.a. Number of teachers per class (2015)

***By level of education, calculations based on the number of full-time equivalent teachers and number of classes***




1. Some levels of education are included with others: Primary education includes pre-primary data on state funded nurseries attached to primary schools. Lower secondary education comprises secondary schools for ages 11-16. See Annex 3 for details.

2. Public and government-dependent private institutions only.

3. Public institutions only.

*Countries are ranked in descending order of the number of teachers per class in lower secondary education.*

**Source**: OECD/UIS/Eurostat (2017), Education at a Glance Database, http://stats.oecd.org/. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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...

There is, however, a high degree of cross-country variation. At the primary level, the number of full-time equivalent teachers per class ranges from less than 1.0 in Brazil, India, Mexico and the Russian Federation to at least 1.7 in Hungary, Iceland, Israel and the United Kingdom. At the lower secondary level, it goes from less than 1.5 in Brazil, China, India and Mexico to more than 2.5 in Colombia, Lithuania, Portugal and the United Kingdom.

The increase in the number of teachers per class between primary and lower secondary education may be explained by several factors. For instance, as the annual instruction time tends to increase with the level of education (see Indicator D1), so does the number of teachers. The increase may also result from differences in teaching hours for teachers at different levels of education (the number of teaching hours tends to decrease with the level of education, as teacher specialisation increases; see Indicator D4).

### *Student-teacher ratios*

The ratio of students to teaching staff compares the number of students (full-time equivalent) to the number of teachers (full-time equivalent) at a given level of education and in similar types of institutions. However, this ratio does not take into account the amount of instruction time for students compared to the length of a teacher's working day, or how much time teachers spend teaching. Therefore, it cannot be interpreted in terms of class size (Box D2.2).

At the primary level there are 15 students for every teacher on average across OECD countries. The student-teacher ratio ranges from 10 or fewer in Lithuania and Norway to 27 in Mexico, 29 in India and 33 in South Africa (Table D2.2).

Student-teacher ratios vary even more at secondary level – from fewer than 10 students per teacher in Austria, Latvia and Lithuania to 27 students per teacher in Mexico and 32 in India. The average across OECD countries is about 13 students per teacher at the secondary level (Table D2.2).

On average there are fewer students per teacher at the secondary level than at the primary level. In most countries, the student-teacher ratio decreases or stays the same between primary and lower secondary school despite an increase in class size. However, the student-teacher ratio increases in Chile, Colombia, Costa Rica and India.

This reduction in the student-teacher ratio from the primary to secondary level may result from differences in annual instruction time (as instruction hours tend to increase with the education level, so does the number of teachers) or from differences in teaching hours (the teaching time decreases with the level of education as teacher specialisation increases).

At the tertiary level, the student-teacher ratio ranges from 10 in Norway and Sweden to over 20 in Belgium, Brazil, the Czech Republic, India and Turkey. However, comparisons at this level should be made with caution, since it is difficult to calculate full-time equivalent students and teachers on a comparable basis.

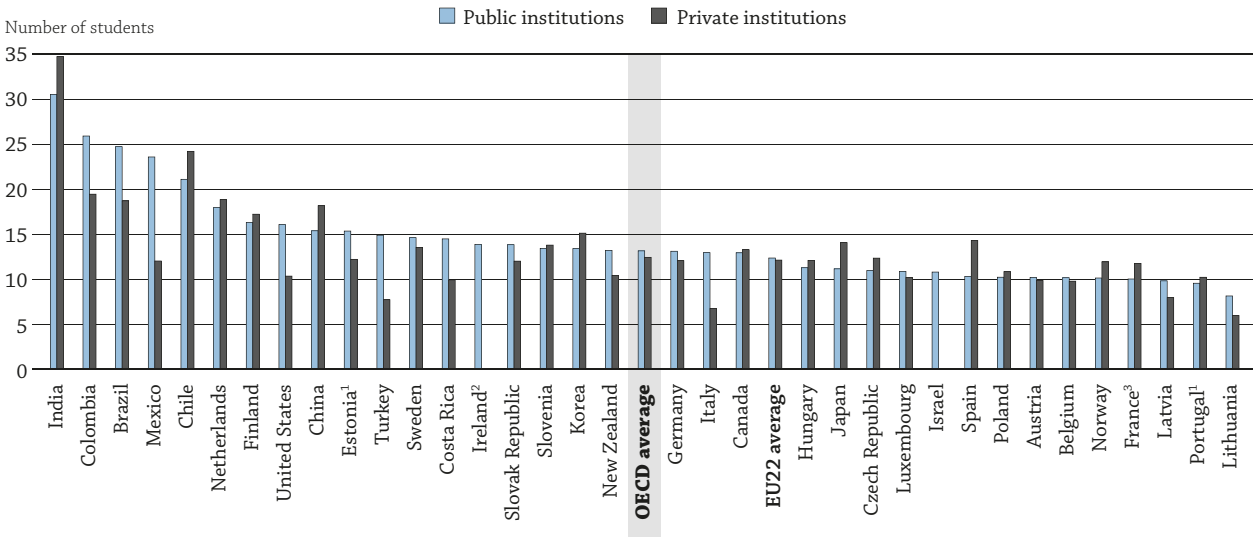
### *Student-teacher ratios in public and private institutions*

Differences between public and private institutions in student-teacher ratios are similar to those observed for class size. On average across countries for which data are available, the ratios of students to teaching staff are slightly higher in public institutions than in private institutions at the lower and upper secondary level (Table D2.3).

At the lower secondary level, the largest differences between public and private institutions are found in Colombia, Iceland, Mexico and Turkey, where there are at least eight more students per teacher in public institutions than in private institutions. However, in some countries the student-teacher ratio is lower in public institutions than in private institutions. This difference is most pronounced in Luxembourg, which has 22 students per teacher in private institutions, compared to 10 students per teacher in public institutions.

At the upper secondary level, the student-teacher ratio is greater in public than in private institutions in 16 countries, smaller in public institutions in 12 countries, and similar for both sectors in 4 countries. Mexico is the country with the highest difference in student-teacher ratios at this level, with 12 more students per teacher in public institutions than in private institutions (Figure D2.3). This mixed pattern in upper secondary education may reflect, in part, differences in the types of programmes offered in public and private institutions. For instance, in Norway, few private schools offer vocational programmes, and the student-teacher ratio is lower in vocational programmes than in general programmes.

## Figure D2.3. Ratio of students to teaching staff in upper secondary education, by type of institution (2015)




1. Some levels of education are included with others. See Table D2.3 or Annex 3 for details.
2. Upper secondary education includes lower secondary.
3. Government-dependent private institutions only.

*Countries are ranked in descending order of the ratio of students to teaching staff in public institutions.*

**Source**: OECD/UIS/Eurostat (2017), Table D2.3. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933558724

### *Student-teacher ratios in upper secondary vocational and general programmes*

On average across the OECD countries for which data are available, the ratio of students to teaching staff in upper secondary vocational programmes is higher than in general programmes (14 to 1 versus 12 to 1) (Table D2.2). These differences can be considerably higher in individual countries, however. In Latvia, vocational programmes have 9 more students per teacher than general programmes. In India – which has the largest difference between programmes of all countries with available data – the ratio is inversed: vocational programmes have 19 fewer students per teacher than general programmes.

### Box D2.2. What is the relationship between class size and the student-teacher ratio?

Class size, as presented in Table D2.1, is defined as the number of students who are following a common course of study, based on the highest number of common courses (usually compulsory studies), and excluding teaching in subgroups. The calculation is done by dividing the number of students by the number of classes. The student-teacher ratio, as presented in Tables D2.2 and D2.3, is calculated by dividing the number of full-time equivalent students by the number of full-time equivalent teachers at a given level of education and type of institution.

The two indicators, therefore, measure very different characteristics of the educational system. Student-teacher ratios provide information on the level of teaching resources available in a country, whereas class size measures the average number of students that are grouped together in classrooms.

Given the difference between student-teacher ratio and average class size, it is possible for countries with similar student-teacher ratios to have different class sizes. For example, at the primary level, Israel and the United States have similar ratios of students to teaching staff (15 students per teacher) (Table D2.2), but the average class size differs substantially (21 students in the United States and 27 in Israel) (Table D2.1).

D2

## Definitions

Teaching staff includes two categories:

- **Teachers' aides and teaching/research assistants** include non-professional personnel or students who support teachers in providing instruction to students.
- **Teaching staff** refers to professional personnel directly involved in teaching to students. The classification includes classroom teachers, special-education teachers and other teachers who work with a whole class of students in a classroom, in small groups in a resource room, or in one-to-one teaching situations inside or outside a regular class. At the tertiary level, academic staff include personnel whose primary assignment is instruction or research. Teaching staff also include department chairpersons whose duties include some teaching, but exclude non-professional personnel who support teachers in providing instruction to students, such as teachers' aides and other paraprofessional personnel.

## Methodology

Class size is calculated by dividing the number of students enrolled by the number of classes. In order to ensure comparability among countries, special-needs programmes are excluded. Data include only regular programmes at primary and lower secondary levels of education, and exclude teaching in subgroups outside the regular classroom setting.

The ratio of students to teaching staff is obtained by dividing the number of full-time equivalent students at a given level of education by the number of full-time equivalent teachers at that level and in similar types of institutions.

Notes on definitions and methodologies regarding this indicator for each country are presented in Annex 3 at www.oecd.org/education/education-at-a-glance-19991487.htm.

## Sources

Data refer to the academic year 2014/15 and are based on the UOE data collection on education statistics administered by the OECD in 2016 (for details see Annex 3 at www.oecd.org/education/education-at-a-glance-19991487.htm).

**Note regarding data from Israel**

The statistical data for Israel are supplied by and are under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

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Fredriksson, P., B. Öckert and H. Oosterbeek (2013) "Long-term effects of class size" *The Quarterly Journal of Economics*, Vol. 128/1, pp. 249-285.

OECD (2016), *PISA 2015 Results (Volume II): Policies and Practices for Successful Schools,* PISA, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264267510-en.

Piketty, T. and M. Valdenaire (2006), *L'Impact de la taille des classes sur la réussite scolaire dans les écoles, collèges et lycées français : Estimations à partir du panel primaire 1997 et du panel secondaire 1995* [Impact of class size on school performance in French primary, lower secondary and upper secondary institutions: Estimates based on the primary education panel of 1997 and the secondary education panel of 1995], ministère de l'Éducation nationale, de l'Enseignement supérieur et de la Recherche, Direction de l'évaluation et de la prospective, Paris, www.education.gouv.fr/cid3865/l-impact-de-la-taille-des-classes-sur-la-reussite-scolaire-dans-les-ecoles-colleges-et-lycees-francais.html&xtmc=piketty&xtnp=1&xtcr=1.

## Indicator D2 Tables

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| | |
|---|---|
| Table D2.1 | Average class size by type of institution (2015) |
| Table D2.2 | Ratio of students to teaching staff in educational institutions (2015) |
| Table D2.3 | Ratio of students to teaching staff, by type of institution (2015) |

Cut-off date for the data: 19 July 2017. Any updates on data can be found on line at http://dx.doi.org/10.1787/eag-data-en.

D2

## Table D2.1. **Average class size by type of institution (2015)**

*By level of education, calculations based on number of students and number of classes*

| | | Primary education | | | | | Lower secondary education | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Private institutions | | | | | Private institutions | | | |
| | | Public institutions | Total private institutions | Government-dependent private institutions | Independent private institutions | Total public and private institutions | Public institutions | Total private institutions | Government-dependent private institutions | Independent private institutions | Total public and private institutions |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
| OECD | Australia | 23 | 25 | 25 | a | **24** | 22 | 24 | 24 | a | **23** |
| | Austria | 18 | 19 | x(2) | x(2) | **18** | 21 | 21 | x(7) | x(7) | **21** |
| | Belgium (Fr.) | 19 | 21 | 21 | a | **20** | m | m | m | m | **m** |
| | Canada | m | m | m | m | **m** | m | m | m | m | **m** |
| | Chile | 28 | 31 | 33 | 24 | **30** | 29 | 31 | 33 | 25 | **31** |
| | Czech Republic | 21 | 15 | 15 | a | **21** | 22 | 19 | 19 | a | **22** |
| | Denmark | 22 | m | 22 | m | **m** | 21 | m | 20 | m | **m** |
| | Estonia | 19 | 15 | a | 15 | **19** | 18 | 15 | a | 15 | **18** |
| | Finland | 19 | 17 | 17 | a | **19** | 20 | 20 | 20 | a | **20** |
| | France | 23 | 23 | x(2) | x(2) | **23** | 25 | 26 | 26 | 13 | **25** |
| | Germany | 21 | 21 | x(2) | x(2) | **21** | 24 | 24 | x(7) | x(7) | **24** |
| | Greece | 17 | 20 | a | 20 | **17** | 21 | 23 | a | 23 | **21** |
| | Hungary | 21 | 21 | 21 | 17 | **21** | 21 | 21 | 22 | 17 | **21** |
| | Iceland | 19 | 15 | 15 | a | **19** | 21 | 13 | 13 | a | **20** |
| | Ireland | 25 | m | a | m | **m** | m | m | a | m | **m** |
| | Israel | 28 | 24 | 24 | a | **27** | 29 | 24 | 24 | a | **28** |
| | Italy | 19 | 19 | a | 19 | **19** | 21 | 21 | a | 21 | **21** |
| | Japan | 27 | 29 | a | 29 | **27** | 32 | 33 | a | 33 | **32** |
| | Korea | 23 | 28 | a | 28 | **23** | 30 | 29 | 29 | a | **30** |
| | Latvia | 16 | 9 | a | 9 | **16** | 15 | 12 | a | 12 | **15** |
| | Luxembourg | 15 | 20 | 18 | 20 | **16** | 19 | 19 | 19 | 19 | **19** |
| | Mexico | 22 | 20 | a | 20 | **22** | 28 | 24 | a | 24 | **28** |
| | Netherlands[1] | 23[d] | m | m | m | **m** | m | m | m | m | **m** |
| | New Zealand | m | m | m | m | **m** | m | m | m | m | **m** |
| | Norway | m | m | m | m | **m** | m | m | m | m | **m** |
| | Poland | 19 | 12 | 10 | 12 | **19** | 23 | 17 | 23 | 15 | **22** |
| | Portugal | 21 | 21 | 24 | 20 | **21** | 22 | 24 | 25 | 22 | **23** |
| | Slovak Republic | 18 | 17 | 17 | a | **18** | 19 | 18 | 18 | a | **19** |
| | Slovenia | 19 | 20 | 20 | a | **19** | 20 | 21 | 21 | a | **20** |
| | Spain | 21 | 25 | 25 | 21 | **22** | 25 | 26 | 27 | 21 | **26** |
| | Sweden | 19 | 17 | 17 | a | **19** | 21 | 22 | 22 | a | **21** |
| | Switzerland | 19 | m | m | m | **m** | 19 | m | m | m | **m** |
| | Turkey | 24 | 11 | a | 11 | **23** | 35 | 20 | a | 20 | **34** |
| | United Kingdom | 27 | m | 27 | 14 | **26** | 20 | m | 20 | 10 | **19** |
| | United States | 22 | 18 | a | 18 | **21** | 28 | 20 | a | 20 | **27** |
| | OECD average | 21 | 20 | m | m | **21** | 23 | 22 | m | m | **23** |
| | EU22 average | 20 | 19 | m | 17 | **20** | 21 | 20 | m | m | **21** |
| Partners | Argentina | m | m | m | m | **m** | m | m | m | m | **m** |
| | Brazil | 24 | 18 | a | 18 | **23** | 28 | 24 | a | 24 | **27** |
| | China[2] | 37 | 43 | x(2) | x(2) | **37** | 49 | 51 | x(7) | x(7) | **49** |
| | Colombia | 24 | 18 | a | 18 | **23** | 31 | 24 | a | 24 | **29** |
| | Costa Rica | 15 | 17 | x(2) | x(2) | **15** | 28 | 21 | x(7) | x(7) | **27** |
| | India | 24 | 23 | 26 | 22 | **24** | 24 | 20 | 21 | 20 | **22** |
| | Indonesia | 24 | 22 | a | 22 | **23** | 30 | 27 | a | 27 | **29** |
| | Lithuania | 16 | 14 | a | 14 | **16** | 19 | 19 | a | 19 | **19** |
| | Russian Federation | 19 | 13 | a | 13 | **19** | 19 | 12 | a | 12 | **19** |
| | Saudi Arabia | m | m | m | m | **m** | m | m | m | m | **m** |
| | South Africa | m | m | m | m | **m** | m | m | m | m | **m** |
| | G20 average | 24 | 22 | 21 | 20 | **24** | 28 | 25 | 25 | 20 | **27** |

1. Primary includes pre-primary education.
2. Year of reference 2014.

**Source:** OECD/UIS/Eurostat (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933561783

D2

## Table D2.2. Ratio of students to teaching staff in educational institutions (2015)

*By level of education, calculations based on full-time equivalents*

| | | Primary education | Lower secondary education | Upper secondary education | | | All secondary education | Post-secondary non-tertiary education | Tertiary education | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | General programmes | Vocational programmes | All programmes | | | Short-cycle tertiary | Bachelor's, master's, doctoral or equivalent level | All tertiary |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
| OECD | Australia | 15 | x(3) | 12[d] | m | m | m | m | m | 15 | m |
| | Austria | 12 | 9 | 10 | 10 | 10 | 9 | 12 | 9 | 16 | 14 |
| | Belgium | 13 | 10 | 10 | 10 | 10 | 10 | 16 | x(10) | x(10) | 23 |
| | Canada[1] | 17[d] | x(1) | x(5) | x(5) | 13 | 13 | m | m | m | m |
| | Chile | 21 | 22 | 23 | 23 | 23 | 23 | a | m | m | m |
| | Czech Republic | 19 | 12 | 11 | 11 | 11 | 11 | 21 | 11 | 23 | 23 |
| | Denmark | m | m | m | m | m | m | m | m | m | m |
| | Estonia | 13 | 10 | 14 | 17[d] | 15[d] | 12[d] | x(4) | a | 14 | 14 |
| | Finland | 14 | 9 | 14 | 18 | 16 | 13 | 18 | a | 15 | 15 |
| | France[2] | 19 | 15 | 9 | 13 | 10 | 13 | x(8) | 20[d] | 18 | 19 |
| | Germany | 15 | 13 | 13 | 14 | 13 | 13 | 13 | 13 | 12 | 12 |
| | Greece | m | m | m | m | m | m | 15 | a | m | m |
| | Hungary | 11 | 11 | 11 | 13 | 11 | 11 | 14 | 15 | 15 | 15 |
| | Iceland | 11 | 10 | m | m | m | m | m | m | m | m |
| | Ireland[3] | 16 | x(5) | 14[d] | a | 14[d] | 14 | m | x(10) | x(10) | 20 |
| | Israel[3] | 15 | 12 | x(5) | x(5) | 11 | 11 | m | m | m | m |
| | Italy | 12 | 12 | 13 | 12 | 12 | 12 | m | a | 20 | 20 |
| | Japan | 17 | 14 | x(5) | x(5) | 12[d] | 13[d] | x(5, 10) | m | m | m |
| | Korea | 17 | 16 | 15 | 12 | 14 | 15 | a | m | m | m |
| | Latvia | 12 | 8 | 8 | 16 | 10 | 9 | 23 | 21 | 19 | 19 |
| | Luxembourg | 11 | 11 | 8 | 12 | 11 | 11 | m | 11 | 8 | 8 |
| | Mexico | 27 | 34 | x(5) | x(5) | 20 | 27 | a | 18 | 15 | 15 |
| | Netherlands | 17 | 16 | 16 | 19 | 18 | 17 | a | 15 | 15 | 15 |
| | New Zealand | 16 | 16 | 12 | 18 | 13 | 14 | 20 | 18 | 17 | 17 |
| | Norway | 10 | 10 | 11 | 10 | 10 | 10 | 13 | 13 | 10 | 10 |
| | Poland | 11 | 10 | 12 | 9 | 10 | 10 | 14 | 8 | 15 | 15 |
| | Portugal | 14 | 10 | x(5) | x(5) | 10[d] | 10[d] | x(5, 10) | x(10) | x(10) | 14[d] |
| | Slovak Republic | 17 | 12 | 14 | 13 | 14 | 12 | 14 | 8 | 13 | 13 |
| | Slovenia | 16 | 8 | 12 | 14 | 13 | 11 | a | 19 | 17 | 17 |
| | Spain | 14 | 12 | 12 | 10 | 11 | 11 | a | 11 | 13 | 13 |
| | Sweden | 13 | 12 | x(5) | x(5) | 14 | 13 | 10 | 10 | 10 | 10 |
| | Switzerland[3] | 16 | 12 | 11 | m | m | m | m | a | m | m |
| | Turkey | 18 | 17 | 14 | 14 | 14 | 15 | a | 52 | 18 | 22 |
| | United Kingdom[4] | 18 | 14[d] | x(2) | m | m | 16 | a | x(10) | x(10) | 16 |
| | United States | 15 | 15 | x(5) | x(5) | 15 | 15 | x(10) | x(10) | x(10) | 14[d] |
| | OECD average | 15 | 13 | 12 | 14 | 14 | 13 | m | m | m | 16 |
| | EU22 average | 14 | 11 | 12 | 13 | 13 | 12 | m | m | m | 16 |
| Partners | Argentina | m | m | m | m | m | m | m | m | m | m |
| | Brazil | 25 | 25 | 26 | 12 | 24 | 24 | 25 | 13 | 25 | 25 |
| | China | 16 | 12 | x(5) | x(5) | 16 | 14 | x(9) | 22 | 18[d] | 19[d] |
| | Colombia | 24 | 26 | x(5) | x(5) | 24 | 26 | 20 | 12 | 13 | 13 |
| | Costa Rica | 13 | 14 | x(5) | x(5) | 14 | 14 | a | m | m | m |
| | India | 29 | 30 | 34 | 15 | 33 | 32 | 9 | a | 24 | 24 |
| | Indonesia | m | m | m | m | m | m | m | m | m | m |
| | Lithuania | 10 | 7 | 8 | 9 | 8 | 8 | 16 | a | 16 | 16 |
| | Russian Federation | 21 | 10[d] | x(2) | x(7, 8) | x(2, 7, 8) | 10 | 29[d] | 11[d] | 11 | 11[d] |
| | Saudi Arabia | 11 | m | m | m | m | m | a | x(10) | x(10) | 20 |
| | South Africa[5] | 33 | x(3) | 28[d] | m | m | m | m | m | m | m |
| | G20 average | 19 | 17 | 18 | 14 | 17 | 16 | 19 | 20 | 17 | 18 |

1. Primary includes pre-primary education.
2. Public and government-dependent private institutions only.
3. For Ireland, public institutions only for all levels. For Israel, public institutions only for upper secondary education and all secondary. For Switzerland, public institutions only for primary, lower secondary and upper secondary general.
4. Lower secondary education comprises secondary schools for age 11-16. Upper secondary includes colleges for age 16+ and adult learning. See Annex 3 for details.
5. Year of reference 2014.

**Source:** OECD/UIS/Eurostat (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933561802

## Table D2.3. Ratio of students to teaching staff, by type of institution (2015)

*By level of education, calculations based on full-time equivalents*

| | | Lower secondary education | | | | Upper secondary education | | | | All secondary programmes | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Private institutions | | | | Private institutions | | | | Private institutions | | |
| | | Public institutions | Total private institutions | Government-dependent private institutions | Independent private institutions | Public institutions | Total private institutions | Government-dependent private institutions | Independent private institutions | Public institutions | Total private institutions | Government-dependent private institutions | Independent private institutions |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
| OECD | Australia[1] | x(5) | x(6) | x(7) | a | 13[d] | 12[d] | 12[d] | a | 13[d] | 12[d] | 12[d] | a |
| | Austria | 9 | 10 | x(2) | x(2) | 10 | 10 | x(6) | x(6) | 9 | 10 | x(10) | x(10) |
| | Belgium | 9 | 10 | 10 | m | 10 | 10 | 10 | m | 10 | 10 | 10 | m |
| | Canada | m | m | m | m | 13 | 13 | x(6) | x(6) | 13 | 13 | x(10) | x(10) |
| | Chile | 18 | 25 | 27 | 20 | 21 | 24 | 26 | 16 | 20 | 25 | 26 | 17 |
| | Czech Republic | 12 | 10 | 10 | a | 11 | 12 | 12 | a | 11 | 12 | 12 | a |
| | Denmark | m | m | m | m | m | m | m | m | m | m | m | m |
| | Estonia[2] | 10 | 8 | a | 8 | 15[d] | 12[d] | a | 12[d] | 12[d] | 10[d] | a | 10[d] |
| | Finland | 9 | 9 | 9 | a | 16 | 17 | 17 | a | 13 | 16 | 16 | a |
| | France | 15 | m | 18 | m | 10 | m | 12 | m | 12 | m | 15 | m |
| | Germany | 13 | 13 | x(2) | x(2) | 13 | 12 | x(6) | x(6) | 13 | 13 | x(10) | x(10) |
| | Greece | m | m | a | m | m | m | a | m | m | m | a | m |
| | Hungary | 10 | 11 | 12 | 9 | 11 | 12 | 11 | 13 | 11 | 12 | 12 | 12 |
| | Iceland | 11 | 3 | 3 | a | m | m | m | m | m | m | m | m |
| | Ireland | x(5) | m | a | m | 14[d] | m | a | m | 14 | m | a | m |
| | Israel | 12 | 10 | 10 | a | 11 | m | m | a | 11 | m | m | a |
| | Italy | 12 | 11 | a | 11 | 13 | 7 | a | 7 | 12 | 8 | a | 8 |
| | Japan[3] | 14 | 12 | a | 12 | 11[d] | 14[d] | a | 14[d] | 13[d] | 14[d] | a | 14[d] |
| | Korea | 15 | 17 | 17 | a | 13 | 15 | 15 | a | 14 | 15 | 15 | a |
| | Latvia | 8 | 4 | a | 4 | 10 | 8 | a | 8 | 9 | 6 | a | 6 |
| | Luxembourg | 10 | 22 | x(2) | x(2) | 11 | 10 | 13 | 9 | 10 | 14 | 27 | 16 |
| | Mexico | 37 | 18 | a | 18 | 24 | 12 | a | 12 | 31 | 14 | a | 14 |
| | Netherlands | 16 | 16 | a | 16 | 18 | 19 | a | 19 | 17 | 18 | a | 18 |
| | New Zealand | 16 | 13 | a | 13 | 13 | 10 | 11 | 10 | 15 | 11 | 11 | 11 |
| | Norway | 10 | 8 | 8 | a | 10 | 12 | 12 | a | 10 | 11 | 11 | a |
| | Poland | 10 | 9 | 11 | 8 | 10 | 11 | 12 | 11 | 10 | 10 | 11 | 10 |
| | Portugal[3] | 10 | 15 | 15 | 14 | 10[d] | 10[d] | 11[d] | 10[d] | 10[d] | 12[d] | 13[d] | 11[d] |
| | Slovak Republic | 12 | 11 | 11 | a | 14 | 12 | 12 | a | 13 | 12 | 12 | a |
| | Slovenia | 8 | 7 | 7 | a | 13 | 14 | 13 | 17 | 11 | 13 | 12 | 17 |
| | Spain | 11 | 15 | 15 | 14 | 10 | 14 | 15 | 13 | 11 | 15 | 15 | 13 |
| | Sweden | 12 | 16 | 16 | a | 15 | 14 | 14 | a | 13 | 14 | 14 | a |
| | Switzerland | 12 | m | m | m | m | m | m | m | m | m | m | m |
| | Turkey | 17 | 9 | a | 9 | 15 | 8 | a | 8 | 16 | 8 | a | 8 |
| | United Kingdom[4] | 15[d] | 14[d] | 16[d] | 7[d] | m | m | m | m | 15 | 17 | 19 | 7 |
| | United States | 16 | 10 | a | 10 | 16 | 10 | a | 10 | 16 | 10 | a | 10 |
| | OECD average | 13 | 12 | m | m | 13 | 12 | m | m | 13 | 13 | m | m |
| | EU22 average | 11 | 12 | m | m | 12 | 12 | m | m | 12 | 12 | m | m |
| Partners | Argentina | m | m | m | m | m | m | m | m | m | m | m | m |
| | Brazil | 26 | 21 | a | 21 | 25 | 19 | a | 19 | 25 | 20 | a | 20 |
| | China | 12 | 17 | x(2) | x(2) | 15 | 18 | x(6) | x(6) | 13 | 18 | x(6) | x(6) |
| | Colombia | 29 | 19 | x(2) | x(2) | 26 | 19 | x(6) | x(6) | 28 | 19 | x(6) | x(6) |
| | Costa Rica | 15 | 10 | x(2) | x(2) | 14 | 10 | x(6) | x(6) | 15 | 10 | x(6) | x(6) |
| | India | 29 | 32 | 36 | 31 | 31 | 35 | 34 | 35 | 30 | 34 | 35 | 33 |
| | Indonesia | m | m | m | m | m | m | m | m | m | m | m | m |
| | Lithuania | 7 | 10 | a | 10 | 8 | 6 | a | 6 | 8 | 9 | a | 9 |
| | Russian Federation | 10[d] | 5[d] | a | 5[d] | x(1) | x(2) | a | x(4) | 10 | 5 | a | 5 |
| | Saudi Arabia | m | m | m | m | m | m | m | m | m | m | m | m |
| | South Africa | m | m | m | m | m | m | m | m | m | m | m | m |
| | G20 average | 17 | 15 | 20 | 14 | 16 | 15 | 18 | 15 | 16 | 14 | 19 | 13 |

1. Includes only general programmes in lower and upper secondary education.
2. Upper secondary education includes programmes from lower secondary and post-secondary non-tertiary.
3. Upper secondary education includes programmes from post-secondary non-tertiary.
4. Lower secondary education comprises secondary schools for age 11-16. Upper secondary includes colleges for age 16+ and adult learning. See Annex 3 for details.

**Source:** OECD/UIS/Eurostat (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

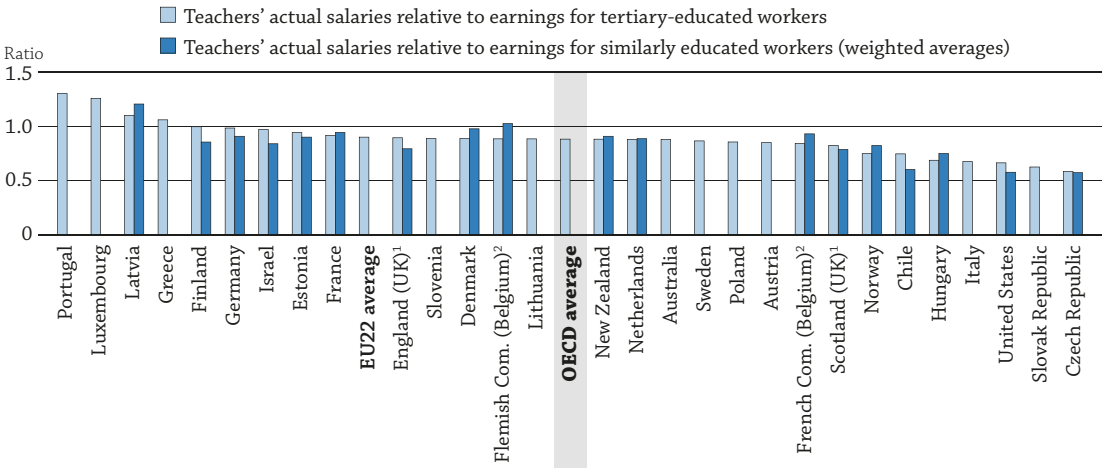
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# HOW MUCH ARE TEACHERS PAID?

- On average across OECD countries, pre-primary teachers' actual salaries are 78% of earnings of tertiary-educated, 25-64 year-old, full-time, full-year workers. Primary teachers are paid 85% of these benchmark earnings, lower secondary teachers 88% and upper secondary teachers 94%.
- The statutory salaries of teachers with 15 years of experience and typical qualifications average USD 39 227 at pre-primary level, USD 42 864 at primary level, USD 44 623 at lower secondary level, and USD 46 631 at upper secondary level.

## Figure D3.1. Lower secondary teachers' salaries relative to earnings for tertiary-educated workers (2015)

*Actual salaries of lower secondary teachers teaching general programmes in public institutions*




**Note**: For further details on the different metrics used to calculate these ratios, please refer to the *Methodology* section.

1. Data on earnings for full-time, full-year workers with tertiary education refer to the United Kingdom.

2. Data on earnings for full-time, full-year workers with tertiary education refer to Belgium.

*Countries and economies are ranked in descending order of the ratio of teachers' salaries to earnings for full-time, full-year tertiary-educated workers aged 25-64.*

**Source**: OECD (2017), Table D3.2a. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933558762

## Context

Teachers' salaries represent the largest single cost in formal education and have a direct impact on the attractiveness of the teaching profession. They influence decisions to enrol in teacher education, to become a teacher after graduation, to return to the teaching profession after a career interruption, and/or to remain a teacher (in general, the higher the salaries, the fewer the people who choose to leave the profession) (OECD, 2005). Burgeoning national debt, spurred by governments' responses to the financial crisis of late 2008, has put pressure on policy makers to reduce government expenditure – particularly on public payrolls. Since compensation and working conditions are important for attracting, developing and retaining skilled and high-quality teachers, policy makers should carefully consider teachers' salaries as they try to ensure both quality teaching and sustainable education budgets (see Indicators B6 and B7).

However, statutory salaries are just one component of teachers' total compensation. Other benefits, such as regional allowances for teaching in remote areas, family allowances, reduced rates on public transport and tax allowances on the purchase of instructional materials, may also form part of teachers' total remuneration. There are also large differences in taxation and social-benefits systems across OECD countries. All this should be borne in mind when analysing teachers' salaries and comparing them across countries.

## Other findings

- In most OECD countries, teachers' salaries increase with the level of education they teach. For example, the salary of an upper secondary school teacher with 15 years of experience and typical qualifications in Denmark, Finland, the Flemish and French Communities of Belgium, Mexico, the Netherlands, Norway and the Slovak Republic is at least 25% higher than that of a pre-primary school teacher with the same experience and typical qualifications.
- Salaries at the top of the scale for teachers with typical qualifications are, on average across OECD countries, 65% higher than starting salaries in pre-primary education, 70% higher in primary education, 70% higher in lower secondary education and 69% higher in upper secondary education. The difference tends to be greatest when it takes many years to progress through the scale. In countries where it takes 30 years or more to reach the top of the salary scale, salaries at that level can be more than 91% higher, on average, than starting salaries.
- Teachers with maximum qualifications at the top of their salary scales are paid, on average across OECD countries, USD 52 470 at the pre-primary level, USD 55 676 at the primary level, USD 59 147 at the lower secondary level and USD 60 143 at the upper secondary level.
- In 10 out of 29 countries and economies with available data, the average annual actual salaries of upper secondary teachers – including bonuses and allowances – are at least 10% higher than statutory salaries for upper secondary teachers with 15 years of experience and typical qualifications.
- Between 2005 and 2015, statutory salaries of teachers with typical qualifications and 15 years of experience increased in real terms on average across OECD countries and economies by 10% at pre-primary level, by 6% at primary level, 6% at lower secondary level and by 4% at upper secondary level.
- The economic downturn in 2008 had a direct impact on teachers' salaries, which were either frozen or cut in some countries. Between 2005 and 2015 teachers' statutory salaries decreased in real terms in one-third of the countries and economies with available data. The decrease (at pre-primary, primary and secondary levels) reached about 10% in England (United Kingdom) and Portugal, and up to 28% in Greece.

D3

## Analysis

### Statutory teachers' salaries

Teachers' salaries vary widely across countries. The salaries of lower secondary school teachers with 15 years of experience and typical qualifications (proxy for mid-career salaries of teachers) range from less than USD 20 000 in the Czech Republic, Hungary, Latvia, Lithuania and the Slovak Republic to more than USD 60 000 in Canada, Germany, the Netherlands and the United States, and exceed USD 110 000 in Luxembourg (Table D3.1a and Figure D3.2).

In most countries, teachers' salaries increase with the level of education they teach. In Denmark, the Flemish and French Communities of Belgium, the Netherlands, Norway and the Slovak Republic, upper secondary teachers with 15 years of experience and typical qualifications earn between 25% and 40% more than pre-primary teachers with the same experience; in Finland they earn 50% more, and in Mexico 89% more. In Finland and the Slovak Republic, the difference is mainly explained by the gap between pre-primary and primary teachers' salaries. In the Flemish and French Communities of Belgium, teachers' salaries at upper secondary level are significantly higher than at other levels of education. The differences between salaries at each level of education should be interpreted in light of the requirements to enter the teaching profession (see OECD, 2014, Indicator D6).

The difference between salaries for upper secondary and pre-primary teachers with 15 years of experience and typical qualifications is less than 5% in Australia, Chile, Korea, Lithuania, Luxembourg, Slovenia and Turkey and teachers have the same salary irrespective of the level of education taught in Colombia, England (United Kingdom), Greece, Latvia, Poland, Portugal and Scotland (United Kingdom). Salaries of teachers with 15 years of experience and typical qualifications are also equal at primary, lower secondary and upper secondary levels in Canada, the Czech Republic, Japan, the Slovak Republic and Slovenia.

In Israel, the salary of a pre-primary teacher is 22% higher than the salary of an upper secondary teacher. This difference is the result of the "New Horizon" reform, begun in 2008 and almost fully implemented by 2014, that increased salaries for pre-primary, primary and lower secondary teachers. Another reform, launched in 2012 with implementation on going, aims to raise salaries for upper secondary teachers.

#### Box D3.1. **Comparability of statutory salary data**

Meaningful international comparisons rely on the provision and implementation of rigorous definitions and a related statistical methodology. Data published on teachers' statutory salaries in this indicator refer to the annual gross statutory salary for a given reference year (2015) for full-time teachers with a given level of qualifications, teaching in general programmes in public institutions (see *Definitions* section). In view of the diversity in the systems of both education and teachers' compensation systems across countries, strict adherence to these guidelines and methodology is not always straightforward. Some caution is therefore required when interpreting these data (see Annex 3 for more information).

**Teachers from vocational programmes:** Whereas statutory salaries should refer to teachers in general programmes, they also include teachers in vocational programmes in some countries. This results from overlapping compensation systems and regulations for teachers working in vocational and general programmes, as well as the fact that some teachers may be involved in both types of programmes. Including teachers in vocational programmes can bias data on salaries, especially at upper secondary where they are more common. Over one-third of countries report statutory salaries for all teachers at this level, but there are only limited differences in the statutory salaries between general and vocational programmes in most cases. The effect on actual salaries (see *Definitions* section), affected by the distribution of teachers, is potentially more substantial, although only a handful of countries (Austria, Portugal and the Slovak Republic) report a potential impact, whose extent would not exceed 3% of the values reported.

**Social and pension contributions:** Some countries could find it challenging to exclude social security contributions paid by employers from data on salaries, while including those paid by employees as required in the data collection. Denmark, Lithuania and Luxembourg include contributions paid by employers; thus, the amounts reported overestimate teachers' salaries. In contrast, in Mexico, New Zealand, Sweden and Turkey, salaries are underestimated due to the exclusion of the employees' contributions.

...

**Reporting of averages:** Salary data for each country refer to the whole country (for a given reference year and level of qualification of teachers). However, one-third of countries do not report statutory salaries based on a single set of national pay scales, but estimate this value for the whole country, since salary scales vary by subnational areas (for example, in federal countries such as Canada and Germany). These averages usually weight each scale by the proportion of teachers paid according to the different scales. However, in some countries where salaries vary by geographical area or where salary scales do not exist at the national level, only actual base salaries can be collected. In the United States, for example, instead of statutory salaries, actual salaries are reported based on samples. Weighted averages are also used when salary scales vary between grades within a level of education (for example, at the primary level in Denmark), or when the annual salaries reported are adjusted to fit the school year, rather than the calendar year (as in the case of Austria). In some cases, multiple factors are taken into account simultaneously to determine the level of the salary. For example, in the Netherlands, several statutory salary scales are used, based on the qualifications of teachers and other criteria, with a different number of salary scales according to levels of education. At the secondary level, there is also a different distribution of the use of these salary scales between geographical areas.

### *Minimum and typical qualifications*

Teachers' statutory salaries do not only vary with the level of education they teach or their years of experience, but also according to their qualifications.

The minimum qualifications required to teach at a given level of education in the public school system refer to the standard duration and the type of training required to enter the profession (see OECD, 2014, Indicator D6) and does not include other requirements to become a licensed teacher, such as probation years. The "typical" level of qualifications refers to the level of qualifications and training that teachers typically have (i.e. the qualifications held by the largest proportion of teachers in the system, in a given year). The typical qualifications may include certificates and qualifications obtained while in the teaching profession. The definition varies by country (Box D3.2).

#### Box D3.2. **Typical qualifications of teachers**

In most OECD countries, teachers are required to have a specific level of attainment or type of diploma, or even a combination of qualifications, to enter the teaching profession. Typical qualifications generally involve the completion of requirements beyond teachers' typical educational attainment (see Annex 3 for the differences between minimum and typical qualification levels between countries). Very often, teachers have to undergo training, gain practical experience and/or demonstrate their skills over probation periods to become fully qualified teachers. Sometimes they have to satisfy additional criteria, such as passing competitive examinations, to be able to teach or to reach higher levels in pay scales and degrees of responsibility in the school system. Criteria may also change depending on the level of education at which they teach (for further information, see OECD, 2014, Indicator D6).

As a result, the minimum qualifications required to enter the teaching profession may not be the most commonly held qualifications in the teaching force. In several education systems, the "typical" teacher has most likely undergone certification and qualification processes beyond the minimum requirements and has reached a given position in a salary scale. This is what is referred to as the typical qualifications of teachers, and they vary depending on the country and the school system.

Variations between the minimum and typical qualifications of teachers currently teaching are often seen in countries where policy or legislation has recently changed and the requirements for entering the teaching profession have been raised or lowered. Variations can also arise in systems where professional development activities have an effect on the definition of teachers' qualifications and on their salaries, as well as in systems where several types of qualifications (types of diploma and/or ISCED levels of attainment) are accepted for entrance into the teaching profession or where there are alternative pathways. Differences can also be indicators of teachers' progression throughout their careers.

Differences in salaries of teachers between those with minimum and typical qualifications are by no means the general rule (in countries with a large proportion of teachers with the minimum qualification level, these may also represent the typical qualifications). In 18 of the 36 countries and economies with available data, there are no differences in salaries between teachers with minimum and typical qualifications throughout a teacher's career. In the remaining 18 countries, differences in teachers' statutory salaries may reflect differences in whether teachers hold typical or minimum qualifications, at least in one education level and at least at one point in their career: at starting salary, after 10 years of experience, after 15 years of experience or at the top of the salary scale (Table D3.1a and Table D3.1b, available on line). Caution is necessary when interpreting these differences in salaries, as in some countries a very small proportion of teachers only have the minimum qualification required.

In Chile, Ireland, Israel, Mexico, Portugal and the Slovak Republic (primary, lower secondary and upper secondary), starting salaries are the same for all teachers within a given level of education, regardless of their level of qualification. However, for teachers with several years of teaching experience in these countries, the salaries start to diverge according to whether they have minimum or typical qualifications. In Canada, Colombia, Costa Rica, the Czech Republic, the French Community of Belgium, Lithuania and the United States, teachers with typical qualifications have higher statutory salaries than teachers with minimum qualifications at all points of a teacher's career (including starting salaries), at all levels of education for which information is available. This is true in Australia as well, except at the top of the salary scale, where salaries do not generally depend on teachers' qualifications. In Norway, statutory salaries are higher for teachers with typical qualifications at all stages of their career and all education levels except pre-primary, where there is no difference between minimum and typical qualifications. Conversely, in Poland, the statutory salaries of teachers with typical qualifications are higher than those of teachers with minimum qualifications at all levels of education except upper secondary. This is because most teachers in Poland have a master's degree or the equivalent (ISCED 7), even though this is only a requirement for teaching upper secondary (Table D3.1a and Table D3.1b, available on line).

Differences in statutory salaries can be substantial among teachers with 15 years of experience between those with minimum qualifications and those with typical qualifications. They range from 10% or less in Australia, Chile, Ireland, Israel, Korea (pre-primary level) and New Zealand to more than 30% in Costa Rica, the French Community of Belgium (upper secondary level) and Poland (at pre-primary and primary levels) (Table D3.1a and Table D3.1b, available on line).

### *Starting and maximum teachers' salaries*

Education systems compete with other sectors of the economy to attract high-quality graduates as teachers. Research shows that salaries and alternative employment opportunities are important factors in the attractiveness of teaching (Santiago, 2004). Teachers' starting salaries relative to other non-teaching occupations and the likely growth in earnings have a huge influence over a graduate's decision to become a teacher.

Countries that are looking to increase the supply of teachers, especially those with an ageing teacher workforce and/or a growing school-age population, might consider offering more attractive starting wages and career prospects. However, to ensure a well-qualified teaching workforce, efforts must be made not only to recruit and select, but also to retain the most competent and qualified teachers.

At the lower secondary level, new teachers entering the profession with minimum qualifications earn, on average, USD 31 486. Starting salaries range from below USD 15 000 in Brazil, Colombia, Hungary, Latvia, Poland and the Slovak Republic to more than USD 40 000 in Denmark and Spain, more than USD 60 000 in Germany and Switzerland and nearly USD 80 000 in Luxembourg. For teachers at the top of the salary scale and with the maximum qualifications, salaries average USD 59 147, ranging from less than USD 25 000 in the Czech Republic, Lithuania and the Slovak Republic, to USD 75 000 or more in Austria, the French Community of Belgium, Germany and Korea, more than USD 95 000 in Switzerland and to more than USD 135 000 in Luxembourg.

In terms of the statutory salary range, from starting salaries (with minimum qualifications) to maximum salaries (with maximum qualifications), most countries and economies with starting salaries below the OECD average also have maximum salaries that are below the OECD average. At the lower secondary level, some exceptions are England (United Kingdom), Japan, Korea and Mexico, where starting salaries are at least 7% lower than the OECD average, but maximum salaries are 7% to 34% higher. The opposite is true in Denmark, Finland and Norway, where starting salaries are at least 13% higher than the OECD average, while maximum salaries are lower than the OECD average

(Figure D3.2, and Table D3.6, available on line). This results from the fact that a number of countries have relatively flat/compressed salary scales. The difference between starting salary with minimum qualification and maximum salary with maximum qualification is 30% or less in Denmark, Finland (pre-primary, primary and lower secondary), Norway (pre-primary) and Turkey (Table D3.6, available on line).

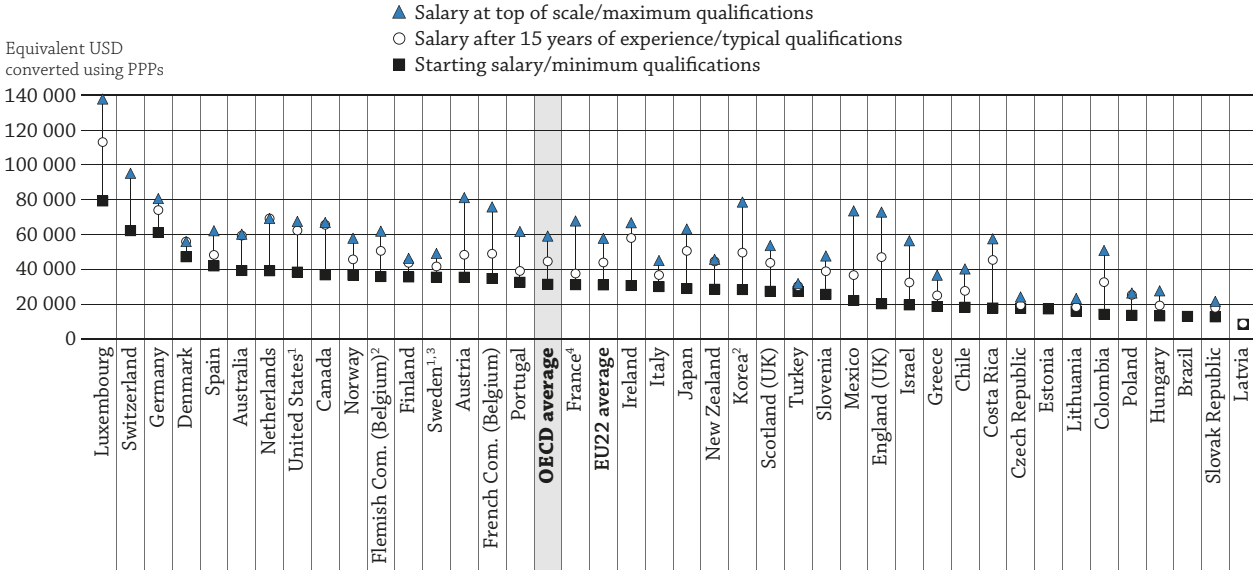
Weak financial incentives may make it more difficult to retain teachers as they approach the peak of their earnings. However, there may be some benefits to compressed pay scales. For example, organisations in which there are smaller differences in salaries among employees may enjoy more trust, freer flows of information and more collegiality among co-workers.

