Education at a Glance

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Regards sur l'éducation

LES INDICATEURS DE L'OCDE - ÉDITION 2006

FOREWORD

Governments are paying increasing attention to international comparisons as they search for effective policies that enhance individuals' social and economic prospects, provide incentives for greater efficiency in schooling and help to mobilise resources to meet rising demands. As part of its response, the OECD Directorate for Education devotes a major effort to the development and analysis of the quantitative, internationally comparable indicators that it publishes annually in *Education at a Glance*. These indicators enable governments to see their education systems in the light of other countries' performances and, together with OECD's country policy reviews, are designed to support and review the efforts that governments are making towards policy reform.

Education at a Glance addresses the needs of a range of users, from governments seeking to learn policy lessons and academics requiring data for further analysis to the general public wanting to monitor how its nation'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's indicators of education systems (INES) programme and the OECD Secretariat. The publication was drafted by the Indicators and Analysis Division of the OECD Directorate for Education, under the responsibility of Andreas Schleicher, in co-operation with Etienne Albiser, Eric Charbonnier, Michael Davidson, Stéphane Guillot, Bo Hansson, Corinne Heckmann, Ben Jensen, Karinne Logez, Alistair Nolan, Annette Panzera, Claire Shewbridge, Karine Tremblay and Sophie Vayssettes. Administrative and editorial support were provided by Cécile Bily, Fionnuala Canning, Juliet Evans and Kate Lancaster. The development of the publication was steered by INES National Co-ordinators in member countries and facilitated by the financial and material support of the three countries responsible for co-ordinating the INES Networks – the Netherlands, Sweden and the United States. 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 strengthen the link between policy needs and the best available internationally comparable data. In doing so, various challenges and tradeoffs must be faced. First, the indicators need to respond to educational issues that are high on national policy agendas, and where the international comparative perspective can offer important added value to what can be accomplished through national analysis and evaluation. Second, while the indicators need to 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 educational 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 educational challenges.

The OECD will continue to address these challenges vigorously and to pursue not just the development of 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 further development of the OECD's Programme for International Student Assessment (PISA) and the launch of a new survey on teachers, teaching and learning will be major efforts to this end.

The report is published on the responsibility of the Secretary-General of the OECD.

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Editorial

By Barbara Ischinger, Director for Education

The OECD education indicators show – consistently and over time – that individuals and countries that invest in education and skills benefit economically and socially from that choice. Human capital is a major factor driving economic growth, both in the world's most advanced economies and in those experiencing rapid development. Not least, it contributes tangibly to social outcomes, including health and social cohesion (Indicators A8, A9 and A10). What is noteworthy is that rising tertiary education levels among citizens seem generally not to have led to an "inflation" of the labour-market value of qualifications: Among the countries with the largest expansion of tertiary education, in which the proportion of 25-to-64-year-olds with tertiary qualifications increased by more than 5 percentage points since 1995 – Australia, Austria, Belgium, Canada, Denmark, Finland, Iceland, Ireland, Japan, Korea, Mexico, Poland, Spain, Sweden, Switzerland and the United States – most have seen stable or rising earnings benefits among tertiary graduates. This suggests that an increase in knowledge workers does not necessarily lead to a decrease in their pay in the way it does for low-skilled workers.

Technology too has played a key role in economic and social development, through the direct contribution of the technology sector to overall industrial production, through the expansion of the capital intensity of production in the economy at large resulting from massive investments in information and communication technology (ICT) during the 1990s and from spill-over effects such as organisational improvements brought about by the new technologies, in particular the spread of the internet. However, technological development depends on educational progress as well, not just because the knowledge workers and innovators require high levels of education, but also because a highly educated workforce is a pre-requisite for adopting new technologies throughout the economy, thereby increasing total factor productivity.

Together, skills and technology have profoundly changed economies and societies (Friedman, 2005). Their coincidence with the deregulation of telecommunications launched the "fibre-optic bubble": telecommunication companies spent billions on wiring the world with fibre-optic cables. This excess supply of connectivity meant that the cost of phone calls, Internet connections and data transmission declined dramatically, indeed so dramatically that many of the companies that laid these cables went bankrupt. But the world was wired and, as a result, all work that can be digitised, automatised and outsourced can increasingly be done by the most effective and competitive individuals or enterprises, wherever they are located. The impact of these developments on OECD countries and their education systems was magnified by the collapse of communism in the Soviet Union, India's turn away from economic insularism, and China's shift to market capitalism. This allowed another three to four billion people in places like China, India, the Russian Federation, Eastern Europe, Latin America and Central Asia, that had previously been locked out of the global economy because they lived in largely closed economies with vertical, hierarchical political and economic structures, to collaborate and compete with everyone else (Friedman, 2005).

In the first instance, the OECD countries found themselves mainly competing with new countries that offered low skills at low costs and this was reflected in rising unemployment in OECD labour markets at the lower skill end (Indicator A8). In addition, entire industries have disappeared as ICT made them superfluous. Certainly, these developments created important new opportunities for OECD countries, because it meant opening up new markets, but generally this led to better employment opportunities and higher earnings only for the better skilled, as the related low-skilled jobs have been largely created in the countries where these new markets were located. More significantly than this, in recent years countries like China or India have rapidly expanded the supply of high-level qualifications as well, and their current investment levels in high skills may suggest that for countries like China competition through lower industrial production costs is merely a transitional strategy, on their way to matching the OECD countries at the top of the product range.

Together, these developments will pose phenomenal changes to education systems in OECD countries (Schleicher and Tremblay, 2006). While the education indicators in this publication focus on the performance of education systems in OECD countries, this editorial provides an opportunity to examine some of these challenges in a wider perspective.

The quantity challenge

Indicator A1 illustrates the pace of change with which education systems have responded to the increase in the demand for better qualifications. It shows how the educational landscape in the OECD area looked in the 1960s, in terms of today's 55-to-64-year-old population who had successfully completed upper-secondary education, which the indicators on the labour-market returns to education identify as the baseline qualification in the knowledge economy. Two generations ago, the United States was well ahead of all other OECD countries, and it is reasonable to assume that the economic success of the United States today derives at least in part from its first-mover advantage in offering high baseline standards of human capital. However, the indicator also shows that many countries had caught up with the United States in the 1980s and eventually overtook it. The same holds for tertiary qualifications. Today, all of the OECD's members are producing more university graduates than they did in 1960, but the pace of change has varied widely. Most of Europe's major economies, including France, Italy and the United Kingdom, have just held their ground or, in the case of Germany, have fallen significantly behind. Looking at today's university entry rates suggests that differences in educational attainment between countries are likely to widen in the years to come (Indicator C2).

However, what is most striking is that both Europe and the United States find themselves increasingly outperformed in education by countries in East Asia. Korea illustrates the pace of improvement that is possible: just two generations ago, it had the standard of living of Afghanistan today and it was among the lowest performers in education among OECD countries. Today, 97% of all 25-to-34-year-olds in Korea have completed upper-secondary education (Indicator A1), the highest rate among the OECD countries, and Korea can compare itself with the best performing countries in the world. Many factors helped Korea do better than other countries that started from a low base. Perhaps most importantly, society and educators in Korea never accepted the systemic and structural barriers that have hindered learning and reinforced inequities in many other countries. When demand for education began to outpace supply, students were not sent home. Instead, class size and schooling hours were extended and parents were ready to complement public provision with high levels of private investment into learning (Indicator B3).

These reforms were driven by merit-based learning opportunities, where progress depended on what children were able to do, not where they came from (Indicator A5).

The experience of Korea is not unique. Japan has seen a somewhat slower expansion as it started from a higher base than did Korea in the 1960s. But measured by the OECD indicators, it too is among today's best performing education systems in the OECD area. Indeed, in many Asian countries, the combined effect of growing populations and rising access to education has resulted in a dramatic increase in student numbers and will potentially result in increased attainment rates. Between 1995 and 2004 alone the number of students attending university more than doubled in China and Malaysia, and expanded by 83% in Thailand and 51% in India. Even if graduation rates in China and India still remain well below the OECD average, the mere size of the populations at the upper secondary and tertiary levels in these countries translates into a vast graduate output in absolute terms: in 2005, China already produced 10.8 million upper secondary graduates, two and a half times the graduate output of the EU countries; it has also surpassed the EU for the number of tertiary graduates, with 4.4 million graduates of Chinese tertiary institutions compared to 2.5 million in the EU, even if a significant proportion of the Chinese qualifications result from shorter vocationally oriented programmes and major quality challenges remain (OECD, 2005d; Ministry of Education of China, 2006). In 2003, India too produced nearly as many upper secondary graduates as the EU countries.

This suggests that the time when OECD countries competed mostly with countries that offered low-skilled work at low wages is gone. Today, countries like China or India are starting to deliver high skills at moderate cost and at an ever increasing pace, and OECD countries cannot switch off the pressures that result from this except at great cost to our own economic well being.

And yet, the biggest challenge may lie in the competition for advanced skills. In the past, the economies of countries like China or India could not provide adequate jobs for their own talent and OECD countries became major beneficiaries of their educational investments. For example, the proportion of science and engineering occupations in the United States that are filled by tertiary-educated workers born abroad increased from 14 to 22% between 1990 and 2000, and from 24 to 38% when considering only doctorate-level science and engineering workers (United States National Science Board, 2003). But with technology flattening the world the time in which the only route to success for these students lay in emigrating to Europe or the United States is coming to an end. Indian engineers, for instance, can increasingly plug into the world from India, whether they are working for Indian companies or for companies in the OECD area that are outsourcing their services to India.

The quality challenge

The OECD countries' capacity to compete in the global knowledge economy will therefore depend on whether they can meet the fast-growing demand for high-level skills. This, in turn, will hinge on significant improvements in the quality of schooling outcomes and a more equitable distribution in learning opportunities.

Time is running out and the clock keeps ticking. Every eight seconds, one student in the OECD area leaves school without completing an upper secondary qualification, with a gloomy outlook for their future: on average, 26% of adults without upper secondary qualifications earn half or less than half the national median earnings. In only two countries are more then 5% of these adults found in the group whose average earnings exceed twice the country median

(Indicator A9). Moreover, as the same indicator show, the penalties for not obtaining strong baseline qualifications continue to rise year after year.

The OECD's Programme for International Student Assessment (PISA) makes it now also possible to regularly and directly compare the quality of educational outcomes in the principal industrialised countries that make up almost 90% of the world economy. The latest PISA assessment in 2003 focused on the capacity of students to analyse, reason and communicate effectively as they posed, solved and interpreted mathematical problems in a variety of situations. Although these capacities reflect goals emphasised in many national curricula, the PISA assessment showed that 15-year-olds in the United States and most of Europe's large economies only performed around or below the OECD average. In contrast, the six East Asian education systems that took part in PISA 2003 were among the top ten performers. It is also noteworthy that most of East Asia's education systems succeed without leaving many students behind, even if Finland, Canada and the Netherlands also did well in this respect (Indicator A5). In contrast, 20% of 15-year-olds on average in the EU, over a quarter in Italy, Mexico, Portugal, Turkey, and the United States performed at Level 1 or below on the PISA mathematics assessment (Indicator A6). They are at risk, as they fail to demonstrate baseline mathematical skills that will enable them to expand their own horizon in their further schooling and beyond. These are not just large proportions but also large numbers in absolute terms: in the OECD area, 3.6 million 15-year-olds performed at Level 1 or below in 2003.

Nevertheless, the OECD indicators also highlight important challenges for the East Asian education systems. At a time when the future success of school students will derive largely from their capacity to expand their horizons and continue learning throughout life, students need not merely to acquire strong subject matter skills but also positive attitudes and effective learning strategies. This is an area where most of the East Asian countries performed comparatively poorly. For example, despite Japan's strong mathematics performance, only about one-quarter of Japanese 15-year-olds report doing mathematics because they enjoy it, roughly half the proportion found in Denmark, the country with the strongest results on this aspect. One might argue that what counts is what students know and not their interest in the subject. However, the PISA data reveal that the relationship between motivation and performance is as high in Japan as it is in Denmark. Beyond their general interest in mathematics, 15-year-olds in many Asian countries also assess the relevance of the mathematics taught in their schools to their own future life comparatively poorly.

The equity challenge

Many education systems make ambitious claims when it comes to securing equity in learning opportunities. However, here lies perhaps the biggest disappointment. PISA reveals that social background plays an even larger role in determining a student's performance in countries such as Germany, France and Italy than in the United States and in both Europe and the United States socio-economic inequalities are larger than in any of the Asian countries for which comparable data are available (Indicator A5). The results show that students from difficult socio-economic backgrounds do not receive the same educational opportunities as children from middle- and upper-class families. The data even suggest that schools in many OECD countries reinforce existing socio-economic inequities.

In contrast, Finland and Canada, as well as five out of the six East and South-East Asian countries for which PISA data are available are among the countries in which social background has the smallest impact on student success. This suggests that these education systems succeed better in creating meritocracies that maximise the human potential of their countries more effectively. The data also provide some explanations for this. First of all, they show that overall variation in student performance, performance differences between schools and the social clustering of school performance, tend to be greater in countries with rigid stratification practices at early ages between types of programme and school than in systems in which the curriculum does not vary significantly between schools (Indicator A7). The German school system, for example, divides children as young as 10 years old into vocational or academic tracks. In the end, those with parents in white-collar, high-skilled occupations are four times more likely to enrol in tracks leading to universities than those with parents from blue-collar or low-skilled occupations, even if the students display the same level of educational performance at an early age. Europe was able to get by with these kind of systems for so long because in the last century, when these systems were established and when industrial mass production was dominant, they were well adapted to what they intended to do, namely to equip a large group of mass production workers with baseline qualifications and at the same time focussing resources on a small elite that could innovate. This was adequate at a time when there were plenty of jobs requiring only baseline qualifications, but no longer works in a world made flat by technology.

Nor does the story end in high school or even at the tertiary level. Initial education alone is not enough to meet the rising and changing demand for skills, and lifelong learning has become a central part of national policy agendas. However, the reality is that the people who most need post-school education and training opportunities, such as those who have not completed high school, the unemployed or those with low-skilled jobs, get the fewest opportunities. Indeed, such opportunities are most common for full-time or established workers in a firm and are more prevalent for management and senior posts. They are also more frequent for young and mid-career workers than for older workers. More worrying still is the sizeable proportion of young people with low levels of education who are neither in work or education, with this population approaching more than 10% of 15-to-19-year-olds in countries such as Italy, Mexico, the Slovak Republic and Turkey.

The ambition challenge

The outsourcing of manufacturing or services from Europe or North America to countries like China and India is not just motivated by obtaining cheaper and more efficient services, but also through boosts in quality and productivity. To some extent, this can be explained by the fact that low-wage, low-prestige jobs in OECD countries easily translate into high-wage, high-prestige jobs in countries with generally lower income levels. However, there is more to this. The indicators also suggest a lack of ambition in many OECD countries that is mirrored in poor educational outcomes and aspirations. By contrast, in countries like Japan, Korea or Hong Kong-China, students, parents and teachers, whatever the socio-economic context from which they come, invest their time and resources in achieving as best as they possibly can in school and university, well aware that this is the most powerful lever for their own future success and that of their country. A recent survey carried out in China to estimate total learning time also suggests that Chinese 15-year-old students spent an average of nearly 3 000 hours in learning activities in 2002 – in school, extra tutoring classes or preparing homework – nearly twice as much as their peers of OECD countries (Indicator D2; Zhen, 2006).

PISA also asked 15-year-old students about their own expectations for their educational future. Although students' own expectations at that age may not always be realistic, they provide some indication as to what young people are striving for. The results show that 15-year old students in all Asian countries with available data have very high tertiary aspirations, with about 60 to 70% of them expecting to attain tertiary level education in Japan, Hong Kong-China, Macao-China and Thailand. Tertiary expectations even reach 95% of 15-year-old students in Korea. In stark contrast, the level of tertiary aspirations is low among European students, with only half of them expecting to obtain a tertiary qualification during their lifetime. These comparatively low tertiary aspirations of European students relative to their Asian peers derive in part from the lack of social inclusiveness in many European education systems: a comparison of the aspirations of students for tertiary education by quartile of the students' economic, social and cultural status index underlines that the difference between aspirations of students from the top and bottom quartiles of the index is significantly smaller in most Asian countries than in Europe. Korea and Macao-China stand out, in particular, with high expectations of all students irrespective of their economic, social and cultural family background.

It should not be ignored, though, that the highly competitive nature of East Asian education systems combined with exceedingly high expectations of teachers are reflected in extraordinary pressure on students and generally high levels of anxiety among students, with all of the East Asian countries that took part in the PISA 2003 assessment reporting levels of helplessness and emotional stress when dealing with mathematics that were well above the OECD average levels. In Hong Kong-China, however, high expectations for students go hand in hand with a highly supportive learning environment where students consistently report that teachers show an interest in every student's learning, give extra help when students need it, and continue teaching until all students understand. In contrast, students in all of Europe's major economies, and most notably Germany, France, Italy, Poland and the Netherlands, reported significantly lower levels of teacher support. The lack of ambition combined with a lack of support in Europe's education system is a troublesome base for the future success of its people.

Conclusion

The education systems in OECD countries will have to make considerable headway if they are to meet the demands of modern societies. Some of these changes will require additional investment, but the evidence also suggests that money is a necessary but not sufficient guarantee for strong results. Put simply, education systems need to develop more challenging and more supportive learning environments and learn to be more flexible and effective in improving learning outcomes. And, they must scale back the inherent class bias and sometimes catastrophically regressive way of funding existing educational opportunities – taxing the poor to subsidize educational opportunity for the rich – in existing systems.

At the same time, the OECD indicators show that the challenges of quality, equity and efficiency are being successfully addressed in some countries. These countries set ambitious goals to which others can aspire. The beginning lies in accepting international benchmarking in educational performance as a basis for improvement, rather than seeking reasons why education systems should not or cannot be compared. It is only through such benchmarking that countries can understand relative strengths and weaknesses of their education system and identify best practices and ways forward. The world is indifferent to tradition and past reputations, unforgiving of frailty and ignorant of custom or practice. Success will go to those individuals and countries which are swift to adapt, slow to complain and open to change. The task of governments will be to ensure that countries rise to this challenge.

Introduction: the Indicators and their Framework

The organising framework

Education at a Glance – OECD Indicators 2006 provides a rich, comparable and up-to-date array of indicators that reflect 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, on how education and learning systems operate and evolve, and on the returns to educational investments. The indicators are organised thematically, and each is accompanied by relevant background information. The education indicators are presented within an organising framework which:

- Distinguishes between the actors in education systems: individual learners, instructional settings and learning environments, educational service providers, and the education system as a whole;
- Groups the indicators according to whether they speak to learning outcomes for individuals or countries, policy levers or circumstances that shape these outcomes, or to antecedents or constraints that set policy choices into context; and
- Identifies the policy issues to which the indicators relate, with three major categories distinguishing between the quality of educational outcomes and educational provision, issues of equity in educational outcomes and educational 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 educational outcomes**	**3. Antecedents or constraints that contextualise policy**
I. Individual participants in education and learning	**1.I** The quality and distribution of individual educational outcomes	**2.I** Individual attitudes, engagement, and behaviour	**3.I** Background characteristics of the individual learners
II. Instructional settings	**1.II** The quality of instructional delivery	**2.II** Pedagogy and 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

The following sections discuss the matrix dimensions in more detail:

Actors in education systems

The OECD Education Indicators programme seeks to gauge the performance of national education systems as a whole, rather than to compare individual institutional or other sub-national 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; and
- 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. 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. Past analyses which have relied on macro-level data alone have therefore sometimes led to misleading conclusions.

Outcomes, policy leavers 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 which shape the outputs and outcomes at each level; and
- These policy levers and contexts typically have *antecedents* – factors that define or constrain policy. These are represented by the sub-heading *antecedents and constraints*. It should be noted that the antecedents or constraints are usually specific for a given level of the education system and that 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 the following three classes which constitute the third dimension in the organising framework for INES:

- Quality of educational outcomes and educational provision;
- Equality of educational outcomes and equity in educational opportunities; and
- Adequacy and effectiveness of resource management.

In addition to the dimensions mentioned above, the time perspective as an additional dimension in the framework, allows dynamic aspects in the development of education systems to be modelled also.

The indicators that are published in *Education at a Glance 2006* 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 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 educational system but also provide context for current educational policies, helping to shape polices 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 which most directly impacts on the individual learner as it acts as a constraint on the learning environment in schools and student 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. Entry rates and progression rates are, for instance, outcomes measures to the extent that they indicate the results of policies and practices in the classroom, school and system levels. But they can also provide contexts for establishing policy by identifying areas where policy intervention is necessary to, for instance, address issues of inequity.

Chapter D *Learning environment and organisation of schools* provides indicators on instruction time, teachers working time and teachers' salaries not only represent policy levers which can be manipulated but also provide contexts for the quality of instruction in instructional settings and for the outcomes of learners at the individual level.

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 the ownership or sponsorship of the institutions concerned and regardless of education delivery mechanisms. With one exception described below, all types of students and all age groups are meant to be included: children (including students with special needs), adults, nationals, foreigners, as well as students in open distance learning, in special education programmes or in educational programmes organised by ministries other than the Ministry of Education, provided the main aim of the programme is the educational development of the individual. However, vocational and technical training in the workplace, with the exception of combined school and work-based programmes that are explicitly deemed to be parts 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 studies or have a subject matter content similar to "regular" education studies or that the underlying programmes lead to potential qualifications similar to corresponding regular educational programmes. Courses for adults that are primarily for general interest, personal enrichment, leisure or recreation are excluded.

Calculation of international means

For many indicators an OECD average is presented and for some an OECD total.

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 a 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.

Note that both the OECD average and the OECD total can be significantly affected by missing data. Given the relatively small number of countries, no statistical methods are used to compensate for this. In cases where a category is not applicable (code "a") in a country or where the data value is negligible (code "n") for the corresponding calculation, the value zero is imputed for the purpose of calculating OECD averages. In cases where both the numerator and the denominator of a ratio are not applicable (code "a") for a certain country, this country is not included in the OECD average.

For financial tables using 1995 data, both the OECD average and OECD total are calculated for countries providing both 1995 and 2004 data. This allows comparison of the OECD average and OECD total over time with no distortion due to the exclusion of certain countries in the different years.

For many indicators an EU19 average is also presented. It is calculated as the unweighted mean of the data values of the 19 OECD countries that are members of the European Union for which data are available or can be estimated. These 19 countries are Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Italy, Ireland, Luxembourg, the Netherlands, Poland, Portugal, the Slovak Republic, Spain, Sweden and the United Kingdom.

Classification of levels of education

The classification of the levels of education is based on the revised International Standard Classification of Education (ISCED-97). The biggest change between the revised ISCED and the former ISCED (ISCED-76) is the introduction of a multi-dimensional classification framework, allowing for the alignment of the educational content of programmes using multiple classification criteria. ISCED is an instrument for compiling statistics on education internationally and distinguishes among six levels of education. The Glossary at *www.oecd.org/edu/eag2006* describes in detail the ISCED levels of education, and Annex 1 shows corresponding typical graduation ages of the main educational programmes by ISCED level.

Symbols for missing data

Six symbols are employed in the tables and charts to denote missing data:

a Data is not applicable because the category does not apply.

c There are too few observations to provide reliable estimates (*i.e.* there are fewer than 3% of students for this cell or too few schools for valid inferences). However, these statistics were included in the calculation of cross-country averages.

m Data is not available.

n Magnitude is either negligible or zero.

w Data has 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).

~ Average is not comparable with other levels of education

Further resources

The Web site *www.oecd.org/edu/eag2006* provides a rich source of information on the methods employed for the calculation of the indicators, the interpretation of the indicators in the respective national contexts and the data sources involved. The Web site also provides access to the data underlying the indicators as well as to a comprehensive glossary for technical terms used in this publication.

Any post-production changes to this publication are listed at *www.oecd.org/edu/eag2006*.

The Web site *www.pisa.oecd.org* provides information on the OECD Programme for International Student Assessment (PISA), on which many of the indicators in this publication draw.

As in the preceding edition, *Education at a Glance* is using the OECD's innovative StatLinks service. Below each table and chart in *Education at Glance 2006* is a url which leads to a corresponding Excel workbook containing the underlying data for the indicator. These urls are stable and will remain unchanged over time. 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.

Education Policy Analysis is a companion volume to *Education at a Glance*, which takes up selected themes of key importance for governments. The forthcoming edition contains four chapters that draw together key findings and policy developments under the following headings: Valuing teachers: how to meet aspirations and enhance motivation; new tools for teaching and learning: formative assessment to help all students succeed; gender differences and mathematics: performance, attitudes and motivation; policy directions in higher education.

Codes used for territorial entities

AUS	Australia	ITA	Italy
AUT	Austria	JPN	Japan
BEL	Belgium	KOR	Korea
BFL	Belgium (Flemish Community)	LUX	Luxembourg
BFR	Belgium (French Community)	MEX	Mexico
BRA	Brazil	NLD	Netherlands
CAN	Canada	NZL	New Zealand
CHL	Chile	NOR	Norway
CZE	Czech Republic	POL	Poland
DNK	Denmark	PRT	Portugal
ENG	England	RUS	Russian Federation
FIN	Finland	SCO	Scotland
FRA	France	SVK	Slovak Republic
DEU	Germany	ESP	Spain
GRC	Greece	SWE	Sweden
HUN	Hungary	CHE	Switzerland
ISL	Iceland	TUR	Turkey
IRL	Ireland	UKM	United Kingdom
ISR	Israel	USA	United States

Chapter

A

THE OUTPUT OF EDUCATIONAL INSTITUTIONS AND THE IMPACT OF LEARNING

INDICATOR A1

EDUCATIONAL ATTAINMENT OF THE ADULT POPULATION

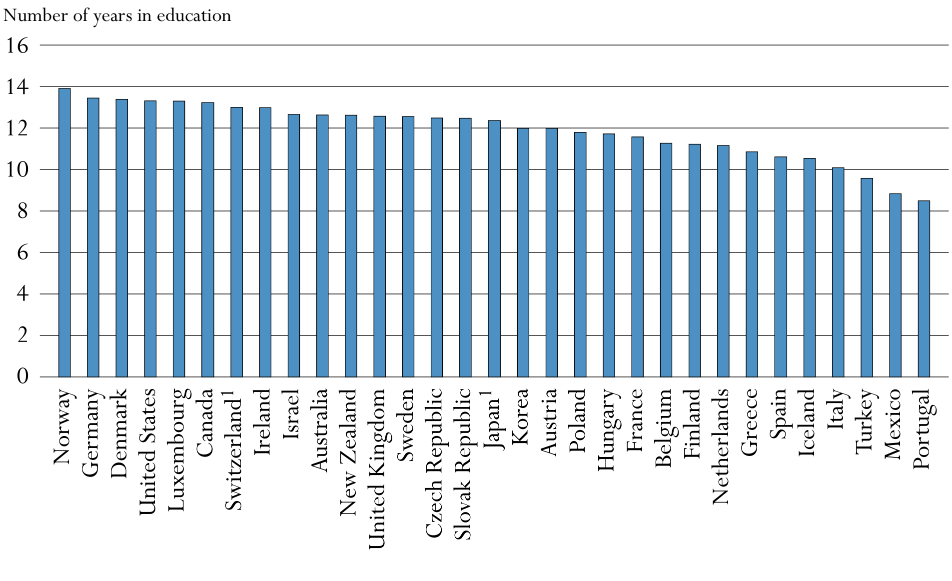
This indicator profiles the educational attainment of the adult population, as captured through formal educational qualifications. As such it provides a proxy for the knowledge and skills available to national economies and societies. Data on educational attainment by age groups are also used in this indicator both to project educational attainment of countries' adult populations ten years in the future and to view changes over time in each country's contribution to the OECD-wide pool of tertiary-level graduates.

Key results

Chart A1.1. Educational attainment of the adult population: average number of years in the education system (2004)

The chart depicts the number of years that today's 25-to-64-year-olds have spent in formal education.

The average educational attainment of the adult population in OECD countries is 11.9 years, based on the duration of current formal educational programmes. For the 17 countries ranking above the OECD average, years of schooling range on average from 12 to 13.9 years. For the 13 countries below, the spread is greater, ranging from 8.5 to 11.8 years.



1. Year of reference 2003.

Countries are ranked in descending order of the average number of years in the education system of 25-to-64year-olds.

Source: OECD. Table A1.5. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/701655207564

Other highlights of this indicator

- The proportion of individuals who have completed upper secondary education has been growing in almost all OECD countries, rapidly in some: in 22 countries, the proportion ranges from 73 to 97% among 25-to-34-year-olds. Many countries with traditionally low levels of education are catching up and completion of upper secondary education has grown almost everywhere, becoming the norm for youth cohorts.

- In 18 OECD countries, the level of educational attainment among males – measured by the average number of years in schooling – is still higher than that of females, and sometimes considerably so, as in Switzerland and Korea. Nonetheless the difference between males and females is less than 0.4 years in 10 out of these 18 countries.

Policy context

A well-educated and well-trained population is central to the social and economic well-being of countries and individuals (see Indicator A10). Education plays a key role in providing individuals with the knowledge, skills and competencies needed to participate effectively in society and in the economy. Education also contributes to an expansion of scientific and cultural knowledge.

The level of educational attainment of the population is a commonly used proxy for the stock of "human capital", that is, the skills available in the population and labour force. Assuming that one year of education is equivalent at all levels, the educational attainment of the adult population can be summarised by the average years of schooling completed. It must be noted, however, that the calculation is based on the length of current educational programmes, rather than an estimate of the actual average duration of studies attained by past populations. Comparing different countries by average years of schooling also presupposes that the amount and sequence of imparted skills and knowledge per year of education are similar in each country.

Current policy debates also focus on the particular role of tertiary-level attainment as a facilitator of innovation and economy-wide productivity. Accordingly, this indicator examines each country's share of the OECD pool of tertiary-level graduates, as well as how that share is likely to change over a period of ten years.

Evidence and explanations

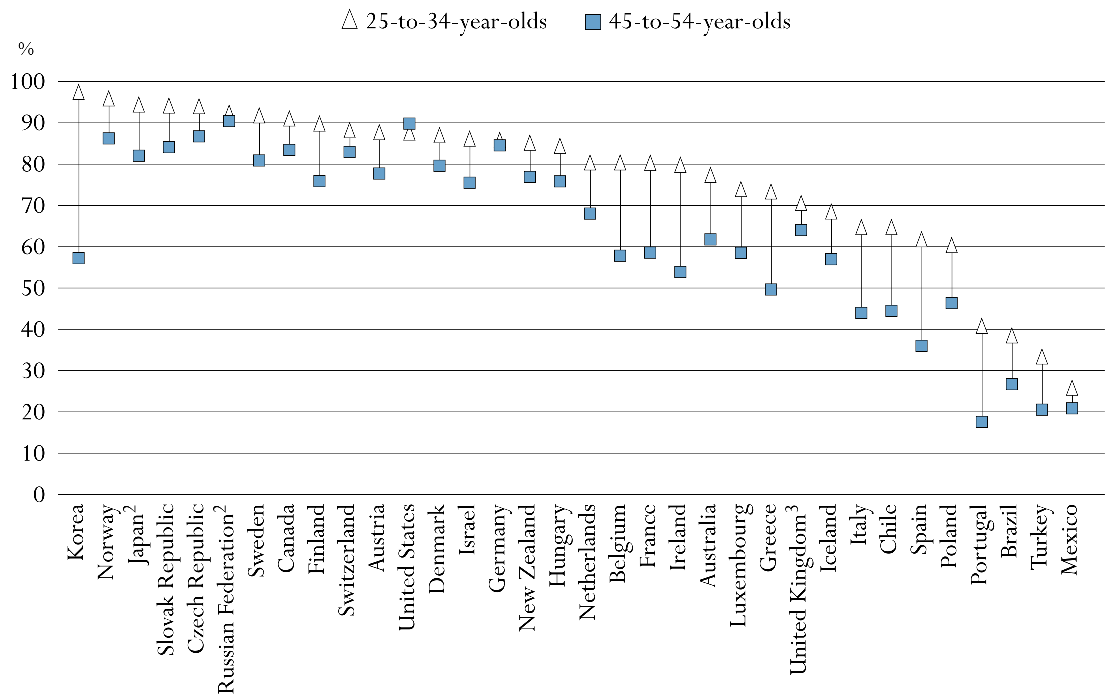
On average, across OECD countries, 42% of the adult population have completed only an upper secondary education. Less than one-third of adults (30%) have obtained only the primary or lower secondary levels of education and one-quarter (25%) have achieved a tertiary level of education (Table A1.1a). However, countries differ widely in the distribution of educational attainment across their populations.

In 23 out of the 30 OECD countries, as well as the partner countries Israel and the Russian Federation, 60% or more of the population aged 25 to 64 years has completed at least upper secondary education (Table A1.2a). Some countries show a different profile, however. For instance, in Italy, Mexico, Portugal, Spain and Turkey, more than half of the population aged 25 to 64 years has not completed upper secondary education. Overall, a comparison of the levels of educational attainment in younger and older age groups indicates marked progress with regard to the achievement of upper secondary education (Chart A1.2). On average across OECD member countries, the proportion of 25-to-34-year-olds having attained upper secondary education is 13 percentage points higher than that of the 45-to-54-year-old age group. This increase has been particularly dramatic in Belgium, France, Greece, Ireland, Italy, Korea, Portugal and Spain, as well as the partner country Chile, which have all seen growth of 20 or more percentage points across these age groups.

In countries whose adult population generally has a high attainment level, differences among age groups in the level of educational attainment are less pronounced (Table A1.2a). An exception to this is Korea – where the difference in upper secondary attainment between those aged 25 to 34 years and those aged 45 to 54 years reaches 40 percentage points. Nevertheless, in countries where more than 80% of 25-to-64-year-olds achieve at least upper secondary attainment, the difference in the share of 25-to-34-year-olds who have attained the upper secondary level and the share of 45-to-54-year-olds who have attained this level is, on average, only 7 percentage points.

Chart A1.2. Population that has attained at least upper secondary education[1] (2004)

Percentage, by age group



1. Excluding ISCED 3C short programmes.
2. Year of reference 2003.
3. Including some ISCED 3C short programmes.

Countries are ranked in descending order of the percentage of 25-to-34-year-olds who have attained at least upper secondary education.

Source: OECD. Table A1.2a. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/701655207564

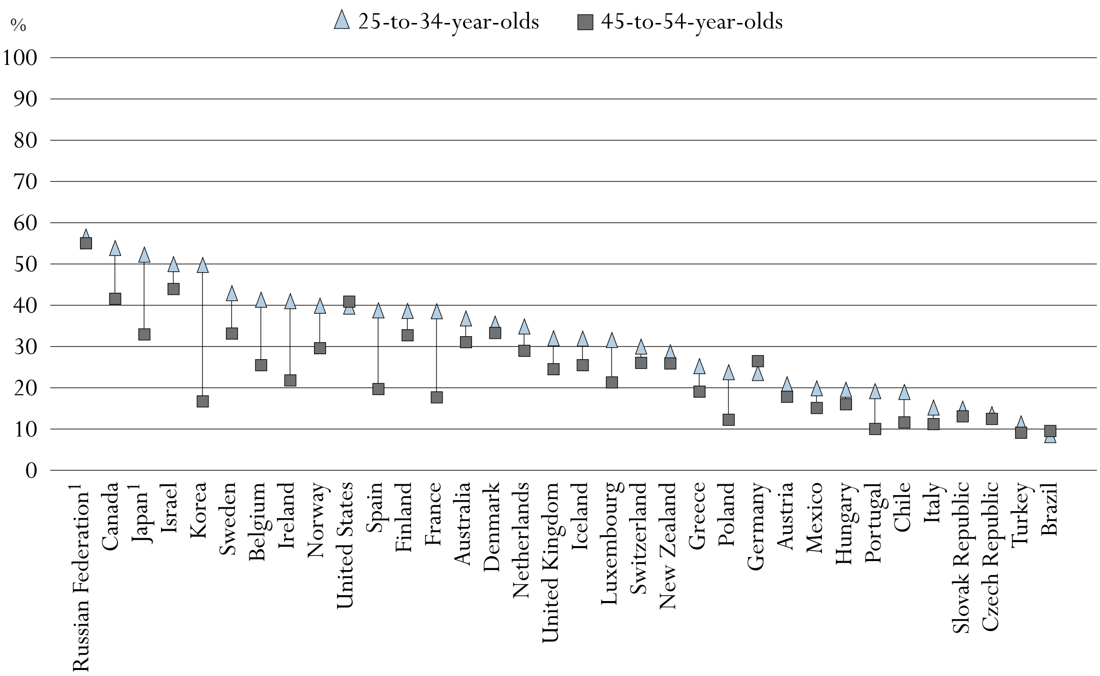
In Germany, the proportion of upper secondary attainment is almost the same, at around 85% for the three youngest age groups. For other countries, where there is more room for increase, the average gain in attainment between these age groups is 13 percentage points. Only seven of these countries (Canada, the Czech Republic, Denmark, Mexico, Switzerland, the United Kingdom and the United States) show gains of less than 8 percentage points.

The growing skill requirements of labour markets, heightened educational expectations and, in some cases, the efforts of governments have, in many countries, led to significant increases in the proportion of young people who obtain a tertiary qualification. Across the OECD, an average of 31% of 25-to-34-year-olds have reached the tertiary level of attainment. This represents a significant increase from earlier years, as evidenced in the fact that, on average, only 23% of 45-to-54-year-olds have achieved the tertiary level (Table A1.3a). Particularly rapid inter-generational advance at the tertiary level has been seen in Belgium, France, Ireland, Japan, Korea and Spain. In only two countries is the share of 45-to-54-year-olds with tertiary-level attainment higher than the share of 25-to-34-year-olds: Germany and the United States.

It is relevant to note that many countries that have experienced a sizeable expansion of tertiary attainment have not witnessed a deterioration of the labour-market value of these qualifications. The five countries that show the largest positive difference between the share of 25-to-34-year-olds with tertiary attainment and the share of 35-to-44-year-olds with tertiary attainment are: France, Ireland, Korea, Poland and Spain (Table A1.3a). In these five countries, it is only in Spain that rapid expansion in tertiary attainment has been associated with a significant decline in the wage premium that tertiary attainment attracts, at least during the period 1997 to 2004 (Table A9.2a). While data for Poland in Table A9.2a are only available for one year, 2004, these also indicate a very high relative earnings differential in favour of those with tertiary-level attainment. In addition, data presented in Indicator A8 show that since 1995, the rate of unemployment among holders of tertiary-level qualifications has changed very little in France and Korea, and indeed has fallen in Ireland and Spain, significantly so in the latter case. In Poland, this unemployment rate increased over the same period. Nevertheless, at 6.2%, unemployment among those with tertiary-level qualifications in Poland is much closer to the OECD average than is Poland's rate of unemployment among persons with lower levels of educational attainment (Table A8.4a).

Attainment at the tertiary level differs greatly across countries. Among 25-to-64-year-olds, the share that has attained tertiary education, whether type B or type A, ranges from below 15% in the Czech Republic, Italy, Portugal, the Slovak Republic and Turkey, to a high of 45% in Canada. It equals or exceeds 30% in nine other countries (Table A1.3a).

Chart A1.3. Population that has attained tertiary education (2004)
Percentage, by age group



1. Year of reference 2003.
Countries are ranked in descending order of the percentage of 25-to-34-year-olds who have attained tertiary education.
Source: OECD. Table A1.3a. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

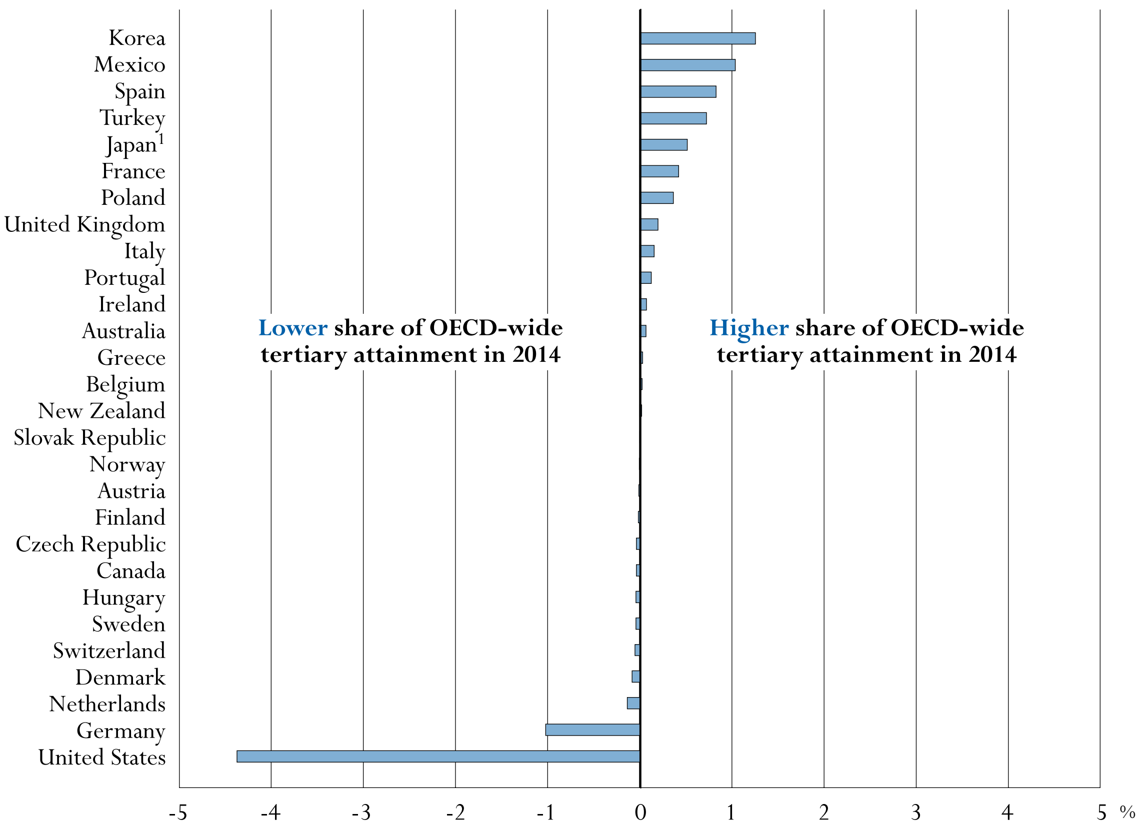
StatLink: http://dx.doi.org/10.1787/701655207564

The pattern of tertiary attainment in OECD countries for 25-to-64-year-olds who have completed tertiary-type A or advanced research programmes is also diverse and ranges from 9% in Austria to 20% or more in Australia, Canada, Denmark, Iceland, Japan, Korea, the Netherlands, Norway and the United States. However, certain countries also have a tradition of vocational education at the tertiary level (tertiary-type B). The proportion of persons who have attained the tertiary-type B level is equal to or exceeds 15% in Belgium, Canada, Finland, Japan and Sweden (Table A1.3a).

It is insightful to consider each country's share of the total OECD-wide pool of highly qualified people that these attainment levels imply. The distribution of persons who have attained a qualification at the tertiary-type A and advanced research programmes level is heavily concentrated in countries that have larger populations and significant tertiary attainment. For instance, within the OECD, the United States accounts for 40.8% of the population of 35-to-64-year-olds with tertiary qualifications (Table A1.4). The next largest single contributor to the OECD-wide pool of individuals in this age group with a tertiary level of attainment is Japan, at 11.6%.

Chart A1.4. Projected percentage point change in each country's share of the OECD-wide pool of individuals aged 35 to 64 with tertiary-type 5A/6 qualifications (2004 to 2014)

Difference, in percentage points, in the country share of all OECD 35-to-64-year-olds with tertiary-type 5A/6 attainment, between 2004 and 2014



1. Year of reference 2003.

Countries are ranked in descending order of the growth in their share of persons with tertiary attainment in 2014 compared to 2004.

Source: OECD. Table A1.4. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

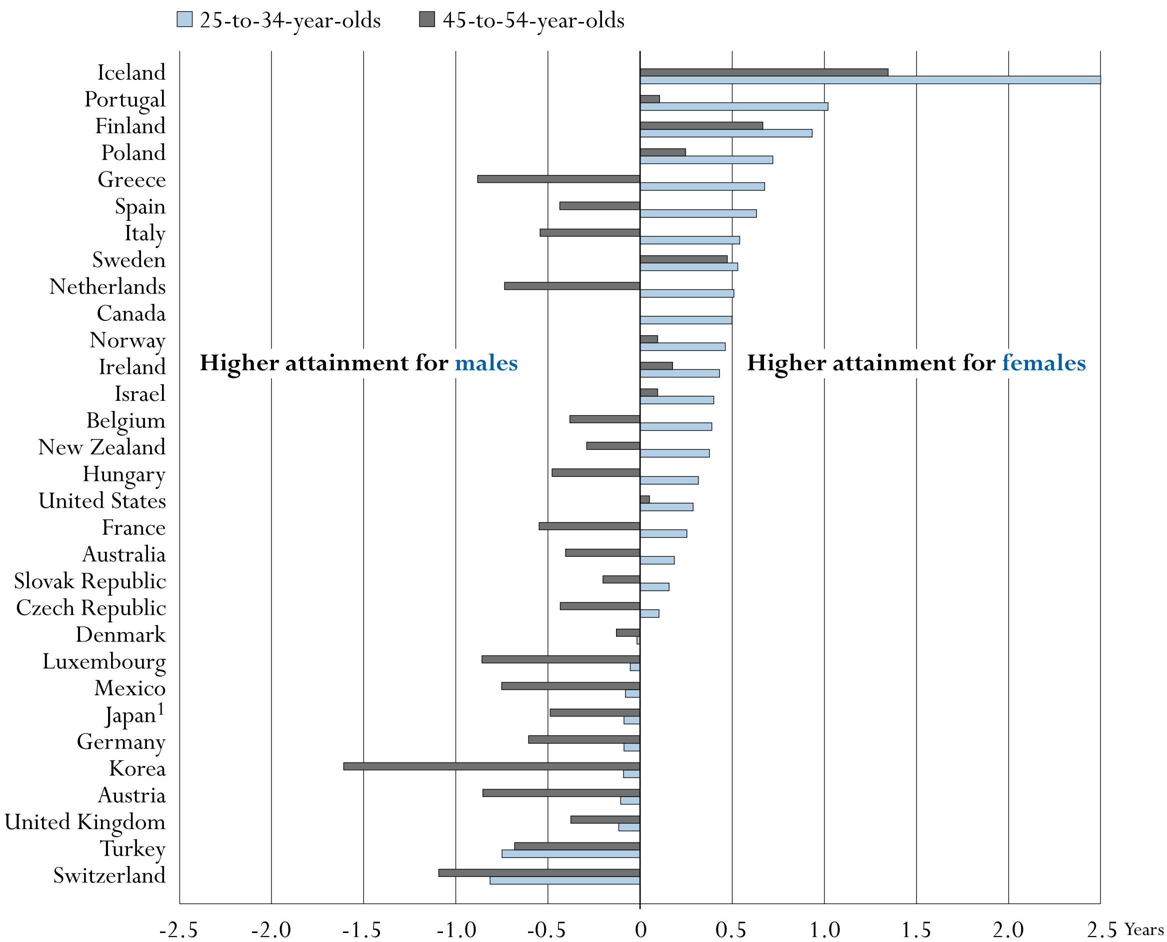
StatLink: http://dx.doi.org/10.1787/701655207564

A1

The current pattern of tertiary attainment across all age groups can be used to approximate the distribution of tertiary attainment in the medium-term future. The simplest way of doing this is to roll forward the current attainment patterns by ten years, so that a figure applying to the share of 25-to-34-year-olds with tertiary attainment in 2004 would become the figure for 35-to-44-year-olds in 2014. By doing this for all age groups, the technique can be employed to provide a crude indication of the change in the share of the population of 35-to-64-year-olds within each nation that has tertiary-level attainment, as well as changes in each country's share of the OECD-wide pool of individuals with tertiary-level qualifications in this age group. This mechanical form of projection – which abstracts from such factors as future policy change, changes in patterns of adult learning, institutional constraints, wider demographic developments and the impacts of immigration – shows that seven countries could experience a decrease in their

Chart A1.5. Gender differences in educational attainment expressed in average number of years in formal education (2004)

Years, by age group



1. Year of reference 2003.

Countries are ranked in descending order of the growth in their share of persons with tertiary attainment in 2014 compared to 2004.

Source: OECD. Table A1.5. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/701655207564

share of the pool of individuals with tertiary attainment: Austria, Denmark, Germany, Hungary, the Netherlands, Sweden and the United States. Sizeable increases in the OECD-wide share will occur in countries such as Japan, Korea, Mexico, Poland, Spain, Turkey and the United Kingdom that combine relatively large populations with significantly higher tertiary attainment in younger generations (Table A1.4 and Chart A1.4).

The average educational attainment of the adult population within OECD countries, considered in terms of years of schooling (of the existing programmes), is 11.9 years. For the 17 countries ranking above the OECD average, the number of years of schooling range on average from 12 to 13.9 years. For the 13 countries below the average the spread is greater, ranging from 8.5 to 11.8 years (Table A1.5).

In 18 OECD countries, males' level of educational attainment – measured by the average number of years of schooling – is still higher than that of females, sometimes considerably, as in Korea and Switzerland. In 8 OECD countries (Canada, Finland, Iceland, Ireland, Poland, Portugal, Sweden and the United States), the educational attainment of females aged 25 to 64 – measured by the average number of years of schooling – is higher than that of men.