By contrast, maximum salaries are at least double the starting salaries in Chile, the French Community of Belgium, Israel and Korea at all levels of education, in Poland in pre-primary and primary levels, in Ireland and Japan in primary and secondary levels, in Austria and France at lower and upper secondary levels, and in Hungary at the lower secondary level. Maximum salaries are more than three times higher than starting salaries at all levels of education in Colombia, Costa Rica, England (United Kingdom) and Mexico (except at the upper secondary level) (Figure D3.2, and Table D3.6, available on line).

At the top of the pay range, the salary premium for higher qualifications also varies across countries. At lower secondary level, while there is no difference between salaries at the top of the scale for teachers with minimum and maximum qualifications in 12 of 36 countries and economies with data for both, in Colombia, France, the French Community of Belgium, Israel, Lithuania, Norway and the Slovak Republic, the difference is at least 25%. This salary gap is widest in Costa Rica, England (United Kingdom) and Mexico, where teachers with maximum qualifications at the top of the scale earn at least twice as much as those with the same experience but minimum qualifications. In England (United Kingdom) this gap reflects the salary increase available to teachers accessing the "Leading Practitioner" pay scale. A similar picture is seen at the upper secondary level (Table D3.1b, and Table D3.6, available on line).

## Figure D3.2. Lower secondary teachers' statutory salaries at different points in teachers' careers (2015)

*Annual statutory salaries of teachers in public institutions, in equivalent USD converted using PPPs*




1. Actual base salaries.
2. Salaries at top of scale and typical qualifications, instead of maximum qualifications.
3. Salaries at top of scale and minimum qualifications, instead of maximum qualifications.
4. Includes the average of fixed bonuses for overtime hours.

*Countries and economies are ranked in descending order of starting salaries for lower secondary teachers with minimum qualifications.*

**Source**: OECD (2017), Table D3.1a, Tables D3.1b and D3.6, available on line. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933558781

When analysing starting salaries (with minimum qualifications) and maximum salaries (i.e. those at the top of the salary scale with maximum qualification), it is important to bear in mind that "minimum" and "maximum" qualifications do not refer to all teachers, as teachers may have other qualification levels, such as the typical qualifications (see Table X2.5 for the proportion of teachers with minimum or typical qualifications levels), that not all teachers may aim for or reach the top of the salary scale and that few of them hold the maximum qualifications.

### Teaching experience and salary scales



Salary structures usually define the salaries paid to teachers at different points in their careers. Deferred compensation, which rewards employees for staying in organisations or professions and for meeting established performance criteria, is also used in teachers' salary structures. OECD data on teachers' salaries are limited to information on statutory salaries at four points of the salary scale: starting salaries, salaries after 10 years of experience, salaries after 15 years of experience and salaries at the top of the scale. Further qualifications can influence differences in starting and maximum salaries and lead to wage increases in some countries.

In OECD countries, teachers' salaries rise during the course of their career (for a given qualification level), although the rate of change differs across countries. With a typical qualification level, the average statutory salaries for lower secondary school teachers with 10 years of experience are 30% higher than the average starting salaries, and 39% higher with 15 years of experience. In addition, salaries at the top of the scale (reached after an average of 25 years of experience) are 71% higher, on average, than starting salaries. In Greece, Hungary, Israel, Italy, Korea and Spain, lower secondary school teachers reach the top of the salary scale only after at least 35 years of service. By contrast, lower secondary teachers in Australia, Colombia, New Zealand and Scotland (United Kingdom) reach the highest step on the salary scale after 6 to 9 years (Tables D3.1a and D3.3a).

### Statutory salaries per hour of net teaching time

As the number of hours of teaching varies considerably between countries and also between levels of education, differences in statutory salaries of teachers may also translate into different levels of salary per teaching hour. The average statutory salary per teaching hour after 15 years of experience and with typical qualifications is USD 54 for primary teachers, USD 64 for lower secondary teachers, and USD 73 for upper secondary teachers in general education.

At primary and secondary levels, Chile, Colombia (secondary levels), Costa Rica (primary level), the Czech Republic (primary level), Latvia, Lithuania (secondary levels) and the Slovak Republic have the lowest salaries per teaching hour: USD 30 or less. By contrast, salaries per teaching hour are USD 90 or more at the lower and upper secondary levels in the Flemish Community of Belgium, Germany and the Netherlands, at the lower secondary level in Korea and at the upper secondary level in the French Community of Belgium, Denmark, Japan and Norway. They exceed USD 120 in Luxembourg at all levels. For pre-primary teachers with typical qualifications, the average statutory salary per teaching hour after 15 years of experience is USD 43. However, in about one-third of the countries, pre-primary teachers with 15 years of experience and typical qualifications earn less than USD 30 per teaching hour (Table D3.3a).

Because secondary teachers are required to teach fewer hours than primary teachers, their salaries per teaching hour are usually higher than those of teachers at lower levels of education, even in countries where statutory salaries are similar (see Indicator D4). On average across OECD countries, upper secondary teachers' salaries per teaching hour exceed those of primary teachers by about 35%. In Latvia and Scotland (United Kingdom), there is no difference, while in Denmark the salary per teaching hour for an upper secondary teacher is more than twice that for a primary teacher. In Colombia and Lithuania, the salary per teaching hour is actually higher at the primary level (Table D3.3a).

However, the difference in salaries per teaching hour between primary and secondary teachers may disappear when comparing salaries per hour of working time. In Portugal, for example, there is a 23% difference in salaries per teaching hour between primary and upper secondary teachers, even though statutory salaries and total working time are the same at these levels. The difference is explained by the fact that primary teachers spend more time teaching than upper secondary teachers (see Table D4.1).

### Salary trends since 2000

Among the half of the OECD countries with available data on statutory salaries of teachers with typical qualifications for 2000 and 2015 (and no break in the time series), teachers' salaries increased overall in real terms in most of these countries during this period. Notable exceptions are England (United Kingdom) and France, where there was a decline of about 5% and 10% respectively and Greece where salaries decreased by 16%. There were also slight declines in teachers' salaries in real terms (less than 3%) in Denmark (upper secondary), and Italy (primary and secondary education). In other countries, salaries increased most significantly (by 18% or more over this period)

in Finland (primary), Ireland (primary to upper secondary), Israel, Mexico (pre-primary to lower secondary) and Turkey. The increase exceeded 40% in Israel (pre-primary), Latvia and Scotland (United Kingdom) (pre-primary). However, in some countries, the overall increase in teachers' salaries between 2000 and 2015 includes periods of decrease in salary (in real terms), particularly from 2010 (Table D3.5a).

Over the period 2005 to 2015, where three-quarters of OECD countries and economies have comparable data for at least one level of education, more than half of these countries showed an increase in their salaries in real terms. On average across OECD countries and economies with available data for 2005 and 2015 reference years, salaries increased by 6% at primary level, 6% at lower secondary level and 4% at upper secondary level. The increase exceeded 20% in Poland at pre-primary, primary and secondary levels – the result of a 2007 government programme that aimed to increase teachers' salaries successively between 2008 and 2013 and to improve the quality of education by providing financial incentives to attract high-quality teachers – and also in Israel (pre-primary, primary and lower secondary), Latvia, Luxembourg (pre-primary and primary), Norway (pre-primary) and Turkey.

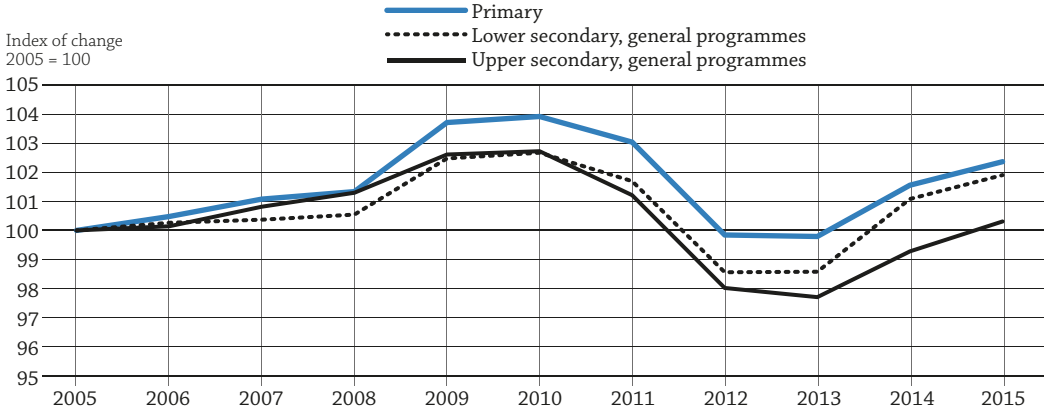
In most countries, similar increases in teachers' salaries were seen at the primary, lower secondary and upper secondary levels between 2005 and 2015. However, this is not true in Israel and Luxembourg. In Israel, salaries increased by more than 43% at pre-primary level, by 29% at primary level, by 38% at lower secondary level and by 18% at upper secondary level. In Luxembourg, the increase exceeded 45% at pre-primary and primary levels, compared to a 16% increase at lower and upper secondary levels. In both Israel and Luxembourg, the difference in the index of change between primary and secondary teachers' salaries is due to reforms that aimed to increase primary teachers' salaries. In Israel, this is largely the result of the gradual implementation of the "New Horizon" reform in primary and lower secondary schools, begun in 2008, following an agreement between the education authorities and the Israeli Teachers Union (for primary and lower secondary education). This reform includes higher teacher pay in exchange for more working hours (see Indicator D4). In the academic year 2014/15 for example, 94% of full-time equivalent teachers in pre-primary education, 97% in primary education and 92% in lower secondary education were included in the reform. The same year, a similar reform ("*Oz Letmura*") was introduced at upper secondary level, affecting 41% of full-time equivalent teachers in the academic year 2014/15.

By contrast, salaries (at pre-primary, primary and secondary levels) have decreased by about 10% since 2005 in England (United Kingdom) and Portugal, and by 28% in Greece.

However, these overall changes in teachers' salaries in OECD countries between 2005 and 2015 mask different periods of change in teachers' salaries as a result of the impact of the economic downturn in 2008. On average across OECD countries and economies with available data for all years over the period, salaries were either frozen or cut between 2009 and 2013, before starting to increase again (Figure D3.3, and for more information, see Box D3.3 in OECD, 2015). As a consequence, the period from 2010 to 2015 is of particular interest when analysing the change in teachers' salaries further to the crisis.

## Figure D3.3. Change in teachers' salaries in OECD countries (2005-15)

***Average index of change, among OECD countries with data on statutory salaries for all reference years, for teachers with 15 years of experience and minimum qualifications (2005 = 100, constant prices)***




**Source**: OECD (2017), Table D3.5b, available on line. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933558800

At lower secondary level, changes in statutory salaries show different patterns among the 28 countries with available data for 2010, 2013 and 2015 (Figure D3.4). In most of the countries, salaries either increased over both 2010-13 and 2013-15 or decreased over both periods. Salaries have decreased in real terms in both periods in just over one-third of the countries and economies, all of them in Europe (Austria, England [United Kingdom], Finland, France, Greece, Ireland, Italy, Scotland [United Kingdom] and Slovenia). In contrast, they have increased continuously over these periods in another third of the countries (mostly outside Europe).

In a small group of countries (Denmark, Hungary, Portugal, Spain and Turkey), statutory salaries decreased from 2010 to 2013 and then increased from 2013 to 2015. Nonetheless, salaries in 2015 were below the level of 2010 in real terms in the majority of these countries (Figure D3.4).

The above analysis of trends in salaries is based on teachers with 15 years of experience and typical qualifications (a proxy for mid-career teachers). But teachers at certain stages of their career may experience more rapid pay increases than teachers at other stages of their career. For example, some countries that have been experiencing teacher shortages may implement targeted policies to improve the attractiveness of the profession by increasing the salaries of beginning teachers (OECD, 2005). In France, for example, starting teachers received an increase in pay in 2010 and 2011.

### *Formation of base salary and additional payments: Incentives and allowances*

Statutory salaries, based on pay scales, are only one component of teachers' total compensation. School systems also offer additional payments to teachers, such as allowances, bonuses or other rewards. These may take the form of financial remuneration and/or reduction in the number of teaching hours, and decisions on the criteria used for the formation of the base salary are taken at different decision-making levels (Table D3.8, available on line).

Criteria for additional payments vary across countries. In the large majority of countries, teachers' core tasks (teaching, planning or preparing lessons, marking students' work, general administrative work, communicating with parents, supervising students and working with colleagues) are rarely considered as meriting bonuses or additional payments (Table D3.7). Taking on other responsibilities, however, often entails having some sort of extra compensation. In about half of the countries and economies with information available for lower secondary teachers, teachers who participate in school management activities in addition to their teaching duties receive some sort of compensation. This may be either reduced teaching time, as in Chile, Denmark, Finland, Luxembourg, Portugal, the Slovak Republic and Switzerland (with also incidental/occasional additional payments); or an annual additional payment, as in Canada (in some provinces/territories), England (United Kingdom), France, Ireland, Italy, Japan, Korea, New Zealand, Norway and Spain. It is also common to see additional payments, either annual or occasional, when teachers teach more classes or hours than required by their full-time contract; have responsibility as a class or form teacher; or perform special tasks, like training student teachers (Table D3.7).

Occasional additional payments are also awarded for outstanding performance by teachers. This is the case for lower secondary teachers in the Czech Republic, Estonia, Israel, Japan, Korea, Lithuania, Poland, the Slovak Republic and Slovenia. Performance bonuses can also be administered through increases in basic salary, such as in England (United Kingdom), France, Hungary, Mexico and New Zealand. Additional payments can also include bonuses for special teaching conditions, such as for teaching students with special needs in regular schools or for teaching in disadvantaged, remote or high-cost areas (Table D3.7).

### *Actual average salaries*

Unlike statutory salaries, teachers' actual salaries may include work-related payments, such as annual bonuses, results-related bonuses, extra pay for holidays, sick-leave pay and other additional payments (see *Definitions* section). These bonuses and allowances can represent a significant addition to base salaries. In this case, teachers' actual average salaries are influenced by the prevalence of bonuses and allowances in the compensation system on top of factors such as the level of experience or the qualification level of the teaching force (Box D3.3). Differences between statutory and actual average salaries are also linked to the distribution of teachers by years of experience and qualifications, as these two factors have an impact on the salary level of teachers.

Across OECD countries and economies, average actual salaries of teachers aged 25-64 are USD 37 093 at pre-primary level, USD 41 827 at primary level, USD 44 070 at lower secondary level and USD 46 928 at upper secondary level.

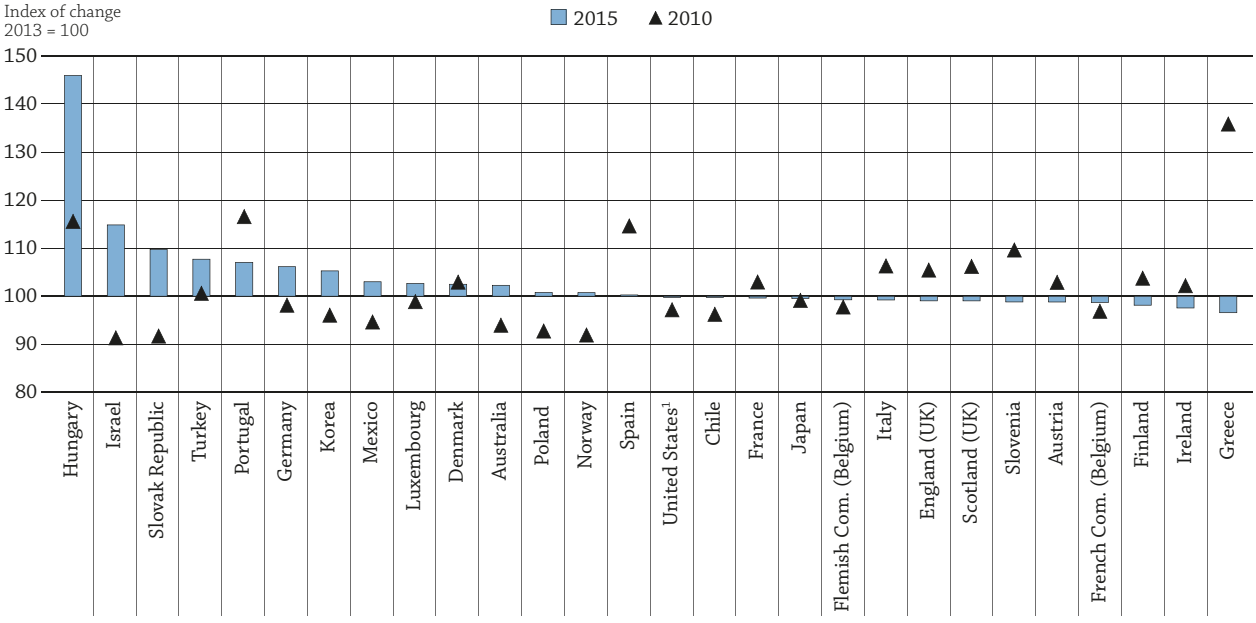
Among the 29 OECD countries and economies with available data on both statutory salaries of teachers with 15 years of experience and typical qualifications and actual salaries of 25-64 year-old teachers, actual annual salaries are 10% to 40% higher than statutory salaries in around a third of the countries: Austria, the Czech Republic,

Finland (primary and secondary levels), France (pre-primary and secondary levels), Hungary, Israel, Poland (primary and secondary levels), Portugal (upper secondary) and the Slovak Republic. In Latvia, the actual salaries of teachers are 48% higher than the statutory equivalent at pre-primary level, and more than double at upper secondary level. As statutory salaries refer to a minimum amount payable in Latvia and are very low, a large proportion of teachers take on more teaching hours and also perform additional tasks (Tables D3.1a and D3.4).



## Figure D3.4. Change in lower secondary teachers' statutory salaries (2010, 2013 and 2015)

*Index of change between 2010 and 2015 (2013 = 100, constant prices), for statutory salaries of teachers with 15 years of experience and typical qualifications*




1. Actual base salaries.

*Countries and economies are ranked in descending order of the index of change, between 2013 and 2015, in the statutory salaries of lower secondary teachers with 15 years of experience.*

**Source**: OECD (2017), Table D3.5a. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933558819

In some countries, average actual teachers' salaries vary more across education levels than statutory salaries for teachers with 15 years of experience and typical qualifications. For example, in the Czech Republic, statutory salaries are 8% higher at upper secondary level than at the pre-primary level, while actual salaries are 22% higher at upper secondary level than at the pre-primary level. The gap in average actual salaries between upper secondary teachers and pre-primary teachers is at least 15 percentage points greater than the difference in their statutory salaries in Finland, France, Israel and Poland, and this gap reaches 40 percentage points in Latvia, partly because statutory salaries do not increase much between pre-primary and upper secondary levels. The variety of bonuses available for different levels of education partly explains these differences (see Annex 3, available on line).

Among countries with available data for both statutory and actual salaries of lower secondary teachers over 2010-15 actual salaries of teachers changed in a similar way to statutory salaries of teachers in most countries. However, in Luxembourg actual salaries decreased between both 2010-13 and 2013-15, while statutory salaries increased during the whole period (Figure D3.5, available on line).

### *Teachers' salaries relative to earnings for tertiary-educated workers*

Young people's decisions to undertake teacher training, and graduates' decisions to subsequently enter or stay in the profession, are influenced by the salaries of teachers relative to those of other occupations requiring similar qualifications and by potential salary increases. In most OECD countries, a tertiary degree is required to become a teacher at all levels of education, meaning the likely alternative to teacher education is a similar tertiary education

programme. Thus, to interpret salary levels in different countries and reflect comparative labour-market conditions, actual teachers' salaries are compared to earnings of other tertiary-educated professionals: 25-64 year-old full-time, full-year workers with a similar tertiary education (see also Box D3.3). Moreover, to ensure that the comparison between countries is not biased by differences between the distribution of teachers by tertiary attainment and the distribution of tertiary-educated workers by attainment level, actual salaries of teachers are compared to a weighted average of earnings of similarly educated workers (earnings of similarly educated workers weighted by the proportion of teachers with similar tertiary attainment) (see Table X2.6 in Annex 2 for the proportion of teachers by attainment level).

Among the 18 countries and economies with available data (for at least one level), actual salaries of teachers amount to less than 60% of the earnings of similarly educated workers in the Czech Republic (primary, secondary) and the United States. Very few countries and economies have actual salaries of teachers that exceed those of similarly educated workers: ranging from up to 6% higher or less in the Flemish Community of Belgium (pre-primary, primary and lower secondary levels) and France (upper secondary) to more than 20% higher in Latvia (primary and secondary levels).

Considering the few countries with available data for this relative measure of teachers' salaries, a second benchmark (see *Methodology* section) is based on the actual salaries of all teachers, relative to earnings for full-time, full-year workers with tertiary education (ISCED 5 to 8). Against this benchmark, pre-primary teachers' salaries amount to 78% of full-time, full-year earnings, on average, among 25-64 year-olds with tertiary education. Primary teachers earn 85% of the benchmark salary, lower secondary teachers 88%, and upper secondary teachers 94% (Table D3.2a and Figure D3.1).

In almost all countries and economies with available information, and at almost all levels of education, teachers' actual salaries are lower than those of tertiary-educated workers. However, upper secondary teachers in 10 of the 29 countries and economies with available data have actual salaries that are equal to or higher than those of workers with a tertiary attainment. Relative salaries for teachers are highest in Finland (upper secondary), the Flemish Community of Belgium (upper secondary), Latvia (primary and secondary), Luxembourg and Portugal, where teachers' actual salaries are at least 10% higher than the earnings of tertiary-educated workers. The lowest relative teachers' actual salaries are found in the Czech Republic and the Slovak Republic, where pre-primary teachers' actual salaries are 50% or less of the earnings of a full-time, full-year tertiary-educated worker (Table D3.2a and Figure D3.1).

### Box D3.3. Actual average salaries, by age group and gender

At pre-primary, primary and secondary levels, actual salaries of older teachers (those aged 55-64) are, on average, 39% to 40% higher than those of younger teachers (those aged 25-34). This difference between age groups varies considerably between countries and economies, however. The difference is less than 30% at all levels of education in the Czech Republic, Denmark, England (United Kingdom), Finland, Latvia, New Zealand, Norway and Sweden while it is 53% or more in Austria, Chile, Israel, Luxembourg, Portugal and Slovenia.

Despite the increase in teachers' salaries for older age groups, the comparison of teachers' salaries with earnings of tertiary-educated workers seems to show that teachers' salaries may evolve at a slower rate than earnings of other workers and that the teaching profession is less attractive as the workforce ages. On average across OECD countries and economies, teachers' actual salaries relative to earnings of tertiary-educated workers are about 10 to 11 percentage points higher among the youngest adults (25-34 year-olds) than among the older age groups (55-64 year-olds). However, there are large differences between countries, and in Chile and Hungary teachers' actual salaries relative to earnings of tertiary-educated workers are higher for older age groups at pre-primary, primary and secondary levels.

Differences between actual salaries for male and female teachers are small – 3% or less, on average, at pre-primary, primary and secondary levels. Female teachers earn, on average, only slightly more than male teachers at the pre-primary level and slightly less at the primary, lower secondary and upper secondary levels.

There are larger gender differences in the ratio of teachers' salaries to earnings for similarly educated workers aged 25-64. On average across OECD countries and economies, actual salaries of male teachers (aged 25-64) are

...

68% (at pre-primary level) to 85% (at upper secondary level) of the earnings of a tertiary-educated 25-64 year-old full-time, full-year male worker. Teachers' actual salaries relative to earnings of tertiary-educated workers are about 25 percentage points higher among women than among the men at pre-primary, primary and secondary levels of education. This higher ratio among female teachers shows that the teaching profession may be more attractive to women than to men compared to other professions, but it also reflects the persistent gender gap in earnings in the labour market (Tables D3.2 and D3.4).



## Definitions

**Actual salaries for teachers aged 25-64** refer to the annual average earnings received by full-time teachers aged 25 to 64, before taxes. It is the gross salary from the employee's point of view, since it includes the part of social security contributions and pension scheme contributions that are paid by the employees (even if deducted automatically from the employees' gross salary by the employer). However, the employers' premium for social security and pension is excluded. Actual salaries also include work-related payments, such as annual bonuses, results-related bonuses, extra pay for holidays and sick-leave pay. Income from other sources, such as government social transfers, investment income and any other income that is not directly related to their profession, are not included.

**Earnings for workers with tertiary education** are average earnings for full-time, full-year workers aged 25-64 with an education at ISCED 5/6/7 or 8 level. The relative salary indicator is calculated for the latest year with available earnings data. For countries in which teachers' salaries and workers' earnings information are not available for the same year (e.g. Belgium, Canada, Denmark, France, Germany, Italy, Luxembourg, the Netherlands, Poland and Spain), the indicator is adjusted for inflation using the deflators for private consumption. Reference statistics for earnings for workers with tertiary education are provided in Annex 3.

**Salary at the top of the scale** refers to the maximum scheduled annual salary (top of the salary scale) for a full-time classroom teacher with the maximum qualifications recognised for compensation.

**Salary after 15 years of experience** refers to the scheduled annual salary of a full-time classroom teacher. Statutory salaries may refer to the salaries of teachers with the minimum training necessary to be fully qualified or salaries of teachers with the typical qualifications, plus 15 years of experience.

**Starting salary** refers to the average scheduled gross salary per year for a full-time classroom teacher with the minimum training necessary to be fully qualified at the beginning of the teaching career.

**Statutory salaries** refer to scheduled salaries according to official pay scales. The salaries reported are gross (total sum paid by the employer) less the employer's contribution to social security and pension, according to existing salary scales. Salaries are "before tax" (i.e. before deductions for income tax). In Table D3.3a, and Table D3.3b, available on line, salary per hour of net contact time divides a teacher's annual statutory salary by the annual net teaching time in hours (see Table D4.1).

## Methodology

Data on teachers' salary at lower and upper secondary level refer only to general programmes.

Measuring the statutory salary of a full-time teacher relative to the number of hours per year that a teacher is required to spend teaching does not adjust salaries for the amount of time that teachers spend in various other teaching-related activities. Since the proportion of teachers' working time spent teaching varies across OECD countries, statutory salaries per hour of net teaching time must be interpreted with caution (see Indicator D4). However, they can provide an estimate of the cost of the actual time teachers spend in the classroom.

Gross teachers' salaries were converted using purchasing power parities (PPPs) for private consumption from the OECD National Accounts database. Prior to the 2012 edition of *Education at a Glance* (OECD, 2012), salaries were converted using PPPs for GDP. As a consequence, teachers' salaries in USD (Table D3.1a, and Table D3.1b, available on line) are not directly comparable with the figures published prior to the 2012 edition of *Education at a Glance*. Information on trends in teachers' salaries can be found in Table D3.5a, and Table D3.5b, available on line. As a complement to Table D3.1a and Table D3.1b (available on line), which present teachers' salaries in equivalent USD, converted using PPPs, tables with teachers' salaries in national currency are included in Annex 2. The period of

reference for teachers' salaries is from 1 July 2014 to 30 June 2015. The reference date for PPPs is 2014/15, except for some Southern Hemisphere countries (e.g. Australia and New Zealand) where the academic year runs from January to December. In these countries the reference year is the calendar year (i.e. 2015).

For calculation of changes in teachers' salaries (Table D3.5a, and Table D3.5b, available on line), the deflator for private consumption is used to convert salaries to 2005 prices.

In most countries, the criteria to determine the typical qualifications of teachers are based on a principle of absolute majority (i.e. the level of qualifications of more than half of all current teachers in the system). When this is not possible, a principle of relative majority has been used (i.e. the level of qualifications of the largest proportion of teachers).

In Table D3.2a, the ratios of teachers' salaries to earnings for full-time, full-year workers with tertiary education aged 25-64 are calculated using the annual average salaries (including bonuses and allowances) for teachers aged 25-64, for countries with available data (Table D3.4). The ratios based on weighted averages (first four columns) use information collected for every country individually, on the percentage of teachers by ISCED level of tertiary attainment (see Table X2.6 in Annex 2). These percentages are used to calculate the weighted average earnings of tertiary-educated workers, used as denominator for the ratio when data on the wages of workers by ISCED level of tertiary attainment are available (i.e. the earnings for full-time, full-year workers). The ratios have been calculated for countries for which these data are available (and when data on earnings of workers referred to a different reference year than the 2014 reference year used for teachers' salaries, a deflator has been used to adjust earnings data to 2014 reference year). For all other ratios in Table D3.2a and those in Table D3.2c (available on line), information on all tertiary-educated workers was used instead of weighted averages. Data on earnings of workers take account of earnings from work for all individuals during the reference period, including salaries of teachers. In most countries the population of teachers is large and may impact on the average earnings of workers.

The same procedure was used in Table D3.2b (available on line), but the ratios are calculated using the statutory salaries of teachers with 15 years of experience instead of their actual salaries.

For more information please see the *OECD Handbook for Internationally Comparative Education Statistics: Concepts, Standards, Definitions and Classifications* (OECD, 2017) and Annex 3 for country-specific notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

## Source

Data on statutory teachers' salaries and bonuses are derived from the 2016 OECD-INES Survey on Teachers and the Curriculum. Data refer to the school year 2014/15 and are reported in accordance with formal policies for public institutions. Data on earnings of workers are based on the regular data collection by the OECD LSO (Labour Market and Social Outcomes of Learning) Network.

**Note regarding data from Israel**

The statistical data for Israel are supplied by and are under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

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## Indicator D3 Tables

StatLink http://dx.doi.org/10.1787/888933561840

| | | |
|---|---|---|
| | Table D3.1a | Teachers' statutory salaries, based on typical qualifications, at different points in teachers' careers (2015) |
| WEB | Table D3.1b | Teachers' statutory salaries, based on minimum qualifications, at different points in teachers' careers (2015) |
| | Table D3.2a | Teachers' actual salaries relative to earnings of tertiary-educated workers (2015) |
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| WEB | Table D3.3a | Comparison of teachers' statutory salaries, based on typical qualifications (2015) |
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| | Table D3.4 | Average actual teachers' salaries, by age group and gender (2015) |
| WEB | Table D3.5a | Trends in teachers' salaries, based on typical qualifications, between 2000 and 2015 |
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| WEB | Table D3.6 | Starting/Maximum teachers' statutory salaries, based on minimum/maximum qualifications (2015) |
| WEB | Table D3.7 | Criteria used for base salary and additional payments awarded to teachers in public institutions, by level of education (2015) |
| WEB | Table D3.8 | Decision-making level to criterion used for determining teachers' base salaries and additional payments, by level of education (2015) |
| WEB | Figure D3.5 | Change in lower secondary teachers' actual and statutory salaries (2010, 2013 and 2015) |

Cut-off date for the data: 19 July 2017. Any updates on data can be found on line at http://dx.doi.org/10.1787/eag-data-en.

D3

## Table D3.1a. Teachers' statutory salaries, based on typical qualifications, at different points in teachers' careers (2015)

*Annual teachers' salaries, in public institutions, in equivalent USD converted using PPPs for private consumption*

| | | Pre-primary | | | | Primary | | | | Lower secondary, general programmes | | | | Upper secondary, general programmes | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Starting salary | Salary after 10 years of experience | Salary after 15 years of experience | Salary at top of scale | Starting salary | Salary after 10 years of experience | Salary after 15 years of experience | Salary at top of scale | Starting salary | Salary after 10 years of experience | Salary after 15 years of experience | Salary at top of scale | Starting salary | Salary after 10 years of experience | Salary after 15 years of experience | Salary at top of scale |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) |
| OECD | **Countries** | | | | | | | | | | | | | | | | |
| | Australia[1] | 41 267 | 59 029 | 59 029 | 59 311 | 40 902 | 59 361 | 59 361 | 59 579 | 40 874 | 59 425 | 59 425 | 59 611 | 40 874 | 59 425 | 59 425 | 59 611 |
| | Austria | m | m | m | m | 33 999 | 39 973 | 44 779 | 66 524 | 35 543 | 43 132 | 48 422 | 68 807 | 37 224 | 45 780 | 52 130 | 76 024 |
| | Canada | m | m | m | m | 39 179 | 63 383 | 65 621 | 65 621 | 39 179 | 63 383 | 65 621 | 65 621 | 39 179 | 63 383 | 65 621 | 65 621 |
| | Chile | 18 301 | 24 641 | 27 684 | 38 702 | 18 301 | 24 641 | 27 684 | 38 702 | 18 301 | 24 641 | 27 684 | 38 702 | 18 753 | 25 188 | 28 276 | 39 458 |
| | Czech Republic | 17 250 | 17 500 | 17 903 | 19 218 | 17 906 | 18 491 | 19 403 | 22 369 | 17 906 | 18 491 | 19 403 | 22 369 | 17 906 | 18 491 | 19 403 | 22 369 |
| | Denmark[2] | 41 938 | 47 601 | 47 601 | 47 601 | 46 974 | 52 178 | 55 054 | 55 054 | 47 256 | 52 860 | 55 999 | 55 999 | 46 914 | 60 956 | 60 956 | 60 956 |
| | Estonia | m | m | m | m | 17 314 | m | m | m | 17 314 | m | m | m | 17 314 | m | m | m |
| | Finland[3] | 29 160 | 31 492 | 31 492 | 31 492 | 33 034 | 38 237 | 40 531 | 42 963 | 35 676 | 41 296 | 43 774 | 46 400 | 37 832 | 45 435 | 47 252 | 50 087 |
| | France[4] | 28 525 | 32 617 | 34 956 | 51 325 | 28 525 | 32 617 | 34 956 | 51 325 | 31 207 | 35 299 | 37 638 | 54 182 | 31 499 | 35 591 | 37 930 | 54 503 |
| | Germany | m | m | m | m | 54 426 | 65 007 | 68 266 | 72 473 | 61 207 | 71 093 | 74 078 | 80 694 | 61 589 | 74 979 | 78 579 | 89 428 |
| | Greece | 18 679 | 21 382 | 25 077 | 35 289 | 18 679 | 21 382 | 25 077 | 35 289 | 18 679 | 21 382 | 25 077 | 35 289 | 18 679 | 21 382 | 25 077 | 35 289 |
| | Hungary | 13 300 | 17 954 | 19 284 | 25 269 | 13 300 | 17 954 | 19 284 | 25 269 | 13 300 | 17 954 | 19 284 | 25 269 | 14 572 | 19 673 | 21 130 | 27 687 |
| | Iceland | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Ireland | m | m | m | m | 30 733 | 51 815 | 57 449 | 64 343 | 30 733 | 53 764 | 58 040 | 64 934 | 30 733 | 53 764 | 58 040 | 64 934 |
| | Israel | 22 465 | 29 052 | 32 916 | 61 741 | 19 507 | 25 586 | 29 718 | 52 080 | 19 615 | 28 036 | 32 509 | 51 144 | 20 245 | 24 189 | 27 036 | 42 597 |
| | Italy | 27 942 | 30 738 | 33 753 | 41 073 | 27 942 | 30 738 | 33 753 | 41 073 | 30 122 | 33 368 | 36 777 | 45 107 | 30 122 | 34 179 | 37 807 | 47 155 |
| | Japan | m | m | m | m | 29 009 | 42 851 | 50 636 | 63 215 | 29 009 | 42 851 | 50 636 | 63 215 | 29 009 | 42 851 | 50 636 | 64 944 |
| | Korea | 28 352 | 42 525 | 49 596 | 78 628 | 28 352 | 42 525 | 49 596 | 78 628 | 28 411 | 42 584 | 49 655 | 78 687 | 27 703 | 41 875 | 48 947 | 77 979 |
| | Latvia | 8 555 | 8 724 | 8 872 | m | 8 555 | 8 724 | 8 872 | m | 8 555 | 8 724 | 8 872 | m | 8 555 | 8 724 | 8 872 | m |
| | Luxembourg[2] | 68 348 | 90 508 | 108 470 | 122 466 | 68 348 | 90 508 | 108 470 | 122 466 | 79 312 | 99 139 | 113 136 | 137 862 | 79 312 | 99 139 | 113 136 | 137 862 |
| | Mexico[1] | 17 271 | 22 434 | 28 625 | 36 682 | 17 271 | 22 434 | 28 625 | 36 682 | 22 168 | 28 690 | 36 742 | 46 898 | 42 935 | 50 181 | 53 968 | 58 754 |
| | Netherlands | 36 642 | 46 001 | 55 141 | 55 141 | 36 642 | 46 001 | 55 141 | 55 141 | 39 205 | 60 232 | 69 268 | 69 268 | 39 205 | 60 232 | 69 268 | 69 268 |
| | New Zealand[1] | m | m | m | m | 28 659 | 42 941 | 42 941 | 42 941 | 29 643 | 44 607 | 44 607 | 44 607 | 30 626 | 46 273 | 46 273 | 46 273 |
| | Norway | 36 202 | 41 664 | 41 664 | 41 664 | 42 275 | 45 771 | 45 771 | 49 565 | 42 275 | 45 771 | 45 771 | 49 565 | 47 445 | 52 083 | 52 083 | 57 913 |
| | Poland | 15 468 | 20 773 | 25 375 | 26 453 | 15 468 | 20 773 | 25 375 | 26 453 | 15 468 | 20 773 | 25 375 | 26 453 | 15 468 | 20 773 | 25 375 | 26 453 |
| | Portugal | 32 644 | 36 000 | 39 129 | 61 748 | 32 644 | 36 000 | 39 129 | 61 748 | 32 644 | 36 000 | 39 129 | 61 748 | 32 644 | 36 000 | 39 129 | 61 748 |
| | Slovak Republic[5] | 11 391 | 12 537 | 13 108 | 14 126 | 12 742 | 15 305 | 17 930 | 19 336 | 12 742 | 15 305 | 17 930 | 19 336 | 12 742 | 15 305 | 17 930 | 19 336 |
| | Slovenia[5] | 25 711 | 30 537 | 37 515 | 43 212 | 25 711 | 31 720 | 38 954 | 46 627 | 25 711 | 31 720 | 38 954 | 46 627 | 25 711 | 31 720 | 38 954 | 46 627 |
| | Spain | 37 609 | 40 636 | 43 304 | 53 043 | 37 609 | 40 636 | 43 304 | 53 043 | 42 002 | 45 416 | 48 336 | 59 163 | 42 002 | 45 416 | 48 336 | 59 163 |
| | Sweden[1, 5, 6] | 35 574 | 37 686 | 38 226 | 41 087 | 35 574 | 39 455 | 40 878 | 47 682 | 35 574 | 40 101 | 41 720 | 49 157 | 36 867 | 41 524 | 43 271 | 51 023 |
| | Switzerland[7] | 50 203 | 62 502 | m | 76 513 | 54 968 | 68 461 | m | 84 052 | 62 239 | 77 844 | m | 95 206 | 69 865 | 89 683 | m | 107 055 |
| | Turkey | 27 285 | 28 287 | 29 570 | 31 877 | 27 285 | 28 287 | 29 570 | 31 877 | 27 285 | 28 287 | 30 408 | 31 877 | 27 285 | 28 287 | 30 408 | 31 877 |
| | United States[5, 6] | 43 570 | 52 455 | 59 541 | 72 612 | 42 563 | 55 037 | 60 705 | 68 478 | 44 322 | 54 995 | 62 369 | 67 542 | 43 678 | 56 105 | 61 327 | 68 558 |
| | **Economies** | | | | | | | | | | | | | | | | |
| | Flemish Com. (Belgium)[5] | 35 878 | 44 991 | 50 652 | 61 975 | 35 878 | 44 991 | 50 652 | 61 975 | 35 878 | 44 991 | 50 652 | 61 975 | 44 761 | 57 050 | 65 059 | 78 407 |
| | French Com. (Belgium) | 34 813 | 43 534 | 49 016 | 59 979 | 34 813 | 43 534 | 49 016 | 59 979 | 34 813 | 43 534 | 49 016 | 59 979 | 43 312 | 55 211 | 62 965 | 75 889 |
| | England (UK) | 27 646 | 43 772 | 47 070 | 47 070 | 27 646 | 43 772 | 47 070 | 47 070 | 27 646 | 43 772 | 47 070 | 47 070 | 27 646 | 43 772 | 47 070 | 47 070 |
| | Scotland (UK) | 27 450 | 43 795 | 43 795 | 43 795 | 27 450 | 43 795 | 43 795 | 43 795 | 27 450 | 43 795 | 43 795 | 43 795 | 27 450 | 43 795 | 43 795 | 43 795 |
| | **OECD average** | 29 636 | 36 599 | 39 227 | 49 253 | 30 838 | 39 854 | 42 864 | 52 748 | 32 202 | 41 807 | 44 623 | 55 122 | 33 824 | 44 240 | 46 631 | 57 815 |
| | **EU22 average** | 28 726 | 34 939 | 38 487 | 46 387 | 30 080 | 37 983 | 42 049 | 51 000 | 31 498 | 40 093 | 43 989 | 53 704 | 32 503 | 42 126 | 46 151 | 56 594 |
| Partners | Argentina | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Brazil | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | China | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Colombia | 17 923 | 32 686 | 32 686 | 36 491 | 17 923 | 32 686 | 32 686 | 36 491 | 17 923 | 32 686 | 32 686 | 36 491 | 17 923 | 32 686 | 32 686 | 36 491 |
| | Costa Rica | 24 217 | 29 872 | 32 810 | 41 626 | 24 217 | 29 872 | 32 810 | 41 626 | 33 602 | 41 397 | 45 442 | 57 578 | 33 602 | 41 397 | 45 442 | 57 578 |
| | India | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Indonesia | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Lithuania[2] | m | 18 440 | 19 218 | 20 218 | m | 17 652 | 18 369 | 19 348 | m | 17 652 | 18 369 | 19 348 | m | 17 652 | 18 369 | 19 348 |
| | Russian Federation | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Saudi Arabia | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | South Africa | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | **G20 average** | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |

**Note:** The definition of teachers' typical qualifications is based on a broad concept, including the typical ISCED level of attainment and other criteria. Please see Box D3.2, Annex 2 and *Definitions* and *Methodology* sections for more information. Data available at http://stats.oecd.org/, Education at a Glance Database.

1. Excludes the social security contributions and pension-scheme contributions paid by the employees.
2. Includes the social security contributions and pension-scheme contributions paid by the employers.
3. Includes data on the majority, i.e. kindergarten teachers only for pre-primary education.
4. Includes the average of fixed bonuses for overtime hours for lower and upper secondary teachers.
5. At the upper secondary level includes teachers working in vocational programmes. (In Slovenia, includes only those teachers teaching general subjects within vocational programmes).
6. Actual base salaries.
7. Salaries after 11 years of experience for Columns 2, 6, 10 and 14.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933561859

## Table D3.2a. Teachers' actual salaries relative to earnings of tertiary-educated workers (2015)

*Ratio of salary, using annual average salaries (including bonuses and allowances) of teachers in public institutions relative to the earnings of workers with similar educational attainment (weighted average) and to the earnings of full-time, full-year workers with tertiary education.*

| | | Year of reference | Actual salaries of all teachers, relative to earnings for full-time, full-year similarly educated workers (weighted averages) 25-64 year-olds | | | | Actual salaries of all teachers, relative to earnings for full-time, full-year workers with tertiary education (ISCED 5 to 8) 25-64 year-olds | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Pre-primary | Primary | Lower secondary, general programmes | Upper secondary, general programmes | Pre-primary | Primary | Lower secondary, general programmes | Upper secondary, general programmes |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| OECD | **Countries** | | | | | | | | | |
| | Australia[1] | 2015 | m | m | m | m | m | 0.87 | 0.88 | 0.88 |
| | Austria | 2015 | m | m | m | m | m | 0.72 | 0.85 | 0.92 |
| | Canada | 2015 | m | m | m | m | m | m | m | m |
| | Chile | 2015 | 0.61 | 0.60 | 0.60 | 0.66 | 0.76 | 0.74 | 0.75 | 0.81 |
| | Czech Republic | 2015 | 0.72 | 0.58 | 0.57 | 0.59 | 0.50 | 0.58 | 0.58 | 0.61 |
| | Denmark | 2015 | 0.80 | 0.96 | 0.98 | 0.85 | 0.72 | 0.88 | 0.89 | 1.01 |
| | Estonia | 2015 | 0.68 | 0.91 | 0.90 | 0.89 | 0.63 | 0.94 | 0.94 | 0.94 |
| | Finland | 2014 | 0.74 | 0.78 | 0.85 | 0.94 | 0.67 | 0.91 | 1.00 | 1.12 |
| | France | 2014 | 0.87 | 0.85 | 0.94 | 1.06 | 0.80 | 0.79 | 0.92 | 1.03 |
| | Germany | 2014 | m | 0.83 | 0.91 | 0.97 | m | 0.90 | 0.98 | 1.06 |
| | Greece | 2015 | m | m | m | m | 1.00 | 1.00 | 1.06 | 1.06 |
| | Hungary | 2015 | 0.76 | 0.75 | 0.75 | 0.66 | 0.66 | 0.69 | 0.69 | 0.73 |
| | Iceland | | m | m | m | m | m | m | m | m |
| | Ireland | 2015 | m | m | m | m | m | m | m | m |
| | Israel | 2015 | 0.84 | 0.81 | 0.84 | 0.78 | 0.88 | 0.89 | 0.97 | 0.88 |
| | Italy | 2015 | m | m | m | m | 0.68 | 0.68 | 0.67 | 0.73 |
| | Japan | | m | m | m | m | m | m | m | m |
| | Korea | | m | m | m | m | m | m | m | m |
| | Latvia | 2015 | 0.97 | 1.29 | 1.20 | 1.34 | 0.88 | 1.18 | 1.10 | 1.23 |
| | Luxembourg | 2015 | m | m | m | m | 1.10 | 1.10 | 1.26 | 1.26 |
| | Mexico | | m | m | m | m | m | m | m | m |
| | Netherlands | 2015 | 0.74 | 0.74 | 0.89 | 0.89 | 0.70 | 0.70 | 0.88 | 0.88 |
| | New Zealand | 2015 | m | 0.90 | 0.91 | 0.94 | m | 0.86 | 0.88 | 0.94 |
| | Norway | 2015 | 0.74 | 0.82 | 0.82 | 0.79 | 0.66 | 0.75 | 0.75 | 0.82 |
| | Poland | 2015 | m | m | m | m | 0.72 | 0.84 | 0.85 | 0.84 |
| | Portugal | 2015 | m | m | m | m | 1.46 | 1.33 | 1.30 | 1.42 |
| | Slovak Republic | 2015 | m | m | m | m | 0.46 | 0.62 | 0.62 | 0.62 |
| | Slovenia | 2015 | m | m | m | m | 0.63 | 0.87 | 0.89 | 0.94 |
| | Spain | | m | m | m | m | m | m | m | m |
| | Sweden | 2015 | m | m | m | m | 0.76 | 0.84 | 0.86 | 0.90 |
| | Switzerland | | m | m | m | m | m | m | m | m |
| | Turkey | | m | m | m | m | m | m | m | m |
| | United States | 2015 | 0.55 | 0.57 | 0.58 | 0.59 | 0.63 | 0.65 | 0.66 | 0.68 |
| | **Economies** | | | | | | | | | |
| | Flemish Com. (Belgium) | 2015 | 1.04 | 1.05 | 1.02 | 0.98 | 0.90 | 0.91 | 0.88 | 1.14 |
| | French Com. (Belgium) | 2015 | 1.00 | 0.99 | 0.93 | 0.95 | 0.86 | 0.86 | 0.84 | 1.07 |
| | England (UK) | 2015 | 0.77 | 0.77 | 0.79 | 0.79 | 0.83 | 0.83 | 0.89 | 0.89 |
| | Scotland (UK) | 2015 | 0.79 | 0.79 | 0.79 | 0.79 | 0.82 | 0.82 | 0.82 | 0.82 |
| | **OECD average** | | m | m | m | m | 0.78 | 0.85 | 0.88 | 0.94 |
| | **EU22 average** | | m | m | m | m | 0.79 | 0.86 | 0.90 | 0.96 |
| Partners | Argentina | | m | m | m | m | m | m | m | m |
| | Brazil | | m | m | m | m | m | m | m | m |
| | China | | m | m | m | m | m | m | m | m |
| | Colombia | | m | m | m | m | m | m | m | m |
| | Costa Rica | | m | m | m | m | m | m | m | m |
| | India | | m | m | m | m | m | m | m | m |
| | Indonesia | | m | m | m | m | m | m | m | m |
| | Lithuania | 2015 | m | m | m | m | 0.88 | 0.88 | 0.88 | 0.88 |
| | Russian Federation | | m | m | m | m | m | m | m | m |
| | Saudi Arabia | | m | m | m | m | m | m | m | m |
| | South Africa | | m | m | m | m | m | m | m | m |
| | **G20 average** | | m | m | m | m | m | m | m | m |

**Note:** See *Definitions* and *Methodology* sections for more information. Data available at http://stats.oecd.org/, Education at a Glance Database.

1. Data for the percentage of teachers by ISCED level of attainment used for the weighted average is from 2013.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933561897

## Table D3.4. Average actual teachers' salaries, by age group and by gender (2015)

*Annual average salaries (including bonuses and allowances) of teachers in public institutions, in equivalent USD converted using PPPs for private consumption, by age group and gender*

| | | 25-64 year-olds | | | | 25-64 year-old men | | | | 25-64 year-old women | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Pre-primary | Primary | Lower secondary, general programmes | Upper secondary, general programmes | Pre-primary | Primary | Lower secondary, general programmes | Upper secondary, general programmes | Pre-primary | Primary | Lower secondary, general programmes | Upper secondary, general programmes |
| | | (1) | (2) | (3) | (4) | (21) | (22) | (23) | (24) | (25) | (26) | (27) | (28) |
| OECD | **Countries** | | | | | | | | | | | | |
| | Australia | m | 52 847 | 53 355 | 53 372 | m | 52 931 | 53 898 | 53 918 | m | 52 701 | 52 857 | 52 875 |
| | Austria[1] | m | 55 546 | 65 367 | 70 466 | m | 52 604 | 67 083 | 73 882 | m | 55 763 | 64 618 | 67 515 |
| | Canada | m | m | m | m | m | m | m | m | m | m | m | m |
| | Chile | 27 791 | 27 219 | 27 383 | 29 897 | 27 145 | 28 744 | 28 574 | 30 974 | 27 804 | 26 820 | 26 901 | 29 207 |
| | Czech Republic | 19 803 | 23 211 | 23 169 | 24 141 | 19 402 | 23 158 | 23 174 | 24 300 | 19 804 | 23 214 | 23 168 | 24 075 |
| | Denmark[2] | 47 443 | 57 546 | 58 247 | 66 316 | 47 696 | 57 883 | 58 599 | 67 108 | 47 395 | 57 423 | 58 104 | 65 602 |
| | Estonia | 14 662 | 22 066 | 22 066 | 22 066 | m | m | m | m | m | m | m | m |
| | Finland[3] | 33 263 | 44 930 | 49 427 | 55 420 | 32 892 | 47 349 | 50 325 | 56 463 | 33 274 | 44 112 | 49 061 | 54 940 |
| | France[4] | 38 668 | 38 154 | 44 409 | 50 021 | 39 743 | 40 754 | 45 868 | 51 695 | 38 579 | 37 496 | 43 608 | 48 687 |
| | Germany | m | 65 043 | 71 768 | 76 143 | m | m | m | m | m | m | m | m |
| | Greece[1] | 22 929 | 22 929 | 24 379 | 24 379 | 24 714 | 24 714 | 24 967 | 24 967 | 22 454 | 22 454 | 24 040 | 24 040 |
| | Hungary | 22 410 | 23 343 | 23 343 | 24 829 | 19 541 | 22 904 | 22 904 | 24 698 | 22 425 | 23 417 | 23 417 | 24 896 |
| | Iceland | m | m | m | m | m | m | m | m | m | m | m | m |
| | Ireland | m | m | m | m | m | m | m | m | m | m | m | m |
| | Israel | 36 601 | 36 784 | 40 156 | 36 492 | 30 814 | 36 463 | 39 497 | m | 36 628 | 36 836 | 40 330 | m |
| | Italy | 34 756 | 34 756 | 34 645 | 37 567 | 34 873 | 34 873 | 34 280 | 37 610 | 34 752 | 34 752 | 34 790 | 37 472 |
| | Japan | m | m | m | m | m | m | m | m | m | m | m | m |
| | Korea | m | m | m | m | m | m | m | m | m | m | m | m |
| | Latvia | 13 087 | 17 570 | 16 406 | 18 359 | 13 299 | 18 537 | 17 104 | 18 296 | 13 086 | 17 521 | 16 339 | 18 365 |
| | Luxembourg | 95 407 | 95 407 | 108 587 | 108 587 | 95 407 | 95 407 | 108 587 | 108 587 | 95 407 | 95 407 | 108 587 | 108 587 |
| | Mexico | m | m | m | m | m | m | m | m | m | m | m | m |
| | Netherlands | 50 780 | 50 780 | 63 912 | 63 912 | 51 549 | 51 549 | 65 552 | 65 552 | 50 641 | 50 641 | 62 078 | 62 078 |
| | New Zealand | m | 42 776 | 43 640 | 46 375 | m | 42 757 | 43 812 | 46 974 | m | 42 780 | 43 558 | 45 911 |
| | Norway | 44 574 | 50 243 | 50 243 | 55 153 | 43 586 | 50 223 | 50 223 | 55 458 | 44 655 | 50 251 | 50 251 | 54 923 |
| | Poland | 26 552 | 30 750 | 31 373 | 30 803 | 24 880 | 29 369 | 30 235 | 30 131 | 26 557 | 30 916 | 31 706 | 31 040 |
| | Portugal | 46 432 | 42 458 | 41 480 | 45 238 | 43 603 | 43 252 | 41 068 | 44 410 | 46 448 | 42 275 | 41 606 | 45 639 |
| | Slovak Republic[1] | 16 451 | 22 307 | 22 307 | 22 291 | m | m | m | m | m | m | m | m |
| | Slovenia[5] | 26 450 | 36 695 | 37 359 | 39 623 | 22 142 | 34 884 | 37 368 | 39 202 | 26 560 | 36 810 | 37 363 | 39 760 |
| | Spain | m | m | m | m | m | m | m | m | m | m | m | m |
| | Sweden[1] | 37 006 | 40 822 | 42 001 | 43 730 | 36 737 | 40 487 | 42 044 | 44 027 | 37 023 | 40 878 | 41 981 | 43 532 |
| | Switzerland | m | m | m | m | m | m | m | m | m | m | m | m |
| | Turkey | m | m | m | m | m | m | m | m | m | m | m | m |
| | United States[1] | 50 946 | 52 516 | 53 548 | 55 328 | 49 940 | 55 122 | 55 118 | 57 366 | 51 539 | 52 008 | 52 518 | 54 075 |
| | **Economies** | | | | | | | | | | | | |
| | Flemish Com. (Belgium) | 51 248 | 51 815 | 50 509 | 65 386 | 49 440 | 53 204 | 49 239 | 64 901 | 51 284 | 51 494 | 50 943 | 65 650 |
| | French Com. (Belgium) | 49 381 | 49 065 | 48 046 | 61 240 | 43 511 | 49 825 | 48 435 | 61 788 | 49 546 | 48 891 | 47 865 | 60 937 |
| | England (UK)[1] | 41 955 | 41 955 | 45 212 | 45 212 | 39 888 | 39 888 | 45 825 | 45 825 | 42 239 | 42 239 | 44 893 | 44 893 |
| | Scotland (UK)[6] | 41 634 | 41 634 | 41 634 | 41 634 | m | m | m | m | m | m | m | m |
| | **OECD average** | 37 093 | 41 827 | 44 070 | 46 928 | 37 657 | 42 787 | 45 157 | 49 049 | 38 957 | 42 379 | 44 608 | 48 030 |
| | **EU22 average** | 36 516 | 41 308 | 43 893 | 47 153 | 37 607 | 42 258 | 45 148 | 49 080 | 38 675 | 41 983 | 44 676 | 48 206 |
| Partners | Argentina | m | m | m | m | m | m | m | m | m | m | m | m |
| | Brazil | m | m | m | m | m | m | m | m | m | m | m | m |
| | China | m | m | m | m | m | m | m | m | m | m | m | m |
| | Colombia | m | m | m | m | m | m | m | m | m | m | m | m |
| | Costa Rica | m | m | m | m | m | m | m | m | m | m | m | m |
| | India | m | m | m | m | m | m | m | m | m | m | m | m |
| | Indonesia | m | m | m | m | m | m | m | m | m | m | m | m |
| | Lithuania | 19 372 | 19 372 | 19 372 | 19 372 | 19 372 | 19 372 | 19 372 | 19 372 | 19 372 | 19 372 | 19 372 | 19 372 |
| | Russian Federation[7] | 17 420 | 20 908 | 20 908 | 20 908 | m | m | m | m | m | m | m | m |
| | Saudi Arabia | m | m | m | m | m | m | m | m | m | m | m | m |
| | South Africa | m | m | m | m | m | m | m | m | m | m | m | m |
| | **G20 average** | m | m | m | m | m | m | m | m | m | m | m | m |

**Note:** Columns showing average actual teachers' salaries, broken down by age groups (i.e. Columns 5-20), are available on line. See Annex 2 and *Definitions* and *Methodology* sections for more information. Data available at http://stats.oecd.org/, Education at a Glance Database.

1. At the upper secondary level includes teachers working in vocational programmes.
2. Also includes data on actual salaries of teachers in early childhood educational development programmes for pre-primary education.
3. Includes data on the majority, i.e. kindergarten teachers only for pre-primary education.
4. Year of reference 2014.
5. Also includes data on actual salaries of pre-school teaching assistants for pre-primary education.
6. Includes all teachers, irrespective of their age.
7. Average actual teachers' salaries for all teachers, irrespective of the level of education they teach except pre-primary education.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

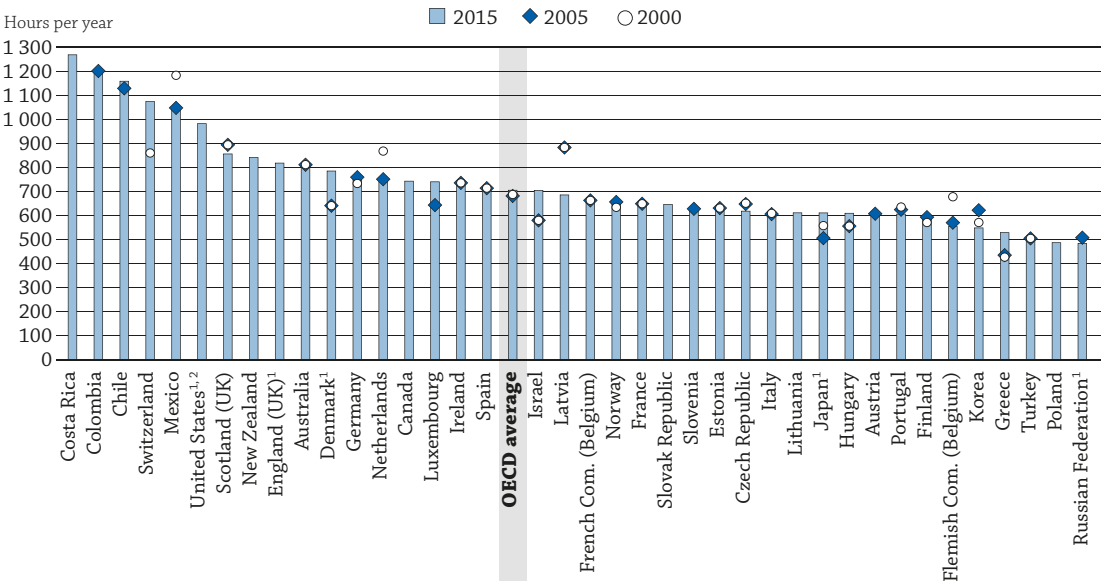
*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

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# HOW MUCH TIME DO TEACHERS SPEND TEACHING?

- Based on official regulations, public school teachers in OECD countries and economies are required to teach on average 1 001 hours per year at pre-primary level, 794 hours at primary level, 712 hours at lower secondary level (general programmes), and 662 hours at upper secondary level (general programmes).
- In the majority of countries with available data, the amount of statutory teaching time in primary, lower secondary and upper secondary public institutions remained largely unchanged between 2000 and 2015.

## Figure D4.1. Number of teaching hours per year in general lower secondary education (2000, 2005 and 2015)




1. Actual teaching time.
2. Year of reference 2013 instead of 2015.

*Countries and economies are ranked in descending order of the number of teaching hours per year in general lower secondary education in 2015.*

**Source**: OECD (2017), Table D4.2. See *Source* for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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## Context

Although statutory working hours and teaching hours only partly determine teachers' actual workload, they do offer valuable insights into the demands placed on teachers in different countries. Teaching hours and the extent of non-teaching duties may also affect the attractiveness of the teaching profession. Together with teachers' salaries (see Indicator D3) and average class size (see Indicator D2), this indicator presents some key measures of the working lives of teachers.

The proportion of statutory working time spent teaching provides information on the amount of time available for non-teaching activities such as lesson preparation, correction, in-service training and staff meetings. A large proportion of statutory working time spent teaching may indicate that less time is devoted to tasks such as assessing students and preparing lessons, as stated within regulations. It also could indicate that teachers have to perform these tasks on their own time and hence to work more hours than required by statutory working time.

In addition to class size and the ratio of students to teaching staff (see Indicator D2), students' hours of instruction (see Indicator D1) and teachers' salaries (see Indicator D3), the amount of time teachers spend teaching also affects the financial resources countries need to allocate to education (see Indicator B7).

## Other findings

- The number of teaching hours per year required of the average OECD public school teacher in pre-primary, primary and secondary education varies considerably across countries and tends to decrease as the level of education increases.
- On average across OECD countries and economies, in public institutions pre-primary teachers are required to teach about 30% more hours than primary school teachers. Statutory requirements for working time at school and/or total working time also differ between pre-primary and primary levels, but generally to a lesser extent.
- Required teaching time in public schools varies more across countries at the pre-primary level than at any other level. The number of teaching hours required in public pre-primary schools averages 1 001 hours per year across OECD countries and economies, ranging, in OECD and partner countries and economies, from 532 hours per year in Mexico to 1 482 in Germany.
- Public primary school teachers are required to teach on average 794 hours per year across OECD countries and economies, but this ranges, in OECD and partner countries and economies, from 573 hours or less in Lithuania, Poland and the Russian Federation to more than 1 150 hours in Chile and Costa Rica.
- The number of teaching hours required in public lower secondary schools averages 712 hours per year across OECD countries and economies, ranging, in OECD and partner countries and economies, from 486 hours or less in Poland and the Russian Federation to over 1 100 hours in Chile, Colombia and Costa Rica.
- Teachers in public upper secondary schools are required to teach on average 662 hours per year across OECD countries and economies, but teaching time ranges, in OECD and partner countries and economies, from 386 hours in Denmark to over 1 100 hours in Chile, Colombia and Costa Rica.
- While there has been little change in statutory teaching hours between 2000 and 2015 on average across countries with available data for 2000, 2005, 2010 and 2015, in a few countries teaching time increased or decreased by 10% or more between 2000 and 2015.
- Most countries regulate the number of hours per year that teachers are formally required to work, including teaching and non-teaching activities. Some of these countries regulate the specific number of hours required at school, while others set the overall working time, including hours at school and elsewhere.

D4

## Analysis

### Teaching time

At pre-primary, primary and secondary levels of education, countries vary considerably in their annual statutory teaching time – the number of teaching hours per year required of a full-time public school teacher.

Statutory teaching time at the pre-primary level in public schools varies more across countries than it does at any other level. The number of teaching days ranges from 162 or less in France and Lithuania to 225 in Norway. Annual teaching hours range from less than 700 in Korea, Lithuania and Mexico to almost 1 500 in Germany. On average across OECD countries and economies, teachers at this level of education are required to teach 1 001 hours per year, spread over 40 weeks or 191 days of teaching (Table D4.1 and Figure D4.2).

Primary school teachers are required to teach an average of 794 hours per year in public institutions. In most countries with available data, daily teaching time ranges from three hours up to six hours a day. The exception is Chile, where teachers teach slightly more than six hours per day (based on a five-day week). There is no set rule on how teaching time is distributed throughout the year. In Spain, for example, primary school teachers must teach 880 hours per year, about 80 hours more than the OECD average. However, these teaching hours are spread over fewer days of instruction than the OECD average because primary school teachers in Spain teach an average of 5 hours per day compared to the OECD average of 4.3 hours.

Lower secondary school teachers in general programmes in public institutions are required to teach an average of 712 hours per year, ranging from less than 600 hours in Finland, the Flemish Community of Belgium, Greece, Korea, Poland, the Russian Federation and Turkey to more than 1 000 hours in Chile, Colombia, Costa Rica, Mexico and Switzerland. However, teachers in Poland can be obliged to teach as much as 25% of the statutory time as additional overtime, at the discretion of the relevant school head (at the lower secondary in addition to all other levels of education).

A teacher of general subjects in upper secondary education in public institutions has an average teaching load of 662 hours per year. Teaching time exceeds 800 hours in only eight countries and economies: Australia, Chile, Colombia, Costa Rica, England (United Kingdom), Mexico, Scotland (United Kingdom) and Switzerland. However, in Chile and Scotland (United Kingdom), the reported hours refer to the maximum time teachers can be required to teach, not to their typical teaching load (see Box D4.1). In contrast, teachers are required to teach less than 500 hours per year in Denmark, Poland and the Russian Federation. Teachers in Finland, Japan, Korea, Norway, Poland, the Russian Federation, Slovenia and Turkey teach for three hours or less per day, on average, compared to more than six hours in Chile and Costa Rica.

Variations in how teaching time is regulated and/or reported across countries may explain some of the differences in statutory teaching time between countries (see Box D4.1).

#### Box D4.1. **Comparability of statutory teaching time data (2015)**

Data on teaching time in this indicator refer to net contact time as stated in the regulations of each country. The international data collection used to gather this information ensures similar definitions and methodologies are used in the compilation of data in all countries. The impact on the comparability of data of differences in the way teaching time is reported in regulations is also minimised as much as possible. For example, teaching time is converted into hours (of 60 minutes) to avoid differences resulting from the varying duration of teaching periods between countries.

Statutory teaching time in this international comparison excludes preparation time and periods of time formally allowed for breaks between lessons or groups of lessons. However, at the pre-primary and primary levels, short breaks (of ten minutes or less) are included in the teaching time if the classroom teacher is responsible for the class during these breaks (see *Definitions* section).

Other activities for teachers, such as professional development days, student examination days and attending conferences, are also excluded from the teaching time reported in this indicator. However, days devoted to these activities are not always specified in the regulations and it may be difficult to estimate and exclude them from teaching time. At the pre-primary level, nearly one-quarter of the countries and economies reporting statutory teaching time could not specify whether these activities were included or excluded from these data.

...

At other levels of education, most countries can exclude all or most of these activities from teaching time. However, excluding examination days may be more challenging for countries, and about 40% of countries do not exclude them, and a further 20% are unable to estimate or exclude them from teaching time. This may result in overestimating teaching time by a few days in these countries.

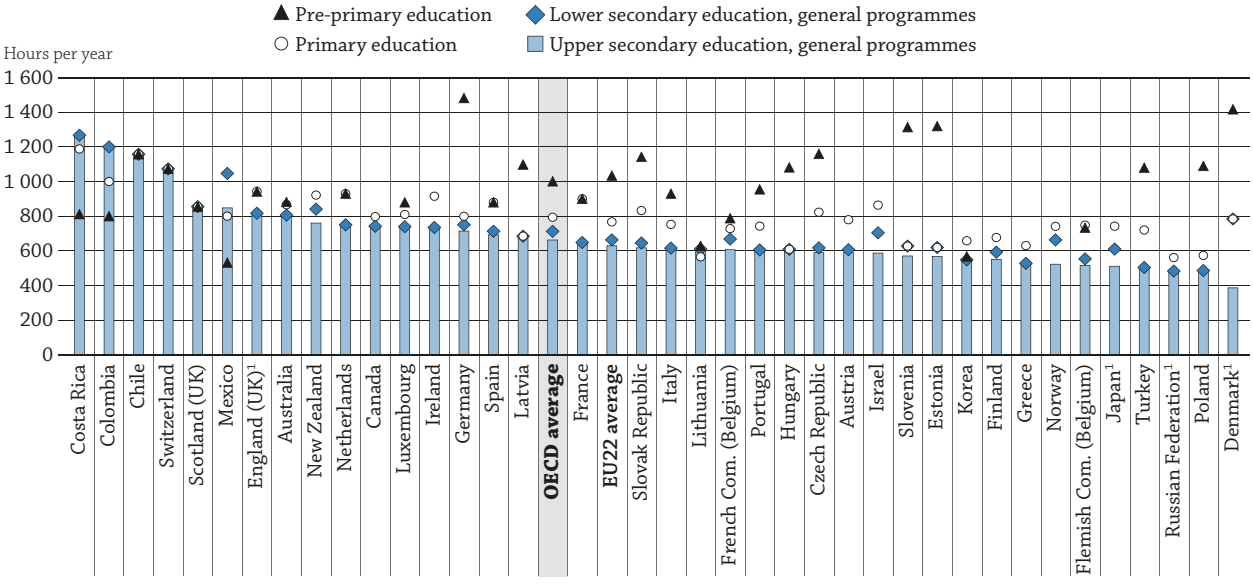
Moreover, data based on regulations that are reported in this indicator may refer to minimum, typical or maximum teaching time, which may explain some of the differences between countries. While most data refer to typical teaching time, about one-quarter of countries report maximum or minimum values for teaching time.

More detailed information on the reporting practices on teaching time for all participating countries and economies is available in Annex 3.



## Figure D4.2. Number of teaching hours per year, by level of education (2015)

*Net statutory contact time in public institutions*




1. Actual teaching time.

*Countries and economies are ranked in descending order of the number of teaching hours per year in general upper secondary education.*

**Source**: OECD (2017), Table D4.1. See *Source* for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933558876

### *Differences in teaching time between levels of education*

In most countries and economies, statutory teaching time at the upper secondary level is less than at the pre-primary level. The exceptions are Chile, Scotland (United Kingdom) and Switzerland – where the time teachers are required to teach is the same at all levels of education – and Colombia, Costa Rica and Mexico, where upper secondary school teachers are required to teach more hours than pre-primary school teachers (Table D4.1 and Figure D4.2).

Teaching time requirements vary the most between the pre-primary and primary levels of education. On average, pre-primary school teachers are required to spend almost 30% more time in the classroom than primary school teachers. In Slovenia, pre-primary school teachers are required to teach at least twice the amount of hours per year as primary school teachers.

In the Czech Republic, the Flemish Community of Belgium, France and Turkey primary school teachers have at least 30% more annual teaching time than lower secondary school teachers, while there is no difference in Chile, Denmark, Estonia, Hungary, Latvia, Scotland (United Kingdom), Slovenia and Switzerland. The teaching load for primary school teachers is slightly lighter than for lower secondary school teachers in Costa Rica and Lithuania and much lighter in Colombia and Mexico.

Teaching time at lower and upper secondary levels is similar across most countries. However, in Israel, Mexico and Norway, the annual required teaching time at the lower secondary level is at least 20% more than at the upper secondary level. In Denmark, it is double.

### Actual teaching time

Statutory teaching time, as reported by most of the countries in this indicator, must be distinguished from actual teaching time. Actual teaching time is the annual average number of hours that full-time teachers teach a group or a class of students, including overtime, and thus provides a full picture of teachers' actual teaching load.

While only a few countries were able to report both statutory and actual teaching time, these data suggest that actual teaching time can sometimes differ significantly from statutory requirements. In Latvia, for example, lower secondary teachers actually teach 63% more than the statutory teaching time. This reflects the low value of statutory salaries, meaning teachers often perform additional teaching time or other tasks for which they can be compensated. In Slovenia, lower secondary teachers teach around 6% more hours than the statutory benchmark time, while in Poland, actual teaching time is up to 14% more than statutory requirements. By contrast, in Estonia actual teaching time is about 2% less than statutory teaching time at the lower secondary level, and in Switzerland teachers teach 10% less than the statutory requirement (Figure D4.4, available on line).

Several factors may explain these differences between statutory and actual teaching time. For example, they can be the result of overtime due to teacher absenteeism or shortages, or may be explained by the nature of the data, as figures on statutory teaching time refer to official requirements and agreements, whereas actual teaching time is based on administrative registers, statistical databases, representative sample surveys or other representative sources.

### Trends in teaching time

While there has been little change in average teaching hours over the last 15 years, some countries with available data reported an increase or decrease of 10% or more in teaching time in one or several levels between 2000 and 2015 (Table D4.2 and Figure D4.1).

At the primary level, teaching time increased by at least 14% (more than 100 hours) between 2000 and 2015 in Israel and Japan. In Israel, this increase in teaching (and working) time is part of the "New Horizon" reform that has been gradually implemented since 2008. One of the key measures of this reform was to lengthen teachers' working week to accommodate small-group teaching in exchange for more generous compensation. Teachers' working time was increased from 30 to 36 hours per week and now includes 5 hours of small-group teaching in primary schools. To compensate, salaries have been raised substantially (see Indicator D3).

Teaching time for lower secondary school teachers also increased in Israel by more than 20% (more than 100 hours) during this period. The increase at the lower secondary level is also significant, albeit to a lesser extent, in Hungary and Japan (both by 53 hours). At the upper secondary level, the largest increase in teaching time also occurred in Israel, where teachers had to teach at least 12% more hours (63 additional hours) in 2015 than in 2000.

By contrast, net teaching time dropped between 2000 and 2015 in some countries and economies. At the pre-primary level, among the few countries and economies with available data for 2000 and 2015, teaching time decreased by 7% or more (corresponding to 80 hours or more) in Portugal (from 1 035 hours to 955 hours) and Scotland (United Kingdom) (from 950 hours to 855 hours).

Teaching time decreased by 10% or more in Mexico at lower secondary level (by 135 hours), in the Netherlands at both lower and upper secondary levels (by 117 hours) and in Scotland (United Kingdom) at primary level (by 95 hours). The decrease exceeded 22% in Korea at the primary level (by 207 hours). In Scotland (United Kingdom), the decrease in teaching time for primary teachers was part of the teachers' agreement, "A Teaching Profession for the 21st Century", which introduced a 35-hour working week for all teachers and a phased reduction of maximum teaching time to 22.5 hours per week for primary, secondary and special-school teachers in 2001. However, even with this decrease of net contact time, the maximum time teachers at these levels in Scotland (United Kingdom) can be required to teach is longer than the OECD average teaching time. In Turkey, the reduction in teaching and working time for upper secondary teachers is related to shorter classes – general upper secondary classes were cut from 45 to 40 minutes in 2013. Since then, teachers' total annual teaching time has been less than in previous years.

### Teachers' working time

In the majority of countries, teachers' working time is determined by the statutory teaching time specified in working regulations. In addition, in most countries, teachers are formally required to work a specific number of hours per year, as stipulated in collective agreements or other contractual arrangements. This may be specified either as the number of hours teachers must be available at school for teaching and non-teaching activities, or as the number of total working hours. Both correspond to official working hours as specified in contractual agreements and countries differ in how they allocate time for each activity. In Israel, for example, recent reforms take into account working hours at school beyond teaching time. Regulations now specify the working time required at school, including teaching and non-teaching time. Following the reform, non-teaching hours at school have been extended, to more time for non-teaching tasks, such as meetings with students or parents, preparation of lessons' plans and checking of students' works.

More than half of OECD countries and economies specify the length of time teachers are required to be available at school, for both teaching and non-teaching activities, for at least one level of education. In over half of these countries, the difference between the time upper secondary school teachers and pre-primary school teachers are required to be available at school is less than 10%. However, in Latvia, Norway, Sweden and Turkey pre-primary teachers are required to be available at school at least 30% more hours than upper secondary school teachers (although statutory total working time are the same for both levels in Latvia and Turkey) (Table D4.1).

In some other countries, teachers' total annual statutory working time (at school and elsewhere) is specified, but the allocation of time spent at school and time spent elsewhere is not. This is the case in Austria (primary and lower secondary education), the Czech Republic, Denmark, England (United Kingdom), France (lower and upper secondary education where total annual working time refers to the working conditions of all civil servants), the French Community of Belgium (pre-primary and primary education), Germany, Japan, Korea, the Netherlands, Poland, the Slovak Republic and Switzerland (Table D4.1). This may result from the fact that, in some countries, total annual statutory working time is valuable for all civil servants and not specifically for teachers.

In Sweden, although the total working time per year is decided through collective agreements, school leaders decide on the number of working hours per week and on the use of teachers' time (teaching or non-teaching activities).

In addition, workload and teaching load requirements may evolve throughout a teacher's career. In some countries, some new teachers have a reduced teaching load as part of their induction programmes. Some countries also encourage older teachers to stay in the teaching profession by diversifying their duties and reducing their teaching hours. For example, in Portugal, teachers may have a reduced teaching workload, due to their age, years in the profession or for doing extracurricular activities at school. Greece reduces teaching hours according to how many years a teacher has served. At the secondary level, teachers are required to teach 23 class sessions per week. After 6 years, this drops to 21 sessions, and after 12 years to 20 sessions. After 20 years of service, teachers are required to teach 18 class sessions a week – more than 20% less than teachers who have just started their careers. However, the remaining hours of teachers' working time must be spent at school.

### Non-teaching time

Although teaching time is a substantial component of teachers' workloads, other activities such as assessing students, preparing lessons, correcting students' work, in-service training and staff meetings should also be taken into account when analysing the demands placed on them in different countries (see Box D4.2 for details on these tasks at lower secondary level). The amount of time available for these non-teaching activities varies across countries; a large proportion of statutory working time spent teaching may indicate that less time is devoted to these activities.

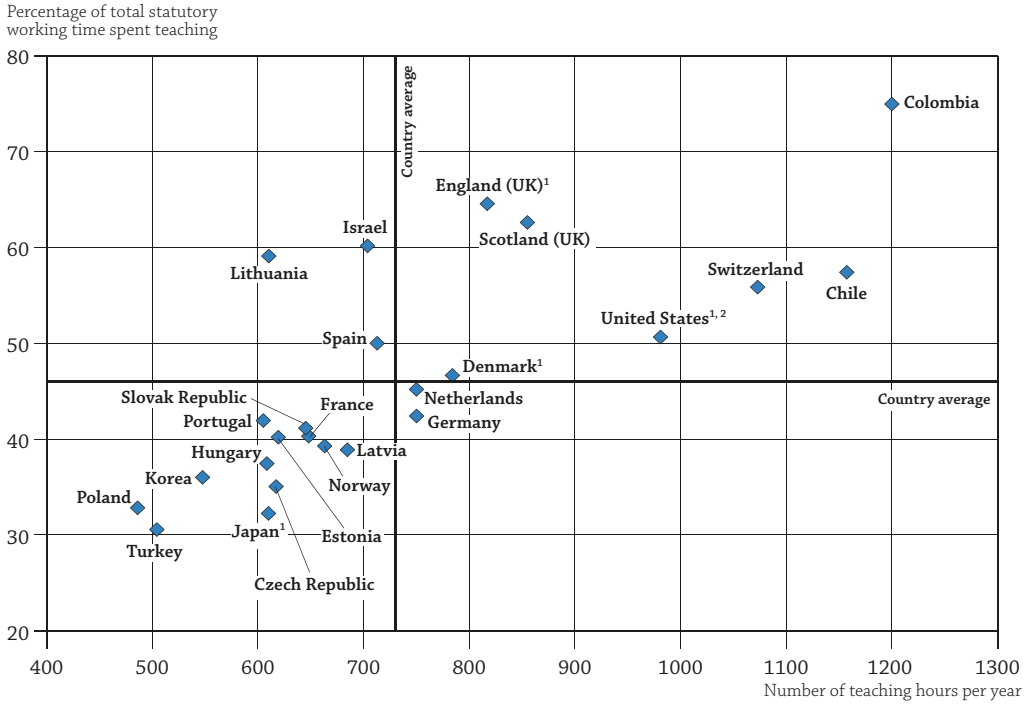
Even if teaching is a core activity of teachers, in a large number of countries, most of the working time is spent on activities other than teaching. In the 24 countries and economies with data for both teaching and total working time for lower secondary teachers, 47% of teachers' working time is spent on teaching on average, with the proportion ranging from less than 34% in Japan, Poland and Turkey to 75% in Colombia. While the proportion of working time spent teaching increases with the annual number of teaching hours, there are significant variations between countries. For example, Japan and Portugal have a similar number of teaching hours (610 hours in Japan and 605 hours in Portugal), but 32% of working time is spent on teaching in Japan, compared to 42% in Portugal. Moreover, in some countries, teachers devote similar proportions of their working time to teaching, even if the number of teaching hours differs considerably. This is the case, for example, in Spain and the United States, where lower secondary teachers spend half of their working time teaching, but teachers teach 713 hours in Spain, compared

to 981 hours in the United States. Only teachers in Chile, Colombia, England (United Kingdom), Israel, Lithuania, Scotland (United Kingdom), Spain, Switzerland and the United States spend at least 50% of their statutory working time teaching (Figure D4.3).



## Figure D4.3. Percentage of lower secondary teachers' working time spent teaching (2015)

*Net teaching time (typical annual number of hours) as a percentage of total statutory working time*




1. Actual teaching time.

2. Year of reference for net teaching time is 2013. Year of reference for working time is 2012.

**Source**: OECD (2017), Table D4.1. See *Source* for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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In some countries, such as Austria (upper secondary level), Brazil, the Flemish and French Communities of Belgium (secondary levels) and Italy, there are no formal requirements for time spent on non-teaching activities. However, this does not mean that teachers are given total freedom to carry out other tasks (Table D4.1). In the Flemish Community of Belgium, although there are no regulations regarding the time devoted to preparing lessons, correcting tests, marking students' papers and other non-teaching tasks, additional non-teaching hours at school are set at the school level. In Italy, there is a requirement of up to 80 hours of scheduled non-teaching collegial work at school per year. Of these 80 hours, up to 40 hours of compulsory working time per year are dedicated to meetings of the teachers' assembly, staff planning meetings and meetings with parents, with the remaining compulsory 40 hours dedicated to class councils.

### Box D4.2. Non-teaching tasks required of teachers in lower secondary education (2015)

Non-teaching tasks are a part of teachers' workload and working conditions. The non-teaching activities required by legislation, regulations or agreements between stakeholders (e.g. teachers' unions, local authorities and school boards) do not necessarily reflect the actual participation of teachers in non-teaching activities, but they provide an insight into the breadth and complexity of teachers' roles.

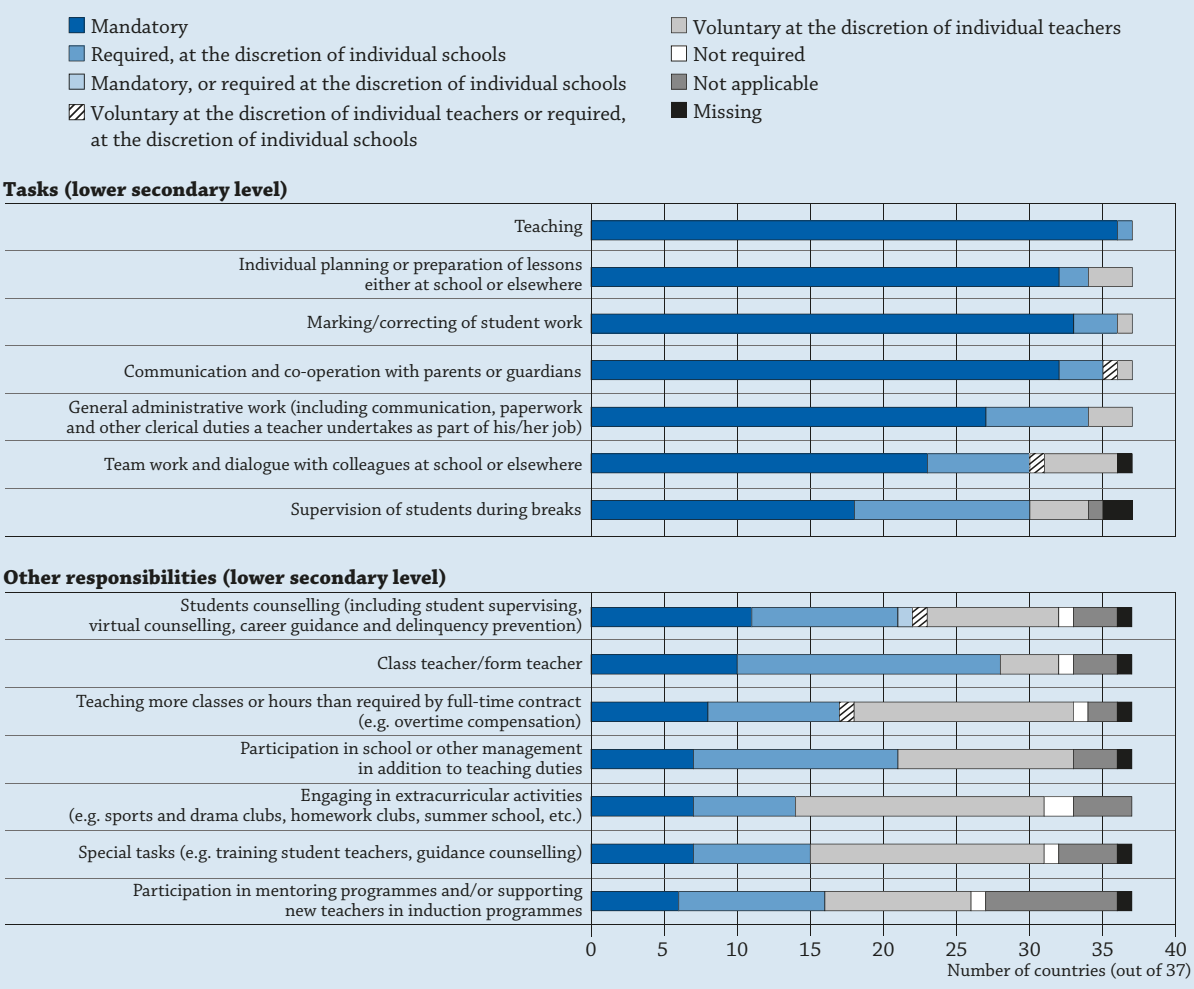
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According to regulations, individual planning or preparing lessons, marking/correcting student work, general administrative communication and paperwork, and communicating and co-operating with parents are the most common non-teaching tasks required of lower secondary teachers during their statutory working time at school or statutory total working time (Table D4.3). These tasks are required in at least 27 of the 37 countries and economies with available data. Teamwork and dialogue with colleagues and supervising students during breaks are also required in around half of the countries with available data. In a quarter of countries, lower secondary teachers are required to take on various additional responsibilities, such as counselling students, teaching more classes or hours than required in the full-time contract, or being class teacher/form teacher (Table D4.3).

Teachers do not only perform tasks that are required by regulations; they often perform voluntarily tasks such as engaging in extracurricular activities, training student teachers, offering guidance counselling and participating in school or other management activities. In almost half of the countries, it was individual teachers who decided whether or not to perform these tasks. Responsibilities such as class/form teacher or participating in school or other management in addition to teaching duties are largely distributed at the school level.

## Figure D4.a. Tasks and responsibilities lower secondary teachers are required to perform (2015)

*For lower secondary teachers teaching general programmes*




**Source**: OECD (2017), Table D4.3. See *Source* for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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D4

## Definitions

**Actual teaching time** is the annual average number of hours that full-time teachers teach a group or class of students. It includes all extra hours, such as overtime. Data on these hours can be sourced from administrative registers, statistical databases, representative sample surveys or other representative sources.

The **number of teaching days** is the number of teaching weeks multiplied by the number of days per week a teacher teaches, less the number of days on which the school is closed for holidays.

The **number of teaching weeks** refers to the number of weeks of instruction excluding holiday weeks.

**Statutory teaching time** is defined as the scheduled number of 60-minute hours per year that a full-time teacher teaches a group or class of students as set by policy, teachers' contracts of employment or other official documents. Teaching time can be defined on a weekly or annual basis. **Annual teaching time** is normally calculated as the number of teaching days per year multiplied by the number of hours a teacher teaches per day (excluding preparation time). It is a net contact time for instruction as it excludes periods of time formally allowed for breaks between lessons or groups of lessons and the days that the school is closed for holidays. At pre-primary and primary levels, short breaks between lessons are included if the classroom teacher is responsible for the class during these breaks.

**Total statutory working time** refers to the number of hours that a full-time teacher is expected to work as set by policy. It can be defined on a weekly or annual basis. It does not include paid overtime. According to a country's formal policy, working time can refer to:

- The time directly associated with teaching and other curricular activities for students, such as assignments and tests.
- The time directly associated with teaching and other activities related to teaching, such as preparing lessons, counselling students, correcting assignments and tests, professional development, meetings with parents, staff meetings and general school tasks.

**Working time required at school** refers to the time teachers are required to spend working at school, including teaching and non-teaching time.

## Methodology

In interpreting differences in teaching hours among countries, net contact time, as used here, does not necessarily correspond to the teaching load. Although contact time is a substantial component of teachers' workloads, preparing for classes and necessary follow-up, including correcting students' work, also need to be included when making comparisons. Other relevant elements, such as the number of subjects taught, the number of students taught and the number of years a teacher teaches the same students, should also be taken into account.

For more information please see the *OECD Handbook for Internationally Comparative Education Statistics: Concepts, Standards, Definitions and Classifications* (OECD, 2017) and Annex 3 for country-specific notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

## Source

Data are from the 2016 OECD-INES Survey on Teachers and the Curriculum and refer to the school year 2014/15.

**Note regarding data from Israel**

The statistical data for Israel are supplied by and are under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

### References

OECD (2017), *OECD Handbook for Internationally Comparative Education Statistics: Concepts, Standards, Definitions and Classifications*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264279889-en.

OECD (2015), "Indicator D4. How much time do teachers spend teaching?", in OECD, *Education at a Glance 2015: OECD Indicators*, OECD Publishing, Paris, http://dx.doi.org/10.1787/eag-2015-33-en.

## Indicator D4 Tables

StatLink http://dx.doi.org/10.1787/888933562201

| | | |
|---|---|---|
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| Table D4.2 | Number of teaching hours per year (2000, 2005 to 2015) |
| Table D4.3 | Tasks and responsibilities of teachers, by level of education (2015) |
| WEB Figure D4.6 | Actual and statutory teaching time in general lower secondary education (2015) |

Cut-off date for the data: 19 July 2017. Any updates on data can be found on line at http://dx.doi.org/10.1787/eag-data-en.