The difference in educational attainment between males and females varies considerably depending on the age group (Chart A1.5). For 55-to-64-year-olds, the gender difference, expressed in average duration of formal study, favours females in only three countries (Table A1.5). By contrast, the situation of 25-to-34-year-olds exhibits a different picture. For this group, the average number of years of study completed is higher among females in 20 out of 30 OECD countries, and only 2 of the remaining 10 countries – Switzerland and Turkey – register differences of more than 0.5 years in favour of males.

Definitions and methodologies

Data on population and educational attainment are taken from OECD and EUROSTAT databases, which are compiled from National Labour Force Surveys. See Annex 3 (*www.oecd.org/edu/eag2006*) for national sources.

Attainment profiles are based on the percentage of the population aged 25 to 64 years that has completed a specified level of education. The International Standard Classification of Education (ISCED-97) is used to define the levels of education. See Annex 3 (*www.oecd.org/edu/eag2006*) for a description of ISCED-97 education programmes and attainment levels and their mappings for each country.

Successful completion of upper secondary education means the achievement of upper secondary programmes type A, B or C of a similar length; completion of type C programmes (labour market destination) of significantly shorter duration is not classified as upper secondary attainment.

The distribution of tertiary attainment among countries shown in table A1.4 is derived by summing the numbers of persons with tertiary-type 5A/6 qualifications across all OECD countries for which there are data and calculating the percentage share of this number that each country represents. The projection to 2014 of these shares, also shown in table A1.4, are obtained by rolling forward the data for each age cohort by ten years, so that a figure applying to the share of 25-to-34-year-olds with tertiary attainment in 2004 would become the figure for 35-to-44-year-olds in 2014. In 2014, the figures for all age groups are therefore the same as those for the preceding cohort ten years earlier. In this way, tertiary education attainment for 35-to-64-year-olds is projected for the year 2014.

The calculation of the average number of years in formal education is based upon the weighted theoretical duration of schooling to achieve a given level of education, according to the current duration of educational programmes as reported in the UNESCO, OECD, Eurostat (UOE) data collection.

Further references

The following additional material relevant to this indicator is available on the Web at *http://dx.doi.org/10.1787/701655207564:*

- ***Educational attainment: adult population, by gender (2004)***
  Table A1.1b: Males
  Table A1.1c: Females

- ***Population that has attained at least upper secondary education, by gender (2004)***
  Table A1.2b: Males
  Table A1.2c: Females

- ***Population that has attained tertiary education, by gender (2004)***
  Table A1.3b: Males
  Table A1.3c: Females

Table A1.1a.

Educational attainment: adult population (2004)

Distribution of the 25-to-64-year-old population, by highest level of education attained

	Pre-primary and primary education	Lower secondary education	Upper secondary education			Post-secondary non-tertiary education	Tertiary education			All levels of education
			ISCED 3C Short	ISCED 3C Long/3B	ISCED 3A		Type B	Type A	Advanced research programmes	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
OECD countries										
Australia	x(2)	36	a	11	20	3	9	22	x(8)	100
Austria	x(2)	20	a	47	6	9	9	9	x(8)	100
Belgium	16	19	a	9	24	1	17	13	n	100
Canada	5	11	a	x(5)	27	12	22	22	x(8)	100
Czech Republic	n	11	n	43	33	n	x(8)	12	x(8)	100
Denmark	1	16	2	45	4	n	7	25	n	100
Finland	13	10	a	a	43	n	17	16	1	100
France	15	20	a	31	10	n	10	14	x(8)	100
Germany	2	14	a	50	2	6	10	13	2	100
Greece	31	11	2	n	27	8	6	14	n	100
Hungary	2	23	a	29	28	2	n	16	n	100
Iceland	3	29	7	21	9	3	4	24	n	100
Ireland	18	19	n	a	24	10	10	17	n	100
Italy	19	32	1	7	28	1	x(8)	11	n	100
Japan[1]	x(2)	16	a	x(5)	47	a	17	21	x(8)	100
Korea	13	13	a	x(5)	44	a	8	22	x(8)	100
Luxembourg	19	3	15	18	15	6	9	11	2	100
Mexico	51	26	a	6	x(2)	a	2	14	x(8)	100
Netherlands	8	21	x(4)	16	22	4	2	26	n	100
New Zealand	x(2)	22	a	x(5)	43	10	8	18	x(8)	100
Norway	n	11	a	41	12	3	2	29	1	100
Poland	x(2)	16	34	a	31	4	x(8)	16	x(8)	100
Portugal	61	14	x(5)	x(5)	12	1	x(8)	12	1	100
Slovak Republic	1	15	x(4)	36	36	x(5)	1	12	n	100
Spain	28	27	c	6	12	c	7	19	c	100
Sweden	7	10	a	x(5)	48	x(7)	15	19	x(8)	100
Switzerland	3	12	2	41	6	7	10	16	2	100
Turkey	64	10	a	6	11	a	x(8)	9	x(8)	100
United Kingdom	n	15	20	21	15	a	9	14	6	100
United States	5	8	x(5)	x(5)	49	x(5)	9	28	1	100
	Attained lower secondary level of education or below		Attained upper secondary level of education				Attained tertiary level of education			
OECD average	*30*		*42*				*25*			
EU19 average	*29*		*45*				*23*			
Partner countries										
Brazil	57	14	x(5)	x(5)	22	a	x(8)	8	x(8)	100
Chile	24	26	x(5)	x(5)	37	a	3	10	x(8)	100
Israel	x(2)	21	x(5)	x(5)	34	a	16	28	1	100
Russian Federation[1]	3	8	x(5)	x(5)	34	x(5)	34	21	x(8)	100

Note: Due to discrepant data, averages have not been calculated for each column individually.

1. Year of reference 2003.

Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.

Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

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Table A1.2a.

Population that has attained at least upper secondary education[1] (2004)

Percentage, by age group

		Age group				
		25-64	25-34	35-44	45-54	55-64
OECD countries	Australia	64	77	65	62	49
	Austria	80	87	84	78	69
	Belgium	64	80	70	58	45
	Canada	84	91	88	83	73
	Czech Republic	89	94	93	87	82
	Denmark	81	86	82	79	77
	Finland	78	89	86	76	59
	France	65	80	70	59	49
	Germany	84	85	86	84	79
	Greece	56	73	64	50	31
	Hungary	75	84	82	76	57
	Iceland	60	68	64	57	46
	Ireland	63	79	68	54	39
	Italy	48	64	52	44	28
	Japan[2]	84	94	94	82	65
	Korea	74	97	86	57	34
	Luxembourg	62	74	64	58	51
	Mexico	23	25	25	21	13
	Netherlands	71	80	74	68	59
	New Zealand	78	85	81	77	64
	Norway	88	96	92	86	78
	Poland	50	60	49	46	42
	Portugal	25	40	26	18	12
	Slovak Republic	85	94	91	84	64
	Spain	45	61	50	36	21
	Sweden	83	91	89	81	71
	Switzerland	85	89	86	83	79
	Turkey	26	33	24	20	14
	United Kingdom[3]	65	70	65	64	59
	United States	88	87	88	90	86
	OECD average	*67*	*77*	*71*	*64*	*53*
	EU19 average	*67*	*78*	*71*	*63*	*52*
Partner countries	Brazil	30	38	32	27	11
	Chile	50	64	53	44	32
	Israel	79	86	81	75	68
	Russian Federation[2]	89	92	95	90	72

1. Excluding ISCED 3C short programmes.
2. Year of reference 2003.
3. Including some ISCED 3C short programmes.
Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.

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Table A1.3a.

Population that has attained tertiary education (2004)

Percentage of the population that has attained tertiary-type B education or tertiary-type A and advanced research programmes, by age group

		Tertiary-type B education					Tertiary-type A and Advanced research programmes					Total tertiary				
		25-64	25-34	35-44	45-54	55-64	**25-64**	25-34	35-44	45-54	55-64	**25-64**	25-34	35-44	45-54	55-64
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
OECD countries	**Australia**	9	9	9	9	8	22	27	22	22	15	31	36	31	31	23
	Austria	9	9	9	10	9	9	11	11	8	6	18	20	20	18	15
	Belgium	17	22	19	14	11	14	19	15	11	9	30	41	32	25	20
	Canada	22	26	23	21	15	22	27	23	20	18	45	53	47	41	35
	Czech Republic	x(11)	x(12)	x(13)	x(14)	x(15)	x(11)	x(12)	x(13)	x(14)	x(15)	12	13	14	12	10
	Denmark	7	8	8	7	6	25	27	26	26	21	32	35	34	33	27
	Finland	17	14	22	18	12	17	24	18	14	13	34	38	40	32	25
	France	10	16	10	7	4	14	22	13	11	10	24	38	24	18	14
	Germany	10	8	11	11	10	15	15	15	16	12	25	23	27	26	23
	Greece	6	7	8	5	3	15	17	17	14	9	21	25	25	19	12
	Hungary	x(11)	x(12)	x(13)	x(14)	x(15)	x(11)	x(12)	x(13)	x(14)	x(15)	17	19	18	16	14
	Iceland	4	3	7	5	2	24	28	27	21	16	28	31	33	25	17
	Ireland	10	15	11	8	6	18	26	18	13	10	28	40	29	22	16
	Italy	x(11)	x(12)	x(13)	x(14)	x(15)	x(11)	x(12)	x(13)	x(14)	x(15)	11	15	12	11	7
	Japan[1]	17	25	20	13	7	21	26	25	20	12	37	52	45	33	19
	Korea	8	18	7	2	1	22	31	26	14	9	30	49	33	16	10
	Luxembourg	9	13	10	8	6	13	17	13	13	10	23	31	22	21	16
	Mexico	2	3	2	1	1	14	16	16	14	8	16	19	18	15	8
	Netherlands	2	2	3	2	2	27	32	27	26	22	29	34	30	29	24
	New Zealand	8	5	7	9	10	18	23	19	16	10	25	28	26	26	20
	Norway	2	2	2	3	2	29	37	32	26	21	32	39	34	29	23
	Poland	x(11)	x(12)	x(13)	x(14)	x(15)	x(11)	x(12)	x(13)	x(14)	x(15)	16	23	14	12	12
	Portugal	x(11)	x(12)	x(13)	x(14)	x(15)	x(11)	x(12)	x(13)	x(14)	x(15)	13	19	13	10	7
	Slovak Republic	1	1	1	1	0	12	14	12	12	9	12	14	12	13	9
	Spain	7	12	9	4	3	19	27	20	15	10	26	38	28	19	12
	Sweden	15	16	18	16	11	19	26	18	17	16	35	42	36	33	27
	Switzerland	10	10	11	11	8	18	20	20	17	14	28	30	31	28	22
	Turkey	x(11)	x(12)	x(13)	x(14)	x(15)	x(11)	x(12)	x(13)	x(14)	x(15)	9	11	8	9	7
	United Kingdom	8	8	8	8	7	18	23	17	16	14	26	31	25	24	21
	United States	9	9	10	10	8	30	30	30	31	28	39	39	39	41	36
	OECD average	*9*	*11*	*10*	*8*	*6*	*19*	*24*	*20*	*17*	*13*	*25*	*31*	*27*	*23*	*18*
	EU19 average	*9*	*11*	*10*	*9*	*6*	*17*	*21*	*17*	*15*	*12*	*23*	*28*	*24*	*21*	*16*
Partner countries	**Brazil**	x(11)	x(12)	x(13)	x(14)	x(15)	x(11)	x(12)	x(13)	x(14)	x(15)	8	8	9	9	4
	Chile	3	4	3	2	1	10	14	9	9	8	13	18	13	11	9
	Israel	16	15	16	16	17	29	34	27	27	26	45	49	44	44	42
	Russian Federation[1]	34	35	37	34	26	21	22	22	20	19	55	56	59	55	45

1. Year of reference 2003.

Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.

Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/701655207564

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Table A1.4

Distribution of population aged 35-to-64 with tertiary type 5A/6 qualifications by country (2004 and projected to 2014)

Number of persons with tertiary type 5A/6 qualifications as a percentage of the OECD total

		2004				Projected 2014			
		Age group				Age group			
		35-64	35-44	45-54	55-64	**35-64**	35-44	45-54	55-64
OECD countries	**Australia**	1.9	1.8	2.0	1.7	1.9	2.0	1.8	2.0
	Austria	0.4	0.4	0.3	0.3	0.3	0.3	0.4	0.3
	Belgium	0.6	0.7	0.5	0.5	0.6	0.6	0.7	0.5
	Canada	3.5	3.7	3.5	3.3	3.5	3.3	3.7	3.5
	Czech Republic	0.6	0.5	0.6	0.8	0.6	0.6	0.5	0.6
	Denmark	0.7	0.6	0.7	0.8	0.6	0.5	0.6	0.7
	Finland	0.4	0.4	0.4	0.5	0.4	0.4	0.4	0.4
	France	3.3	3.3	3.1	3.8	3.8	4.6	3.3	3.1
	Germany	6.0	5.7	5.9	6.8	5.0	3.6	5.7	5.9
	Greece	0.7	0.8	0.7	0.6	0.7	0.7	0.8	0.7
	Hungary	0.8	0.6	0.8	1.0	0.7	0.7	0.6	0.8
	Ireland	0.2	0.3	0.2	0.2	0.3	0.4	0.3	0.2
	Italy	2.8	3.0	2.7	2.7	3.0	3.2	3.0	2.7
	Japan[1]	11.6	11.5	11.9	11.3	12.1	12.8	11.5	11.9
	Korea	4.2	6.3	3.1	2.0	5.5	6.6	6.3	3.1
	Mexico	4.8	6.1	4.6	2.8	5.9	6.7	6.1	4.6
	Netherlands	2.1	2.0	2.0	2.3	1.9	1.8	2.0	2.0
	New Zealand	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.3
	Norway	0.6	0.6	0.5	0.6	0.6	0.6	0.6	0.5
	Poland	2.3	2.0	2.5	2.6	2.7	3.4	2.0	2.5
	Portugal	0.5	0.6	0.5	0.4	0.6	0.8	0.6	0.5
	Slovak Republic	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
	Spain	2.8	3.4	2.4	2.1	3.6	4.7	3.4	2.4
	Sweden	0.8	0.7	0.7	1.1	0.7	0.8	0.7	0.7
	Switzerland	0.6	0.7	0.6	0.7	0.6	0.5	0.7	0.6
	Turkey	1.7	1.9	1.8	1.2	2.4	3.4	1.9	1.8
	United Kingdom	4.8	5.0	4.7	4.6	5.0	5.3	5.0	4.7
	United States	40.8	36.9	42.8	45.0	36.4	31.0	36.9	42.8
	Total	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*

1. Year of reference for attainment type 5A/6data is 2003.

Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.

Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/701655207564

Table A1.5

Educational attainment expressed in average number of years in formal education (2004)

The 25-to-64-year-old population, by gender and age group

		25-to-64-year-old population										
		Total	Males	Females	Males				Females			
					25-34	35-44	45-54	55-64	25-34	35-44	45-54	55-64
OECD countries	Australia	**12.6**	12.8	12.5	13.2	12.8	12.7	12.2	13.3	12.4	12.3	11.7
	Austria	**12.0**	12.3	11.7	12.4	12.4	12.2	12.0	12.3	12.0	11.4	10.8
	Belgium	**11.3**	11.4	11.4	12.4	11.7	11.1	10.3	12.8	11.9	10.7	9.5
	Canada	**13.2**	13.2	13.3	13.6	13.3	13.0	12.2	14.1	13.6	13.0	11.8
	Czech Republic	**12.5**	12.6	12.4	12.6	12.8	12.6	12.5	12.8	12.6	12.1	11.9
	Denmark	**13.4**	13.5	13.3	13.6	13.6	13.4	13.6	13.6	13.3	13.3	13.0
	Finland	**11.2**	10.9	11.4	12.5	12.3	10.5	8.5	13.5	13.0	11.2	8.5
	France	**11.6**	11.7	11.4	12.8	12.1	11.3	10.3	13.1	12.0	10.7	9.6
	Germany	**13.4**	13.7	13.2	13.6	13.8	13.8	13.7	13.5	13.4	13.2	12.5
	Greece	**10.9**	11.0	10.7	11.9	11.7	10.9	9.4	12.6	11.7	10.0	8.2
	Hungary	**11.7**	11.8	11.6	12.1	12.1	12.0	11.3	12.4	12.1	11.5	10.5
	Iceland	**10.5**	9.7	11.4	10.1	10.4	9.2	9.0	12.6	11.9	10.5	9.7
	Ireland	**13.0**	12.9	13.1	14.0	13.4	12.3	11.2	14.5	13.6	12.5	11.4
	Italy	**10.1**	10.2	10.0	11.2	10.5	10.0	8.7	11.7	10.7	9.5	7.6
	Japan[1]	**12.4**	12.6	12.1	13.3	13.3	12.4	11.2	13.2	12.9	11.9	10.5
	Korea	**12.0**	12.5	11.4	13.7	13.2	11.6	10.2	13.6	12.2	10.0	8.0
	Luxembourg	**13.3**	13.6	13.0	14.2	13.5	13.5	13.1	14.1	13.3	12.6	11.6
	Mexico	**8.8**	9.1	8.6	9.5	9.4	8.8	7.8	9.4	8.9	8.0	7.1
	Netherlands	**11.2**	11.4	11.1	12.0	11.5	11.3	10.6	12.5	11.4	10.5	9.8
	New Zealand	**12.6**	12.6	12.6	11.8	11.4	11.0	9.6	12.1	11.5	10.7	8.4
	Norway	**13.9**	13.9	13.9	14.2	14.1	13.7	13.4	14.7	14.2	13.8	13.1
	Poland	**11.8**	11.6	11.9	12.2	11.7	11.4	11.0	12.9	12.2	11.7	10.7
	Portugal	**8.5**	8.3	8.7	9.3	8.4	7.8	7.3	10.3	8.8	7.9	7.2
	Slovak Republic	**12.5**	12.5	12.4	12.8	12.7	12.6	12.1	13.0	12.7	12.4	11.3
	Spain	**10.6**	10.6	10.6	11.9	11.2	10.1	8.9	12.5	11.4	9.7	8.0
	Sweden	**12.6**	12.4	12.8	13.1	12.7	12.2	11.3	13.6	13.0	12.7	11.8
	Switzerland	**13.0**	13.5	12.5	13.7	13.7	13.5	13.2	13.0	12.7	12.3	11.7
	Turkey	**9.6**	9.9	9.2	10.3	9.8	9.6	9.2	9.6	9.1	8.9	8.6
	United Kingdom	**12.6**	12.7	12.4	13.0	12.6	12.7	12.4	12.9	12.4	12.3	12.0
	United States	**13.3**	13.2	13.4	13.1	13.2	13.4	13.2	13.4	13.4	13.5	13.1
	OECD average	*11.9*	*11.9*	*11.8*	*12.5*	*12.2*	*11.7*	*11.0*	*12.8*	*12.1*	*11.4*	*10.3*
	EU19 average	*11.8*	*11.8*	*11.7*	*12.5*	*12.1*	*11.7*	*11.0*	*12.9*	*12.2*	*11.4*	*10.3*
Partner country	Israel	**12.7**	12.6	12.7	12.8	12.6	12.4	12.3	13.2	12.7	12.5	12.0

1. Year of reference 2003.

Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.

StatLink: http://dx.doi.org/10.1787/701655207564

CURRENT UPPER SECONDARY GRADUATION RATES

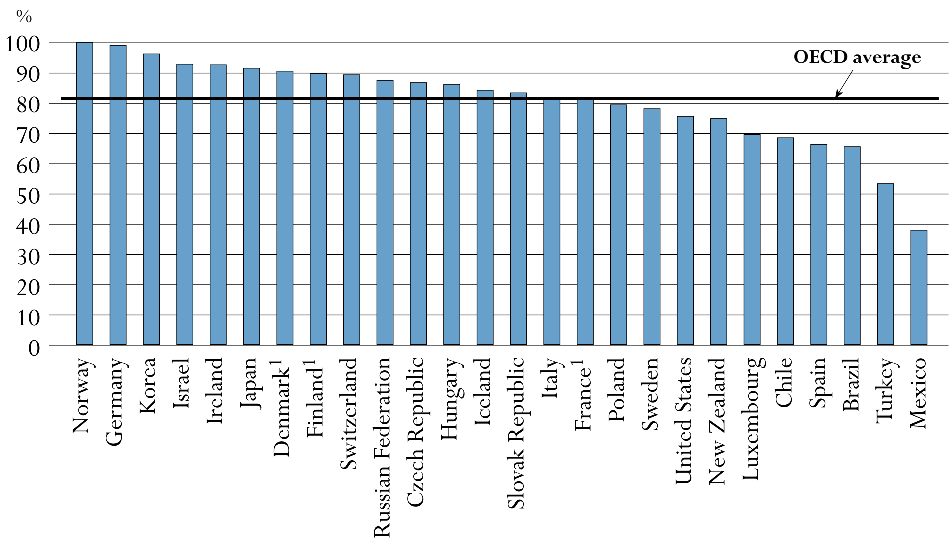
This indicator shows the current upper secondary graduate output of education systems, *i.e.* the percentage of the typical population of upper secondary school age that follows and successfully completes upper secondary programmes.

Key results

Chart A2.1. Upper secondary graduation rates (2004)

The chart shows the number of students completing upper secondary education programmes for the first time, as a percentage of the age group normally completing this level. Although not all of the graduates are in this age band, this calculation gives an indication of how many of today's young people are completing upper secondary education.

In 18 of 22 OECD countries and in 2 of the 4 partner countries for which comparable data are available, the ratio of upper secondary graduates to the population at the typical age of graduation exceeds 70%. In Denmark, Finland, Germany, Ireland, Japan, Korea and Norway, and the partner country Israel, graduation rates equal or exceed 90%. The challenge is now to ensure that the remaining fraction is not left behind, with the risk of limited job prospects that this may entail.



1. Year of reference 2003.

Countries are ranked in descending order of upper secondary graduation rates.

Source: OECD. Table A2.1. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/141843246636

Other highlights of this indicator

- Females are now more likely to complete upper secondary education than males in almost every OECD country, a reversal of the historical pattern. Today, only in Turkey are graduation rates for females below those for males.
- The vast majority of students who graduate from upper secondary programmes graduate from programmes that are designed to provide access to further tertiary education.
- Most students obtain upper secondary qualifications giving them access to university-level study (ISCED 5A), although the extent to which students go on to take up such study varies significantly between countries.
- In many countries, males are more likely to be on vocational courses. Still, in nearly half of the countries represented there is either no gender difference or a higher proportion of females on such courses.
- In some countries, a significant proportion of students broaden their knowledge at the post-secondary non-tertiary level after completing a first upper secondary programme. In the Czech Republic, Hungary and Ireland, 20% or more of a typical age cohort complete a post-secondary non-tertiary programme.

Policy context

Rising skill demands in OECD countries have made qualifications at the upper secondary level the minimum credential for successful labour market entry. Upper secondary education serves as the foundation for advanced learning and training opportunities, as well as preparation for direct entry into the labour market. Although many countries do allow students to leave the education system at the end of the lower secondary level, young people in OECD countries who leave without an upper secondary qualification tend to face severe difficulties in entering the labour market (see Indicators A8, A9 and A10).

High upper secondary graduation rates do not guarantee that an education system has adequately equipped its graduates with the basic skills and knowledge necessary to enter the labour market because this indicator does not capture the quality of educational outcomes. But these graduation rates do give an indication of the extent to which educational systems succeed in preparing students to meet the minimum requirements of the labour market.

Evidence and explanations

Graduation from upper secondary education is becoming the norm in most OECD countries. In 18 of 22 OECD countries and in 2 of the 4 partner countries for which comparable data are available, upper secondary graduation rates exceed 70% (Chart A2.1). In Denmark, Finland, Germany, Ireland, Japan, Korea and Norway and the partner country Israel, graduation rates equal or exceed 90%.

The challenge is now to ensure that the remaining fraction is not left behind, with the risk of limited job prospects that this could entail.

Gender differences

The balance of educational attainment between males and females in the adult population is unequal in most countries. In the past, females did not have sufficient opportunities and/or incentives to reach the same level of education as males. Females have generally been overrepresented among those who did not proceed to upper secondary education and underrepresented at the higher levels of education. However, these gender differences are most evident in older age groups and have been significantly reduced or reversed among younger age groups (see Indicator A1).

Today, it is males who trail behind females in upper secondary graduation in almost every OECD country (Table A2.1). Graduation rates for females exceed those for males in 19 of 22 OECD countries and in the 3 partner countries for which total upper secondary graduation rates can be compared between the genders. The exception is Turkey, where graduation rates are higher for males. In Korea and Switzerland, graduation rates are similar for both genders, with a less than one percentage point difference. The gender gap is greatest in Denmark, Finland, Iceland, Ireland, New Zealand, Norway, Poland and Spain, and in the partner country Brazil, where female graduation rates exceed those of males by more than 10 percentage points.

Transitions following educational programmes

Graduation from upper secondary education is becoming the norm in most OECD and partner countries, but curriculum content in upper secondary programmes can vary depending on the type of education or occupation for which the programmes are designed. Most upper secondary programmes in OECD countries are designed primarily to prepare students for tertiary studies, and their orientation can be general, pre-vocational or vocational.

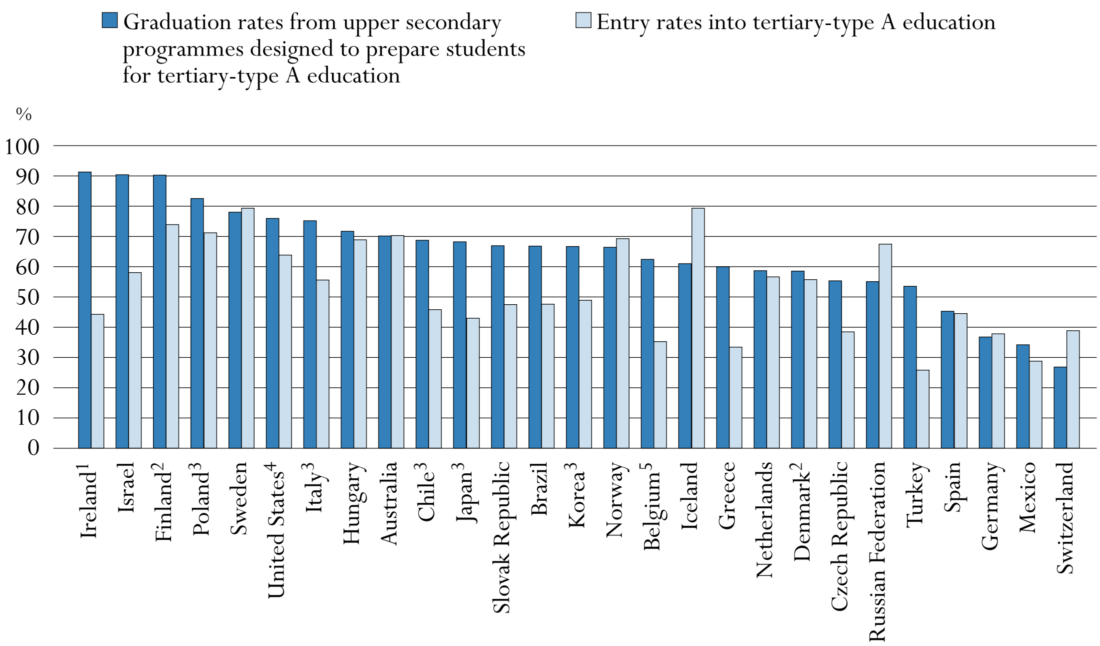
The vast majority of students who graduate from upper secondary programmes graduate from programmes that are designed to provide access to further tertiary education (ISCED 3A and 3B). Programmes to facilitate direct entry into tertiary-type A education are preferred by students in all countries, except in Germany and Switzerland where both female and male students are more likely to graduate from upper secondary programmes leading to tertiary-type B programmes (Table A2.1).

The graduation rate for ISCED 3C (long) programmes is 20% on average in the OECD countries.

It is interesting, however, to contrast the proportion of students who graduate from programmes designed for entry into tertiary-type A programmes with the proportion who actually do enter these programmes. Chart A2.2 shows this comparison and demonstrates significant variation among countries. For instance, in the OECD countries Belgium, Greece, Ireland, Japan and Turkey and the partner countries Brazil, Chile and Israel, the difference between graduation rates

Chart A2.2. Access to tertiary-type A education for upper secondary graduates (2004)

Comparison of graduation rates from upper secondary programmes designed for tertiary-type A entry with actual entry rates to tertiary-type A education



1. Full-time entrants only.
2. Year of reference 2003.
3. Entry rate for tertiary-type A programmes calculated as gross entry rate.
4. Tertiary-type A education includes tertiary-type B education.
5. Excludes the German speaking community of Belgium.

Countries are ranked in descending order of graduation rates from upper secondary programmes designed to prepare students for tertiary-type A education.

Source: OECD. Tables A2.1. and C2.1. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/141843246636

from upper secondary programmes designed for tertiary-type A programmes and the eventual entry rate to these tertiary-type A programmes is relatively large (more than 20 percentage points). This suggests that many students who achieve qualifications designed for university level entrance do not in fact go on to take up university studies, although at least in Belgium such upper secondary programmes may also give access to tertiary-type B programmes. In contrast, in countries such as Australia, Denmark, Germany, Hungary, Netherlands, Norway, Spain and Sweden, where the comparative graduation and entry rates are similar, the reverse seems to be true.

In 14 out of 25 OECD countries for which comparable data are available, more males than females graduate from pre-vocational and vocational upper secondary programmes. Graduation rates for these programmes are higher for females in seven OECD countries – Belgium, Denmark, Finland, Ireland, the Netherlands, Norway and Spain – and are the same for males and females in the four remaining OECD countries.

Graduation from post-secondary non-tertiary programmes

Post-secondary non-tertiary programmes of various kinds are offered in 26 OECD countries. From an international comparative point of view such programmes straddle the boundary between upper secondary and post-secondary education, even though they might clearly be considered either upper secondary or post-secondary programmes in a national context. Although the content of these programmes may not be significantly more advanced than upper secondary programmes, post-secondary non-tertiary programmes programs serve to broaden the knowledge of participants who have already gained an upper secondary qualification. The students tend to be older than those enrolled at the upper secondary level.

Typical examples of such programmes are trade and vocational certificates in Canada and the United States, nursery teacher training in Austria and Switzerland or vocational training in the dual system for holders of general upper secondary qualifications in Germany. In most countries, post-secondary non-tertiary programmes are vocationally oriented.

In 12 of the 19 OECD countries with available data, the majority of, if not all, post-secondary non-tertiary students graduate from ISCED 4C programmes, which are designed primarily to prepare graduates for direct entry into the labour market.

Apprenticeships that are designed for students who have already graduated from an upper secondary programme are also included in the post-secondary non-tertiary programmes. However, in 7 out of 20 OECD countries, 50% or more of post-secondary non-tertiary graduates have completed programmes designed to provide direct access to either tertiary-type A or B education. In Switzerland, 72% graduate from ISCED 4B programmes.

Definitions and methodologies

The data for the school year 2003-2004 are based on the UOE data collection on education statistics administered annually by the OECD.

In Table A2.1, upper secondary graduates are those who successfully complete the final year of upper secondary education, regardless of age. In some countries, successful completion requires a final examination, and in others it does not (see Annex 1).

Upper secondary graduation rates are estimated as the number of students, regardless of age, who graduate for the first time from upper secondary programmes, divided by the population at the age at which students typically graduate from upper secondary education (see Annex 1). The graduation rates take into account students graduating from upper secondary education at the typical (modal) graduation ages, as well as older students (*e.g.* those in "second chance" programmes). The unduplicated total count of graduates is calculated by netting out those students who have graduated from another upper secondary programme in a previous year.

Counts of students for ISCED 3A, 3B and 3C programmes are not unduplicated, however. Gross graduation rates cannot be added, as some individuals graduate from more than one upper secondary programme and would thus be counted twice. The same applies for graduation rates by programme orientation, *i.e.* general or vocational.

Pre-vocational and vocational programmes include both school-based programmes and combined school- and work-based programmes that are recognised as part of the education system. Entirely work-based education and training that is not overseen by a formal education authority is not taken into account.

In Table A2.2, post-secondary non-tertiary graduates are those who successfully complete the final year of post-secondary non-tertiary education, regardless of age. In some countries, successful completion requires a final examination, and in others it does not.

Post-secondary non-tertiary graduation rates are estimated as the number of students, regardless of age, who graduate for the first time from post-secondary non-tertiary programmes, divided by the population at the age at which students typically graduate from these programmes (see Annex 1). The graduation rates take into account students graduating at the typical (modal) graduation ages, as well as older students. The unduplicated total count of graduates is calculated by netting out those students who have graduated from another post-secondary non-tertiary programme in a previous year.

For some countries, an unduplicated count of post-secondary non-tertiary graduates is unavailable and graduation rates may be overestimated because of graduates who have completed multiple programmes at the same level. These countries are marked with a footnote in the Table A2.2.

Counts of students for ISCED 4A, 4B and 4C programmes are not unduplicated. Gross graduation rates cannot be added, as some individuals graduate from more than one post-secondary non-tertiary programme and would thus be counted twice.

Table A2.1.

Upper secondary graduation rates (2004)

Percentage of upper secondary graduates to the population at the typical age of graduation, by programme destination, programme orientation and gender

		Total (unduplicated)			ISCED 3A (designed to prepare for direct entry to tertiary-type A education)		ISCED 3B (designed to prepare for direct entry to tertiary-type B education)		ISCED 3C (long) similar to duration of typical 3A or 3B programmes		ISCED 3C (short) shorter than duration of typical 3A or 3B programmes		General programmes		Pre-vocational/ vocational programmes	
		M + F	Males	Females	M + F	Females	M + F	Females	M + F	Females	M + F	Females	M + F	Females	M + F	Females
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
OECD countries	**Australia**	m	m	m	70	75	x(8)	x(9)	54	51	x(8)	x(9)	70	75	54	51
	Austria	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Belgium[1]	m	m	m	62	67	a	a	20	18	17	22	37	43	62	65
	Canada	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Czech Republic	87	85	88	55	64	n	n	31	23	n	n	18	23	69	65
	Denmark[2]	90	81	100	58	70	a	a	56	63	a	a	58	70	56	63
	Finland[2]	90	84	96	90	96	a	a	a	a	a	a	52	62	75	83
	France[2]	81	78	84	51	60	11	10	38	33	3	2	33	40	70	65
	Germany	99	97	101	37	40	61	60	a	a	1	1	36	40	62	61
	Greece	m	m	m	59	68	a	a	37	36	x(8)	x(9)	59	68	39	38
	Hungary	86	82	90	71	80	a	a	19	15	x(8)	x(9)	71	80	21	15
	Iceland	84	72	96	61	75	1	2	37	30	15	17	61	75	52	48
	Ireland	92	86	99	91	97	a	a	6	6	a	a	66	69	34	38
	Italy	81	80	83	75	78	3	4	a	a	19	18	29	38	67	60
	Japan	91	90	92	68	71	1	n	23	21	x(8)	x(9)	68	71	24	21
	Korea	96	96	96	66	66	a	a	30	30	a	a	66	66	30	30
	Luxembourg	69	66	73	42	49	7	7	18	15	2	1	28	31	42	42
	Mexico	38	34	41	34	37	a	a	4	4	a	a	34	37	4	4
	Netherlands	m	m	m	58	65	a	a	20	22	22	18	34	38	66	68
	New Zealand	75	65	85	x(1)	x(3)	x(1)	x(3)	x(1)	x(3)	x(1)	x(3)	x(1)	x(3)	x(1)	x(3)
	Norway	100	86	114	66	80	a	a	45	46	m	m	66	80	45	46
	Poland	79	70	89	82	87	a	a	a	a	7	7	43	52	45	42
	Portugal	m	m	m	53	62	x(4)	x(5)	x(4)	x(5)	x(4)	x(5)	40	48	14	14
	Slovak Republic	83	81	85	66	74	a	a	22	15	1	2	22	26	68	62
	Spain	66	58	75	45	54	a	a	18	19	7	8	45	54	25	27
	Sweden	78	75	81	77	81	a	a	1	n	a	a	37	44	41	37
	Switzerland	89	89	90	27	30	61	55	12	16	m	m	29	35	70	66
	Turkey	53	57	49	53	49	a	a	m	m	a	a	34	33	19	15
	United Kingdom	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	United States	75	72	79	75	79	a	a	a	a	a	a	75	79	a	a
	OECD average	*81*	*77*	*86*	*61*	*67*	*6*	*6*	*20*	*19*	*5*	*5*	*47*	*53*	*44*	*43*
	EU19 average	*83*	*79*	*88*	*63*	*70*	*5*	*5*	*18*	*17*	*6*	*6*	*42*	*49*	*50*	*50*
Partner countries	**Brazil**	65	57	75	66	76	a	a	a	a	a	a	65	74	1	2
	Chile	68	64	72	68	72	a	a	a	a	a	a	37	41	32	32
	Israel	93	89	96	90	95	a	a	3	1	a	a	59	66	34	30
	Russian Federation	87	x(1)	x(1)	55	x(4)	11	x(6)	18	x(8)	4	x(10)	55	x(12)	33	x(14)

Note: Mismatches between the coverage of the population data and the student/graduate data mean that the participation/graduation rates for those countries that are net exporters of students may be underestimated (for instance Luxembourg) and those that are net importers may be overestimated.

1. Excludes the German-speaking Community of Belgium.

2. Year of reference 2003.

Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.

Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/141843246636

Table A2.2.
Post-secondary non-tertiary graduation rates (2004)
Percentage of post-secondary non-tertiary graduates to the population at the typical age of graduation, by programme destination and gender

		Total (unduplicated)			ISCED 4A (designed to prepare for direct entry to tertiary-type A education)		ISCED 4B (designed to prepare for direct entry to tertiary-type B education)		ISCED 4C (designed to prepare for direct entry to the labour market)	
		M + F	Males	Females	M + F	Females	M + F	Females	M + F	Females
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
OECD countries	Australia	m	m	m	a	a	a	a	20.0	23.5
	Austria	m	m	m	m	m	m	m	m	m
	Belgium[1,2]	m	m	m	7.6	7.6	2.9	3.1	8.6	10.1
	Canada	m	m	m	x(8)	x(9)	x(8)	x(9)	4.6	5.9
	Czech Republic	30.4	28.8	32.2	25.2	28.2	a	a	5.2	4.0
	Denmark[1,3]	1.0	1.4	0.6	1.0	0.6	a	a	a	a
	Finland[3]	2.3	2.2	2.4	a	a	a	a	4.5	4.8
	France[3]	1.2	0.8	1.6	0.6	0.8	a	a	0.6	0.8
	Germany	15.4	16.5	14.2	10.3	9.7	5.1	4.5	a	a
	Greece	9.9	9.1	10.7	a	a	a	a	9.9	10.7
	Hungary	20.0	18.1	21.9	a	a	a	a	27.0	29.5
	Iceland	6.9	7.7	6.0	a	a	a	a	6.9	6.1
	Ireland	27.7	31.7	23.4	a	a	a	a	27.7	23.4
	Italy	6.0	4.6	7.5	a	a	a	a	6.0	7.5
	Japan	m	m	m	m	m	m	m	m	m
	Korea	a	a	a	a	a	a	a	a	a
	Luxembourg	3.6	4.9	2.3	a	a	a	a	3.6	2.3
	Mexico	a	a	a	a	a	a	a	a	a
	Netherlands[1]	1.2	1.9	0.5	a	a	a	a	1.2	0.5
	New Zealand	12.0	7.5	16.7	x(1)	x(3)	x(1)	x(3)	x(1)	x(3)
	Norway	4.3	7.2	1.3	1.1	0.3	a	a	3.9	1.2
	Poland	13.1	9.6	16.8	a	a	a	a	13.1	16.8
	Portugal	m	m	m	m	m	m	m	m	m
	Slovak Republic	2.8	2.3	3.4	2.8	3.4	a	a	a	a
	Spain	a	a	a	a	a	a	a	a	a
	Sweden	0.6	0.6	0.5	m	m	a	a	0.6	0.5
	Switzerland	14.7	11.4	18.0	4.5	3.7	11.2	15.6	a	a
	Turkey	a	a	a	a	a	a	a	a	a
	United Kingdom	m	m	m	m	m	m	m	m	m
	United States	m	m	m	m	m	m	m	m	m
	OECD average	7.9	7.6	8.2	2.4	2.5	0.8	1.0	6.0	6.2
	EU19 average	9.0	8.8	9.2	3.2	3.3	0.5	0.5	6.7	6.9
Partner countries	Brazil	a	a	a	a	a	a	a	a	a
	Chile	a	a	a	a	a	a	a	a	a
	Israel	m	m	m	m	m	a	a	a	a
	Russian Federation	m	m	m	a	a	a	a	7	7

Note: Mismatches between the coverage of the population data and the student/graduate data mean that the participation/graduation rates for those countries that are net exporters of students may be underestimated (for instance, Luxembourg) and those that are net importers may be overestimated.
1. Gross graduation rate may include some double counting.
2. Excludes the German-speaking Community of Belgium.
3. Year of reference 2003.
Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/141843246636

CURRENT TERTIARY GRADUATION AND SURVIVAL RATES

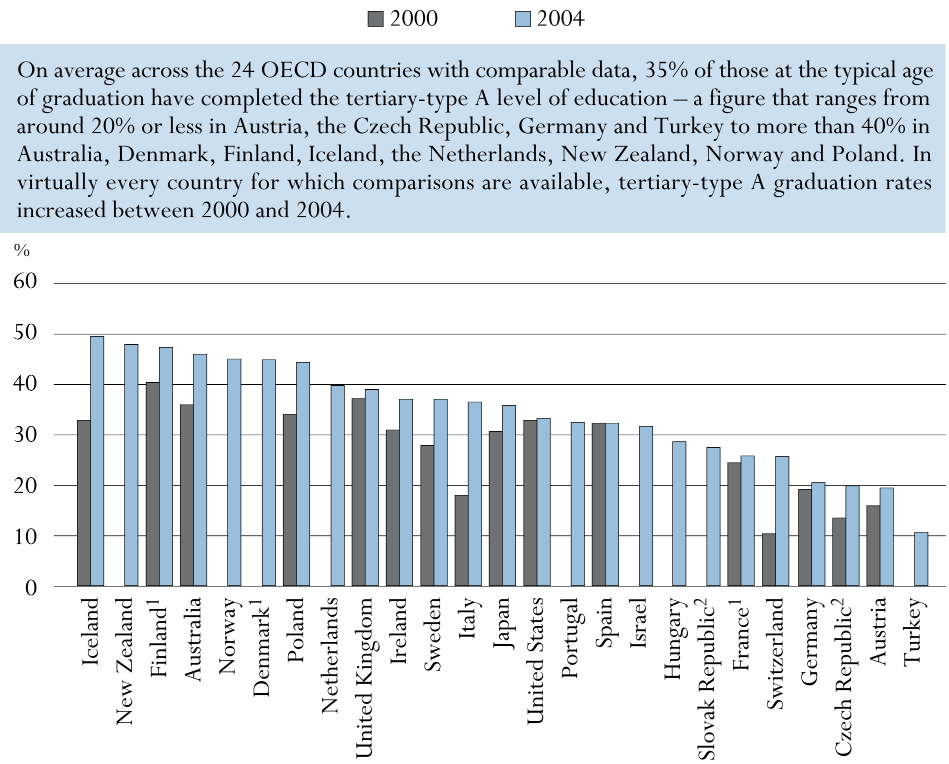
This indicator first shows the current tertiary graduate output of educational systems, *i.e.* the percentage of the population in the typical age cohort for tertiary education that follows and successfully completes tertiary programmes, as well as the distribution of tertiary graduates across fields of education. The indicator then shows survival rates at the tertiary level, *i.e.* the proportion of new entrants into the specified level of education who successfully complete a first qualification. Tertiary education covers a wide range of programmes, but overall serves as an indicator of the rate at which countries produce advanced knowledge. A traditional university degree is associated with completion of "type A" tertiary courses; "type B" generally refers to shorter and often vocationally oriented courses. The indicator also sheds light on the internal efficiency of tertiary educational systems.

Key results

Chart A3.1. Tertiary-type A graduation rates (2000, 2004)

The charts show the number of students of any age completing tertiary-type A programmes for the first time, in 2000 and 2004, as a percentage of the age-group normally completing each level. Although not all of those completing are in this age band, this figure gives an indication of how many of today's young people are obtaining a high-level qualification.

On average across the 24 OECD countries with comparable data, 35% of those at the typical age of graduation have completed the tertiary-type A level of education – a figure that ranges from around 20% or less in Austria, the Czech Republic, Germany and Turkey to more than 40% in Australia, Denmark, Finland, Iceland, the Netherlands, New Zealand, Norway and Poland. In virtually every country for which comparisons are available, tertiary-type A graduation rates increased between 2000 and 2004.



1. Year of reference 2003.
2. Gross graduation rate may include some double counting.
Countries are ranked in descending order of the graduation rates for tertiary-type A education in 2004.
Source: OECD. Table A3.1. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).
StatLink: http://dx.doi.org/10.1787/436145613668

Other highlights of this indicator

- Tertiary-type A graduation rates tend to be higher in countries where the programmes provided are mainly of shorter duration.
- The graduation rate is 9% at the tertiary-type B level and 1.3% for programmes leading to advanced research qualifications.
- On average, some 30% of tertiary-type A students fail to successfully complete these programmes though there is marked variation from country to country. The highest tertiary-type A "survival rates" are reported by Ireland, Japan and Korea, at over 80% while the survival rates for Mexico, New Zealand and the United States are just over 50%. Tertiary-type B survival rates are on average lower than those for type A programmes.

Policy context

Not only is upper secondary graduation becoming the norm, but also, the majority of students are now graduating from upper secondary programmes designed to provide access to tertiary education; this is leading to increased enrolment in tertiary programmes (see Indicators A2 and C2). Countries with high graduation rates at the tertiary level are also the ones most likely to be developing or maintaining a highly skilled labour force.

Moreover, specific skills and knowledge in science are of particular interest as they increasingly represent a principal source of innovation and growth in knowledge-based economies (see Indicator A10). Differences among countries in the output of tertiary graduates by field of education are likely to be influenced by the relative rewards in the labour market for different fields, as well as the degree to which the market drives field selection in a particular country.

Tertiary level drop out and survival rates can be useful indicators of the internal efficiency of tertiary education systems. However, students' specific reasons for leaving a tertiary programme are varied: students may realise that they have chosen the wrong subject or educational programme; they may fail to meet the standards set by their educational institution, particularly in tertiary systems that provide relatively broad access; or they may find attractive employment before completing their programme. Dropping out is not necessarily an indication of failure by individual students, but high dropout rates may well indicate that the education system is not meeting the needs of its clients. Students may not find that the educational programmes offered meet their expectations or their labour market needs. It may also be that programmes take longer than the number of years which students can justify being outside the labour market.

Evidence and explanations

Tertiary graduation rates show the rate at which each country's education system produces advanced knowledge. But tertiary programmes vary widely in structure and scope among countries. Tertiary graduation rates are influenced both by the degree of access to tertiary programmes and by the demand for higher skills in the labour market. They are also affected by the way in which the degree and qualification structures are organised within countries.

Graduation rates at the tertiary level

This indicator distinguishes among three different categories of tertiary qualifications: degrees at the tertiary-type B level (ISCED 5B); degrees at the tertiary-type A level (ISCED 5A); and advanced research qualifications at the doctorate level (ISCED 6).

Tertiary-type A programmes are largely theoretically based and are designed to provide qualifications for entry into advanced research programmes and professions with high skill requirements. Countries differ in the way in which tertiary-type A programmes are organised. The institutional framework may be universities or other institutions. The duration of programmes leading to a first tertiary-type A qualification ranges from three years (*e.g.* the Bachelor's degree in many colleges in Ireland and the United Kingdom in most fields of study, and the *Licence* in France) to five years or more (*e.g.* the *Diplom* in Germany).

Whereas in many countries there is a clear distinction between first and second university degrees, (*i.e.* undergraduate and graduate programmes), this distinction does not exist everywhere. In some systems, degrees that are comparable internationally to a Master's degree level are obtained through a single programme of long duration. To ensure international comparability, it is therefore necessary to compare degree programmes of similar cumulative duration, as well as completion rates for first-degree programmes.

To allow for comparisons that are independent of differences in national degree structures, tertiary-type A degrees are subdivided in accordance with their total theoretical durations of studies. Specifically, the OECD classification divides degrees into those of medium (three to less than five years), long (five to six years) and very long (more than six years) duration. Degrees obtained from short programmes of less than three years' duration are not considered equivalent to the completion of the tertiary-type A level of education and are therefore not included in this indicator. Second-degree programmes are classified according to the cumulative duration of the first- and second-degree programmes. Those individuals who already hold a first degree are netted out.