D4

## Table D4.1. Organisation of teachers' working time (2015)

*Number of statutory teaching weeks, teaching days, net teaching hours and teachers' working time in public institutions over the school year*

| | | Number of weeks of teaching | | | | Number of days of teaching | | | | Net teaching time, in hours | | | | Working time required at school, in hours | | | | Total statutory working time, in hours | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Pre-primary | Primary | Lower secondary, general programmes | Upper secondary, general programmes | Pre-primary | Primary | Lower secondary, general programmes | Upper secondary, general programmes | Pre-primary | Primary | Lower secondary, general programmes | Upper secondary, general programmes | Pre-primary | Primary | Lower secondary, general programmes | Upper secondary, general programmes | Pre-primary | Primary | Lower secondary, general programmes | Upper secondary, general programmes |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) | (17) | (18) | (19) | (20) |
| OECD | **Countries** | | | | | | | | | | | | | | | | | | | | |
| | Australia[1] | 40 | 40 | 40 | 40 | 195 | 196 | 196 | 195 | 882 | 866 | 806 | 804 | 1 221 | 1 203 | 1 221 | 1 221 | a | a | a | a |
| | Austria[1] | m | 38 | 38 | 38 | m | 180 | 180 | 180 | m | 779 | 607 | 589 | m | a | a | a | m | 1 776 | 1 776 | m |
| | Canada[1] | m | 37 | 37 | 37 | m | 183 | 183 | 183 | m | 797 | 742 | 743 | m | 1 228 | 1 233 | 1 236 | m | m | m | m |
| | Chile[2] | 38 | 38 | 38 | 38 | 184 | 184 | 184 | 184 | 1 157 | 1 157 | 1 157 | 1 157 | 1 883 | 1 883 | 1 883 | 1 883 | 2 015 | 2 015 | 2 015 | 2 015 |
| | Czech Republic[1] | 39 | 39 | 39 | 39 | 187 | 187 | 187 | 187 | 1 159 | 823 | 617 | 589 | a | a | a | a | 1 760 | 1 760 | 1 760 | 1 760 |
| | Denmark[1, 3] | a | a | a | a | a | a | a | a | 1 417 | 784 | 784 | 386 | a | a | a | a | 1 680 | 1 680 | 1 680 | 1 680 |
| | Estonia[2] | 46 | 35 | 35 | 35 | 220 | 172 | 172 | 172 | 1 320 | 619 | 619 | 568 | 1 610 | 1 540 | 1 540 | 1 540 | 1 610 | 1 540 | 1 540 | 1 540 |
| | Finland[4] | m | 38 | 38 | 38 | m | 188 | 188 | 188 | m | 677 | 592 | 550 | m | 791 | 706 | 645 | a | a | a | a |
| | France[1] | 36 | 36 | 36 | 36 | 162 | 162 | a | a | 900 | 900 | 648 | 648 | 972 | 972 | a | a | 1 607 | 1 607 | 1 607 | 1 607 |
| | Germany[1] | 39 | 40 | 40 | 40 | 190 | 193 | 193 | 193 | 1 482 | 799 | 750 | 714 | a | a | a | a | 1 768 | 1 768 | 1 768 | 1 768 |
| | Greece[2] | 36 | 36 | 31 | 31 | 175 | 175 | 153 | 153 | 788 | 630 | 528 | 528 | 1 140 | 1 140 | 1 170 | 1 170 | a | a | a | a |
| | Hungary[4] | 36 | 36 | 36 | 36 | 169 | 169 | 169 | 168 | 1 082 | 608 | 608 | 605 | 1 158 | 1 158 | 1 158 | 1 158 | 1 624 | 1 624 | 1 624 | 1 624 |
| | Iceland | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Ireland[1] | m | 37 | 33 | 33 | m | 183 | 167 | 167 | m | 915 | 735 | 735 | m | 1 073 | 768 | 768 | a | a | a | a |
| | Israel[1] | 39 | 39 | 37 | 37 | 187 | 187 | 179 | 179 | 1 056 | 864 | 704 | 587 | 1 092 | 1 263 | 1 169 | 990 | 1 092 | 1 263 | 1 169 | 990 |
| | Italy[1] | 42 | 39 | 39 | 39 | 186 | 171 | 171 | 171 | 930 | 752 | 616 | 616 | a | a | a | a | a | a | a | a |
| | Japan[3] | 39 | 40 | 40 | 39 | m | 201 | 201 | 196 | m | 742 | 610 | 511 | a | a | a | a | 1 891 | 1 891 | 1 891 | 1 891 |
| | Korea[4] | 36 | 38 | 38 | 38 | 180 | 190 | 190 | 190 | 568 | 658 | 548 | 551 | a | a | a | a | 1 520 | 1 520 | 1 520 | 1 520 |
| | Latvia[1] | 39 | 35 | 35 | 35 | 183 | 163 | 163 | 163 | 1 098 | 685 | 685 | 685 | 1 200 | 735 | 735 | 735 | 1 760 | 1 760 | 1 760 | 1 760 |
| | Luxembourg[1] | 36 | 36 | 36 | 36 | 176 | 176 | 176 | 176 | 880 | 810 | 739 | 739 | 1 060 | 990 | 828 | 828 | a | a | a | a |
| | Mexico[1] | 41 | 41 | 41 | 36 | 200 | 200 | 200 | 173 | 532 | 800 | 1 047 | 848 | 772 | 800 | 1 167 | 971 | a | a | a | a |
| | Netherlands[2] | 40 | 40 | m | m | 195 | 195 | m | m | 930 | 930 | 750 | 750 | a | a | a | a | 1 659 | 1 659 | 1 659 | 1 659 |
| | New Zealand[1] | m | 38 | 38 | 38 | m | 192 | 191 | 190 | m | 922 | 840 | 760 | m | 1 536 | 1 243 | 950 | a | a | a | a |
| | Norway[2] | 45 | 38 | 38 | 38 | 225 | 190 | 190 | 190 | a | 741 | 663 | 523 | 1 508 | 1 300 | 1 225 | 1 150 | a | 1 688 | 1 688 | 1 688 |
| | Poland[4] | 45 | 37 | 37 | 37 | 218 | 182 | 180 | 178 | 1 090 | 573 | 486 | 481 | m | m | m | m | 1 808 | 1 496 | 1 480 | 1 464 |
| | Portugal[2] | 41 | 36 | 36 | 36 | 191 | 165 | 165 | 165 | 955 | 743 | 605 | 605 | 1 105 | 1 013 | 914 | 914 | 1 602 | 1 442 | 1 442 | 1 442 |
| | Slovak Republic[1] | 43 | 38 | 38 | 38 | 204 | 187 | 187 | 187 | 1 142 | 832 | 645 | 617 | m | m | m | m | 1 568 | 1 568 | 1 568 | 1 568 |
| | Slovenia[1] | 46 | 38 | 38 | 38 | 219 | 190 | 190 | 190 | 1 314 | 627 | 627 | 570 | a | a | a | a | m | m | m | m |
| | Spain[1] | 37 | 37 | 37 | 36 | 176 | 176 | 176 | 171 | 880 | 880 | 713 | 693 | 1 140 | 1 140 | 1 140 | 1 140 | 1 425 | 1 425 | 1 425 | 1 425 |
| | Sweden[1] | 47 | a | a | a | 224 | a | a | a | m | a | a | a | 1 792 | 1 360 | 1 360 | 1 360 | a | 1 767 | 1 767 | 1 767 |
| | Switzerland[1] | 38 | 38 | 38 | 38 | 185 | 185 | 185 | 185 | 1 073 | 1 073 | 1 073 | 1 073 | a | a | a | a | 1 920 | 1 920 | 1 920 | 1 920 |
| | Turkey[1] | 38 | 38 | 38 | 38 | 180 | 180 | 180 | 180 | 1 080 | 720 | 504 | 504 | 1 160 | 980 | 836 | 836 | 1 592 | 1 592 | 1 592 | 1 592 |
| | United States[3, 5] | 36 | 36 | 36 | 36 | 180 | 180 | 180 | 180 | m | m | 981 | m | 1 365 | 1 362 | 1 366 | 1 365 | 1 890 | 1 922 | 1 936 | 1 960 |
| | **Economies** | | | | | | | | | | | | | | | | | | | | |
| | Flemish Com. (Belgium)[1, 4] | 37 | 37 | 37 | 37 | 176 | 176 | 148 | 148 | 733 | 748 | 553 | 516 | 915 | 915 | a | a | a | a | a | a |
| | French Com. (Belgium)[1] | 37 | 37 | 37 | 37 | 182 | 182 | 182 | 182 | 788 | 728 | 668 | 606 | a | a | a | a | 962 | 962 | a | a |
| | England (UK)[3] | 38 | 38 | 38 | 38 | 190 | 190 | 190 | 190 | 942 | 942 | 817 | 817 | a | a | a | a | 1 265 | 1 265 | 1 265 | 1 265 |
| | Scotland (UK)[2] | 38 | 38 | 38 | 38 | 190 | 190 | 190 | 190 | 855 | 855 | 855 | 855 | 1 045 | 1 045 | 1 045 | 1 045 | 1 365 | 1 365 | 1 365 | 1 365 |
| | **OECD average** | 40 | 38 | 37 | 37 | 191 | 183 | 181 | 179 | 1 001 | 794 | 712 | 662 | 1 230 | 1 156 | 1 135 | 1 095 | 1 608 | 1 611 | 1 634 | 1 620 |
| | **EU22 average** | 40 | 37 | 37 | 37 | 191 | 180 | 176 | 176 | 1 034 | 767 | 663 | 629 | 1 194 | 1 067 | 1 033 | 1 028 | 1 564 | 1 557 | 1 593 | 1 580 |
| Partners | Argentina | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Brazil | 42 | 42 | 42 | 42 | 201 | 201 | 201 | 201 | m | m | m | m | a | a | a | a | a | a | a | a |
| | China | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Colombia[1] | 40 | 40 | 40 | 40 | 200 | 200 | 200 | 200 | 800 | 1 000 | 1 200 | 1 200 | 1 350 | 1 350 | 1 350 | 1 350 | 1 600 | 1 600 | 1 600 | 1 600 |
| | Costa Rica | 41 | 41 | 41 | 41 | 198 | 198 | 198 | 198 | 812 | 1 188 | 1 267 | 1 267 | m | m | m | m | m | m | m | m |
| | India | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Indonesia | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Lithuania[1] | 32 | 32 | 35 | 35 | 157 | 157 | 170 | 170 | 628 | 565 | 610 | 610 | 1 056 | 850 | 870 | 878 | 1 500 | 1 050 | 1 032 | 1 040 |
| | Russian Federation[3] | m | 34 | 35 | 35 | m | 170 | 210 | 210 | m | 561 | 483 | 483 | a | a | a | a | m | m | m | m |
| | Saudi Arabia | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | South Africa | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | **G20 average** | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |

**Note:** See *Definitions* and *Methodology* sections for more information. Data available at http://stats.oecd.org/, Education at a Glance Database.

1. Typical teaching time (in the Flemish Community of Belgium, for pre-primary and primary levels).
2. Maximum teaching time.
3. Actual teaching time (in Denmark except for pre-primary level. Data for England [UK] refer to 2016).
4. Minimum teaching time (in the Flemish Community of Belgium, for lower and upper secondary levels).
5. Year of reference for net teaching time is 2013. Year of reference for working time is 2012.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933562125

## Table D4.2. **Number of teaching hours per year (2000, 2005 to 2015)**

*Net statutory contact time in public institutions, by level of education*

| | | Primary | | | | Lower secondary, general programmes | | | | Upper secondary, general programmes | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2000 | 2005 | 2010 | 2015 | 2000 | 2005 | 2010 | 2015 | 2000 | 2005 | 2010 | 2015 |
| | | (13) | (14) | (19) | (24) | (25) | (26) | (31) | (36) | (37) | (38) | (43) | (48) |
| OECD | **Countries** | | | | | | | | | | | | |
| | Australia | 882 | 888 | 868 | 866 | 811 | 810 | 819 | 806 | 803 | 810 | 803 | 804 |
| | Austria[1] | m | 774 | 779 | 779 | m | 607 | 607 | 607 | m | 589 | 589 | 589 |
| | Canada | m | m | 799 | 797 | m | m | 740 | 742 | m | m | 744 | 743 |
| | Chile | m | 1 128 | 1 105 | 1 157 | m | 1 128 | 1 105 | 1 157 | m | 1 128 | 1 105 | 1 157 |
| | Czech Republic | m | 813 | 862 | 823 | 650 | 647 | 647 | 617 | 621 | 617 | 617 | 589 |
| | Denmark[2, 3] | 640 | 640 | 650 | 784[b] | 640 | 640 | 650 | 784[b] | m | m | 377 | 386 |
| | Estonia | 630 | 630 | 630 | 619 | 630 | 630 | 630 | 619 | 578 | 578 | 578 | 568 |
| | Finland | 656 | 677 | 680 | 677 | 570 | 592 | 595 | 592 | 527 | 550 | 553 | 550 |
| | France | 924 | 924 | 924 | 900 | 648 | 648 | 648 | 648 | 648 | 648 | 648 | 648 |
| | Germany | 783 | 808 | 805 | 799 | 732 | 758 | 756 | 750 | 690 | 714 | 713 | 714 |
| | Greece | 609 | 604 | 589 | 630[b] | 426 | 434 | 415 | 528[b] | 429 | 430 | 415 | 528[b] |
| | Hungary | 583 | 583 | 604 | 608 | 555 | 555 | 604 | 608 | 555 | 555 | 604 | 605 |
| | Iceland | 629 | 671 | 624 | m | 629 | 671 | 624 | m | 464 | 560 | 544 | m |
| | Ireland | 915 | 915 | 915 | 915 | 735 | 735 | 735 | 735 | 735 | 735 | 735 | 735 |
| | Israel | 731 | 731 | 820 | 864 | 579 | 579 | 598 | 704 | 524 | 524 | 521 | 587 |
| | Italy | 744 | 739 | 770 | 752 | 608 | 605 | 630 | 616 | 608 | 605 | 630 | 616 |
| | Japan[2] | 635 | 578 | 707 | 742 | 557 | 505 | 602 | 610 | 478 | 429 | 500 | 511 |
| | Korea | 865 | 883 | 807 | 658 | 570 | 621 | 627 | 548 | 530 | 605 | 616 | 551 |
| | Latvia | 882 | 882 | 882 | 685[b] | 882 | 882 | 882 | 685[b] | 882 | 882 | 882 | 685[b] |
| | Luxembourg | m | 774 | 739 | 810 | m | 642 | 634 | 739 | m | 642 | 634 | 739 |
| | Mexico | 800 | 800 | 800 | 800 | 1 182 | 1 047 | 1 047 | 1 047 | m | 848 | 843 | 848 |
| | Netherlands | 930 | 930 | 930 | 930 | 867 | 750 | 750 | 750 | 867 | 750 | 750 | 750 |
| | New Zealand | m | m | m | 922 | m | m | m | 840 | m | m | m | 760 |
| | Norway | 713 | 741 | 741 | 741 | 633 | 656 | 654 | 663 | 505 | 524 | 523 | 523 |
| | Poland | m | m | 586 | 573 | m | m | 497 | 486 | m | m | 494 | 481 |
| | Portugal | 779 | 765 | 779 | 743 | 634 | 623 | 634 | 605 | 577 | 567 | 634 | 605 |
| | Slovak Republic | m | m | 841 | 832 | m | m | 652 | 645 | m | m | 624 | 617 |
| | Slovenia | m | 627 | 627 | 627 | m | 627 | 627 | 627 | m | 570 | 570 | 570 |
| | Spain | 880 | 880 | 880 | 880 | 713 | 713 | 713 | 713 | 693 | 693 | 693 | 693 |
| | Sweden | m | m | m | a | m | m | m | a | m | m | m | a |
| | Switzerland | 884 | m | m | 1 073[b] | 859 | m | m | 1 073[b] | 674 | m | m | 1 073[b] |
| | Turkey | 720 | 720 | 720 | 720 | 504 | 504 | 504 | 504 | 567 | 567 | 567 | 504 |
| | United States[2] | m | m | m | m | m | m | m | m | m | m | m | m |
| | **Economies** | | | | | | | | | | | | |
| | Flemish Com. (Belgium) | 758 | 752 | 752 | 748 | 677 | 569[b] | 557 | 553 | 633 | 532[b] | 520 | 516 |
| | French Com. (Belgium) | 722 | 722 | 732 | 728 | 662 | 662 | 671 | 668 | 603 | 603 | 610 | 606 |
| | England (UK)[2] | m | m | 684 | 942 | m | m | 703 | 817 | m | m | 703 | 817 |
| | Scotland (UK) | 950 | 893 | 855 | 855 | 893 | 893 | 855 | 855 | 893 | 893 | 855 | 855 |
| | **OECD average** | 770 | 775 | 772 | 794 | 686 | 680 | 679 | 704 | 628 | 648 | 642 | 662 |
| | **Average for OECD countries with 2000, 2005, 2010 and 2015 data** | 771 | 769 | 776 | 767 | 682 | 669 | 676 | 675 | 634 | 628 | 635 | 625 |
| | **Average for EU22 countries with 2000, 2005, 2010 and 2015 data** | 774 | 771 | 774 | 766 | 678 | 667 | 669 | 666 | 659 | 647 | 652 | 641 |
| Partners | Argentina | m | m | m | m | m | m | m | m | m | m | m | m |
| | Brazil | m | m | m | m | m | m | m | m | m | m | m | m |
| | China | m | m | m | m | m | m | m | m | m | m | m | m |
| | Colombia | m | 1 000 | 1 000 | 1 000 | m | 1 200 | 1 200 | 1 200 | m | 1 200 | 1 200 | 1 200 |
| | Costa Rica | m | m | m | 1188 | m | m | m | 1267 | m | m | m | 1267 |
| | India | m | m | m | m | m | m | m | m | m | m | m | m |
| | Indonesia | m | m | m | m | m | m | m | m | m | m | m | m |
| | Lithuania | m | m | m | 565 | m | m | m | 610 | m | m | m | 610 |
| | Russian Federation[2] | m | 615 | 615 | 561 | m | 507 | 507 | 483 | m | 507 | 507 | 483 |
| | Saudi Arabia | m | m | m | m | m | m | m | m | m | m | m | m |
| | South Africa | m | m | m | m | m | m | m | m | m | m | m | m |
| | **G20 average** | m | m | m | m | m | m | m | m | m | m | m | m |

**Note:** See *Definitions* and *Methodology* sections for more information. Data on years 2000, 2005 to 2015 for pre-primary education (i.e. Columns 1-12) are available for consultation on line. Data on years 2006, 2007, 2008, 2009, 2011, 2012, 2013 and 2014 for primary education, lower secondary education and upper secondary education (i.e. Columns 15-18; 20-23; 27-30; 32-35; 39-42; 44-47) are available at http://stats.oecd.org/, Education at a Glance Database or via *StatLink* below.

1. Figures for the pre-primary level refer to primary teachers (in primary schools only) teaching pre-primary classes.

2. Actual teaching time (in Denmark except for pre-primary level, in England [UK] data for 2015 refer ro 2016).

3. Year of reference 2011 instead of 2012 and 2013, and year of reference 2015 instead of 2014 for upper secondary education.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933562144

## Table D4.3. [1/2] Tasks and responsibilities of teachers, by level of education (2015)

*Teachers' tasks and responsibilities in public institutions as defined explicitly in regulations and/or steering documents*

| | | Lower secondary education | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Tasks | | | | | | |
| | | Teaching | Individual planning or preparation of lessons either at school or elsewhere | Marking/ correcting of student work | General administrative work (including communication, paperwork and other clerical duties undertaken as part of the job) | Communication and co-operation with parents or guardians | Supervision of students during breaks | Team work and dialogue with colleagues at school or elsewhere |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| OECD | **Countries** | | | | | | | |
| | Australia | m | m | m | m | m | m | m |
| | Austria | Mand. | Mand. | Mand. | Mand. | Mand. | Mand. | School Req. |
| | Canada | Mand. | Mand. | Mand. | Mand. | Mand. | m | m |
| | Chile | Mand. | Mand. | Mand. | School Req. | School Req./ Vol. | School Req. | School Req./ Vol. |
| | Czech Republic | Mand. | Voluntary | Voluntary | School Req. | Voluntary | School Req. | School Req. |
| | Denmark | Mand. | Mand. | Mand. | Mand. | Mand. | m | Mand. |
| | Estonia | Mand. | Mand. | Mand. | Mand. | Mand. | School Req. | Mand. |
| | Finland | Mand. | Mand. | Mand. | Mand. | Mand. | School Req. | Mand. |
| | France | Mand. | Voluntary | Mand. | Mand. | Mand. | a | Voluntary |
| | Germany | Mand. | Mand. | Mand. | School Req. | Mand. | School Req. | Voluntary |
| | Greece | Mand. | Mand. | Mand. | Mand. | Mand. | Mand. | Mand. |
| | Hungary | Mand. | Mand. | Mand. | Mand. | Mand. | Mand. | Mand. |
| | Iceland | m | m | m | m | m | m | m |
| | Ireland | Mand. | Mand. | Mand. | Mand. | Mand. | Mand. | Mand. |
| | Israel | Mand. | Mand. | Mand. | Mand. | Mand. | Mand. | Mand. |
| | Italy | Mand. | Mand. | Mand. | Mand. | Mand. | Mand. | Mand. |
| | Japan | Mand. | Mand. | Mand. | Mand. | Mand. | Mand. | Mand. |
| | Korea | Mand. | Mand. | Mand. | Mand. | Mand. | Mand. | Mand. |
| | Latvia | Mand. | Mand. | Mand. | School Req. | Mand. | Mand. | School Req. |
| | Luxembourg | Mand. | Mand. | Mand. | Mand. | Mand. | Mand. | Voluntary |
| | Mexico | m | m | m | m | m | m | m |
| | Netherlands | School Req. | School Req. | School Req. | School Req. | School Req. | School Req. | School Req. |
| | New Zealand[1] | Mand. | Mand. | Mand. | Mand. | Mand. | School Req. | Mand. |
| | Norway | Mand. | Mand. | Mand. | Mand. | Mand. | School Req. | School Req. |
| | Poland | Mand. | Mand. | Mand. | Mand. | Mand. | Mand. | Mand. |
| | Portugal | Mand. | Mand. | Mand. | Mand. | Mand. | Voluntary | Mand. |
| | Slovak Republic | Mand. | Mand. | Mand. | Mand. | Mand. | Mand. | Mand. |
| | Slovenia | Mand. | Mand. | Mand. | Mand. | Mand. | School Req. | Mand. |
| | Spain | Mand. | Mand. | Mand. | Mand. | Mand. | Mand. | Mand. |
| | Sweden | Mand. | Mand. | Mand. | Mand. | Mand. | School Req. | Mand. |
| | Switzerland | Mand. | Mand. | Mand. | Mand. | Mand. | Mand. | Mand. |
| | Turkey | Mand. | Voluntary | Mand. | Mand. | Mand. | Mand. | Voluntary |
| | United States | Mand. | School Req. | School Req. | School Req. | School Req. | School Req. | School Req. |
| | **Economies** | | | | | | | |
| | Flemish Com. (Belgium) | Mand. | Mand. | School Req. | School Req. | School Req. | School Req. | School Req. |
| | French Com. (Belgium) | Mand. | Mand. | Mand. | Mand. | Mand. | Voluntary | Voluntary |
| | England (UK) | Mand. | Mand. | Mand. | Voluntary | Mand. | Voluntary | Mand. |
| | Scotland (UK) | Mand. | Mand. | Mand. | Voluntary | Mand. | Voluntary | Mand. |
| Partners | Argentina | m | m | m | m | m | m | m |
| | Brazil | m | m | m | m | m | m | m |
| | China | m | m | m | m | m | m | m |
| | Colombia | Mand. | Mand. | Mand. | Mand. | Mand. | Mand. | Mand. |
| | Costa Rica | Mand. | Mand. | Mand. | Voluntary | Mand. | Mand. | Mand. |
| | India | m | m | m | m | m | m | m |
| | Indonesia | m | m | m | m | m | m | m |
| | Lithuania | Mand. | Mand. | Mand. | Mand. | Mand. | Mand. | Mand. |
| | Russian Federation | Mand. | m | m | m | m | m | m |
| | Saudi Arabia | m | m | m | m | m | m | m |
| | South Africa | m | m | m | m | m | m | m |

**Are tasks/responsibilities required of teachers?**

Mand. = Yes, mandatory
School Req. = Yes, at the discretion of individual schools
Voluntary = No, voluntary at the discretion of individual teachers
Not req. = No, not required

**Note:** Pre-primary, primary and upper secondary levels (added in separate rows) are available for consultation on line (see *StatLink* below). See *Definitions* and *Methodology* sections for more information.

1. Citeria for the first two years of lower secondary education (general programmes) follow those for primary education and those for the last two years of lower secondary education (general programmes) follow those of upper secondary education (general programmes).

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933562163

## Table D4.3. [2/2] Tasks and responsibilities of teachers, by level of education (2015)

*Teachers' tasks and responsibilities in public institutions as defined explicitly in regulations and/or steering documents*

| | | Lower secondary education | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Other responsibilities | | | | | | |
| | | Participation in school or other management duties in addition to teaching (e.g. serving as head of department or co-ordinator of teachers) | Teaching more classes or hours than required by full-time contract (e.g. overtime compensation) | Students counselling (including student supervising, virtual counselling, career guidance, and delinquency prevention) | Engaging in extracurricular activities (e.g. homework clubs, sports and drama clubs, summer school) | Special tasks (e.g. training student teachers, guidance counselling) | Class teacher/ form teacher | Participation in mentoring programmes and/or supporting new teachers in induction programmes |
| | | (8) | (9) | (10) | (11) | (12) | (13) | (14) |
| OECD | **Countries** | | | | | | | |
| | **Australia** | m | m | m | m | m | m | m |
| | **Austria** | School Req. | Mand. | School Req. | Voluntary | Voluntary | Mand. | a |
| | **Canada** | m | m | m | Voluntary | m | m | Voluntary |
| | **Chile** | Voluntary | School Req./ Vol. | School Req./ Vol. | Voluntary | Voluntary | School Req. | Voluntary |
| | **Czech Republic** | School Req. | School Req. | Voluntary | Voluntary | School Req. | School Req. | School Req. |
| | **Denmark** | Voluntary | Voluntary | Voluntary | Voluntary | Voluntary | School Req. | a |
| | **Estonia** | School Req. | Voluntary | School Req. | School Req. | School Req. | School Req. | a |
| | **Finland** | Voluntary | Voluntary | Voluntary | Voluntary | Voluntary | School Req. | School Req. |
| | **France** | Voluntary | Voluntary | Mand. | Voluntary | Voluntary | Voluntary | Voluntary |
| | **Germany** | Voluntary | Voluntary | Voluntary | Voluntary | Voluntary | School Req. | a |
| | **Greece** | a | Voluntary | Mand. | a | a | Mand. | Mand. |
| | **Hungary** | Mand. | Mand. | Mand. | Mand. | Mand. | Not req. | Mand. |
| | **Iceland** | m | m | m | m | m | m | m |
| | **Ireland** | School Req. | a | a | Voluntary | Voluntary | School Req. | Voluntary |
| | **Israel** | Voluntary | Voluntary | School Req. | a | Voluntary | School Req. | Voluntary |
| | **Italy** | School Req. | Voluntary | Voluntary | Voluntary | Voluntary | a | Voluntary |
| | **Japan** | Mand. | Mand. | Mand. | Mand. | Mand. | Mand. | School Req. |
| | **Korea** | School Req. | Voluntary | Mand. | School Req. | Voluntary | School Req. | School Req. |
| | **Latvia** | Mand. | Mand. | Mand. | Mand. | Mand. | Mand. | Voluntary |
| | **Luxembourg** | Mand. | Mand. | Mand. | Mand. | Mand. | Voluntary | Voluntary |
| | **Mexico** | m | m | m | m | m | m | m |
| | **Netherlands** | School Req. | Voluntary | School Req. | School Req. | Voluntary | School Req. | a |
| | **New Zealand**[1] | School Req. | School Req./Not req. | Mand./School Req. | Voluntary | School Req. | School Req. | School Req. |
| | **Norway** | School Req. | School Req. | School Req. | Not req. | Not req. | School Req. | School Req. |
| | **Poland** | School Req. | School Req. | Voluntary | Mand. | School Req. | Mand. | Mand. |
| | **Portugal** | Mand. | Mand. | Mand. | Mand. | Mand. | Mand. | School Req. |
| | **Slovak Republic** | Voluntary | School Req. | Voluntary | Voluntary | Voluntary | Mand. | Voluntary |
| | **Slovenia** | School Req. | Mand. | Mand. | Mand. | Mand. | Mand. | Mand. |
| | **Spain** | Mand. | a | a | a | a | a | a |
| | **Sweden** | Voluntary | Voluntary | School Req. | Voluntary | Voluntary | School Req. | a |
| | **Switzerland** | Voluntary | Not req. | Not req. | Not req. | Voluntary | Mand. | Voluntary |
| | **Turkey** | Voluntary | School Req. | School Req. | School Req. | School Req. | School Req. | School Req. |
| | **United States** | School Req. | School Req. | School Req. | School Req. | School Req. | School Req. | m |
| | **Economies** | | | | | | | |
| | **Flemish Com. (Belgium)** | Voluntary | Voluntary | a | Voluntary | Voluntary | Voluntary | a |
| | **French Com. (Belgium)** | Voluntary | Voluntary | Voluntary | Voluntary | Voluntary | Voluntary | School Req. |
| | **England (UK)** | School Req. | School Req. | School Req. | School Req. | School Req. | School Req. | School Req. |
| | **Scotland (UK)** | a | Voluntary | Mand. | Voluntary | School Req. | School Req. | Mand. |
| Partners | **Argentina** | m | m | m | m | m | m | m |
| | **Brazil** | m | m | m | m | m | m | m |
| | **China** | m | m | m | m | m | m | m |
| | **Colombia** | Mand. | Mand. | Voluntary | a | a | a | Not req. |
| | **Costa Rica** | School Req. | Voluntary | Mand. | Voluntary | Mand. | Mand. | Mand. |
| | **India** | m | m | m | m | m | m | m |
| | **Indonesia** | m | m | m | m | m | m | m |
| | **Lithuania** | a | School Req. | School Req. | School Req. | a | School Req. | a |
| | **Russian Federation** | m | m | m | m | m | m | m |
| | **Saudi Arabia** | m | m | m | m | m | m | m |
| | **South Africa** | m | m | m | m | m | m | m |

**Are tasks/responsibilities required of teachers?**

Mand. = Yes, mandatory
School Req. = Yes, at the discretion of individual schools
Voluntary = No, voluntary at the discretion of individual teachers
Not req. = No, not required

**Note:** Pre-primary, primary and upper secondary levels (added in separate rows) are available for consultation on line (see *StatLink* below). See *Definitions* and *Methodology* sections for more information.

1. Citeria for the first two years of lower secondary education (general programmes) follow those for primary education and those for the last two years of lower secondary education (general programmes) follow those of upper secondary education (general programmes).

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

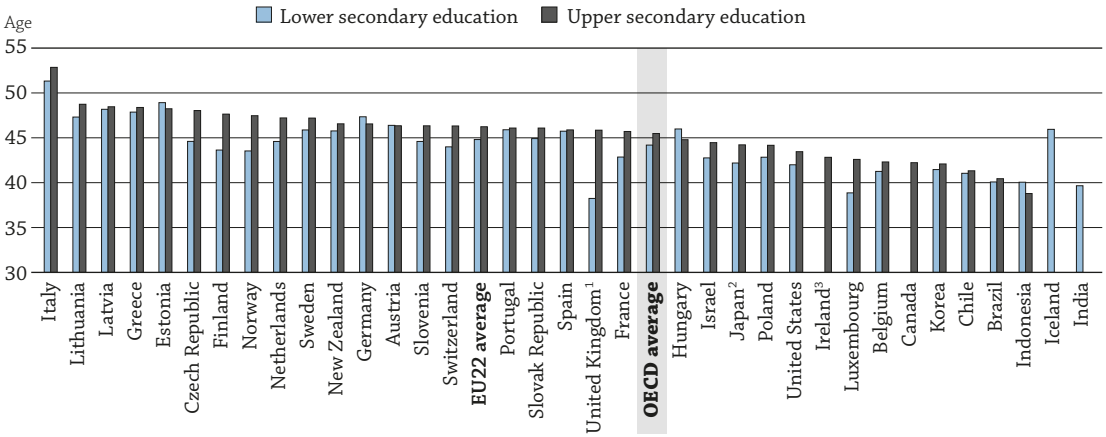
*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

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## WHO ARE THE TEACHERS?

- On average across OECD countries, 32% of primary school teachers were at least 50 years old in 2015. This average increases to 36% at the lower secondary level and 40% at the upper secondary level.
- More than two-thirds of teachers are women on average across OECD countries, but the percentage of female teachers decreases as the level of education increases: 97% at the pre-primary level, 83% at the primary level, 69% at the lower secondary level, 59% at the upper secondary level and 43% at the tertiary level.
- Between 2005 and 2015, on average for countries with data for both years, the share of female teachers increased by 3 percentage points from the primary to upper secondary levels and by 4 percentage points at the tertiary level. In addition, for all education levels, the largest share of women is found among the new generation of teachers (below the age of 30).

### Figure D5.1. Average age of teachers by education level (2015)




1. Lower secondary education comprises secondary schools for ages 11-16. Upper secondary education includes colleges for ages 16+ and adult learning. See Annex 3 for details.

2. Upper secondary education includes post-secondary non-tertiary.

3. Upper secondary education includes lower secondary.

*Countries are ranked in descending order of the average age of teachers in upper secondary education.*

**Source**: OECD/UIS/Eurostat (2017), Education at a Glance Database, http://stats.oecd.org/. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

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### Context

The demand for teachers depends on a range of factors, including average class size, the required instruction time for students, the use of teaching assistants and other "non-classroom" staff in schools, enrolment rates at the different levels of education, and the starting and ending age for compulsory education. With large proportions of teachers in several OECD countries set to reach retirement age in the next decade, and/or the projected increase in the size of the school-age population, governments will be under pressure to recruit and train new teachers. Given compelling evidence that the calibre of teachers is the most significant in-school determinant of student achievement, concerted efforts must be made to attract top talent to the teaching profession and to provide high-quality training (Hiebert and Stigler, 1999; OECD, 2005).

Teacher-retention policies need to promote work environments that encourage effective teachers to continue teaching. In addition, as teaching at the pre-primary, primary and lower secondary levels remains largely dominated by women, the gender imbalance in the teaching profession and its impact on student learning warrant detailed study.

## Other findings

- The United Kingdom has the largest proportion of young primary teachers (31% under the age of 30) of all countries with available data. By contrast, in Italy and Portugal only 1% of primary teachers are in that age group.
- In all countries except Colombia, Finland, Latvia, Lithuania and the Russian Federation, more than half of tertiary teachers are men.

## Analysis

### Teachers' age distribution

Teachers' age distribution varies considerably across countries and can be affected by a variety of factors, such as the size and age distribution of the population, the duration of tertiary education, as well as teachers' salaries and working conditions. Declining birth rates, for example, may drive down the demand for new teachers, and longer tertiary education can delay the entrance of teachers to the labour market. Competitive salaries and good working conditions may attract young people to teaching in some countries and, in others, help to retain effective teachers.

On average across the OECD, more than half of primary, lower secondary and upper secondary teachers are between the ages of 30 and 49. The average age of teachers goes from 43 in primary education to 45 in upper secondary education.

Young teachers – below the age of 30 – make up only a small proportion of the teaching population: 12% in primary education, 10% in lower secondary and 7% in upper secondary on average across the OECD. This pattern is particularly striking at the upper secondary level: in nearly two-thirds of the countries with available data, teachers below the age of 30 make up less than 10% of the teaching population. They account for less than 5% of teachers in the Czech Republic, Finland, Greece, Italy, Portugal, Slovenia and Spain (Table D5.1).

In contrast, a high share of teachers are aged 50 and above. This share increases with the education level, from 32% in primary education to 36% in lower secondary and 40% in upper secondary education. This pattern is quite striking at the upper secondary level, where older teachers account for more than 30% of all teachers in 25 out of 31 countries with available data. There is, however, a high level of cross-country variation, with figures ranging from 21% in Brazil to 71% in Italy for upper secondary education.

The ageing of the teaching force has a number of implications for countries' education systems. In addition to prompting recruitment and training efforts to replace retiring teachers, it may also affect budgetary decisions. In most school systems, teachers' salaries increase with years of teaching experience. Thus, the ageing of teachers increases school costs, which can in turn limit the resources available for other initiatives (see Indicator D3).

### Trends in teachers' ages between 2005 and 2015

On average for OECD countries with available data for both years, the share of teachers aged 50 and older has increased by 3 percentage points over the past decade, for primary to upper secondary education combined. Hungary, Japan, Lithuania, Poland, Portugal and Slovenia saw an increase of at least 10 percentage points (Table D5.1), though in Japan and Poland the share of teachers aged 50 and over remains lower than the OECD average. In contrast, in Italy, the Netherlands and New Zealand the share of older teachers is higher than in other OECD countries (at least 5 percentage point above the OECD average for both years), and the teaching population is still ageing.

Around one-third of the countries with available data – namely Chile, France, Germany, Ireland, Luxembourg, the United Kingdom and the United States – exhibit a negative change, which indicates that the teaching population is growing younger. This may be explained, in part, by efforts to implement teacher recruitment policies. For instance, the United Kingdom, which has seen the largest decrease in the share of older teachers, launched an ambitious recruitment campaign in the early 2000s.

In countries where the school-age population has increased over the period (see Indicator C1), new teachers will be needed to replace the staff who will reach retirement over the next decade. Governments may have to increase incentives for students to join the teaching profession, and to develop teacher-training programmes (see Indicator D6 in OECD, 2014). In addition, fiscal constraints (particularly driven by pension obligations and healthcare costs for retirees) may put pressure on governments to reduce academic offerings, increase class size or integrate more self-paced online learning (Abrams, 2011; Peterson, 2010).

### Gender profile of teachers

More than two-thirds of teachers are women on average across OECD countries, in all levels of education combined (Table D5.2). The highest proportions of female teachers, however, are concentrated in the earlier years of schooling and shrink at each successive level of education. Indeed, while women represent 97% of the teaching staff in pre-primary education on average across OECD countries, the average drops to 43% at the tertiary level.

At the pre-primary level, women make up at least 90% of the teaching population in all countries with available data, except the Netherlands (87%) and South Africa (79%). In primary education, the share of female teachers averages 83% in OECD countries, and it is above 60% in all OECD and partner countries except India (49%) and Saudi Arabia (52%).

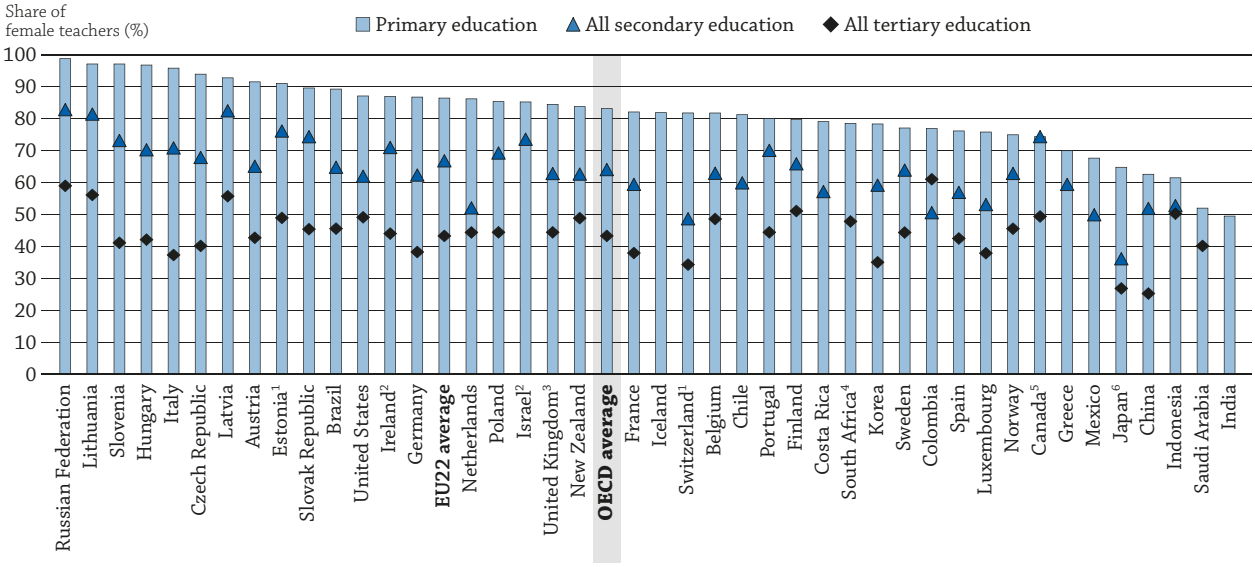
In lower and upper secondary education, although female teachers continue to be in the majority, the proportion of male teachers is larger than at earlier levels. In lower secondary education, 69% of teachers on average across OECD countries are women. In fact, they represent at least 50% of the teaching staff at this level in all countries with available data except India 44% and Japan (42%).

At the upper secondary level, the OECD average drops to 59% and the proportion of female teachers varies considerably, from 30% in Japan to 80% in Latvia. When combining both lower and upper secondary levels, over half of all secondary teachers are men in Japan and Switzerland (Figure D5.2).

At the tertiary level, the gender profile of teachers is reversed, with men making up the majority across OECD countries and female teachers representing 43% of the teaching staff on average. In fact, of the OECD countries with available data, only two – Finland and Latvia – have more than 50% of female teachers in tertiary education. The smallest share of female tertiary teachers in the OECD is found in Japan (27%).

## Figure D5.2. Gender distribution of teachers (2015)

*Percentage of women among teaching staff in public and private institutions, by level of education*




1. Upper secondary education includes post-secondary non-tertiary.

2. For Ireland, public institutions only. For Israel, private institutions are included for all levels except for pre-primary and upper secondary levels.

3. Lower secondary education comprises secondary schools for ages 11-16. Upper secondary education includes colleges for ages 16+ and adult learning. See Annex 3 for details.

4. Year of reference 2014.

5. Pre-primary and lower-secondary education included in primary.

6. Post-secondary non-tertiary education included in upper secondary and in all tertiary.

*Countries are ranked in descending order of the share of female teachers in primary education.*

**Source**: OECD/UIS/Eurostat (2017), Education at a Glance Database. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933558971

Why do so few men decide to teach at the lower levels of education? One explanation may be cultural – social perceptions of links between gender and vocations may influence men and women's career choices. This gender bias often arises very early, at home, when parents have aspirations for their children's professions based on gender stereotypes (Croft et al., 2014; Kane and Mertz, 2011; OECD, 2015).

From an economic point of view, the choice of future jobs is also influenced by young people's expectations for future earning potential. In every country with available data, male teachers earn less than their male tertiary-educated counterparts in other professions, while female teachers in primary and lower secondary education earn virtually the same as women with a tertiary degree in other fields (see Indicator D3; OECD, 2017). These differences in relative salaries for men and women are likely to make the teaching profession more appealing to women, especially at the lower levels of education.

The potential impact of this gender imbalance in the teaching profession on student achievement, student motivation and teacher retention is worthy of study, especially in countries where few men are attracted to the profession (Drudy, 2008; OECD, 2005; OECD, 2009). While there is little evidence that a teacher's gender has an impact on student performance (e.g. Antecol, Eren and Ozbeklik, 2012; Holmlund and Sund, 2008), some research has shown that female teachers' attitudes towards some school subjects, such as mathematics, can influence their female students' achievement (Beilock et al., 2009; OECD, 2014).

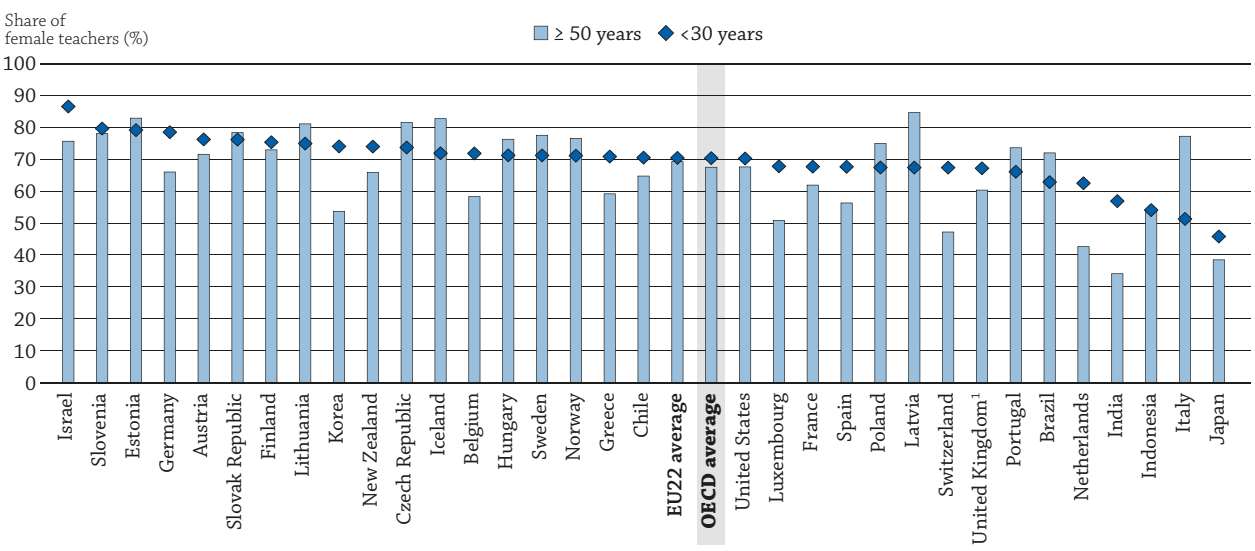
School leadership does not reflect the gender balance among teachers, however (OECD, 2014). While the proportion of male teachers in primary schools is relatively small in many countries, in comparison there is an over-representation of male principals. This suggests that male teachers tend to be promoted to principal positions more often than female teachers – which is surprising, given that most principals are former teachers and most teachers are female (see Indicator D6 in OECD, 2016).

### Share of female teachers by age group and level of education

In most countries, the share of women is higher among young teachers (below the age of 30) than among older teachers (above the age of 49). At the primary level, the difference between the two age groups is rather small, with 85% of women in the younger group, compared to 83% in the older one, on average across OECD countries (Table D5.3). At the lower secondary level, the difference is also small on average: women make up 70% of teachers under the age of 30, and 67% of those aged 50 and over. In more than half of the countries with available data, the share of women is higher among the younger group, and the difference exceeds 10 percentage points in nine countries (Figure D5.3). At the upper secondary level the difference is much larger: on average across OECD countries, 64% of teachers under the age of 30 are women, compared to 55% in the older group. The higher proportion of women among young teachers, together with the predominance of female tertiary graduates in the field of education (see Education at a Glance Database), may raise concerns about future gender imbalances at the primary to upper secondary levels, where women already dominate the profession.

However, at the tertiary level, where female teachers are a minority on average, the higher share of women among the younger generation of teachers suggests an increase in gender parity. On average across OECD countries, the share of female tertiary teachers is closer to 50% (i.e. an equal gender distribution) among the younger group – with 52% of female teachers aged under 30, and 39% aged 50 and above.

**Figure D5.3. Share of female teachers at lower secondary level, by age group (2015)**




1. Lower secondary education comprises secondary schools for ages 11-16. Upper secondary education includes colleges for ages 16+ and adult learning. See Annex 3 for details.

*Countries are ranked in descending order of the share of women among teachers under 30 at lower secondary level.*

**Source**: OECD/UIS/Eurostat (2017), Table D5.3. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933558990

These indicators are consistent with the gender distribution dynamics observed over the last decade, which point to a gradual increase in the gender gap in the teaching profession from the primary to upper secondary levels, but a decrease at the tertiary level. On average, for all OECD countries with data for both years, the rise in the share of female teachers between 2005 and 2015 has widened the gender gap by 3 percentage points for the primary and secondary levels combined, while it has narrowed it by 4 percentage points at the tertiary level.

## Definitions

**Instructional personnel** (teachers) includes two categories:

- **Teachers' aides and teaching/research assistants** include non-professional personnel or students who support teachers in providing instruction to students.
- **Teachers** refer to professional personnel directly involved in teaching to students. The classification includes classroom teachers, special-education teachers and other teachers who work with a whole class of students in a classroom, in small groups in a resource room, or in one-to-one teaching situations inside or outside a regular class. At the tertiary level, academic staff includes personnel whose primary assignment is instruction or research. Teaching staff also includes department chairpersons whose duties include some teaching, but excludes non-professional personnel who support teachers in providing instruction to students, such as teachers' aides and other paraprofessional personnel.

## Source

Data refer to the academic year 2014/15 and are based on the UOE data collection on education statistics administered by the OECD in 2015 (for details, see Annex 3 at www.oecd.org/education/education-at-a-glance-19991487.htm). Data on teachers by age for 2005 may have been revised in 2017 to ensure consistency with 2015 data.

**Note regarding data from Israel**

The statistical data for Israel are supplied by and are under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

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## Indicator D5 Tables

StatLink http://dx.doi.org/10.1787/888933562277

| | |
|---|---|
| **Table D5.1** | **Age distribution of teachers (2015 and 2015)** |
| **Table D5.2** | **Gender distribution of teachers (2015)** |
| **Table D5.3** | **Gender distribution of teachers (2005 and 2015)** |

Cut-off date for the data: 19 July 2017. Any updates on data can be found on line at http://dx.doi.org/10.1787/eag-data-en. More breakdowns can also be found at http://stats.oecd.org/, Education at a Glance Database.