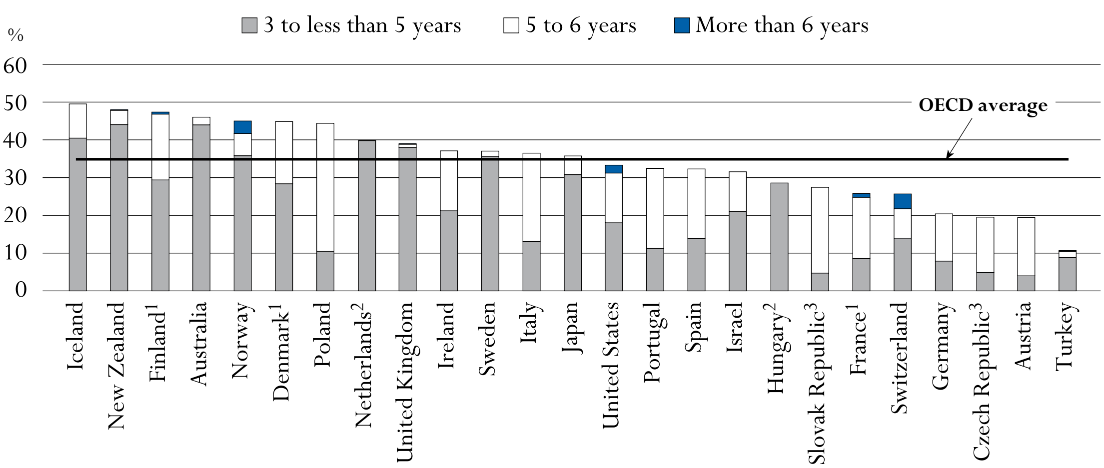
Tertiary-type A graduation rates

On average across the 24 OECD countries with comparable data, 35% of persons at the typical age of graduation completed tertiary-type A education in 2004. This figure ranged from around 20% or less in Austria, the Czech Republic, Germany and Turkey to more than 40% in Australia, Denmark, Finland, Iceland, the Netherlands, New Zealand, Norway and Poland (Table A3.1).

In virtually every country for which comparable data are available, tertiary-type A graduation rates increased between 2000 and 2004, often quite substantially. The most significant increase in type A graduation rates was reported in Italy where the rate doubled to 37%, though this was largely a result of structural change. Reform in the Italian tertiary system in 2002 allowed university students who had originally enrolled on programmes with a long duration to attain a degree after three years of study (Chart A3.1).

Chart A3.2. Tertiary-type A graduation rates, by duration of programme (2004)

Percentage of tertiary-type A graduates to the population at the typical age of graduation



1. Year of reference 2003.
2. 3-to-less-than-5-year programmes include 5-to-more-than-6-year programmes.
3. Gross graduation rate may include some double counting.

Countries are ranked in descending order of tertiary-type A graduation rates.

Source: OECD. Table A3.1. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/436145613668

Similarly, in Switzerland, the increase in tertiary-type A graduation rates is largely due to reforms in the system which not only shortened the duration of the first degree but also created new universities focusing on applied sciences.

Tertiary-type A: the shorter the programme, the higher the participation and graduation rates

There is considerable variation in the form and structure of tertiary-type A programmes among countries, notably in the length of programmes that are offered (Chart A3.2). What is evident is that overall, tertiary-type A graduation rates tend to be higher in countries where the programmes provided are mainly of a shorter duration. For example, in Austria, the Czech Republic, France, Germany, the Slovak Republic and Switzerland, the majority of students complete programmes of at least five years' duration and the tertiary-type A graduation rates are below 30%. In contrast, type A graduation rates are around 40% or more in Australia, New Zealand and the United Kingdom, where programmes of three to less than five years are the norm. Turkey provides a notable exception to this trend: despite typically providing short tertiary-type A programmes, its tertiary-type A graduation rate is the lowest among OECD countries.

To summarise this trend, the tertiary-type A graduation rate for OECD countries where the majority of first degrees are obtained in shorter programmes averages some 40% of the typical age cohort, compared with 29% for OECD countries where the majority of first degrees are obtained in programmes of long or very long duration.

Tertiary-type B graduation rates

Tertiary-type B programmes are classified at the same level of competencies as tertiary-type A programmes, but are more occupationally oriented and usually lead to direct labour market access. The programmes are typically of shorter duration than type A programmes – usually two to three years – and generally are not intended to lead to university-level degrees. Graduation rates for tertiary-type B programmes averaged some 9% of an age cohort amongst the 21 OECD countries with comparable data. (Table A3.1). In fact, graduation from tertiary-type B programmes is a sizeable feature of the tertiary system in only a few OECD countries, most notably in Ireland, Japan and New Zealand, where over 20% of the age cohort obtained type B qualifications in 2004.

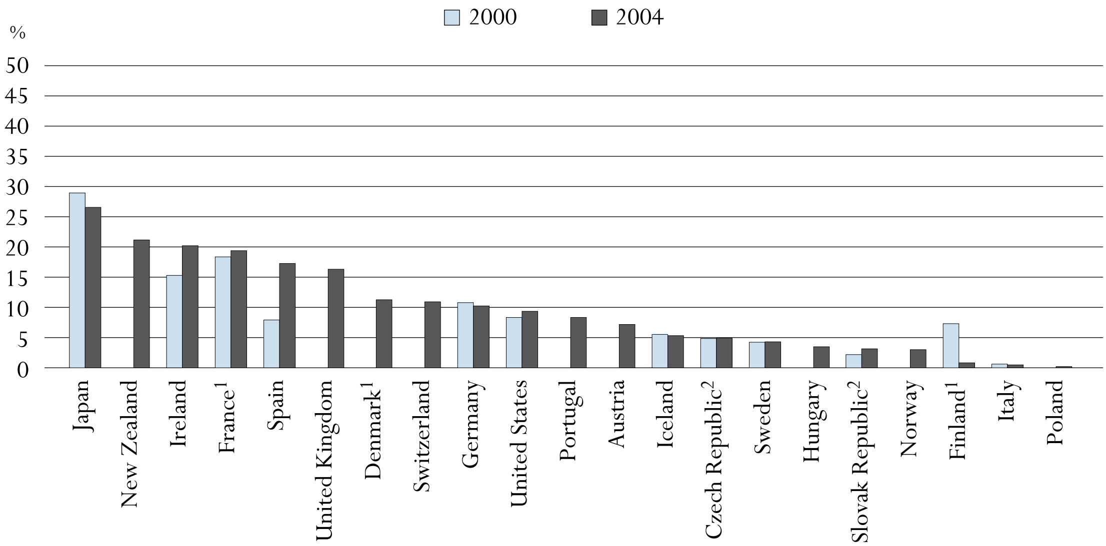
Trends in the provision of and graduation from tertiary-type B programmes are variable among countries (Chart A3.3). For instance, in Spain, a sharp rise in type B graduation rates between 2000 and 2004 is attributable to the development of a new advanced level, specific vocational training programmes. In contrast, type B programmes in Finland are being phased out and the proportion of the age cohort graduating from these programmes has consequently fallen rapidly over the same period.

Advanced research qualification rates

Across the 29 OECD countries with comparable data, an average of 1.3% of the population obtained an advanced research qualification (such as a PhD) in 2004. The percentages range from 0.1% in Mexico to over 2% in Austria, Germany, Portugal, and Switzerland, to over 3% in Sweden (Table A3.1).

Chart A3.3. Tertiary-type B graduation rates (2000, 2004)

Percentage of tertiary-type B graduates to the population at the typical age of graduation



1. Year of reference 2003.
2. Gross graduation rate may include some double counting.

Countries are ranked in descending order of the graduation rates for tertiary-type B education in 2004.

Source: OECD. Table A3.1. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/436145613668

Box A3.1. Graduation rates by field of education and gender

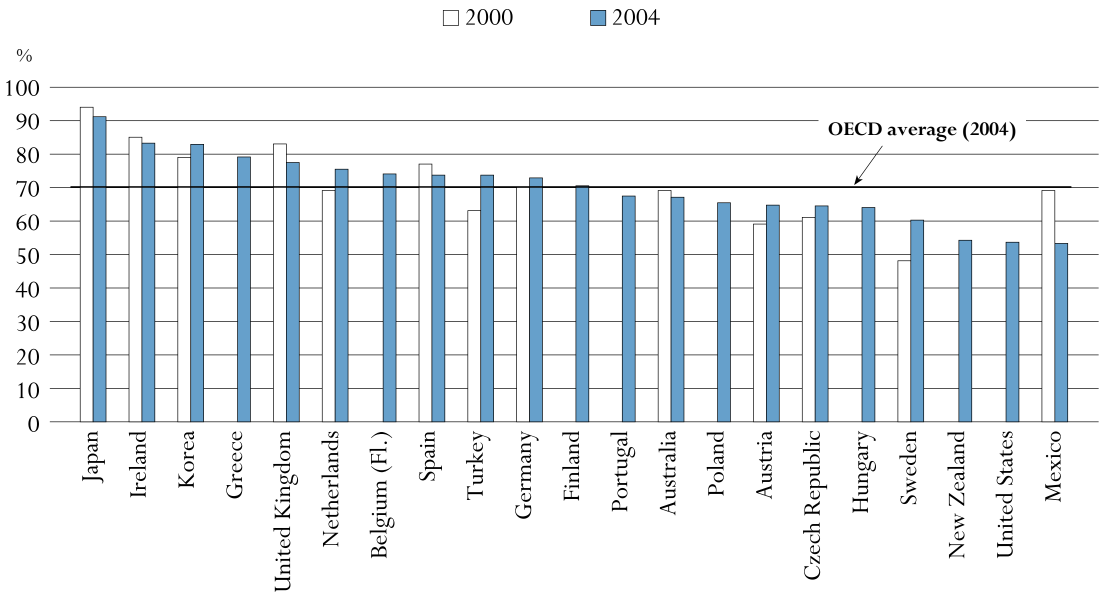
Changing opportunities in the job market, differences in earnings among occupations and sectors, and the admission policies and practices of tertiary education institutions may all affect in which field students choose to study. In turn, the relative popularity of the various fields of education affects the demand for courses and teaching staff, as well as the supply of new graduates. The distribution of tertiary graduates across fields sheds light on the relative importance of the different fields from country to country, as well as on the relative proportion of female graduates in those fields. For more information, see *Education at a Glance 2004* (OECD, 2004c), Tables A4.1 and A4.2. For a data update, see *Education at a Glance 2006* Tables A3.3, A3.4 and A3.5 on the Web at *http://dx.doi.org/10.1787/436145613668*.

Survival rates at the tertiary level

On average across 21 OECD countries for which data are available, some 30% of tertiary-type A students fail to successfully complete the programmes they undertake. Survival rates differ widely among OECD countries. In Mexico, New Zealand and the United States only just over 50% of those who enter tertiary-type A programme go on to successfully complete their programmes in contrast to their counterparts in Ireland and Korea where the survival rates are 83% and in Japan where the rate is 91% (Chart A3.4).

Chart A3.4. Survival rates in tertiary-type A education (2000, 2004)

Number of graduates divided by the number of new entrants in the typical year of entrance to the specified programme



Countries are ranked in descending order of tertiary-type A survival rates in 2004.
Source: OECD. Table A3.2. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/436145613668

Notably, in each of the three countries where survival rates are highest, tertiary-type A programmes are predominantly of a shorter duration; three to five years. Interestingly, entry rates to tertiary-type A programmes for these countries are below the OECD average, whereas in New Zealand, Sweden and the United States – where survival rates are among the lowest in comparison – entry rates are relatively high. Mexico, on the other hand, has one of the lowest entry rates to type-A programmes among OECD countries and the highest failure rate from these programmes.

Tertiary-type B survival rates are, at 62%, somewhat lower than those for tertiary-type A programmes, and again there is wide country variation. Type B survival rates range from above 80% in the Flemish Community of Belgium and Japan to below 40% in Greece. In general, tertiary-type B programmes are of a shorter duration than tertiary-type A programmes. However, interestingly, in the Flemish community of Belgium, the majority of students graduate from medium length type B programmes (the only tertiary-type B programme option) and the country has the second highest survival rates at the tertiary-type B level, just after Japan, for which the breakdown by the duration of studies is not available (Table A3.2).

Among the 12 OECD countries with comparable data, survival rates from advanced research programmes range from 34% in Greece to almost 90% in Italy, Japan and Mexico.

Definitions and methodologies

The data for the academic year 2003-2004 are based on the UOE data collection on education statistics that is administered annually by the OECD.

Tertiary graduates are those who obtain a tertiary qualification in the specified reference year. This indicator distinguishes among different categories of tertiary qualifications: *i)* tertiary-type B qualifications (ISCED 5B); *ii)* tertiary-type A qualifications (ISCED 5A); and *iii)* advanced research degrees of doctorate standard (ISCED 6). For some countries, data are not available for the categories requested. In such cases, the OECD has assigned graduates to the most appropriate category (see Annex 3 at *www.oecd.org/edu/eag2006* for a list of programmes included for each country at the tertiary-type A and tertiary-type B levels). Tertiary-type A degrees are also subdivided by their corresponding total theoretical duration of studies, to allow for comparisons that are independent of differences in national degree structures.

In Table A3.1, graduation rates for first tertiary programmes (tertiary-type A and tertiary-type B) are calculated as gross graduation rates. 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.

A net graduation rate is calculated for advanced research programmes (where duplication of certificates awarded does not pose a problem) as the sum of age-specific graduation rates. The net graduation rate can be interpreted as the percentage of persons within an age cohort who obtain a tertiary qualification and is thus unaffected by changes in population size or typical graduation age. Gross graduation rates are presented for those countries that cannot provide such detailed data.

The survival rate is calculated as the ratio of the number of students who graduated from an initial degree during the reference year to the number of new entrants into this degree *n* years before, with *n* being the number of years of full-time study required to complete the degree. The calculation of the survival rate is not defined from a cohort analysis. This estimation assumes constant student flows at the tertiary level, implied by the need for consistency between the graduate cohort in the reference year with the entrant cohort *n* years before. This assumption may be an oversimplification of the reality in countries (see Annex 3 at *www.oecd.org/edu/eag2006*).

Dropouts are defined as those students who leave the specified level without graduating from a first qualification at that level. The first qualification refers to any degree, regardless of the duration of study, obtained at the end of a programme which does not have a previous degree at the same level as a pre-requisite.

Further references

Examining the number of science graduates per 100 000 25-to-34-year-olds in employment provides another way of gauging the recent output of high-level skills from different education systems. For more information, see *Education at a Glance 2005* (OECD, 2005c), Table A3.2. For a data update, see *Education at a Glance 2006,* Table A3.5 on the Web at *http://dx.doi.org/10.1787/436145613668*.

Table A3.1.
Tertiary graduation rates (2000, 2004)
Percentage of tertiary graduates to the population at the typical age of graduation, by programme destination and duration

		Tertiary-type B programmes (first-time graduation)	Tertiary-type A programmes (first-time graduation)				Advanced research programmes[2]	All programmes (2000) (first-time graduation)	
			All programmes	3 to less than 5 years[1]	5 to 6 years[1]	More than 6 years		Tertiary-type B programmes	Tertiary-type A programmes
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
OECD countries	Australia	m	46.4	44.4	2.0	n	1.7	m	36.3
	Austria	7.1	19.6	4.0	15.6	a	2.1	m	16.0
	Belgium	m	m	m	m	m	1.1	m	m
	Canada	m	m	m	m	m	0.8	m	27.9
	Czech Republic[3]	4.9	19.7	4.9	14.8	a	1.1	4.8	13.6
	Denmark[4]	11.2	45.3	28.6	16.7	n	1.0	m	m
	Finland[4]	0.8	47.8	29.6	17.6	0.6	1.8	7.3	40.7
	France[4]	19.3	26.0	8.6	16.4	1.0	1.1	18.3	24.6
	Germany	10.2	20.6	8.0	12.6	a	2.1	10.7	19.3
	Greece	m	m	m	m	m	0.8	m	m
	Hungary	3.5	28.8	x(2)	x(2)	x(2)	0.6	m	m
	Iceland	5.3	50.0	40.8	9.2	n	0.2	5.5	33.2
	Ireland	20.1	37.4	21.4	16.0	x(4)	1.1	15.2	31.2
	Italy[5]	0.5	36.8	13.3	23.6	a	0.7	0.6	18.1
	Japan	26.5	36.1	31.1	5.0	a	0.8	28.8	30.9
	Korea	m	m	m	m	m	1.1	m	m
	Luxembourg	m	m	m	m	m	m	m	m
	Mexico	m	m	m	m	m	0.1	m	m
	Netherlands	a	40.2	x(2)	x(2)	a	1.4	m	m
	New Zealand	21.0	48.4	44.5	3.8	0.2	1.1	m	m
	Norway	3.0	45.4	36.1	6.0	3.3	1.1	m	m
	Poland	0.2	44.8	10.6	34.3	n	0.9	m	34.4
	Portugal	8.3	32.8	11.4	21.3	0.1	2.5	m	m
	Slovak Republic[3]	3.1	27.7	4.8	22.9	a	1.1	2.2	m
	Spain	17.2	32.6	14.1	18.5	n	1.2	7.9	32.6
	Sweden	4.3	37.4	36.0	1.4	a	3.1	4.2	28.1
	Switzerland	10.9	25.9	14.1	7.9	4.0	2.7	m	10.4
	Turkey	m	10.8	8.9	1.6	0.2	0.2	m	m
	United Kingdom[6]	16.3	39.3	38.3	0.9	0.1	1.9	m	37.5
	United States	9.3	33.6	18.2	13.3	2.1	1.3	8.3	33.2
	OECD average	*9.2*	*34.8*	*21.4*	*12.8*	*0.5*	*1.3*	*9.5*	*27.5*
	EU19 average	*7.9*	*33.4*	*16.7*	*16.6*	*0.1*	*1.4*	*7.9*	*26.9*
Partner countries	Brazil	m	m	m	m	m	m	m	m
	Chile	m	m	m	m	m	0.1	m	m
	Israel	m	31.8	21.3	10.6	a	1.3	m	m
	Russian Federation	m	m	m	m	m	m	m	m

Notes: Mismatches between the coverage of the population data and the student/graduate data mean that the participation/graduation rates for those countries that are net exporters of students may be underestimated (for instance, Luxembourg) and those that are net importers may be overestimated.
1. Excluding students who subsequently completed a longer programme.
2. Net graduation rate is calculated by summing the graduation rates by single year of age except for France, Italy, Japan, Korea, Mexico, the Netherlands and the United States.
3. Gross graduation rate may include some double counting for tertiary-type A and B programmes.
4. Year of reference 2003.
5. Year of reference 2003 for advanced research programmes.
6. The graduation rate for tertiary-type B programmes includes some graduates who have previously graduated at this level and it therefore represents an over-estimate of first-time graduation.
Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/436145613668

Table A3.2.

Survival rates in tertiary education (2004)

Calculated separately for tertiary-type A and teriary-type B programmes: number of graduates from these programmes divided by the number of new entrants to these programmes in the typical year of entrance, by duration of programme

	Tertiary-type A education				Tertiary-type B education				Advanced research programmes
		Duration of programmes				Duration of programmes			
	All programmes	3 to less than 5 years	5 to 6 years	More than 6 years	All programmes	2 to less than 3 years	3 to less than 5 years	5 years or more	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
OECD countries									
Australia	67	x(1)	x(1)	x(1)	m	m	m	m	67
Austria	65	x(1)	x(1)	a	m	m	m	a	m
Belgium (Fl.)	74	75	71	82	85	a	85	a	m
Canada	m	m	m	m	m	m	m	m	m
Czech Republic	65	74	60	a	61	66	60	a	44
Denmark	m	m	m	m	m	m	m	m	m
Finland	71	x(1)	x(1)	x(1)	m	m	a	a	m
France	m	m	m	m	m	m	m	a	m
Germany	73	92	65	a	79	87	72	a	m
Greece	79	78	83	a	35	a	35	a	34
Hungary	64	64	x(2)	x(2)	48	48	m	a	37
Iceland	m	m	m	m	m	m	m	m	m
Ireland	83	x(1)	x(1)	x(1)	69	x(5)	x(5)	x(5)	m
Italy	m	m	m	m	m	m	m	m	88
Japan	91	91	90	a	87	87	x(6)	x(6)	89
Korea	83	83	100	a	m	m	m	a	76
Luxembourg	m	m	m	m	m	m	m	m	m
Mexico	53	53	x(2)	x(2)	63	63	a	a	87
Netherlands	76	76	x(2)	a	a	a	a	a	m
New Zealand	54	55	m	m	42	42	x(6)	x(6)	66
Norway	m	m	m	m	m	m	m	m	m
Poland	66	65	66	a	74	a	74	a	m
Portugal	68	62	72	a	58	a	58	a	65
Slovak Republic	m	m	m	a	77	80	70	a	m
Spain	74	71	76	a	79	79	a	a	m
Sweden	60	x(1)	x(1)	a	68	x(1)	a	a	m
Switzerland	m	m	m	m	m	m	m	m	m
Turkey	74	74	x(2)	a	79	79	a	a	75
United Kingdom	78	78	84	53	53	x(5)	x(5)	x(5)	70
United States	54	x(1)	m	a	m	m	m	m	m
OECD average	***70***	***73***	***77***	***8***	***62***	***45***	***35***	***m***	***67***
EU19 average	***71***	***74***	***72***	***11***	***60***	***36***	***41***	***m***	***56***

Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.

Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/436145613668

INDICATOR A4

WHAT 15-YEAR-OLDS CAN DO IN MATHEMATICS

This indicator examines the mathematics performance of 15-year-old students, drawing on 2003 data from the OECD's Programme for International Student Assessment (PISA). It describes mathematical proficiency in each country in terms of the percentage of students reaching one of six competency levels as well as in terms of the mean scores achieved by students on the overall mathematics scale and on different aspects of mathematics. It also examines the distribution of student scores within countries.

Key results

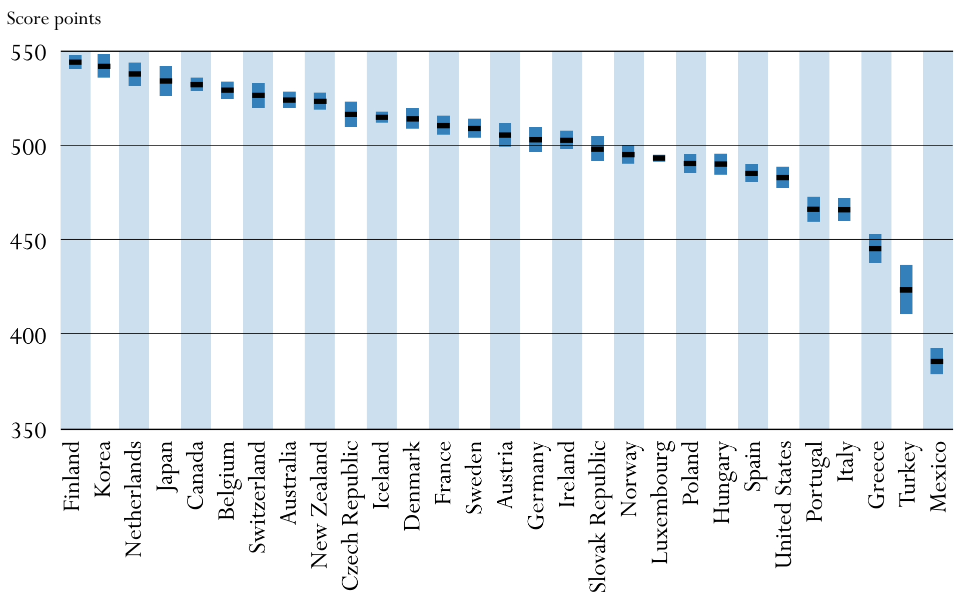
Chart A4.1. Distribution of student performance on the OECD PISA mathematics scale (2003)

The chart summarises the overall performance of 15-year-old students in different countries on the OECD PISA 2003 mathematics scale. The width of the symbols indicates the statistical uncertainty with which the mean performance was estimated.

95% confidence interval around the mean score

Mean score on the mathematical literacy scale

Three OECD countries (Finland, Korea and the Netherlands) achieve statistically similar average scores that are higher than the average scores in all other OECD countries. Students' average scores in these countries – ranging from 538 points in the Netherlands to 544 points in Finland – are over one-half a proficiency level higher than the average. Eleven other countries (Australia, Belgium, Canada, Czech Republic, Denmark, France, Iceland, Japan, New Zealand, Sweden, and Switzerland) have mean scores that are above the OECD mean. Four countries (Austria, Germany, Ireland and the Slovak Republic) perform similarly to the OECD mean, and the remaining 11 countries perform below it.



Source: OECD PISA 2003 database. Table A4.3.

StatLink: http://dx.doi.org/10.1787/564711722418

Other highlights of this indicator

- At least 7% of students in Belgium, Japan, Korea, the Netherlands and Switzerland reach the highest level of mathematics proficiency (Level 6). Furthermore, in these countries and in Canada, Finland and New Zealand, over 20% of students reach at least Level 5. In Greece, Mexico, Portugal and Turkey, however, less than 6% of students reach these two levels of proficiency.
- With the exception of Finland and Korea, all OECD countries have at least 10% of students that perform at Level 1 or below, and there are 12 countries in which this exceeds one-fifth of all students. In Mexico and Turkey, a majority of students perform only at Level 1 or below.
- In the majority of countries, the range of performance in the middle half of the students exceeds the magnitude of two proficiency levels, and in Belgium and Germany it is around 2.4 proficiency levels. This suggests that educational programmes, schools and teachers need to cope with a wide range of student knowledge and skills.

Policy context

For much of the last century, the content of school mathematics and science curricula was dominated by the need to provide the foundations for the professional training of a small number of mathematicians, scientists and engineers. With the growing role of science, mathematics and technology in modern life, however, the objectives of personal fulfilment, employment and full participation in society increasingly require that all adults – not just those aspiring to a scientific career – be mathematically, scientifically and technologically literate.

The performance of a country's best students in mathematics and related subjects may have implications for the part a country will play in tomorrow's advanced technology sector and for its general international competitiveness. Conversely, deficiencies of students in key competency areas can have negative consequences for individuals' labour market and earnings prospects and for their capacity to participate fully in society.

Evidence and explanations

PISA starts with a concept of mathematical literacy that is concerned with the capacity of students to analyse, reason and communicate effectively as they pose, solve and interpret mathematical problems in a variety of situations involving quantitative, spatial, probabilistic or other mathematical concepts. When thinking about what mathematics might mean for individuals, one must consider both the extent to which they possess mathematical knowledge and understanding, and the extent to which they can activate their mathematical competencies to solve problems they encounter in life. PISA therefore presents students with problems mainly set in real-world situations. These are crafted in such a way that aspects of mathematics would be of genuine benefit in solving the problem. The objective of the PISA assessment is to obtain measures of the extent to which students presented with these problems can activate their mathematical knowledge and competencies to solve such problems successfully.

Proficiency in mathematics

Chart A4.2 presents an overall profile of students' proficiency on the mathematics literacy scale with the length of the coloured components of the bars showing the percentage of students proficient at each of six levels that were based on substantive considerations relating to the nature of the underlying competencies (Box A4.2). Across OECD countries, on average, 4% of students reach Level 6 (the highest level of performance), 15% reach Level 5 or higher, 34% reach Level 4 or higher, 58% reach Level 3 or higher, and 79% reach Level 2 or higher. Thirteen percent of students reach Level 1, although 8% of students across OECD countries perform below this level (Table A4.1).

Examining individual countries' performance by proficiency level shows that in Belgium, Japan, Korea, the Netherlands and Switzerland, 7% or more of students reach the highest level of proficiency. In these countries and in Canada, Finland and New Zealand, a significant proportion of students also reach Level 5 or above (over 20% in each case). In contrast, in Greece, Mexico, Portugal and Turkey, less than 6% of students reach these two levels of proficiency.

Although there is general tendency among countries with a high proportion of 15-year-old students scoring at Levels 5 and 6 to have fewer students below the lowest level of proficiency (see, *e.g.*, Korea), this is not always the case. For example, while 9% of students in Belgium perform at Level 6, 7% do not reach Level 1.

Box A4.1. What is mathematical literacy in PISA?

Mathematics in PISA focuses on the capacity of students to analyse, reason, and communicate effectively as they pose, solve and interpret mathematical problems in a variety of situations involving quantitative, spatial, probabilistic, and other mathematical concepts. It defines "mathematical literacy" as an individual's capacity to identify and understand the role that mathematics plays in the world, to make well-founded judgments, and to use and engage with mathematics in ways that meet the needs of that individual's life as a constructive, concerned, and reflective citizen. This definition focuses on the extent to which students possess mathematical knowledge and understanding and the extent to which they can activate their mathematical competencies to solve problems they encounter in life.

What scales are reported? PISA's assessment of mathematics is reported on an overall mathematics scale (reported here) that is comprised of four components. *Space and shape* relates to spatial and geometric phenomena and relationships, drawing on the curricular discipline of geometry. *Change and relationships* involves mathematical manifestations of change as well as functional relationships and dependency among variables; it relates most closely to algebra. *Quantity* involves numeric phenomena as well as quantitative relationships and patterns, which in turn involve familiarity with numbers, representing numbers, understanding the meaning of operations, mental arithmetic and estimating. *Uncertainty* involves probabilistic and statistical phenomena and relationships that become increasingly relevant in the information society.

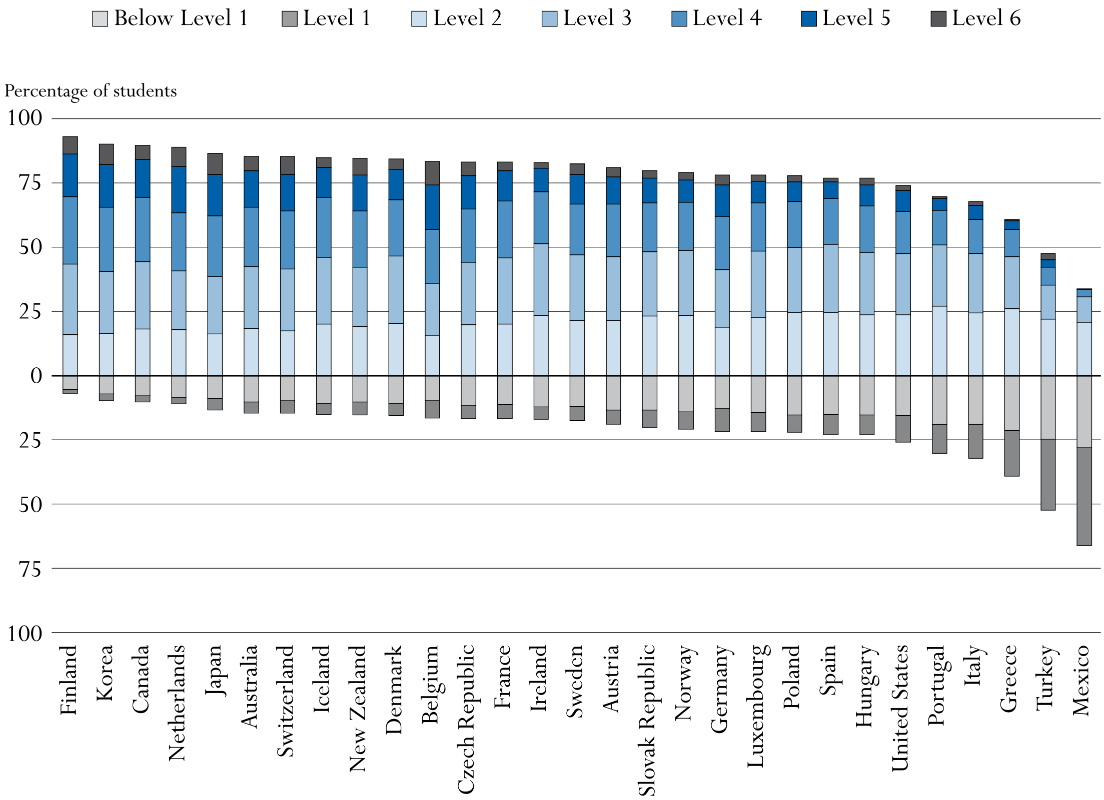
What do the scale scores mean? The scores on each scale represent degrees of proficiency along each dimension or aspect of mathematics (in this indicator, the combined scale). For example, a low score on a scale indicates that a student has more limited skills, whereas a high score indicates that a student has more advanced skills in this area.

What are proficiency levels? In an attempt to capture this progression, each of the mathematics scales is divided into six levels based on the type of knowledge and skills students need to demonstrate at a particular level. Students at a particular level are not only likely to demonstrate the knowledge and skills associated with that level but are also likely to demonstrate the proficiencies defined by lower levels. Thus, all students proficient at Level 3 are also proficient at Levels 1 and 2.

In 16 OECD countries, at least one-third of students reach Level 4 or beyond on the mathematics scale, and in nine of these countries, the percentage is over 40%. In all but five OECD countries, the percentage of students reaching Level 3 or higher is over 50%, and this extends to 77% in Finland. In all but four OECD countries, the percentage of students reaching Level 2 or higher is over 70%.

While most students in most OECD countries reach Level 2 or higher on the mathematics scale, there are a number of students performing at Level 1 or below. With the exception of Finland and Korea, all OECD countries have at least 10% of students that perform at Level 1 or below, and there are 12 countries in which this exceeds one-fifth of all students. In Mexico and Turkey, a majority of students are unable to complete tasks above Level 1 on a consistent basis.

Chart A4.2. Percentage of students at each level of proficiency on the OECD PISA mathematics scale (2003)



Countries are ranked in descending order of percentage of 15-year-olds in Levels 2, 3, 4, 5 and 6.
Source: OECD PISA 2003 database. Table A4.1.

StatLink: http://dx.doi.org/10.1787/564711722418

Mean scores in mathematics

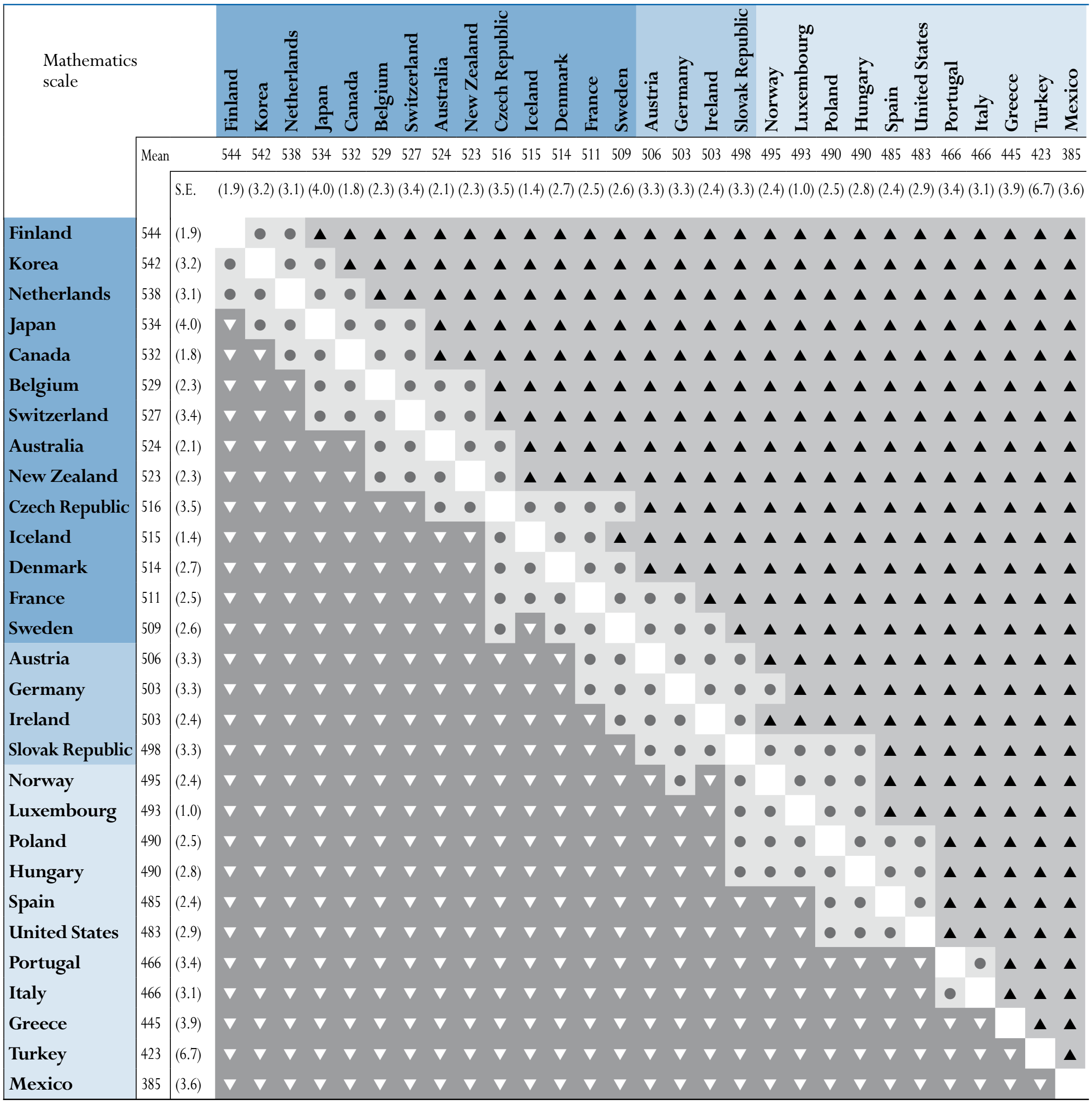
Another way to summarise student performance and to compare the relative standing of countries in terms of student performance is through the mean scores for students in each country. To the extent that high average performance at age 15 can be considered predictive of a highly skilled future workforce, countries with high average performance will have an important economic and social advantage. This section describes country means on the overall scale, as well as briefly describing countries' relative strengths and weakness on the four scales identified in Box A4.1. (See also Box A4.3 for an indication of how mean scores on select scales differed from the 2000 to the 2003 assessments of PISA.)

Chart A4.3 gives a summary of overall student performance in different countries on the combined mathematics scale, in terms of the mean student score, and indicates which countries perform above, at, or below the OECD average, and compares mean scores among pairs of countries. It also indicates the comparative performance of individual countries with each of the other countries.

Box A4.2. What can students at each proficiency level do and what scores are associated with the levels?

- Students proficient at ***Level 6 (over 668 points)*** can conceptualise, generalise and utilise information based on their investigations and modelling of complex problem situations. They can link different information sources and representations and flexibly translate among them. Students at this level are capable of advanced mathematical thinking and reasoning; they can apply this insight and understanding, along with a mastery of symbolic and formal mathematical operations and relationships, to new approaches and strategies for attacking novel situations. Student at this level can formulate and precisely communicate their actions and reflections regarding their findings, interpretations, arguments and the appropriateness of these to the original situations.
- Students proficient at ***Level 5 (607 to 668 points)*** can develop and work with models for complex situations, identifying constraints and specifying assumptions. They can select, compare and evaluate appropriate problem solving strategies for dealing with complex problems related to these models. Students at this level can work strategically using broad, well-developed thinking and reasoning skills, appropriate linked representations, symbolic and formal characterisations, and insight pertaining to these situations. They can reflect on their actions and can formulate and communicate their interpretations and reasoning.
- Students proficient at ***Level 4 (545 to 606 points)*** can work effectively with explicit models for complex concrete situations that may involve constraints or call for making assumptions. They can select and integrate different representations, including symbolic, linking them directly to aspects of real-world situations. Students at this level can utilise well-developed skills and reason flexibly, with some insight, in these contexts. They can construct and communicate explanations and arguments based on their interpretations, arguments and actions.
- Students proficient at ***Level 3 (483 to 544 points)*** can execute clearly described procedures, including those that require sequential decisions. They can select and apply simple problem solving strategies. Students at this level can interpret and use representations based on different information sources and reason directly from them. They can develop short communications reporting their interpretations, results and reasoning.
- Students proficient at ***Level 2 (421 to 482 points)*** can interpret and recognise situations in contexts that require no more than direct inference. They can extract relevant information from a single source and make use of a single representational mode. Students at this level can employ basic algorithms, formulae, procedures or conventions. They are capable of direct reasoning and making literal interpretations of the results.
- Students proficient at ***Level 1 (358 to 420 points)*** can answer questions involving familiar contexts where all relevant information is present and the questions are clearly defined. They are able to identify information and to carry out routine procedures according to direct instructions in explicit situations. They can perform actions that are obvious and follow immediately from the given stimuli.
- Students performing ***below Level 1 (below 358 points)*** are not able to show routinely the most basic type of knowledge and skills that PISA seeks to measure.

Chart A4.3. Multiple comparisons of mean performance on the OECD PISA mathematics scale (2003)



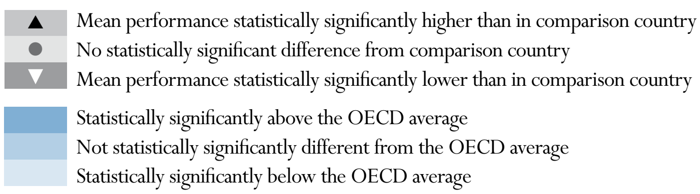
Range of rank*

		Finland	Korea	Netherlands	Japan	Canada	Belgium	Switzerland	Australia	New Zealand	Czech Republic	Iceland	Denmark	France	Sweden	Austria	Germany	Ireland	Slovak Republic	Norway	Luxembourg	Poland	Hungary	Spain	United States	Portugal	Italy	Greece	Turkey	Mexico
OECD countries	Upper rank	1	1	1	2	4	4	4	7	7	9	10	10	11	12	13	14	15	16	18	19	19	19	22	22	25	25	27	28	29
	Lower rank	3	4	5	7	7	8	9	9	10	14	13	14	15	16	18	18	18	21	21	21	23	23	24	24	26	26	27	28	29

* Because data are based on samples, it is not possible to report exact rank order positions for countries. However, it is possible to report the range of rank order positions within which the country mean lies with 95 per cent likelihood.

Instructions:

Read across the row for a country to compare performance with the countries listed along the top of the chart. The symbols indicate whether the average performance of the country in the row is lower than that of the comparison country, higher than that of the comparison country, or if there is no statistically significant difference between the average achievement of the two countries.



Source: OECD PISA 2003 database.

StatLink: http://dx.doi.org/10.1787/564711722418

On the combined mathematics scale, Finland, Korea and the Netherlands are the best performing OECD countries. Students' average scores in these countries – ranging from 538 points in the Netherlands to 544 points in Finland – are over one-half a proficiency level higher than the OECD average. Eleven other OECD countries (Australia, Belgium, Canada, Czech Republic, Denmark, France, Iceland, Japan, New Zealand, Sweden and Switzerland) have mean scores that are above the OECD mean. Four countries (Austria, Germany, Ireland and the Slovak Republic) perform similarly to the OECD mean, and the remaining 11 OECD countries perform below it.

Table A4.2 compares the performance results in the different content areas of mathematics, allowing an assessment of the relative strengths and weaknesses of countries. Although it is not appropriate to compare numerical scale scores directly between the different content areas of mathematics, it is possible to determine the relative strengths of countries in the different content areas of mathematics, on the basis of their relative positions on the respective scales. The relative probability that a country will assume each position on each scale is determined from the country mean scores, their standard errors and the covariance between the performance scales of two domains. From this, it can be concluded, with a likelihood of 95%, whether a country would rank statistically significantly higher, not statistically differently, or statistically significantly lower in one domain than in the other domain. For details on the methods employed, see the *PISA 2003 Technical Report* (OECD, 2005c).

For some countries – most notably Greece, Italy, Korea, Mexico, Portugal, Spain and Turkey – the relative standing is similar across the four mathematics content areas. By contrast, in Austria, Canada, the Czech Republic, France, Germany, Ireland, Japan, New Zealand, Norway, the Slovak Republic and Switzerland, performance differences among the content areas are particularly large and may warrant attention in curriculum development and implementation. For additional details, see *Learning for Tomorrow's World – First Results from PISA 2003* (OECD, 2004a).

For some countries – most notably Japan – the relative standing is broadly similar in the content areas that were assessed in both 2000 and 2003, while performance is lower on the quantity and uncertainty scales that were newly introduced in 2003. While it would be wrong to conclude that mathematics performance in these countries has declined, the results do suggest that the introduction of the new content areas into the assessment shed a slightly different light on the overall performance of these countries.

Distribution of student performance

While average performance figures can provide a good indication of the overall performance of a country, they may mask significant variation in performance within countries, possibly reflecting different performance among different student groups. Thus, this section presents information on the distribution of mathematics scores, examining the range of performance within countries.

Table A4.3 shows the distribution of student performance within countries. This analysis is different from the examination of the distribution of student performance across the PISA proficiency levels discussed in the first section in the following way. Whereas the distribution of students across proficiency levels indicates the proportion of students in each country that can demonstrate a specified level of knowledge and skills, and thus compares countries on the basis of absolute benchmarks of student performance, the analysis below focuses on the relative distribution of scores, *i.e.* the gap that exists between students with the highest and the lowest levels of performance within each country. This is an important indicator of the equality of educational outcomes in mathematics.

The results show that there is wide variation in overall student performance on the combined mathematics scale within countries. The middle 90% of the population exceeds by far the range between the mean scores of the highest and lowest performing countries. In almost all OECD countries, this group includes some students proficient at Level 5 and others not proficient above Level 1 (Table A4.3).

In addition, the range of performance in the middle half of the students (*i.e.* the difference between the 75th and 25th percentiles) on the combined mathematics scale ranges from less than 120 score points in Canada, Finland, Ireland and Mexico to more than 140 score points in Belgium and Germany. In the majority of countries, this range exceeds the magnitude of two proficiency levels and in Belgium and Germany it is around 2.4 proficiency levels. In Belgium, this difference can be explained partially by the difference in performance between the Flemish and French Communities). For additional details, see *Learning for Tomorrow's World – First Results from PISA 2003* (OECD, 2004a).

Box A4.3. Differences in mathematics in PISA 2000 and PISA 2003

PISA was first administered in 2000, and thus it is possible to estimate differences in mathematics performance between PISA 2000 and PISA 2003 for the two scales that were used in the 2000 assessment: *space and shape* and *change and relationships.* However, in both cases, data should be interpreted with caution. First, since data are only available from two points in time, it is not possible to assess to what extent the observed differences are indicative of trends. Second, while the overall approach to measurement used by PISA is consistent across cycles, small refinements continue to be made, so it would not be prudent to read too much into small changes in results at this stage. Furthermore, sampling and measurement error limit the reliability of comparisons of results over time. Both types of error inevitably arise when assessments are linked through a limited number of common items over time. To account for the effects of such error, the confidence band for comparisons over time has been broadened correspondingly.

With these caveats in mind, performance on the *space and shape* scale has remained broadly similar across countries between 2000 (494 points) and 2003 (496 points), though this varies for individual countries. In four OECD countries, there were statistically significant increases on this scale, ranging from 15 points in Italy to 28 points in Belgium. On the other hand, average performance in Mexico and Iceland decreased by 18 and 15 points, respectively.

On the *change and relationships* scale, among the 25 countries for which data can be compared, the OECD average increased from 488 points in 2000 to 499 points in 2003, the largest observed difference in any areas of the PISA assessment. Again, however, there is wide variation across countries and more countries saw differences on this scale than on the *space and shape* scale. The Czech Republic and Poland both saw increases of around 30 score points (equivalent to about one-half a proficiency level); and in Belgium, Canada, Finland, Germany, Hungary, Korea, Portugal, and Spain, increases were between 13 and 22 points. There were no statistically significant increases or decreases in average scores of the remaining countries.

Source: Learning for Tomorrow's World – First Results from PISA 2003 (OECD, 2004a), Tables 2.1c, 2.1d, 2.2c and 2.2d.

Even countries with similar levels of average performance show considerable variation in the disparities of student performance. For example, Germany and Ireland both have mean scores around the OECD average, but while Ireland shows one of the narrowest distributions, the difference between the 75th and 25th percentiles in Germany is among the widest. Similarly, towards the lower end of the scale, Italy and Portugal show similar levels of average performance, but Italy shows much larger performance variation than Portugal. Among the top performing countries, Finland displays much less performance variation than Korea or the Netherlands (Table A4.3).

Finally, a comparison between the range of performance within a country and its average performance reveals that wide disparities in performance are not a necessary condition for a country to attain a high level of overall performance. For example, Canada, Denmark, Finland, Iceland and Korea all have above-average performance but below-average differences between the 75th and 25th percentiles.

Definitions and methodologies

The achievement scores are based on assessments administered in 2003 as part of the Programme for International Student Assessment (PISA) undertaken by the OECD.

The target population studied for this indicator was 15-year-old students. Operationally, this referred to students who were from 15 years and 3 (completed) months to 16 years and 2 (completed) months at the beginning of the testing period and who were enrolled in an educational institution at the secondary level, irrespective of the grade levels or type of institutions in which they were enrolled, and irrespective of whether they participated in school full-time or part-time.

Further references

For further information about PISA 2003, see *Learning for Tomorrow's World – First Results from PISA 2003* (OECD, 2004a), *Problem Solving for Tomorrow's World – First Measures of Cross-Curricular Competencies from PISA 2003* (OECD, 2004b) and the *PISA 2003 Technical Report* (OECD, 2005c). PISA data is also available on the PISA Web site: *www.pisa.oecd.org*.

Table A4.1.
Percentage of students at each level of proficiency on the OECD PISA mathematics scale (2003)

	Proficiency levels													
	Below Level 1 (below 358 score points)		Level 1 (from 358 to 420 score points)		Level 2 (from 421 to 482 score points)		Level 3 (from 483 to 544 score points)		Level 4 (from 545 to 606 score points)		Level 5 (from 607 to 668 score points)		Level 6 (above 668 score points)	
	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
OECD countries														
Australia	4.3	(0.4)	10.0	(0.5)	18.6	(0.6)	24.0	(0.7)	23.3	(0.6)	14.0	(0.5)	5.8	(0.4)
Austria	5.6	(0.7)	13.2	(0.8)	21.6	(0.9)	24.9	(1.1)	20.5	(0.8)	10.5	(0.9)	3.7	(0.5)
Belgium	7.2	(0.6)	9.3	(0.5)	15.9	(0.6)	20.1	(0.7)	21.0	(0.6)	17.5	(0.7)	9.0	(0.5)
Canada	2.4	(0.3)	7.7	(0.4)	18.3	(0.6)	26.2	(0.7)	25.1	(0.6)	14.8	(0.5)	5.5	(0.4)
Czech Republic	5.0	(0.7)	11.6	(0.9)	20.1	(1.0)	24.3	(0.9)	20.8	(0.9)	12.9	(0.8)	5.3	(0.5)
Denmark	4.7	(0.5)	10.7	(0.6)	20.6	(0.9)	26.2	(0.9)	21.9	(0.8)	11.8	(0.9)	4.1	(0.5)
Finland	1.5	(0.2)	5.3	(0.4)	16.0	(0.6)	27.7	(0.7)	26.1	(0.9)	16.7	(0.6)	6.7	(0.5)
France	5.6	(0.7)	11.0	(0.8)	20.2	(0.8)	25.9	(1.0)	22.1	(1.0)	11.6	(0.7)	3.5	(0.4)
Germany	9.2	(0.8)	12.4	(0.8)	19.0	(1.1)	22.6	(0.8)	20.6	(1.0)	12.2	(0.9)	4.1	(0.5)
Greece	17.8	(1.2)	21.2	(1.2)	26.3	(1.0)	20.2	(1.0)	10.6	(0.9)	3.4	(0.5)	0.6	(0.2)
Hungary	7.8	(0.8)	15.2	(0.8)	23.8	(1.1)	24.3	(0.9)	18.2	(0.9)	8.2	(0.7)	2.5	(0.4)
Iceland	4.5	(0.4)	10.5	(0.6)	20.2	(1.0)	26.1	(0.9)	23.2	(0.8)	11.7	(0.6)	3.7	(0.4)
Ireland	4.7	(0.6)	12.1	(0.8)	23.6	(0.8)	28.0	(0.8)	20.2	(1.1)	9.1	(0.8)	2.2	(0.3)
Italy	13.2	(1.2)	18.7	(0.9)	24.7	(1.0)	22.9	(0.8)	13.4	(0.7)	5.5	(0.4)	1.5	(0.2)
Japan	4.7	(0.7)	8.6	(0.7)	16.3	(0.8)	22.4	(1.0)	23.6	(1.2)	16.1	(1.0)	8.2	(1.1)
Korea	2.5	(0.3)	7.1	(0.7)	16.6	(0.8)	24.1	(1.0)	25.0	(1.1)	16.7	(0.8)	8.1	(0.9)
Luxembourg	7.4	(0.4)	14.3	(0.6)	22.9	(0.9)	25.9	(0.8)	18.7	(0.8)	8.5	(0.6)	2.4	(0.3)
Mexico	38.1	(1.7)	27.9	(1.0)	20.8	(0.9)	10.1	(0.8)	2.7	(0.4)	0.4	(0.1)	0.0	(0.0)
Netherlands	2.6	(0.7)	8.4	(0.9)	18.0	(1.1)	23.0	(1.1)	22.6	(1.3)	18.2	(1.1)	7.3	(0.6)
New Zealand	4.9	(0.4)	10.1	(0.6)	19.2	(0.7)	23.2	(0.9)	21.9	(0.8)	14.1	(0.6)	6.6	(0.4)
Norway	6.9	(0.5)	13.9	(0.8)	23.7	(1.2)	25.2	(1.0)	18.9	(1.0)	8.7	(0.6)	2.7	(0.3)
Poland	6.8	(0.6)	15.2	(0.8)	24.8	(0.7)	25.3	(0.9)	17.7	(0.9)	7.8	(0.5)	2.3	(0.3)
Portugal	11.3	(1.1)	18.8	(1.0)	27.1	(1.0)	24.0	(1.0)	13.4	(0.9)	4.6	(0.5)	0.8	(0.2)
Slovak Republic	6.7	(0.8)	13.2	(0.9)	23.5	(0.9)	24.9	(1.1)	18.9	(0.8)	9.8	(0.7)	2.9	(0.4)
Spain	8.1	(0.7)	14.9	(0.9)	24.7	(0.8)	26.7	(1.0)	17.7	(0.6)	6.5	(0.6)	1.4	(0.2)
Sweden	5.6	(0.5)	11.7	(0.6)	21.7	(0.8)	25.5	(0.9)	19.8	(0.8)	11.6	(0.6)	4.1	(0.5)
Switzerland	4.9	(0.4)	9.6	(0.6)	17.5	(0.8)	24.3	(1.0)	22.5	(0.7)	14.2	(1.1)	7.0	(0.9)
Turkey	27.7	(2.0)	24.6	(1.3)	22.1	(1.1)	13.5	(1.3)	6.8	(1.1)	3.1	(0.8)	2.4	(1.0)
United States	10.2	(0.8)	15.5	(0.8)	23.9	(0.8)	23.8	(0.8)	16.6	(0.7)	8.1	(0.5)	2.0	(0.4)
OECD total	*11.0*	*(0.3)*	*14.6*	*(0.3)*	*21.2*	*(0.3)*	*22.4*	*(0.3)*	*17.6*	*(0.2)*	*9.6*	*(0.2)*	*3.5*	*(0.2)*
OECD average	*8.2*	*(0.2)*	*13.2*	*(0.2)*	*21.1*	*(0.1)*	*23.7*	*(0.2)*	*19.1*	*(0.2)*	*10.6*	*(0.1)*	*4.0*	*(0.1)*

Source: OECD PISA 2003 database. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*

StatLink: http://dx.doi.org/10.1787/564711722418

Table A4.2.

Mean student performance and variation on different aspects of the OECD PISA mathematics scale (2003)

	Space and shape				Change and relationships				Quantity				Uncertainty			
	Mean		Standard deviation		Mean		Standard deviation		Mean		Standard deviation		Mean		Standard deviation	
	Score	S.E.	S.D.	S.E.	Score	S.E.	S.D.	S.E.	Score	S.E.	S.D.	S.E.	Score	S.E.	S.D.	S.E.
OECD countries																
Australia	521	(2.3)	104	(1.7)	525	(2.3)	98	(1.8)	517	(2.1)	97	(1.5)	531	(2.2)	98	(1.6)
Austria	515	(3.5)	112	(1.7)	500	(3.6)	102	(1.8)	513	(3.0)	86	(1.7)	494	(3.1)	95	(1.7)
Belgium	530	(2.3)	111	(1.4)	535	(2.4)	117	(1.6)	530	(2.3)	110	(1.8)	526	(2.2)	106	(1.5)
Canada	518	(1.8)	95	(0.9)	537	(1.9)	92	(0.9)	528	(1.8)	94	(0.9)	542	(1.8)	87	(0.9)
Czech Republic	527	(4.1)	119	(2.3)	515	(3.5)	100	(1.8)	528	(3.5)	98	(2.1)	500	(3.1)	91	(1.7)
Denmark	512	(2.8)	103	(1.6)	509	(3.0)	98	(1.8)	516	(2.6)	92	(1.6)	516	(2.8)	92	(1.6)
Finland	539	(2.0)	92	(1.2)	543	(2.2)	95	(1.4)	549	(1.8)	83	(1.1)	545	(2.1)	85	(1.1)
France	508	(3.0)	102	(2.0)	520	(2.6)	100	(2.1)	507	(2.5)	95	(1.8)	506	(2.4)	92	(1.7)
Germany	500	(3.3)	112	(1.9)	507	(3.7)	109	(1.7)	514	(3.4)	106	(1.9)	493	(3.3)	98	(1.7)
Greece	437	(3.8)	100	(1.6)	436	(4.3)	107	(1.7)	446	(4.0)	100	(1.7)	458	(3.5)	88	(1.5)
Hungary	479	(3.3)	109	(2.2)	495	(3.1)	99	(2.1)	496	(2.7)	95	(1.9)	489	(2.6)	86	(1.8)
Iceland	504	(1.5)	94	(1.5)	510	(1.4)	97	(1.2)	513	(1.5)	96	(1.3)	528	(1.5)	95	(1.4)
Ireland	476	(2.4)	95	(1.5)	506	(2.4)	88	(1.4)	502	(2.5)	88	(1.3)	517	(2.6)	89	(1.4)
Italy	470	(3.1)	109	(1.8)	452	(3.2)	103	(1.9)	475	(3.4)	106	(2.0)	463	(3.0)	95	(1.7)
Japan	553	(4.3)	110	(2.9)	536	(4.3)	112	(3.0)	527	(3.8)	102	(2.5)	528	(3.9)	98	(2.6)
Korea	552	(3.8)	117	(2.5)	548	(3.5)	100	(2.4)	537	(3.0)	90	(1.9)	538	(3.0)	89	(1.9)
Luxembourg	488	(1.4)	100	(1.2)	487	(1.2)	102	(1.0)	502	(1.1)	91	(1.1)	492	(1.1)	96	(1.0)
Mexico	382	(3.2)	87	(1.4)	364	(4.1)	99	(1.9)	394	(3.9)	95	(1.9)	390	(3.3)	80	(1.5)
Netherlands	526	(2.9)	94	(2.3)	551	(3.1)	94	(2.0)	528	(3.1)	97	(2.4)	549	(3.0)	90	(2.0)
New Zealand	525	(2.3)	106	(1.3)	526	(2.4)	103	(1.5)	511	(2.2)	99	(1.3)	532	(2.3)	99	(1.3)
Norway	483	(2.5)	103	(1.3)	488	(2.6)	98	(1.3)	494	(2.2)	94	(1.1)	513	(2.6)	98	(1.1)
Poland	490	(2.7)	107	(1.9)	484	(2.7)	100	(1.7)	492	(2.5)	89	(1.7)	494	(2.3)	85	(1.7)
Portugal	450	(3.4)	93	(1.7)	468	(4.0)	99	(2.2)	465	(3.5)	94	(1.8)	471	(3.4)	83	(1.8)
Slovak Republic	505	(4.0)	117	(2.3)	494	(3.5)	105	(2.3)	513	(3.4)	94	(2.3)	476	(3.2)	87	(1.8)
Spain	477	(2.6)	92	(1.4)	481	(2.8)	99	(1.4)	492	(2.5)	97	(1.3)	489	(2.4)	88	(1.4)
Sweden	498	(2.6)	100	(1.7)	505	(2.9)	111	(1.9)	514	(2.5)	90	(1.7)	511	(2.7)	101	(1.7)
Switzerland	540	(3.5)	110	(2.1)	523	(3.7)	112	(2.2)	533	(3.1)	96	(1.7)	517	(3.3)	100	(2.1)
Turkey	417	(6.3)	102	(5.1)	423	(7.6)	121	(5.4)	413	(6.8)	112	(5.1)	443	(6.2)	98	(5.0)
United States	472	(2.8)	98	(1.4)	486	(3.0)	98	(1.6)	476	(3.2)	105	(1.5)	492	(3.0)	99	(1.5)
OECD total	*486*	*(1.0)*	*112*	*(0.7)*	*489*	*(1.2)*	*113*	*(0.8)*	*487*	*(1.1)*	*108*	*(0.7)*	*492*	*(1.1)*	*102*	*(0.7)*
OECD average	*496*	*(0.6)*	*110*	*(0.4)*	*499*	*(0.7)*	*109*	*(0.5)*	*501*	*(0.6)*	*102*	*(0.4)*	*502*	*(0.6)*	*99*	*(0.4)*

Source: OECD PISA 2003 database. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.

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Table A4.3.

Mean score and variation in student performance on the OECD PISA mathematics scale (2003)

	Mean		Standard deviation		Percentiles											
					5th		10th		25th		75th		90th		95th	
	Score	S.E.	S.D.	S.E.	Score	S.E.	Score	S.E.	Score	S.E.	Score	S.E.	Score	S.E.	Score	S.E.
OECD countries																
Australia	524	(2.1)	95	(1.5)	364	(4.4)	399	(3.4)	460	(2.7)	592	(2.5)	645	(3.0)	676	(3.5)
Austria	506	(3.3)	93	(1.7)	353	(6.6)	384	(4.4)	439	(4.0)	571	(4.2)	626	(4.0)	658	(5.0)
Belgium	529	(2.3)	110	(1.8)	334	(6.5)	381	(4.6)	456	(3.4)	611	(2.5)	664	(2.4)	693	(2.4)
Canada	533	(1.8)	87	(1.0)	386	(3.1)	419	(2.5)	474	(2.2)	593	(2.1)	644	(2.6)	673	(3.4)
Czech Republic	517	(3.5)	96	(1.9)	358	(6.2)	392	(5.7)	449	(4.5)	584	(4.0)	641	(4.3)	672	(4.9)
Denmark	514	(2.7)	91	(1.4)	361	(4.4)	396	(4.5)	453	(3.7)	578	(3.1)	632	(3.7)	662	(4.7)
Finland	544	(1.9)	84	(1.1)	406	(3.8)	438	(2.8)	488	(2.2)	603	(2.3)	652	(2.8)	680	(3.1)
France	511	(2.5)	92	(1.8)	352	(6.0)	389	(5.6)	449	(3.7)	575	(3.0)	628	(3.6)	656	(3.5)
Germany	503	(3.3)	103	(1.8)	324	(6.1)	363	(5.6)	432	(4.7)	578	(3.5)	632	(3.5)	662	(3.6)
Greece	445	(3.9)	94	(1.8)	288	(5.4)	324	(5.1)	382	(4.6)	508	(4.3)	566	(5.3)	598	(5.1)
Hungary	490	(2.8)	94	(2.0)	335	(5.6)	370	(4.2)	426	(3.0)	556	(3.9)	611	(4.7)	644	(4.6)
Iceland	515	(1.4)	90	(1.2)	362	(4.1)	396	(2.7)	454	(2.8)	578	(1.9)	629	(3.0)	658	(3.8)
Ireland	503	(2.4)	85	(1.3)	360	(4.7)	393	(3.2)	445	(3.4)	562	(3.0)	614	(3.6)	641	(3.3)
Italy	466	(3.1)	96	(1.9)	307	(6.4)	342	(5.9)	401	(4.3)	530	(3.0)	589	(3.6)	623	(3.7)
Japan	534	(4.0)	101	(2.8)	361	(8.2)	402	(6.3)	467	(5.4)	605	(4.4)	660	(6.1)	690	(6.6)
Korea	542	(3.2)	92	(2.1)	388	(4.6)	423	(4.5)	479	(3.7)	606	(4.2)	659	(5.4)	690	(6.8)
Luxembourg	493	(1.0)	92	(1.0)	339	(3.9)	373	(2.7)	430	(2.2)	557	(1.9)	611	(3.2)	641	(2.7)
Mexico	385	(3.6)	85	(1.9)	247	(5.4)	276	(4.7)	327	(4.3)	444	(4.5)	497	(4.7)	527	(5.6)
Netherlands	538	(3.1)	93	(2.3)	385	(6.9)	415	(5.8)	471	(5.4)	608	(3.8)	657	(3.2)	684	(3.4)
New Zealand	524	(2.3)	98	(1.2)	359	(4.1)	394	(3.9)	455	(2.9)	593	(2.2)	650	(3.2)	682	(2.9)
Norway	495	(2.4)	92	(1.2)	344	(4.0)	376	(3.4)	433	(2.9)	560	(3.3)	614	(3.6)	645	(3.9)
Poland	490	(2.5)	90	(1.3)	343	(5.8)	376	(3.6)	428	(3.1)	553	(2.9)	607	(3.3)	640	(3.5)
Portugal	466	(3.4)	88	(1.7)	321	(6.3)	352	(5.3)	406	(5.0)	526	(3.5)	580	(3.3)	610	(3.7)
Slovak Republic	498	(3.3)	93	(2.3)	342	(6.9)	379	(5.8)	436	(4.6)	565	(3.8)	619	(3.5)	648	(4.1)
Spain	485	(2.4)	89	(1.3)	335	(5.1)	369	(3.5)	426	(3.0)	546	(3.1)	597	(3.5)	626	(3.7)
Sweden	509	(2.6)	95	(1.8)	353	(5.3)	387	(4.4)	446	(3.0)	576	(3.2)	631	(3.8)	662	(4.8)
Switzerland	527	(3.4)	98	(2.1)	359	(4.8)	396	(4.2)	461	(3.6)	595	(4.9)	652	(5.2)	684	(6.8)
Turkey	423	(6.7)	105	(5.3)	270	(5.8)	300	(5.0)	351	(5.3)	485	(8.5)	560	(14.2)	614	(22.7)
United States	483	(2.9)	95	(1.3)	323	(4.9)	357	(4.5)	418	(3.7)	550	(3.4)	607	(3.9)	638	(5.1)
OECD total	*489*	*(1.1)*	*104*	*(0.7)*	*315*	*(2.1)*	*352*	*(1.7)*	*418*	*(1.6)*	*563*	*(1.1)*	*622*	*(1.3)*	*655*	*(1.8)*
OECD average	*500*	*(0.6)*	*100*	*(0.4)*	*332*	*(1.3)*	*369*	*(1.1)*	*432*	*(0.9)*	*571*	*(0.7)*	*628*	*(0.7)*	*660*	*(1.0)*

Source: OECD PISA 2003 database. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.

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INDICATOR A5

BETWEEN- AND WITHIN-SCHOOL VARIATION IN THE MATHEMATICS PERFORMANCE OF 15-YEAR-OLDS

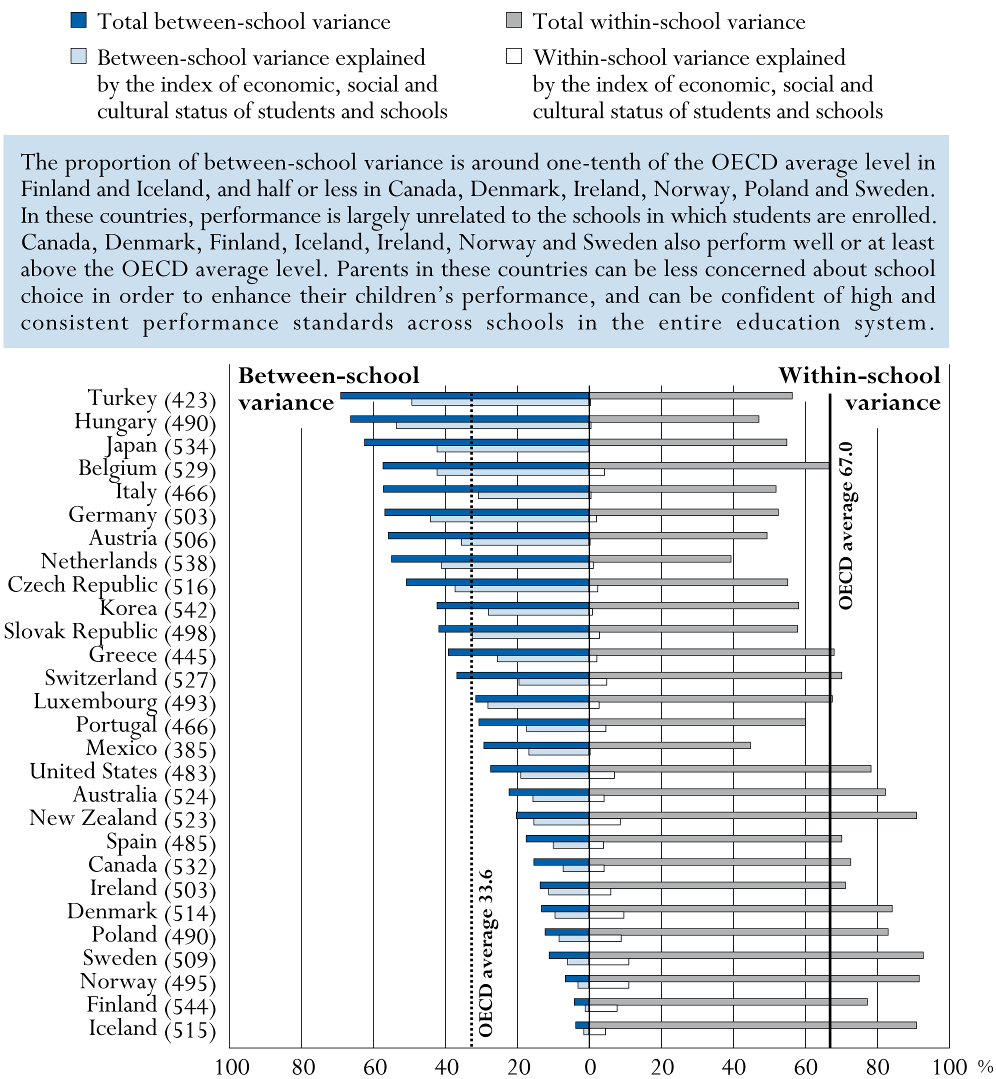
This indicator examines the between- and within-school variation in student performance on the mathematics scale. It also compares between-school variation in PISA 2000 and PISA 2003.

Key results

Chart A5.1. Variance in student performance between and within schools on the OECD PISA mathematics scale (2003)

The chart shows to what extent mathematics performance varies between schools. The longer the left side of the bar, the greater the performance differences among schools. This is measured by the percentage of the average variance in performance that lies between schools. One hundred points on this index equals the total variation in student performance, between and within schools, on average in OECD countries.

The proportion of between-school variance is around one-tenth of the OECD average level in Finland and Iceland, and half or less in Canada, Denmark, Ireland, Norway, Poland and Sweden. In these countries, performance is largely unrelated to the schools in which students are enrolled. Canada, Denmark, Finland, Iceland, Ireland, Norway and Sweden also perform well or at least above the OECD average level. Parents in these countries can be less concerned about school choice in order to enhance their children's performance, and can be confident of high and consistent performance standards across schools in the entire education system.



Source: OECD PISA 2003 database. Table A5.1.

StatLink: http://dx.doi.org/10.1787/332470076170

Other highlights of this indicator

- Students in all OECD countries show widely varying performance, but countries vary widely in the extent to which students in different schools perform differently. On average across OECD countries, differences in the performance in mathematics between schools account for 34% of total variation in achievement. However, in nine countries between-school variation is above half the overall variation in OECD countries, while in three countries it is below 10%.
- While some between-school variance is attributable to students' socio-economic backgrounds, some of it also likely reflects the structural features of schools and/or education systems, and/or the policies and practices of school administrators and teachers. Thus, there may be an added value associated with attending a particular school.
- Some, though not all, countries that performed well in PISA also showed low or modest levels of between-school variance, suggesting that securing similar student performance among schools is a policy goal that is both important in itself and compatible with the goal of high overall performance standards.

Policy context

Catering for the needs of a diverse student body and narrowing the gaps in student performance represent formidable challenges for all countries. The approaches that countries have chosen to address these demands vary. Some countries have comprehensive school systems with no, or only limited, institutional differentiation. They seek to provide all students with similar opportunities for learning by requiring each school and teacher to provide for the full range of student abilities, interests and backgrounds. Other countries respond to diversity by grouping students through tracking or streaming, whether between schools or between classes within schools, with the aim of serving students according to their academic potential and/or interests in specific programs. In many countries, combinations of the two approaches occur. Even in comprehensive school systems, there may be variation in performance levels between schools, due to the socio-economic and cultural characteristics of the communities that are served, or due to geographical differences (such as between regions, provinces or states in federal systems, or between rural and urban areas). Finally, there may be differences between individual schools, such as the type or quality of instruction. As a result, even in comprehensive systems, the performance levels attained by students may still vary across schools. This indicator examines the between- and within-school variation in students' performance on the mathematics scale.

Evidence and explanations

Chart A5.1 above shows considerable differences in the extent to which mathematics competencies of 15-year-old students vary within each country (Table 5.1). The total length of the bars indicates the observed variance in student performance on the PISA mathematics scale. The values in Chart A5.1 are expressed as percentages of the average variance between OECD countries in student performance on the PISA mathematics scale.

The average is calculated over the OECD countries included in the table. A value larger than 100 indicates that variance in student performance is greater in the corresponding country than on average among OECD countries. Similarly, a value smaller than 100 indicates below-average variance in student performance. For example, the variance in student performance in Finland, Ireland and Mexico is more than 15% below the OECD average variance. By contrast, in Belgium, Japan and Turkey, variance in student performance is at least 15% above the OECD average level. The OECD average level is calculated simply as the arithmetic mean of the respective country values. This average differs from the square of the OECD average standard deviation shown in Chapter 2 of *Learning for Tomorrow's World – First Results from PISA 2003* (OECD, 2004a), since the latter includes the performance variation among countries whereas the former simply averages the within-country performance variation across countries.

In Chart A5.1, a distinction is made for each country between the variation attributable to differences in student results attained by students in different schools (between-school differences) and that attributable to the range of student results within schools (within-school differences). Note that, because of the manner in which students were sampled, the within-school variation includes variation between classes as well as between students. The length of the bars to the left of the central line shows between-school differences, and also serves to order countries in the figure. The length of the bars to the right of the central line shows the within-school differences. Therefore, longer segments to the left of the central line indicate greater variation in the mean performance of different schools while longer segments to the right of the central line indicate greater variation among students within schools.

As presented in Chart A5.1, while all countries show considerable within-school variance, in most countries variance in student performance between schools is also considerable. On average across OECD countries, differences in the performance of 15-year-olds between schools account for 34% of the total variation in student performance in OECD countries. See Box A5.1 for an indication of how between-school variation in PISA 2003 compares to PISA 2000.

In Hungary and Turkey, variation in performance between schools is particularly large and is about twice the OECD average between-school variance. In Austria, Belgium, the Czech Republic, Germany, Italy, Japan and the Netherlands, the proportion of between-school variance is still over one-and-a-half times that of the OECD average level (third column, Table A5.1). Where there is substantial variation in performance between schools and less variation between students within schools, students tend to be grouped in schools in which other students perform at levels similar to their own. This may reflect school choices made by families or residential location, as well as policies on school enrolment or the allocation of students to different curricula. To capture variation between education systems and regions within countries, some countries have undertaken the PISA assessment at regional levels.

The proportion of between-school variance is around one-tenth of the OECD average level in Finland and Iceland, and half or less in Canada, Denmark, Ireland, Norway, Poland and Sweden. In these countries, performance is largely unrelated to the schools in which students are enrolled (see Table 5.1). This suggests that the learning environment is similar in the ways that it affects the performance of students. It is noteworthy that Canada, Denmark, Finland, Iceland, Ireland, Norway and Sweden also perform close to or above the OECD average level. Parents in these countries can be less concerned about school choice in order to enhance their children's performance, and can be confident of high and consistent performance standards across schools in the entire education system.

While some of the variance between schools is attributable to the socio-economic background of students entering the school, some of it is also likely to reflect certain structural features of schools and education systems, particularly in systems where students are tracked by ability. Some of the variance in performance between schools also may be attributable to the policies and practices of school administrators and teachers. In other words, there is an added value associated with attending a particular school.

It is important to note that some, though not all, high-performing countries also show low or modest levels of between-school variance. This suggests that securing similar student performance among schools, perhaps most importantly by identifying and reforming poorly performing schools, is a policy goal that is both important in itself and compatible with the goal of high overall performance standards.

Box A5.1. Comparing between-school variation in PISA 2000 and PISA 2003

For most countries, the 2003 results are similar to those observed in the PISA 2000 assessment. However, there are some exceptions. For instance, in Poland, the move towards a more integrated education system since 1999 – as a consequence of which institutional differentiation now occurs mainly after the age of 15 – may have contributed to the observed dramatic reduction in the between-school variation in mathematics performance of 15-year-old students. Between-school variance in Poland fell from more than half of the overall performance variation in Poland in 2000 (see *Learning for Tomorrow's World – First Results from PISA 2003* [OECD, 2004a], Table 4.1b) to just 13% in 2003 (see the same publication, Table 4.1a). Note that in all countries, the changes between 2000 and 2003 are very similar for the two mathematics subscales for which trend data can be estimated. For the purpose of this comparison, results are only shown for the overall mathematics scale, even though the PISA 2000 data did not include two of the four mathematical content areas used in PISA 2003. Simultaneously, the average performance of 15-year-olds in Poland is significantly higher in both mathematical content areas, and the overall performance gap between the lower and higher achievers is narrower than it was in 2000. The increase in average mathematics performance is thus mainly attributable to an increase in performance at the lower end of the performance distribution (*i.e.* the 5^{th}, 10^{th} and 25^{th} percentiles). This has occurred to such an extent that in 2003 fewer than 5% of students fell below the performance standards that 10% of Polish students had failed to attain in 2000 (for data, see *www.pisa.oecd.org*).

Performance differences among schools were also lower in some other countries in 2003: for example, in Belgium, Greece and Mexico, the proportion of national variation in student performance attributable to between-school variance is between 8 to 10 percentage points lower than in 2000. Note that in Belgium some of this difference may likely be attributable to changes in the ways in which schools were defined for the purposes of sampling in PISA. In contrast, in Italy, the proportion of variance that lies between schools increased by more than 10 percentage points.

Definitions and methodology

The achievement scores are based on assessments administered in 2003 as part of the Programme for International Student Assessment (PISA) undertaken by the OECD.

The target population studied for this indicator was 15-year-old students. Operationally, this referred to students who were from 15 years and 3 (completed) months to 16 years and 2 (completed) months at the beginning of the testing period and who were enrolled in an educational institution, irrespective of the grade levels or type of institutions in which they were enrolled, and irrespective of whether they participated in school full-time or part-time.

Variation in this indicator is expressed by statistical variance. This is obtained by squaring the standard deviation. The statistical variance rather than the standard deviation is used for this comparison to allow for the decomposition of the components of variation in student performance. For reasons explained in the *PISA 2003 Technical Report* (OECD, 2005c), and most importantly because the data in this table only account for students with valid data on their socio-economic background, the variance may differ from the square of the standard deviation.

The between-school variation is influenced by the ways in which schools are defined and organised within countries and by the units that were chosen for sampling purposes. For example, in some countries some of the schools in the PISA sample were defined as administrative units (even if they spanned several geographically separate institutions, as in Italy; in others they were defined as those parts of larger educational institutions that serve 15-year-olds; in others they were defined as physical school buildings; and in yet others they were defined from a management perspective (*e.g.* entities having a principal). The *PISA 2003 Technical Report* (OECD, 2005c) provides an overview of how schools were defined.

Further references

For further information about PISA 2003, see *Learning for Tomorrow's World – First Results from PISA 2003* (OECD, 2004a), *Problem Solving for Tomorrow's World – First Measures of Cross-Curricular Competencies from PISA 2003* (OECD, 2004b) and the *PISA 2003 Technical Report* (OECD, 2005c). PISA data is also available on the PISA Web site: *www.pisa.oecd.org*.

Table A5.1.
Between-school and within-school variance in student performance on the OECD PISA mathematics scale (2003)

		Total variance in SP[2]	Variance expressed as a percentage of the average variance in student performance (SP) across OECD countries[1]											Total variance between schools expressed as a percentage of the total variance within the country[5]
			Total variance in SP expressed as a percentage of the average variance in student performance across OECD countries[3]	Total variance in SP between schools[4]	Total variance in SP within schools	Variance explained by the international index of economic, social and cultural status of students		Variance explained by the international index of economic, social and cultural status of students and schools		Variance explained by students' study programmes		Variance explained by students' study programmes and the international index of economic, social and cultural status of students and schools		
						Between-school variance explained	Within-school variance explained	Between-school variance explained	Within-school variance explained	Between-school variance explained	Within-school variance explained	Between-school variance explained	Within-school variance explained	
OECD countries	Australia	9 036	105.1	22.1	82.3	9.0	4.2	15.4	4.3	1.8	2.8	16.7	6.8	21.1
	Austria	8 455	98.4	55.5	49.5	7.6	0.6	35.2	0.5	42.6	0.4	45.3	0.9	52.9
	Belgium	10 463	121.8	56.9	66.7	17.7	4.4	42.0	4.4	49.1	15.8	52.1	17.0	46.0
	Canada	7 626	88.7	15.1	72.6	4.7	4.2	7.1	4.3	2.6	5.0	7.0	8.5	17.3
	Czech Republic	8 582	99.9	50.5	55.2	13.8	2.5	37.0	2.6	34.1	0.2	41.6	2.7	47.8
	Denmark	8 289	96.5	13.1	84.2	7.7	9.7	9.3	9.8	1.6	0.1	9.7	9.9	13.4
	Finland	6 974	81.2	3.9	77.3	0.9	7.9	0.9	7.9	0.0	0.0	0.9	7.9	4.8
	France	w	w	w	w	w	w	w	w	w	w	w	w	w
	Germany	9 306	108.3	56.4	52.6	14.1	2.2	43.8	2.2	47.2	1.1	50.7	3.2	51.7
	Greece	8 752	101.8	38.9	68.1	10.3	2.5	25.2	2.3	28.3	-0.0	32.9	2.3	36.3
	Hungary	8 726	101.5	66.0	47.3	15.6	1.0	53.2	0.7	49.0	-0.1	57.1	0.8	58.3
	Iceland	8 123	94.5	3.6	90.9	1.3	4.7	1.3	4.7	0.0	0.0	1.3	4.7	3.8
	Ireland	7 213	83.9	13.4	71.2	7.8	6.0	11.1	6.1	1.4	4.4	11.0	10.0	15.9
	Italy	9 153	106.5	56.8	52.0	6.6	0.7	30.5	0.7	26.0	0.1	34.6	0.7	52.2
	Japan	9 994	116.3	62.1	55.0	3.3	0.1	42.0	0.1	5.2	-0.0	42.9	0.1	53.1
	Korea	8 531	99.3	42.0	58.2	7.7	1.1	27.8	1.1	21.5	0.6	31.2	1.6	42.0
	Luxembourg	8 432	98.1	31.2	67.6	9.3	3.0	27.9	2.9	14.8	14.6	27.8	15.7	31.6
	Mexico	7 295	84.9	29.1	44.8	4.2	0.3	16.6	0.4	12.7	0.0	20.8	0.5	39.4
	Netherlands	7 897	91.9	54.5	39.5	8.8	1.3	40.7	1.3	50.8	7.8	51.4	8.4	58.0
	New Zealand	9 457	110.1	20.1	90.9	9.8	8.7	15.2	8.8	0.8	3.1	15.2	11.4	18.1
	Norway	8 432	98.1	6.5	91.7	2.7	11.1	2.9	11.2	0.2	0.1	2.9	11.2	6.6
	Poland	8 138	94.7	12.0	83.1	7.1	8.9	8.2	9.0	0.8	0.1	8.3	9.0	12.6
	Portugal	7 647	89.0	30.3	60.0	9.5	4.8	17.2	4.8	26.5	8.6	28.6	11.6	33.6
	Slovak Republic	8 478	98.7	41.5	58.0	12.9	3.1	32.3	3.1	26.0	0.4	33.6	3.4	41.7
	Spain	7 803	90.8	17.2	70.2	6.4	4.1	9.8	4.2	0.0	0.0	9.8	4.2	19.7
	Sweden	8 880	103.3	10.9	92.8	4.7	11.2	5.8	11.2	1.5	0.6	6.9	11.6	10.5
	Switzerland	9 542	111.0	36.4	70.2	9.4	5.1	19.3	5.1	6.1	1.0	19.8	6.0	34.2
	Turkey	10 952	127.4	68.7	56.5	10.1	0.7	49.0	0.6	42.5	3.1	56.0	3.4	54.9
	United States	9 016	104.9	27.1	78.3	12.1	7.0	18.7	7.2	3.2	2.8	19.2	9.2	25.7
	OECD average	*8 593*	*100.0*	*33.6*	*67.0*	*8.5*	*4.4*	*23.0*	*4.4*	*17.8*	*2.6*	*26.4*	*6.5*	

1. The variance components were estimated for all students in participating countries with data on socio-economic background and study programmes. Students in special education programmes were excluded from these analyses.
2. The total variance in student performance is obtained as the square of the standard deviation shown in *Learning for Tomorrow's World* (OECD, 2004a), Chapter 2. The statistical variance in student performance and not the standard deviation is used for this comparison to allow for the decomposition.
3. The sum of the between- and within-school variance components, as an estimate from a sample, does not necessarily add up to the total.
4. In some countries, sub-units within schools were sampled instead of schools and this may affect the estimation of the between-school variance components. In Austria, the Czech Republic, Hungary, Italy and Japan, schools with more than one study programme were split into the units delivering these programmes. In the Netherlands, for schools with both lower and upper secondary programmes, schools were split into units delivering each programme level. In Mexico, schools where instruction is delivered in shifts were split into the corresponding units. In the Flemish part of Belgium, in case of multi-campus schools, implantations (campuses) were sampled whereas in the French part, in case of multi-campus schools the larger administrative units were sampled. In the Slovak Republic, in case of schools with both Slovak and Hungarian as test languages, schools were split into units delivering each language of instruction.
5. This index is often referred to as the intra-class correlation (rho).

Source: OECD PISA 2003 database.

Please refer to the Reader's Guide (www.oecd.org/eag2006) for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/332470076170

INDICATOR A6

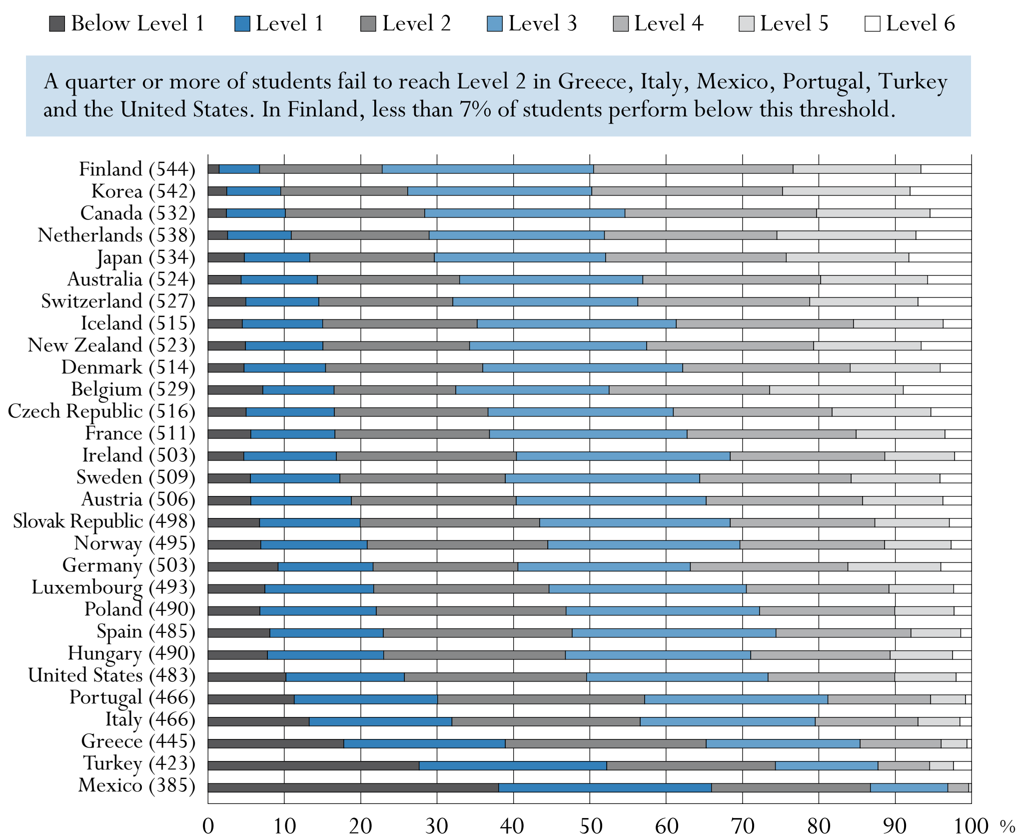
FIFTEEN-YEAR-OLD STUDENTS WHO PERFORM AT THE LOWEST LEVELS OF PROFICIENCY IN MATHEMATICS (2003)

This indicator focuses on those students who performed at the lowest levels of proficiency on the OECD Programme for International Student Assessment (PISA) 2003 mathematics literacy scale. It shows the percentages of students performing at these levels on average and across individual countries, and examines the influence of students' background on the likelihood of them being among the lowest performers in mathematics. It looks at the reading proficiency of the lowest mathematics performers to explore whether their low performance in mathematics reflects overall difficulty in school or only in mathematics.

Key results

Chart A6.1. Percentage of students at low proficiency levels on the OECD PISA mathematics scale (2003)

Level 2 represents a baseline proficiency at which students begin to demonstrate skills that enable them to actively use mathematics. At Level 2, they can use direct inference to recognise the mathematical elements of a situation, are able to use a single representation to help explore and understand a situation, can use basic algorithms, formulae and procedures, and can make literal interpretations and apply direct reasoning.



Countries are sorted in ascending order of the percentage of students at Level 1 and below.
Source: OECD PISA 2003 database. Table A4.1.

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Other highlights of this indicator

- Across OECD countries, students from the least socio-economically advantaged backgrounds are on average 3.5 times more likely to be low mathematics performers, *i.e.* at or below Level 1, than those from the most socio-economically advantaged backgrounds.

- Countries vary in the percentage of students who perform both the least well in mathematics and reading, and in the mean reading scores for these lowest mathematics performers. In six countries, students who perform the least well in mathematics have reading scores below the average for all the lowest mathematics performers across all countries *and* there are higher-than-average percentages of low mathematics students who are also among the lowest performing readers. In six other countries, the situation is reversed: the lowest performers in mathematics have above-average reading scores compared to their peers, as well as lower-than-average representation among the lowest performing readers.

Policy context

Knowledge and skills in mathematics are important outcomes of education; therefore, countries are increasingly focusing on enhancing students' mathematical achievements. Findings from PISA 2003, however, indicate that over 20% of students in OECD countries display a limited level of mathematical literacy *i.e.* they are able to perform only the most routine mathematical functions in the most familiar contexts. Low-achieving students are the focus of this indicator because of their sizeable numbers and the potentially serious effect their lack of mathematical understanding may have on social and economic well-being. Achieving a better understanding of countries' lowest achievers may provide information for the development of policies that are more successful at providing all students with the necessary skills in mathematics to lead productive lives.

Evidence and explanations

This indicator focuses on those students who performed at the lowest levels of proficiency on the PISA 2003 mathematics literacy assessment. It begins with an overview of the percentages of students performing at these levels on average and across individual countries, to set the context for later analyses. The indicator then extends earlier research using PISA's composite measure of economic, social, and cultural status (ESCS) to examine the influence of students' backgrounds on the likelihood of them being among the lowest performers in mathematics. Finally, the indicator looks at the reading proficiency of the lowest mathematics performers to explore whether these students demonstrate difficulty in mathematics only or whether their difficulty in mathematics could reflect overall difficulty in school.

Overall performance on the PISA 2003 mathematics literacy assessment

The PISA 2003 mathematics literacy assessment measures the extent to which 15-year-old students are able to analyse, reason and communicate effectively as they pose, solve and interpret mathematical problems in a variety of situations involving quantitative, spatial, probabilistic or other mathematical concepts. One of the key features of PISA is that students' performance can be reported according to proficiency levels. The use of proficiency levels, as a supplement to summary statistics such as mean scores, provides policy makers with a descriptive picture of students' skills and abilities as well as examples of the types of tasks they are likely to be able to perform.

The PISA mathematics assessment identifies six levels of proficiency, representing tasks of increasing difficulty. At the highest level of proficiency, students are able to apply advanced mathematical thinking and reasoning, conceptualise and work with complex mathematical models, as well as reflect upon and apply the outcomes of models to other situations. At the lowest level of proficiency, Level 1, students are able to follow direct and explicit instructions and take obvious actions applying simple models to simple problems as long as they are presented within familiar contexts. Students performing below Level 1 are unable to routinely apply the most basic forms of mathematical knowledge and skills that the PISA assessment measures. A complete description of the PISA mathematics proficiency levels and examples of mathematics items are given in OECD's *Learning for Tomorrow's World – First Results from PISA 2003* (OECD 2004).

Chart A6.1 (and Table A6.3 available on the Web at *http://dx.doi.org/10.1787/133160111888*) displays an overall profile of 15-year-olds' proficiency on the combined mathematics literacy assessment with the length of the coloured bars showing the percentages of students who are competent at each of the six levels of proficiency. This indicator focuses on those students represented by the darkest coloured bars, *i.e.* those at Level 1 and below. These are the students who, as described above, can apply only the most basic mathematics skills.

Across OECD countries, more than one-fifth (21.4% of 15-year-old students) performed at Level 1 and below. This is also true for 13 of the 29 OECD countries individually. For all countries except one (Finland), there are at least 10% of students at Level 1 and below in mathematics. This is a sizeable percentage of a country's human capital.

There is also considerable variation across countries with respect to the percentages of students who perform at these levels. The percentages of students displaying minimal or less-than-minimal functioning in mathematics ranges from a low of 6.8% in Finland to a high of 66.0% in Mexico. Limiting the analysis to those countries which perform above the OECD average (500 points), the variation remains marked, from 6.8% in Finland to 21.6% in Germany. Additionally, some countries that perform similarly in terms of mean score have different percentages of students performing at Level 1 and below. For example, while there is no statistically significant difference in the mean scores of students in the top-performing countries of Canada and Belgium, Canada has a statistically significantly lower rate of low achievers than the Belgium by 6.4 percentage points. Similar examples can be found among countries at other levels of overall performance, such as in Germany and Ireland – both perform around the OECD average – where the percentages of low-achievers are 21.6% versus 16.8%, respectively. These findings show how mean scores can mask varying degrees of dispersion in countries, and that some countries do demonstrate both high scores and low variation.

Socio-economic background and low mathematics performance

Universally, students' home backgrounds exert a powerful influence on their academic performance. Consistently, students from disadvantaged socio-economic backgrounds have been found to perform less well in mathematics (and other subjects) than students from more advantaged backgrounds. Although this is not true in all cases: many students from disadvantaged backgrounds excel in school, while many students from advantaged backgrounds perform badly. Earlier research using PISA found strong relationships between students' mathematics performance and a variety of measures of students' backgrounds. For example, one finding was that across OECD countries, students in the highest quarter of an index of parents' occupational status scored 93 points more in mathematics than their peers in the lowest quarter of this index.

Another major component of initial reporting from PISA 2003 was the use of a composite index, ESCS, to provide an overall measure of students' socio-economic status. This indicator extends this earlier research on the relationship between students' socio-economic backgrounds and their mathematics performance, by employing "odds ratios" to examine the probability of students performing at the lowest proficiency levels in mathematics. Specifically, odds ratios indicate, in this case, the greater (or lesser) chances for a student of performing at Level 1 or below that is associated with belonging to the lowest quarter of students on the PISA composite socio-economic index.

For example, an odds ratio of 1 means that students from the lowest and highest quarters have an equal chance of performing at or below Level 1 and thus that the education system is achieving equitable results for students of varied socio-economic backgrounds. However, odds ratios greater than 1 mean that students from the lowest quarter have a greater chance than students from the highest quarter of performing at or below Level 1; and odds ratios of less than 1 mean that students from the highest socio-economic quarter have a greater chance than students from the lowest socio-economic quarter of performing at or below Level 1. Odds ratios differing from one indicate that socio-economic status plays an influential role in mathematics performance and that there are potential inequities in the system.

Box A6.1 provides more detailed information and examples of how odds ratios were computed for this indicator. For convenience, the results are reported in this indicator using the expression “more likely,” although as described in Box A6.1, the meaning of an odds ratio is slightly more complicated.

Box A6.1. An explanation of odds ratios and an example

An odds ratio compares the likelihood (or probability) that an event will happen between two groups. For this indicator, the odds ratio is employed to look at the likelihood that a student with low socio-economic background status will be a low achiever in mathematics relative to the likelihood that a student with high socio-economic background status will be a low achiever in mathematics. (Socio-economic status was defined using the PISA composite socio-economic index [ESCS], with low indicating students at or below the 25th percentile on the index and high indicating students at or above the 75th percentile. As stated in the indicator, low mathematics performance is defined as performance at or below proficiency Level 1.)

The table below provides the data that are used to compute the odds ratio for one country – in this case, France. Reading across the rows, 32% of students with low socio-economic status perform at or below Level 1, and 68% perform above Level 1. Among students with high socio-economic status, 10% perform at or below Level 1, compared with 90% who perform above it.

	Performance on the PISA mathematics literacy assessment	
Socio-economic status	**Percentage of students at or below Level 1 (P_1)**	**Percentage of students above Level 1 (P_2)**
Percentage of students at or below the 25th percentile on the socio-economic index (P_1)	32 (or P_{11})	68 (P_{12})
Percentage of students above the 75th percentile on the socio-economic index (P_2)	10 (P_{21})	90 (P_{22})

Using the formula for the odds ratio:

$$(P_{11}/P_{21})/(P_{12}/P_{22}),$$

the following is computed: $[(0.32/0.10)/(0.68/0.90) = 3.2/0.75 = 4.3]$. Thus, for France, the likelihood of a low socio-economic student being a low mathematics achiever is 4.3 times greater than the likelihood of a high socio-economic student being a low mathematics achiever.

Table A6.1 reports the odds ratios for individual countries and overall. As the table shows, across all countries, students who come from the lowest economically, culturally and socially well-off families are more likely to perform at or below Level 1 than students who come from the highest economically, culturally and socially well-off families. Although odds ratios vary across countries, all OECD countries have ratios greater than 1, indicating inequitable outcomes for students of different socio-economic backgrounds, albeit to differing degrees. Across all OECD countries, students from the lowest quarter on the socio-economic index are 3.5 times more likely, on average, to perform at or below Level 1 on the mathematics literacy assessment than students from the highest quarter.