## Table D5.1. Age distribution of teachers (2005 and 2015)

*Percentage of teachers in public and private institutions, by level of education and age group, based on head counts*

| | | Primary | | | Lower secondary | | | Upper secondary | | | Total primary to upper secondary | | | Total primary to upper secondary | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2015 | | | 2015 | | | 2015 | | | 2015 | | | 2005 | | |
| | | < 30 years | 30-49 years | >= 50 years | < 30 years | 30-49 years | >= 50 years | < 30 years | 30-49 years | >= 50 years | < 30 years | 30-49 years | >= 50 years | < 30 years | 30-49 years | >= 50 years |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) |
| OECD | Australia | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Austria | 14 | 49 | 37 | 10 | 43 | 48 | 6 | 51 | 43 | 10 | 47 | 43 | m | m | m |
| | Belgium[1] | 22 | 55 | 23 | 18 | 54 | 28 | 15 | 54 | 31 | 18 | 54 | 28 | 19[d] | 55[d] | 26[d] |
| | Canada[2] | 11[d] | 63[d] | 26[d] | x(1) | x(2) | x(3) | 11 | 62 | 26 | 11 | 62 | 26 | 14 | 60 | 26 |
| | Chile | 22 | 51 | 27 | 22 | 49 | 29 | 21 | 49 | 30 | 22 | 50 | 28 | 12 | 52 | 36 |
| | Czech Republic | 8 | 53 | 39 | 9 | 56 | 35 | 4 | 45 | 50 | 7 | 51 | 42 | m | m | m |
| | Denmark | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Estonia[3] | 10 | 50 | 41 | 7 | 40 | 53 | 8[d] | 41[d] | 51[d] | 9[d] | 44[d] | 47[d] | m | m | m |
| | Finland | 8 | 61 | 31 | 8 | 60 | 32 | 4 | 50 | 46 | 7 | 57 | 36 | 10 | 57 | 33 |
| | France | 8 | 66 | 26 | 9 | 65 | 27 | 5 | 58 | 36 | 7 | 63 | 30 | 13 | 56 | 31 |
| | Germany[4] | 8 | 51 | 41 | 7 | 45 | 48 | 5 | 52 | 42 | 7 | 48 | 45 | 4 | 44 | 52 |
| | Greece | 7 | 61 | 32 | 1 | 54 | 45 | 1 | 53 | 47 | 4 | 57 | 39 | 8 | 69 | 23 |
| | Hungary | 7 | 55 | 38 | 5 | 54 | 41 | 5 | 61 | 34 | 6 | 57 | 37 | 15 | 60 | 25 |
| | Iceland | 5 | 57 | 38 | 5 | 57 | 38 | m | m | m | m | m | m | m | m | m |
| | Ireland[5] | 18 | 59 | 22 | x(7) | x(8) | x(9) | 8[d] | 63[d] | 29[d] | 14 | 61 | 25 | 17 | 50 | 33 |
| | Israel[5] | 14 | 65 | 21 | 10 | 62 | 28 | 10 | 56 | 35 | 12 | 62 | 26 | 16 | 60 | 24 |
| | Italy | 1 | 39 | 60 | 1 | 40 | 60 | 0 | 29 | 71 | 1 | 36 | 64 | 0 | 44 | 56 |
| | Japan[1] | 17 | 52 | 31 | 16 | 54 | 31 | 11[d] | 52[d] | 37[d] | 15[d] | 52[d] | 33[d] | 10 | 68 | 23 |
| | Korea | 20 | 65 | 15 | 12 | 62 | 26 | 11 | 59 | 30 | 15 | 62 | 23 | 20 | 64 | 16 |
| | Latvia | 9 | 53 | 39 | 5 | 45 | 49 | 6 | 43 | 51 | 7 | 48 | 45 | m | m | m |
| | Luxembourg | 23 | 59 | 17 | 16 | 67 | 18 | 9 | 62 | 29 | 17 | 62 | 21 | 23 | 49 | 28 |
| | Mexico | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Netherlands | 16 | 48 | 37 | 15 | 44 | 41 | 10 | 40 | 50 | 14 | 45 | 41 | 16 | 49 | 35 |
| | New Zealand | 12 | 49 | 39 | 11 | 47 | 41 | 10 | 46 | 44 | 11 | 48 | 41 | 14 | 50 | 36 |
| | Norway | 13 | 55 | 31 | 13 | 55 | 31 | 7 | 49 | 44 | 12 | 53 | 35 | m | m | m |
| | Poland | 9 | 62 | 29 | 7 | 67 | 26 | 6 | 63 | 31 | 7 | 64 | 29 | 15 | 66 | 19 |
| | Portugal[1] | 1 | 62 | 37 | 1 | 66 | 33 | 2[d] | 60[d] | 38[d] | 1[d] | 63[d] | 36[d] | 16 | 61 | 22 |
| | Slovak Republic | 7 | 63 | 30 | 9 | 53 | 38 | 8 | 50 | 43 | 8 | 55 | 37 | 16 | 49 | 35 |
| | Slovenia | 6 | 63 | 32 | 4 | 59 | 37 | 3 | 59 | 38 | 4 | 60 | 35 | 12 | 68 | 20 |
| | Spain | 9 | 58 | 34 | 3 | 61 | 36 | 2 | 61 | 37 | 5 | 60 | 35 | 10 | 62 | 28 |
| | Sweden | 7 | 55 | 37 | 7 | 55 | 38 | 5 | 51 | 44 | 7 | 54 | 39 | m | m | m |
| | Switzerland[1] | 17 | 49 | 34 | 10 | 54 | 36 | 5[d] | 53[d] | 42[d] | 12[d] | 52[d] | 37[d] | 17 | 53 | 30 |
| | Turkey | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | United Kingdom[6] | 31 | 54 | 15 | 24 | 58 | 18 | 9 | 49 | 42 | 25 | 55 | 20 | 18 | 50 | 32 |
| | United States | 15 | 53 | 31 | 17 | 53 | 30 | 14 | 52 | 34 | 15 | 53 | 31 | 18 | 49 | 33 |
| | OECD average | 12 | 56 | 32 | 10 | 54 | 36 | 7 | 52 | 40 | 10 | 54 | 35 | 14 | 56 | 30 |
| | Average for countries with available data for both reference years | | | | | | | | | | 11 | 56 | 33 | 14 | 56 | 30 |
| | EU22 average | 11 | 56 | 33 | 8 | 54 | 37 | 6 | 52 | 42 | 9 | 54 | 37 | 13 | 56 | 31 |
| Partners | Argentina | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Brazil | 15 | 68 | 17 | 16 | 65 | 19 | 15 | 64 | 21 | 15 | 66 | 19 | m | m | m |
| | China | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Colombia | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Costa Rica | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | India | 22 | 63 | 14 | 19 | 62 | 20 | m | m | m | m | m | m | m | m | m |
| | Indonesia | 27 | 52 | 21 | 20 | 58 | 21 | 23 | 60 | 17 | 24 | 55 | 20 | m | m | m |
| | Lithuania | 4 | 54 | 42 | 6 | 48 | 46 | 5 | 43 | 52 | 5 | 48 | 47 | 13 | 58 | 28 |
| | Russian Federation | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | Saudi Arabia | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | South Africa | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| | G20 average | 15 | 57 | 28 | 13 | 57 | 30 | m | m | m | m | m | m | m | m | m |

1. Upper secondary includes post-secondary non-tertiary education (only for 2005 in Belgium, and only for 2015 in Japan).
2. Primary includes pre-primary education.
3. Upper secondary includes programmes from lower secondary and post-secondary non-tertiary education.
4. Year of reference 2006 instead of 2005.
5. For Ireland, public institutions only. For Israel, private institutions are included for all levels except for pre-primary and upper secondary levels.
6. Primary includes pre-primary state funded nurseries attached to primary schools. Lower secondary comprises secondary schools for ages 11-16. Upper secondary includes colleges for ages 16+ and adult learning. See Annex 3 for details.

**Source:** OECD/UIS/Eurostat (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933562220

D5

## Table D5.2. Gender distribution of teachers (2015)

*Share of female teachers in public and private institutions by level of education, based on head counts*

| | | Pre-primary education | Primary | Lower secondary | Upper secondary | | | Post-secondary non-tertiary | Tertiary | | | All levels of education |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | General programmes | Vocational programmes | All programmes | | Short-cycle tertiary | Bachelor's, master's, doctoral or equivalent level | All tertiary | |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) |
| OECD | Australia | m | m | m | m | m | m | m | m | 45 | m | m |
| | Austria | 99 | 92 | 72 | 63 | 50 | 55 | 69 | 52 | 41 | 43 | 66 |
| | Belgium | 97 | 82 | 63 | 63 | 62 | 63 | 46 | x(10) | x(10) | 49 | 70 |
| | Canada | x(2) | 74[d] | x(2) | x(6) | x(6) | 74 | m | 54 | 43 | 49 | m |
| | Chile | 99 | 81 | 68 | 58 | 51 | 56 | a | m | m | m | m |
| | Czech Republic | 100 | 94 | 78 | 59 | 59 | 59 | 42 | 59 | 40 | 40 | 76 |
| | Denmark | m | m | m | m | m | m | m | m | m | m | m |
| | Estonia[1] | 99 | 91 | 82 | 77 | 62[d] | 70[d] | x(5) | a | 49 | 49 | 82 |
| | Finland | 97 | 80 | 73 | 70 | 54 | 60 | 54 | a | 51 | 51 | 73 |
| | France | 92 | 82 | 64 | 55 | 52 | 54 | x(8) | 31[d] | 39 | 38[d] | 67 |
| | Germany | 96 | 87 | 66 | 56 | 48 | 53 | 59 | 22 | 38 | 38 | 66 |
| | Greece | 98 | 70 | 66 | 55 | 48 | 53 | 55 | a | m | m | m |
| | Hungary | 100 | 97 | 77 | 68 | 50 | 64 | 53 | 39 | 42 | 42 | 76 |
| | Iceland | 94 | 82 | 82 | m | m | m | m | m | m | m | m |
| | Ireland[2] | 99 | 87 | x(4) | 71[d] | a | 71[d] | m | x(10) | x(10) | 44 | m |
| | Israel[2] | 99 | 85 | 79 | x(6) | x(6) | 70 | m | m | m | m | m |
| | Italy | 99 | 96 | 78 | 71 | 62 | 66 | m | a | 37 | 37 | m |
| | Japan | 97 | 65 | 42 | x(6) | x(6) | 30 | x(6, 8, 9) | 48[d] | 21[d] | 27[d] | 48 |
| | Korea | 99 | 78 | 70 | 52 | 45 | 51 | a | 44 | 33 | 35 | 61 |
| | Latvia | 100 | 93 | 84 | 84 | 71 | 80 | 65 | 65 | 54 | 56 | 84 |
| | Luxembourg | 96 | 76 | 58 | 54 | 46 | 50 | m | 46 | 37 | 38 | m |
| | Mexico | 94 | 68 | 53 | x(6) | x(6) | 47 | a | m | m | m | m |
| | Netherlands | 87 | 86 | 52 | 52 | 52 | 52 | a | 44 | 44 | 44 | 66 |
| | New Zealand | 98 | 84 | 66 | 61 | 56 | 60 | 55 | 50 | 49 | 49 | 71 |
| | Norway[1] | 93 | 75 | 75 | 53 | 53 | 53 | 53 | 53 | 45 | 46 | 66 |
| | Poland | 98 | 85 | 74 | 70 | 62 | 65 | 68 | 73 | 44 | 44 | 75 |
| | Portugal | 99 | 80 | 75 | x(6) | x(6) | 65[d] | x(6, 10) | x(10) | x(10) | 44[d] | 71 |
| | Slovak Republic | 100 | 90 | 76 | 74 | 71 | 72 | 68 | 59 | 45 | 45 | 76 |
| | Slovenia | 97 | 97 | 79 | 70 | 64 | 67 | a | 48 | 39 | 41 | 76 |
| | Spain | 93 | 76 | 60 | 57 | 51 | 55 | a | 48 | 41 | 42 | 64 |
| | Sweden | 96 | 77 | 77 | x(6) | x(6) | 53 | 44 | 43 | 44 | 44 | 75 |
| | Switzerland | 97 | 82 | 54 | 46 | 42[d] | 43[d] | x(5) | a | 34 | 34 | 60 |
| | Turkey | m | m | m | m | m | m | a | 39 | 44 | 43 | m |
| | United Kingdom[3] | x(2) | 85[d] | 64[d] | x(3) | 59[d] | 59[d] | a | x(5, 10) | x(5, 10) | 44 | 68 |
| | United States | 94 | 87 | 67 | x(6) | x(6) | 57 | x(10) | x(10) | x(10) | 49[d] | 70 |
| | **OECD average** | 97 | 83 | 69 | 63 | 55 | 59 | m | m | 42 | 43 | 70 |
| | **EU22 average** | 97 | 86 | 71 | 65 | 57 | 61 | m | m | 43 | 44 | 72 |
| Partners | Argentina | m | m | m | m | m | m | m | m | m | m | m |
| | Brazil | 95 | 89 | 69 | 61 | 50 | 60 | 46 | 49 | 46 | 46 | 71 |
| | China | 97 | 63 | 53 | x(6) | x(6) | 51 | x(9) | 17 | 30[d] | 25[d] | 58 |
| | Colombia | 96 | 77 | 53 | x(6) | x(6) | 45 | 62 | 57 | 63 | 61 | 66 |
| | Costa Rica | 94 | 79 | 57 | x(6) | x(6) | 57 | a | m | m | m | m |
| | India | m | 49 | 44 | 43 | m | m | m | a | m | m | m |
| | Indonesia | 96 | 61 | 54 | 53 | 49 | 51 | a | 87 | 49 | 50 | 62 |
| | Lithuania | 99 | 97 | 82 | 82 | 70 | 79 | 67 | a | 56 | 56 | 81 |
| | Russian Federation | m | 99 | 83[d] | x(3) | x(7, 8) | x(3, 7, 8) | 60[d] | 77[d] | 51 | 59[d] | 77 |
| | Saudi Arabia | 100 | 52 | m | m | m | m | a | 29 | 40 | 40 | m |
| | South Africa[4] | 79 | 79 | x(4) | 56[d] | m | m | m | x(10) | x(10) | 48 | m |
| | **G20 average** | 95 | 76 | 62 | 56 | m | 54 | m | 45 | 40 | 42 | 65 |

**Note:** The data in "All levels of education" do not include early childhood educational development (ISCED 01).

1. Pre-primary includes early childhood education.

2. For Ireland, public institutions only for all levels except pre-primary, where data include independent private institutions only. For Israel, private institutions are included for all levels except for pre-primary and upper secondary levels.

3. Lower secondary comprises secondary schools for ages 11-16. Upper secondary includes colleges for ages 16+ and adult learning. See Annex 3 for details.

4. Year of reference 2014.

**Source:** OECD/UIS/Eurostat (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933562239

## Table D5.3. Gender distribution of teachers (2005 and 2015)

*Share of female teachers, by age group and level of education*

| | | Primary | | Lower secondary | | Upper secondary | | All tertiary | | Total primary to upper secondary | | All tertiary | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2015 | | 2015 | | 2015 | | 2015 | | 2015 | 2005 | 2015 | 2005 |
| | | < 30 years | >= 50 years | < 30 years | >= 50 years | < 30 years | >= 50 years | < 30 years | >= 50 years | All ages | All ages | All ages | All ages |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
| OECD | Australia | m | m | m | m | m | m | m | m | m | m | m | m |
| | Austria | 94 | 91 | 76 | 72 | 72 | 52 | 53 | 38 | 73 | m | 43 | m |
| | Belgium[1] | 84 | 77 | 72 | 58 | 70 | 57 | 65 | 44 | 70 | 65[d] | 49 | 41 |
| | Canada | 83[d] | 70[d] | x(1) | x(2) | 83 | 70 | 58 | 45 | 74 | 73 | 49 | 48 |
| | Chile | 80 | 80 | 71 | 65 | 60 | 49 | m | m | 71 | 70 | m | m |
| | Czech Republic[1] | 92 | 94 | 74 | 82 | 56 | 56 | 67 | 69 | 76 | 71[d] | 40 | 40 |
| | Denmark | m | m | m | m | m | m | m | m | m | m | m | m |
| | Estonia[2] | 84 | 91 | 79 | 83 | 62[d] | 72[d] | 52 | 46 | 83[d] | m | 49 | 48 |
| | Finland | 82 | 76 | 75 | 73 | 70 | 55 | 46 | 51 | 71 | 69 | 51 | 47 |
| | France[1] | 90 | 74 | 68 | 62 | 62 | 52 | 43[d] | 33[d] | 67 | 65 | 38[d] | 38 |
| | Germany[3] | 93 | 84 | 78 | 66 | 73 | 49 | 45 | 27 | 69 | 65 | 38 | 32 |
| | Greece | 86 | 55 | 71 | 59 | 68 | 44 | m | m | 64 | 59 | m | 36 |
| | Hungary | 95 | 97 | 71 | 76 | 63 | 59 | 52 | 37 | 79 | 79 | 42 | 39 |
| | Iceland | 73 | 83 | 72 | 83 | m | m | m | m | m | m | m | m |
| | Ireland[4] | 86 | 85 | x(5) | x(6) | 64[d] | 67[d] | m | m | 80 | 72 | 44 | 39 |
| | Israel[4] | 91 | 83 | 87 | 76 | 82 | 65 | m | m | 80 | 79 | m | m |
| | Italy | 96 | 96 | 51 | 77 | 63 | 65 | 56 | 33 | 80 | 78 | 37 | 34 |
| | Japan[5] | 65 | 68 | 46 | 38 | 40[d] | 22[d] | 47[d] | 23[d] | 49 | 46 | 27[d] | 18 |
| | Korea | 73 | 87 | 74 | 54 | 71 | 27 | 67 | 21 | 67 | 61 | 35 | 31 |
| | Latvia | 85 | 94 | 67 | 85 | 64 | 80 | 55 | 53 | 87 | m | 56 | m |
| | Luxembourg | 79 | 76 | 68 | 51 | 63 | 46 | 45 | 27 | 64 | 57 | 38 | m |
| | Mexico | m | m | m | m | m | m | m | m | 57 | 56 | m | m |
| | Netherlands | 89 | 82 | 62 | 43 | 64 | 45 | 51 | 34 | 69 | 66 | 44 | 35 |
| | New Zealand | 87 | 86 | 74 | 66 | 65 | 59 | 49 | 47 | 72 | 69 | 49 | 50 |
| | Norway | 71 | 77 | 71 | 77 | 60 | 47 | 41 | 43 | 69 | m | 46 | m |
| | Poland | 82 | 87 | 67 | 75 | 62 | 62 | m | m | 76 | 76 | 44 | 41 |
| | Portugal[5] | 85 | 78 | 66 | 74 | 54[d] | 66[d] | 48[d] | 38[d] | 74[d] | 74 | 44[d] | 42[d] |
| | Slovak Republic | 89 | 91 | 76 | 78 | 79 | 72 | 57 | 41 | 78 | 77 | 45 | 42 |
| | Slovenia | 95 | 98 | 80 | 78 | 70 | 60 | 38 | 36 | 81 | 78 | 41 | 33 |
| | Spain | 81 | 74 | 68 | 56 | 63 | 51 | 60 | 36 | 66 | 62 | 42 | 39 |
| | Sweden | 72 | 78 | 71 | 78 | 55 | 50 | 48 | 42 | 71 | m | 44 | m |
| | Switzerland[1] | 89 | 77 | 67 | 47 | 55[d] | 39[d] | 52 | 29 | 63[d] | 62 | 34 | 32 |
| | Turkey | m | m | m | m | m | m | 53 | 30 | m | m | 43 | 38 |
| | United Kingdom[6] | 82 | 88 | 67 | 60 | 57 | 55 | 49 | 40 | 72 | 68 | 44 | 40 |
| | United States[7] | 89 | 89 | 70 | 68 | 63 | 57 | m | m | 75 | 74 | 49[d] | 44[d] |
| | OECD average | 85 | 83 | 70 | 67 | 64 | 55 | 52 | 39 | 72 | 68 | 43 | 39 |
| | Average for countries with available data for both reference years | | | | | | | 52 | 35 | 71 | 68 | 43 | 39 |
| | EU22 average | 87 | 84 | 70 | 69 | 64 | 58 | 52 | 40 | 74 | 69 | 44 | 39 |
| Partners | Argentina | m | m | m | m | m | m | m | m | m | m | m | m |
| | Brazil | 84 | 92 | 63 | 72 | 56 | 61 | 50 | 41 | 74 | m | 46 | m |
| | China | m | m | m | m | m | m | m | m | 57 | m | 25 | m |
| | Colombia | m | m | m | m | m | m | m | m | 64 | m | 61 | m |
| | Costa Rica | m | m | m | m | m | m | m | m | 69 | m | m | m |
| | India | 60 | 44 | 57 | 34 | m | m | m | m | m | m | m | m |
| | Indonesia | 70 | 49 | 54 | 54 | 51 | 52 | 61 | 21 | 57 | m | 50 | m |
| | Lithuania | 90 | 97 | 75 | 81 | 63 | 78 | 54 | 51 | 85 | 84 | 56 | 53 |
| | Russian Federation[8] | m | m | m | m | m | m | 65[d] | 53[d] | 87 | 86 | 59[d] | 51[d] |
| | Saudi Arabia | m | m | m | m | m | m | m | m | m | m | 40 | m |
| | South Africa[9] | m | m | m | m | m | m | m | m | m | m | 48 | m |
| | G20 average | 80 | 76 | 66 | 58 | m | m | m | m | 68 | m | 42 | m |

1. Upper secondary includes post-secondary non-tertiary education (only for 2005 in Belgium and the Czech Republic, and for 2015 in Japan).
2. Upper secondary includes programmes from lower secondary and post-secondary non-tertiary education.
3. Year of reference 2006 instead of 2005.
4. For Ireland, public institutions only. For Israel, private institutions are included for all levels except for pre-primary and upper secondary levels.
5. Post-secondary non-tertiary education included in upper secondary and in all tertiary.
6. Primary includes pre-primary state funded nurseries attached to primary schools. Lower secondary comprises secondary schools for ages 11-16. Upper secondary includes colleges for ages 16+ and adult learning. See Annex 3 for details.
7. All tertiary includes post-secondary non-tertiary education.
8. All tertiary includes part of upper secondary vocational education.
9. Year of reference 2014 instead of 2015.

**Source:** OECD/UIS/Eurostat (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

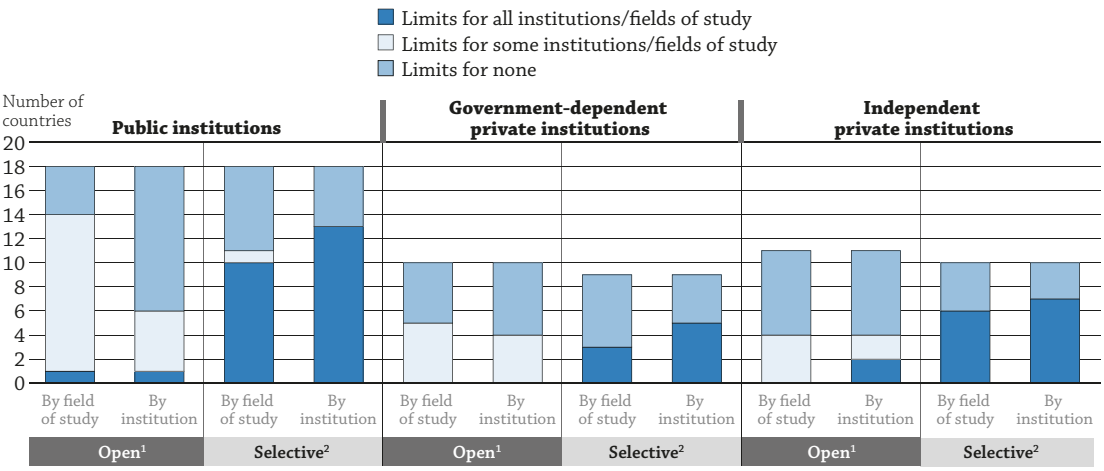
*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933562258

# WHAT ARE THE NATIONAL CRITERIA FOR STUDENTS TO APPLY TO AND ENTER INTO TERTIARY EDUCATION?

- More than half of countries and economies with available data have open admissions systems (meaning all applicants with the minimum qualification level required are admitted) to at least some public and/or private institutions. Access to certain fields of study and/or institutions can still be based on some selection criteria within these countries.
- National/central examinations, taken towards the end of upper secondary education, and entrance examinations administered by tertiary institutions, are the most widely used examinations/tests for entry into first-degree tertiary programmes.
- Factors other than the results of national/central examinations are also taken into account by selective institutions in most countries, although used to differing extents. The criteria most used for admission to public tertiary institutions include grade point averages, candidate interviews and work experience.

## Figure D6.1. Use of limits on number of students entering fields of study and institutions within countries with open and selective systems (2017)




**How to read this figure**

First-degree tertiary programmes within countries with open admissions systems can still be subject to limitations on the number of places available, either by field of study or institution. These limits may affect all fields of study or types of institutions, only some, or none at all. Similarly, for countries with selective systems, limits may be set with reference to field of study and/or institutions. As such, a country with a selective system may still report no limits (none) for one of these dimensions.

1. Open = open admissions systems exist.
2. Selective = only selective admissions systems exist.

**Note**: Of the 38 countries that participated in the survey, this figure does not include those for which the information is missing or not applicable.

**Source**: OECD (2017), Table D6.1. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933559009

## Context

An increasing number of students are enrolling in tertiary education across OECD countries. This expansion in enrolment reflects a variety of factors. First, an increasing number of students are achieving the minimum educational attainment required to enter tertiary institutions, which in turn increases the potential demand for tertiary education (see Indicator A2). At the same time, in the context of high unemployment rates and the economic crisis, the positive relationship between educational attainment levels and opportunities in the labour market may result in even greater demand: individuals with a secondary qualification wish to continue their studies, attracted by the high financial incentives to invest in education (see Indicators A6 and A7).

Tertiary enrolment is also affected by the number of places available within tertiary institutions. Given the rising demand for tertiary education, educational institutions and policy makers face new challenges to ensure enough student places. In the meantime, increased demand could result in increased competition between students wishing to enter tertiary education. In some countries decisions on the number of positions available in the different fields of tertiary education are more strongly linked to the needs of the labour market. This matching of skills of tertiary-educated people to meet labour market demand may have an impact on enrolments and the selectivity of the different fields of tertiary education.

The analysis of national criteria and admission systems for students to apply and enter first-degree tertiary programmes highlights differences across countries, specifically between open and selective admission systems.

## Other findings

- Funding systems for first-degree tertiary programmes are largely reliant on a mixture of central allocation (government funding) and market distribution (tuition fees). Only one-third of countries and economies with available data have public tertiary institutions that are financed only by central allocation of public funds.
- In about half of countries and economies with available information, the government sets the minimum academic performance requirements for entry into tertiary education (first-degree), on top of the usual qualification requirements. These performance requirements are most often based on secondary school certificate/report cards, including students' grades or results of upper secondary national/central examinations.
- In around two-thirds of the countries and economies with available data, national/central examinations, other standardised tests at upper secondary level and/or entrance examinations to tertiary institutions are compulsory requirements to enter at least some fields of study in public tertiary institutions.
- Students are required to apply directly to public tertiary institutions in nearly half the countries and economies, while roughly an equal number of countries use a centralised system or combination of both approaches for admission to public institutions. Applications to private tertiary institutions are less frequently processed through a centralised application system.
- Application and admission systems to first-degree tertiary programmes are similar for national and non-national/international students in about half the countries and economies.
- Almost all countries and economies have some government policies, measures or campaigns in place to support or increase participation in first-degree tertiary programmes. These are most often related to tuition fees (including free or capped tuition and decreased tuition for certain fields of study) and financial support to tertiary students (through student loans, scholarships and grants or through taxation policies).

## Analysis

### Organisation of the system: Open versus selective admission

Admission systems to first-degree tertiary programmes reflect the way tertiary education is structured and organised within countries. Public institutions are a common feature of tertiary education systems in nearly all countries and economies with available data. Private tertiary institutions are almost as widespread, with only Denmark and Greece not having government-dependent and independent private institutions for first-degree tertiary programmes. In around half the countries and economies with available data, government-dependent private institutions are also part of the tertiary education landscape (Table D6.1).

The admission into first-degree tertiary programmes of all applicants (students with the required attainment level to enrol into first-degree tertiary programmes), often referred to as open admissions or unselective enrolment (as opposed to selective systems), is fairly common in both public and private tertiary institutions. Among countries and economies with available information on public institutions, one in two has at least some institutions with open admissions systems. The prevalence of open admissions systems in private tertiary institutions is similar: half of all countries and economies with government-dependent private institutions and nearly half of those with independent private institutions report the use of open admission systems in at least some of these tertiary institutions. However, open admission systems may still include some limitations on the number of available positions in first-degree tertiary programmes (Figure D6.1).

Enrolment can be limited for specific fields of study and/or tertiary institutions, with entry decided on the basis of some selection criteria (Table D6.1). Among the 18 countries and economies with an open admission system for their public tertiary institutions, nearly all have some limitations in the admission system for at least some fields of study or some tertiary institutions. For example, in Germany, enrolment into some fields of study is limited through the use of quotas if the total number of applicants exceeds the number of places available across all higher education institutions. For these fields a selection procedure applies, which takes into account the grade obtained in the *Abitur* (the upper secondary school-leaving examination in Germany, also used as the higher education entrance qualification). In New Zealand, there is a fixed number of places for certain subjects, such as dentistry, aviation, veterinary science and medical degrees. Limits on the number of students entering into health/medical programmes are a feature of admission to public tertiary institutions in several other countries. Similar use of number limits is observed among government-dependent private and independent private institutions (Table D6.1).

One-half of countries operate with a selective system to enter first-degree tertiary programmes. In these countries limitations on enrolment into programmes are more often set with reference to tertiary institutions than to field of study. For example, tertiary institutions within the United States encompass a broad range of selectivity since admission decisions are made at the institution level. While many institutions are open admission, others are moderately or highly selective. This pattern is similar in public, government-dependent private and independent private institutions (Figure D6.1).

When the number of student positions available in public tertiary institutions is limited (either in selective or in open admission systems), the central/state government is usually responsible for setting these limits. However, universities may also be part of the decision-making process, and in about one-third of countries and economies with available information, these public institutions are the only responsible authority for taking decisions on these limits. In some countries, both the central government and the universities are responsible for the decision. This can result from the fact that the central authority decide for some fields of study, whereas tertiary institutions decide for others. This is the case in Italy, where each year the Ministry of Education defines the number of positions available nationally in medicine, dentistry and other health professions, in addition to veterinary medicine and architecture. In some countries the number of positions results from an agreement between central government and tertiary institutions. In Finland, for example, operational and qualitative targets for universities and universities of applied sciences, as well as the required resources, are determined in performance agreements negotiated between each higher education institution and the ministry.

In private institutions, central or state governments are less often the responsible authorities for these decisions, and when they are, this is usually in co-operation with universities. Nevertheless, central or state governments are the only responsible authorities in a few countries (in Israel and Slovenia for government-dependent private institutions; in Turkey for independent private institutions) (Table D6.1).

Countries use different mechanisms to distribute student places to tertiary institutions. In public institutions, central authorities usually play an important role. In 11 countries, a system of central allocation is applied, through which the government determines priorities and allocates the student places it funds accordingly (where priorities might be for particular disciplines, higher education providers, or types of students). In a further group of 13 countries, the distribution of student places is the result of a combined decision-making process between the government and tertiary institutions themselves (a mixed-model approach). Four countries use a different approach, which could imply an agreement between the central government and tertiary institutions (for example, in Finland and Japan). Only 7 countries use a demand-driven system (market distribution), in which higher education providers decide on disciplines, courses, types of students, fees, number of places available, etc., and students decide whether they would like to purchase the courses at the fees charged (Table D6.1).

### *Qualification and performance requirements to enter first-degree tertiary programmes*

In all countries, access to first-degree tertiary programmes (in public or private institutions) requires a minimum qualification level, which is usually an upper secondary qualification. Governments may also require some minimum academic performance from upper secondary graduates to access first-degree tertiary programmes (Table D6.3).

About half of the countries and economies with available information (19 out of 38) also have minimum academic performance requirements set by the government for students to enter at least some first-degree tertiary programmes or institutions. These minimum requirements are more often set for specific fields of study rather than specific tertiary institutions. In 14 countries, minimum performance criteria are defined for some or all fields of studies, whereas only 8 have minimum performance criteria for some or all tertiary institutions. In Colombia, Greece and Portugal, these performance requirements relate to both fields of studies and tertiary institutions (Table D6.3).

Countries may use a range of different tools to assess students' minimum performance, but a secondary school certificate/report card (including student's grades) and results of upper secondary national/central examinations are the most frequently used. For example, in Hungary students are required to gather a minimum number of points (280 from a total of 500) in their school-leaving exam to be admitted into first-degree tertiary programmes. In some countries, both a secondary school certificate/report card and results of upper secondary national/central examinations are used, including Hungary, Lithuania, the Netherlands, New Zealand, Poland, Portugal and Turkey (Table D6.3).

### *Examinations and tests used by public tertiary institutions to determine access to first-degree programmes*

Countries may use various examinations and/or tests in the admission process to first-degree tertiary programmes. On top of entrance examinations administered to applicants to tertiary institutions, examinations or tests administered to upper secondary students (either national/central or non-national/central examinations that may be either standardised or non-standardised tests) can also be used in the admission system.

There is wide variation among countries in the combination of different types of examinations available and on the way these are used as criteria for access to tertiary education. Among all countries with available information, only Latvia has all these types of examinations/tests (though they are not all used to determine access to tertiary education). In contrast, in countries such as Brazil, Colombia, Denmark, Hungary, Italy, Portugal and Spain, only national/central examinations exist (and are used in some of these countries to determine access to tertiary education).

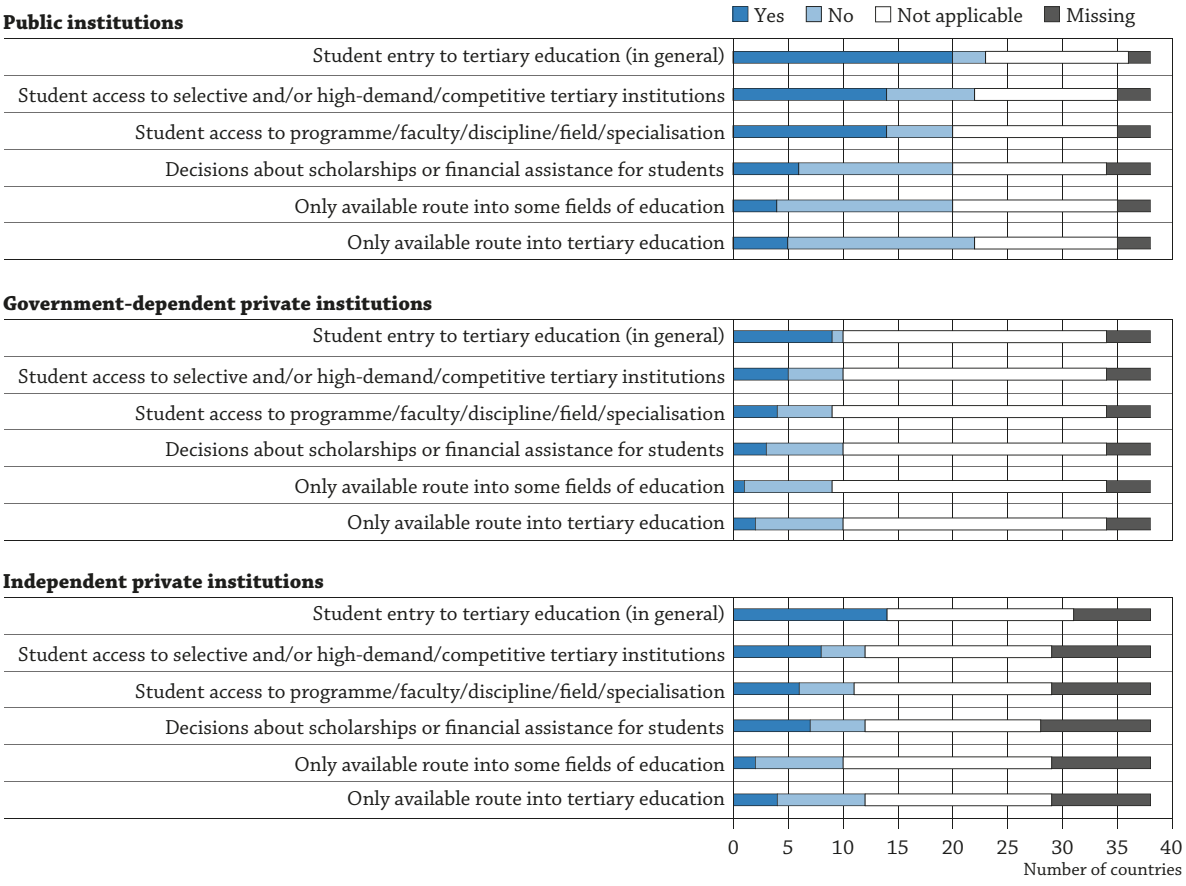
National/central examinations (standardised tests that have a formal consequence for students) at the end of upper secondary level are administered in most countries with available data (27 countries). While the majority of students in these countries take these examinations, the proportion varies significantly: from less than three-quarters of upper secondary students in the Czech Republic and Hungary to all students in more than one-third of countries (10 countries). Other types of examinations administered in secondary schools (non-national/central standardised or non-standardised examinations) are less frequent. They are administered in two-fifths of the countries with available information, and fewer countries are able to report the proportion of students taking these examinations. Entrance examinations to first-degree tertiary programmes are also administered in about half of the countries with available data (21 countries), although very few countries are able to report the proportion of students tested. Among these countries, either a small proportion of students (10% or less in five countries) or most of them (more than 75% in four countries) took these tests (Table D6.5). The proportion of students taking these tests may partly result from the fact that they are part of the compulsory requirements for admission to first-degree tertiary programmes.

The completion of national/central examinations towards the end of upper secondary education and/or entrance examinations to tertiary education (not administered by upper secondary schools) can be compulsory requirements to access first-degree programmes. In nearly two-thirds of countries, the completion of national/central examinations is compulsory to enter most or all fields of study in public tertiary institutions, whereas entrance examinations to public tertiary institutions are compulsory for at least some fields of study in one-third of countries. In some countries, such as Estonia, Latvia, Lithuania, Luxembourg, Norway, the Russian Federation, Slovenia and Switzerland, both types of tests are compulsory requirements to enter some fields of study (Table D6.5).

For public institutions, these two types of tests are of particular relevance for students wishing to access selective and/or high-demand/competitive tertiary institutions or specific fields or specialisations. Institutions in six countries use these results for making decisions about scholarships and other financial assistance (Figure D6.2).

## Figure D6.2. Purposes and uses of national/central examinations as admission criteria to tertiary institutions (2017)

*National/central examinations refer to examinations for students at the end of upper secondary level*




**Source**: OECD (2017), Tables D6.7a, D6.7b and D6.7c. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933559028

### Additional factors used for admission to first-degree tertiary programmes

Admission criteria for first-degree tertiary programmes extend beyond the results of students in national/central examinations towards the end of the upper secondary level or entrance examinations to tertiary institutions. For entry into public tertiary institutions, grade point averages from secondary school are used in one-third of countries (with either open or selective admission systems), with a further quarter of countries reporting that institutions have autonomy over their use. However, this factor was considered to be of moderate or high importance

in determining the success of a student's application in over half of these countries. More than two-thirds of countries indicate that candidate interviews are used, either across public tertiary institutions (one-quarter of countries) or at the discretion of public tertiary institutions (more than one-third of countries) (Table D6.8).

Other factors also used by public institutions in a significant number of countries to determine access to first-degree programmes include past work experience (21 countries), past service or volunteer work (15 countries), candidate recommendations (11 countries) and written application letters (16 countries). However, public tertiary institutions in most of the countries using these tools decide autonomously on their use (Table D6.8).

In most countries, public institutions use a combination of some of these factors rather than one in isolation. An exception is Hungary, which uses only one criterion (grade point average from secondary schools) in addition to the successful completion of national examinations to determine access to public tertiary institutions (Table D6.8).

Grade point averages from secondary school, interviews and past work experience are also the most frequently used criteria in the admission process to first-degree programmes in private tertiary institutions (government-dependent and independent private institutions). However, in contrast to the system of admissions to public tertiary institutions, the use of these criteria is largely at the discretion of institutions.

### *Student application/admission process to tertiary institutions*

Application and admission processes to first-degree tertiary programmes in public institutions vary significantly between countries. Students are required to apply directly to public tertiary institutions in close to half of countries with available information, while in around one-quarter of countries students apply through a centralised system. Another quarter of countries combine a centralised application system with direct applications to public tertiary institutions (Figure D6.3).

**Figure D6.3. Application process for entry into first-degree tertiary programmes – use of centralised application systems (2017)**




**Source**: OECD (2017), Table D6.4. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933559047

When a centralised system is used (either as the only application system or in combination with direct application to tertiary institutions), the number of preferences that students can specify may be limited, as can the number of offers they receive following their applications. The number of preferences an applicant can specify when applying to public institutions cannot exceed 2 in Brazil and 3 in Canada, the Netherlands, Slovenia and the Russian Federation; but it is possible to make 20 or more preferences for applications in France, Sweden and Turkey. In Greece, Italy and New Zealand there is no maximum number of applications. Regardless of the maximum number of applications, applicants receive just one offer in most countries with a centralised system. Nevertheless, there is no limit on the number of offers made in Australia, Canada, Italy and Korea, which use combined systems of centralised and direct applications to tertiary institutions.

Applications to private tertiary institutions are less likely to be processed through a centralised application system. Nonetheless, a central system for applications is the only (or main) way to apply to private institutions in a few countries (Chile, Finland and Sweden for government-dependent private institutions, and Hungary and Turkey

for independent private institutions). Applications are made directly to private institutions in nearly one-half of the countries with government-dependent private institutions, and in most countries with independent private institutions. However, a centralised applications system is combined with a direct application process in one-third of countries with these types of tertiary institutions (Table D6.4).

### *Application and admission process for non-national/international students*



Around half the countries and economies have similar systems of application and admission to first-degree tertiary programmes for non-national/international students as for national students (either citizens or permanent residents in the country). In one-quarter of countries, international applicants from only some countries undergo a similar process as for national applicants. This is usually the case for applicants from countries of the European Union (EU) applying to tertiary institutions in another EU country; but also the case, for example, in Norway for national students and international students from the other Nordic countries. In one-quarter of countries, the application and admission process for non-national or international students is different to that for national students.

Even where application systems are similar for non-national/international and national students, additional or specific admission criteria are used for international students. These relate to their educational background and skills as well as to other factors. The most frequent criteria used for these students are an accredited home country school certificate (in three-quarters of the countries), followed by the successful completion of their home country school systems and language proficiency (in two-thirds of the countries) and holding an international qualification (in half the countries). Less than one-third of countries with available information report the use of completion of aptitude tests (9 countries), health requirements (9 countries) or proof of sufficient funding (8 countries). In countries with a specific application and admission system for non-national students, accredited home country school certificates and language proficiency are the only two criteria required for all countries according to available information (Table D6.9).

### *Policies that affect participation in first-degree tertiary programmes*

Criteria and admission systems to tertiary education directly affect tertiary enrolment. However, other aspects of government policies may create incentives for people to apply to tertiary programmes. These may aim at increasing participation levels generally, target unrepresented groups of students specifically or promote applications to certain disciplines.

Almost all countries and economies with available data have some government policies, measures or campaigns in place to support or increase participation in first-degree tertiary programmes. Exceptions are the Czech Republic and Iceland, who reported the absence of such initiatives. Among the remaining 36 countries and economies with available information, two-thirds had policies in place in relation to tuition fees: free tuition (in 13 countries), tuition subsidies (11 countries), capped tuition fees (9 countries), decreased tuition for certain fields of study (5 countries) and charging administrative fees only (4 countries). Other forms of government-funded financial support to tertiary students were reported by 35 countries. Among the most prevalent were the availability of student loans (reported by 30 countries), the use of scholarships and grants (27 countries), as well as tax-based provisions (19 countries reported the use of tax allowances, reductions or credits for students) (Table D6.2).

More general campaigns to increase participation in tertiary education are also widespread; all countries with available information except the Czech Republic, Greece and Iceland have such schemes. These aim to promote certain subjects or occupations (25 countries), improve equality of participation among genders (14 countries) or attract students to tertiary education more generally (15 countries). Alternative routes into tertiary education were also available in around half the countries, through the opening up of applications to tertiary education to those who have completed post-school education and training or vocational education and training, as well as recognition of past work experience as an alternative to more traditional entry requirements (Table D6.2).

## Definitions

A **standardised examination or test** refers to a test that is administered and scored under uniform conditions across different schools so that student scores are directly comparable between schools. In some cases, it also refers to multiple choice or fixed answer questions as this makes it easy and possible to score the test uniformly. However, with rubrics and calibration of test examiners (persons who manually score open-ended responses), one can also find standardised tests that go beyond multiple choice and fixed answers.

**National/central examinations** are standardised tests that have a formal consequence for students, such as their eligibility to progress to a higher level of education or to complete an officially-recognised degree. They assess a major portion of what students are expected to know or be able to do in a given subject. Examinations differ from **assessments** in terms of their purpose. National assessments are mandatory, but unlike examinations they do not have an effect on students' progression or certification.

**Other (non-national/central) standardised examinations** are standardised tests that are administered and scored under uniform conditions across different schools at the state/territorial/provincial/regional or local level so that student scores are directly comparable.

**Entrance examinations** are examinations not administered by upper secondary schools that are typically used to determine, or help to determine, access to tertiary programmes. These examinations can be devised and/or graded at the school level (i.e. by individual tertiary institutions or a consortium of tertiary institutions), or by private companies.

**First-degree tertiary programmes** refer to first-degree bachelor's programmes/applied higher education programmes and first-degree master's programmes as defined in ISCED 2011.

**Public tertiary institution:** An institution is classified as public if it is: 1) controlled and managed directly by a public education authority or agency of the country where it is located; or 2) controlled and managed by a government agency directly or by a governing body (council, committee etc.), most of whose members are either appointed by a public authority of the country where it is located or elected by public franchise.

A **government-dependent private tertiary institution** is one that either receives at least 50% of its core funding from government agencies or one whose teaching personnel are paid by a government agency – either directly or through government

An **independent private tertiary institution** is one that receives less than 50% of its core funding from government agencies and whose teaching personnel are not paid by a government agency.

## Methodology

This indicator is based on a survey on national criteria and admission systems for students to apply and enter first-degree tertiary programmes focusing on formal requirements, rather than actual practice. As practices can vary considerably within individual schools and tertiary institutions, this indicator cannot capture the diverse array of practices that exist.

Please see Annex 3 for more information and for country-specific notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

## Source

Data are from the 2016 OECD-INES NESLI survey on national criteria and admission systems for students to apply and enter first-degree tertiary programmes and refer to the school year 2016/17.

**Note regarding data from Israel**

The statistical data for Israel are supplied by and are under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

## Indicator D6 Tables

StatLink http://dx.doi.org/10.1787/888933562505

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| | Table D6.3 | Minimum qualification and academic performance requirements for entry into tertiary education (government perspective) (2017) |
| | Table D6.4 | Application process for entry into first-degree tertiary programmes (2017) |
| | Table D6.5 | Use of examinations/tests to determine entry/admission into first-degree tertiary programmes (2017) |

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| | | |
|---|---|---|
| WEB | Table D6.6 | Responsible authorities in charge of examinations systems for entry/admission into first-degree tertiary programmes (2017) |
| WEB | Table D6.7a | Types of examinations used as admission criteria to tertiary public institutions (2017) |
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Cut-off date for the data: 19 July 2017. Any updates on data can be found on line at http://dx.doi.org/10.1787/eag-data-en.

## Table D6.1. [1/2] Organisation of the admission system to first-degree tertiary programmes (2017)

| | | Public institutions | | | | | | Government-dependent private institutions | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Fixed limited number of student positions (selective institutions) | | | | | | Fixed limited number of student positions (selective institutions) | | | | |
| | | Existence of open admissions | By field of study | By tertiary institutions | Authority responsible for setting the number of student positions | Model used to distribute student places | Model used to fund degree programmes | Existence of open admissions | By field of study | By tertiary institutions | Authority responsible for setting the number of student positions | Model used to distribute student places | Model used to fund degree programmes |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
| OECD | **Countries** | | | | | | | | | | | | |
| | **Australia** | No | No | No | Central, universities | Mixed model | Mixed | No | No | No | Central, universities | Market (demand) | Mixed |
| | **Austria** | Yes | Some | No | Central, universities | Central allocation | Central allocation | No | All | No | Other | Central allocation | Mixed |
| | **Canada** | Yes | Some | Some | Universities | Market (demand) | Mixed | Yes | No | Some | Universities | Market (demand) | Mixed |
| | **Chile** | No | No | All | Universities | Market (demand) | Mixed | No | No | All | Universities | Market (demand) | Mixed |
| | **Czech Republic** | No | No | All | Universities | Mixed model | Central allocation | No | No | All | Other | Mixed model | Mixed |
| | **Denmark** | Yes | Some | No | State, universities | Central allocation | Central allocation | a | a | a | a | a | a |
| | **Estonia** | No | All | All | Universities | Mixed model | Mixed | a | a | a | a | a | a |
| | **Finland** | No | All | All | Central, universities | Other | Central allocation | No | All | All | Central, universities | Other | Central allocation |
| | **France** | Yes | Some | Some | Central, regional, universities, other | Central allocation | Mixed | Yes | No | Some | Central, regional, universities, other | Mixed model | Mixed |
| | **Germany** | Yes | Some | No | State, universities | Mixed model | Central allocation | Yes | Some | No | Universities | Mixed model | Mixed |
| | **Greece** | No | No | All | Central, universities, other | Central allocation | Central allocation | a | a | a | a | a | a |
| | **Hungary** | No | All | All | a | Mixed model | Mixed | No | No | No | a | Mixed model | Mixed |
| | **Iceland** | Yes | Some | No | Universities | Market (demand) | Central allocation | Yes | Some | Some | Universities | Market (demand) | Mixed |
| | **Israel** | No | All | No | Central | Central allocation | Mixed | No | No | All | Central | Central allocation | Mixed |
| | **Italy** | Yes | Some | No | Central, universities | Central allocation | Mixed | a | a | a | a | a | a |
| | **Japan**[1] | No | All | All | Universities | Other | Mixed | a | a | a | a | a | a |
| | **Korea** | No | All | All | Central, regional, universities | Mixed model | Mixed | a | a | a | a | a | a |
| | **Latvia** | a | a | a | Universities | Mixed model | Mixed | a | a | a | a | a | a |
| | **Luxembourg** | Yes | Some | No | Universities | Market (demand) | Mixed | a | a | a | a | a | a |
| | **Netherlands** | Yes | Some | No | Universities | Other | Central allocation | a | a | a | a | a | a |
| | **New Zealand** | Yes | Some | No | Central, universities, other | Mixed model | Mixed | Yes | Some | No | Central, other | Mixed model | Mixed |
| | **Norway** | Yes | Some | Some | Central, universities | Mixed model | Central allocation | Yes | Some | Some | Central, universities | Mixed model | Mixed |
| | **Poland** | No | All | No | Central | Central allocation | Central allocation | a | a | a | a | a | a |
| | **Portugal** | No | All | All | Central, universities | Central allocation | Mixed | a | a | a | a | a | a |
| | **Slovak Republic** | Yes | No | Some | Universities | Mixed model | Mixed | m | m | m | m | m | m |
| | **Slovenia** | No | All | No | Central | Central allocation | Central allocation | No | All | No | Central | Central allocation | Central allocation |
| | **Spain** | No | Some | No | Universities | Market (demand) | Other | a | a | a | a | a | a |
| | **Sweden** | No | No | All | Central, universities | Mixed model | Central allocation | No | No | All | Central, universities | Mixed model | Central allocation |
| | **Switzerland** | Yes | Some | No | Central, state | Other | Mixed | Yes | No | No | m | a | Mixed |
| | **Turkey** | No | No | All | Central | Central allocation | Mixed | a | a | a | a | a | a |
| | **United Kingdom**[2] | a | a | a | a | a | a | Yes | Some | No | Universities | Market (demand) | Mixed |
| | **United States** | Yes | Some | Some | Universities | Market (demand) | Mixed | a | a | a | a | a | a |
| | **Economies** | | | | | | | | | | | | |
| | **Flemish Com. (Belgium)** | Yes | No | No | a | m | Mixed | Yes | No | No | a | m | Mixed |
| | **French Com. (Belgium)** | Yes | No | No | a | a | Mixed | Yes | No | No | a | a | Mixed |
| Partners | **Brazil** | No | No | All | Universities | Central allocation | Central allocation | a | a | a | a | a | a |
| | **Colombia** | Yes | No | All | Universities | Market (demand) | m | m | m | m | m | m | m |
| | **Lithuania** | No | All | All | Central | Mixed model | Mixed | a | a | a | a | a | a |
| | **Russian Federation** | Yes | All | No | Central | Mixed model | Mixed | a | a | a | a | a | a |

**Note:** See *Definitions* and *Methodology* sections for more information.

1. For national universities, the fixed number of students is decided by each national university and is submitted as a part of its mid-term plan to be approved by the Minister of Education, Culture, Sports, Science and Technology.