In four countries, Belgium, Germany, Hungary, and the Slovak Republic, the likelihood of the lowest socio-economic status students relative to the highest socio-economic status students to perform at or below Level 1 was higher than the OECD average. In other words, in these countries, students' minimal competence in mathematics is more strongly associated with their backgrounds, with the likelihood of students from the lowest quarter on the socio-economic index to perform at or below Level 1 in mathematics at least 4.6 times higher than it is for students from the highest quarter of the index.

The likelihood of the most disadvantaged students relative to the most advantaged students to perform at or below Level 1 was lower than the OECD average in eight countries (Canada, Greece, Iceland, Japan, Norway, Spain, Sweden and Turkey), indicating a weaker association in these countries between 15-year-olds' mathematical competence and family backgrounds. In these countries, students from the lowest quarter on the socio-economic index were 2.1 to 2.9 times more likely on the economic index to perform at Level 1 or below in mathematics.

While the previous analysis compared countries' odds ratios to the OECD average as one way of looking at relative influence of socio-economic status on low mathematics performance across countries, this subsequent analysis compares countries' odds ratios to one another. If countries show consistently high or low odds ratios in these one-on-one comparisons, then stronger statements may be made about their systems' ability to foster equitable outcomes for students with different socio-economic backgrounds than can be made simply by comparing their odds ratios to the overall mean.

Chart A6.2 compares odds ratios among pairs of countries, identifying whether or not the odds ratio is significantly higher or lower than that of the comparison country. Two distinct groupings of countries are evident in this chart: those with consistently higher odds ratios than other countries and those with consistently lower odds ratios than other countries. Ten countries – Belgium, the Czech Republic, Denmark, France, Germany, Hungary, Mexico, the Slovak Republic, Switzerland, and the United States – have higher odds ratios than at least eight other countries; this represents one-third of the OECD countries participating in PISA. Eight countries – Canada, Finland, Greece, Iceland, Japan, Norway, Sweden, and Turkey – have lower odds ratios than at least ten other countries.

Reading proficiency of low mathematics performers

Another useful analysis is to examine how those students performing at or below Level 1 in mathematics are performing in reading. This may shed light on the extent to which these students

Chart A6.2.

Multiple comparisons of the likelihood of the quarter of students with the lowest socio-economic status to be in the lowest quarter of mathematics performers relative to the likelihood of the quarter of students with highest socio-economic status to be in the lowest quarter of mathematics performers (odds ratios) (2003)

			Belgium	Slovak Republic	Hungary	Germany	France	Czech Republic	Denmark	Mexico	Switzerland	United States	Netherlands	Ireland	New Zealand	Korea	Luxembourg	Australia	Poland	Austria	Italy	Portugal	Spain	Sweden	Norway	Finland	Greece	Japan	Canada	Turkey	Iceland
	Odds ratio		5.4	5.1	4.8	4.6	4.3	4.1	4.1	4.1	3.9	3.8	3.8	3.6	3.6	3.5	3.3	3.2	3.2	3.1	3.1	3.0	2.9	2.9	2.9	2.8	2.8	2.8	2.7	2.5	2.1
		S.E.	(0.52)	(0.54)	(0.56)	(0.50)	(0.51)	(0.44)	(0.37)	(0.52)	(0.40)	(0.34)	(0.70)	(0.44)	(0.44)	(0.40)	(0.40)	(0.40)	(0.31)	(0.37)	(0.27)	(0.29)	(0.28)	(0.27)	(0.28)	(0.37)	(0.32)	(0.32)	(0.21)	(0.31)	(0.23)
Belgium	5.4	(0.52)		●	●	●	●	●	▲	●	▲	▲	●	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
Slovak Republic	5.1	(0.54)	●		●	●	●	●	●	●	●	▲	●	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
Hungary	4.8	(0.56)	●	●		●	●	●	●	●	●	●	●	●	●	●	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
Germany	4.6	(0.50)	●	●	●		●	●	●	●	●	●	●	●	●	●	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
France	4.3	(0.51)	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
Czech Republic	4.1	(0.44)	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
Denmark	4.1	(0.37)	▼	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
Mexico	4.1	(0.52)	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	▲	▲	▲	▲	▲	▲	▲	▲
Switzerland	3.9	(0.40)	▼	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	▲	▲	▲	▲	▲	▲	▲	▲	▲
United States	3.8	(0.34)	▼	▼	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	▲	▲	▲	▲	▲	▲	▲	▲	▲
Netherlands	3.8	(0.70)	●	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	▲
Ireland	3.6	(0.44)	▼	▼	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	▲	▲
New Zealand	3.6	(0.44)	▼	▼	●	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	▲	▲
Korea	3.5	(0.40)	▼	▼	●	●	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	▲	▲
Luxembourg	3.3	(0.40)	▼	▼	▼	▼	●	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	▲
Australia	3.2	(0.40)	▼	▼	▼	▼	●	●	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	▲
Poland	3.2	(0.31)	▼	▼	▼	▼	●	●	●	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	▲
Austria	3.1	(0.37)	▼	▼	▼	▼	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	▲
Italy	3.1	(0.27)	▼	▼	▼	▼	▼	▼	▼	●	●	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	▲
Portugal	3.0	(0.29)	▼	▼	▼	▼	▼	▼	▼	●	●	●	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	▲
Spain	2.9	(0.28)	▼	▼	▼	▼	▼	▼	▼	●	▼	▼	●	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●	●	▲
Sweden	2.9	(0.27)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	●	●	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●	▲
Norway	2.9	(0.28)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	●	●	●	●	●	●	●	●	●	●	●	●		●	●	●	●	●	▲
Finland	2.8	(0.37)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●	●	●	●
Greece	2.8	(0.32)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●	●	●
Japan	2.8	(0.32)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●	●
Canada	2.7	(0.21)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●	▲
Turkey	2.5	(0.31)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	●	▼	▼	▼	●	●	●	●	●	●	●	●	●	●	●	●	●		●
Iceland	2.1	(0.23)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	●	●	●	▼	●	

Source: OECD PISA 2003 database. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

Instructions: Read across the row for a country to compare performance with the countries listed along the top of the figure. The symbols indicate whether the odds ratio of the country is lower, higher or not statistically different from the comparison country's odds ratio.

▲	Odds ratio significantly higher than the odds ratio of the comparison country.
●	Odds ratio not statistically different than the odds ratio of the comparison country.
▼	Odds ratio signifcantly lower than the odds ratio of the comparison country.

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are having difficulty with mathematics specifically or struggling in school more generally. With an understanding of the source of students' difficulty in mathematics (whether specific to mathematics or perhaps more broad), it is possible to target interventions that will address students' particular learning challenges.

Table A6.2 presents the average reading scores for the lowest mathematics performers as well as the percentages of those who also are at or below the lowest proficiency level in reading. In six countries – Belgium, Germany, Japan, Luxembourg, Mexico, and the Slovak Republic – the lowest mathematics performers have reading scores below the average for the lowest mathematics performers across countries *and* there are higher-than-average percentages of low mathematics students who also are among the lowest readers. This suggests that, in these countries, students who are struggling in mathematics are also struggling in reading.

Spain also has a higher-than-average percentage of low-performing students in mathematic who are among the lowest performing readers, although the average reading score for this group is not significantly different from the OECD average. In Iceland, however, the percentage of low-performing students in mathematics who also are the lowest performing readers is similar to the OECD average, although the reading scores of these students are below the average for the lowest mathematics students across countries.

In six other countries – Finland, Greece, Ireland, Korea, Poland, and Sweden – the situation is reversed: the lowest mathematics performers have above-average reading scores compared to their peers, as well as lower-than-average representation among the lowest performing readers. This suggests that in these countries, students' difficulty with mathematics may represent a specialised learning effect – these students are not necessarily doing poorly in mathematics because of poor reading or an overall difficulty with school, but perhaps a specific deficiency in mathematics.

Of course, the picture is very complex and to get a deeper understanding of whether students have generalised or specialised learning problems, one must also look at how the lowest reading performers perform in mathematics. These results are presented in Table A6.3. Looking at this and the previous table together, two countries show consistent patterns. In Mexico, there are high percentages of students at the lowest levels in reading who also are at the lowest levels in mathematics, and vice versa, suggesting that Mexican students who are at the lowest levels on the PISA scale are struggling in school generally. In Finland, there are low percentages of students at the lowest levels in reading who also are at the lowest levels in mathematics, and vice versa, suggesting that students in Finland who do poorly in PISA are struggling with one subject area more than the other.

Definitions and methodologies

The achievement scores are based on assessments administered in 2003 as part of the Programme for International Student Assessment (PISA) undertaken by the OECD.

The target population studied for this indicator was 15-year-old students. Operationally, this referred to students who were from 15 years and 3 (completed) months to 16 years and 2 (completed) months at the beginning of the testing period and who were enrolled in an educational institution, irrespective of the grade levels or type of institutions in which they were enrolled, and irrespective of whether they participated in school full-time or part-time. Subsets of the target population were examined in Chart A6.2 and Tables A6.2 and A6.3. Fifteen-year-olds who were the lowest performers on the PISA mathematics literacy assessment – defined as performing at or below proficiency Level 1 – who were also in the highest or lowest quarters of the economic, social and cultural status (ESCS) index were examined in Chart A6.2. Fifteen-year-olds who were the lowest performers on the PISA mathematics literacy assessment who were also the lowest performers on the PISA reading literacy assessment – defined as performing at or below proficiency Level 1 – were examined in Table A6.2. Fifteen-year-olds who were the lowest performers on the PISA reading literacy assessment who were also the lowest performers on the PISA mathematics literacy assessment were examined in Table A6.3.

To test the robustness of the odds ratios findings, analysts compared these results with OECD's earlier results for "relative risk" and socio-economic status (SES) gradients. There was a strong correlation with relative risk and a relatively strong correlation with the SES gradients. Further exploration of the few cases in which there were differences with the latter measure would be an interesting area for further analysis.

Analyses were performed for 29 of 30 countries participating in PISA 2003. The United Kingdom failed to reach PISA's unit response rate standard, which precluded the country from being included in OECD averages, although estimates for the United Kingdom are still reported in charts and tables dealing with subsets of the population for the purposes of comparison within the country. When estimates for the United Kingdom are reported, they are reported at the end of charts and tables separate from the estimates of other countries as a cautionary reminder that the estimate may not be as reliable as the estimates of countries that met PISA's unit response rate standard.

It should be noted that across OECD countries, mathematics and reading performance are highly correlated and that, because of the PISA design, some students' reading scores were imputed on the basis of their mathematics scores, both of which may have an influence on the results reported in this section. Additionally, it should be noted that the proficiency levels for mathematics and reading are not equivalent.

Further references

For further information about PISA 2003, see *Learning for Tomorrow's World – First Results from PISA 2003* (OECD, 2004a), and the *PISA 2003 Technical Report* (OECD, 2005c). PISA data are also available on the PISA Web site: *www.pisa.oecd.org*. See also *Education at a Glance: OECD Indicators – 2005 Edition* (OECD 2005d).

Table A6.1.
Odds ratios of the likelihood of students with the lowest socio-economic status to be lowest mathematics performers relative to the likelihood of students with the highest socio-economic status to be lowest mathematics peformers (2003)

▲ Country odds ratio is signifcantly higher than the OECD average odds ratio.
▼ Country odds ratio is significantly lower than the OECD average odds ratio.

	Odds Ratio	S.E.	
Australia	3.2	(0.40)	
Austria	3.1	(0.37)	
Belgium	5.4	(0.52)	▲
Canada	2.7	(0.21)	▼
Czech Republic	4.1	(0.44)	
Denmark	4.1	(0.37)	
Finland	2.8	(0.37)	
France	4.3	(0.51)	
Germany	4.6	(0.50)	▲
Greece	2.8	(0.32)	▼
Hungary	4.8	(0.56)	▲
Iceland	2.1	(0.23)	▼
Ireland	3.6	(0.44)	
Italy	3.1	(0.27)	
Japan	2.8	(0.32)	▼
Korea	3.5	(0.40)	
Luxembourg	3.3	(0.40)	
Mexico	4.1	(0.52)	
Netherlands	3.8	(0.70)	
New Zealand	3.6	(0.44)	
Norway	2.9	(0.28)	▼
Poland	3.2	(0.31)	
Portugal	3.0	(0.29)	
Slovak Republic	5.1	(0.54)	▲
Spain	2.9	(0.28)	▼
Sweden	2.9	(0.27)	▼
Switzerland	3.9	(0.40)	
Turkey	2.5	(0.31)	▼
United States	3.8	(0.34)	
OECD average	***3.5***	***(0.08)***	
United Kingdom[1]	3.3	(0.32)	

1. Response rate too low to ensure comparability. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.
Source: OECD PISA 2003 database.

StatLink: http://dx.doi.org/10.1787/133160111888

Table A6.2.
Reading performance of lowest mathematics performers (2003)

▲ Mean/percentage is significantly higher than the OECD average mean/percentage.
▼ Mean/percentage is significantly lower than the OECD average mean/percentage.

	Mean score in reading for students at Level 1 or below in mathematics[1]	S.E.		Percent of students at Level 1 or below in mathematics who also are at Level 1 or below in reading[1]	S.E.	
Australia	395	(4.6)		53.4	(2.4)	▼
Austria	376	(5.2)		66.9	(4.1)	
Belgium	366	(6.7)	▼	67.7	(3.3)	▲
Canada	395	(3.0)	▲	55.9	(3.1)	
Czech Republic	388	(4.8)		60.4	(3.8)	
Denmark	399	(5.9)	▲	51.5	(3.8)	
Finland	408	(7.2)	▲	47.5	(4.8)	▼
France	374	(7.8)		62.1	(3.9)	
Germany	371	(6.2)	▼	68.4	(3.0)	▲
Greece	404	(4.6)	▲	48.2	(2.4)	▼
Hungary	394	(5.3)		54.7	(3.0)	
Iceland	370	(5.4)	▼	63.5	(3.5)	
Ireland	409	(5.2)	▲	45.9	(3.4)	▼
Italy	394	(5.5)		53.2	(2.5)	▼
Japan	358	(7.1)	▼	71.1	(4.2)	▲
Korea	411	(5.3)	▲	45.1	(5.1)	▼
Luxembourg	364	(5.2)	▼	67.8	(2.9)	▲
Mexico	359	(3.6)	▼	70.1	(1.8)	▲
Netherlands	391	(5.8)		60.2	(5.7)	
New Zealand	378	(4.6)		64.7	(3.9)	
Norway	388	(5.9)		56.9	(3.2)	
Poland	400	(4.9)	▲	49.5	(2.8)	▼
Portugal	390	(4.9)		56.6	(2.7)	
Slovak Republic	370	(6.1)	▼	68.4	(4.2)	▲
Spain	386	(5.1)		65.1	(2.8)	▲
Sweden	404	(6.0)	▲	48.3	(3.3)	▼
Switzerland	375	(5.4)		65.3	(3.7)	
Turkey	385	(4.5)		60.2	(2.7)	
United States	380	(4.1)		61.9	(2.7)	
OECD average	*386*	*(1.0)*		*58.7*	*(0.65)*	
United Kingdom[2]	m	m		m	m	

1. Note that proficiency levels were established separately for the mathematics scale and for the reading scale and are not equivalent.
2. Response rate too low to ensure comparability. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.
Source: OECD PISA 2003 database.
Please refer to the Reader's Guide (www.oecd.org/eag2006) for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/133160111888

Table A6.3.
Mathematics performance of lowest reading performers (2003)

▲ Mean/percentage is significantly higher than the OECD average mean/percentage.
▼ Mean/percentage is significantly lower than the OECD average mean/percentage.

	Mean score in mathematics for students at Level 1 or below in reading[1]	S.E.		Percent of students at Level 1 or below in reading who are also are at Level 1 and below in mathematics[1]	S.E.	
Australia	393	(4.1)		67.1	(3.2)	
Austria	402	(4.5)	▲	64.1	(3.2)	
Belgium	397	(3.8)		64.9	(2.6)	
Canada	403	(3.2)	▲	64.1	(2.5)	
Czech Republic	418	(4.2)	▲	53.4	(4.2)	▼
Denmark	402	(5.6)		61.3	(4.7)	
Finland	418	(5.7)	▲	52.5	(4.6)	▼
France	398	(5.3)		64.0	(3.8)	
Germany	390	(4.5)		70.4	(3.0)	
Greece	371	(4.8)	▼	71.6	(2.6)	
Hungary	400	(5.9)		64.7	(4.0)	
Iceland	411	(4.6)	▲	57.1	(4.2)	▼
Ireland	383	(5.6)		77.9	(4.6)	▲
Italy	372	(5.0)	▼	74.9	(2.5)	▲
Japan	403	(5.9)	▲	61.3	(3.2)	▼
Korea	394	(5.0)		67.8	(5.3)	
Luxembourg	393	(3.0)		67.5	(2.5)	
Mexico	333	(3.4)	▼	89.5	(1.3)	▲
Netherlands	416	(5.6)	▲	56.6	(5.5)	▼
New Zealand	387	(4.6)		71.6	(3.3)	
Norway	390	(4.1)		67.5	(3.2)	
Poland	388	(4.7)		70.4	(2.9)	
Portugal	380	(4.5)	▼	74.4	(2.7)	▲
Slovak Republic	404	(4.6)	▲	61.0	(3.0)	▼
Spain	398	(3.9)		65.1	(2.7)	
Sweden	387	(5.5)		67.9	(3.5)	
Switzerland	397	(4.0)		67.7	(2.9)	
Turkey	348	(4.4)	▼	85.5	(1.8)	▲
United States	369	(4.2)	▼	82.3	(2.2)	▲
OECD average	*391*	*(0.9)*		*67.7*	*(0.6)*	
United Kingdom[2]	m	m		m	m	

1. Note that proficiency levels were established separately for the mathematics scale and for the reading scale and are not equivalent.
2. Response rate too low to ensure comparability. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.
Source: OECD PISA 2003 database.
Please refer to the Reader's Guide (www.oecd.org/eag2006) for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/133160111888

INDICATOR A7

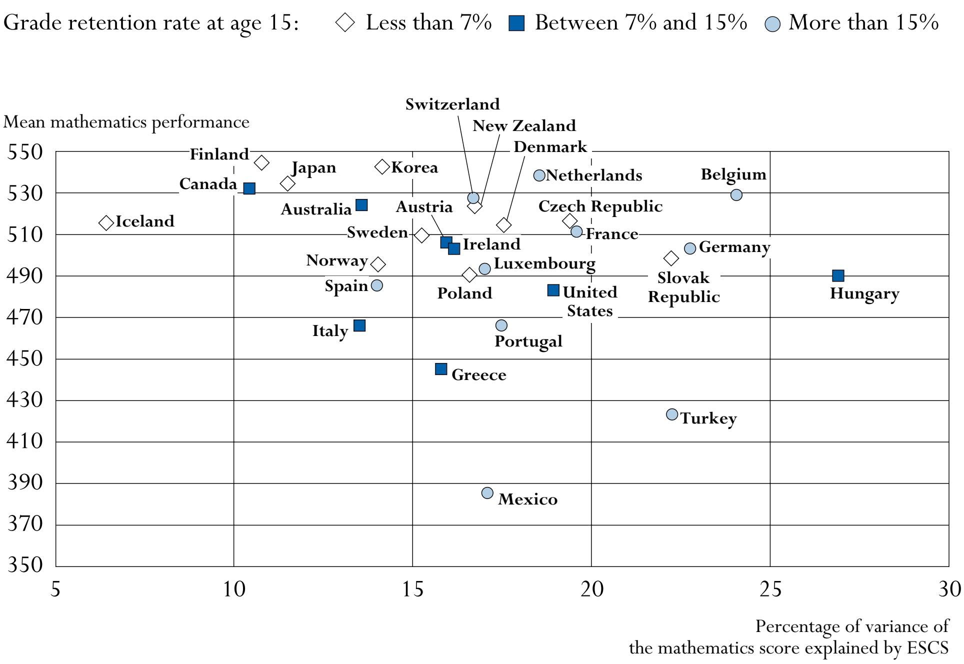
INSTITUTIONAL DIFFERENTIATION, SOCIO-ECONOMIC STATUS AND 15-YEAR-OLD STUDENTS' MATHEMATICS PERFORMANCE (2003)

As previous analyses of data from PISA have shown, socio-economic background accounts for a sizeable proportion of variance in mathematics performance. Some socio-economic background influences are attributable to the impact of student sorting or selection on the basis of differentiation practices in schools. This indicator examines the relative influence of socio-economic background and three forms of institutional differentiation on student mathematics performance on the PISA 2003 mathematics literacy assessment, and provides evidence on various forms of institutional differentiation and the proportion of variance in student mathematics performance that is associated with these practices relative to the proportion of variance that is attributable to students' socio-economic backgrounds.

Key results

Chart A7.1. Performance and variance in mathematics attributable to socio-economic status, by prevalence of grade retention in OECD countries

In countries in which larger proportions of 15-year-old students have repeated the school year, the impact that social background has on mathematics performance tends to be stronger.



Source: OECD PISA 2003 database. Table A7.1.

StatLink: http://dx.doi.org/10.1787/650647703470

Other highlights of this indicator

- The relationship between mathematics performance and between-school differences is stronger in countries that offer more distinct education programmes. For example, in countries with one or two programmes, the proportion of variance in mathematics performance associated with differences between schools is 19.2% compared with 42.2% in countries offering four or five programmes.
- On average, differences between grades (related largely to the degree to which students have been retained at some point during their school careers) account for less of the variance in mathematics performance than do differences between schools and differences between programmes. However, the relationship between mathematics performance and between-grade differences is generally stronger among countries in which higher percentages of students have repeated a school year, even though in some countries different starting ages for schools in different regions also play a role.
- Across OECD countries, as the number of distinct education programmes available to 15-year-olds increases, the proportion of variance in mathematics scores associated with socio-economic background also tends to increase. The average proportion of variance in mathematics scores accounted for by differences in students' socio-economic background ranges from 13.8% in countries with one or two programmes to 19.3% in countries with four or five programmes.

Policy context

Catering for the diverse needs of students and narrowing the gaps in their performance represent formidable challenges for all countries. Countries have chosen various approaches to address these demands. Some countries have comprehensive school systems with no, or only limited institutional differentiation. They seek to provide all students with similar opportunities for learning by requiring each school and teacher to provide for the full range of student abilities, interests and backgrounds. Other countries respond to diversity by grouping students through tracking or streaming, whether between schools or between classes within schools, with the aim of serving students according to their academic potential and/or interests in specific programmes. And in many countries, combinations of the two approaches occur.

Even in comprehensive school systems, there may be significant variation in performance levels between schools, due to practices in which students are sorted on the basis of interest or ability through curriculum tracking or grade retention, or due to the socio-economic and cultural characteristics of the communities that are served, or geographical differences (such as between regions, provinces or states in federal systems, or between rural and urban areas). Finally, there may be differences between individual schools that are more difficult to quantify or describe, part of which could result from differences in the quality or effectiveness of the instruction that those schools deliver. As a result, even in comprehensive systems, the performance levels attained by students may still vary across schools.

How do the policies and historical patterns that shape each country's school system affect and relate to the variation in student performance between and within schools? Do countries with explicit tracking and streaming policies show a higher degree of overall disparity in student performance than countries that have non-selective education systems? Research on curriculum tracking and other forms of institutional differentiation suggests that the greater the differentiation of students' educational experiences, the more their educational outcomes will be socially stratified (Garet and Delaney, 1988; Lucas, 2001; Ready, Lee and Welner, 2004). This suggests that some portion of socio-economic background influences might be attributable to the influences of differentiation practices. This indicator explores the influences of several forms of institutional differentiation on students' mathematics literacy relative to the influence of their socio-economic backgrounds.

Evidence and explanations

This indicator examines three features of countries' education systems related to differentiation among students. The first feature is the number of distinct programmes that are included in the secondary education system and that are available to 15-year-old students. The second feature is the students' age at the time of their first decision to continue to the next stage of a country's secondary education process or to select (or be selected for) educational programmes. The third feature is the degree to which countries engage in the practice of retaining students to repeat a grade (grade retention).

The indicator provides descriptive information about countries on these features, as well as information on the proportion of variance in mathematics performance that is associated with between-school differences, between-grade differences, and between-programme differences. The variances associated with these structural factors also are discussed relative to the proportion of variance in mathematics performance that is attributable to differences in students' socio-economic background.

Table A7.1 presents the three institutional differentiation practices examined in this indicator for the OECD countries reporting results. Columns 1 and 2 present statistics on student mathematics performance for each country: the mean and the standard deviation of the distribution of mathematics performance. Columns 3 to 5 display the institutional differentiation practices in which countries engage. Column 6 shows the proportion of variance in socio-economic background – measured by the PISA index of students' economic, social and cultural status (ESCS) – that is attributable to differences between schools. Columns 7 to 9 display the proportion of variance in mathematics scores that is associated with differences between schools, differences between grades, and differences between programmes. Column 10 shows the proportion of variance in mathematics scores that is attributable to socio-economic background differences; this percentage indicates the strength of the relationship between mathematics performance and socio-economic background. Countries are presented in ascending order, first, by the number of distinct programmes or school types countries offer to 15-year-olds (column 3) and, second, by the total variance in mathematics performance attributed to differences in socio-economic status (column 10).

The relative influence of the number of distinct programmes available to 15-year-olds, age at first selection and socio-economic background on student mathematics performance

One device to differentiate among students is the use of different institutions or programmes that seek to group students, in accordance with their performance or other characteristics. Sorting students according to their performance often assumes that their talents will best develop in a learning environment where their intellectual stimulation is equal, and that an intellectually homogeneous student body will favour effective teaching. Looking first at the number of distinct programmes, Table A7.1 shows that OECD countries vary: some have essentially undivided secondary education until the age of 15 years, others have four or more school types or distinct educational programmes (Austria, Belgium, the Czech Republic, Germany, Ireland, Luxembourg, the Netherlands, the Slovak Republic and Switzerland). Simple cross-country comparisons show that, while the number of school types or distinct educational programmes available to 15-year-olds is, across countries, not related to average country performance in mathematics, it accounts for 39% of the share of the OECD average variation that lies between schools (see Figure 5.20b in *Learning for Tomorrow's World – First Results from PISA 2003,* [OECD, 2004a]). No less important, it accounts for 26% of the cross-country variation among countries in the strength of the relationship between socio-economic background and student performance. In other words, in countries with a larger number of distinct programme types, socio-economic background tends to have a significantly larger impact on student performance. It is therefore much harder to achieve equity.

An important dimension of tracking and streaming is the age at which decisions between different types of school are generally made, and the impact this has on students and their parents who are faced with these choices. Such decisions occur very early in Austria and Germany, at around age 10. By contrast, in countries such as New Zealand, Spain and the United States no institutional differentiation takes place, at least between schools, until the completion of secondary education. There is no statistically significant correlation between the age of selection and country mean performance in mathematics. However, the share of the OECD average variation in student performance that lies between students and schools tends to be much higher in countries with early selection policies. In fact, the age of selection accounts for half of the between-school differences. While this, in itself, is not surprising because variation in school performance is an intended outcome of stratification, the findings also show that education systems with lower ages of selection tend to show much larger social disparities, with the age of selection explaining 28% of the country average of the strength of the relationship between the PISA index of economic, social and cultural status and student performance in mathematics.

Box A7.1. Notes on data

This indicator uses data from the PISA 2003 mathematics literacy assessment (for mathematics performance statistics), the student background questionnaires (for percentage of students retained in grade by age 15) and macro-level data provided by PISA National Project Managers (for number of distinct educational programmes and students' age at first selection). This box provides information on the macro-level data sources. Notes on the student background data are presented in the text in the final section of the indicator

In this indicator, number of programmes refers to the number of distinct programmes that are available to students at age 15 and which can be defined in relation to the International Standard Classification of Education (ISCED) levels. One inconsistency to point out in the table accompanying this indicator is that, in some countries with a single, comprehensive education programme, a small proportion of the variance in mathematics scores is attributable to differences between programmes. In these cases, despite there being only one distinct programme, implicit differentiation practices (particularly curriculum tracking) within the programme are accounting for the variance in students' performance in mathematics that between-school differences do not pick up.

Table A7.1 also illustrates the extent to which the number of programmes or school types is related to between-school differences in mathematics performance. Across OECD countries two general patterns emerge.

First, the relationship between student mathematics performance and between-school differences is generally stronger in countries that offer more distinct programmes or school types. The average strength of the relationship between mathematics performance and between-school differences in one- and two-programme countries is 19.2%, compared to 41.9% and 42.2% in countries offering three and four or five distinct programmes, respectively.

Second, the variance in mathematics scores attributable to between-school differences and the variance in mathematics scores attributable to between-programme differences are positively related: high proportions of variance in mathematics scores attributable to between-school differences tend to be accompanied by high proportions of variance in mathematics scores attributable to between-programme differences. (The converse is true as well, with low proportions of variance in mathematics scores attributable to between-school differences accompanied by low proportions attributable to between-programme differences.) With the exception of single-programme countries, this suggests that between-programme differences make up a considerable proportion – at least half, if not more for most countries – of the variance in mathematics scores that is being attributed to between-school differences.

There are a number of interesting exceptions to this pattern, however. In four countries, Belgium Luxembourg, the Netherlands and Portugal, between-programme differences account for a greater proportion of variance in mathematics scores than between-school differences. In these countries, school differences may be all programme differences. Another exception is Japan in which between-school differences account for a much greater portion of variance in mathematics scores than between-programme differences. With two distinct programmes, between-school differences account for a sizeable 53% of differences in student mathematics performance, yet between-programme differences account for only 4.8%. This suggests that in Japan, schools within distinct programmes are more differentiated than they are across Japan's two programmes. Examining the different proportions of variance in mathematics scores attributable to different features of countries' educational systems relative to one another offers insight into how student learning may be taking place, and the features of education systems that may facilitate or hold back mathematics performance. When interpreting the data, the Netherlands provide an interesting case, in which the overall performance of students is so high, that even the lower performing students do relatively well in an international comparative perspective.

The relative influence of grade retention by age 15 and socio-economic background on mathematics performance

The third form of institutional differentiation examined in this indicator is the practice of grade retention. As defined by Jackson (1975), "grade retention is the practice of requiring students who have been in a given grade level for a full year to remain at that grade level for a subsequent year". The practice is generally used by schools to remediate poor academic performance, though it may also be used – particularly in the lower grades – to retain students who are judged too young or too immature compared to their peers to proceed.

As with other forms of institutional differentiation, grade retention is considered by some, primarily teachers and administrators, to be an effective and efficient strategy for facilitating learning and raising performance, as struggling students are grouped together in homogeneous classes where instruction can be delivered more to their level. Additionally, retention often operates as an incentive for students to study (Cosnefroy and Rocher, 2004). Despite the popularity of retention, considerable research has shown that retained students are no more likely to perform well than their non-retained, similarly achieving classmates (Jimerson, 2001).

Table A7.1 shows the percentage of 15-year-old students who have repeated at least one grade, based on students' responses to the PISA background questionnaire. Because these figures are based on self-reports and because students' answers reflect the entirety of their educational experiences (which, for small percentages of students, may not have occurred in their present systems), they are a proxy for their countries' actual retention policies.

As the table shows, three countries clearly do not have a retention policy (Iceland, Japan, and Norway), with no students reporting having repeated a grade by the age of 15. Additionally, eight countries have only a limited number of students having repeated a grade, including: the Czech Republic, Denmark, Finland, Korea, New Zealand, Poland, the Slovak Republic and Sweden.

In at least two of those countries, Sweden and New Zealand, there is no explicit retention policy, so the small percentages of students in those countries reporting having repeated a grade may be reflective of other factors.

However, in the majority of OECD countries, grade retention is much more prevalent, with the percentage of students reporting having repeated a grade ranging from 7% in Greece up to 38% in France. Grouping these countries further, eight countries have between 7 and 15% of students reporting having repeated a grade, while ten countries (one-third of all OECD countries) have over 15% of students having repeated a grade. The three groupings of countries emerge from an examination of the data and knowledge of countries' retention policies. In general, countries in which fewer than 7% of students are retained tend to have automatic promotion policies or no explicit policies related to retention, whereas countries in which over 15% of students have been retained tend to have explicit, long-standing policies and a culture in which retention is a common feature.

Chart A7.1 illustrates where countries in these groupings fall along the dimensions of mean mathematics performance and the percentage of variance in mathematics scores attributable to students' socio-economic backgrounds, which represents the strength of the relationship between mathematics performance and socio-economic background (measured with the ESCS index).

Across the percentage groupings (*i.e.* less than 7%, 7 to 15%, and over 15%), between-grade differences (retention), on average, account for less variance in student mathematics performance than both between-school differences and between-programme differences (and socio-economic background, but more will be said separately on this issue). Across countries in which less than 7% of 15-year-olds have repeated a grade, the proportion of variance in mathematics scores attributable to retention is, on average, 3.9%, compared to 8.5% for countries in which 7 to 15% of 15-year-olds have repeated, and 24% for countries in which more than 15% have repeated. By contrast, the proportion of variance in mathematics scores accounted for by between-school differences is 23.1%, 35.0%, and 41.0% and the proportion of variance in mathematics scores attributable to between-programme differences is 9.0%, 18.4% and 36.2%, respectively for the same groupings. Although not additive, it is not surprising to find the variance in mathematics scores attributable to between-school differences to be larger than the variances attributable to between-programme differences and between-grade differences. Variance in mathematics scores attributable to between-school differences includes variance accounted for by both programme differences and grade differences. Similarly, variance accounted for by between-programme differences encompasses variance accounted for by between-grade differences, and some, but not all, variance accounted for by between-school differences.

There are exceptions to this general pattern, and they occur among countries in which retention is among the most prevalent. In Spain and Portugal, where 28.6% and 29.5% of 15-year-olds have been retained by age 15, respectively, differences between grades account for more variance in mathematics performance than do differences between schools and differences between programmes. In Spain, with one distinct compulsory secondary education programme until age 16, this suggests a possibly high rate of multiple repeaters. Multiple repeaters are students who have been held back for several years. Their performance on the PISA mathematics assessment may be reflecting the much lower grade in which they are enrolled (and the much lower curriculum they are being taught) more so than any differences that exist among schools in

Spain. This explanation applies equally to Portugal's high proportion of variance attributable to retention. Students' performance on the mathematics assessment is reflecting the much lower grade in which they are enrolled, more so than the different schools and programmes in which they are enrolled.

The earlier examination of distinct programmes or schools types and age at first selection found that both forms of institutional differentiation are associated with an increased strength of the relationship between students' mathematics performance and socio-economic backgrounds. That is, greater social stratification in mathematics performance was observed in countries that engaged in greater differentiation. The same observation holds true for the practice of grade retention. In countries with higher a percentage of students having repeated a grade, student mathematics performance is more socially stratified. Across OECD countries in which less than 7% of 15-year-olds have been retained, students' socio-economic background accounts for 15% of the variance in students' mathematics performance. In countries in which 7 to 15% of 15-year-olds have been retained, socio-economic status accounts for 16.5% of the variance in students' mathematics performance. And, in countries retaining over 15% of their 15-year-olds, 19% of the variance in students' mathematics performance is attributable to students' socio-economic backgrounds.

Definitions and methodologies

The achievement scores are based on assessments administered in 2003 as part of the Programme for International Student Assessment (PISA) undertaken by the OECD.

The target population studied for this indicator was 15-year-old students. Operationally, this referred to students who were from 15 years and 3 (completed) months to 16 years and 2 (completed) months at the beginning of the testing period and who were enrolled in an educational institution, irrespective of the grade levels or type of institutions in which they were enrolled, and irrespective of whether they participated in school full-time or part-time.

Further references

For further information about PISA 2003, see *Learning for Tomorrow's World – First Results from PISA 2003* (OECD, 2004a), and the *PISA 2003 Technical Report* (OECD, 2005c). PISA data are also available on the PISA Web site: *www.pisa.oecd.org.*

A7

Table A7.1.
Institutional differentiation, variance in mathematics performance, and economic, social and cultural status (ESCS), (2003)

	Performance on the PISA 2003 mathematics assessment		Differentiation practices			Variance expressed as a percentage of the total variance in ESCS in a country	Variance expressed as a percentage of total variance in mathematics scores in a country			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Mean	SD	Number of school types or distinct programmes available to 15-year-olds	Age at first selection	Percentage of 15-year-olds who have repeated at least once[1]	Total variance in ESCS attributable to differences between schools	Total variance attributable to differences between schools	Total variance attributable to differences between grades	Total variance attributable to differences between programmes	Total variance attributable to differences in ESCS
Iceland	515	90	1	16	0.0	17.4	3.8	0.0	a	6.5
Canada	532	87	1	16	9.7	17.8	17.3	10.2	a	10.5
Finland	544	84	1	16	2.8	11.4	4.8	5.4	a	10.9
Australia	524	95	1	16	9.0	26.1	21.1	6.7	a	13.7
Spain	485	88	1	16	28.6	24.8	19.7	25.3	a	14.0
Norway	495	92	1	16	0.0	11.6	6.6	0.5	a	14.1
Sweden	509	95	1	16	3.4	11.7	10.5	4.6	a	15.3
Poland	490	90	1	16	3.6	23.3	12.6	8.2	a	16.7
New Zealand	523	98	1	16	4.5	17.0	18.1	4.9	a	16.8
Denmark	514	91	1	16	3.4	19.2	13.4	5.7	a	17.6
United States	483	95	1	16	11.3	22.7	25.7	7.0	a	19.0
Japan	534	101	2	15	0.0	27.3	53.0	0.0	4.8	11.6
Greece	445	94	2	15	7.0	28.7	36.3	6.3	23.5	15.9
Italy	466	96	3	14	15.0	29.6	52.2	10.6	19.3	13.6
Korea	542	92	3	14	0.5	29.7	42.0	0.0	22.2	14.2
Mexico	385	85	3	12	28.4	34.2	39.4	19.7	22.1	17.1
Portugal	466	88	3	15	29.5	24.3	33.6	42.6	38.8	17.5
Turkey	423	105	3	11	17.3	36.9	54.9	5.9	40.1	22.3
Hungary	490	94	3	11	9.5	44.4	58.3	10.3	37.7	27.0
Austria	506	93	4	10	9.6	32.2	52.9	8.0	39.7	16.0
Ireland	503	85	4	15	13.8	21.0	15.9	9.1	8.2	16.3
Switzerland	527	98	4	12	21.6	18.7	34.2	16.2	10.3	16.8
Luxembourg	493	92	4	13	37.9	23.9	31.6	20.3	34.4	17.1
Netherlands	538	93	4	12	28.4	22.9	58.0	19.4	64.4	18.6
Germany	503	103	4	10	20.3	30.3	51.7	22.2	50.2	22.8
Belgium	529	110	4	12	29.5	31.8	46.0	32.0	59.1	24.1
Czech Republic	516	96	5	11	2.6	29.9	47.8	7.8	35.1	19.5
Slovak Republic	498	93	5	11	2.5	32.3	41.7	6.2	28.7	22.3
France	511	92	m	15	38.3	32.3	m	36.8	41.5	19.6
OECD average	***500***	***100***	**-**	**-**	***13.4***	***25.3***	***32.3***	***12.1***	***32.2***	***16.8***
United Kingdom[2]	m	m	1	16	2.1	18.4	22.3	0.9	a	19.7

Note: Countries are presented in ascending order, first, of the number of distinct programmes and, second, of the total variance in mathematics performance explained by differences in economic, social and cultural status (ESCS).
1. Data on grade retention come from student self-reports on whether or not they have ever repeated a grade; therefore they only approximate the grade retention policy and practices of any given country.
2. Response rate too low to ensure comparability. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.
Source: OECD PISA 2003 database.
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

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INDICATOR A8

LABOUR FORCE PARTICIPATION BY LEVEL OF EDUCATIONAL ATTAINMENT

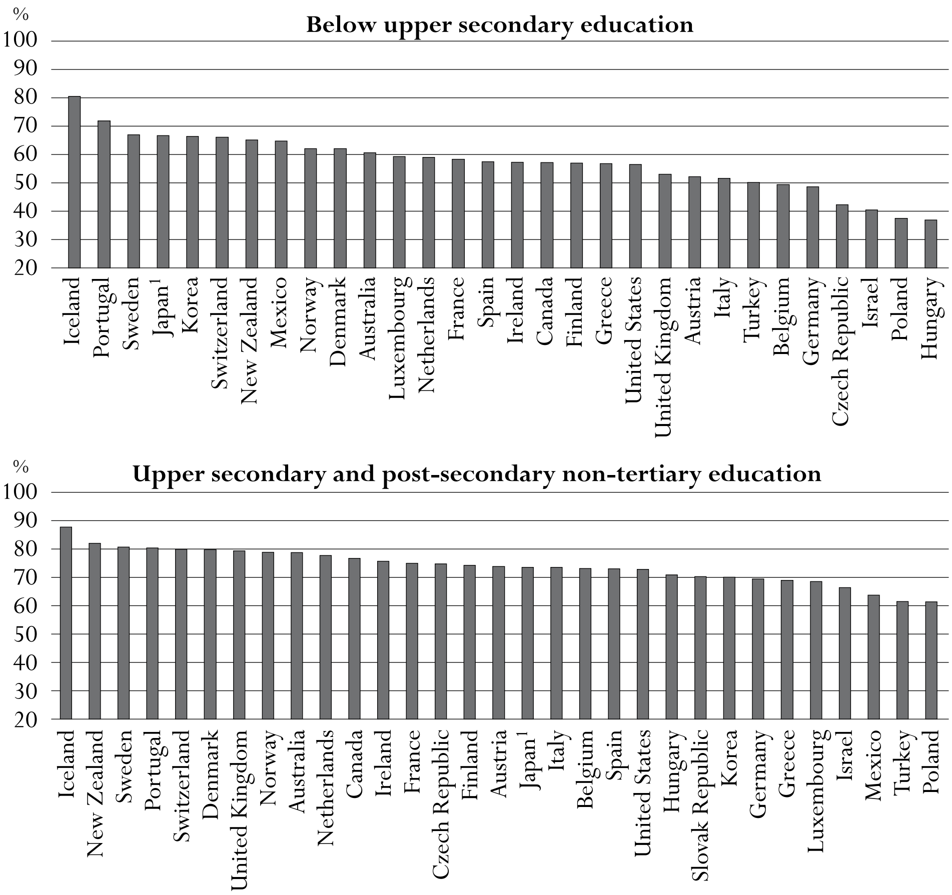
This indicator examines relationships between educational attainment and labour force status, for both males and females, and considers changes in these relationships over time. The match between workers' skills and the skill requirements of the labour market is a critical issue for policy makers.

Key results

Chart A8.1. Employment rates by educational attainment (2004)

The chart shows the percentage of the 25-to-64-year-old population that is employed

Compared to people who have not completed upper secondary education, people who have completed upper secondary education are much more likely to be in work, but the employment advantage of upper secondary attainment varies across countries.



1. Year of reference 2003.

Countries are ranked in descending order of the employment rates.

Source: OECD. Table A8.3. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/015830764831

Other highlights of this indicator

- Employment rates rise with educational attainment in most OECD countries. With few exceptions, the employment rate for graduates of tertiary education is markedly higher than the rate for upper secondary graduates. For males, the gap is particularly wide between upper secondary graduates and those without an upper secondary qualification.
- Differences in employment rates between males and females are wider among less educated groups. The chance of being in employment is 23 points higher for males than for females among those without upper secondary qualifications, falling to 10 points for the most highly qualified.
- Those with low educational attainment are both less likely to be labour force participants and more likely to be unemployed. Unemployment rates fall with higher educational attainment. The greatest gender differences in unemployment rates are seen among lower-qualified adults (Chart A8.3).
- Unemployment rates are higher for females at each level of educational attainment in 12 OECD countries. Unemployment rates are higher for males at each level of educational attainment in only three countries (Chart A8.3).

Policy content

The economies and labour markets of OECD countries depend upon a stable supply of well-educated workers to further their economic development. As levels of skill tend to rise with educational attainment, the costs incurred also rise when those with higher levels of education do not work; and as populations in OECD countries age, higher and longer participation in employment can lower dependency ratios and help to alleviate the burden of financing public pensions.

Evidence and explanations

Employment

Variation among countries in employment among females is a primary factor in the differences in overall employment rates. The six countries with the highest overall rate of employment for individuals aged 25 to 64 – Denmark, Iceland, Norway, Sweden, Switzerland and the United Kingdom – also have the highest overall rate of employment for females. The overall employment rate for males aged 25 to 64 ranges from 78% or less in Belgium, Finland, France, Germany, Hungary, Italy, Poland, the Slovak Republic and Turkey to above 84% in Iceland, Japan, Korea, New Zealand, Mexico and Switzerland (Table A8.1a). By contrast, employment rates among females range from 57% or less in Greece, Hungary, Italy, Korea, Luxembourg, Mexico, Poland, the Slovak Republic, Spain and Turkey, to 83% and more in Iceland and Switzerland, reflecting very different cultural and social patterns.

With the exception of Mexico and New Zealand, the employment rate for graduates of tertiary education is markedly higher – around 10 percentage points on average for OECD countries – than that for upper secondary graduates. The difference ranges from a few percentage points to 14 percentage points and more in Luxembourg, Mexico, Poland and Turkey (Chart A8.3a).

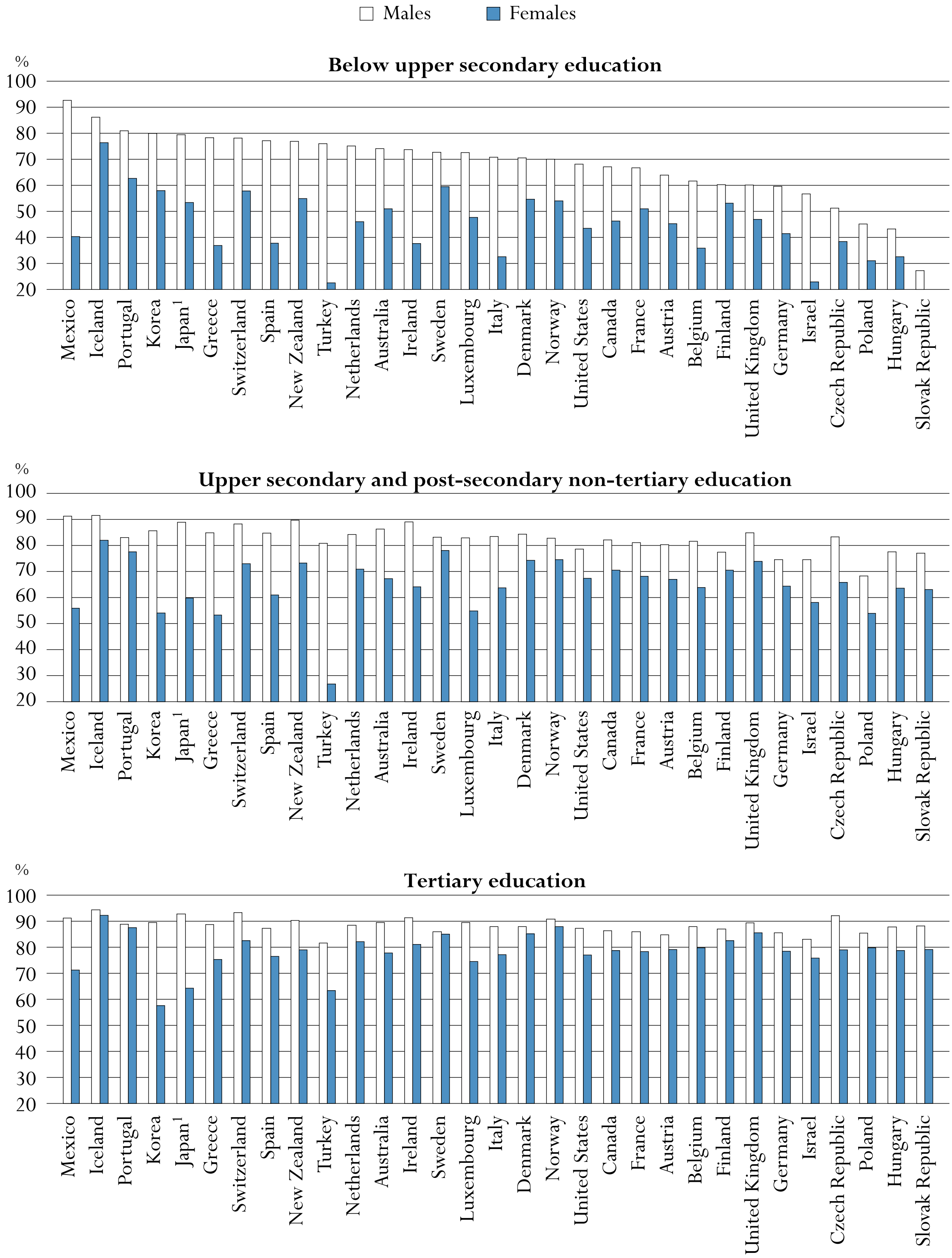
The gap in employment rates of males aged 25 to 64 years is particularly wide between upper secondary graduates and those who have not completed an upper secondary qualification. The extreme cases are the Czech Republic, Hungary and the Slovak Republic, where rates of employment for males with an upper secondary level of education are at least 32 percentage points higher than for a male without such attainment. The gap in employment rates between males with and without upper secondary attainment is 7 percentage points or less in Greece, Iceland, Korea, Mexico, Portugal and Turkey (Chart A8.2).

Employment rates for females aged 25 to 64 show more substantial differences, not only between those with below upper secondary and those with upper secondary attainment (15 percentage points or more in 25 out of the 29 OECD countries where data were available), but also between those with upper secondary and those with tertiary attainment (10 percentage points or more in 23 countries).

Employment rates for females with lower secondary attainment are particularly low, averaging 49% across all OECD countries and standing at 35% or below in Hungary, Poland, the Slovak Republic and Turkey and the partner countries Chile and Israel. Employment rates for females with tertiary-type A attainment equal or exceed 75 % everywhere except Japan, Korea, Mexico and Turkey, but remain below those of males in all countries (Table A8.1a).

Chart A8.2. Employment rates, by educational attainment (2004)

Percentage of the 25-to-64-year-old population that is employed



1. Year of reference 2003.

Countries are ranked in descending order of the employment rate of males having attained less than upper secondary education.

Source: OECD. Table A8.3b and A8.3c. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/015830764831

On average among OECD countries, at successively higher levels of educational attainment, the difference between the employment rates of males and females decreases significantly: from 23 percentage points at the below upper secondary level to 10 percentage points at the tertiary level (Chart A8.2).

Unemployment rates fall with higher educational attainment

To the extent that educational attainment is an indicator of skill, it can signal to employers the potential knowledge, capacities and workplace performance of candidates for employment. The employment prospects of individuals with varying levels of educational attainment depend both on the requirements of labour markets and on the supply of workers with different skills. Those with low educational qualifications are at particular risk of economic marginalisation since they are both less likely to be labour force participants and more likely to be without a job even if they are actively seeking one.

Among OECD countries, achieving an upper-secondary level of education is considered to be the minimum level to obtain a satisfactory position in the labour market. On average, the rate of unemployment among individuals with an upper secondary education is 4 percentage points lower than among individuals who only have lower secondary attainment (Table A8.4a). Depending on the structure of the supply of jobs, the unemployment risk associated with non-attainment of the upper secondary level varies among countries being particulaly large (at over 10%) in the Czech Republic, Poland, and the Slovak Republic (Table A8.4a).

There are only five countries in which, in 2004, a lack of upper secondary education is not associated with a higher unemployment risk: Greece, Korea, Mexico, Norway and Turkey (Table A8.4a). Nevertheless, in four of those five countries (Greece, Korea, Norway and Turkey), the employment rate is clearly higher for the secondary levels than for the less educated (Table A8.3a).

On average in OECD countries, male labour force participants aged 25 to 64 with a qualification below the upper secondary level are almost twice as likely to be unemployed as their counterparts who have completed upper secondary education. In 17 countries, the unemployment rate for male upper secondary graduates is at least 1.3 times the unemployment rate among tertiary graduates. The negative association between unemployment rates and educational attainment is similar among females, but is even more pronounced in some countries.

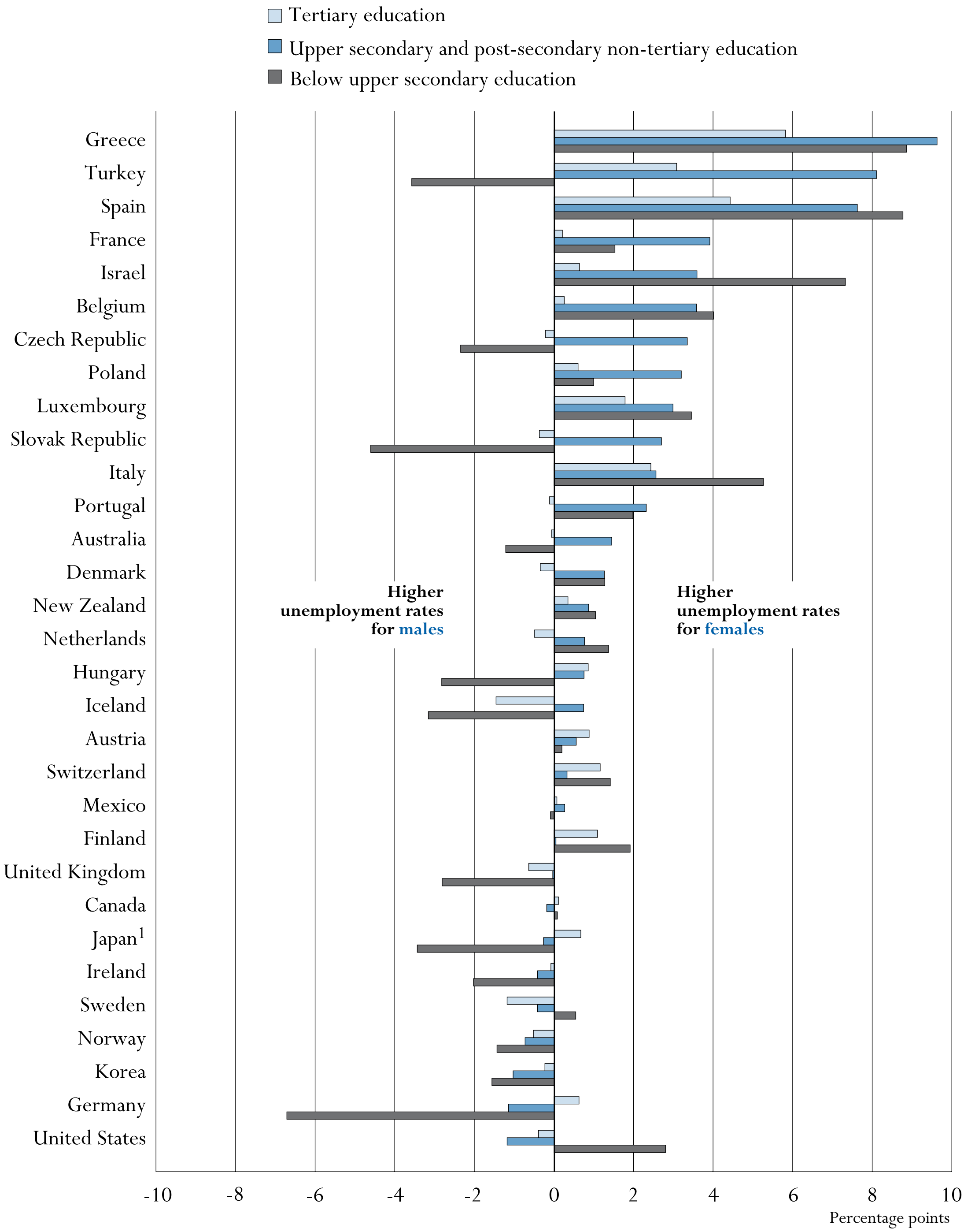
Considering all levels of educational attainment combined, higher unemployment rates for females are seen in 18 OECD countries as well as in the partner countries Chile and Israel (Table A8.2a). Differences in unemployment rates among males and females are less than half of a percentage point in four countries: Australia, Finland, Hungary and Mexico. In 18 countries, unemployment rates for females with below upper secondary education are higher than those for males (Chart A8.3).

The changes in the value of education with regard to unemployment

In countries such as Australia, Canada, Denmark, Finland, France, Greece, Ireland, Italy, Mexico, Netherlands, New Zealand, Norway, Spain, Sweden and the United Kingdom – unemployment rates for persons with an upper secondary education decreased between 1995 and 2004. Over the same period, the difference between upper and lower secondary unemployment rates has increased in countries such as Austria, Germany, Italy and Switzerland, from 0.5 to

Chart A8.3. Differences between unemployment rates of females and males, by level of educational attainment (2004)

Percentage points for the 25-to-64-year-old labour force



1. Year of reference 2003.

Countries are ranked in descending order of the difference in unemployment rates of females and males who have completed upper secondary education or post-secondary non-tertiary education.

Source: OECD. Table A8.4. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/015830764831

3.9 percentage points and by as much as 7.6, 11.0 and 18.7 percentage points in Poland, the Czech Republic and the Slovak Republic respectively. Although the difference between the unemployment rate among individuals with upper and lower secondary levels of education is on average greater than between tertiary and upper secondary levels, achieving an upper secondary education makes less of a difference in the labour market than the achievement of tertiary education since the tertiary-level unemployment rate is almost always lower than the upper secondary level rate (Table A8.4a).

Higher educational attainment is usually associated with lower unemployment, but there are exceptions. In Mexico and New Zealand the 2004 unemployment rate for those with tertiary education was almost the same as for those who attained upper secondary education. Nevertheless, in both countries the employment rate for those with a tertiary-level education remained higher than for those with a secondary-level of attainment.

Since 1995, there has been a small decrease in the difference between the unemployment rate among individuals with tertiary education and for those with an upper secondary level of education (considering the OECD as a whole). In 2004, unemployment rates for those with tertiary education were on average 2.3 percentage points lower than those for persons with upper secondary education. This compares with a difference of 2.7 percentage points in 1995. This trend has been most apparent in Denmark, Finland and Sweden. The reverse situation can also be seen, with tertiary graduates having a greater labour market advantage, in countries such as the Czech Republic, Poland and the Slovak Republic (Table A8.4a).

Definition and methodologies

Under the auspices of the International Labour Organisation (ILO) and the conferences of labour statisticians, concepts and definitions were progressively established and are now used as a common reference (see the "Resolution Concerning Statistics of the Economically Active Population, Employment, Unemployment and Underemployment" (1982), adopted by the 13th International Conference of Labour Statisticians). The employment rate refers to the number of persons in employment as a percentage of the population of working age. Unemployment rates refer to unemployed persons as a percentage of the civilian labour force.

The unemployed are defined as individuals who are without work, actively seeking employment and currently available to start work. The employed are defined as those who during the survey reference week: *i)* work for pay (employees) or profit (self-employed and unpaid family workers) for at least one hour; or *ii)* have a job but are temporarily not at work (through injury, illness, holiday, strike or lock-out, educational or training leave, maternity or parental leave, etc.).

Further references

The following additional material relevant to this indicator is available on the Web at *http://dx.doi.org/10.1787/015830764831:*

- ***Employment rates and educational attainment***
  Table A8.1b: Total adult population
- ***Unemployment rates and educational attainment***
  Table A8.2b: Total adult population

- ***Trends in employment rates by educational attainment, by gender***
  Table A8.3b: Males
  Table A8.3c: Females
- ***Trends in unemployment rates by educational attainment, by gender***
  Table A8.4b: Males
  Table A8.4c: Females

Table A8.1a.

Employment rates and educational attainment, by gender (2004)

Number of 25-to-64-year-olds in employment as a percentage of the population aged 25 to 64, by level of education attained and gender

		Pre-primary and primary education	Lower secondary education	Upper secondary education: ISCED 3C Short	Upper secondary education: ISCED 3C Long/3B	Upper secondary education: ISCED 3A	Post-secondary non-tertiary education	Tertiary education: Type B	Tertiary education: Type A and advanced research programmes	All levels of education
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
OECD countries										
Australia	Males	x(2)	74	a	86	86	92	86	91	84
	Females	x(2)	51	a	66	66	77	74	80	64
Austria	Males	x(2)	64	a	80	79	85	81	89	79
	Females	x(2)	45	a	65	66	78	79	79	64
Belgium	Males	48	73	a	81	82	92	88	88	76
	Females	26	45	a	59	65	69	79	81	59
Canada	Males	57	72	a	x(5)	82	83	87	86	81
	Females	35	52	a	x(5)	70	73	78	80	71
Czech Republic	Males	c	52	a	81	87	x(8)	x(8)	92	82
	Females	c	39	a	61	71	x(8)	x(8)	79	63
Denmark	Males	x(2)	73	81	85	76	c	88	88	83
	Females	x(2)	55	79	75	63	c	84	85	74
Finland	Males	53	70	a	x(5)	77	93	84	89	76
	Females	48	60	a	x(5)	70	90	82	83	72
France	Males	54	76	a	81	82	a	89	84	77
	Females	41	59	a	67	70	a	81	77	64
Germany	Males	49	62	a	75	56	82	84	87	76
	Females	29	43	a	64	50	75	77	79	62
Greece	Males	75	86	87	80	85	84	88	89	83
	Females	35	43	58	30	50	65	74	76	51
Hungary	Males	17	46	a	76	79	84	84	88	72
	Females	8	35	a	60	66	65	82	79	57
Iceland	Males	79	87	94	94	78	92	88	95	91
	Females	78	76	80	85	79	100	90	93	83
Ireland	Males	63	84	69	a	89	90	91	92	84
	Females	29	46	71	a	62	68	79	83	60
Italy	Males	52	79	76	85	83	82	87	88	78
	Females	18	44	55	59	65	70	74	78	49
Japan	Males	x(2)	79	a	a	89	a	92	93	89
	Females	x(2)	53	a	a	60	a	63	67	60
Korea	Males	76	83	a	x(5)	86	a	90	90	86
	Females	57	59	a	x(5)	54	a	58	57	56
Luxembourg	Males	73	72	83	83	83	84	86	91	83
	Females	49	43	44	55	62	69	74	75	57
Mexico	Males	92	94	a	91	a	a	94	91	92
	Females	37	47	a	56	a	a	63	73	46
Netherlands	Males	64	80	x(4)	82	87	82	85	89	83
	Females	32	52	x(4)	66	74	75	76	83	66
New Zealand	Males	x(2)	77	a	x(5)	90	89	91	90	87
	Females	x(2)	55	a	x(5)	73	76	78	80	71
Norway	Males	25	71	a	83	81	85	90	91	84
	Females	41	55	a	74	74	84	87	88	77

Note: Due to incomplete data, some averages have not been calculated.
Source: OECD. See Annex 3 for a description of ISCED-97 levels, ISCED-97 country mappings and national data sources *(www.oecd.org/edu/eag2006)*.
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

Table A8.1a. *(continued)*

Employment rates and educational attainment, by gender (2004)

Number of 25-to-64-year-olds in employment as a percentage of the population aged 25 to 64, by level of education attained and gender

			Pre-primary and primary education	Lower secondary education	Upper secondary education			Post-secondary non-tertiary education	Tertiary education		All levels of education
					ISCED 3C Short	ISCED 3C Long/3B	ISCED 3A		Type B	Type A and advanced research programmes	
			(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
OECD countries	**Poland**	Males	x(2)	45	65	a	73	71	x(8)	86	67
		Females	x(2)	31	48	a	57	64	x(8)	80	55
	Portugal	Males	80	87	a	a	83	87	x(8)	89	82
		Females	60	74	a	a	78	75	x(8)	88	68
	Slovak Republic	Males	c	29	x(4)	72	84	x(5)	87	88	73
		Females	c	20	x(4)	57	67	x(5)	77	79	56
	Spain	Males	70	84	c	88	83	c	88	87	81
		Females	29	48	c	61	61	c	72	78	52
	Sweden	Males	64	79	a	a	83	x(5)	83	88	82
		Females	49	66	a	a	78	x(5)	82	87	78
	Switzerland	Males	73	80	92	89	79	90	95	95	94
		Females	52	59	64	73	72	81	84	82	86
	Turkey	Males	75	79	a	82	80	a	x(8)	82	78
		Females	23	18	a	31	25	a	x(8)	63	26
	United Kingdom	Males	x(2)	60	84	84	88	a	88	90	83
		Females	x(2)	47	72	75	79	a	85	86	73
	United States	Males	69	68	x(5)	x(5)	79	x(5)	84	88	81
		Females	38	47	x(5)	x(5)	67	x(5)	76	78	69
	OECD average	***Males***		***72***			***82***			***89***	***82***
		Females		***49***			***65***			***79***	***63***
	EU19 average	***Males***		***68***			***81***			***88***	***79***
		Females		***47***			***66***			***81***	***62***
Partner countries	**Chile**	Males	24	63	x(5)	x(5)	72	a	81	84	74
		Females	9	27	x(5)	x(5)	60	a	70	80	61
	Israel	Males	x(2)	58	x(5)	x(5)	75	a	82	83	74
		Females	x(2)	25	x(5)	x(5)	58	x(7)	70	79	60

Note: Due to incomplete data, some averages have not been calculated.
Source: OECD. See Annex 3 for a description of ISCED-97 levels, ISCED-97 country mappings and national data sources *(www.oecd.org/edu/eag2006)*.
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

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Table A8.2a.

Unemployment rates and educational attainment, by gender (2004)

Number of 25-to-64-year-olds in unemployment as a percentage of the labour force aged 25 to 64, by level of education attained and gender

			Pre-primary and primary education	Lower secondary education	Upper secondary education			Post-secondary non-tertiary education	Tertiary education		All levels of education
					ISCED 3C Short	ISCED 3C Long/3B	ISCED 3A		Type B	Type A and advanced research programmes	
			(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
OECD countries	Australia	Males	x(2)	6.8	a	2.5	4.3	2.6	3.3	2.7	4.2
		Females	x(2)	5.6	a	5.6	4.9	3.9	2.7	2.9	4.3
	Austria	Males	x(2)	7.7	a	3.6	4.5	2.5	2.7	2.4	3.8
		Females	x(2)	7.9	a	4.2	5.9	2.5	2.0	4.8	4.7
	Belgium	Males	14.2	8.0	a	7.5	4.8	2.2	3.6	3.9	6.2
		Females	16.1	12.6	a	10.8	8.9	9.4	3.8	4.3	8.1
	Canada	Males	11.1	9.3	a	x(5)	6.3	6.1	4.6	4.6	6.0
		Females	11.0	9.4	a	x(5)	6.0	6.2	4.6	4.8	5.7
	Czech Republic	Males	c	24.7	a	5.9	3.2	x(8)	x(8)	2.1	5.5
		Females	c	22.1	a	12.3	5.0	x(8)	x(8)	1.8	9.0
	Denmark	Males	c	7.1	5.1	3.9	8.2	c	6.9	2.9	4.6
		Females	c	8.0	6.4	5.4	6.6	c	4.7	3.5	5.2
	Finland	Males	9.6	12.7	a	a	8.2	2.6	5.4	3.3	7.4
		Females	12.7	13.4	a	a	8.3	6.2	5.4	5.1	7.7
	France	Males	12.4	10.9	a	5.5	7.2	x(7)	5.1	6.6	7.5
		Females	13.5	12.6	a	10.2	8.8	x(7)	5.2	7.0	9.7
	Germany	Males	30.2	22.6	a	12.3	9.7	7.6	5.6	5.1	11.1
		Females	22.4	16.5	a	11.3	10.0	5.5	6.0	6.0	10.4
	Greece	Males	5.1	5.4	3.4	5.7	5.6	7.5	3.1	4.8	5.2
		Females	12.5	18.3	19.1	35.3	15.1	15.7	11.6	9.5	13.5
	Hungary	Males	31.1	11.4	a	5.6	3.2	2.8	1.6	1.5	5.1
		Females	22.6	9.2	a	7.3	4.3	7.1	1.6	2.4	5.4
	Iceland	Males	a	4.6	0.0	1.7	9.6	2.0	6.1	1.2	3.0
		Females	a	1.9	1.4	2.4	6.0	0.0	0.0	0.4	1.8
	Ireland	Males	8.6	5.8	c	a	3.3	3.5	2.6	1.9	4.3
		Females	4.2	5.4	c	a	2.8	3.3	2.4	1.8	3.1
	Italy	Males	7.6	5.6	11.5	3.0	4.2	10.8	4.7	3.5	5.0
		Females	12.1	11.1	14.5	7.9	6.1	10.3	7.5	6.0	8.2
	Japan	Males	m	m	m	m	m	m	m	m	m
		Females	m	m	m	m	m	m	m	m	m
	Korea	Males	3.5	3.5	a	x(5)	3.9	a	3.8	2.7	3.5
		Females	1.6	2.2	a	x(5)	2.9	a	3.3	2.5	2.5
	Luxembourg	Males	3.4	4.2	3.8	2.3	2.2	1.5	2.8	2.0	2.6
		Females	7.3	5.0	7.5	4.3	5.6	3.9	3.2	4.9	5.5
	Mexico	Males	1.7	2.2	a	2.6	a	a	2.7	3.1	2.1
		Females	1.5	2.4	a	2.9	a	a	3.7	3.0	2.2
	Netherlands	Males	9.1	5.8	x(4)	5.2	3.8	4.2	2.6	2.5	4.2
		Females	7.2	4.4	x(4)	3.5	3.7	2.7	4.6	2.9	3.7
	New Zealand	Males	x(2)	3.7	a	x(5)	1.9	2.5	1.1	2.5	2.4
		Females	x(2)	4.8	a	x(5)	2.8	3.5	2.2	2.8	3.2
	Norway	Males	c	3.9	a	4.1	4.5	3.3	1.7	2.8	3.7
		Females	c	2.9	a	3.4	3.6	2.5	3.5	2.1	2.9

Note: c too small sample to provide reliable estimates. Due to incomplete data, some averages have not been calculated.
Source: OECD. See Annex 3 for a description of ISCED-97 levels, ISCED-97 country mappings and national data sources *(www.oecd.org/edu/eag2006)*.
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

Table A8.2a. *(continued)*

Unemployment rates and educational attainment, by gender (2004)

Number of 25-to-64-year-olds in unemployment as a percentage of the labour force aged 25 to 64, by level of education attained and gender

			Pre-primary and primary education	Lower secondary education	Upper secondary education: ISCED 3C Short	Upper secondary education: ISCED 3C Long/3B	Upper secondary education: ISCED 3A	Post-secondary non-tertiary education	Tertiary education: Type B	Tertiary education: Type A and advanced research programmes	All levels of education
			(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
OECD countries	**Poland**	Males	x(2)	27.3	18.9	a	11.7	14.5	x(8)	5.9	15.7
		Females	x(2)	28.3	24.1	a	16.6	14.4	x(8)	6.5	17.4
	Portugal	Males	5.5	5.6	x(5)	x(5)	4.5	3.9	x(8)	4.5	5.3
		Females	7.2	8.4	x(5)	x(5)	7.0	3.5	x(8)	4.4	6.8
	Slovak Republic	Males	88.5	48.4	x(4)	17.4	8.0	a	3.0	5.0	14.7
		Females	c	44.4	x(4)	21.3	12.8	a	8.0	4.3	17.4
	Spain	Males	8.7	7.3	c	6.5	6.0	c	4.9	5.3	6.8
		Females	17.2	16.4	c	16.4	12.0	c	12.3	8.8	13.4
	Sweden	Males	7.6	5.5	a	x(5)	6.0	x(5)	5.6	4.3	5.7
		Females	7.8	6.3	a	x(5)	5.6	x(5)	3.9	3.6	5.0
	Switzerland	Males	c	6.3	c	3.3	7.1	c	1.8	1.9	2.2
		Females	c	7.5	c	3.9	4.8	c	c	3.0	4.4
	Turkey	Males	8.9	9.0	a	8.5	8.9	x(8)	x(8)	7.2	8.7
		Females	4.6	14.4	a	17.0	16.8	x(8)	x(8)	10.3	8.0
	United Kingdom	Males	x(2)	7.9	4.2	3.6	2.8	a	2.9	2.5	3.8
		Females	x(2)	5.1	3.9	3.4	3.0	a	1.7	2.0	3.3
	United States	Males	8.1	10.3	x(5)	x(5)	6.2	x(5)	5.2	3.0	5.4
		Females	13.1	11.8	x(5)	x(5)	5.0	x(5)	3.6	2.9	4.7
	OECD average	***Males***		***10.1***			***5.7***		***3.7***	***3.5***	***5.7***
		Females		***11.0***			***7.2***		***4.5***	***4.3***	***6.8***
	EU19 average	***Males***		***12.3***			***5.6***		***3.9***	***3.7***	***6.6***
		Females		***13.4***			***7.8***		***5.2***	***4.7***	***8.3***
Partner countries	**Chile**	Males	5.8	6.9	x(5)	x(5)	6.8	a	12.6	6.0	6.6
		Females	6.1	8.9	x(5)	x(5)	9.2	a	10.7	7.1	8.4
	Israel	Males	x(2)	13.1	x(5)	x(5)	9.0	a	6.7	5.3	8.3
		Females	x(2)	19.7	x(5)	x(5)	12.6	a	7.7	5.8	9.7

Note: c too small sample to provide reliable estimates. Due to incomplete data, some averages have not been calculated.
Source: OECD. See Annex 3 for a description of ISCED-97 levels, ISCED-97 country mappings and national data sources *(www.oecd.org/edu/eag2006)*.
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

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Table A8.3a.
Trends in employment rates, by educational attainment (1991-2004)
Number of 25-to-64-year-olds in employment as a percentage of the population aged 25 to 64, by level of educational attainment

			1991	1995	1998	2000	2001	2002	2003	2004
OECD countries	**Australia**	Below upper secondary	54	60	59	61	60	60	61	61
		Upper secondary and post-secondary non-tertiary	71	76	76	77	78	78	79	79
		Tertiary education	81	83	84	83	83	84	83	83
	Austria	Below upper secondary	52	56	53	54	54	55	55	52
		Upper secondary and post-secondary non-tertiary	73	77	75	75	75	75	75	74
		Tertiary education	88	88	86	87	87	86	85	83
	Belgium	Below upper secondary	49	47	47	51	49	49	49	49
		Upper secondary and post-secondary non-tertiary	75	72	72	75	74	74	73	73
		Tertiary education	85	84	84	85	85	84	84	84
	Canada	Below upper secondary	55	53	54	55	55	55	57	57
		Upper secondary and post-secondary non-tertiary	75	74	74	76	76	76	76	77
		Tertiary education	82	81	82	83	82	82	82	82
	Czech Republic	Below upper secondary	m	56	50	47	47	45	44	42
		Upper secondary and post-secondary non-tertiary	m	82	78	76	76	76	75	75
		Tertiary education	m	92	89	87	88	87	87	86
	Denmark	Below upper secondary	62	62	61	63	62	61	61	62
		Upper secondary and post-secondary non-tertiary	81	77	79	81	81	82	80	80
		Tertiary education	89	89	87	88	87	87	85	87
	Finland	Below upper secondary	64	54	56	57	58	58	58	57
		Upper secondary and post-secondary non-tertiary	78	70	103	75	76	74	73	74
		Tertiary education	88	81	83	84	85	85	85	85
	France	Below upper secondary	58	57	56	57	58	58	59	58
		Upper secondary and post-secondary non-tertiary	78	76	75	76	77	77	76	75
		Tertiary education	85	82	82	83	84	83	82	82
	Germany	Below upper secondary	51	49	48	51	52	51	50	49
		Upper secondary and post-secondary non-tertiary	74	71	69	70	71	70	70	70
		Tertiary education	86	84	83	83	83	84	83	83
	Greece	Below upper secondary	m	56	56	56	56	56	58	57
		Upper secondary and post-secondary non-tertiary	m	62	65	65	65	66	67	69
		Tertiary education	m	79	80	81	80	81	82	82
	Hungary	Below upper secondary	m	m	36	36	37	37	37	37
		Upper secondary and post-secondary non-tertiary	m	m	71	72	72	72	71	71
		Tertiary education	m	m	81	101	101	82	82	83
	Iceland	Below upper secondary	m	m	85	87	87	86	m	81
		Upper secondary and post-secondary non-tertiary	m	m	89	89	90	89	m	88
		Tertiary education	m	m	100	95	95	95	m	93
	Ireland	Below upper secondary	46	49	53	56	57	57	57	57
		Upper secondary and post-secondary non-tertiary	63	67	72	77	77	77	76	76
		Tertiary education	81	83	85	88	87	87	86	86
	Italy	Below upper secondary	54	49	47	48	49	50	m	52
		Upper secondary and post-secondary non-tertiary	74	70	70	71	72	72	m	74
		Tertiary education	87	81	81	81	82	82	m	82
	Japan	Below upper secondary	m	m	69	67	68	67	67	m
		Upper secondary and post-secondary non-tertiary	m	m	76	74	74	74	74	m
		Tertiary education	m	m	79	79	80	79	79	m
	Korea	Below upper secondary	70	71	66	68	68	68	67	66
		Upper secondary and post-secondary non-tertiary	71	71	66	69	69	71	70	70
		Tertiary education	80	80	76	75	76	76	76	77
	Luxembourg	Below upper secondary	m	m	m	58	58	59	61	59
		Upper secondary and post-secondary non-tertiary	m	m	m	73	74	74	72	69
		Tertiary education	m	m	m	84	86	85	83	83

Table A8.3a. *(continued)*

Trends in employment rates, by educational attainment (1991-2004)

Number of 25-to-64-year-olds in employment as a percentage of the population aged 25 to 64, by level of educational attainment

			1991	1995	1998	2000	2001	2002	2003	2004
OECD countries	**Mexico**	Below upper secondary	m	60	64	63	63	64	63	65
		Upper secondary and post-secondary non-tertiary	m	63	64	66	64	63	63	64
		Tertiary education	m	82	84	83	81	82	82	82
	Netherlands	Below upper secondary	50	52	55	58	59	59	m	59
		Upper secondary and post-secondary non-tertiary	73	74	77	79	80	80	m	78
		Tertiary education	85	83	85	86	86	87	m	86
	New Zealand	Below upper secondary	57	59	59	61	62	64	64	65
		Upper secondary and post-secondary non-tertiary	73	80	79	80	81	81	82	82
		Tertiary education	80	82	80	81	82	82	81	84
	Norway	Below upper secondary	62	61	67	63	61	61	62	62
		Upper secondary and post-secondary non-tertiary	80	81	84	83	83	82	80	79
		Tertiary education	90	89	90	90	90	90	89	89
	Poland	Below upper secondary	m	50	49	43	42	39	38	38
		Upper secondary and post-secondary non-tertiary	m	70	71	67	65	63	62	61
		Tertiary education	m	85	87	85	84	83	83	82
	Portugal	Below upper secondary	62	67	72	73	73	73	72	72
		Upper secondary and post-secondary non-tertiary	84	77	80	83	83	82	82	80
		Tertiary education	92	89	89	91	91	89	87	88
	Slovak Republic	Below upper secondary	m	39	37	31	31	28	29	22
		Upper secondary and post-secondary non-tertiary	m	75	75	71	70	71	71	70
		Tertiary education	m	88	89	86	87	87	87	84
	Spain	Below upper secondary	50	46	49	54	55	56	57	58
		Upper secondary and post-secondary non-tertiary	72	65	67	72	72	72	72	73
		Tertiary education	79	75	76	80	81	81	82	82
	Sweden	Below upper secondary	83	78	66	68	69	68	68	67
		Upper secondary and post-secondary non-tertiary	91	84	79	82	82	82	81	81
		Tertiary education	94	89	85	87	87	87	86	85
	Switzerland	Below upper secondary	78	67	69	66	69	68	66	66
		Upper secondary and post-secondary non-tertiary	80	80	81	82	81	81	80	80
		Tertiary education	92	90	90	91	91	91	90	90
	Turkey	Below upper secondary	60	64	57	53	52	51	49	50
		Upper secondary and post-secondary non-tertiary	67	63	66	64	62	62	61	62
		Tertiary education	87	74	81	79	78	76	75	75
	United Kingdom	Below upper secondary	61	55	53	54	54	53	54	53
		Upper secondary and post-secondary non-tertiary	79	77	79	79	80	79	80	79
		Tertiary education	86	86	87	88	88	88	88	89
	United States	Below upper secondary	52	54	58	58	58	57	58	57
		Upper secondary and post-secondary non-tertiary	74	75	76	77	76	74	73	73
		Tertiary education	85	86	85	85	84	83	82	82
	OECD average	***Below upper secondary***		***57***	***57***	***57***	***57***	***57***	***56***	***56***
		Upper secondary and post-secondary non-tertiary		***73***	***75***	***75***	***75***	***75***	***74***	***74***
		Tertiary education		***84***	***85***	***85***	***85***	***84***	***84***	***84***
	EU-19 average	***Below upper secondary***		***51***	***50***	***51***	***51***	***51***	***50***	***50***
		Upper secondary and post-secondary non-tertiary		***69***	***71***	***71***	***71***	***71***	***70***	***70***
		Tertiary education		***80***	***80***	***82***	***82***	***81***	***80***	***80***
Partner country	**Israel**	Below upper secondary	m	m	m	m	m	44	43	40
		Upper secondary and post-secondary non-tertiary	m	m	m	m	m	67	66	66
		Tertiary education	m	m	m	m	m	79	79	79

Note: Due to incomplete data, some averages have not been calculated. Break in Austrian time series is due to a change in survey methodology from 2003 to 2004.

Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006).*

Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

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Table A8.4a.

Trends in unemployment rates, by educational attainment (1991-2004)

Number of 25-to-64-year-olds in unemployment as a percentage of the labour force aged 25 to 64, by level of educational attainment

OECD countries			1991	1995	1998	2000	2001	2002	2003	2004
	Australia	Below upper secondary	9.2	8.7	9.0	7.5	7.6	7.5	7.0	6.2
		Upper secondary and post-secondary non-tertiary	6.8	6.2	5.8	4.5	4.7	4.3	4.3	3.9
		Tertiary education	3.9	4.0	3.3	3.6	3.1	3.3	3.0	2.8
	Austria	Below upper secondary	4.8	5.7	6.9	6.3	6.4	6.9	7.9	7.8
		Upper secondary and post-secondary non-tertiary	3.1	2.9	3.6	3.0	3.0	3.4	3.4	3.8
		Tertiary education	1.5	2.0	2.0	1.6	1.5	1.9	2.0	2.9
	Belgium	Below upper secondary	11.8	13.4	13.1	9.8	8.5	10.3	10.7	11.7
		Upper secondary and post-secondary non-tertiary	4.2	7.5	7.4	5.3	5.5	6.0	6.7	6.9
		Tertiary education	2.0	3.6	3.2	2.7	2.7	3.5	3.5	3.9
	Canada	Below upper secondary	13.8	13.1	11.8	10.1	10.5	11.0	10.9	9.9
		Upper secondary and post-secondary non-tertiary	8.7	8.3	c	5.9	6.2	6.7	6.5	6.1
		Tertiary education	6.3	6.2	4.7	4.1	4.7	5.1	5.2	4.7
	Czech Republic	Below upper secondary	m	7.7	14.5	19.3	19.2	18.8	19.8	23.0
		Upper secondary and post-secondary non-tertiary	m	2.1	4.6	6.7	6.2	5.6	6.1	6.4
		Tertiary education	m	0.7	1.9	2.5	2.0	1.8	2.0	2.0
	Denmark	Below upper secondary	14.2	14.6	7.0	6.3	(5)	6.2	7.2	7.8
		Upper secondary and post-secondary non-tertiary	9.1	9.9	4.6	3.9	3.3	3.4	4.4	4.8
		Tertiary education	4.9	4.6	3.3	2.6	3.2	3.5	4.7	3.9
	Finland	Below upper secondary	8.6	21.6	13.8	12.1	11.4	12.2	11.1	12.0
		Upper secondary and post-secondary non-tertiary	7.3	16.7	10.6	8.9	8.5	8.8	9.2	8.2
		Tertiary education	3.4	9.1	5.8	4.7	4.4	4.5	4.3	4.7
	France	Below upper secondary	10.6	13.7	14.9	13.9	11.9	c	12.1	12.1
		Upper secondary and post-secondary non-tertiary	6.6	9.0	9.6	7.9	6.9	6.8	7.5	7.5
		Tertiary education	3.7	6.5	6.6	5.1	4.8	5.2	6.1	6.1
	Germany	Below upper secondary	7.4	13.3	15.4	13.9	13.5	15.3	18.0	20.5
		Upper secondary and post-secondary non-tertiary	4.7	7.9	10.3	8.1	8.2	9.0	10.2	11.2
		Tertiary education	3.2	4.9	5.5	4.2	4.2	4.5	5.2	5.5
	Greece	Below upper secondary	m	6.3	7.3	7.7	7.4	7.2	6.6	8.4
		Upper secondary and post-secondary non-tertiary	m	9.0	10.4	10.9	9.9	9.7	9.1	9.7
		Tertiary education	m	8.1	6.2	7.2	6.7	6.4	5.6	6.9
	Hungary	Below upper secondary	m	m	11.4	9.9	10.0	10.5	10.6	10.8
		Upper secondary and post-secondary non-tertiary	m	m	6.2	5.3	4.6	4.4	4.8	5.0
		Tertiary education	m	m	1.7	1.3	1.2	1.5	1.4	1.9
	Iceland	Below upper secondary	m	m	3.4	2.5	2.4	3.0	m	3.1
		Upper secondary and post-secondary non-tertiary	m	m	c	c	c	2.6	m	2.8
		Tertiary education	m	m	c	c	c	c	m	1.0
	Ireland	Below upper secondary	20.3	16.4	11.6	7.0	5.6	5.9	6.3	6.4
		Upper secondary and post-secondary non-tertiary	7.3	7.6	4.5	2.5	2.4	2.8	2.9	3.2
		Tertiary education	4.1	4.2	3.0	1.6	1.4	1.8	2.6	2.1
	Italy	Below upper secondary	5.7	9.1	10.8	10.0	9.1	9.0	m	7.8
		Upper secondary and post-secondary non-tertiary	7.2	7.9	8.2	7.4	6.8	6.4	m	5.3
		Tertiary education	5.0	7.3	6.9	5.9	5.3	5.3	m	4.8
	Japan	Below upper secondary	m	m	4.3	6.0	5.9	6.6	6.7	m
		Upper secondary and post-secondary non-tertiary	m	m	3.3	4.7	4.8	5.3	5.4	m
		Tertiary education	m	m	2.6	3.5	3.1	3.8	3.7	m
	Korea	Below upper secondary	0.9	1.0	6.0	3.7	3.1	2.2	2.2	2.6
		Upper secondary and post-secondary non-tertiary	1.9	1.6	6.8	4.1	3.6	3.0	3.3	3.5
		Tertiary education	2.7	2.0	4.9	3.6	3.5	3.2	3.1	2.9
	Luxembourg	Below upper secondary	m	m	m	3.1	c	3.8	3.3	5.0
		Upper secondary and post-secondary non-tertiary	m	m	m	c	c	c	2.6	3.8
		Tertiary education	m	m	m	c	c	c	c	3.0

Table A8.4a. *(continued)*

Trends in unemployment rates, by educational attainment (1991-2004)

Number of 25-to-64-year-olds in unemployment as a percentage of the labour force aged 25 to 64, by level of educational attainment

			1991	1995	1998	2000	2001	2002	2003	2004
OECD countries	**Mexico**	Below upper secondary	m	4.2	1.9	1.3	1.4	1.5	1.6	1.9
		Upper secondary and post-secondary non-tertiary	m	5.2	2.6	1.6	1.7	1.8	1.9	2.8
		Tertiary education	m	4.7	2.5	2.0	2.2	2.5	2.6	3.0
	Netherlands	Below upper secondary	8.6	7.9	0.9	3.9	2.9	3.8	m	5.7
		Upper secondary and post-secondary non-tertiary	4.6	4.8	1.7	2.3	1.6	2.2	m	3.9
		Tertiary education	1.5	4.1	c	1.9	1.2	2.1	m	2.8
	New Zealand	Below upper secondary	12.5	8.2	10.5	7.8	6.7	5.6	4.9	4.2
		Upper secondary and post-secondary non-tertiary	7.3	3.3	4.7	3.5	3.2	3.3	2.9	2.4
		Tertiary education	4.8	3.2	4.5	3.6	3.2	3.4	3.5	2.4
	Norway	Below upper secondary	6.7	6.5	2.9	2.2	3.4	3.4	3.9	3.6
		Upper secondary and post-secondary non-tertiary	4.4	4.0	2.4	2.6	2.7	2.9	3.6	3.8
		Tertiary education	2.0	2.4	1.5	1.9	1.7	2.1	2.5	2.4
	Poland	Below upper secondary	m	13.9	13.9	20.6	22.6	25.2	25.9	27.8
		Upper secondary and post-secondary non-tertiary	m	11.1	9.1	13.9	15.9	17.8	17.8	17.4
		Tertiary education	m	2.8	2.5	4.3	5.0	6.3	6.6	6.2
	Portugal	Below upper secondary	5.3	6.2	4.4	3.6	3.6	4.4	5.7	6.4
		Upper secondary and post-secondary non-tertiary	4.5	6.4	5.1	3.5	3.3	4.3	5.1	5.6
		Tertiary education	c	3.2	c	c	c	3.9	4.9	4.4
	Slovak Republic	Below upper secondary	m	24.0	24.3	36.3	38.7	42.3	44.9	47.7
		Upper secondary and post-secondary non-tertiary	m	9.6	8.8	14.3	14.8	14.2	13.5	14.6
		Tertiary education	m	2.7	3.3	4.6	4.2	3.6	3.7	4.8
	Spain	Below upper secondary	13.7	20.6	17.1	13.7	10.2	11.2	11.2	11.0
		Upper secondary and post-secondary non-tertiary	12.2	18.5	15.3	11.0	8.4	9.5	9.5	9.5
		Tertiary education	9.3	14.5	13.1	9.5	6.9	7.7	7.7	7.3
	Sweden	Below upper secondary	2.6	10.1	10.4	8.0	5.9	5.8	6.1	6.5
		Upper secondary and post-secondary non-tertiary	2.3	8.7	7.8	5.3	4.6	4.6	5.2	5.8
		Tertiary education	1.1	4.5	4.4	3.0	2.6	3.0	3.9	4.3
	Switzerland	Below upper secondary	1.2	5.8	5.6	5.0	3.7	4.6	6.1	7.2
		Upper secondary and post-secondary non-tertiary	1.5	2.8	2.8	2.0	2.1	2.4	3.3	3.7
		Tertiary education	1.3	c	2.8	c	1.3	2.2	2.9	2.8
	Turkey	Below upper secondary	5.7	4.8	4.4	4.6	6.7	8.5	8.8	8.1
		Upper secondary and post-secondary non-tertiary	7.2	6.9	6.6	5.5	7.4	8.7	7.8	10.1
		Tertiary education	3.1	3.3	4.8	3.9	4.7	7.5	6.9	8.2
	United Kingdom	Below upper secondary	10.4	12.8	10.5	8.9	7.6	8.5	6.9	6.6
		Upper secondary and post-secondary non-tertiary	6.5	7.5	5.0	4.6	3.9	4.1	3.9	3.7
		Tertiary education	3.3	3.7	2.6	2.1	2.0	2.4	2.4	2.2
	United States	Below upper secondary	12.3	10.0	8.5	7.9	8.1	10.2	9.9	10.5
		Upper secondary and post-secondary non-tertiary	6.5	5.0	4.5	3.6	3.8	5.7	6.1	5.6
		Tertiary education	2.9	2.7	2.1	1.8	2.1	3.0	3.4	3.3
	OECD average	***Below upper secondary***		***10.8***	***9.5***	***9.1***	***8.9***	***9.4***	***10.2***	***10.4***
		Upper secondary and post-secondary non-tertiary		***7.3***	***6.4***	***5.8***	***5.6***	***5.9***	***6.2***	***6.2***
		Tertiary education		***4.6***	***4.1***	***3.6***	***3.3***	***3.8***	***4.0***	***3.9***
	EU19 average	***Below upper secondary***		***12.8***	***11.6***	***11.3***	***11.1***	***11.5***	***12.6***	***12.9***
		Upper secondary and post-secondary non-tertiary		***8.7***	***7.4***	***6.9***	***6.5***	***6.8***	***7.2***	***7.2***
		Tertiary education		***5.1***	***4.5***	***3.8***	***3.5***	***3.8***	***4.2***	***4.2***
Partner country	**Israel**	Below upper secondary	m	m	m	m	m	14	15	16
		Upper secondary and post-secondary non-tertiary	m	m	m	m	m	10	10	11
		Tertiary education	m	m	m	m	m	6	6	6

Note: c too small sample to provide reliable estimates. Due to incomplete data, some averages have not been calculated.
Break in Austrian time series is due to a change in survey methodology from 2003 to 2004.
Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006).*
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

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INDICATOR A9

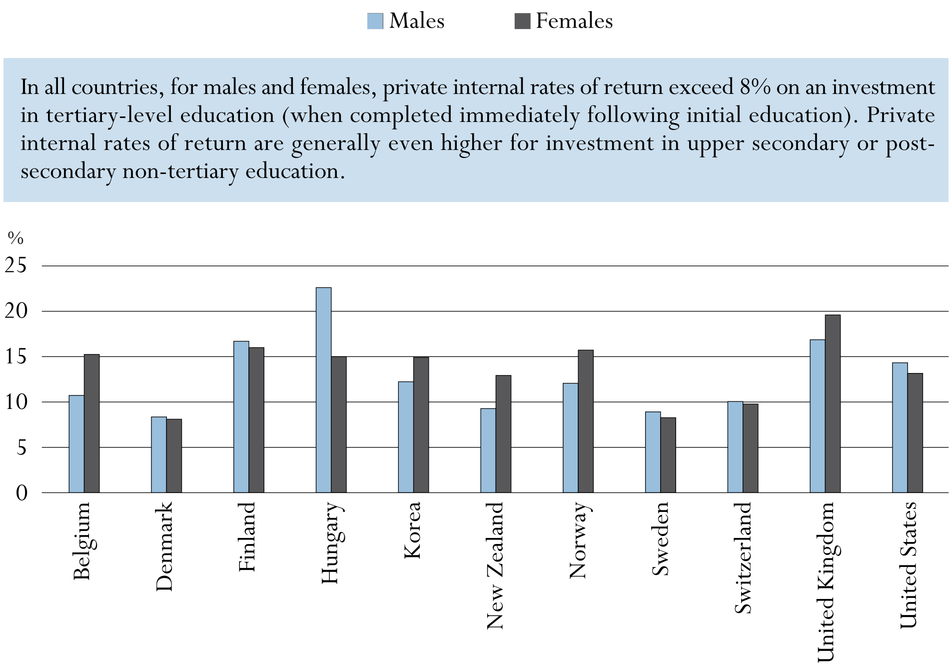
THE RETURNS TO EDUCATION: EDUCATION AND EARNINGS

This indicator examines the relative earnings of workers with different levels of educational attainment as well as the financial returns to investment at these levels. Rates of return are calculated for investments undertaken as a part of initial education, as well as for the case of a hypothetical 40-year-old who decides to return to education in mid-career. This indicator also presents data that describe the distribution of pre-tax earnings within five (ISCED) levels of educational attainment to help show how returns to education vary within countries among individuals with comparable levels of educational attainment.

Key results

Chart A9.1. Private internal rates of return (RoR) for an individual obtaining a university-level degree (ISCED 5/6) from an upper secondary and post-secondary non-tertiary level of education (ISCED 3/4) (2003)

In all countries, for males and females, private internal rates of return exceed 8% on an investment in tertiary-level education (when completed immediately following initial education). Private internal rates of return are generally even higher for investment in upper secondary or post-secondary non-tertiary education.



Source: OECD. Table A9.6. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/815010258467

Other highlights of this indicator

- Attaining higher levels of education can be viewed as an economic investment in which there are costs paid by the individual (including reductions in earnings while receiving education) that typically result in higher earnings over the individual's lifetime. In this context, the investment to obtain a university level degree, when undertaken as part of initial education, can produce private annual returns as high as 22.6%, with all countries showing a rate of return above 8%.
- Countries differ significantly in the dispersion of earnings among individuals with similar levels of educational attainment. Although individuals with higher levels of education are more likely to be in the highest earnings group, this is not always the case.
- Countries differ in the relative share of men and women in the upper and lower categories of earnings.
- Females earn less than males with similar levels of educational attainment in all countries (Table A9.3). For a given level of educational attainment, they typically earn between 50 and 80% of what males earn.

Policy context

One way in which markets provide incentives for individuals to develop and maintain appropriate skills is through wage differentials – in particular through the enhanced earnings accorded to persons with higher levels of education. At the same time, education involves costs that must be balanced against these higher earnings. This indicator examines relative earnings associated with different levels of education, the variation in these earnings, and the estimated rates of return to individuals making investments to obtain higher levels of education.

The dispersion of earnings is also relevant for policies that support attainment of higher levels of education. Evidence suggests that some individuals may be receiving relatively low returns to investments in education, that is, they earn relatively low wages even though they have relatively high levels of educational attainment. Policy makers may wish to examine characteristics of the education programmes which appear to have low rates of return for some people, or examine the characteristics of the individuals in these programmes, such as their gender or occupation.