2. Information relates to the four separate systems across the United Kingdom. In each case, "yes" indicates the policy is in place in at least one of the four countries.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933562296

D6

## Table D6.1. [2/2] Organisation of the admission system to first-degree tertiary programmes (2017)

| | | Independent private institutions | | | | | |
|---|---|---|---|---|---|---|---|
| | | Existence of open admissions | Fixed limited number of student positions (selective institutions) | | | Model used to distribute student places | Model used to fund degree programmes |
| | | | By field of study | By tertiary institutions | Authority responsible for setting the number of student positions | | |
| | | (13) | (14) | (15) | (16) | (17) | (18) |
| OECD | **Countries** | | | | | | |
| | Australia | No | No | No | Universities | Market (demand) | Market distribution |
| | Austria | No | All | No | Universities | Market (demand) | Market distribution |
| | Canada | m | a | a | Universities | Market (demand) | a |
| | Chile | Yes | No | All | Universities | Market (demand) | Mixed |
| | Czech Republic | No | No | All | Universities | Mixed model | Market distribution |
| | Denmark | a | a | a | a | a | a |
| | Estonia | m | m | m | m | m | m |
| | Finland | a | a | a | a | a | a |
| | France | m | No | All | Other | Market (demand) | Mixed |
| | Germany | m | m | m | m | Market (demand) | Market distribution |
| | Greece | a | a | a | a | a | a |
| | Hungary | No | All | All | a | Mixed model | Mixed |
| | Iceland | a | a | a | a | a | a |
| | Israel | Yes | No | No | a | Market (demand) | Market distribution |
| | Italy | Yes | Some | No | Central, universities | Central allocation | Mixed |
| | Japan[1] | No | All | All | Universities | Market (demand) | Mixed |
| | Korea | No | All | All | Central, regional, universities | Mixed model | Mixed |
| | Latvia | a | a | a | Universities | Market (demand) | Market distribution |
| | Luxembourg | Yes | No | Some | Universities | Market (demand) | Mixed |
| | Netherlands | m | m | m | m | a | m |
| | New Zealand | Yes | Some | No | Central, other | Mixed model | Mixed |
| | Norway | Yes | No | No | m | Market (demand) | Market distribution |
| | Poland | Yes | a | a | a | a | m |
| | Portugal | No | All | All | Central, universities | Market (demand) | Market distribution |
| | Slovak Republic | Yes | No | No | a | a | Market distribution |
| | Slovenia | No | No | No | Universities | Market (demand) | Other |
| | Spain | Yes | Some | No | Universities | Market (demand) | Market distribution |
| | Sweden | a | a | a | a | a | a |
| | Switzerland | Yes | No | No | m | a | a |
| | Turkey | No | No | All | Central | Central allocation | Other |
| | United Kingdom[2] | m | m | m | m | m | m |
| | United States | Yes | Some | Some | Universities | Market (demand) | Mixed |
| | **Economies** | | | | | | |
| | Flemish Com. (Belgium) | m | m | m | a | m | m |
| | French Com. (Belgium) | a | a | a | a | a | a |
| Partners | Brazil | m | No | Most | Universities | Market (demand) | m |
| | Colombia | Yes | No | All | Universities | Market (demand) | Market distribution |
| | Lithuania | No | All | All | Universities, other | Market (demand) | Market distribution |
| | Russian Federation | m | No | No | a | Market (demand) | Market distribution |

**Note:** See *Definitions* and *Methodology* sections for more information.

1. For national universities, the fixed number of students is decided by each national university and is submitted as a part of its mid-term plan to be approved by the Minister of Education, Culture, Sports, Science and Technology.

2. Information relates to the four separate systems across the United Kingdom. In each case, "yes" indicates the policy is in place in at least one of the four countries.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933562296

## Table D6.3. Minimum qualification and academic performance requirements for entry into tertiary education (government perspective) (2017)

| | | Typical minimum ISCED qualification required for entry into first-degree tertiary programmes (type of upper secondary programme) | Minimum academic performance requirement used to determine entry into tertiary education (set by government) | | Tools used to assess the minimum academic performance requirements | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | By field of study | By tertiary institutions | Secondary school certificate/report card which includes students' grades | Upper secondary national/ central examination | Other (non-central) standardised examinations administered to multiple students in multiple secondary schools | Other (non-national) non-standardised examinations administered to students in secondary schools | First-degree tertiary programme entrance examinations (not administered by upper secondary schools) | Other | Course prerequisites to enter a specific field of study |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
| OECD | **Countries** | | | | | | | | | | |
| | Australia | General | No | No | a | a | a | a | a | a | Some fields |
| | Austria[1] | a | No | No | a | a | a | a | a | a | No |
| | Canada | All | No | No | a | a | a | a | a | a | Some fields |
| | Chile | All | No | Yes (for some) | Yes | No | No | No | Yes | Yes | No |
| | Czech Republic[2] | General or vocational | No | No | a | a | a | a | a | a | No |
| | Denmark | General | No | No | a | a | a | a | a | a | Most fields |
| | Estonia | All | No | No | a | a | a | a | a | a | a |
| | Finland | All | No | No | a | a | a | a | a | a | a |
| | France | All | No | Yes (for some) | Yes | No | No | No | Yes | No | Some fields |
| | Germany | All | No | No | a | a | a | a | a | a | No |
| | Greece | All | Yes (for all) | Yes (for all) | No | Yes | a | a | a | No | All fields |
| | Hungary | All | Yes (for all) | No | Yes | Yes | No | No | No | No | All fields |
| | Iceland | All | No | No | a | a | a | a | a | a | m |
| | Israel | Vocational | No | Yes (for most) | a | Yes | a | a | Yes | Yes | Some fields |
| | Italy | All | No | No | a | a | a | a | a | a | No |
| | Japan | All | No | No | a | a | a | a | a | a | No |
| | Korea | All | No | No | a | a | a | a | a | a | Some fields |
| | Latvia | All | Yes (for all) | No | No | Yes | No | No | No | Yes | Some fields |
| | Luxembourg | All | No | No | a | a | a | a | a | a | m |
| | Netherlands | All | Yes (for all) | No | Yes | Yes | No | No | Yes | No | Some fields |
| | New Zealand | General | Yes (for most) | No | Yes | Yes | No | No | No | No | Some fields |
| | Norway | General | Yes (for some) | No | a | Yes | No | No | Yes | No | Some fields |
| | Poland | General or vocational | Yes (for all) | No | Yes | Yes | No | No | No | No | No |
| | Portugal | All | Yes (for all) | Yes (for all) | Yes | Yes | No | No | No | No | Some fields |
| | Slovak Republic | All | Yes (for all) | No | Yes | m | m | m | m | No | No |
| | Slovenia | General or vocational | Yes (for all) | No | No | Yes | No | No | No | Yes | Some fields |
| | Spain | General | No | Yes (for all) | m | Yes | m | m | m | No | All fields |
| | Sweden | All | No | No | a | a | a | a | a | a | All fields |
| | Switzerland | All | No | No | a | a | a | a | a | a | Some fields |
| | Turkey | All | Yes (for all) | No | Yes | Yes | No | Yes | No | m | No |
| | United Kingdom[3] | General | No | Yes (for all) | No | Yes | No | No | No | No | Some fields |
| | United States | All | No | No | a | a | a | a | a | a | No |
| | **Economies** | | | | | | | | | | |
| | Flemish Com. (Belgium) | All | No | No | a | a | a | a | a | a | a |
| | French Com. (Belgium) | All | No | No | a | a | a | a | a | a | No |
| Partners | Brazil | All | No | No | a | a | a | a | a | a | No |
| | Colombia | All | Yes (for all) | Yes (for some) | No | Yes | No | No | No | No | a |
| | Lithuania[4] | All | Yes (for all) | No | Yes | Yes | Yes | No | Yes | No | Some fields |
| | Russian Federation | All | Yes (for all) | No | No | Yes | a | No | No | Yes | No |

**Note:** Typical minimum qualification for entry into first-degree tertiary programmes refers to the ISCED level required, but not all qualifications at this level allow entry into these first-degree tertiary programmes. See *Definitions* and *Methodology* sections for more information.

1. Minimum qualification requirement is the Upper Secondary School Leaving Certificate (called MATURA); additional entry routes exist.
2. Some vocational programmes at upper secondary level allow access to tertiary education, whereas others do not.
3. Information relates to the four separate systems across the United Kingdom. In each case, "yes" indicates the policy is in place in at least one of the four countries.
4. In Lithuania, it is possible to enter tertiary programmes with a qualification level from upper secondary (all programmes) or post-secondary non-tertiary (vocational programmes).

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933562334

## Table D6.4. Application process for entry into first-degree tertiary programmes (2017)

| | | Public institutions | | | Government-dependent private institutions | | | Independent private institutions | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | In the case of centralised systems | | | In the case of centralised systems | | | In the case of centralised systems | |
| | | Type of admission/ application system | Maximum number of preferences an applicant can specify | Maximum number of offers an applicant can receive | Type of admission/ application system | Maximum number of preferences an applicant can specify | Maximum number of offers an applicant can receive | Type of admission/ application system | Maximum number of preferences an applicant can specify | Maximum number of offers an applicant can receive |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| OECD | **Countries** | | | | | | | | | |
| | Australia | Centralised and direct to institutions | m | No limit | Centralised and direct to institutions | m | No limit | Centralised and direct to institutions | m | No limit |
| | Austria | Direct to institutions | a | a | Direct to institutions | a | a | Direct to institutions | a | a |
| | Canada | Centralised and direct to institutions | 3 | No limit | Centralised and direct to institutions | 3 | No limit | Centralised and direct to institutions | m | m |
| | Chile | Centralised | 10 | 1 | Centralised | 10 | 1 | Centralised and direct to institutions | 10 | 1 |
| | Czech Republic | Direct to institutions | a | a | Direct to institutions | a | a | Direct to institutions | a | a |
| | Denmark | Centralised | 8 | 1 | a | a | a | a | a | a |
| | Estonia | Centralised | 2 per institution | a | a | a | a | m | m | m |
| | Finland | Centralised | 6 | 1 | Centralised | 6 | 1 | a | a | a |
| | France | Centralised and direct to institutions | 24 | 1 | Centralised and direct to institutions | 24 | 1 | Direct to institutions | a | a |
| | Germany | Centralised and direct to institutions | 6 | 1 | Direct to institutions | m | m | Direct to institutions | m | m |
| | Greece | Centralised | No limit | 1 | a | a | a | a | a | a |
| | Hungary | Centralised | m | m | Centralised and direct to institutions | 6 | 1 | Centralised | 6 | 1 |
| | Iceland | Direct to institutions | a | a | Direct to institutions | a | a | a | a | a |
| | Israel | Direct to institutions | a | a | Direct to institutions | a | a | Direct to institutions | a | a |
| | Italy | Centralised and direct to institutions | No limit | No limit | a | a | a | Centralised and direct to institutions | No limit | No limit |
| | Japan | Direct to institutions | a | a | a | a | a | Direct to institutions | a | a |
| | Korea | Centralised and direct to institutions | 9 | No limit | a | a | a | Centralised and direct to institutions | 9 | No limit |
| | Latvia | Centralised and direct to institutions | 10 | a | a | a | a | Centralised and direct to institutions | 10 | a |
| | Luxembourg | Direct to institutions | m | m | a | a | a | Direct to institutions | m | m |
| | Netherlands | Centralised | 3 | 3 | a | a | a | m | m | m |
| | New Zealand | Direct to institutions | No limit | No limit | Direct to institutions | No limit | No limit | Direct to institutions | No limit | No limit |
| | Norway | Centralised and direct to institutions | 10 | 1 | Centralised and direct to institutions | 10 | 1 | Direct to institutions | m | m |
| | Poland | Direct to institutions | a | a | a | a | a | Direct to institutions | a | a |
| | Portugal | Centralised and direct to institutions | 6 | 1 | a | a | a | Direct to institutions | No limit | No limit |
| | Slovak Republic | Direct to institutions | m | No limit | a | m | a | Direct to institutions | m | No limit |
| | Slovenia | Centralised | 3 | 1 | Centralised and direct to institutions | 3 | 1 | Direct to institutions | a | a |
| | Spain | Direct to institutions | a | a | a | a | a | Direct to institutions | a | a |
| | Sweden | Centralised | 20 | 1 | Centralised | 20 | 1 | a | a | a |
| | Switzerland | Direct to institutions | a | a | Direct to institutions | a | a | Direct to institutions | a | a |
| | Turkey | Centralised | 24 | 1 | a | a | a | Centralised | 24 | 1 |
| | United Kingdom[1] | a | a | a | Centralised and direct to institutions | 5 | 5 | m | m | m |
| | United States | Direct to institutions | a | a | a | a | a | Direct to institutions | a | a |
| | **Economies** | | | | | | | | | |
| | Flemish Com. (Belgium) | Direct to institutions | a | a | Direct to institutions | a | a | m | a | a |
| | French Com. (Belgium) | Direct to institutions | a | a | Direct to institutions | a | a | a | a | a |
| Partners | Brazil | Centralised and direct to institutions | 2 | a | a | a | a | Centralised and direct to institutions | m | No limit |
| | Colombia | Direct to institutions | a | a | m | m | m | Direct to institutions | a | a |
| | Lithuania | Centralised and direct to institutions | 9 | 1 | a | a | a | Centralised and direct to institutions | 9 | 1 |
| | Russian Federation | Direct to institutions | 3 | 3 | a | a | a | Direct to institutions | No limit | No limit |

**Note:** See *Definitions* and *Methodology* sections for more information.

1. Information relates to the four separate systems across the United Kingdom. In each case, "yes" indicates the policy is in place in at least one of the four countries.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933562353

## Table D6.5. [1/2] Use of examinations/tests to determine entry/admission into first-degree tertiary programmes (2017)

| | | National/central examinations (for students at the end of upper secondary level) | | | | | Non-national/central standardised examinations (for students at the end of upper secondary level) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Compulsory to gain access to | | | | | Compulsory to gain access to | | |
| | | Existence | Proportion of upper secondary students taking these examinations | Public tertiary institutions | Government-dependent private tertiary institutions | Independent private tertiary institutions | Existence | Proportion of upper secondary students taking these examinations | Public tertiary institutions | Government-dependent private tertiary institutions | Independent private tertiary institutions |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
| OECD | **Countries** | | | | | | | | | | |
| | **Australia** | No | a | a | a | a | Yes | 76-99% | No | No | No |
| | **Austria** | No | a | a | a | a | No | a | a | a | a |
| | **Canada** | No | a | a | a | a | Yes | m | Yes, some | Yes, some | m |
| | **Chile** | m | m | m | m | m | m | m | m | m | m |
| | **Czech Republic** | Yes | 51-75% | Yes, most | Yes, most | Yes, most | Yes | m | No | No | No |
| | **Denmark** | Yes | 100% | Yes, most | a | a | No | a | a | a | a |
| | **Estonia** | Yes | 100% | Yes, most | a | m | No | a | a | a | a |
| | **Finland** | Yes | m | No | No | a | Yes | a | No | m | a |
| | **France** | Yes | 76-99% | Yes, most | Yes, most | Yes, most | No | a | a | a | a |
| | **Germany** | No | a | a | a | a | Yes | 76-99% | Yes, all | m | m |
| | **Greece** | Yes | 76-99% | Yes, all | a | a | No | a | a | a | a |
| | **Hungary** | Yes | 51-75% | Yes, all | Yes, all | Yes, all | No | a | No | No | No |
| | **Iceland** | No | a | a | a | a | No | a | a | a | a |
| | **Israel** | Yes | 76-99% | Yes, all | Yes, all | Yes, all | No | a | No | No | No |
| | **Italy** | Yes | 100% | Yes, all | a | Yes, all | No | a | a | a | a |
| | **Japan** | No | a | a | a | a | No | a | a | a | a |
| | **Korea** | No | a | a | a | a | No | a | a | a | a |
| | **Latvia** | Yes | 76-99% | Yes, all | a | Yes, all | Yes | 10% or less | No | a | m |
| | **Luxembourg** | Yes | 100% | Yes, some | a | No | No | a | a | a | a |
| | **Netherlands** | Yes | 100% | Yes, all | a | m | No | a | a | a | m |
| | **New Zealand** | Yes | 76-99% | No | No | No | Yes | 10% or less | No | No | No |
| | **Norway** | Yes | 100% | Yes, most | Yes, most | Yes, most | No | m | No | m | No |
| | **Poland** | Yes | 76-99% | Yes, all | a | Yes, all | No | a | a | a | a |
| | **Portugal** | Yes | 76-99% | Yes, all | a | Yes, all | No | a | a | a | a |
| | **Slovak Republic** | m | m | m | m | m | m | m | m | m | m |
| | **Slovenia** | Yes | 100% | Yes, all | Yes, all | Yes, all | No | a | a | a | a |
| | **Spain** | Yes | 76-99% | Yes, all | a | Yes, all | No | a | a | a | a |
| | **Sweden** | No | a | a | a | a | No | a | a | a | a |
| | **Switzerland** | Yes | 76-99% | Yes, all | Yes, all | Yes, all | No | a | a | a | a |
| | **Turkey** | Yes | 76-99% | Yes, all | No | Yes, all | No | a | a | a | a |
| | **United Kingdom**[1] | Yes | 76-99% | a | No | No | No | a | a | a | a |
| | **United States** | Yes | 76-99% | No | a | No | Yes | m | No | a | No |
| | **Economies** | | | | | | | | | | |
| | **Flemish Com. (Belgium)** | No | a | a | a | a | No | a | a | a | a |
| | **French Com. (Belgium)** | Yes | 100% | a | a | a | No | a | a | a | a |
| Partners | **Brazil** | Yes | 76-99% | m | a | m | No | m | m | a | m |
| | **Colombia** | Yes | 100% | Yes, all | m | Yes, all | No | a | a | m | a |
| | **Lithuania** | Yes | 100% | Yes, all | a | Yes, all | No | a | Yes, some | a | a |
| | **Russian Federation** | Yes | 76-99% | Yes, all | a | m | Yes | 100% | Yes, all | a | m |

**Note:** See *Definitions* and *Methodology* sections for more information.

1. Information relates to the four separate systems across the United Kingdom. In each case, "yes" indicates the policy is in place in at least one of the four countries.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933562372

## Table D6.5. [2/2] Use of examinations/tests to determine entry/admission into first-degree tertiary programmes (2017)

| | | Non-national/central non-standardised examinations (for students at the end of upper secondary level) | | | | | First-degree tertiary programme entrance examinations (not administered by upper secondary schools) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Compulsory to gain access to | | | | | Compulsory to gain access to | | |
| | | Existence | Proportion of upper secondary students taking these examinations | Public tertiary institutions | Government-dependent private tertiary institutions | Independent private tertiary institutions | Existence | Proportion of upper secondary students taking these examinations | Public tertiary institutions | Government-dependent private tertiary institutions | Independent private tertiary institutions |
| | | (11) | (12) | (13) | (14) | (15) | (16) | (17) | (18) | (19) | (20) |
| OECD | **Countries** | | | | | | | | | | |
| | **Australia** | Yes | m | No | m | m | m | m | Yes, some | m | m |
| | **Austria** | No | a | a | a | a | Yes | m | a | a | a |
| | **Canada** | Yes | a | Yes, some | Yes, some | m | No | a | a | a | a |
| | **Chile** | m | m | m | m | m | Yes | 76-99% | Yes, all | Yes, all | No |
| | **Czech Republic** | Yes | | a | a | a | No | a | a | a | a |
| | **Denmark** | No | a | a | a | a | No | a | a | a | a |
| | **Estonia** | Yes | 100% | a | a | a | Yes | 76-99% | Yes, most | a | m |
| | **Finland** | No | a | a | a | a | Yes | m | m | m | a |
| | **France** | No | a | a | a | a | Yes | 10% or less | No | m | m |
| | **Germany** | Yes | 100% | Yes, all | Yes, all | m | Yes | a | a | a | a |
| | **Greece** | Yes | 100% | m | a | a | a | a | a | a | a |
| | **Hungary** | No | a | a | a | a | No | a | a | a | a |
| | **Iceland** | No | a | a | a | a | Yes | a | No | No | a |
| | **Israel** | No | a | No | No | No | Yes | m | No | No | No |
| | **Italy** | No | a | a | a | a | No | a | a | a | a |
| | **Japan** | No | a | a | a | a | Yes | 76-99% | No | a | No |
| | **Korea** | No | a | a | a | a | Yes | 76-99% | Yes, most | a | Yes, most |
| | **Latvia** | Yes | m | No | a | m | Yes | m | Yes, some | a | Yes, some |
| | **Luxembourg** | No | a | a | a | a | Yes | a | Yes, some | a | No |
| | **Netherlands** | Yes | 100% | Yes, all | a | m | No | a | No | a | No |
| | **New Zealand** | Yes | 10% or less | No | No | No | No | a | a | a | a |
| | **Norway** | Yes | 100% | No | No | No | Yes | 10% or less | Yes, some | Yes, some | Yes, some |
| | **Poland** | No | a | a | a | a | Yes | m | m | a | m |
| | **Portugal** | No | a | a | a | a | No | a | a | a | a |
| | **Slovak Republic** | m | m | m | m | m | No | a | a | m | m |
| | **Slovenia** | No | a | a | a | a | Yes | 10% or less | Yes, some | Yes, some | Yes, some |
| | **Spain** | No | a | a | a | a | No | a | a | a | a |
| | **Sweden** | No | a | a | a | a | Yes | m | No | No | a |
| | **Switzerland** | No | a | a | a | a | Yes | 10% or less | Yes, all | Yes, all | Yes, all |
| | **Turkey** | Yes | m | No | No | No | No | a | a | a | a |
| | **United Kingdom**[1] | No | a | a | a | a | No | a | a | a | No |
| | **United States** | No | a | a | a | a | Yes | m | No | a | No |
| | **Economies** | | | | | | | | | | |
| | **Flemish Com. (Belgium)** | No | a | a | a | a | Yes | m | Yes, some | Yes, some | m |
| | **French Com. (Belgium)** | Yes | 100% | a | a | a | Yes | 10% or less | Yes, some | Yes, some | a |
| Partners | **Brazil** | No | m | m | a | m | No | m | No | a | No |
| | **Colombia** | No | a | a | m | a | No | a | a | m | a |
| | **Lithuania** | No | a | a | a | a | Yes | 11-25% | Yes, some | a | No |
| | **Russian Federation** | No | a | a | a | a | No | a | Yes, some | a | m |

**Note:** See *Definitions* and *Methodology* sections for more information.

1. Information relates to the four separate systems across the United Kingdom. In each case, "yes" indicates the policy is in place in at least one of the four countries.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933562372

Annex

# 1

# Characteristics of Education Systems

**All tables in Annex 1 are available on line at:**

StatLink http://dx.doi.org/10.1787/888933562619

**Note regarding data from Israel**

The statistical data for Israel are supplied by and are under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

## Table X1.1a. [1/2] Typical graduation ages, by level of education (2015)

*The typical age refers to the age of the students at the beginning of the school year; students will generally be one year older than the age indicated when they graduate at the end of the school year. The typical age is used for the gross graduation rate calculation.*

| | | Upper secondary level | | Post-secondary non-tertiary level | | Tertiary level | |
|---|---|---|---|---|---|---|---|
| | | | | | | Short-cycle tertiary (ISCED 5) | |
| | | General programmes | Vocational programmes | General programmes | Vocational programmes | General programmes | Vocational programmes |
| | | (1) | (2) | (3) | (4) | (5) | (6) |
| OECD | Australia | 17-18 | 17-30 | a | 18-37 | 19-24 | 18-30 |
| OECD | Austria | 17-18 | 16-18 | a | 19-32 | a | 18-19 |
| OECD | Belgium | 18-18 | 18-19 | a | 20-22 | a | 21-24 |
| OECD | Canada | 17-18 | 18-32 | m | m | a | 20-24 |
| OECD | Chile | 17-17 | 17-17 | a | a | a | 21-26 |
| OECD | Czech Republic | 19-20 | 19-20 | 20-22 | 19-20 | a | 21-23 |
| OECD | Denmark | 18-19 | 19-24 | a | 23-35 | a | 20-25 |
| OECD | Estonia | 18-18 | 18-19 | a | 19-25 | a | a |
| OECD | Finland | 19-19 | 19-23 | a | 32-46 | a | a |
| OECD | France | 17-18 | 16-19 | m | m | m | m |
| OECD | Germany | 18-20 | 19-21 | 20-23 | 21-24 | a | 22-26 |
| OECD | Greece | 18-18 | 18-19 | a | 20-22 | a | a |
| OECD | Hungary | 17-19 | 17-19 | a | 19-20 | a | 20-22 |
| OECD | Iceland | m | m | m | m | m | m |
| OECD | Ireland | 18-19 | 18-24 | a | 20-26 | 20-35 | 20-35 |
| OECD | Israel | 17-17 | 17-17 | m | m | m | m |
| OECD | Italy | 18-19 | 18-19 | a | 20-20 | a | 21-23 |
| OECD | Japan | 17-17 | 17-17 | 18-18 | 18-18 | 19-19 | 19-19 |
| OECD | Korea | 18-18 | 18-18 | a | a | a | 20-22 |
| OECD | Latvia | 18-18 | 20-21 | a | 20-23 | a | 21-25 |
| OECD | Luxembourg | 18-18 | | a | 23-29 | a | 21-23 |
| OECD | Mexico | 17-18 | 17-18 | a | a | a | 20-24 |
| OECD | Netherlands | 17-18 | 18-21 | a | 22-32 | a | 21-27 |
| OECD | New Zealand | 17-18 | 16-29 | 17-26 | 17-26 | 18-24 | 18-24 |
| OECD | Norway | 18-18 | 18-22 | a | 19-29 | 21-31 | 20-28 |
| OECD | Poland | 19-19 | 19-20 | a | 21-25 | a | 22-23 |
| OECD | Portugal | 17-17 | 17-19 | a | 19-21 | a | a |
| OECD | Slovak Republic | 17-19 | 18-19 | a | 19-21 | a | 20-22 |
| OECD | Slovenia | 18-18 | 18-20 | a | a | a | 21-27 |
| OECD | Spain | 17-17 | 17-21 | a | 23-38 | a | 20-23 |
| OECD | Sweden | 18-19 | 18-19 | a | 19-31 | 21-28 | 22-29 |
| OECD | Switzerland | 19-20 | 19-21 | 20-23 | a | a | 25-41 |
| OECD | Turkey | 17-17 | 17-17 | a | a | a | 19-22 |
| OECD | United Kingdom | 16-19 | 16-19 | a | a | 19-30 | 19-29 |
| OECD | United States | 17-17 | 17-17 | 19-22 | 19-22 | 20-21 | 20-21 |
| Partners | Argentina[1] | 17-18 | 17-20 | a | a | 20-22 | 20-24 |
| Partners | Brazil | 16-17 | 16-18 | a | 18-26 | 19-27 | 19-26 |
| Partners | China | 17-18 | 17-20 | a | a | 20-22 | 20-24 |
| Partners | Colombia | 17-18 | 17-20 | m | m | 20-22 | 20-24 |
| Partners | Costa Rica | 16-17 | 17-18 | a | a | 18-20 | m |
| Partners | India | 17-17 | 18-18 | a | 21-21 | a | a |
| Partners | Indonesia | 17-19 | 17-19 | a | a | a | 21-29 |
| Partners | Lithuania | 18-18 | 19-20 | a | 20-25 | a | a |
| Partners | Russian Federation | 17-18 | 17-18 | a | 18-19 | a | 19-20 |
| Partners | Saudi Arabia[1] | 17-18 | 17-20 | a | a | 20-22 | 20-24 |
| Partners | South Africa[1] | 17-18 | 17-20 | a | a | 20-22 | 20-24 |

1. Year of reference 2014.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

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## Table X1.1a. [2/2] Typical graduation ages, by level of education (2015)

*The typical age refers to the age of the students at the beginning of the school year; students will generally be one year older than the age indicated when they graduate at the end of the school year. The typical age is used for the gross graduation rate calculation.*

| | | Tertiary level | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Bachelor's or equivalent (ISCED 6) | | | Master's or equivalent (ISCED 7) | | | |
| | | First degree (3-4 years) | Long first degree (more than 4 years) | Second or further degree, (following a Bachelor's or equivalent programme) | Long first degree (at least 5 years) | Second or further degree, (following a Bachelor's or equivalent programme) | Second or further degree, (following a Master's or equivalent programme) | Doctoral or equivalent (ISCED 8) |
| | | (7) | (8) | (9) | (10) | (11) | (12) | (13) |
| OECD | Australia | 20-23 | 22-25 | 22-33 | 23-27 | 22-30 | 29-44 | 26-35 |
| OECD | Austria | 21-24 | a | a | 24-28 | 23-28 | a | 27-32 |
| OECD | Belgium | 21-23 | a | 22-24 | a | 22-24 | 23-27 | 27-31 |
| OECD | Canada | 22-24 | 23-25 | 23-28 | 24-27 | 24-29 | 26-29 | 29-34 |
| OECD | Chile | 23-28 | 23-30 | 23-26 | 24-26 | 26-36 | 30-39 | 30-37 |
| OECD | Czech Republic | 22-24 | a | 24-26 | 25-26 | 24-26 | 26-28 | 29-33 |
| OECD | Denmark | 22-25 | a | 32-44 | 25-27 | 25-28 | a | 27-39 |
| OECD | Estonia | 21-23 | a | a | 24-25 | 24-28 | a | 28-34 |
| OECD | Finland | 23-26 | a | a | 26-28 | 25-30 | 32-38 | 30-37 |
| OECD | France | m | m | m | m | m | m | 26-30 |
| OECD | Germany | 22-26 | a | 24-30 | 24-27 | 24-27 | 24-27 | 28-32 |
| OECD | Greece | m | m | m | a | m | m | m |
| OECD | Hungary | 21-24 | a | 27-41 | 23-26 | 23-26 | a | 27-33 |
| OECD | Iceland | m | m | m | m | m | m | m |
| OECD | Ireland | 21-23 | 23-25 | 23-28 | 22-27 | x(10) | x(10) | 27-32 |
| OECD | Israel | 25-29 | m | 27-35 | m | 28-36 | m | 30-34 |
| OECD | Italy | 22-24 | m | m | 24-27 | 24-27 | m | 28-31 |
| OECD | Japan | 21-21 | m | m | 23-23 | 23-23 | m | 26-26 |
| OECD | Korea | 23-25 | x(7) | a | a | 25-31 | a | 29-38 |
| OECD | Latvia | 22-24 | 23-25 | 24-33 | 25-29 | 24-27 | a | 28-36 |
| OECD | Luxembourg | 22-24 | a | a | a | 23-26 | 26-31 | 28-31 |
| OECD | Mexico | 20-24 | x(7) | a | a | 23-26 | a | 24-28 |
| OECD | Netherlands | 21-23 | a | a | a | 23-26 | 24-27 | 28-31 |
| OECD | New Zealand | 20-23 | 22-24 | 21-27 | a | 23-30 | a | 27-35 |
| OECD | Norway | 21-25 | a | 26-29 | 23-27 | 23-29 | 24-28 | 29-37 |
| OECD | Poland | 22-23 | a | 25-34 | 24-25 | 24-25 | a | 29-32 |
| OECD | Portugal | 21-23 | a | 30-37 | 23-24 | 23-26 | a | 27-37 |
| OECD | Slovak Republic | 21-22 | a | a | 25-26 | 20-24 | 23-31 | 24-30 |
| OECD | Slovenia | 21-23 | a | a | 25-27 | 24-27 | a | 27-33 |
| OECD | Spain | 21-23 | a | a | 22-24 | 22-26 | 29-32 | 28-34 |
| OECD | Sweden | 22-26 | a | a | 24-28 | 24-30 | a | 28-34 |
| OECD | Switzerland | 23-26 | a | 31-41 | 30-39 | 24-29 | 25-32 | 29-33 |
| OECD | Turkey | 22-24 | a | a | 23-25 | 25-31 | a | 30-35 |
| OECD | United Kingdom | 20-22 | 22-24 | x(8) | x(11) | 23-28 | x(11) | 25-32 |
| OECD | United States | 21-23 | a | a | a | 24-31 | 24-31 | 26-32 |
| Partners | Argentina[1] | 20-23 | 21-24 | a | 22-25 | 22-25 | a | 25-29 |
| Partners | Brazil | 21-27 | a | m | a | 25-31 | a | 29-37 |
| Partners | China | 20-23 | 21-24 | a | 22-25 | 22-25 | a | 25-29 |
| Partners | Colombia | 20-23 | 21-24 | m | 22-25 | 22-25 | m | 25-29 |
| Partners | Costa Rica | 18-21 | 22-23 | a | 24-26 | a | a | 27-30 |
| Partners | India | 21-22 | 23-23 | 22-22 | 22-23 | 22-23 | 23-24 | 24-28 |
| Partners | Indonesia | | 23-32 | a | a | 26-36 | a | 32-45 |
| Partners | Lithuania | 21-22 | a | 23-28 | 23-24 | 24-25 | 26-31 | 28-32 |
| Partners | Russian Federation | 21-23 | a | a | 22-25 | 22-25 | a | 25-27 |
| Partners | Saudi Arabia[1] | 20-23 | 21-24 | a | 22-25 | 22-25 | a | 25-29 |
| Partners | South Africa[1] | 20-23 | 21-24 | a | 22-25 | 22-25 | a | 25-29 |

1. Year of reference 2014.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933562524

## Table X1.1b. Typical age of entry by level of education (2015)

| | | Short-cycle tertiary (ISCED 5) | Bachelor's or equivalent (ISCED 6) | Master's or equivalent (ISCED 7) | Doctoral or equivalent (ISCED 8) |
|---|---|---|---|---|---|
| | | (1) | (2) | (3) | (4) |
| OECD | Australia | m | 18-20 | 21-26 | 22-30 |
| OECD | Austria | 17-18 | 19-21 | 19-24 | 25-29 |
| OECD | Belgium | 18-20 | 18-19 | 21-22 | 23-27 |
| OECD | Canada | m | m | m | m |
| OECD | Chile | 18-21 | 18-19 | 18-30 | 25-31 |
| OECD | Czech Republic | 19-21 | 19-20 | 22-24 | 24-26 |
| OECD | Denmark | 19-26 | 20-22 | 23-25 | 25-29 |
| OECD | Estonia | a | 19-22 | 22-26 | 24-28 |
| OECD | Finland | a | 19-20 | 22-30 | 26-32 |
| OECD | France | m | m | m | 23-26 |
| OECD | Germany | 21-25 | 18-20 | 19-24 | 25-29 |
| OECD | Greece | m | m | m | m |
| OECD | Hungary | 19-21 | 19-20 | 19-23 | 24-27 |
| OECD | Iceland | 20-33 | 20-22 | 23-32 | 24-32 |
| OECD | Ireland | 18-24 | 18-19 | 21-26 | 22-27 |
| OECD | Israel | 18-24 | 23-24 | 27-28 | 29-30 |
| OECD | Italy | 20-21 | 20-20 | 20-24 | 25-28 |
| OECD | Japan | 18-18 | 18-18 | 22-23 | 24-28 |
| OECD | Korea | 18-18 | 18-18 | 22-27 | 23-32 |
| OECD | Latvia | 19-23 | 19-22 | 22-25 | 24-27 |
| OECD | Luxembourg | 19-22 | 19-22 | 22-24 | 24-27 |
| OECD | Mexico | 18-19 | 18-19 | 23-29 | 25-33 |
| OECD | Netherlands | 20-24 | 18-20 | 22-24 | 23-27 |
| OECD | New Zealand | 17-25 | 18-20 | 21-28 | 22-30 |
| OECD | Norway | 20-24 | 19-20 | 19-24 | 25-31 |
| OECD | Poland | 19-28 | 19-20 | 19-24 | 24-26 |
| OECD | Portugal | 18-25 | 18-19 | 18-23 | 23-33 |
| OECD | Slovak Republic | 19-20 | 19-20 | 22-23 | 24-25 |
| OECD | Slovenia | 19-20 | 19-19 | 22-24 | 24-28 |
| OECD | Spain | 18-20 | 18-18 | 18-23 | 23-30 |
| OECD | Sweden | 19-25 | 19-21 | 19-24 | 24-30 |
| OECD | Switzerland | 18-25 | 19-23 | 22-25 | 25-28 |
| OECD | Turkey | 18-19 | 18-19 | 23-25 | 26-27 |
| OECD | United Kingdom | 17-29 | 18-21 | 21-30 | 22-28 |
| OECD | United States | 18-22 | 18-19 | 22-28 | 22-27 |
| Partners | Argentina[1] | 18-19 | 18-20 | 21-24 | 23-26 |
| Partners | Brazil | m | m | m | m |
| Partners | China | 18-19 | 18-20 | 21-24 | 23-26 |
| Partners | Colombia | 18-19 | 18-20 | 21-24 | 23-26 |
| Partners | Costa Rica | 17-18 | 17-18 | m | m |
| Partners | India | a | 18-18 | 21-22 | 23-23 |
| Partners | Indonesia | 20-23 | 20-26 | 24-32 | 27-33 |
| Partners | Lithuania | a | 19-19 | 23-25 | 25-25 |
| Partners | Russian Federation | 17-18 | 17-20 | 21-24 | 23-26 |
| Partners | Saudi Arabia | 18-19 | 18-20 | 21-24 | 23-26 |
| Partners | South Africa[1] | 18-19 | 18-20 | 21-24 | 23-26 |

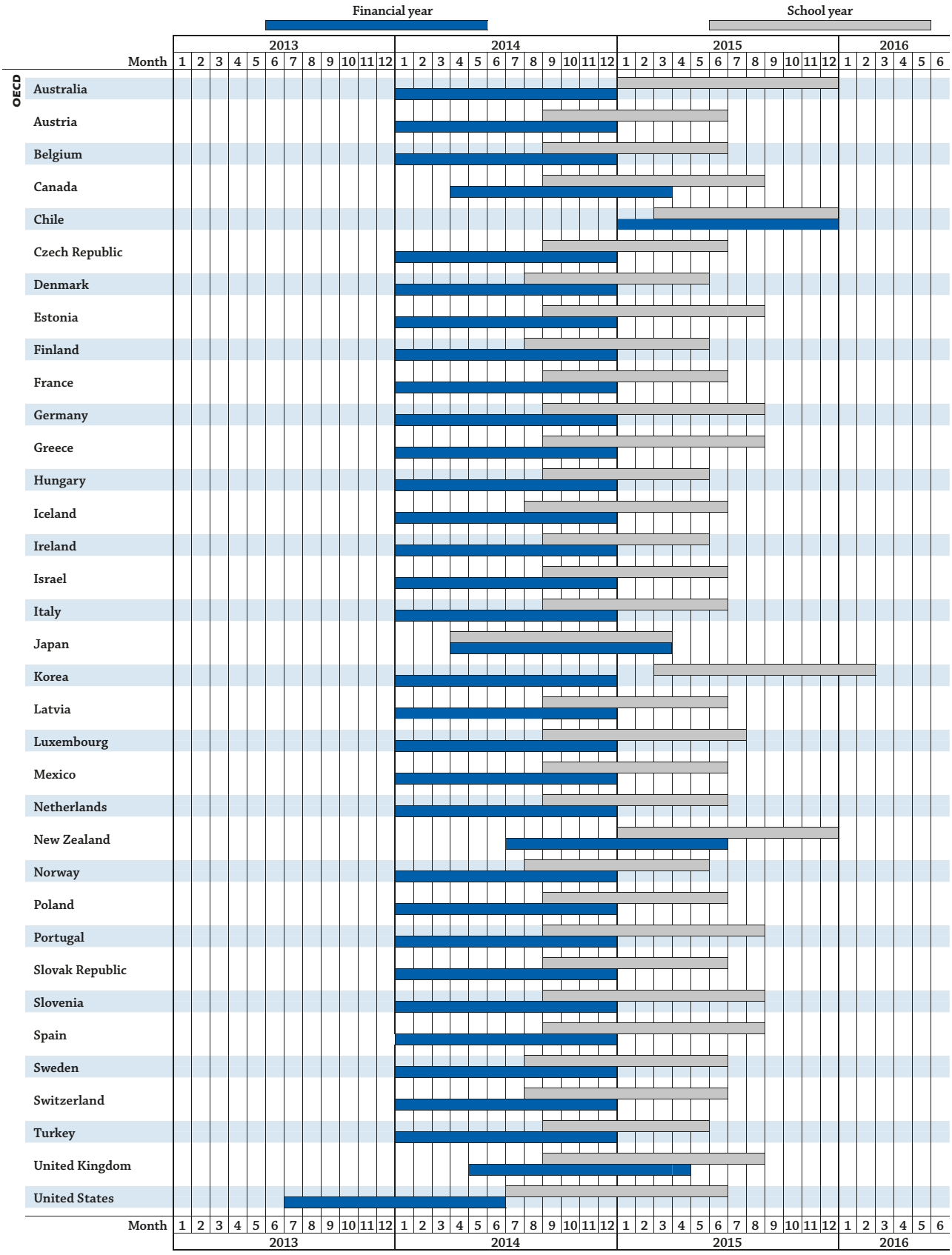
1. Year of reference 2014.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

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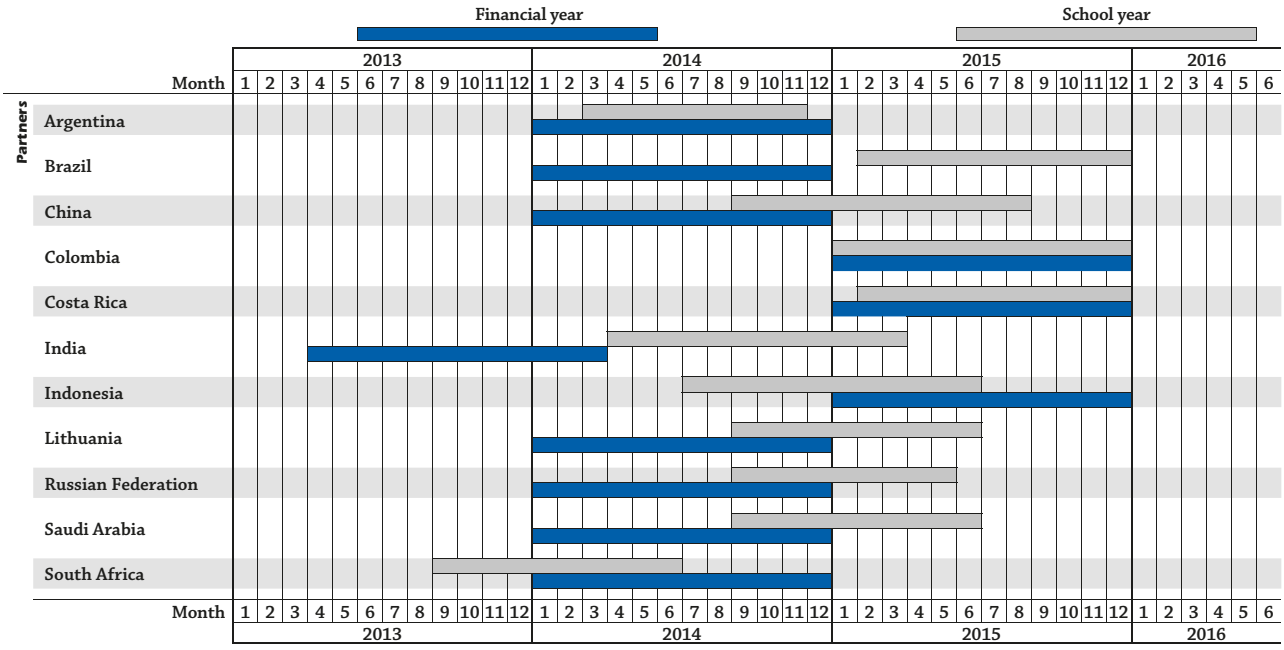
## Table X1.2a. School year and financial year used for the calculation of indicators, OECD countries




**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933562562

## Table X1.2b. School year and financial year used for the calculation of indicators, partner countries




**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933562581

## Table X1.3. Starting and ending age for students in compulsory education (2015)

| | | Compulsory education | |
|---|---|---|---|
| | | Starting age | Ending age |
| | | (1) | (2) |
| OECD | Australia | 6 | 17 |
| | Austria | 6 | 15 |
| | Belgium | 6 | 18 |
| | Canada | 6 | 16-18 |
| | Chile | 6 | 18 |
| | Czech Republic | 6 | 15 |
| | Denmark | 6 | 16 |
| | Estonia | 7 | 16 |
| | Finland | 7 | 16 |
| | France | 6 | 16 |
| | Germany | 6 | 18 |
| | Greece | 5 | 14-15 |
| | Hungary | 5 | 16 |
| | Iceland | 6 | 16 |
| | Ireland | 6 | 16 |
| | Israel | 5 | 17 |
| | Italy | 6 | 16 |
| | Japan | 6 | 15 |
| | Korea | 6 | 14 |
| | Latvia | 5 | 16 |
| | Luxembourg | 4 | 16 |
| | Mexico | 4 | 15 |
| | Netherlands | 5 | 18 |
| | New Zealand | 5 | 16 |
| | Norway | 6 | 16 |
| | Poland | 5 | 16 |
| | Portugal | 6 | 18 |
| | Slovak Republic | 6 | 16 |
| | Slovenia | 6 | 14 |
| | Spain | 6 | 16 |
| | Sweden | 7 | 16 |
| | Switzerland | 5 | 15 |
| | Turkey | 5-6 | 17 |
| | United Kingdom | 4-5 | 16 |
| | United States | 4-6 | 17 |
| | OECD average | 6 | 16 |
| | EU22 average | 6 | 16 |
| Partners | Argentina | 5 | 17 |
| | Brazil | 4 | 17 |
| | China | m | m |
| | Colombia | 5 | 15 |
| | Costa Rica | m | m |
| | India | m | m |
| | Indonesia | 7 | 15 |
| | Lithuania | m | m |
| | Russian Federation | 7 | 17 |
| | Saudi Arabia | 6 | 11 |
| | South Africa | 7 | 15 |
| | G20 average | m | m |