Evidence and explanations

Education and earnings

Earnings differentials according to educational attainment

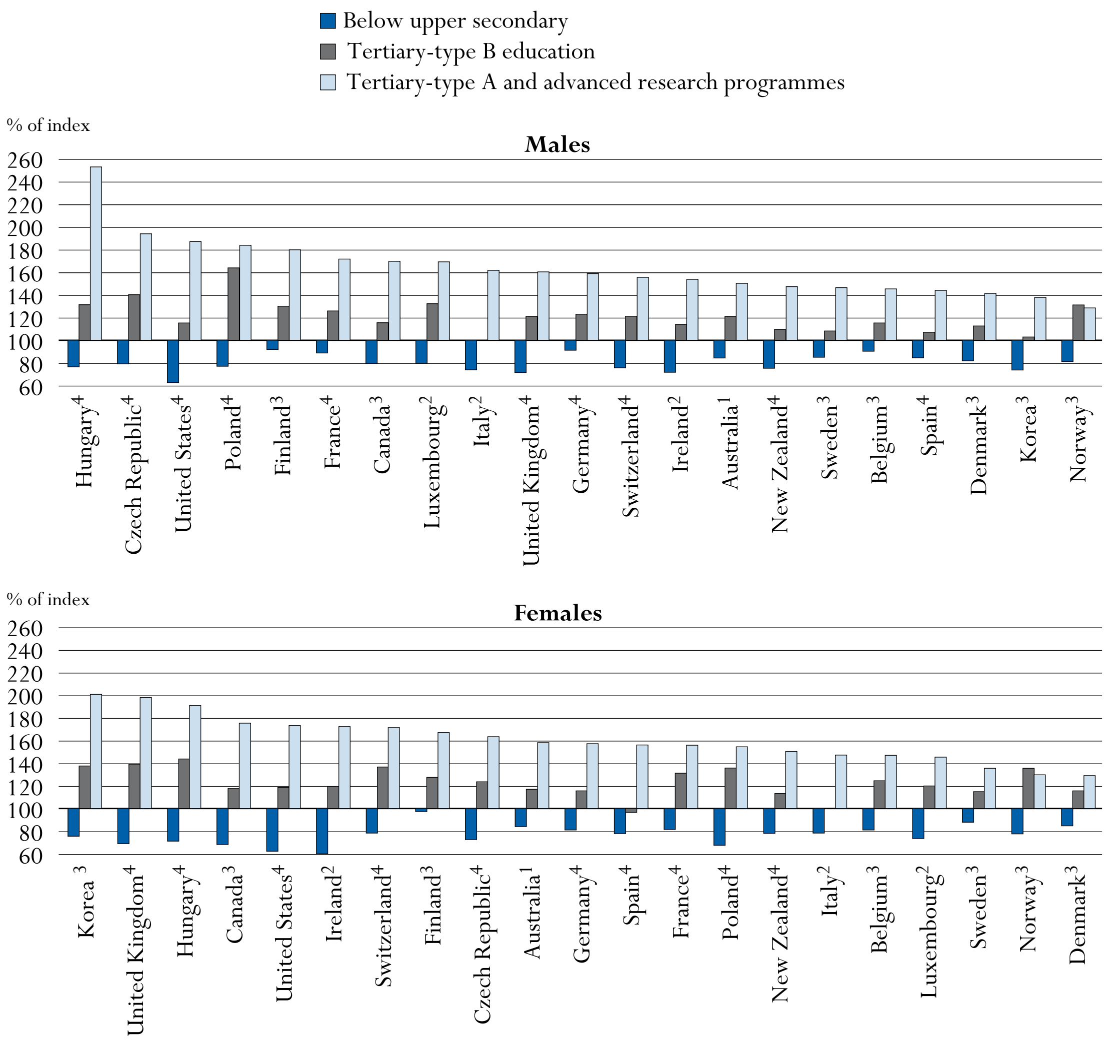
A key measure of the financial incentive available for an individual to invest in further education, earnings differentials may also reflect differences in the supply of educational programmes at different levels (or barriers to access to those programmes). The earnings benefit of completing tertiary education can be seen by comparing the average annual earnings of those who graduate from tertiary education with the average annual earnings of upper secondary or post-secondary non-tertiary graduates. The earnings disadvantage from not completing upper secondary education is apparent from a similar comparison of average earnings. Variations in relative earnings (before taxes) among countries reflect a number of factors, including the demand for skills in the labour market, minimum wage legislation, the strength of unions, the coverage of collective bargaining agreements, the supply of workers at the various levels of educational attainment, the range of work experience of workers with high and low levels of educational attainment, the distribution of employment among occupations and the relative incidence of part-time and seasonal work.

Chart A9.2 shows a strong positive relationship between educational attainment and average pre-tax earnings. In all countries, graduates of tertiary-level education earn substantially more than upper secondary and post-secondary non-tertiary graduates. Earnings differentials between those who have tertiary education – especially those with a tertiary-type A level of attainment – and those who have upper secondary education are generally more pronounced than the differentials between upper secondary and lower secondary or below, suggesting that in many countries upper secondary (and with a small number of exceptions, post-secondary non-tertiary) education forms a break-point beyond which additional education attracts a particularly high premium. Table A9.1a shows that, among those countries which report gross earnings, the earnings premium for 25-to-64-year-olds with tertiary-level education, relative to upper secondary education, ranges from 26% in Norway (2003) to 117% in Hungary (2004).

The earnings data shown in this indicator differ across countries in a number of ways. The results should therefore be interpreted with caution. In particular, in countries reporting annual earnings, differences in the incidence of seasonal work among individuals with different levels of educational attainment will have an effect on relative earnings that is not reflected in the data for countries reporting weekly or monthly earnings (see the Definitions and methodologies section below).

Chart A9.2. Relative earnings from employment (2004 or latest available year)

By level of educational attainment and gender for 25-to-64-years-olds
(upper secondary and post-secondary non-tertiary education = 100)



1. Year of reference 2001.
2. Year of reference 2002.
3. Year of reference 2003.
4. Year of reference 2004.

Countries are ranked in descending order of the relative earnings of the population with a tertiary-type A level of educational attainment.

Source: OECD. Table A9.1a. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/815010258467

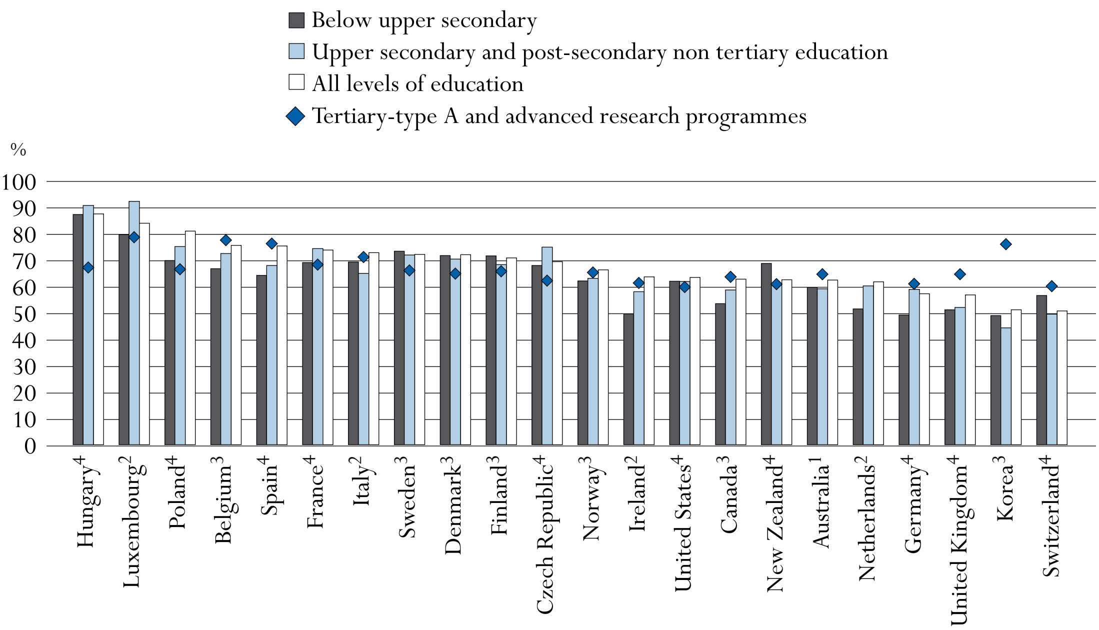
Education and gender disparity in earnings

For 25-to-64-year-olds, financial rewards from tertiary education benefit females more than males in Australia, Canada, Ireland, Korea, the Netherlands, Norway, Spain, Switzerland and the United Kingdom. The reverse is true in the remaining countries, with the exception of Belgium where, relative to upper secondary education, the earnings of males and females are equally enhanced by tertiary education (Table A9.1a).

Although both males and females with upper secondary, post-secondary non-tertiary or tertiary attainment have substantial earnings advantages (compared with those of the same gender who do not complete upper secondary education), earnings differentials between males and females with the same educational attainment remain substantial. In all countries, and at all levels of educational attainment, females in the 30-to-44 age group earn less than their male counterparts (Chart A9.3 and Table A9.1b). The relative differential between men and women must be treated with caution, however, since in most countries earnings data include part-time work. Part-time work is often a major characteristic of women's employment although its prevalence is likely to vary a lot from one country to another.

Chart A9.3. Differences in earnings between females and males (2004 or latest available year)

Average female earnings as a percentage of male earnings (30-to-44 age group), by level of educational attainment



1. Year of reference 2001.
2. Year of reference 2002.
3. Year of reference 2003.
4. Year of reference 2004.

Countries are ranked in descending order of the relative earnings of the population at all levels of education taken together.
Source: OECD. Table A9.1b. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/815010258467

When all levels of education are taken together (*i.e.* total earnings are divided by the total number of income earners, by gender), average earnings of females between the ages of 30 and 44 range from 51% of those of males, in Korea and Switzerland, to over 74% in Belgium (Chart A9.3 and Table A9.1b). In Hungary, Luxembourg and Poland, where part-time work and part-year earnings are excluded, the earnings of females between the ages of 30 and 44 range from 81% to over 87% of those of males.

The gap in earnings between males and females is explained in part by different choices of career and occupation, differences in the amount of time that males and females spend in the labour force, and the relatively high incidence of part-time work among females.

The distribution of earnings within levels of educational attainment

Tables A9.4a, A9.4b and A9.4c show the distributions of earnings among 25-to-64-year-olds with data for 21 countries. Distributions are given for the combined male and female populations, as well as for males and females separately. There are five categories of the earnings distribution, ranging from “At or below half of the median” to “More than twice the median”. For example, in Table A9.4a, for Australia, the figure of 24.5% is found in the row “Below upper secondary” under the column “At or below half of the median”. This means that 24.5% of Australians who are between the ages of 25 and 64 and whose highest educational attainment is below the upper secondary level have pre-tax earnings at or below half of the median earnings of all Australian 25-to-64-year-olds who had earnings from work during the reference period of the national survey. Tables A9.4b and A9.4c also present earnings distributions among males and females relative to the median of the entire adult population with earnings from work.

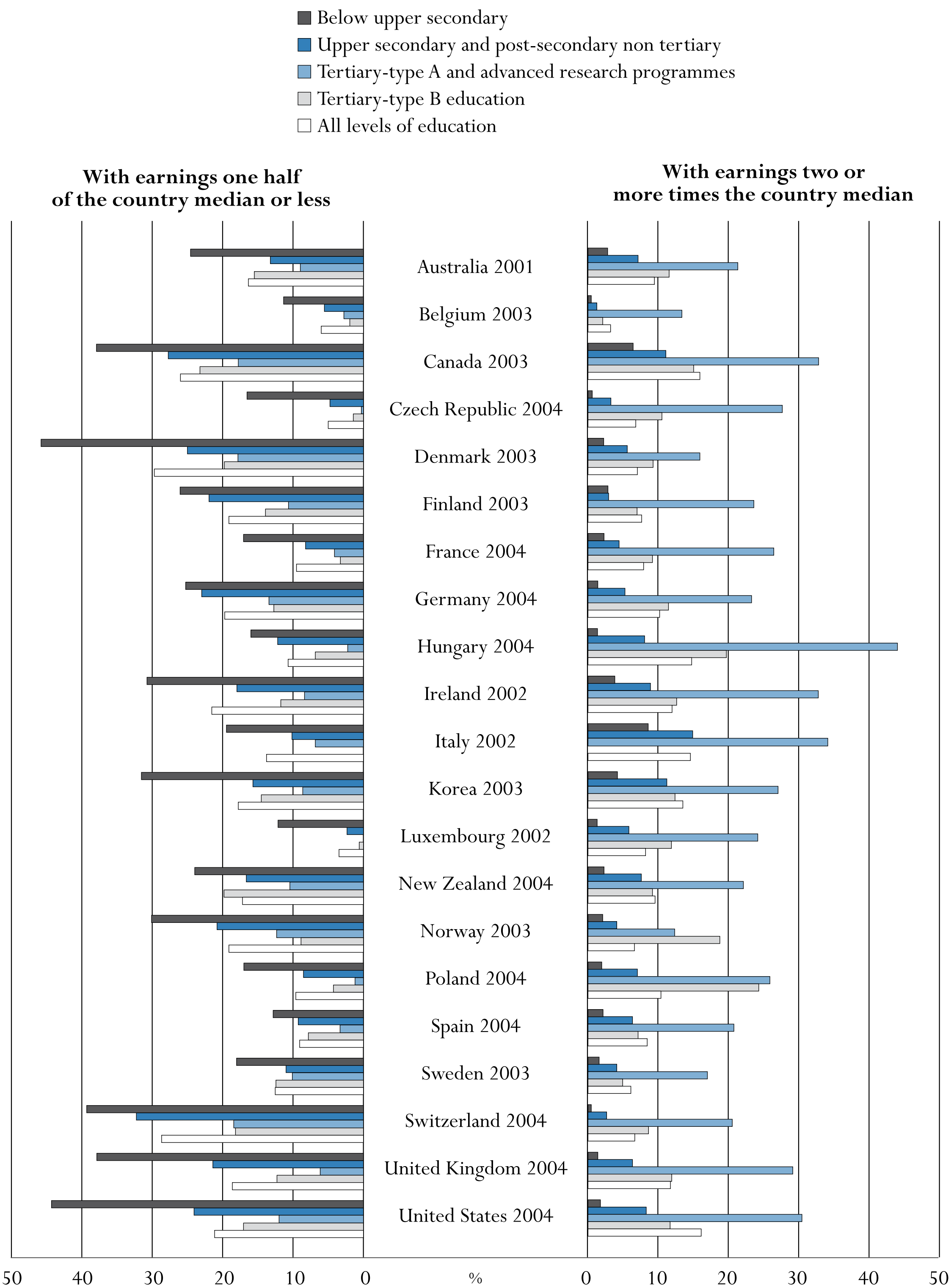
Data on the distribution of earnings among individuals of similar educational attainment provide information beyond that obtained by looking only at average earnings, which can be affected by having small numbers of individuals with very low or high earnings.

The data show that in most countries the share of individuals in the lowest earnings categories falls as the level of educational attainment rises. This result is another way of viewing the well-established positive relationship between earnings and educational attainment. However, it is notable that even at higher levels of education there are individuals in the lower earnings categories, indicating that they have experienced a relatively low rate of return to education.

Still, countries differ significantly in the dispersion of earnings. For instance, Table A9.4a shows that in most countries the majority of the population has earnings above half of the median but less than 1.5 times the median. Yet this percentage ranges from 45% in Canada and 51% in the United States to 79% in the Czech Republic. Across all levels of education, countries such as Belgium, the Czech Republic, France and Luxembourg have relatively few individuals with earnings either at or below half the median. Conversely, while across all countries an average of 21% of individuals between the ages of 25 and 64 has pre-tax earnings above 1.5 times the median, this population share is as low as 15% in Sweden.

Countries also differ significantly in the gender distribution of individuals in the lowest earnings group. For example, taking into account all levels of educational attainment, Hungary is the only country in which the percentage of females in the lowest earnings category is smaller than the percentage of males in the same category. At the opposite end of the spectrum, in Switzerland, 44% of females and 16% of males are found in the lowest earnings category (Table A9.4b and A9.4c).

Chart A9.4. Share of 25-to-64-year-olds in earnings categories by level of educational attainment (2004 or latest available year)



Source: OECD. Table A9.4a. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

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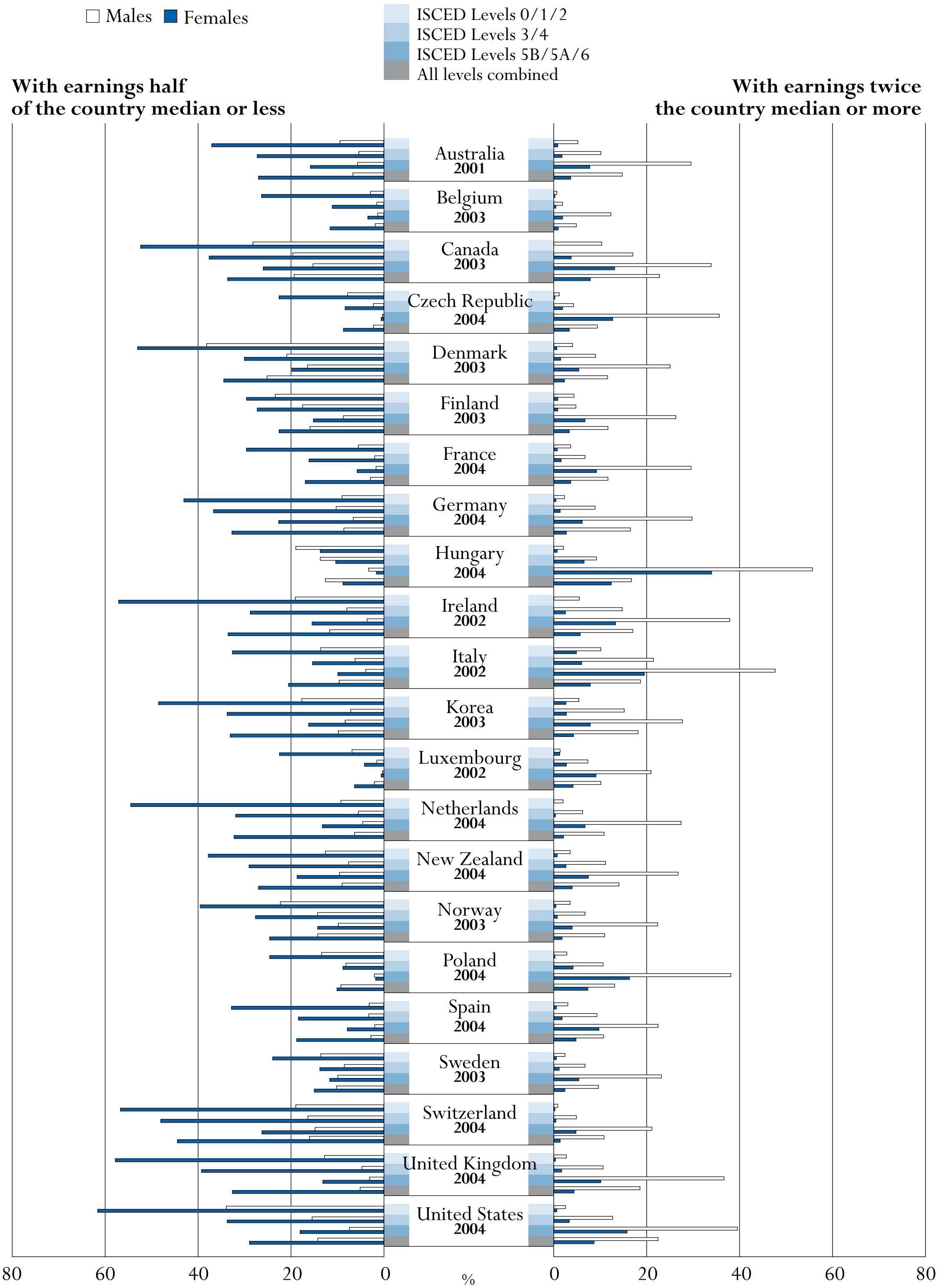
Chart A9.5. Share of 25-to-64-year-olds in earnings categories by level of educational attainment and gender (2004 or latest available year)



Source: OECD. Table A9.4b, Table A9.4c. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/815010258467

The interpretation of earnings dispersion data

A wide range of factors – from differences in institutional arrangements to variation in individual abilities – is likely to determine the extent of earnings dispersion among individuals of similar educational attainment. At an institutional level, countries in which wage setting is more centralised would tend to see lower earnings dispersion, owing to a degree of convergence between occupational status and educational attainment. More broadly, earnings dispersions also reflect the fact that educational attainment cannot be fully equated with proficiency and skills: skills other than those indicated by educational attainment, as well as experience, are rewarded in the labour market. Differences in the scale and operation of training systems for adult learners also influence national patterns of earnings dispersion, as do non-skills-related recruitment considerations – such as gender, race or age discrimination (and, consequently, the relative effectiveness of national legislative frameworks in countering such problems).

However, the data do show that in all countries, earnings dispersion falls as educational attainment rises. This trend has many possible interpretations, including that greater educational attainment could be providing more information on an individual's skills to potential employers, resulting in a closer link between education and wages.

More generally, the data point to gaps in the understanding of earnings determination. Research in the United States has shown that for individuals of the same race and sex, over half of the variance in earnings is not explained by quantifiable factors such as a person's years of schooling, age, duration of labour market experience, or indeed the schooling, occupation and income of their parents. Some research on the determinants of earnings has highlighted the importance that employers give to so-called non-cognitive skills – such as persistence, reliability and self-discipline – as well as raising questions for policy-oriented research on the role of education systems, and particularly early childhood education, in developing and signalling such skills (see the Definitions and methodologies section below).

Rates of return to investment in education

The impact of education on earnings can be evaluated in the framework of investment analysis in which an individual incurs costs of getting an education (direct costs such as tuition while in school, and indirect costs such as reduced earnings while in school). The effectiveness of this investment can be assessed by estimating the economic rate of return to the investment, which measures the degree to which the costs of attaining higher levels of education are translated into higher levels of earnings. The measure of return used here is the internal rate of return. This is the rate that equates the costs required to attain the next highest level of education with the present value of a lifetime stream of additional earnings associated with the higher level of attainment. This indicator is analysed from two different points of view: rates of return to the individual (Tables A9.5 and A9.6), which reflect only the individual's earnings and costs and rates of return to government (Tables A9.7 and A9.8). The return to government includes higher income tax and social contributions collected, as well as costs borne by the government. These private and public returns are calculated for 11 OECD countries.

Internal rates of return are computed for the attainment of two different levels of education: upper secondary education and post-secondary non-tertiary education, following from a lower upper secondary level of attainment (Tables A9.5 and A9.7); and tertiary education, following from an upper secondary and post-secondary non-tertiary level of educational attainment (Tables A9.6 and A9.8). Internal rates of return are computed for two different periods in the individual's lifetime: immediately following initial education, and at the age of 40. In addition, when calculating the internal rate of return at the age of 40, the analysis explores the impact on rates of return – for individuals and government – of the costs of education. All results are presented separately for males and females.

Private internal rates of return to investment in education

The private internal rate of return for the individual is estimated on the basis of the additions to after-tax earnings that result from a higher level of educational attainment, net of the additional private costs (private expenditures and foregone earnings) that attaining this higher level of education requires. In general, the living expenses of students (cost of housing, meals, clothing, recreation, etc.) are excluded from these private expenditures.

Estimates of private rates of return are presented in Tables A9.5 (private rates of return for an individual who has invested in obtaining upper secondary or post-secondary non-tertiary education from an original lower upper secondary level of education) and A9.6 (estimates for an individual who has invested in obtaining a tertiary-level education, up to the attainment of an advanced research qualification starting from an upper secondary level of education).

Private rates of return were calculated for the following two scenarios:

1. The individual has continued directly to the next highest level of education before entering the labour market.
2. Attaining the next highest level of education has been postponed until the age of 40, when education is resumed on a full-time basis. Two cases are examined in this scenario: *i)* the individual bears the direct costs of tuition (as reported by national education authorities) and foregoes earnings (net of taxes) while studying; and *ii)* the individual bears no direct tuition costs, but again bears the cost of foregoing earnings.

The results show that for males, in all countries except Hungary and Switzerland, the rates of return to the attainment of upper secondary or post-secondary non tertiary education exceed those for tertiary education. At the tertiary level, all countries except Denmark, New Zealand, Sweden and Switzerland register private rates of return above 10%, for both males and females (Table A9.6). Private rates of return at the tertiary level are seen to be higher for females than males in five countries: Belgium, Korea, New Zealand, Norway and the United Kingdom.

The results also show that when an individual attains the next higher level of education at age 40, private rates of return to tertiary education are generally higher than those for the achievement of upper secondary education, except in Denmark, New Zealand and the United States. At the tertiary level, the additional incentive created by eliminating tuition costs tends to be weak. At the upper secondary level, eliminating tuition costs results on average in 0.4 of a percentage point increase in the private rate of return for males and a 1.0 percentage point increase for females. At the tertiary level, eliminating tuition costs increases the private rate of return by 0.9 of a percentage point for males and 1.7 percentage points for females. Nevertheless, while in countries such as Denmark, Finland and Norway the impact on private rates of return from eliminating the student's tertiary-level tuition costs is small, the impact is significantly larger in Belgium, Hungary, Korea, the United Kingdom and the United States.

Public internal rates of return to investment in education

The public internal rate of return is one way of examining the effect on public-sector accounts of individuals' choices to invest in education and the effect of the different policy settings that affect these investments. For the public sector, the costs of education include direct expenditures on educational institutions (such as direct payment of teachers' salaries, direct payments for the construction of school buildings, and buying textbooks, etc.) and public private transfers (such as public subsidies to households for scholarships and other grants and to other private entities for the provision of training at the workplace, etc.). The public costs of education also include lost income tax revenues on students' foregone earnings. The benefits include increased revenues from income taxes on higher wages, plus social insurance payments. In practice, the achievement of higher levels of education will give rise to a complex set of fiscal effects on the benefit side, beyond the effects of wage and government payments-based revenue growth. For instance, better educated individuals generally experience superior health status, lowering public expenditure on the provision of health care. And, for some individuals, achieving higher levels of educational attainment may lower the likelihood of committing certain types of crime (see Indicator A10); this in turn reduces public expenditure. However, tax and expenditure data on such indirect effects of education are not readily available for inclusion in these rate-of-return calculations.

Estimates of public rates of return are shown in Tables A9.7 and A9.8. Table A9.7 presents public rates of return for an individual who has invested in obtaining upper secondary or post-secondary non-tertiary education (ISCED level 3/4), from an original lower secondary level of education (ISCED level 0/1/2). Table A9.8 concerns an individual who has invested in obtaining a tertiary-level education, up to the attainment of an advanced research qualification (ISCED level 5(A, B)/6), starting from an upper secondary level of education (ISCED level 3/4).

As with the estimation of private rates of return, the calculation considered two scenarios:

1. Following initial education, the individual has continued directly to the next highest level of education before entering the labour market.

2. Attaining the next highest level of education has been postponed until the age of 40, when education is resumed on a full-time basis. Two cases are examined in this scenario: *i)* the individual bears the direct costs of tuition (as reported by national education authorities) and foregoes earnings (net of taxes) while studying; and *ii)* the individual bears no direct tuition costs, but again bears the cost of foregoing earnings.

The results show that, for the achievement of the tertiary level of attainment during initial education, the public rate of return is in all cases lower than the private rate of return (except for Belgium, Korea and, for males, New Zealand). When the individual goes back to full-time education in mid-career, and bears the direct costs of tuition and foregone earnings, public rates of return for completing tertiary education are lower than private rates of return in all countries (Table A9.8). Nevertheless, these public rates of return are still high – for instance well above the interest rate offered on long-term government bonds – in a number of countries. Particularly low public rates of return are seen in Denmark, New Zealand, Sweden and Switzerland. These low rates are driven by a number of factors including the high costs of providing education and high losses in tax receipts (when the individual in study foregoes earnings) relative to tax revenues (when the individual returns to work).

The results show that, for upper secondary education, the effect of the public sector bearing the individual's tuition costs is to lower the public rate of return by an average of 0.2 percentage points for males and 0.3 percentage points for females (Table A9.7). At the tertiary level, the average effect is to lower the public rate of return by about 0.7 of a percentage point for males and 1 percentage point for females. The magnitude of this decline in the public rate of return in the United States is noteworthy – 2.3 percentage points for males and 2.8 percentage points for females (Table A9.8) – which is partially explained by the high private contributions to the costs of tertiary education in the United States.

The interpretation of internal rates of return

For those who acquire upper secondary or tertiary education, high private internal rates of return in most countries (though not in all) indicate that human capital investment appears to be an attractive way for the average person to build wealth. Furthermore, and with some exceptions, policies that reduce or eliminate the direct costs of education are seen to have only a modest impact on individuals' decisions to invest in mid-career learning.

In many cases, the reported private internal rates of return are above – and in a number of countries significantly above – the risk-free real interest rate, which is typically measured with reference to rates applying on long-term government bonds. However, returns on human capital accumulation are not risk-free, as indicated by the wide distribution of earnings among the better educated. Moreover, not everybody who invests in a course of education actually completes the course. Rates of return will be low, and possibly negative, for individuals who drop out. Therefore, individuals contemplating an investment in education are likely to require a compensating risk premium. However, in a number of countries, the size of the premium of the internal rates of return over the real interest rate is higher than would seem to be warranted by considerations of risk alone. If returns to this form of investment are high, relative to investments of similar risk, there is some obstacle to individuals making the investment. High risk-adjusted private rates of return provide initial grounds for policy intervention to alleviate the relevant constraints.

For one, high rates of return indicate a shortage of better-educated workers, driving up earnings for these workers. Such a situation might be temporary, with high returns to education eventually generating enough supply response to push the rates into line with returns to other productive assets. However, the speed of adjustment would depend largely on the capacity of the education system to respond to the derived increase in demand and the capacity of the labour market to absorb the changing relative supplies of labour. The rebalancing mechanism could be accelerated by making better information about the returns to different courses of study available to students, helping them to make more informed choices.

Part of the high returns may also be compatible with market stability. This will be the case if the marginal rates are significantly lower than the average rates. The marginal rate will be lower than the average rate if students at the margin are of lower ability and motivation than average students, and therefore unlikely to be able to command the average wage premium. According to this interpretation, the high internal rates of return would partly reflect economic rents on a scarce resource, namely ability and motivation. If the returns to education at the margin are lower, the case for public intervention to stimulate human capital accumulation is lessened if the quality of the marginal student cannot be improved. However, to the extent that the education system can improve both cognitive and non-cognitive skills of young people, education policy can make a significant contribution to efficiency and equity in the long run. The results from PISA suggest that some countries succeed much better than others in securing high and equitable educational performances at the age of 15 years.

Internal rates of return to investment in education can also be viewed from a societal perspective. Such a perspective would combine both the private and public costs and benefits of additional education. For instance, the social cost of education would include foregone production of output during study periods as well as the full cost of providing education, rather than just the cost borne by the individual. A social rate of return should also include a range of possible indirect benefits of education, which also have economic repercussions, such as better health, more social cohesion and more informed and effective citizens. While data on social costs are available for most OECD countries, information on the full range of social benefits is less readily available. Indeed, for a number of possible external factors associated with education, current understanding of the nature and size of the effects is incomplete.

It is important to consider some of the broad conceptual limitations to estimating internal rates of return in the manner done here:

- The data reported are accounting rates of return only. The results would no doubt differ from econometric estimates that control for the inherent ability, and other features, of those who decide to invest in education.
- Estimates relate to levels of formal educational attainment only. They do not reflect the effects of learning outside of formal education.
- The approach used here estimates future earnings for individuals with different levels of educational attainment based on knowledge of how average gross earnings in the present vary by level of attainment and age. However, the relationship between different levels of educational attainment and earnings may not be the same in the future as it is today. Technological, economic and social change could all alter how wage levels relate to the level of educational attainment.
- As with the discussion of the interpretation of earnings dispersion data, differences in internal rates of return across countries will in part reflect different institutional and non-market conditions that bear on earnings. Institutional settings that limit flexibility in relative earnings are a case in point.
- Estimates are based on average pre-tax earnings for persons at different levels of educational attainment. However, at a given level of educational attainment, individuals who have chosen different courses of study or who come from different social groups may register different rates of return.
- In estimating benefits, the effect of education in increasing the likelihood of employment is taken into account. However, this also makes the estimate sensitive to the stage in the economic cycle when the data were collected.

The rate-of-return calculations also involve a number of restrictive assumptions necessary for international comparability. In particular, it was not possible to include the effects on public accounts of changes in social transfer payments resulting from changes in wages. This is largely because the rules that govern eligibility for a broad range of social entitlements vary greatly across countries as well as by marital or civic status (and sometimes other criteria).

Consequently, to ensure comparability, the rates of return have been calculated on the assumption that the individual in question is single and childless.

The above analyses could be extended in a number of ways, subject to data availability. In particular, more differentiated and comparable data relative to costs per student and a range of social transfer payments would be useful. Estimating changes in value added tax receipts resulting from the increased earnings acquired through obtaining higher levels of educational would also contribute to a more complete assessment of impact on public accounts. The calculations do not consider that those with high earnings can often generate higher levels of income after age 64 as a consequence of their having superior pension arrangements.

Definitions and methodologies

Earnings data in Table A9.1a are based on an annual reference period in Canada, the Czech Republic, Denmark, Finland, Ireland, Italy, Korea, Luxembourg, Norway, Spain, Sweden and the United States. Earnings are reported weekly in Australia, New Zealand and the United Kingdom, and monthly in Belgium, France, Germany, Hungary, Poland and Switzerland. Data on earnings are before income tax, while earnings for Belgium and Korea are net of income tax. Data on earnings for individuals in part-time work are excluded for the Czech Republic, Hungary, Luxembourg and Poland, while data on part-year earnings are excluded for Hungary, Luxembourg and Poland.

The research regarding earnings determination in the United States is described in Bowles and Gintis (2000).

Earnings assumptions were made in calculating rates of return for an individual who starts work again in mid-career after having attained the next highest level of education. The assumptions concerned the immediate earnings increase (10% relative to the level of earnings at the previous level of educational attainment) and the time required for convergence with the average wage of individuals already holding the next highest level of educational qualification (two years). These assumptions are somewhat *ad hoc*. Empirical evidence on the earnings of adults who return to work following part-time or full-time studies is scarce, especially for individuals attaining an upper secondary qualification. However, Canadian data indicate a convergence period of just two years for 30-to-49-year-olds who obtain a university degree, with a still shorter catch-up time for those who obtain a tertiary degree (OECD, 2003). It should be noted, nevertheless, that the Canadian data are derived from a small sample of individuals and do not control for the fact that those who invested in education may differ in important ways – such as motivation and inherent ability – by comparison with those who did not.

The rate of return estimates presented here are not fully compatible with those published in *Education at a Glance 2005* on account of changes in assumptions used. In particular, in *Education at a Glance 2005,* a generic figure for the rate of productivity increase of 1% was used to project growth of earnings. This year, country-specific figures that reflect labour productivity have been used. Also, an earnings catch-up period of two years was used this year, instead of the three-year period assumed last year (see above). Finally, estimates of the public rate of return also include the effects of social insurance payments made by the employed.

For the methods employed for the calculation of the rates of return in Tables A9.5 to A9.8, see Annex 3 at *www.oecd.org/edu/eag2006*.

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Further references

The following additional material relevant to this indicator is available on the Web at *http://dx.doi.org/10.1787/815010258467:*

- ***Trends in relative earnings, by gender (1997-2004)***
  Table A9.2b Trends in relative earnings: male population (1997-2004)
  Table A9.2c Trends in relative earnings: female population (1997-2004)
  Table A9.3 Trends in differences in earnings between females and males (1997-2004)

Table A9.1a.

Relative earnings of the population with income from employment (2004 or latest available year)

By level of educational attainment and gender for 25-to-64-year-olds and 30-to-44-year-olds
(upper secondary and post-secondary non-tertiary education = 100)

OECD countries			Below upper secondary education		Post-secondary non-tertiary education		Tertiary-type B education		Tertiary-type A and advanced research programmes		All tertiary education	
			25-64	30-44	25-64	30-44	25-64	30-44	25-64	30-44	25-64	30-44
Australia	2001	Men	84	82	102	100	121	114	151	152	142	142
		Women	84	82	99	99	117	122	158	167	146	154
		M+W	77	75	92	92	111	107	143	146	133	135
Belgium	2003	Men	90	91	m	m	115	116	146	143	132	130
		Women	81	84	m	m	124	127	147	153	132	136
		M+W	89	91	m	m	114	116	148	148	130	130
Canada	2003	Men	79	79	100	106	115	114	170	172	143	144
		Women	68	72	103	96	118	122	175	187	144	152
		M+W	78	78	102	104	112	112	169	172	140	141
Czech Republic	2004	Men	79	81	m	m	140	167	195	203	193	202
		Women	73	73	m	m	124	131	163	168	160	166
		M+W	73	75	m	m	126	145	185	193	182	191
Denmark	2003	Men	82	79	99	96	113	113	142	135	134	129
		Women	85	81	98	104	116	115	129	125	127	123
		M+W	82	81	107	104	115	117	130	124	127	123
Finland	2003	Men	92	88	m	m	130	125	180	169	160	150
		Women	97	92	m	m	127	125	167	163	146	141
		M+W	94	92	m	m	122	115	173	162	148	138
France	2004	Men	89	88	m	m	126	133	172	175	154	157
		Women	82	81	m	m	131	134	156	161	145	149
		M+W	85	85	m	m	125	130	163	167	147	151
Germany	2004	Men	91	90	112	111	123	125	159	151	149	142
		Women	81	75	116	123	116	109	157	156	148	144
		M+W	88	82	109	112	128	129	163	153	153	146
Hungary	2004	Men	76	77	128	128	132	154	254	263	253	263
		Women	71	74	116	114	144	144	191	195	190	195
		M+W	73	75	120	119	138	144	218	222	217	222
Ireland	2002	Men	71	73	96	96	114	113	154	160	141	143
		Women	60	62	103	99	120	120	172	169	153	153
		M+W	76	77	98	96	113	116	160	160	144	145
Italy	2002	Men	74	73	m	m	m	m	162	136	162	136
		Women	78	78	m	m	m	m	147	148	147	148
		M+W	78	80	m	m	m	m	153	137	153	137
Korea	2003	Men	73	83	m	m	103	109	138	132	127	125
		Women	75	91	m	m	138	146	201	227	176	195
		M+W	67	77	m	m	111	122	156	161	141	148
Luxembourg	2002	Men	79	78	114	137	132	139	170	176	149	156
		Women	74	67	120	129	120	125	145	150	131	137
		M+W	78	76	117	120	129	136	165	171	145	152
Netherlands	2002	Men	84	84	m	m	m	m	m	m	143	141
		Women	72	72	m	m	m	m	m	m	155	156
		M+W	84	84	m	m	m	m	m	m	148	147
New Zealand	2004	Men	75	70	107	105	110	109	148	142	136	133
		Women	78	79	105	105	113	118	150	141	133	132
		M+W	75	73	103	101	102	105	147	142	129	129

Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

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A9

Table A9.1a. *(continued)*

Relative earnings of the population with income from employment (2004 or latest available year)

By level of educational attainment and gender for 25-to-64-year-olds and 30-to-44-year-olds
(upper secondary and post-secondary non-tertiary education = 100)

				Below upper secondary education		Post-secondary non-tertiary education		Tertiary-type B education		Tertiary-type A and advanced research programmes		All tertiary education	
				25-64	30-44	25-64	30-44	25-64	30-44	25-64	30-44	25-64	30-44
OECD countries	**Norway**	2003	Men	81	88	112	114	131	143	129	138	129	138
			Women	78	87	111	116	136	150	130	143	130	143
			M+W	80	89	117	120	141	147	125	134	126	135
	Poland	2004	Men	77	76	107	110	164	175	184	186	179	183
			Women	68	71	102	103	136	150	155	164	151	162
			M+W	78	80	99	100	154	166	166	170	163	169
	Spain	2004	Men	84	83	c	c	107	105	144	141	132	128
			Women	78	79	c	c	97	100	156	158	141	144
			M+W	85	84	c	c	104	105	144	141	132	130
	Sweden	2003	Men	85	82	121	124	108	107	147	143	137	134
			Women	88	83	105	107	115	107	136	132	128	123
			M+W	87	83	120	122	106	101	139	134	128	124
	Switzerland	2004	Men	75	78	107	105	121	117	156	151	142	137
			Women	78	89	113	108	137	151	171	183	160	172
			M+W	74	81	108	107	142	141	177	175	164	162
	United Kingdom	2004	Men	71	70	m	m	121	119	161	164	150	151
			Women	69	69	m	m	139	137	198	204	178	180
			M+W	67	69	m	m	124	122	174	181	158	162
	United States	2004	Men	62	64	113	114	115	115	188	188	179	178
			Women	62	64	109	108	119	118	173	181	166	173
			M+W	65	66	110	110	114	114	181	182	172	173

Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.
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Table A9.1b.

Differences in earnings between females and males (2004 or latest available year)

Average annual earnings of females as a percentage of males by level of educational attainment of 30-to-44-year-olds and 55-to-64-year-olds

		Below upper secondary education		Upper secondary and Post-secondary non-tertiary education		Tertiary-type B education		Tertiary-type A and advanced research programmes		All levels of education	
		30-44	55-64	30-44	55-64	30-44	55-64	30-44	55-64	30-44	55-64
OECD countries											
Australia	2001	59	61	59	60	63	58	64	61	62	60
Belgium	2003	67	63	72	69	79	78	77	72	75	66
Canada	2003	53	52	58	57	62	63	63	61	63	58
Czech Republic	2004	68	76	75	90	58	74	62	74	69	82
Denmark	2003	72	70	70	71	72	71	65	63	71	68
Finland	2003	71	78	68	78	68	74	66	72	71	73
France	2004	69	65	74	70	75	67	68	67	74	64
Germany	2004	49	56	59	49	51	66	61	62	57	53
Hungary	2004	87	90	90	104	85	107	67	79	87	86
Ireland	2002	49	41	58	52	61	59	61	65	63	53
Italy	2002	69	72	65	59	m	m	71	41	73	58
Korea	2003	49	45	44	52	59	107	76	62	51	37
Luxembourg	2002	79	83	92	71	83	105	78	131	84	56
Netherlands	2002	51	47	60	47	m	m	m	m	62	50
New Zealand	2004	68	59	61	62	65	58	61	63	62	60
Norway	2003	62	64	63	65	66	69	65	64	66	63
Poland	2004	70	72	75	95	64	76	66	74	81	87
Spain	2004	64	57	68	67	64	56	76	74	75	65
Sweden	2003	73	76	72	72	72	76	66	68	72	74
Switzerland	2004	56	47	49	55	64	55	60	56	51	49
United Kingdom	2004	51	49	52	56	60	55	64	60	57	54
United States	2004	62	58	62	61	63	62	60	57	63	57

Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.

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Table A9.2a.
Trends in relative earnings: adult population (1997-2004)
By educational attainment, for 25-to-64-year-olds (upper secondary and post-secondary non-tertiary education = 100)

			1997	1998	1999	2000	2001	2002	2003	2004
OECD countries	Australia	Below upper secondary	79	m	80	m	77	m	m	m
		Tertiary	124	m	134	m	133	m	m	m
	Belgium	Below upper secondary	m	m	m	92	m	91	89	m
		Tertiary	m	m	m	128	m	132	130	m
	Canada	Below upper secondary	84	77	79	79	76	77	78	m
		Tertiary	127	141	141	145	146	139	140	m
	Czech Republic	Below upper secondary	68	68	68	m	m	m	m	73
		Tertiary	179	179	179	m	m	m	m	182
	Denmark	Below upper secondary	85	86	86	m	87	88	82	m
		Tertiary	123	124	124	m	124	124	127	m
	Finland	Below upper secondary	97	96	96	m	95	95	94	m
		Tertiary	148	148	153	m	150	150	148	m
	France	Below upper secondary	84	84	84	m	m	84	84	85
		Tertiary	149	150	150	m	m	150	146	147
	Germany	Below upper secondary	81	78	79	75	m	77	87	88
		Tertiary	133	130	135	143	m	143	153	153
	Hungary	Below upper secondary	68	68	70	71	71	74	74	73
		Tertiary	179	184	200	194	194	205	219	217
	Ireland	Below upper secondary	75	79	m	89	m	76	m	m
		Tertiary	146	142	m	153	m	144	m	m
	Italy	Below upper secondary	m	58	m	78	m	78	m	m
		Tertiary	m	127	m	138	m	153	m	m
	Korea	Below upper secondary	m	78	m	m	m	m	67	m
		Tertiary	m	135	m	m	m	m	141	m
	Luxembourg	Below upper secondary	m	m	m	m	m	78	m	m
		Tertiary	m	m	m	m	m	145	m	m
	Netherlands	Below upper secondary	83	m	m	m	m	84	m	m
		Tertiary	141	m	m	m	m	148	m	m
	New Zealand	Below upper secondary	77	76	76	74	74	m	76	75
		Tertiary	148	136	139	133	133	m	126	129
	Norway	Below upper secondary	85	84	84	m	m	84	80	m
		Tertiary	138	132	133	m	m	135	126	m
	Poland	Below upper secondary	m	m	m	m	m	m	m	78
		Tertiary	m	m	m	m	m	m	m	163
	Portugal	Below upper secondary	62	62	62	m	m	m	m	m
		Tertiary	176	177	178	m	m	m	m	m
	Spain	Below upper secondary	76	80	m	m	78	m	m	85
		Tertiary	149	144	m	m	129	m	m	132
	Sweden	Below upper secondary	90	89	89	m	86	87	88	m
		Tertiary	129	130	131	m	131	130	130	m
	Switzerland	Below upper secondary	74	75	76	78	m	77	75	75
		Tertiary	152	153	151	157	m	156	156	161
	United Kingdom	Below upper secondary	64	65	65	67	67	m	69	67
		Tertiary	153	157	159	159	159	m	162	158
	United States	Below upper secondary	70	67	65	65	m	66	66	65
		Tertiary	168	173	166	172	m	172	172	172

Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

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Table A9.3.

Trends in differences in earnings between females and males (1997-2004)

Average annual earnings of females as a percentage of males by level of educational attainment of 25-to-64-year-olds

OECD countries			1997	1998	1999	2000	2001	2002	2003	2004
	Australia	Below upper secondary	60	m	66	m	62	m	m	m
		Upper secondary and post-secondary non-tertiary	62	m	64	m	62	m	m	m
		Tertiary	62	m	67	m	62	m	m	m
	Belgium	Below upper secondary	m	m	m	64	m	65	66	m
		Upper secondary and post-secondary non-tertiary	m	m	m	72	m	72	74	m
		Tertiary	m	m	m	74	m	76	74	m
	Canada	Below upper secondary	54	52	51	52	51	50	52	m
		Upper secondary and post-secondary non-tertiary	61	59	60	60	59	61	60	m
		Tertiary	64	61	60	58	58	60	61	m
	Czech Republic	Below upper secondary	66	66	66	m	m	m	m	74
		Upper secondary and post-secondary non-tertiary	69	69	69	m	m	m	m	80
		Tertiary	66	65	65	m	m	m	m	67
	Denmark	Below upper secondary	73	73	73	m	74	75	73	m
		Upper secondary and post-secondary non-tertiary	72	71	71	m	71	73	71	m
		Tertiary	68	66	66	m	67	68	67	m
	Finland	Below upper secondary	78	77	77	m	76	76	76	m
		Upper secondary and post-secondary non-tertiary	74	72	72	m	71	72	72	m
		Tertiary	66	65	62	m	63	64	66	m
	France	Below upper secondary	68	68	68	m	m	68	68	68
		Upper secondary and post-secondary non-tertiary	75	75	75	m	m	75	75	74
		Tertiary	69	69	69	m	m	69	72	70
	Germany	Below upper secondary	63	74	70	56	m	53	54	54
		Upper secondary and post-secondary non-tertiary	64	67	68	63	m	61	60	60
		Tertiary	63	68	60	61	m	60	58	60
	Hungary	Below upper secondary	79	80	84	83	83	85	89	89
		Upper secondary and post-secondary non-tertiary	88	86	89	88	88	93	95	96
		Tertiary	64	63	62	62	62	67	71	72
	Ireland	Below upper secondary	46	48	m	46	m	48	m	m
		Upper secondary and post-secondary non-tertiary	59	63	m	60	m	57	m	m
		Tertiary	70	70	m	71	m	62	m	m
	Italy	Below upper secondary	m	70	m	76	m	70	m	m
		Upper secondary and post-secondary non-tertiary	m	62	m	65	m	66	m	m
		Tertiary	m	52	m	62	m	60	m	m
	Korea	Below upper secondary	m	56	m	m	m	m	48	m
		Upper secondary and post-secondary non-tertiary	m	70	m	m	m	m	47	m
		Tertiary	m	75	m	m	m	m	65	m
	Luxembourg	Below upper secondary	m	m	m	m	m	80	m	m
		Upper secondary and post-secondary non-tertiary	m	m	m	m	m	86	m	m
		Tertiary	m	m	m	m	m	75	m	m
	Netherlands	Below upper secondary	46	m	m	m	m	49	m	m
		Upper secondary and post-secondary non-tertiary	56	m	m	m	m	58	m	m
		Tertiary	57	m	m	m	m	62	m	m
	New Zealand	Below upper secondary	52	61	65	61	61	m	65	66
		Upper secondary and post-secondary non-tertiary	62	63	67	64	64	m	63	63
		Tertiary	60	59	61	67	67	m	62	62

Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.
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Table A9.3. *(continued)*

Trends in differences in earnings between females and males (1997-2004)

Average annual earnings of females as a percentage of males by level of educational attainment of 25-to-64-year-olds

			1997	1998	1999	2000	2001	2002	2003	2004
OECD countries	**Norway**	Below upper secondary	60	60	61	m	m	61	63	m
		Upper secondary and post-secondary non-tertiary	61	61	62	m	m	63	66	m
		Tertiary	63	62	62	m	m	64	66	m
	Poland	Below upper secondary	m	m	m	m	m	m	m	71
		Upper secondary and post-secondary non-tertiary	m	m	m	m	m	m	m	81
		Tertiary	m	m	m	m	m	m	m	68
	Portugal	Below upper secondary	72	71	71	m	m	m	m	m
		Upper secondary and post-secondary non-tertiary	69	69	69	m	m	m	m	m
		Tertiary	66	66	65	m	m	m	m	m
	Spain	Below upper secondary	60	61	m	m	58	m	m	63
		Upper secondary and post-secondary non-tertiary	72	76	m	m	71	m	m	68
		Tertiary	68	69	m	m	64	m	m	73
	Sweden	Below upper secondary	73	74	74	m	74	74	75	m
		Upper secondary and post-secondary non-tertiary	72	72	73	m	71	72	73	m
		Tertiary	67	66	67	m	65	67	68	m
	Switzerland	Below upper secondary	51	51	53	51	m	51	52	54
		Upper secondary and post-secondary non-tertiary	55	57	58	57	m	53	54	54
		Tertiary	60	61	62	62	m	59	60	62
	United Kingdom	Below upper secondary	47	50	51	50	50	m	52	52
		Upper secondary and post-secondary non-tertiary	53	53	53	52	52	m	54	53
		Tertiary	60	62	63	64	64	m	64	63
	United States	Below upper secondary	53	60	59	59	m	63	67	63
		Upper secondary and post-secondary non-tertiary	59	62	61	60	m	63	64	63
		Tertiary	59	58	59	56	m	58	61	59

Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.
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A9

Table A9.4a.