**Note:** Ending age of compulsory education is the age at which compulsory schooling ends. For example, an ending age of 18 indicates that all students under 18 are legally obliged to participate in education.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

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Annex

2

# Reference Statistics

**All tables in Annex 2 are available on line at:**

StatLink http://dx.doi.org/10.1787/888933562847

**Note regarding data from Israel**

The statistical data for Israel are supplied by and are under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

## Table X2.1. Basic reference statistics (reference period: calendar year 2014 and 2015)

| | | 2014 | | | | | | | 2015 |
|---|---|---|---|---|---|---|---|---|---|
| | | Total government expenditure (in millions of local currency, current prices) | Gross domestic product (in millions of local currency, current prices) | Gross domestic product (adjusted to financial year)[1] | Total population in thousands on 1st January | Deflator (2010 = 100, constant prices) | Purchasing power parity for GDP (PPP) (USD = 1) | Purchasing power parity for GDP (PPP) (Euro area = 1) | Gross domestic product per capita (in equivalent USD converted using PPPs)[2] |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| OECD | Australia | 573 298 | 1 617 016 | 1 617 016 | 23 475 | 103 | 1.46 | 1.95 | 47 587 |
| | Austria | 174 313 | 330 418 | 330 418 | 8 507 | 107 | 0.80 | 1.06 | 49 747 |
| | Belgium | 220 845 | 400 805 | 400 805 | 11 204 | 106 | 0.80 | 1.06 | 45 684 |
| | Canada | 703 778 | 1 983 117 | 1 918 928 | 35 538 | 108 | 1.24 | 1.65 | 44 609 |
| | Chile[3] | 39 741 133 | 157 510 721 | 157 510 721 | 18 006 | 117 | 378.76 | 504.93 | 23 095 |
| | Czech Republic | 1 821 984 | 4 313 789 | 4 313 789 | 10 512 | 105 | 12.67 | 16.90 | 33 768 |
| | Denmark | 1 093 854 | 1 977 255 | 1 977 255 | 5 627 | 105 | 7.33 | 9.78 | 49 186 |
| | Estonia | 7 597 | 19 758 | 19 758 | 1 316 | 115 | 0.53 | 0.70 | 28 994 |
| | Finland | 119 291 | 205 474 | 205 474 | 5 451 | 110 | 0.91 | 1.21 | 42 335 |
| | France | 1 226 643 | 2 139 964 | 2 139 964 | 65 836 | 103 | 0.80 | 1.07 | 41 060 |
| | Germany | 1 298 207 | 2 923 930 | 2 923 930 | 80 767 | 107 | 0.77 | 1.02 | 48 288 |
| | Greece | 90 014 | 177 941 | 177 941 | 10 904 | 96 | 0.62 | 0.82 | 26 268 |
| | Hungary | 15 881 359 | 32 400 148 | 32 400 148 | 9 877 | 112 | 128.81 | 171.83 | 26 403 |
| | Iceland | 908 205 | 2 006 019 | 2 006 019 | 326 | 113 | 138.34 | 184.54 | 47 927 |
| | Ireland | 72 320 | 193 160 | 193 160 | 4 605 | 107 | 0.82 | 1.09 | 68 677 |
| | Israel | 449 349 | 1 104 746 | 1 104 746 | 8 134 | 109 | 3.85 | 5.14 | 36 912 |
| | Italy | 825 165 | 1 620 381 | 1 620 381 | 60 783 | 105 | 0.74 | 0.98 | 37 148 |
| | Japan[4] | 204 836 900 | 486 938 800 | 490 041 575 | 127 298 | 98 | 102.47 | 136.70 | 38 465 |
| | Korea | 475 250 100 | 1 486 079 300 | 1 486 079 300 | 50 747 | 104 | 870.74 | 1 161.54 | 34 300 |
| | Latvia | 8 854 | 23 608 | 23 608 | 2 001 | 113 | 0.50 | 0.66 | 24 772 |
| | Luxembourg | 20 852 | 49 273 | 49 273 | 550 | 111 | 0.88 | 1.18 | 103 173 |
| | Mexico | 4 566 809 | 17 209 663 | 17 209 663 | 118 395 | 116 | 8.00 | 10.67 | 17 972 |
| | Netherlands | 306 204 | 663 008 | 663 008 | 16 829 | 103 | 0.80 | 1.07 | 49 662 |
| | New Zealand[5] | 72 363 | 241 260 | 241 260 | 4 510 | 107 | 1.44 | 1.92 | 37 527 |
| | Norway[6] | 1 440 795 | 2 533 302 | 2 533 302 | 5 108 | 114 | 9.31 | 12.42 | 52 376 |
| | Poland | 724 147 | 1 719 704 | 1 719 704 | 38 496 | 106 | 1.76 | 2.35 | 26 827 |
| | Portugal | 89 598 | 173 079 | 173 079 | 10 427 | 102 | 0.58 | 0.77 | 29 646 |
| | Slovak Republic | 31 911 | 75 946 | 75 946 | 5 416 | 103 | 0.48 | 0.64 | 29 921 |
| | Slovenia | 18 667 | 37 332 | 37 332 | 2 061 | 103 | 0.58 | 0.78 | 31 975 |
| | Spain | 463 041 | 1 037 025 | 1 037 025 | 46 512 | 100 | 0.66 | 0.88 | 34 695 |
| | Sweden | 2 029 164 | 3 936 840 | 3 936 840 | 9 645 | 105 | 8.75 | 11.67 | 48 078 |
| | Switzerland | 217 502 | 643 784 | 643 784 | 8 140 | 99 | 1.28 | 1.71 | 62 839 |
| | Turkey | 689 007 | 2 044 466 | 2 044 466 | 76 668 | 133 | 1.15 | 1.53 | 24 232 |
| | United Kingdom | 796 068 | 1 822 480 | 1 801 751 | 64 308 | 107 | 0.69 | 0.92 | 41 931 |
| | United States | 6 621 221 | 17 393 103 | 16 866 914 | 316 776 | 108 | 1.00 | 1.33 | 56 448 |
| Partners | Argentina | 1 668 167 | 4 608 745 | 4 608 745 | 42 980 | 263 | 5.39 | 7.20 | 20 363 |
| | Brazil | 1 886 133 | 5 687 309 | 5 687 309 | 203 191 | 134 | 1.73 | 2.31 | m |
| | China | 18 745 463 | 64 397 405 | 64 397 405 | 1 369 436 | 114 | 3.52 | 4.69 | 14 373 |
| | Colombia | 222 896 756 | 757 065 000 | 757 065 000 | 47 662 | 114 | 1 184.92 | 1 580.65 | m |
| | Costa Rica | 8 934 323 | 27 268 998 | 27 268 998 | 4 758 | 120 | 374.47 | 499.53 | 16 497 |
| | India | 32 810 323 | 124 882 048 | 124 882 048 | 1 295 291 | 128 | 17.00 | 22.67 | m |
| | Indonesia | 1 966 625 285 | 10 565 817 300 | 10 565 817 300 | 254 455 | 123 | 3 934.67 | 5 248.72 | 11 035 |
| | Lithuania | 12 703 | 36 590 | 36 590 | 2 944 | 111 | 0.44 | 0.59 | 28 751 |
| | Russian Federation | 27 611 666 | 77 945 072 | 77 945 072 | 143 667 | 143 | 21.28 | 28.39 | 23 033 |
| | Saudi Arabia | 1 140 539 | 2 826 869 | 2 826 869 | 30 886 | 116 | 1.75 | 2.34 | 54 027 |
| | South Africa | 1 210 943 | 3 796 460 | 3 796 460 | 53 969 | 126 | 5.37 | 7.16 | m |

1. For countries where GDP is not reported for the same reference period as data on educational finance, GDP is estimated as: wt-1 (GDPt - 1) + wt (GDPt), where wt and wt-1 are the weights for the respective portions of the two reference periods for GDP which fall within the educational financial year. Adjustments were made in Chapter B for Canada, Japan, the United Kingdom and the United States.

2. These data are used in Indicator B7 in order to calculate salary cost of teacher per student in percentage of GDP per capita.

3. Year of reference 2015 instead of 2014.

4. Total public expenditure adjusted to financial year.

5. GDP and total government expenditure calculated for the fiscal year in New Zealand.

6. The GDP Mainland market value is used for Norway.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (http://www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

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## Table X2.2. [1/2] Basic reference statistics (reference period: calendar year 2005, 2008, 2010, 2011, 2012, 2013 current prices)

| | | Gross domestic product (in millions of local currency, current prices) | | | | | |
|---|---|---|---|---|---|---|---|
| | | 2005 | 2008 | 2010 | 2011 | 2012 | 2013 |
| | | (1) | (2) | (3) | (4) | (5) | (6) |
| OECD | Australia | 998 458 | 1 259 280 | 1 410 442 | 1 491 741 | 1 527 529 | 1 589 940 |
| | Austria | 253 009 | 291 930 | 294 628 | 308 630 | 317 117 | 322 539 |
| | Belgium | 311 481 | 354 066 | 365 101 | 379 106 | 387 500 | 391 712 |
| | Canada | 1 417 028 | 1 652 923 | 1 662 130 | 1 769 921 | 1 822 808 | 1 897 531 |
| | Chile | 68 882 768 | 93 847 932 | 110 998 729 | 121 319 462 | 129 027 553 | 137 229 576 |
| | Czech Republic | 3 257 972 | 4 015 346 | 3 953 651 | 4 033 755 | 4 059 912 | 4 098 128 |
| | Denmark | 1 585 984 | 1 801 470 | 1 810 926 | 1 846 854 | 1 895 002 | 1 929 677 |
| | Estonia | 11 262 | 16 517 | 14 717 | 16 668 | 17 935 | 18 890 |
| | Finland | 164 387 | 193 711 | 187 100 | 196 869 | 199 793 | 203 338 |
| | France | 1 771 978 | 1 995 850 | 1 998 481 | 2 059 284 | 2 086 929 | 2 115 256 |
| | Germany | 2 300 860 | 2 561 740 | 2 580 060 | 2 703 120 | 2 758 260 | 2 826 240 |
| | Greece | 199 242 | 241 990 | 226 031 | 207 029 | 191 204 | 180 654 |
| | Hungary | 22 470 802 | 27 071 868 | 27 085 900 | 28 166 115 | 28 660 518 | 30 127 349 |
| | Iceland | 1 051 241 | 1 551 434 | 1 620 293 | 1 701 585 | 1 778 499 | 1 891 239 |
| | Ireland | 170 216 | 187 687 | 167 124 | 173 070 | 175 753 | 180 209 |
| | Israel | 639 329 | 774 758 | 874 009 | 935 225 | 993 441 | 1 059 101 |
| | Italy | 1 489 725 | 1 632 151 | 1 604 515 | 1 637 463 | 1 613 265 | 1 604 599 |
| | Japan | 503 903 000 | 501 209 300 | 482 676 900 | 471 578 700 | 475 331 700 | 479 083 700 |
| | Korea | 919 797 300 | 1 104 492 200 | 1 265 308 000 | 1 332 681 000 | 1 377 456 700 | 1 429 445 400 |
| | Latvia | 13 597 | 24 351 | 17 938 | 20 269 | 21 848 | 22 774 |
| | Luxembourg | 29 733 | 37 647 | 39 947 | 42 856 | 43 905 | 46 353 |
| | Mexico | 9 424 602 | 12 256 864 | 13 266 858 | 14 527 337 | 15 599 271 | 16 077 059 |
| | Netherlands | 545 609 | 639 163 | 631 512 | 642 929 | 645 164 | 652 748 |
| | New Zealand | 162 935 | 189 618 | 203 434 | 213 241 | 217 995 | 232 530 |
| | Norway[1] | 1 514 364 | 1 943 269 | 2 073 953 | 2 157 836 | 2 295 395 | 2 418 801 |
| | Poland | 990 468 | 1 286 069 | 1 445 297 | 1 566 813 | 1 629 392 | 1 656 842 |
| | Portugal | 158 653 | 178 873 | 179 930 | 176 167 | 168 398 | 170 269 |
| | Slovak Republic | 50 415 | 68 492 | 67 577 | 70 627 | 72 704 | 74 170 |
| | Slovenia | 29 227 | 37 951 | 36 252 | 36 896 | 36 002 | 35 917 |
| | Spain | 930 566 | 1 116 207 | 1 080 913 | 1 070 413 | 1 039 758 | 1 025 634 |
| | Sweden | 2 907 352 | 3 387 599 | 3 519 994 | 3 656 577 | 3 684 800 | 3 769 909 |
| | Switzerland | 507 463 | 597 381 | 606 146 | 618 325 | 623 611 | 634 776 |
| | Turkey | 673 703 | 994 783 | 1 160 014 | 1 394 477 | 1 569 672 | 1 809 713 |
| | United Kingdom | 1 379 457 | 1 564 252 | 1 572 439 | 1 628 274 | 1 675 044 | 1 739 563 |
| | United States | 13 093 726 | 14 718 582 | 14 964 372 | 15 517 926 | 16 155 255 | 16 691 517 |
| Partners | Argentina | 584 761 | 1 154 668 | 1 670 698 | 2 191 507 | 2 652 189 | 3 361 239 |
| | Brazil | 2 170 585 | 3 109 803 | 3 885 847 | 4 376 382 | 4 805 913 | 5 316 455 |
| | China | 18 731 890 | 31 951 555 | 41 303 031 | 48 930 057 | 54 036 743 | 59 524 441 |
| | Colombia | 340 156 000 | 480 087 000 | 544 924 000 | 619 894 000 | 664 240 000 | 710 497 000 |
| | Costa Rica | 9 532 875 | 16 109 612 | 19 596 937 | 21 370 733 | 23 371 406 | 24 860 944 |
| | India | 35 811 776 | 54 590 421 | 75 476 617 | 87 360 392 | 99 513 443 | 112 727 645 |
| | Indonesia | 3 035 611 121 | 5 414 841 900 | 6 864 133 100 | 7 831 726 000 | 8 615 704 500 | 9 546 134 000 |
| | Lithuania | 21 002 | 32 696 | 28 028 | 31 275 | 33 348 | 35 002 |
| | Russian Federation | 23 050 317 | 44 028 449 | 49 395 564 | 59 698 117 | 66 926 863 | 71 016 729 |
| | Saudi Arabia | 1 230 771 | 1 949 238 | 1 975 543 | 2 510 650 | 2 752 334 | 2 791 261 |
| | South Africa | 1 639 254 | 2 369 063 | 2 748 008 | 3 024 951 | 3 262 545 | 3 534 327 |

1. The GDP Mainland market value is used for Norway.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (http://www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933562657

## Table X2.2. [2/2] Basic reference statistics (reference period: calendar year 2005, 2008, 2010, 2011, 2012, 2013 current prices)

| | | Total government expenditure (in millions of local currency, current prices) | | | | | |
|---|---|---|---|---|---|---|---|
| | | 2005 | 2008 | 2010 | 2011 | 2012 | 2013 |
| | | (7) | (8) | (9) | (10) | (11) | (12) |
| OECD | Australia | 324 295 | 413 774 | 473 514 | 504 961 | 531 829 | 552 307 |
| OECD | Austria | 129 970 | 146 502 | 156 338 | 157 831 | 163 174 | 165 257 |
| OECD | Belgium | 160 200 | 177 994 | 194 553 | 206 287 | 216 339 | 218 296 |
| OECD | Canada | m | 583 933 | 641 141 | 665 215 | 675 081 | 689 601 |
| OECD | Chile | 15 312 072 | 20 490 435 | 26 053 547 | 27 837 793 | 30 050 204 | 31 845 155 |
| OECD | Czech Republic | 1 362 401 | 1 612 529 | 1 698 794 | 1 735 916 | 1 805 836 | 1 745 908 |
| OECD | Denmark | 812 682 | 908 135 | 1 026 310 | 1 042 167 | 1 098 247 | 1 077 153 |
| OECD | Estonia | 3 827 | 6 566 | 5 962 | 6 238 | 7 049 | 7 279 |
| OECD | Finland | 81 002 | 93 483 | 102 446 | 107 066 | 112 291 | 116 922 |
| OECD | France | 936 988 | 1 057 610 | 1 128 022 | 1 151 537 | 1 186 020 | 1 205 267 |
| OECD | Germany | 1 062 999 | 1 116 223 | 1 219 219 | 1 208 565 | 1 221 782 | 1 263 718 |
| OECD | Greece | 90 778 | 123 041 | 118 616 | 112 376 | 105 960 | 112 538 |
| OECD | Hungary | 11 131 800 | 13 190 523 | 13 404 821 | 13 996 199 | 13 916 287 | 14 863 853 |
| OECD | Iceland | 437 351 | 858 162 | 799 305 | 777 342 | 807 229 | 830 530 |
| OECD | Ireland | 56 741 | 78 499 | 109 083 | 79 124 | 73 126 | 71 192 |
| OECD | Israel | 293 531 | 327 034 | 359 634 | 378 371 | 411 559 | 433 945 |
| OECD | Italy | 702 315 | 780 664 | 800 494 | 808 562 | 818 874 | 815 687 |
| OECD | Japan | 183 659 700 | 188 578 700 | 195 897 100 | 198 844 000 | 199 331 800 | 203 502 700 |
| OECD | Korea | 271 192 000 | 353 493 900 | 392 264 100 | 431 075 500 | 450 811 900 | 453 991 400 |
| OECD | Latvia | 4 662 | 9 083 | 8 034 | 7 927 | 8 112 | 8 427 |
| OECD | Luxembourg | 13 087 | 15 135 | 17 729 | 18 287 | 19 440 | 20 136 |
| OECD | Mexico | 1 979 808 | 2 894 807 | 3 355 288 | 3 655 757 | 3 942 261 | 4 206 351 |
| OECD | Netherlands | 230 867 | 278 419 | 304 107 | 302 010 | 303 865 | 302 036 |
| OECD | New Zealand | 49 084 | 63 711 | 70 099 | 68 939 | 69 962 | 71 174 |
| OECD | Norway[1] | 836 626 | 1 048 572 | 1 165 722 | 1 223 268 | 1 273 053 | 1 352 217 |
| OECD | Poland | 438 686 | 568 310 | 660 503 | 685 819 | 696 400 | 703 039 |
| OECD | Portugal | 74 054 | 81 093 | 93 237 | 88 112 | 81 719 | 85 032 |
| OECD | Slovak Republic | 20 053 | 25 299 | 28 480 | 28 828 | 29 539 | 30 737 |
| OECD | Slovenia | 13 127 | 16 649 | 17 858 | 18 448 | 17 499 | 21 663 |
| OECD | Spain | 356 470 | 459 294 | 493 106 | 490 261 | 500 071 | 465 437 |
| OECD | Sweden | 1 532 612 | 1 706 867 | 1 802 808 | 1 852 023 | 1 906 306 | 1 975 935 |
| OECD | Switzerland | 172 625 | 186 144 | 199 492 | 203 433 | 207 508 | 216 802 |
| OECD | Turkey | m | 345 392 | 442 178 | 490 770 | 550 332 | 623 671 |
| OECD | United Kingdom | 563 403 | 702 344 | 755 419 | 756 210 | 776 188 | 777 312 |
| OECD | United States | 4 772 092 | 5 808 889 | 6 425 237 | 6 492 089 | 6 466 040 | 6 465 937 |
| Partners | Argentina | 142 219 | 333 970 | 527 111 | 722 171 | 919 573 | 1 192 696 |
| Partners | Brazil | 605 877 | 939 831 | 1 211 373 | 1 308 035 | 1 453 358 | 1 772 570 |
| Partners | China | 3 427 928 | 7 164 539 | 10 251 183 | 13 128 594 | 15 178 679 | 17 034 245 |
| Partners | Colombia | 87 471 638 | 127 887 564 | 160 177 848 | 178 027 123 | 187 773 255 | 205 972 415 |
| Partners | Costa Rica | m | m | m | m | 7 302 493 | 8 148 822 |
| Partners | India | 9 761 839 | 16 152 664 | 21 365 301 | 24 147 724 | 27 210 645 | 29 881 105 |
| Partners | Indonesia | 526 114 278 | 1 050 154 508 | 1 159 098 284 | 1 387 241 117 | 1 622 837 246 | 1 821 515 839 |
| Partners | Lithuania | 7 157 | 12 454 | 11 855 | 13 284 | 12 040 | 12 429 |
| Partners | Russian Federation | 6 820 645 | 13 991 800 | 17 616 656 | 19 994 645 | 23 174 718 | 25 290 909 |
| Partners | Saudi Arabia | 346 471 | 520 050 | 670 985 | 837 500 | 917 105 | 994 734 |
| Partners | South Africa | 461 829 | 679 247 | 864 157 | 933 613 | 1 020 652 | 1 118 424 |

1. The GDP Mainland market value is used for Norway.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (http:/www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933562657

## Table X2.3. [1/2] Basic reference statistics (reference period: calendar year 2005, 2008, 2010, 2011, 2012, 2013 in constant prices of 2014)

| | | Gross domestic product (in millions of local currency, 2014 constant prices) | | | | | |
|---|---|---|---|---|---|---|---|
| | | 2005 | 2008 | 2010 | 2011 | 2012 | 2013 |
| | | (1) | (2) | (3) | (4) | (5) | (6) |
| OECD | Australia | 1 265 452 | 1 386 125 | 1 447 479 | 1 500 084 | 1 538 634 | 1 578 784 |
| | Austria | 296 873 | 322 852 | 316 577 | 325 466 | 327 893 | 328 301 |
| | Belgium | 361 245 | 385 714 | 387 058 | 394 012 | 394 552 | 394 287 |
| | Canada | 1 698 867 | 1 797 198 | 1 797 971 | 1 854 449 | 1 886 818 | 1 933 517 |
| | Chile | 103 875 658 | 119 258 155 | 124 812 775 | 132 101 392 | 139 310 338 | 144 850 148 |
| | Czech Republic | 3 698 490 | 4 284 465 | 4 170 591 | 4 254 199 | 4 220 172 | 4 199 761 |
| | Denmark | 1 877 101 | 1 958 209 | 1 896 969 | 1 922 328 | 1 926 681 | 1 944 664 |
| | Estonia | 17 228 | 19 360 | 16 883 | 18 165 | 18 948 | 19 216 |
| | Finland | 197 866 | 218 126 | 206 076 | 211 374 | 208 360 | 206 780 |
| | France | 1 989 569 | 2 088 992 | 2 067 402 | 2 110 388 | 2 114 244 | 2 126 427 |
| | Germany | 2 585 760 | 2 798 835 | 2 749 347 | 2 849 973 | 2 863 994 | 2 878 016 |
| | Greece | 221 167 | 240 509 | 217 555 | 197 687 | 183 255 | 177 315 |
| | Hungary | 30 766 598 | 32 381 541 | 30 460 999 | 30 990 845 | 30 494 212 | 31 139 819 |
| | Iceland | 1 745 593 | 2 034 713 | 1 826 020 | 1 862 305 | 1 884 980 | 1 968 103 |
| | Ireland | 174 147 | 182 993 | 178 190 | 178 118 | 176 153 | 178 089 |
| | Israel | 769 880 | 890 371 | 953 821 | 1 002 106 | 1 025 973 | 1 070 874 |
| | Italy | 1 712 130 | 1 753 611 | 1 685 430 | 1 695 149 | 1 647 362 | 1 618 893 |
| | Japan | 466 414 549 | 479 659 373 | 474 498 297 | 472 342 737 | 480 571 890 | 487 091 889 |
| | Korea | 1 077 180 987 | 1 228 638 930 | 1 317 718 563 | 1 366 232 852 | 1 397 552 353 | 1 438 028 324 |
| | Latvia | 20 815 | 24 682 | 20 343 | 21 607 | 22 471 | 23 122 |
| | Luxembourg | 39 152 | 44 232 | 44 270 | 45 161 | 45 164 | 47 058 |
| | Mexico | 13 949 155 | 15 324 118 | 15 356 118 | 15 958 014 | 16 602 540 | 16 834 129 |
| | Netherlands | 611 216 | 667 272 | 651 139 | 661 971 | 654 974 | 653 727 |
| | New Zealand | 202 388 | 212 055 | 218 204 | 224 073 | 230 205 | 233 841 |
| | Norway[1] | 2 138 293 | 2 216 190 | 2 354 675 | 2 294 781 | 2 361 636 | 2 426 766 |
| | Poland | 1 219 382 | 1 444 709 | 1 539 033 | 1 616 240 | 1 642 207 | 1 665 048 |
| | Portugal | 178 606 | 186 271 | 184 155 | 180 791 | 173 508 | 171 547 |
| | Slovak Republic | 55 352 | 70 258 | 69 798 | 71 766 | 72 955 | 74 043 |
| | Slovenia | 34 304 | 40 040 | 37 375 | 37 617 | 36 606 | 36 208 |
| | Spain | 1 027 286 | 1 122 892 | 1 082 912 | 1 072 082 | 1 040 672 | 1 022 919 |
| | Sweden | 3 422 144 | 3 683 927 | 3 702 117 | 3 800 756 | 3 789 874 | 3 836 914 |
| | Switzerland | 540 026 | 598 273 | 602 828 | 613 706 | 620 138 | 631 180 |
| | Turkey | 1 312 106 | 1 488 568 | 1 538 935 | 1 709 965 | 1 791 871 | 1 944 024 |
| | United Kingdom | 1 656 333 | 1 730 263 | 1 687 085 | 1 712 544 | 1 735 030 | 1 768 188 |
| | United States | 15 490 784 | 16 139 522 | 16 088 863 | 16 346 519 | 16 710 070 | 16 990 354 |
| Partners | Argentina | 3 458 407 | 4 244 114 | 4 401 894 | 4 672 499 | 4 623 304 | 4 729 755 |
| | Brazil | 4 184 417 | 4 849 334 | 5 207 851 | 5 414 863 | 5 515 149 | 5 681 437 |
| | China | 27 587 594 | 38 950 521 | 47 143 464 | 51 640 546 | 55 697 826 | 60 019 089 |
| | Colombia | 499 527 093 | 589 970 517 | 623 533 625 | 664 621 443 | 691 498 365 | 725 202 444 |
| | Costa Rica | 18 652 057 | 22 641 767 | 23 532 325 | 24 545 886 | 25 723 333 | 26 307 002 |
| | India | 65 032 589 | 81 057 549 | 96 952 748 | 103 388 824 | 109 197 790 | 116 447 226 |
| | Indonesia | 6 390 827 823 | 7 601 383 831 | 8 466 364 745 | 8 988 721 183 | 9 530 745 641 | 10 060 394 251 |
| | Lithuania | 29 257 | 35 825 | 31 019 | 32 895 | 34 157 | 35 354 |
| | Russian Federation | 59 493 732 | 73 501 349 | 70 804 297 | 73 823 517 | 76 420 586 | 77 398 352 |
| | Saudi Arabia | 1 727 178 | 2 095 645 | 2 292 627 | 2 520 949 | 2 656 688 | 2 727 619 |
| | South Africa | 2 976 898 | 3 417 926 | 3 467 655 | 3 579 051 | 3 658 501 | 3 739 439 |

1. The GDP Mainland market value is used for Norway.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (http://www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933562676

## Table X2.3. [2/2] Basic reference statistics (reference period: calendar year 2005, 2008, 2010, 2011, 2012, 2013 in constant prices of 2014)

| | | Total government expenditure (in millions of local currency, 2014 constant prices) | | | | | |
|---|---|---|---|---|---|---|---|
| | | 2005 | 2008 | 2010 | 2011 | 2012 | 2013 |
| | | (7) | (8) | (9) | (10) | (11) | (12) |
| OECD | Australia | 411 014 | 455 453 | 485 948 | 507 785 | 535 695 | 548 432 |
| OECD | Austria | 152 503 | 162 019 | 167 985 | 166 440 | 168 719 | 168 209 |
| OECD | Belgium | 185 795 | 193 904 | 206 253 | 214 398 | 220 276 | 219 731 |
| OECD | Canada | m | 634 902 | 693 539 | 696 984 | 698 787 | 702 679 |
| OECD | Chile | 23 090 703 | 26 038 416 | 29 295 971 | 30 311 800 | 32 445 040 | 33 613 566 |
| OECD | Czech Republic | 1 546 615 | 1 720 605 | 1 792 008 | 1 830 784 | 1 877 119 | 1 789 206 |
| OECD | Denmark | 961 855 | 987 148 | 1 075 074 | 1 084 756 | 1 116 607 | 1 085 519 |
| OECD | Estonia | 5 854 | 7 696 | 6 840 | 6 798 | 7 447 | 7 405 |
| OECD | Finland | 97 499 | 105 265 | 112 837 | 114 955 | 117 106 | 118 901 |
| OECD | France | 1 052 046 | 1 106 966 | 1 166 924 | 1 180 114 | 1 201 543 | 1 211 632 |
| OECD | Germany | 1 194 623 | 1 219 532 | 1 299 216 | 1 274 223 | 1 268 617 | 1 286 869 |
| OECD | Greece | 100 767 | 122 288 | 114 168 | 107 305 | 101 555 | 110 458 |
| OECD | Hungary | 15 241 451 | 15 777 613 | 15 075 158 | 15 399 853 | 14 806 648 | 15 363 373 |
| OECD | Iceland | 726 225 | 1 125 483 | 900 792 | 850 765 | 855 559 | 864 285 |
| OECD | Ireland | 58 051 | 76 535 | 116 306 | 81 431 | 73 293 | 70 354 |
| OECD | Israel | 353 470 | 375 836 | 392 475 | 405 430 | 425 036 | 438 769 |
| OECD | Italy | 807 165 | 838 759 | 840 863 | 837 047 | 836 181 | 822 953 |
| OECD | Japan | 169 996 122 | 180 470 596 | 192 577 769 | 199 166 161 | 201 529 290 | 206 904 377 |
| OECD | Korea | 317 594 829 | 393 227 193 | 408 512 146 | 441 928 346 | 457 388 774 | 456 717 334 |
| OECD | Latvia | 7 136 | 9 207 | 9 112 | 8 450 | 8 343 | 8 556 |
| OECD | Luxembourg | 17 233 | 17 782 | 19 648 | 19 271 | 19 998 | 20 442 |
| OECD | Mexico | 2 930 272 | 3 619 226 | 3 883 678 | 4 015 782 | 4 195 808 | 4 404 428 |
| OECD | Netherlands | 258 628 | 290 663 | 313 558 | 310 955 | 308 485 | 302 489 |
| OECD | New Zealand | 60 969 | 71 250 | 75 188 | 72 441 | 73 881 | 71 575 |
| OECD | Norway[1] | 1 181 322 | 1 195 838 | 1 323 510 | 1 300 901 | 1 309 791 | 1 356 670 |
| OECD | Poland | 540 074 | 638 413 | 703 340 | 707 454 | 701 877 | 706 521 |
| OECD | Portugal | 83 368 | 84 447 | 95 426 | 90 425 | 84 198 | 85 670 |
| OECD | Slovak Republic | 22 016 | 25 952 | 29 417 | 29 293 | 29 642 | 30 684 |
| OECD | Slovenia | 15 408 | 17 565 | 18 410 | 18 809 | 17 793 | 21 839 |
| OECD | Spain | 393 520 | 462 045 | 494 018 | 491 025 | 500 510 | 464 205 |
| OECD | Sweden | 1 803 985 | 1 856 174 | 1 896 085 | 1 925 049 | 1 960 665 | 2 011 055 |
| OECD | Switzerland | 183 702 | 186 422 | 198 400 | 201 913 | 206 352 | 215 574 |
| OECD | Turkey | m | 516 835 | 586 617 | 601 802 | 628 236 | 669 958 |
| OECD | United Kingdom | 676 486 | 776 882 | 810 496 | 795 347 | 803 985 | 790 103 |
| OECD | United States | 5 645 715 | 6 369 682 | 6 908 059 | 6 838 740 | 6 688 101 | 6 581 700 |
| Partners | Argentina | 841 114 | 1 227 544 | 1 388 812 | 1 539 737 | 1 603 003 | 1 678 297 |
| Partners | Brazil | 1 168 000 | 1 465 544 | 1 623 494 | 1 618 421 | 1 667 838 | 1 894 259 |
| Partners | China | 5 048 518 | 8 733 926 | 11 700 746 | 13 855 855 | 15 645 270 | 17 175 800 |
| Partners | Colombia | 128 454 159 | 157 158 790 | 183 284 778 | 190 872 380 | 195 478 891 | 210 235 509 |
| Partners | Costa Rica | m | m | m | m | 8 037 363 | 8 622 806 |
| Partners | India | 17 727 065 | 23 983 976 | 27 444 588 | 28 578 223 | 29 858 702 | 30 867 067 |
| Partners | Indonesia | 1 107 620 717 | 1 474 212 478 | 1 429 655 968 | 1 592 180 780 | 1 795 192 605 | 1 919 642 808 |
| Partners | Lithuania | 9 971 | 13 646 | 13 121 | 13 971 | 12 331 | 12 554 |
| Partners | Russian Federation | 17 604 340 | 23 357 992 | 25 251 963 | 24 725 654 | 26 462 103 | 27 563 571 |
| Partners | Saudi Arabia | 486 213 | 559 111 | 778 681 | 840 935 | 885 235 | 972 054 |
| Partners | South Africa | 838 685 | 979 972 | 1 090 462 | 1 104 629 | 1 144 523 | 1 183 331 |

1. The GDP Mainland market value is used for Norway.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (http:/www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933562676

## Table X2.4a. [1/2] Teachers' statutory salaries at different points in their careers, for teachers with typical qualification (2015)

*Annual salaries in public institutions for teachers with typical qualification, in national currency*

| | | Pre-primary education | | | | Primary education | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Starting salary | Salary after 10 years of experience | Salary after 15 years of experience | Salary at top of scale | Starting salary | Salary after 10 years of experience | Salary after 15 years of experience | Salary at top of scale |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| OECD | **Countries** | | | | | | | | |
| | Australia[1] | 63 821 | 91 291 | 91 291 | 91 726 | 63 257 | 91 805 | 91 805 | 92 142 |
| | Austria | m | m | m | m | 29 022 | 34 122 | 38 225 | 56 787 |
| | Canada | m | m | m | m | 52 064 | 84 228 | 87 202 | 87 202 |
| | Chile | 7 569 485 | 10 191 653 | 11 449 961 | 16 007 165 | 7 569 485 | 10 191 653 | 11 449 961 | 16 007 165 |
| | Czech Republic | 242 000 | 245 500 | 251 160 | 269 600 | 251 200 | 259 400 | 272 200 | 313 800 |
| | Denmark[2] | 350 272 | 397 571 | 397 571 | 397 571 | 392 335 | 435 797 | 459 819 | 459 819 |
| | Estonia | m | m | m | m | 10 400 | m | m | m |
| | Finland[3] | 28 611 | 30 900 | 30 900 | 30 900 | 32 412 | 37 518 | 39 769 | 42 155 |
| | France[4] | 24 595 | 28 124 | 30 140 | 44 254 | 24 595 | 28 124 | 30 140 | 44 254 |
| | Germany | m | m | m | m | 44 860 | 53 581 | 56 267 | 59 734 |
| | Greece | 13 104 | 15 000 | 17 592 | 24 756 | 13 104 | 15 000 | 17 592 | 24 756 |
| | Hungary | 1 922 004 | 2 594 705 | 2 786 906 | 3 651 808 | 1 922 004 | 2 594 705 | 2 786 906 | 3 651 808 |
| | Iceland | m | m | m | m | m | m | m | m |
| | Ireland | m | m | m | m | 30 702 | 51 762 | 57 390 | 64 277 |
| | Israel | 98 968 | 127 987 | 145 012 | 272 000 | 85 936 | 112 720 | 130 922 | 229 438 |
| | Italy | 23 051 | 25 358 | 27 845 | 33 884 | 23 051 | 25 358 | 27 845 | 33 884 |
| | Japan | m | m | m | m | 3 171 000 | 4 684 000 | 5 535 000 | 6 910 000 |
| | Korea | 28 824 720 | 43 233 480 | 50 422 920 | 79 939 200 | 28 824 720 | 43 233 480 | 50 422 920 | 79 939 200 |
| | Latvia | 4 860 | 4 956 | 5 040 | m | 4 860 | 4 956 | 5 040 | m |
| | Luxembourg[2] | 67 129 | 88 894 | 106 536 | 120 282 | 67 129 | 88 894 | 106 536 | 120 282 |
| | Mexico | 164 657 | 213 880 | 272 901 | 349 713 | 164 657 | 213 880 | 272 901 | 349 713 |
| | Netherlands | 32 562 | 40 879 | 49 002 | 49 002 | 32 562 | 40 879 | 49 002 | 49 002 |
| | New Zealand[1] | m | m | m | m | 46 117 | 69 099 | 69 099 | 69 099 |
| | Norway | 364 500 | 419 500 | 419 500 | 419 500 | 425 650 | 460 850 | 460 850 | 499 050 |
| | Poland | 29 044 | 39 004 | 47 645 | 49 669 | 29 044 | 39 004 | 47 645 | 49 669 |
| | Portugal | 21 960 | 24 217 | 26 321 | 41 537 | 21 960 | 24 217 | 26 321 | 41 537 |
| | Slovak Republic[5] | 6 222 | 6 848 | 7 160 | 7 716 | 6 960 | 8 360 | 9 794 | 10 562 |
| | Slovenia[5] | 16 864 | 20 030 | 24 607 | 28 343 | 16 864 | 20 805 | 25 550 | 30 583 |
| | Spain | 28 129 | 30 393 | 32 389 | 39 673 | 28 129 | 30 393 | 32 389 | 39 673 |
| | Sweden[1, 5, 6] | 330 000 | 349 596 | 354 600 | 381 144 | 330 000 | 366 000 | 379 200 | 442 320 |
| | Switzerland[7] | 72 200 | 89 888 | m | 110 038 | 79 053 | 98 458 | m | 120 881 |
| | Turkey | 39 954 | 41 421 | 43 300 | 46 678 | 39 954 | 41 421 | 43 300 | 46 678 |
| | United States[5, 6] | 43 570 | 52 455 | 59 541 | 72 612 | 42 563 | 55 037 | 60 705 | 68 478 |
| | **Economies** | | | | | | | | |
| | Flemish Com. (Belgium)[5] | 31 054 | 38 942 | 43 842 | 53 642 | 31 054 | 38 942 | 43 842 | 53 642 |
| | French Com. (Belgium) | 30 132 | 37 681 | 42 425 | 51 914 | 30 132 | 37 681 | 42 425 | 51 914 |
| | England (UK) | 22 023 | 34 869 | 37 496 | 37 496 | 22 023 | 34 869 | 37 496 | 37 496 |
| | Scotland (UK) | 21 867 | 34 887 | 34 887 | 34 887 | 21 867 | 34 887 | 34 887 | 34 887 |
| Partners | Argentina | m | m | m | m | m | m | m | m |
| | Brazil | m | m | m | m | m | m | m | m |
| | China | m | m | m | m | m | m | m | m |
| | Colombia | 22 612 928 | 41 239 431 | 41 239 431 | 46 040 509 | 22 612 928 | 41 239 431 | 41 239 431 | 46 040 509 |
| | Costa Rica | 9 122 311 | 11 252 393 | 12 359 313 | 15 680 074 | 9 122 311 | 11 252 393 | 12 359 313 | 15 680 074 |
| | India | m | m | m | m | m | m | m | m |
| | Indonesia | m | m | m | m | m | m | m | m |
| | Lithuania | m | 9 264 | 9 655 | 10 157 | m | 8 868 | 9 228 | 9 720 |
| | Russian Federation | m | m | m | m | m | m | m | m |
| | Saudi Arabia | m | m | m | m | m | m | m | m |
| | South Africa | m | m | m | m | m | m | m | m |

**Note:** The definition of teachers' typical qualification is based on a broad concept, including the typical ISCED level of attainment and other criteria. Please see Box D3.2 and Annex 3 for more information. Data available at http://stats.oecd.org/, Education at a Glance Database.

1. Excludes the social security contributions and pension-scheme contributions paid by the employees.
2. Includes the social security contributions and pension-scheme contributions paid by the employers.
3. Includes data on the majority, i.e. kindergarten teachers only for pre-primary education.
4. Includes the average of fixed bonuses for overtime hours for lower and upper secondary teachers.
5. At the upper secondary level includes teachers working in vocational programmes. (In Slovenia, includes only those teachers teaching general subjects within vocational programmes).
6. Actual base salaries.
7. Salaries after 11 years of experience for Columns 2, 6, 10 and 14.

**Source:** OECD. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933562695

## Table X2.4a. [2/2] Teachers' statutory salaries at different points in their careers, for teachers with typical qualification (2015)

*Annual salaries in public institutions for teachers with typical qualification, in national currency*

| | | Lower secondary education, general programmes | | | | Upper secondary education, general programmes | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Starting salary | Salary after 10 years of experience | Salary after 15 years of experience | Salary at top of scale | Starting salary | Salary after 10 years of experience | Salary after 15 years of experience | Salary at top of scale |
| | | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) |
| OECD | **Countries** | | | | | | | | |
| | Australia[1] | 63 213 | 91 903 | 91 903 | 92 191 | 63 213 | 91 903 | 91 903 | 92 191 |
| | Austria | 30 340 | 36 819 | 41 334 | 58 736 | 31 775 | 39 079 | 44 500 | 64 896 |
| | Canada | 52 064 | 84 228 | 87 202 | 87 202 | 52 064 | 84 228 | 87 202 | 87 202 |
| | Chile | 7 569 485 | 10 191 653 | 11 449 961 | 16 007 165 | 7 756 420 | 10 417 756 | 11 694 832 | 16 320 100 |
| | Czech Republic | 251 200 | 259 400 | 272 200 | 313 800 | 251 200 | 259 400 | 272 200 | 313 800 |
| | Denmark[2] | 394 687 | 441 498 | 467 714 | 467 714 | 391 835 | 509 119 | 509 119 | 509 119 |
| | Estonia | 10 400 | m | m | m | 10 400 | m | m | m |
| | Finland[3] | 35 005 | 40 519 | 42 951 | 45 528 | 37 120 | 44 580 | 46 363 | 49 145 |
| | France[4] | 26 908 | 30 436 | 32 453 | 46 718 | 27 160 | 30 688 | 32 705 | 46 995 |
| | Germany | 50 448 | 58 597 | 61 058 | 66 510 | 50 764 | 61 800 | 64 767 | 73 709 |
| | Greece | 13 104 | 15 000 | 17 592 | 24 756 | 13 104 | 15 000 | 17 592 | 24 756 |
| | Hungary | 1 922 004 | 2 594 705 | 2 786 906 | 3 651 808 | 2 105 922 | 2 842 995 | 3 053 587 | 4 001 252 |
| | Iceland | m | m | m | m | m | m | m | m |
| | Ireland | 30 702 | 53 709 | 57 981 | 64 868 | 30 702 | 53 709 | 57 981 | 64 868 |
| | Israel | 86 414 | 123 511 | 143 219 | 225 312 | 89 187 | 106 566 | 119 107 | 187 659 |
| | Italy | 24 849 | 27 527 | 30 340 | 37 211 | 24 849 | 28 196 | 31 189 | 38 901 |
| | Japan | 3 171 000 | 4 684 000 | 5 535 000 | 6 910 000 | 3 171 000 | 4 684 000 | 5 535 000 | 7 099 000 |
| | Korea | 28 884 720 | 43 293 480 | 50 482 920 | 79 999 200 | 28 164 720 | 42 573 480 | 49 762 920 | 79 279 200 |
| | Latvia | 4 860 | 4 956 | 5 040 | m | 4 860 | 4 956 | 5 040 | m |
| | Luxembourg[2] | 77 897 | 97 371 | 111 118 | 135 403 | 77 897 | 97 371 | 111 118 | 135 403 |
| | Mexico | 211 345 | 273 517 | 350 283 | 447 105 | 409 330 | 478 403 | 514 509 | 560 137 |
| | Netherlands | 34 840 | 53 526 | 61 556 | 61 556 | 34 840 | 53 526 | 61 556 | 61 556 |
| | New Zealand[1] | 47 700 | 71 780 | 71 780 | 71 780 | 49 282 | 74 460 | 74 460 | 74 460 |
| | Norway | 425 650 | 460 850 | 460 850 | 499 050 | 477 700 | 524 400 | 524 400 | 583 100 |
| | Poland | 29 044 | 39 004 | 47 645 | 49 669 | 29 044 | 39 004 | 47 645 | 49 669 |
| | Portugal | 21 960 | 24 217 | 26 321 | 41 537 | 21 960 | 24 217 | 26 321 | 41 537 |
| | Slovak Republic[5] | 6 960 | 8 360 | 9 794 | 10 562 | 6 960 | 8 360 | 9 794 | 10 562 |
| | Slovenia[5] | 16 864 | 20 805 | 25 550 | 30 583 | 16 864 | 20 805 | 25 550 | 30 583 |
| | Spain | 31 415 | 33 969 | 36 153 | 44 250 | 31 415 | 33 969 | 36 153 | 44 250 |
| | Sweden[1, 5, 6] | 330 000 | 372 000 | 387 018 | 456 000 | 342 000 | 385 200 | 401 400 | 473 316 |
| | Switzerland[7] | 89 509 | 111 951 | m | 136 922 | 100 477 | 128 978 | m | 153 963 |
| | Turkey | 39 954 | 41 421 | 44 527 | 46 678 | 39 954 | 41 421 | 44 527 | 46 678 |
| | United States[5, 6] | 44 322 | 54 995 | 62 369 | 67 542 | 43 678 | 56 105 | 61 327 | 68 558 |
| | **Economies** | | | | | | | | |
| | Flemish Com. (Belgium)[5] | 31 054 | 38 942 | 43 842 | 53 642 | 38 743 | 49 379 | 56 311 | 67 864 |
| | French Com. (Belgium) | 30 132 | 37 681 | 42 425 | 51 914 | 37 488 | 47 787 | 54 499 | 65 685 |
| | England (UK) | 22 023 | 34 869 | 37 496 | 37 496 | 22 023 | 34 869 | 37 496 | 37 496 |
| | Scotland (UK) | 21 867 | 34 887 | 34 887 | 34 887 | 21 867 | 34 887 | 34 887 | 34 887 |
| Partners | Argentina | m | m | m | m | m | m | m | m |
| | Brazil | m | m | m | m | m | m | m | m |
| | China | m | m | m | m | m | m | m | m |
| | Colombia | 22 612 928 | 41 239 431 | 41 239 431 | 46 040 509 | 22 612 928 | 41 239 431 | 41 239 431 | 46 040 509 |
| | Costa Rica | 12 657 737 | 15 593 730 | 17 117 566 | 21 689 074 | 12 657 737 | 15 593 730 | 17 117 566 | 21 689 074 |
| | India | m | m | m | m | m | m | m | m |
| | Indonesia | m | m | m | m | m | m | m | m |
| | Lithuania | m | 8 868 | 9 228 | 9 720 | m | 8 868 | 9 228 | 9 720 |
| | Russian Federation | m | m | m | m | m | m | m | m |
| | Saudi Arabia | m | m | m | m | m | m | m | m |
| | South Africa | m | m | m | m | m | m | m | m |

**Note:** The definition of teachers' typical qualification is based on a broad concept, including the typical ISCED level of attainment and other criteria. Please see Box D3.2 and Annex 3 for more information. Data available at http://stats.oecd.org/, Education at a Glance Database.

1. Excludes the social security contributions and pension-scheme contributions paid by the employees.
2. Includes the social security contributions and pension-scheme contributions paid by the employers.
3. Includes data on the majority, i.e. kindergarten teachers only for pre-primary education.
4. Includes the average of fixed bonuses for overtime hours for lower and upper secondary teachers.
5. At the upper secondary level includes teachers working in vocational programmes. (In Slovenia, includes only those teachers teaching general subjects within vocational programmes).
6. Actual base salaries.
7. Salaries after 11 years of experience for Columns 2, 6, 10 and 14.

**Source:** OECD. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933562695

## Table X2.4b. [1/2] Teachers' statutory salaries at different points in their careers, for teachers with minimum qualification (2015)

*Annual salaries in public institutions for teachers with minimum qualification, in national currency*

| | | Pre-primary education | | | | Primary education | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Starting salary | Salary after 10 years of experience | Salary after 15 years of experience | Salary at top of scale | Starting salary | Salary after 10 years of experience | Salary after 15 years of experience | Salary at top of scale |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| OECD | **Countries** | | | | | | | | |
| | Australia[1] | 60 749 | 89 762 | 90 922 | 92 142 | 60 749 | 89 762 | 90 922 | 92 142 |
| | Austria | m | m | m | m | 29 022 | 34 122 | 38 225 | 56 787 |
| | Canada | m | m | m | m | 48 999 | 74 494 | 78 106 | 78 106 |
| | Chile | 7 569 485 | 9 737 321 | 10 601 861 | 14 060 009 | 7 569 485 | 9 737 321 | 10 601 861 | 14 060 009 |
| | Czech Republic | 191 000 | 198 700 | 208 500 | 232 600 | 247 200 | 251 900 | 259 360 | 285 500 |
| | Denmark[2] | 350 272 | 397 571 | 397 571 | 397 571 | 392 335 | 435 797 | 459 819 | 459 819 |
| | Estonia | a | a | a | a | 10 400 | m | m | m |
| | Finland[3] | 28 611 | 30 900 | 30 900 | 30 900 | 32 412 | 37 518 | 39 769 | 42 155 |
| | France[4] | 24 595 | 28 124 | 30 140 | 44 254 | 24 595 | 28 124 | 30 140 | 44 254 |
| | Germany | m | m | m | m | 44 860 | 53 581 | 56 267 | 59 734 |
| | Greece | 13 104 | 15 000 | 17 592 | 24 756 | 13 104 | 15 000 | 17 592 | 24 756 |
| | Hungary | 1 922 004 | 2 594 705 | 2 786 906 | 3 651 808 | 1 922 004 | 2 594 705 | 2 786 906 | 3 651 808 |
| | Iceland | m | m | m | m | m | m | m | m |
| | Ireland | a | m | m | m | 30 702 | 48 686 | 54 314 | 61 201 |
| | Israel | 98 968 | 127 957 | 144 916 | 217 541 | 85 936 | 112 703 | 130 880 | 183 041 |
| | Italy | 23 051 | 25 358 | 27 845 | 33 884 | 23 051 | 25 358 | 27 845 | 33 884 |
| | Japan | m | m | m | m | 3 171 000 | 4 684 000 | 5 535 000 | 6 910 000 |
| | Korea | 28 243 920 | 41 952 600 | 49 007 160 | 79 939 200 | 28 824 720 | 43 233 480 | 50 422 920 | 79 939 200 |
| | Latvia | 4 860 | 4 956 | 5 040 | m | 4 860 | 4 956 | 5 040 | m |
| | Luxembourg[2] | 67 129 | 88 894 | 106 536 | 120 282 | 67 129 | 88 894 | 106 536 | 120 282 |
| | Mexico | 164 657 | 165 491 | 213 880 | 272 901 | 164 657 | 165 491 | 213 880 | 272 901 |
| | Netherlands | 32 562 | 40 879 | 49 002 | 49 002 | 32 562 | 40 879 | 49 002 | 49 002 |
| | New Zealand[1] | m | m | m | m | 46 117 | 69 099 | 69 099 | 69 099 |
| | Norway | 364 500 | 419 500 | 419 500 | 419 500 | 369 700 | 408 600 | 408 600 | 451 200 |
| | Poland | 22 800 | 30 082 | 36 520 | 38 060 | 22 800 | 30 082 | 36 520 | 38 060 |
| | Portugal | 21 960 | 24 217 | 26 321 | 36 973 | 21 960 | 24 217 | 26 321 | 36 973 |
| | Slovak Republic[5] | 6 222 | 6 848 | 7 160 | 7 716 | 6 960 | 8 360 | 8 742 | 9 422 |
| | Slovenia[5] | 16 864 | a | a | a | 16 864 | a | a | a |
| | Spain | 28 129 | 30 393 | 32 389 | 39 673 | 28 129 | 30 393 | 32 389 | 39 673 |
| | Sweden[1, 5, 6] | 330 000 | 349 596 | 354 600 | 381 144 | 330 000 | 366 000 | 379 200 | 442 320 |
| | Switzerland[7] | 72 200 | 89 888 | m | 110 038 | 79 053 | 98 458 | m | 120 881 |
| | Turkey | 39 954 | 41 421 | 43 300 | 46 678 | 39 954 | 41 421 | 43 300 | 46 678 |
| | United States[5, 6] | 37 392 | 47 963 | 47 114 | 63 426 | 37 788 | 46 797 | 47 839 | 61 147 |
| | **Economies** | | | | | | | | |
| | Flemish Com. (Belgium)[5] | 31 054 | 38 942 | 43 842 | 53 642 | 31 054 | 38 942 | 43 842 | 53 642 |
| | French Com. (Belgium) | 30 095 | 36 601 | 40 420 | 48 057 | 30 095 | 36 601 | 40 420 | 48 057 |
| | England (UK) | 16 136 | a | a | 25 520 | 16 136 | a | a | 25 520 |
| | Scotland (UK) | 21 867 | 34 887 | 34 887 | 34 887 | 21 867 | 34 887 | 34 887 | 34 887 |
| Partners | Argentina | m | m | m | m | m | m | m | m |
| | Brazil | 25 570 | m | m | m | 25 570 | m | m | m |
| | China | m | m | m | m | m | m | m | m |
| | Colombia | 17 967 105 | 36 599 868 | 36 599 868 | 36 599 868 | 17 967 105 | 36 599 868 | 36 599 868 | 36 599 868 |
| | Costa Rica | 4 830 517 | 5 822 978 | 6 319 209 | 7 807 901 | 4 830 517 | 5 822 978 | 6 319 209 | 7 807 901 |
| | India | m | m | m | m | m | m | m | m |
| | Indonesia | m | m | m | m | m | m | m | m |
| | Lithuania | 8 315 | 8 538 | 8 650 | 9 124 | 8 052 | 8 148 | 8 232 | 8 652 |
| | Russian Federation | m | m | m | m | m | m | m | m |
| | Saudi Arabia | m | m | m | m | m | m | m | m |
| | South Africa | m | m | m | m | m | m | m | m |

**Note:** See *Definitions* and *Methodology* sections for more information. Data available at http://stats.oecd.org/, Education at a Glance Database.

1. Excludes the social security contributions and pension-scheme contributions paid by the employees.
2. Includes the social security contributions and pension-scheme contributions paid by the employers.
3. Includes data on the majority, i.e. kindergarten teachers only for pre-primary education.
4. Includes the average of fixed bonuses for overtime hours for lower and upper secondary teachers.
5. At the upper secondary level includes teachers working in vocational programmes. (In Slovenia, includes only those teachers teaching general subjects within vocational programmes).
6. Actual base salaries.
7. Salaries after 11 years of experience for Columns 2, 6, 10 and 14.

**Source:** OECD. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933562714

## Table X2.4b. [2/2] Teachers' statutory salaries at different points in their careers, for teachers with minimum qualification (2015)

*Annual salaries in public institutions for teachers with minimum qualification, in national currency*

| | | Lower secondary education, general programmes | | | | Upper secondary education, general programmes | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Starting salary | Salary after 10 years of experience | Salary after 15 years of experience | Salary at top of scale | Starting salary | Salary after 10 years of experience | Salary after 15 years of experience | Salary at top of scale |
| | | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) |
| OECD | **Countries** | | | | | | | | |
| | Australia[1] | 60 838 | 90 097 | 91 122 | 92 180 | 61 349 | 90 451 | 91 477 | 92 546 |
| | Austria | 30 340 | 36 819 | 41 334 | 58 736 | 31 775 | 39 079 | 44 500 | 64 896 |
| | Canada | 48 999 | 74 494 | 78 106 | 78 106 | 48 999 | 74 495 | 78 106 | 78 106 |
| | Chile | 7 569 485 | 9 737 321 | 10 601 861 | 14 060 009 | 7 756 420 | 9 956 632 | 10 834 072 | 14 343 868 |
| | Czech Republic | 247 200 | 251 900 | 259 360 | 285 500 | 247 200 | 251 900 | 259 360 | 285 500 |
| | Denmark[2] | 394 687 | 441 498 | 467 714 | 467 714 | 391 835 | 509 119 | 509 119 | 509 119 |
| | Estonia | 10 400 | m | m | m | 10 400 | m | m | m |
| | Finland[3] | 35 005 | 40 519 | 42 951 | 45 528 | 37 120 | 44 580 | 46 363 | 49 145 |
| | France[4] | 26 908 | 30 436 | 32 453 | 46 718 | 27 160 | 30 688 | 32 705 | 46 995 |
| | Germany | 50 448 | 58 597 | 61 058 | 66 510 | 50 764 | 61 800 | 64 767 | 73 709 |
| | Greece | 13 104 | 15 000 | 17 592 | 24 756 | 13 104 | 15 000 | 17 592 | 24 756 |
| | Hungary | 1 922 004 | 2 594 705 | 2 786 906 | 3 651 808 | 2 105 922 | 2 842 995 | 3 053 587 | 4 001 252 |
| | Iceland | m | m | m | m | m | m | m | m |
| | Ireland | 30 702 | 50 633 | 54 905 | 61 792 | 30 702 | 50 633 | 54 905 | 61 792 |
| | Israel | 86 414 | 123 485 | 138 760 | 181 538 | 89 187 | 105 765 | 118 192 | 175 337 |
| | Italy | 24 849 | 27 527 | 30 340 | 37 211 | 24 849 | 28 196 | 31 189 | 38 901 |
| | Japan | 3 171 000 | 4 684 000 | 5 535 000 | 6 910 000 | 3 171 000 | 4 684 000 | 5 535 000 | 7 099 000 |
| | Korea | 28 884 720 | 43 293 480 | 50 482 920 | 79 999 200 | 28 164 720 | 42 573 480 | 49 762 920 | 79 279 200 |
| | Latvia | 4 860 | 4 956 | 5 040 | m | 4 860 | 4 956 | 5 040 | m |
| | Luxembourg[2] | 77 897 | 97 371 | 111 118 | 135 403 | 77 897 | 97 371 | 111 118 | 135 403 |
| | Mexico | 211 345 | 216 361 | 273 517 | 350 283 | 409 330 | 409 330 | 439 876 | 514 509 |
| | Netherlands | 34 840 | 53 526 | 61 556 | 61 556 | 34 840 | 53 526 | 61 556 | 61 556 |
| | New Zealand[1] | 46 043 | 69 790 | 69 790 | 69 790 | 45 969 | 70 481 | 70 481 | 70 481 |
| | Norway | 369 700 | 408 600 | 408 600 | 451 200 | 410 800 | 443 300 | 443 300 | 480 300 |
| | Poland | 25 688 | 34 120 | 41 626 | 43 388 | 29 044 | 39 004 | 47 645 | 49 669 |
| | Portugal | 21 960 | 24 217 | 26 321 | 36 973 | 21 960 | 24 217 | 26 321 | 36 973 |
| | Slovak Republic[5] | 6 960 | 8 360 | 8 742 | 9 422 | 6 960 | 8 360 | 8 742 | 9 422 |
| | Slovenia[5] | 16 864 | a | a | a | 16 864 | a | a | a |
| | Spain | 31 415 | 33 969 | 36 153 | 43 852 | 31 415 | 33 969 | 36 153 | 44 250 |
| | Sweden[1, 5, 6] | 330 000 | 372 000 | 387 018 | 456 000 | 342 000 | 385 200 | 401 400 | 473 316 |
| | Switzerland[7] | 89 509 | 111 951 | m | 136 922 | 100 477 | 128 978 | m | 153 963 |
| | Turkey | 39 954 | 41 421 | 44 527 | 46 678 | 39 954 | 41 421 | 44 527 | 46 678 |
| | United States[5, 6] | 38 475 | 45 514 | 48 930 | 59 218 | 39 972 | 46 614 | 51 817 | 59 217 |
| | **Economies** | | | | | | | | |
| | Flemish Com. (Belgium)[5] | 31 054 | 38 942 | 43 842 | 53 642 | 38 743 | 49 379 | 56 311 | 67 864 |
| | French Com. (Belgium) | 30 095 | 36 601 | 40 420 | 48 057 | 30 095 | 36 601 | 40 420 | 48 057 |
| | England (UK) | 16 136 | a | a | 25 520 | 16 136 | a | a | 25 520 |
| | Scotland (UK) | 21 867 | 34 887 | 34 887 | 34 887 | 21 867 | 34 887 | 34 887 | 34 887 |
| Partners | Argentina | m | m | m | m | m | m | m | m |
| | Brazil | 25 570 | m | m | m | 25 570 | m | m | m |
| | China | m | m | m | m | m | m | m | m |
| | Colombia | 17 967 105 | 36 599 868 | 36 599 868 | 36 599 868 | 17 967 105 | 36 599 868 | 36 599 868 | 36 599 868 |
| | Costa Rica | 6 721 028 | 8 053 858 | 8 720 273 | 10 719 517 | 6 721 028 | 8 053 858 | 8 720 273 | 10 719 517 |
| | India | m | m | m | m | m | m | m | m |
| | Indonesia | m | m | m | m | m | m | m | m |
| | Lithuania | 8 052 | 8 148 | 8 232 | 8 652 | 8 052 | 8 148 | 8 232 | 8 652 |
| | Russian Federation | m | m | m | m | m | m | m | m |
| | Saudi Arabia | m | m | m | m | m | m | m | m |
| | South Africa | m | m | m | m | m | m | m | m |

**Note:** See *Definitions* and *Methodology* sections for more information. Data available at http://stats.oecd.org/, Education at a Glance Database.

1. Excludes the social security contributions and pension-scheme contributions paid by the employees.
2. Includes the social security contributions and pension-scheme contributions paid by the employers.
3. Includes data on the majority, i.e. kindergarten teachers only for pre-primary education.
4. Includes the average of fixed bonuses for overtime hours for lower and upper secondary teachers.
5. At the upper secondary level includes teachers working in vocational programmes. (In Slovenia, includes only those teachers teaching general subjects within vocational programmes).
6. Actual base salaries.
7. Salaries after 11 years of experience for Columns 2, 6, 10 and 14.

**Source:** OECD. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933562714

## Table X2.4e. Reference statistics used in calculating teachers' salaries (2000, 2005 to 2015)

| | | Purchasing power parity for private consumption (PPP)[1] | | | Private consumption deflators (2005 = 100) | | | | | | | | | | | | Reference year for 2015 salary data |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2014 | 2015 | Jan 2015 | Jan 2000 | Jan 2005 | Jan 2006 | Jan 2007 | Jan 2008 | Jan 2009 | Jan 2010 | Jan 2011 | Jan 2012 | Jan 2013 | Jan 2014 | Jan 2015 | |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) |
| | **Countries** | | | | | | | | | | | | | | | | |
| OECD | Australia | 1.54 | 1.55 | 1.55 | 88 | 100 | 103 | 106 | 110 | 113 | 116 | 118 | 121 | 124 | 127 | 130 | 2015 |
| OECD | Austria | 0.85 | 0.86 | 0.85 | 91 | 100 | 102 | 105 | 107 | 108 | 110 | 112 | 115 | 118 | 121 | 123 | 2014/2015 |
| OECD | Canada | 1.31 | 1.34 | 1.33 | 91 | 100 | 101 | 103 | 105 | 105 | 106 | 108 | 110 | 111 | 113 | 115 | 2014/2015 |
| OECD | Chile | 407.97 | 419.23 | 413.60 | 86 | 100 | 104 | 107 | 113 | 118 | 121 | 125 | 129 | 133 | 138 | 146 | 2015 |
| OECD | Czech Republic | 14.01 | 14.05 | 14.03 | 90 | 100 | 101 | 104 | 108 | 111 | 112 | 113 | 115 | 117 | 117 | 118 | 2014/2015 |
| OECD | Denmark | 8.38 | 8.33 | 8.35 | 92 | 100 | 102 | 104 | 106 | 109 | 111 | 113 | 116 | 118 | 119 | 120 | 2014/2015 |
| OECD | Estonia | 0.60 | 0.60 | 0.60 | 82 | 100 | 105 | 112 | 121 | 126 | 128 | 134 | 141 | 145 | 148 | 148 | 2014/2015 |
| OECD | Finland | 0.98 | 0.98 | 0.98 | 93 | 100 | 101 | 103 | 106 | 108 | 110 | 113 | 116 | 119 | 121 | 122 | 2014/2015 |
| OECD | France | 0.86 | 0.86 | 0.86 | 92 | 100 | 102 | 104 | 107 | 107 | 107 | 109 | 111 | 112 | 112 | 112 | 2014/2015 |
| OECD | Germany | 0.82 | 0.82 | 0.82 | 93 | 100 | 101 | 103 | 104 | 105 | 106 | 108 | 110 | 111 | 112 | 113 | 2014/2015 |
| OECD | Greece | 0.70 | 0.70 | 0.70 | 87 | 100 | 103 | 107 | 111 | 114 | 116 | 120 | 121 | 121 | 118 | 115 | 2015 |
| OECD | Hungary | 144.11 | 144.92 | 144.52 | 73 | 100 | 103 | 108 | 115 | 121 | 125 | 130 | 136 | 142 | 144 | 144 | 2015 |
| OECD | Iceland | 151.19 | 155.30 | 153.24 | 82 | 100 | 104 | 110 | 121 | 139 | 150 | 154 | 161 | 169 | 174 | 177 | m |
| OECD | Ireland | 0.99 | 1.00 | 1.00 | 83 | 100 | 102 | 105 | 107 | 105 | 100 | 100 | 101 | 102 | 104 | 105 | 2014/2015 |
| OECD | Israel | 4.43 | 4.38 | 4.41 | 93 | 100 | 102 | 104 | 107 | 111 | 114 | 118 | 121 | 123 | 124 | 124 | 2014/2015 |
| OECD | Italy | 0.83 | 0.82 | 0.82 | 87 | 100 | 102 | 105 | 108 | 109 | 110 | 112 | 115 | 117 | 118 | 118 | 2014/2015 |
| OECD | Japan | 109.10 | 109.52 | 109.31 | 105 | 100 | 100 | 99 | 99 | 98 | 96 | 94 | 94 | 93 | 94 | 95 | 2014/2015 |
| OECD | Korea | 996.17 | 1 037.17 | 1 016.67 | 84 | 100 | 102 | 104 | 107 | 111 | 114 | 117 | 121 | 123 | 124 | 125 | 2015 |
| OECD | Latvia | 0.57 | 0.57 | 0.57 | 77 | 100 | 110 | 122 | 137 | 143 | 139 | 141 | 148 | 150 | 152 | 153 | 2014/2015 |
| OECD | Luxembourg | 0.97 | 0.99 | 0.98 | 90 | 100 | 103 | 105 | 108 | 109 | 110 | 112 | 115 | 117 | 118 | 118 | 2014/2015 |
| OECD | Mexico | 9.32 | 9.74 | 9.53 | 80 | 100 | 104 | 109 | 115 | 121 | 127 | 132 | 137 | 142 | 147 | 153 | 2014/2015 |
| OECD | Netherlands | 0.89 | 0.89 | 0.89 | 88 | 100 | 102 | 105 | 107 | 107 | 107 | 109 | 111 | 113 | 115 | 115 | 2014/2015 |
| OECD | New Zealand | 1.60 | 1.62 | 1.61 | 92 | 100 | 102 | 105 | 108 | 111 | 113 | 116 | 118 | 119 | 119 | 120 | 2015 |
| OECD | Norway | 9.96 | 10.18 | 10.07 | 91 | 100 | 101 | 103 | 106 | 109 | 111 | 113 | 114 | 116 | 118 | 121 | 2014/2015 |
| OECD | Poland | 1.89 | 1.87 | 1.88 | 84 | 100 | 102 | 104 | 107 | 111 | 113 | 118 | 122 | 125 | 125 | 124 | 2014/2015 |
| OECD | Portugal | 0.67 | 0.67 | 0.67 | 85 | 100 | 104 | 107 | 111 | 111 | 111 | 113 | 115 | 116 | 117 | 118 | 2014/2015 |
| OECD | Slovak Republic | 0.55 | 0.54 | 0.55 | 76 | 100 | 104 | 108 | 111 | 114 | 115 | 117 | 122 | 125 | 125 | 125 | 2014/2015 |
| OECD | Slovenia | 0.66 | 0.65 | 0.66 | 76 | 100 | 102 | 106 | 111 | 114 | 116 | 117 | 119 | 121 | 121 | 121 | 2014/2015 |
| OECD | Spain | 0.75 | 0.75 | 0.75 | 85 | 100 | 104 | 107 | 111 | 112 | 113 | 115 | 118 | 120 | 121 | 121 | 2014/2015 |
| OECD | Sweden | 9.20 | 9.35 | 9.28 | 93 | 100 | 101 | 102 | 105 | 108 | 110 | 111 | 113 | 113 | 114 | 115 | 2015 |
| OECD | Switzerland | 1.44 | 1.43 | 1.44 | 97 | 100 | 101 | 102 | 104 | 105 | 105 | 105 | 105 | 104 | 103 | 103 | 2014/2015 |
| OECD | Turkey | 1.41 | 1.52 | 1.46 | 28 | 100 | 109 | 118 | 128 | 138 | 147 | 160 | 174 | 186 | 199 | 212 | 2015 |
| OECD | United States | 1.00 | 1.00 | 1.00 | 90 | 100 | 103 | 105 | 108 | 110 | 111 | 113 | 116 | 117 | 119 | 120 | 2014/2015 |
| | **Economies** | | | | | | | | | | | | | | | | |
| | Flemish Com. (Belgium)[2] | 0.86 | 0.87 | 0.87 | 90 | 100 | 103 | 106 | 109 | 111 | 111 | 114 | 117 | 119 | 120 | 120 | 2015 |
| | French Com. (Belgium)[2] | 0.86 | 0.87 | 0.87 | 90 | 100 | 103 | 106 | 109 | 111 | 111 | 114 | 117 | 119 | 120 | 120 | 2015 |
| | England (UK)[3] | 0.80 | 0.80 | 0.80 | 95 | 100 | 102 | 105 | 108 | 111 | 112 | 115 | 119 | 121 | 124 | 125 | 2014/2015 |
| | Scotland (UK)[3] | 0.80 | 0.80 | 0.80 | 95 | 100 | 102 | 105 | 108 | 111 | 112 | 115 | 119 | 121 | 124 | 125 | 2014/2015 |
| Partners | Argentina | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| Partners | Brazil | 1.88 | 2.04 | 1.96 | 65 | 100 | 106 | 112 | 118 | 126 | 135 | 144 | 156 | 168 | 179 | 194 | m |
| Partners | China | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| Partners | Colombia | 1 231.63 | 1 291.74 | 1 261.68 | 72 | 100 | 104 | 109 | 115 | 120 | 124 | 128 | 133 | 136 | 140 | 147 | 2 015 |
| Partners | Costa Rica | 375.42 | 377.96 | 376.69 | 56 | 100 | 115 | 129 | 144 | 154 | 159 | 167 | 173 | 178 | 185 | 189 | 2 015 |
| Partners | India | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| Partners | Indonesia | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| Partners | Lithuania | 0.50 | 0.50 | 0.50 | 99 | 100 | 104 | 109 | 118 | 127 | 131 | 134 | 139 | 142 | 142 | 142 | 2014/15 |
| Partners | Russian Federation | 22.59 | 25.36 | 23.98 | 48 | 100 | 110 | 120 | 132 | 148 | 160 | 172 | 185 | 196 | 210 | 235 | 2014/15 |
| Partners | Saudi Arabia | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| Partners | South Africa | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |

**Note:** See *Definitions* and *Methodology* sections for more information. Data available at http://stats.oecd.org/, Education at a Glance Database.

1. Data on PPPs and GDP for countries now in the Euro area are shown in euros.
2. Data on PPPs and deflators refer to Belgium.
3. Data on PPPs and deflators refer to the United Kingdom.

**Source:** OECD. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933562771

## Table X2.4f. [1/2] Trends in average teachers' actual salaries, in national currency (2000, 2005, 2010 to 2015)

*Average annual actual salary of teachers aged 25-64*

| | | Pre-primary | | | | Primary | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 2000 | 2005 | 2010 | 2015 | 2000 | 2005 | 2010 | 2015 |
| | | (1) | (2) | (3) | (8) | (9) | (10) | (11) | (16) |
| OECD | **Countries** | | | | | | | | |
| | Australia | m | m | 77 641 | m | m | m | 78 352 | 81 730 |
| | Austria[1] | m | m | m | m | m | m | m | 47 416 |
| | Canada | m | m | m | m | m | m | m | m |
| | Chile | m | m | m | 11 494 412 | m | m | m | 11 258 028 |
| | Czech Republic | m | m | 228 603 | 277 809 | m | m | 290 682 | 325 614 |
| | Denmark[2] | m | m | 372 336 | 396 252 | m | m | 452 337 | 480 636 |
| | Estonia | m | m | m | 8 807 | m | m | m | 13 254 |
| | Finland[3] | m | m | 29 759 | 32 637 | 28 723 | 35 654 | 40 458 | 44 085 |
| | France | m | m | 31 490 | m | m | m | 31 200 | m |
| | Germany | m | m | m | m | m | m | m | 53 610 |
| | Greece | m | m | m | 16 085 | m | m | m | 16 085 |
| | Hungary | m | m | 2 217 300 | 3 238 584 | m | m | 2 473 800 | 3 373 500 |
| | Iceland | m | m | m | m | m | m | m | m |
| | Ireland | m | m | m | m | m | m | m | m |
| | Israel | m | m | 110 959 | 161 247 | m | m | 123 151 | 162 049 |
| | Italy | m | m | 25 774 | 28 672 | m | m | 25 774 | 28 672 |
| | Japan | m | m | m | m | m | m | m | m |
| | Korea | m | m | m | m | m | m | m | m |
| | Latvia | m | m | m | 7 435 | m | m | m | 9 981 |
| | Luxembourg | m | m | 88 315 | 93 705 | m | m | 88 315 | 93 705 |
| | Mexico | m | m | m | m | m | m | m | m |
| | Netherlands | m | m | 43 374 | 45 126 | m | m | 43 374 | 45 126 |
| | New Zealand | m | m | m | m | m | m | m | 68 833 |
| | Norway | m | 289 548 | 368 580 | 448 797 | m | 348 877 | 422 930 | 505 878 |
| | Poland | m | m | 40 626 | 49 856 | m | m | 46 862 | 57 738 |
| | Portugal | m | m | m | 31 234 | m | m | m | 28 561 |
| | Slovak Republic | m | m | m | 8 986 | m | m | m | 12 185 |
| | Slovenia[4] | m | m | m | 17 349 | m | m | m | 24 069 |
| | Spain | m | m | m | m | m | m | m | m |
| | Sweden[5] | 204 516 | 252 268 | 296 997 | 343 285 | 239 887 | 288 154 | 323 621 | 378 684 |
| | Switzerland | m | m | m | m | m | m | m | m |
| | Turkey | m | m | m | m | m | m | m | m |
| | United States | 38 028 | 40 268 | 48 103 | 50 946 | 38 746 | 41 059 | 49 133 | 52 516 |
| | **Economies** | | | | | | | | |
| | Flemish Com. (Belgium) | m | m | 41 046 | 44 357 | m | m | 41 543 | 44 848 |
| | French Com. (Belgium) | m | m | m | 42 741 | m | m | m | 42 468 |
| | England (UK) | 22 968 | 29 418 | 33 680 | 33 422 | 22 968 | 29 418 | 33 680 | 33 422 |
| | Scotland (UK)[6] | m | m | 31 884 | 33 166 | m | m | 31 884 | 33 166 |
| Partners | Argentina | m | m | m | m | m | m | m | m |
| | Brazil | m | m | m | m | m | m | m | m |
| | China | m | m | m | m | m | m | m | m |
| | Colombia | m | m | m | m | m | m | m | m |
| | Costa Rica | m | m | m | m | m | m | m | m |
| | India | m | m | m | m | m | m | m | m |
| | Indonesia | m | m | m | m | m | m | m | m |
| | Lithuania | m | m | m | 9 732 | m | m | m | 9 732 |
| | Russian Federation[7] | m | m | m | 417 670 | m | m | m | 501 312 |
| | Saudi Arabia | m | m | m | m | m | m | m | m |
| | South Africa | m | m | m | m | m | m | m | m |

**Note:** Years 2011 to 2014 (i.e. Columns 4 to 7, 12 to 15, 20 to 23, and 28 to 31) are available for consultation on line. Data available at http://stats.oecd.org/, Education at a Glance Database.

1. Before 2015 includes also data on actual salaries of headmasters, deputies and assistants.
2. Includes also data on actual salaries of teachers in early childhood educational development programmes for pre-primary education.
3. Includes data on the majority, i.e. kindergarten teachers only for pre-primary education.
4. Includes also data on actual salaries of pre-school teacher assistants for pre-primary education.
5. Average actual teachers' salaries, not including bonuses and allowances.
6. Includes all teachers, irrespective of their age.
7. Average actual teachers' salaries for all teachers, irrespective of the level of education they teach.

**Source:** OECD. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933562790

## Table X2.4f. [2/2] Trends in average teachers' actual salaries, in national currency (2000, 2005, 2010 to 2015)

*Average annual actual salary of teachers aged 25-64*

| | | Lower secondary | | | | Upper secondary | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 2000 | 2005 | 2010 | 2015 | 2000 | 2005 | 2010 | 2015 |
| | | (17) | (18) | (19) | (24) | (25) | (26) | (27) | (32) |
| OECD | **Countries** | | | | | | | | |
| | Australia | m | m | 78 221 | 82 516 | m | m | 78 225 | 82 542 |
| | Austria[1] | m | m | m | 55 799 | m | m | m | 60 152 |
| | Canada | m | m | m | m | m | m | m | m |
| | Chile | m | m | m | 11 325 494 | m | m | m | 12 365 587 |
| | Czech Republic | m | m | 289 771 | 325 034 | m | m | 313 534 | 338 662 |
| | Denmark[2] | m | m | 457 728 | 486 492 | m | m | m | 553 880 |
| | Estonia | m | m | m | 13 254 | m | m | m | 13 254 |
| | Finland[3] | 32 919 | 39 519 | 44 421 | 48 497 | 37 728 | 44 051 | 49 808 | 54 378 |
| | France | m | m | 37 227 | m | m | m | 41 783 | m |
| | Germany | m | m | m | 59 153 | m | m | m | 62 760 |
| | Greece | m | m | m | 17 103 | m | m | m | 17 103 |
| | Hungary | m | m | 2 473 800 | 3 373 500 | m | m | 2 814 100 | 3 588 180 |
| | Iceland | m | m | m | m | m | m | 5 172 300 | m |
| | Ireland | m | m | m | m | m | m | m | m |
| | Israel | m | m | 126 309 | 176 907 | m | m | 133 790 | 160 763 |
| | Italy | m | m | 27 170 | 28 581 | m | m | 28 986 | 30 991 |
| | Japan | m | m | m | m | m | m | m | m |
| | Korea | m | m | m | m | m | m | m | m |
| | Latvia | m | m | m | 9 320 | m | m | m | 10 430 |
| | Luxembourg | m | m | 101 471 | 106 650 | m | m | 101 471 | 106 650 |
| | Mexico | m | m | m | m | m | m | m | m |
| | Netherlands | m | m | 52 831 | 56 796 | m | m | 52 831 | 56 796 |
| | New Zealand | m | m | m | 70 223 | m | m | m | 74 624 |
| | Norway | m | 348 877 | 422 930 | 505 878 | m | 372 694 | 449 704 | 555 315 |
| | Poland | m | m | 47 410 | 58 907 | m | m | 46 147 | 57 837 |
| | Portugal | m | m | m | 27 903 | m | m | m | 30 431 |
| | Slovak Republic | m | m | m | 12 185 | m | m | m | 12 176 |
| | Slovenia[4] | m | m | m | 24 504 | m | m | m | 25 989 |
| | Spain | m | m | m | m | m | m | m | m |
| | Sweden[5] | 247 793 | 290 058 | 324 639 | 389 624 | 265 488 | 315 592 | 347 967 | 405 662 |
| | Switzerland | m | m | m | m | m | m | m | m |
| | Turkey | m | m | m | m | m | m | m | m |
| | United States | 39 500 | 41 873 | 50 158 | 53 548 | 41 124 | 43 588 | 52 188 | 55 328 |
| | **Economies** | | | | | | | | |
| | Flemish Com. (Belgium) | m | m | 41 277 | 43 718 | m | m | 54 381 | 56 594 |
| | French Com. (Belgium) | m | m | m | 41 586 | m | m | m | 53 006 |
| | England (UK) | 25 347 | 32 355 | 36 173 | 36 016 | 25 347 | 32 355 | 36 173 | 36 016 |
| | Scotland (UK)[6] | m | m | 31 884 | 33 166 | m | m | 31 884 | 33 166 |
| Partners | Argentina | m | m | m | m | m | m | m | m |
| | Brazil | m | m | m | m | m | m | m | m |
| | China | m | m | m | m | m | m | m | m |
| | Colombia | m | m | m | m | m | m | m | m |
| | Costa Rica | m | m | m | m | m | m | m | m |
| | India | m | m | m | m | m | m | m | m |
| | Indonesia | m | m | m | m | m | m | m | m |
| | Lithuania | m | m | m | 9 732 | m | m | m | 9 732 |
| | Russian Federation[7] | m | m | m | 501 312 | m | m | m | 501 312 |
| | Saudi Arabia | m | m | m | m | m | m | m | m |
| | South Africa | m | m | m | m | m | m | m | m |

**Note:** Years 2011 to 2014 (i.e. Columns 4 to 7, 12 to 15, 20 to 23, and 28 to 31) are available for consultation on line. Data available at http://stats.oecd.org/, Education at a Glance Database.

1. Before 2015 includes also data on actual salaries of headmasters, deputies and assistants.
2. Includes also data on actual salaries of teachers in early childhood educational development programmes for pre-primary education.
3. Includes data on the majority, i.e. kindergarten teachers only for pre-primary education.
4. Includes also data on actual salaries of pre-school teacher assistants for pre-primary education.
5. Average actual teachers' salaries, not including bonuses and allowances.
6. Includes all teachers, irrespective of their age.
7. Average actual teachers' salaries for all teachers, irrespective of the level of education they teach.

**Source:** OECD. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933562790

## Table X2.5. Teachers with 15 years of experience, by level of qualification (2015)

*Teachers with 15 years of experience that have either minimum or typical qualification level*

| | | Pre-primary | | | Primary | | | Lower secondary | | | Upper secondary | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Is there a difference between "minimum" and "typical" qualification of teachers? | Percentage of teachers with minimum qualification | Percentage of teachers with typical qualification | Is there a difference between "minimum" and "typical" qualification of teachers? | Percentage of teachers with minimum qualification | Percentage of teachers with typical qualification | Is there a difference between "minimum" and "typical" qualification of teachers? | Percentage of teachers with minimum qualification | Percentage of teachers with typical qualification | Is there a difference between "minimum" and "typical" qualification of teachers? | Percentage of teachers with minimum qualification | Percentage of teachers with typical qualification |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
| OECD | **Countries** | | | | | | | | | | | | |
| | Australia | m | m | m | m | m | m | m | m | m | m | m | m |
| | Austria | m | m | m | No | x(6) | 100 | No | x(9) | 100 | No | x(12) | 100 |
| | Canada | m | m | m | No | m | m | No | m | m | No | m | m |
| | Chile | Yes | m | m | Yes | m | m | Yes | m | m | Yes | m | m |
| | Czech Republic | Yes | 5 | 88 | Yes | 4 | 95 | Yes | 2 | 95 | Yes | 1 | 96 |
| | Denmark | No | x(3) | 100 | No | x(6) | 100 | No | x(9) | 100 | No | x(12) | 100 |
| | Estonia | Yes | 13 | 45 | Yes | 10 | 68 | Yes | 9 | 71 | Yes | 8 | 78 |
| | Finland | No | m | m | No | m | m | No | m | m | No | m | m |
| | France | No | m | m | No | m | m | No | m | m | No | m | m |
| | Germany | No | m | m | No | x(6) | 100 | Yes | x(9) | 100 | Yes | x(12) | 100 |
| | Greece | No | m | m | No | m | m | No | m | m | No | m | m |
| | Hungary | No | m | m | No | m | m | No | m | m | No | m | m |
| | Iceland | m | m | m | m | m | m | m | m | m | m | m | m |
| | Ireland | m | m | m | Yes | m | m | Yes | m | m | Yes | m | m |
| | Israel | Yes | x(3) | 74 | Yes | x(6) | 62 | Yes | x(9) | 50 | Yes | x(12) | 48 |
| | Italy | Yes | a | m | Yes | a | m | Yes | a | m | Yes | a | m |
| | Japan | m | m | m | No | m | m | No | m | m | No | m | m |
| | Korea | Yes | 14 | 41 | No | x(6) | 62 | No | x(9) | 62 | No | x(12) | 54 |
| | Latvia | No | x(3) | 100 | No | x(6) | 100 | No | x(9) | 100 | No | x(12) | 100 |
| | Luxembourg | a | a | a | a | a | a | a | a | a | a | a | a |
| | Mexico | Yes | m | m | Yes | m | m | Yes | m | m | Yes | m | m |
| | Netherlands | No | x(6) | x(6) | No | x(6) | 100 | No | m | m | Yes | m | m |
| | New Zealand | m | m | m | Yes | m | m | Yes | m | m | Yes | m | m |
| | Norway | No | m | m | Yes | 5-10 | 75-80 | Yes | 35-40 | 75-80 | Yes | 9 | 50-55 |
| | Poland | Yes | 1 | 94 | Yes | 0 | 97 | Yes | 2 | 98 | No | x(12) | 98 |
| | Portugal | Yes | a | a | Yes | a | a | Yes | a | a | Yes | a | a |
| | Slovak Republic | No | x(3) | 52 | No | x(6) | 90 | No | x(9) | 96 | No | x(12) | 94 |
| | Slovenia | Yes | a | m | Yes | a | m | Yes | a | m | Yes | a | m |
| | Spain | No | x(3) | 100 | No | x(6) | 100 | No | x(9) | 88 | No | x(12) | 100 |
| | Sweden | No | m | m | No | m | m | No | m | m | No | m | m |
| | Switzerland | No | m | m | No | m | m | Yes | m | m | No | m | m |
| | Turkey | No | x(3) | 100 | No | x(6) | 100 | No | x(9) | 100 | No | x(12) | 100 |
| | United States | Yes | 37 | 55 | Yes | 37 | 53 | Yes | 33 | 55 | Yes | 32 | 56 |
| | **Economies** | | | | | | | | | | | | |
| | Flemish Com. (Belgium) | Yes | 2 | 98 | Yes | 14 | 86 | Yes | 15 | 85 | Yes | 26 | 74 |
| | French Com. (Belgium) | Yes | 0 | 100 | Yes | 1 | 98 | Yes | 1 | 95 | Yes | 1 | 82 |
| | England (UK) | Yes | m | m | Yes | m | m | Yes | m | m | Yes | m | m |
| | Scotland (UK) | No | m | m | No | m | m | No | m | m | No | m | m |
| Partners | Argentina | m | m | m | m | m | m | m | m | m | m | m | m |
| | Brazil | m | m | m | m | m | m | m | m | m | m | m | m |
| | China | m | m | m | No | m | m | m | m | m | m | m | m |
| | Colombia | Yes | 0 | 2 | Yes | 2 | 2 | Yes | 0 | 3 | Yes | x(8) | x(9) |
| | Costa Rica | Yes | m | m | Yes | m | m | Yes | m | m | Yes | m | m |
| | India | m | m | m | m | m | m | m | m | m | m | m | m |
| | Indonesia | m | m | m | m | m | m | m | m | m | m | m | m |
| | Lithuania | Yes | 13 | 45 | Yes | 4 | 61 | Yes | 3 | 58 | Yes | 0 | 53 |
| | Russian Federation | m | m | m | m | m | m | m | m | m | m | m | m |
| | Saudi Arabia | m | m | m | m | m | m | m | m | m | m | m | m |
| | South Africa | m | m | m | m | m | m | m | m | m | m | m | m |

**Note:** See *Definitions* and *Methodology* sections for more information. Data available at http://stats.oecd.org/, Education at a Glance Database.
**Source:** OECD. See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).
*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*
StatLink http://dx.doi.org/10.1787/888933562809

## Table X2.6. Percentage of pre-primary, primary, lower secondary and upper secondary teachers, by level of attainment (2015)

| | | Pre-primary | | | Primary | | | Lower secondary | | | Upper secondary | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Attainment at ISCED level 5 or lower | Attainment at ISCED level 6 | Attainment at ISCED level 7 or 8 | Attainment at ISCED level 5 or lower | Attainment at ISCED level 6 | Attainment at ISCED level 7 or 8 | Attainment at ISCED level 5 or lower | Attainment at ISCED level 6 | Attainment at ISCED level 7 or 8 | Attainment at ISCED level 5 or lower | Attainment at ISCED level 6 | Attainment at ISCED level 7 or 8 |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
| OECD | **Countries** | | | | | | | | | | | | |
| | Australia | m | m | m | m | m | m | m | m | m | m | m | m |
| | Austria | m | m | m | m | m | m | m | m | m | m | m | m |
| | Canada | m | m | m | m | m | m | m | m | m | m | m | m |
| | Chile | 2 | 98 | x(2) | 1 | 99 | x(5) | 1 | 99 | x(8) | 1 | 99 | x(11) |
| | Czech Republic | 79 | 14 | 8 | 9 | 4 | 87 | 6 | 5 | 89 | 4 | 3 | 94 |
| | Denmark | 0 | 100 | 0 | 0 | 100 | 0 | 0 | 100 | 0 | 0 | 0 | 100 |
| | Estonia | 39 | 40 | 21 | 9 | 18 | 73 | 7 | 16 | 77 | 4 | 13 | 83 |
| | Finland | 29 | 65 | 6 | 3 | 9 | 88 | 3 | 6 | 91 | 0 | 1 | 99 |
| | France[1] | 24 | 65 | 10 | x(1) | x(2) | x(3) | 8 | 71 | 21 | x(7) | x(8) | x(9) |
| | Germany | m | m | m | 0 | 0 | 100 | 0 | 0 | 100 | 0 | 0 | 100 |
| | Greece | a | m | m | a | m | m | a | m | m | a | m | m |
| | Hungary | 5 | 94 | 1 | 1 | 89 | 11 | 1 | 89 | 11 | 1 | 33 | 66 |
| | Iceland | m | m | m | m | m | m | m | m | m | m | m | m |
| | Ireland | m | m | m | m | m | m | m | m | m | m | m | m |
| | Israel | 10 | 71 | 19 | 6 | 65 | 28 | 3 | 51 | 46 | 9 | 48 | 43 |
| | Italy | m | m | m | m | m | m | m | m | m | m | m | m |
| | Japan | m | m | m | m | m | m | m | m | m | m | m | m |
| | Korea | m | m | m | m | m | m | m | m | m | m | m | m |
| | Latvia | 14 | 86 | m | 4 | 96 | m | 6 | 94 | m | 3 | 97 | m |
| | Luxembourg | m | m | m | m | m | m | m | m | m | m | m | m |
| | Mexico | m | m | m | m | m | m | m | m | m | m | m | m |
| | Netherlands | 0 | x(5) | x(6) | 0 | 83 | 17 | 0 | 64 | 36 | 0 | x(8) | x(9) |
| | New Zealand | m | m | m | 13 | 85 | 2 | 12 | 84 | 4 | 4 | 87 | 9 |
| | Norway | 4 | 95 | 1 | 3 | 91 | 5 | 3 | 91 | 5 | 0 | 43 | 56 |
| | Poland | 4 | 8 | 88 | 1 | 3 | 97 | 0 | 2 | 98 | 0 | 1 | 99 |
| | Portugal | a | 12 | 88 | a | 8 | 92 | a | 4 | 96 | a | 4 | 96 |
| | Slovak Republic | m | m | m | m | m | m | m | m | m | m | m | m |
| | Slovenia | 57 | 29 | 14 | 24 | 3 | 73 | 28 | 2 | 70 | 2 | 1 | 97 |
| | Spain | 0 | 78 | 22 | 0 | 80 | 20 | 0 | 11 | 89 | 0 | 3 | 97 |
| | Sweden | 47 | 50 | 3 | 5 | 72 | 23 | 4 | 25 | 71 | 3 | 13 | 84 |
| | Switzerland | m | m | m | m | m | m | m | m | m | m | m | m |
| | Turkey | m | m | m | m | m | m | m | m | m | m | m | m |
| | United States | 3 | 44 | 53 | 3 | 41 | 56 | 4 | 40 | 56 | 5 | 35 | 60 |
| | **Economies** | | | | | | | | | | | | |
| | Flemish Com. (Belgium) | 1 | 99 | 0 | 2 | 98 | 1 | 0 | 100 | 0 | 0 | 0 | 100 |
| | French Com. (Belgium) | 0 | 99 | 1 | 2 | 96 | 3 | 2 | 84 | 15 | 1 | 12 | 87 |
| | England (UK) | 2 | 46 | 52 | 2 | 46 | 52 | 1 | 20 | 79 | 1 | 20 | 79 |
| | Scotland (UK) | 0 | 100 | x(2) | 0 | 100 | x(5) | 0 | 100 | x(8) | 0 | 100 | x(11) |
| Partners | Argentina | m | m | m | m | m | m | m | m | m | m | m | m |
| | Brazil | m | m | m | m | m | m | m | m | m | m | m | m |
| | China | m | m | m | m | m | m | m | m | m | m | m | m |
| | Colombia | m | m | m | m | m | m | m | m | m | m | m | m |
| | Costa Rica | m | m | m | m | m | m | m | m | m | m | m | m |
| | India | m | m | m | m | m | m | m | m | m | m | m | m |
| | Indonesia | m | m | m | m | m | m | m | m | m | m | m | m |
| | Lithuania | m | m | m | m | m | m | m | m | m | m | m | m |
| | Russian Federation | m | m | m | m | m | m | m | m | m | m | m | m |
| | Saudi Arabia | m | m | m | m | m | m | m | m | m | m | m | m |
| | South Africa | m | m | m | m | m | m | m | m | m | m | m | m |

**Note:** See *Definitions* and *Methodology* sections for more information. Data available at http://stats.oecd.org/, Education at a Glance Database.

1. Data for pre-primary level refer to pre-primary and primary level teachers combined. Data for lower secondary level refer to lower secondary and upper secondary combined.

**Source:** OECD (2017). See *Source* section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

*Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.*

StatLink http://dx.doi.org/10.1787/888933562828

Annex

3

# Sources, Methods and Technical Notes

**Annex 3 on sources and methods is available in electronic form only. It can be found at:**

www.oecd.org/education/education-at-a-glance-19991487.htm

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Many people have contributed to the development of this publication.

The following lists the names of the country representatives who have taken part to the INES meetings and to the preparatory work leading to the publication of *Education at a Glance 2017: OECD Indicators*.

The OECD wishes to thank them all for their valuable efforts.

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OECD PUBLISHING, 2, rue André-Pascal, 75775 PARIS CEDEX 16
(96 2017 04 1P) ISBN 978-92-64-27976-6 – 2017

# Education at a Glance 2017

## OECD INDICATORS

*Education at a Glance: OECD Indicators* is the authoritative source for information on the state of education around the world. It provides data on the structure, finances and performance of education systems in the 35 OECD and a number of partner countries.

With more than 100 charts and 80 tables included in the publication and links to much more available on the educational database, *Education at a Glance 2017* provides key information on the output of educational institutions; the impact of learning across countries; the financial and human resources invested in education; access, participation and progression in education; and the learning environment and organisation of schools.

New material in the 2017 edition includes:

- a focus on fields of study, investigating both trends in enrolment at upper secondary and tertiary level, student mobility, and labour market outcomes of the qualifications obtained in these fields
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- a new indicator on upper secondary completion rate, analysing the share of students graduating, still enrolled, or dropping out from the programme
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**ISBN 978-92-64-27976-6**
**96 2017 04 1P**

9 789264 279766