Distribution of the 25-to-64-year-old population by level of earnings and educational attainment (2004 or latest available year)

OECD countries

			Level of earnings: 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 2.0 times the median	More than 2 times the median	All categories
			%	%	%	%	%	%
Australia	2001	Below upper secondary	24.5	45.9	20.4	6.3	2.8	100
		Upper secondary and post-secondary non-tertiary	13.2	36.9	30.8	11.9	7.1	100
		Tertiary-type B education	15.5	28.0	30.0	15.0	11.5	100
		Tertiary-type A and advanced research programmes	8.9	18.6	28.7	22.5	21.3	100
		All levels of education	16.3	34.8	26.6	12.8	9.4	100
Belgium	2003	Below upper secondary	11.4	58.9	26.2	3.1	0.5	100
		Upper secondary and post-secondary non-tertiary	5.5	52.8	33.9	6.5	1.3	100
		Tertiary-type B education	1.9	36.6	48.7	10.6	2.1	100
		Tertiary-type A and advanced research programmes	2.8	17.2	39.2	27.5	13.3	100
		All levels of education	6.0	45.4	35.6	9.8	3.2	100
Canada	2003	Below upper secondary	37.9	29.8	16.5	9.4	6.4	100
		Upper secondary and post-secondary non-tertiary	27.7	26.8	22.9	11.5	11.0	100
		Tertiary-type B education	23.2	23.7	22.9	15.1	15.0	100
		Tertiary-type A and advanced research programmes	17.8	15.3	18.1	16.1	32.8	100
		All levels of education	26.0	24.0	21.1	13.1	15.9	100
Czech Rep.	2004	Below upper secondary	16.5	66.8	14.2	1.8	0.6	100
		Upper secondary and post-secondary non-tertiary	4.7	49.5	35.0	7.6	3.2	100
		Tertiary-type B education	1.4	35.5	39.4	13.2	10.5	100
		Tertiary-type A and advanced research programmes	0.3	10.6	39.9	21.6	27.6	100
		All levels of education	5.0	45.0	33.9	9.3	6.8	100
Denmark	2003	Below upper secondary	45.8	23.0	24.0	5.0	2.2	100
		Upper secondary and post-secondary non-tertiary	25.0	23.1	36.0	10.3	5.6	100
		Tertiary-type B education	19.8	14.9	37.7	18.4	9.3	100
		Tertiary-type A and advanced research programmes	17.8	13.1	35.1	18.0	15.9	100
		All levels of education	29.7	20.3	32.2	10.8	7.0	100
Finland	2003	Below upper secondary	26.0	36.8	27.5	6.9	2.8	100
		Upper secondary and post-secondary non-tertiary	21.9	36.3	31.1	7.8	2.9	100
		Tertiary-type B education	13.9	27.5	39.5	12.1	7.0	100
		Tertiary-type A and advanced research programmes	10.6	15.9	27.1	22.8	23.6	100
		All levels of education	19.1	30.9	31.1	11.3	7.6	100
France	2004	Below upper secondary	17.1	52.0	23.3	5.4	2.3	100
		Upper secondary and post-secondary non-tertiary	8.2	46.9	31.9	8.6	4.4	100
		Tertiary-type B education	3.3	28.2	41.0	18.4	9.1	100
		Tertiary-type A and advanced research programmes	4.1	16.6	32.1	20.9	26.4	100
		All levels of education	9.5	41.3	30.5	10.8	7.9	100
Germany	2004	Below upper secondary	25.2	38.6	29.5	5.3	1.4	100
		Upper secondary and post-secondary non-tertiary	23.0	33.9	30.0	7.9	5.3	100
		Tertiary-type B education	12.7	27.8	28.7	19.3	11.5	100
		Tertiary-type A and advanced research programmes	13.4	18.3	24.1	20.9	23.2	100
		All levels of education	19.7	30.0	28.2	12.0	10.2	100

Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

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Table A9.4a. *(continued-1)*

Distribution of the 25-to-64-year-old population by level of earnings and educational attainment (2004 or latest available year)

			Level of earnings					
			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 2.0 times the median	More than 2 times the median	All categories
			%	%	%	%	%	%
OECD countries: Hungary	2004	Below upper secondary	16.0	64.0	15.6	3.0	1.3	100
		Upper secondary and post-secondary non-tertiary	12.2	43.6	25.9	10.3	8.0	100
		Tertiary-type B education	6.8	25.4	34.2	13.9	19.6	100
		Tertiary-type A and advanced research programmes	2.2	6.8	21.9	25.1	43.9	100
		All levels of education	10.7	39.3	23.1	12.2	14.7	100
Ireland	2002	Below upper secondary	30.8	34.4	23.9	7.2	3.8	100
		Upper secondary and post-secondary non-tertiary	18.0	33.8	26.0	13.3	8.9	100
		Tertiary-type B education	11.7	32.0	28.7	14.9	12.6	100
		Tertiary-type A and advanced research programmes	8.3	14.7	21.4	22.8	32.7	100
		All levels of education	21.5	29.8	23.9	12.8	12.0	100
Italy	2002	Below upper secondary	19.5	42.3	22.2	7.5	8.5	100
		Upper secondary and post-secondary non-tertiary	10.1	35.0	29.3	10.8	14.9	100
		Tertiary-type B education	m	m	m	m	m	m
		Tertiary-type A and advanced research programmes	6.8	19.9	27.4	11.8	34.1	100
		All levels of education	13.8	36.2	25.9	9.5	14.6	100
Korea	2003	Below upper secondary	31.5	42.8	19.0	2.5	4.2	100
		Upper secondary and post-secondary non-tertiary	15.7	34.9	29.6	8.6	11.2	100
		Tertiary-type B education	14.5	30.8	31.0	11.3	12.4	100
		Tertiary-type A and advanced research programmes	8.6	17.5	29.7	17.1	27.0	100
		All levels of education	17.8	32.1	27.1	9.5	13.5	100
Luxembourg	2002	Below upper secondary	12.1	60.1	21.6	4.9	1.3	100
		Upper secondary and post-secondary non-tertiary	2.3	52.2	28.0	11.7	5.8	100
		Tertiary-type B education	0.6	28.6	41.7	17.2	11.8	100
		Tertiary-type A and advanced research programmes	0.0	14.4	36.6	24.9	24.1	100
		All levels of education	3.5	45.4	30.0	13.0	8.2	100
Netherlands	2002	Below upper secondary	26.9	37.9	29.0	5.0	1.3	100
		Upper secondary and post-secondary non-tertiary	17.4	36.5	33.2	9.3	3.6	100
		All tertiary	8.3	20.8	30.5	21.9	18.6	100
		All levels of education	17.4	32.6	31.3	11.6	7.1	100
New Zealand	2004	Below upper secondary	24.0	47.6	20.2	5.9	2.3	100
		Upper secondary and post-secondary non-tertiary	16.6	34.0	30.5	11.2	7.6	100
		Tertiary-type B education	10.5	19.7	29.3	18.4	22.1	100
		Tertiary-type A and advanced research programmes	19.8	28.8	30.0	12.3	9.2	100
		All levels of education	17.2	33.1	28.4	11.8	9.5	100

Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/815010258467

Table A9.4a. *(continued-2)*

Distribution of the 25-to-64-year-old population by level of earnings and educational attainment (2004 or latest available year)

				Level of earnings					
				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 2.0 times the median	More than 2 times the median	All categories
				%	%	%	%	%	%
OECD countries	Norway	2003	Below upper secondary	30.1	37.2	25.6	5.0	2.1	100
			Upper secondary and post-secondary non-tertiary	20.8	36.2	30.6	8.4	4.1	100
			Tertiary-type B education	8.9	15.0	34.5	22.9	18.7	100
			Tertiary-type A and advanced research programmes	12.3	21.4	39.9	14.1	12.3	100
			All levels of education	19.1	30.9	33.5	9.8	6.6	100
	Poland	2004	Below upper secondary	17.0	54.4	21.0	5.7	1.9	100
			Upper secondary and post-secondary non-tertiary	8.5	44.7	29.1	10.7	7.0	100
			Tertiary-type B education	4.2	27.9	28.0	15.6	24.3	100
			Tertiary-type A and advanced research programmes	1.2	16.6	35.6	20.8	25.8	100
			All levels of education	9.6	41.0	27.6	11.4	10.4	100
	Spain	2004	Below upper secondary	12.8	50.8	29.0	5.2	2.2	100
			Upper secondary and post-secondary non-tertiary	9.3	42.6	31.6	10.2	6.3	100
			Tertiary-type B education	7.8	43.8	30.6	10.6	7.1	100
			Tertiary-type A and advanced research programmes	3.3	22.8	33.2	19.9	20.7	100
			All levels of education	9.1	41.0	30.9	10.7	8.4	100
	Sweden	2003	Below upper secondary	18.0	44.4	31.3	4.7	1.6	100
			Upper secondary and post-secondary non-tertiary	11.0	42.2	34.8	8.0	4.1	100
			Tertiary-type B education	12.4	31.3	39.6	11.7	4.9	100
			Tertiary-type A and advanced research programmes	10.1	20.4	36.6	15.9	16.9	100
			All levels of education	12.5	37.5	34.8	9.2	6.1	100
	Switzerland	2004	Below upper secondary	39.3	44.7	14.4	1.2	0.5	100
			Upper secondary and post-secondary non-tertiary	32.3	30.3	28.1	6.7	2.6	100
			Tertiary-type B education	18.2	17.8	37.4	18.0	8.6	100
			Tertiary-type A and advanced research programmes	18.4	17.4	23.0	20.8	20.5	100
			All levels of education	28.7	27.8	26.7	10.2	6.6	100
	United Kingdom	2004	Below upper secondary	37.9	44.7	13.3	2.7	1.4	100
			Upper secondary and post-secondary non-tertiary	21.4	37.4	25.5	9.4	6.3	100
			Tertiary-type B education	12.3	30.2	28.8	16.9	11.9	100
			Tertiary-type A and advanced research programmes	6.1	15.9	24.9	23.9	29.1	100
			All levels of education	18.6	32.6	24.3	12.9	11.7	100
	United States	2004	Below upper secondary	44.3	39.0	10.8	4.0	1.8	100
			Upper secondary and post-secondary non-tertiary	24.1	35.9	21.9	9.9	8.3	100
			Tertiary-type B education	17.0	32.1	24.2	15.0	11.7	100
			Tertiary-type A and advanced research programmes	12.0	18.8	22.0	16.9	30.4	100
			All levels of education	21.1	29.6	21.0	12.2	16.1	100

Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.

Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/815010258467

Table A9.4b.

Distribution of the 25-to-64-year-old males by level of earnings and educational attainment (2004 or latest available year)

			Level of earnings					
			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 2.0 times the median	More than 2 times the median	All categories
			%	%	%	%	%	%
OECD countries								
Australia	2001	Below upper secondary	9.4	44.3	29.5	11.5	5.2	100
		Upper secondary and post-secondary non-tertiary	5.3	31.6	36.1	16.8	10.2	100
		Tertiary-type B education	7.2	17.4	32.4	22.9	20.2	100
		Tertiary-type A and advanced research programmes	5.0	11.3	23.8	26.1	33.9	100
		All levels of education	6.7	29.6	31.1	17.8	14.8	100
Belgium	2003	Below upper secondary	2.8	54.6	37.5	4.5	0.6	100
		Upper secondary and post-secondary non-tertiary	1.5	42.5	43.8	10.3	1.9	100
		Tertiary-type B education	0.9	21.9	53.2	19.6	4.3	100
		Tertiary-type A and advanced research programmes	1.6	11.0	34.8	33.7	18.8	100
		All levels of education	1.8	37.6	41.6	14.1	4.9	100
Canada	2003	Below upper secondary	28.2	26.1	20.7	14.7	10.4	100
		Upper secondary and post-secondary non-tertiary	19.6	22.7	24.6	15.9	17.1	100
		Tertiary-type B education	15.4	18.1	22.9	18.9	24.6	100
		Tertiary-type A and advanced research programmes	14.9	11.5	13.8	16.2	43.6	100
		All levels of education	19.3	20.0	21.5	16.3	23.0	100
Czech Republic	2004	Below upper secondary	7.8	62.6	24.6	3.9	1.1	100
		Upper secondary and post-secondary non-tertiary	2.2	42.8	40.7	10.1	4.2	100
		Tertiary-type B education	0.5	23.4	38.4	18.7	18.9	100
		Tertiary-type A and advanced research programmes	0.2	8.2	30.6	24.3	36.7	100
		All levels of education	2.3	38.2	38.0	12.1	9.5	100
Denmark	2003	Below upper secondary	38.1	17.2	32.3	8.3	4.0	100
		Upper secondary and post-secondary non-tertiary	20.8	14.4	40.6	15.1	9.1	100
		Tertiary-type B education	16.9	9.3	35.3	24.7	13.8	100
		Tertiary-type A and advanced research programmes	16.3	6.9	22.9	24.5	29.3	100
		All levels of education	25.1	13.5	34.4	15.4	11.6	100
Finland	2003	Below upper secondary	23.4	29.5	32.7	10.1	4.3	100
		Upper secondary and post-secondary non-tertiary	17.4	27.0	38.4	12.4	4.8	100
		Tertiary-type B education	10.6	17.3	35.4	21.9	14.8	100
		Tertiary-type A and advanced research programmes	7.2	9.6	22.2	26.2	34.7	100
		All levels of education	15.9	23.0	33.6	15.8	11.7	100
France	2004	Below upper secondary	5.4	50.7	31.8	8.4	3.7	100
		Upper secondary and post-secondary non-tertiary	1.9	42.1	37.4	11.8	6.7	100
		Tertiary-type B education	1.3	20.6	39.4	22.9	15.9	100
		Tertiary-type A and advanced research programmes	1.9	11.2	24.8	23.0	39.0	100
		All levels of education	2.8	37.6	34.1	13.7	11.7	100
Germany	2004	Below upper secondary	9.0	32.6	46.5	9.6	2.3	100
		Upper secondary and post-secondary non-tertiary	10.2	30.7	37.8	12.3	9.0	100
		Tertiary-type B education	4.3	19.3	32.3	27.1	17.0	100
		Tertiary-type A and advanced research programmes	7.5	13.6	19.5	24.2	35.3	100
		All levels of education	8.6	25.1	32.8	16.9	16.6	100

Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/815010258467

Table A9.4b. *(continued-1)*

Distribution of the 25-to-64-year-old males by level of earnings and educational attainment (2004 or latest available year)

			Level of earnings					
			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 2.0 times the median	More than 2 times the median	All categories
			%	%	%	%	%	%
OECD countries								
Hungary	2004	Below upper secondary	18.9	54.9	19.7	4.5	2.1	100
		Upper secondary and post-secondary non-tertiary	13.6	41.5	25.0	10.8	9.2	100
		Tertiary-type B education	9.1	28.5	32.9	9.6	19.9	100
		Tertiary-type A and advanced research programmes	3.2	8.0	13.7	18.7	56.4	100
		All levels of education	12.5	37.4	22.0	11.2	16.9	100
Ireland	2002	Below upper secondary	19.0	34.1	31.3	10.1	5.5	100
		Upper secondary and post-secondary non-tertiary	7.9	24.1	31.6	21.5	14.8	100
		Tertiary-type B education	3.3	24.0	29.1	22.8	20.8	100
		Tertiary-type A and advanced research programmes	3.7	11.0	19.5	19.2	46.6	100
		All levels of education	11.6	26.0	28.9	16.3	17.1	100
Italy	2002	Below upper secondary	13.6	42.5	24.6	9.2	10.2	100
		Upper secondary and post-secondary non-tertiary	6.2	31.2	28.6	12.4	21.6	100
		Tertiary-type B education	m	m	m	m	m	m
		Tertiary-type A and advanced research programmes	3.9	13.3	20.8	13.9	48.1	100
		All levels of education	9.6	34.8	25.8	11.0	18.8	100
Korea	2003	Below upper secondary	17.6	44.3	28.6	4.1	5.4	100
		Upper secondary and post-secondary non-tertiary	7.1	29.8	37.3	10.4	15.3	100
		Tertiary-type B education	11.1	22.6	37.2	12.9	16.3	100
		Tertiary-type A and advanced research programmes	7.0	12.9	28.3	18.4	33.3	100
		All levels of education	9.8	27.3	33.0	11.6	18.3	100
Luxembourg	2002	Below upper secondary	6.9	60.7	25.2	5.8	1.3	100
		Upper secondary and post-secondary non-tertiary	1.4	51.6	26.8	12.8	7.4	100
		Tertiary-type B education	0.5	24.0	41.5	18.9	15.1	100
		Tertiary-type A and advanced research programmes	0.0	10.8	34.2	26.6	28.5	100
		All levels of education	2.1	43.9	29.6	14.2	10.2	100
Netherlands	2002	Below upper secondary	9.2	37.8	43.3	7.7	2.0	100
		Upper secondary and post-secondary non-tertiary	5.4	26.2	47.0	15.1	6.2	100
		All tertiary	4.6	11.5	27.2	29.1	27.6	100
		All levels of education	6.3	25.5	40.5	16.8	10.9	100
New Zealand	2004	Below upper secondary	12.6	48.0	27.1	8.7	3.6	100
		Upper secondary and post-secondary non-tertiary	7.6	29.6	36.8	14.9	11.2	100
		Tertiary-type B education	8.4	15.8	26.2	18.4	31.3	100
		Tertiary-type A and advanced research programmes	11.9	25.0	27.9	17.6	17.6	100
		All levels of education	9.0	29.9	32.3	14.6	14.2	100

Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/815010258467

Table A9.4b. *(continued-2)*

Distribution of the 25-to-64-year-old males by level of earnings and educational attainment (2004 or latest available year)

				Level of earnings					
				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 2.0 times the median	More than 2 times the median	All categories
				%	%	%	%	%	%
OECD countries	**Norway**	2003	Below upper secondary	22.2	28.5	37.5	8.2	3.6	100
			Upper secondary and post-secondary non-tertiary	14.2	23.1	42.8	13.1	6.8	100
			Tertiary-type B education	7.2	8.6	31.8	27.9	24.5	100
			Tertiary-type A and advanced research programmes	10.1	10.8	35.4	21.4	22.3	100
			All levels of education	14.2	20.2	39.5	15.1	11.0	100
	Poland	2004	Below upper secondary	13.4	49.0	26.9	7.9	2.8	100
			Upper secondary and post-secondary non-tertiary	8.1	35.5	31.4	14.3	10.7	100
			Tertiary-type B education	4.0	19.9	23.9	18.2	34.0	100
			Tertiary-type A and advanced research programmes	1.3	13.1	25.2	20.3	40.1	100
			All levels of education	9.2	37.2	27.9	12.5	13.2	100
	Spain	2004	Below upper secondary	3.1	50.0	36.7	7.1	3.0	100
			Upper secondary and post-secondary non-tertiary	3.2	37.0	35.5	14.9	9.4	100
			Tertiary-type B education	2.5	33.9	37.8	15.4	10.4	100
			Tertiary-type A and advanced research programmes	1.6	18.2	31.4	19.8	29.0	100
			All levels of education	2.8	38.5	35.4	12.5	10.8	100
	Sweden	2003	Below upper secondary	13.6	35.6	41.5	6.8	2.4	100
			Upper secondary and post-secondary non-tertiary	8.5	28.4	44.2	12.2	6.7	100
			Tertiary-type B education	11.9	19.2	39.7	19.2	10.0	100
			Tertiary-type A and advanced research programmes	9.1	12.9	29.2	20.5	28.2	100
			All levels of education	10.1	26.6	40.7	12.9	9.7	100
	Switzerland	2004	Below upper secondary	18.9	50.8	27.7	1.8	0.8	100
			Upper secondary and post-secondary non-tertiary	16.3	26.3	41.2	11.2	4.9	100
			Tertiary-type B education	14.6	12.5	39.9	22.1	10.9	100
			Tertiary-type A and advanced research programmes	14.8	10.7	21.3	25.2	28.0	100
			All levels of education	15.9	22.7	35.1	15.4	10.9	100
	United Kingdom	2004	Below upper secondary	12.7	53.3	26.0	5.2	2.7	100
			Upper secondary and post-secondary non-tertiary	4.7	32.8	36.4	15.3	10.7	100
			Tertiary-type B education	4.7	19.3	26.9	26.9	22.2	100
			Tertiary-type A and advanced research programmes	2.5	10.2	21.1	23.4	42.8	100
			All levels of education	5.1	28.4	30.4	17.3	18.7	100
	United States	2004	Below upper secondary	33.8	43.1	15.1	5.5	2.5	100
			Upper secondary and post-secondary non-tertiary	15.4	31.3	26.0	14.5	12.7	100
			Tertiary-type B education	8.8	25.1	26.9	21.0	18.2	100
			Tertiary-type A and advanced research programmes	7.2	13.9	18.6	17.5	42.9	100
			All levels of education	14.2	26.1	22.1	14.9	22.7	100

Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/815010258467

Table A9.4c.
Distribution of the 25-to-64-year-old females by level of earnings and educational attainment (2004 or latest available year)

				Level of earnings					
				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 2.0 times the median	More than 2 times the median	All categories
				%	%	%	%	%	%
OECD countries	Australia	2001	Below upper secondary	37.0	47.3	12.9	2.0	0.8	100
			Upper secondary and post-secondary non-tertiary	27.2	46.3	21.5	3.2	1.8	100
			Tertiary-type B education	23.1	37.7	27.8	7.8	3.7	100
			Tertiary-type A and advanced research programmes	12.7	25.4	33.3	19.1	9.5	100
			All levels of education	26.9	40.4	21.8	7.3	3.6	100
	Belgium	2003	Below upper secondary	26.3	66.4	6.6	0.5	0.2	100
			Upper secondary and post-secondary non-tertiary	11.1	66.8	20.4	1.3	0.4	100
			Tertiary-type B education	2.7	47.2	45.5	4.1	0.5	100
			Tertiary-type A and advanced research programmes	4.7	27.2	46.3	17.5	4.3	100
			All levels of education	11.5	55.7	27.6	4.2	0.9	100
	Canada	2003	Below upper secondary	52.3	35.5	10.5	1.7	0.0	100
			Upper secondary and post-secondary non-tertiary	37.5	31.6	20.9	6.2	3.7	100
			Tertiary-type B education	30.2	28.7	22.9	11.7	6.4	100
			Tertiary-type A and advanced research programmes	20.8	19.3	22.7	16.0	21.2	100
			All levels of education	33.6	28.5	20.6	9.4	7.9	100
	Czech Republic	2004	Below upper secondary	22.5	69.7	7.1	0.4	0.2	100
			Upper secondary and post-secondary non-tertiary	8.3	58.9	26.9	4.1	1.8	100
			Tertiary-type B education	2.0	43.7	40.1	9.4	4.8	100
			Tertiary-type A and advanced research programmes	0.4	14.3	54.4	17.4	13.5	100
			All levels of education	8.6	53.9	28.6	5.6	3.3	100
	Denmark	2003	Below upper secondary	52.9	28.4	16.2	1.9	0.6	100
			Upper secondary and post-secondary non-tertiary	30.0	33.4	30.5	4.7	1.4	100
			Tertiary-type B education	24.0	22.9	41.1	9.3	2.7	100
			Tertiary-type A and advanced research programmes	19.0	17.8	44.3	13.1	5.8	100
			All levels of education	34.4	27.3	29.9	6.1	2.3	100
	Finland	2003	Below upper secondary	29.6	46.4	20.7	2.5	0.8	100
			Upper secondary and post-secondary non-tertiary	27.2	47.1	22.5	2.4	0.8	100
			Tertiary-type B education	15.9	33.7	41.9	6.2	2.2	100
			Tertiary-type A and advanced research programmes	14.1	22.3	32.2	19.3	12.1	100
			All levels of education	22.5	39.1	28.5	6.6	3.3	100
	France	2004	Below upper secondary	29.5	53.3	14.2	2.2	0.8	100
			Upper secondary and post-secondary non-tertiary	16.0	52.8	25.1	4.6	1.5	100
			Tertiary-type B education	5.0	34.6	42.2	14.6	3.5	100
			Tertiary-type A and advanced research programmes	6.3	21.9	39.3	18.8	13.8	100
			All levels of education	16.8	45.3	26.6	7.6	3.6	100
	Germany	2004	Below upper secondary	43.0	45.1	10.9	0.6	0.4	100
			Upper secondary and post-secondary non-tertiary	36.6	37.3	21.8	3.1	1.3	100
			Tertiary-type B education	26.9	42.2	22.6	6.3	2.1	100
			Tertiary-type A and advanced research programmes	21.2	24.4	30.3	16.7	7.4	100
			All levels of education	32.6	35.6	22.7	6.3	2.7	100

Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/815010258467

Table A9.4c. *(continued-1)*

Distribution of the 25-to-64-year-old females by level of earnings and educational attainment (2004 or latest available year)

			Level of earnings					
			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 2.0 times the median	More than 2 times the median	All categories
			%	%	%	%	%	%
OECD countries: **Hungary**	2004	Below upper secondary	13.7	71.5	12.4	1.7	0.8	100
		Upper secondary and post-secondary non-tertiary	10.3	46.3	27.1	9.8	6.5	100
		Tertiary-type B education	5.7	23.8	34.9	16.1	19.5	100
		Tertiary-type A and advanced research programmes	1.5	5.9	28.2	30.0	34.4	100
		All levels of education	8.8	41.3	24.2	13.3	12.5	100
Ireland	2002	Below upper secondary	57.0	35.0	7.4	0.6	0.0	100
		Upper secondary and post-secondary non-tertiary	28.7	44.2	20.1	4.5	2.5	100
		Tertiary-type B education	19.2	39.1	28.4	7.9	5.4	100
		Tertiary-type A and advanced research programmes	13.2	18.6	23.6	26.7	18.0	100
		All levels of education	33.4	34.3	17.8	8.7	5.7	100
Italy	2002	Below upper secondary	32.6	41.8	16.8	3.9	4.9	100
		Upper secondary and post-secondary non-tertiary	15.3	39.9	30.1	8.6	6.0	100
		Tertiary-type B education	m	m	m	m	m	m
		Tertiary-type A and advanced research programmes	9.8	26.7	34.2	9.6	19.6	100
		All levels of education	20.4	38.4	26.1	7.1	7.8	100
Korea	2003	Below upper secondary	48.4	41.1	7.2	0.6	2.6	100
		Upper secondary and post-secondary non-tertiary	33.7	45.5	13.4	4.7	2.7	100
		Tertiary-type B education	21.4	47.4	18.6	8.2	4.4	100
		Tertiary-type A and advanced research programmes	12.8	30.0	33.6	13.7	10.0	100
		All levels of education	33.0	41.3	15.9	5.5	4.3	100
Luxembourg	2002	Below upper secondary	22.4	58.9	14.4	3.1	1.2	100
		Upper secondary and post-secondary non-tertiary	4.1	53.4	30.2	9.5	2.7	100
		Tertiary-type B education	0.9	38.0	42.0	13.8	5.3	100
		Tertiary-type A and advanced research programmes	0.0	22.3	42.0	21.3	14.4	100
		All levels of education	6.3	48.3	30.8	10.4	4.2	100
Netherlands	2002	Below upper secondary	54.4	38.0	6.7	0.8	0.2	100
		Upper secondary and post-secondary non-tertiary	31.8	48.7	16.7	2.4	0.4	100
		All tertiary	13.2	33.1	34.8	12.2	6.8	100
		All levels of education	32.2	41.9	19.2	4.7	2.1	100
New Zealand	2004	Below upper secondary	37.7	47.2	11.9	2.5	0.7	100
		Upper secondary and post-secondary non-tertiary	29.0	40.1	22.1	6.3	2.6	100
		Tertiary-type B education	13.0	24.7	33.1	18.5	10.7	100
		Tertiary-type A and advanced research programmes	24.7	31.1	31.3	9.0	3.9	100
		All levels of education	26.9	37.0	23.8	8.3	4.0	100

Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/815010258467

Table A9.4c. *(continued-2)*

Distribution of the 25-to-64-year-old females by level of earnings and educational attainment (2004 or latest available year)

				Level of earnings					
				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 2.0 times the median	More than 2 times the median	All categories
				%	%	%	%	%	%
OECD countries	**Norway**	2003	Below upper secondary	39.5	47.5	11.5	1.1	0.4	100
			Upper secondary and post-secondary non-tertiary	27.6	49.8	19.6	2.3	0.7	100
			Tertiary-type B education	12.9	30.4	41.0	10.7	4.9	100
			Tertiary-type A and advanced research programmes	14.2	30.3	43.7	7.8	3.9	100
			All levels of education	24.5	42.6	27.0	4.1	1.8	100
	Poland	2004	Below upper secondary	24.5	65.5	8.6	1.1	0.2	100
			Upper secondary and post-secondary non-tertiary	8.8	51.8	27.4	7.9	4.2	100
			Tertiary-type B education	4.5	36.0	32.1	13.0	14.4	100
			Tertiary-type A and advanced research programmes	1.1	18.8	42.1	21.1	16.9	100
			All levels of education	10.1	44.9	27.4	10.2	7.4	100
	Spain	2004	Below upper secondary	32.8	52.5	13.2	1.1	0.5	100
			Upper secondary and post-secondary non-tertiary	18.4	50.9	25.9	3.2	1.7	100
			Tertiary-type B education	16.3	59.6	19.2	3.1	1.8	100
			Tertiary-type A and advanced research programmes	5.0	27.5	35.0	20.1	12.4	100
			All levels of education	18.7	44.7	23.9	7.9	4.8	100
	Sweden	2003	Below upper secondary	23.9	55.9	17.8	1.9	0.5	100
			Upper secondary and post-secondary non-tertiary	13.8	57.4	24.3	3.3	1.2	100
			Tertiary-type B education	12.7	38.1	39.6	7.6	2.1	100
			Tertiary-type A and advanced research programmes	11.0	26.9	42.9	11.9	7.3	100
			All levels of education	15.0	48.6	28.7	5.3	2.4	100
	Switzerland	2004	Below upper secondary	56.6	39.4	3.1	0.6	0.2	100
			Upper secondary and post-secondary non-tertiary	47.9	34.2	15.2	2.2	0.4	100
			Tertiary-type B education	28.0	33.0	30.2	6.6	2.2	100
			Tertiary-type A and advanced research programmes	25.4	30.3	26.3	12.1	5.9	100
			All levels of education	44.3	34.2	16.3	3.8	1.3	100
	United Kingdom	2004	Below upper secondary	57.7	38.0	3.2	0.7	0.3	100
			Upper secondary and post-secondary non-tertiary	39.2	42.3	13.8	3.1	1.6	100
			Tertiary-type B education	18.9	39.6	30.4	8.2	2.9	100
			Tertiary-type A and advanced research programmes	10.2	22.2	29.2	24.5	13.8	100
			All levels of education	32.6	36.9	17.9	8.3	4.4	100
	United States	2004	Below upper secondary	61.5	32.4	3.9	1.6	0.6	100
			Upper secondary and post-secondary non-tertiary	33.7	40.9	17.4	4.7	3.3	100
			Tertiary-type B education	24.6	38.5	21.7	9.5	5.7	100
			Tertiary-type A and advanced research programmes	17.0	23.9	25.5	16.2	17.5	100
			All levels of education	28.8	33.5	19.7	9.2	8.7	100

Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/815010258467

Table A9.5.
Private internal rates of return for an individual obtaining an upper secondary or post-secondary non-tertiary education, ISCED 3/4 (2003)

	Rate of return when the individual immediately acquires the next higher level of education		Rate of return when the individual, at age 40, begins the next higher level of education in full-time studies, and the individual bears:			
			Direct costs and foregone earnings		No direct costs but foregone earnings	
	Males %	Females %	Males %	Females %	Males %	Females %
Belgium	14.3	11.9	9.0	24.4	9.3	25.8
Denmark	(1)	(1)	12.8	12.9	13.0	13.1
Finland	(1)	(1)	-0.5	2.6	-0.5	2.7
Hungary	9.7	11.3	11.4	13.7	11.7	14.1
Korea	13.5	6.6	13.2	12.2	13.6	13.1
New Zealand	14.1	16.2	10.3	7.3	10.7	7.8
Norway	(1)	(1)	9.3	10.8	9.7	11.9
Sweden	(1)	(1)	7.7	5.4	7.7	5.4
Switzerland	7.9	8.3	10.2	10.2	12.1	15.6
United Kingdom	25.1	29.9	8.2	9.0	8.6	9.8
United States	(1)	(1)	20.9	18.7	21.4	19.3

Note: (1) = Excessively low recorded earnings for 15-to-24 year-olds with lower secondary education, which cause excessively high estimates.
Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006).*

StatLink: http://dx.doi.org/10.1787/815010258467

Table A9.6.
Private internal rates of return for an individual obtaining a university-level degree, ISCED 5/6 (2003)

	Rate of return when the individual immediately acquires the next higher level of education		Rate of return when the individual, at age 40, begins the next higher level of education in full-time studies, and the individual bears:			
			Direct costs and foregone earnings		No direct costs but foregone earnings	
	Males %	Females %	Males %	Females %	Males %	Females %
Belgium	10.7	15.2	20.0	28.2	21.1	32.2
Denmark	8.3	8.1	12.4	10.2	12.5	10.5
Finland	16.7	16.0	16.2	13.2	16.4	13.4
Hungary	22.6	15.0	25.1	19.4	27.8	22.0
Korea	12.2	14.9	15.0	27.7	15.9	31.1
New Zealand	9.3	12.9	6.5	7.5	7.2	8.8
Norway	12.1	15.7	15.6	15.9	15.8	16.2
Sweden	8.9	8.2	10.4	8.2	10.8	8.7
Switzerland	10.0	9.8	10.9	20.6	11.3	22.2
United Kingdom	16.8	19.6	11.4	14.9	12.5	16.8
United States	14.3	13.1	12.9	9.7	15.1	13.0

Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006).*

StatLink: http://dx.doi.org/10.1787/815010258467

Table A9.7.

Public internal rates of return for an individual obtaining an upper secondary or post-secondary non-tertiary education, ISCED 3/4 (2003)

	Rate of return when the individual immediately acquires the next higher level of education		Rate of return when the individual, at age 40, begins the next higher level of education in full-time studies, and the individual bears:			
			Direct costs and foregone earnings		No direct costs but foregone earnings	
	Males %	Females %	Males %	Females %	Males %	Females %
Belgium	11.3	9.2	2.2	6.4	2.1	6.2
Denmark	14.3	11.6	2.1	1.9	2.1	1.9
Finland	9.8	6.7	-9.2	-2.6	-9.2	-2.6
Hungary	7.6	8.2	3.3	5.9	3.2	5.7
Korea	6.7	3.2	3.2	3.7	2.6	3.0
New Zealand	8.3	5.4	3.0	-2.2	2.7	-2.4
Norway	7.5	5 .2	0.4	-0.2	0.2	-0.4
Sweden	13 .2	10 .2	-0.2	-0.1	-0.2	-0.1
Switzerland	1.9	3.2	-4.1	-3.1	-4.6	-3.7
United Kingdom	13.8	11.1	4.8	4.1	4.3	3.4
United States	13 .3	10 .5	14.2	13.1	13.7	12.5

Note: Negative benefits occur when excessively high forgone earnings cause excessively low estimates.
Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.

StatLink: http://dx.doi.org/10.1787/815010258467

Table A9.8.

Public internal rates of return for an individual obtaining a university-level degree, ISCED 5/6 (2003)

	Rate of return when the individual immediately acquires the next higher level of education		Rate of return when the individual, at age 40, begins the next higher level of education in full-time studies, and the individual bears:			
			Direct costs and foregone earnings		No direct costs but foregone earnings	
	Males %	Females %	Males %	Females %	Males %	Females %
Belgium	12.2	17.9	10.6	9.4	10.3	9.0
Denmark	7.8	6.9	3.4	1.0	3.3	0.9
Finland	13.6	11 .3	10.7	8.7	10.6	8.6
Hungary	18.8	13.1	14.8	10.3	13.6	9.2
Korea	14.2	16.8	7.4	17.2	5.9	13.1
New Zealand	9.9	9.9	2.4	2.1	1.7	1.2
Norway	9.5	9.9	4.3	4.5	4.3	4.5
Sweden	7 .5	6.3	3.6	1.8	3.4	1.6
Switzerland	6.3	5.8	-0.1	-0.7	-0.2	-0.9
United Kingdom	13.7	16.1	6.4	8.4	5.6	7.1
United States	14 .1	13 .0	9.6	6.0	7.3	3.2

Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.

StatLink: http://dx.doi.org/10.1787/815010258467

INDICATOR A10

THE RETURNS TO EDUCATION: LINKS BETWEEN EDUCATION, ECONOMIC GROWTH AND SOCIAL OUTCOMES

This indicator focuses on the role of human capital as a determinant of the level and rate of growth of output per capita within countries. The indicator complements Indicator A9, which examines the relationship between human capital and economic returns at the individual and public levels. While Indicator A9 depicts what happens to the earnings of an individual as his or her level of schooling rises, Indicator A10 seeks to capture the effects of changes in a country's overall stock of human capital on labour productivity and health status.

Key results

- The estimated long-term effect on economic output of one additional year of education in the OECD area is generally between 3 and 6%. Analyses of human capital across 14 OECD economies – based on literacy scores – also suggest significant positive effects on growth.
- An analysis by the OECD secretariat of the causes of economic growth shows that rising labour productivity accounted for at least half of GDP per capita growth in most OECD countries from 1994 to 2004.
- Many national analyses indicate a positive causal relationship between higher educational attainment and better mental and physical health.

Policy context

Since the mid-1980s, economic growth has occupied centre-stage in macroeconomic research. Research has gained impetus from new theoretical insights – in particular new-growth theory – and new approaches to the empirics of growth. Human capital – the knowledge and skills embodied in workers – has been critical to this question. Significant differences among OECD member countries in their recent macroeconomic performance have also spurred interest in the causes of economic growth.

Comparisons of micro-level estimates of returns to education for individuals (such as those portrayed in Indicator A9) and macro-econometric estimates as reflected in this indicator, are potentially of great policy relevance. Discrepancies between the two approaches can point to differences in the private and public returns on schooling that may call for corrective policy action. For instance, following a rise in school attainment, if productivity at the aggregate level of the economy is raised in ways additional to the increases in productivity of each worker, then this will generate a tendency for underinvestment in education, because individuals will fail to take into account the wider economic benefits that could arise from their schooling choices. In this context, micro-econometric estimates of wage equations with individual cross-section data for a given country only pick up the effects on individuals of schooling, whereas macro-econometric estimates with cross-country data should also capture the wider economic impacts.

This year, Indicator A10 also reviews linkages between educational attainment and physical and mental health. Interest in this relationship is likely to grow in light of a range of challenges to social cohesion associated with globalisation and immigration. Though much is already known about a variety of positive associations between educational attainment and physical and mental well-being, definitive evidence is lacking on the forms, magnitudes and causal nature of these benefits. Further evidence on these relationships could have significant policy implications. This is especially so given that in many countries, the overall cost of health care is rising faster than the rate of economic growth.

Evidence and explanations

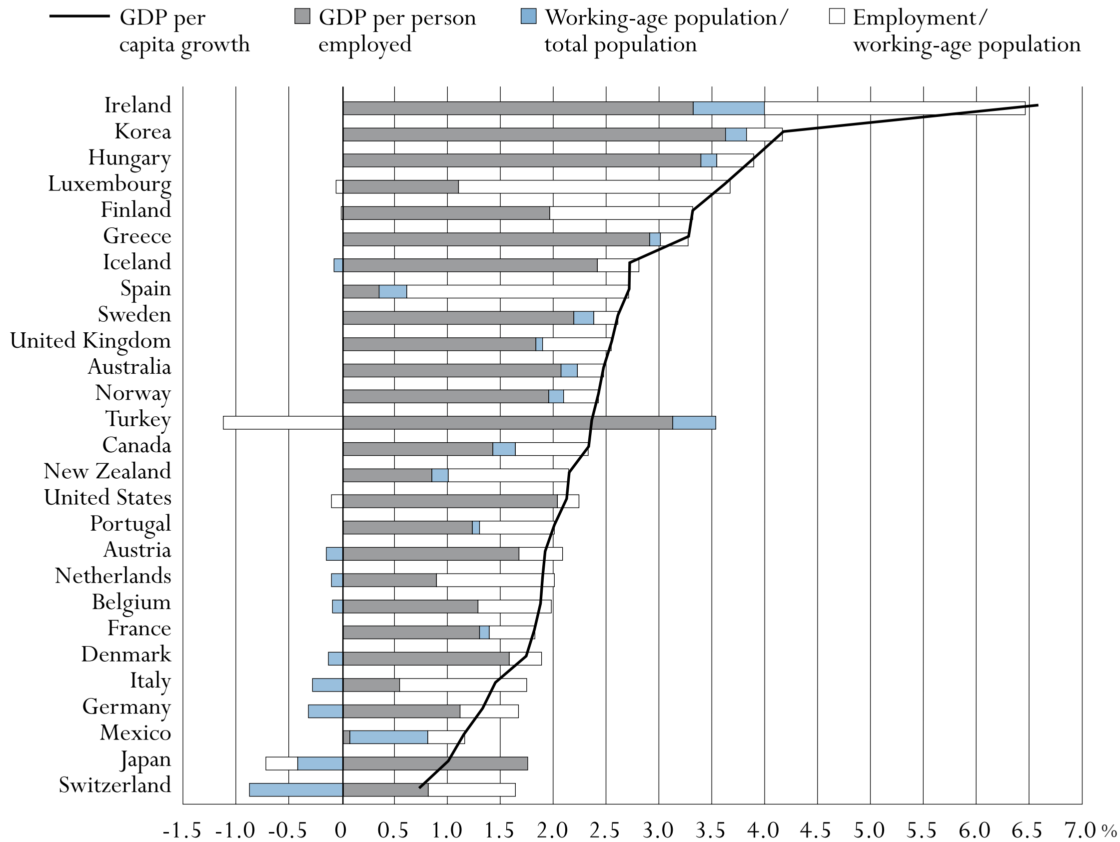
The critical roles of labour productivity and human capital

Chart A10.1 illustrates the relative importance of the key drivers of growth in GDP per capita over the years 1994 to 2004. For each country, changes in GDP per capita are broken down into three effects: demographic, labour utilisation and labour productivity. The demographic effect refers to the ratio of the working age population to total population. In most countries, this effect accounted for only a minor part of per capita output growth over time, with the exceptions of Ireland, Mexico and Turkey. However, in some OECD countries (such as Austria, Belgium, Denmark, Germany, Iceland, Italy, Japan, Luxembourg, the Netherlands and Switzerland) demographic trends have begun (in this accounting sense) to act as a slight drag on growth in GDP per capita. This tendency is set to strengthen in the future as the total population ages more rapidly.

In most countries, improvements in the utilisation of available labour *(i.e.* an increase in the share of the working age population that is in employment) had a much larger impact on change in per capita output. Improved labour utilisation accounted for from 2 to approximately 2.5% per annum increases in GDP per capita in countries such as Ireland, Luxembourg and Spain.

Chart A10.1. The driving forces of GDP per capita growth (1994-2004)

Trend series, average annual percentage change



Countries are ranked in descending order of GDP per capita growth.
Source: OECD.
StatLink: http://dx.doi.org/10.1787/646816661151

Chart A10.1 shows that rising labour productivity (GDP per person employed) accounted for at least half of GDP per capita growth in most OECD countries over the period 1994 to 2004. Indeed, in a number of countries, growth in labour productivity produced almost all of the increase in GDP per capita (this includes Austria, Denmark, Greece, Hungary, Japan, Korea, Turkey and the United States).

Labour productivity can be increased in several ways: by improving the quality of labour used in the production process, by increasing the use of capital per worker, or by attaining greater overall efficiency in how these factors of production are used together: what economists call multi-factor productivity. Multi-factor productivity itself reflects many types of efficiency improvements, such as improved managerial practices and organisational changes, and innovations leading to more valuable output being produced with a given combination of capital and labour. The skills and competencies embodied in workers – or human capital – play a fundamental role in raising labour productivity. Rising levels of educational attainment among workers is only one sign of this role. Increases in the level of post-educational skills may be even more important, although few hard measures of this are available. The OECD Growth Project estimated that in the OECD area, the long-term effect on output of one additional year of education in the adult population generally falls between 3 and 6%.

Box A10.1. Literacy and growth in 14 OECD member countries

Recent research has sought to estimate the relationship between human capital and economic growth using internationally comparable literacy scores. This approach helps avoid the problem of the imperfect comparability of measures of educational attainment across different national education systems. The literacy measures were obtained from the 1994 International Adult Literacy Survey (IALS), which tested the skills of 16-to-64-year-olds in prose, quantitative and document literacy. The data cover 14 OECD countries. Using these survey findings, a synthetic time series was constructed for 1960-1995. The literacy results of 17-to-25-year-olds in a given period were then used as proxies for investment in human capital during the previous period.

The research indicates that literacy scores, as a direct measure of human capital, perform better in growth regressions than indicators of schooling. A country able to attain literacy scores 1% higher than the international average will achieve levels of labour productivity and GDP per capita that are 2.5 and 1.5% higher, respectively, than those of other countries. IALS offers two explanations as to why literacy data should contain more information on the relative well-being of nations than data on years of schooling: that literacy might be a superior measure of some key driver of growth, such as social infrastructure; and that data on literacy skills might be more comparable across countries than data on years of schooling. To assess these interpretations, the study proposes future research using both indicators to compare growth effects across regions within a given country. This could help to surmount problems of imperfect international comparability, as the relative performance of the two would reveal which performed best as a measure of human capital and which was most closely associated with economic growth.

Measures based on average literacy scores across all individuals were shown to serve as much better indicators of aggregate human capital than measures based on the share of individuals attaining high levels of literacy. This finding is in line with the idea that the principal impact of education on growth is to raise the productivity of the whole workforce, rather than to increase the number of individuals able to bring about radical innovations. Strikingly, increases in literacy skills among women have a much larger effect on growth than increases in literacy among men. Various explanations are possible: investment in the education of women may have been provided to particularly high-ability individuals who were previously held back by social barriers; the rate of return to education among women may have been high owing to low initial levels of literacy; increased education might allow a reallocation of male and female labour across occupations, allowing more men and women to subsequently work in occupations for which they have a comparative advantage; if male and female labour is not perfectly substitutable, increased education of women might be associated with a period of rapid growth, rebalancing of the stock of human and physical capital prior to achieving a new steady state level; possible statistical effects stemming from greater variation in women's literacy scores across countries; and the possible association of women's literacy with omitted variables that affect growth, such as a country's level of social development.

Source: Coulombe *et al.* (2004).

Estimating the macroeconomic returns to education: challenges and outstanding questions

A large body of empirical research has confirmed a positive link between education and productivity. Better educated employees are generally more productive, and may also raise the productivity of co-workers. Higher stocks of human capital facilitate investments in physical capital and enhance the development and diffusion of new technologies, which in turn affects output per worker. A range of indirect benefits from education are also likely to have positive economic consequences. For instance, greater education is associated with superior health status and increases in some aspects of social cohesion and political participation.

Studies of the macroeconomic returns to education are methodologically diverse and based on two broad theoretical approaches. The first, a neo-classical approach, models the relationship between the stock of education and the long-run level of GDP. Most studies follow this tradition. A second approach derives from new-growth theory and models the relationship between the stock of education and the rate of growth of GDP. Whether increases in the stock of education primarily affect the level of output or its growth rate is still unclear. Concerning the magnitude of the returns, the available studies indicate that in the neo-classical models a one-year increase in average education raises the level of output per capita by between 3 to 6%. Studies of the new-growth variety find that the same increase in average education raises the rate of growth of output by around 1%. The two theoretical approaches yield results that differ significantly in magnitude over the medium-to-long term. This is because the absolute effect on output of a cumulative one percentage point increase in the rate of growth soon exceeds a once-only increment to the level of output of even 6 percentage points (the upper boundary). However, over a period of a few years the absolute size of the predicted effects on output is comparable in both theoretical frameworks.

Various conceptual and methodological hurdles have hindered the estimation of education's impact on growth. A central issue relates to the direction of causality in the growth relationship: does education spur growth, or does growth cause individuals to consume more education? In practice, it is likely that causality operates in both directions. In a related manner, efficiency in producing educational outputs may simply be positively associated with efficiency in other areas of the economy. The results of many studies have also been weakened by data deficiencies. For instance, low correlations have been observed between measures of education from some key sources of educational data. Furthermore, growth studies have relied on a variety of proxies for human capital, such as average years of education, adult literacy rates and school enrolment ratios, and different studies have used a variety of dependent variables. Such proxies pose a number of difficulties. For instance, they include formal education only, omitting the skills acquired through on-the-job training, experience and other channels, as well as the loss of skills caused, for example, by disuse. Similarly, adult literacy rates capture only one dimension of human capital, omitting such competencies as numeracy and technical knowledge. Indeed, different specifications of human capital lead to major divergences in estimates of the stock of human capital across countries. And variations in the quality of education systems mean that indicators of educational attainment are often not fully comparable across countries. Different types of education can also be expected to have different impacts on growth: a cohort of graduates in engineering disciplines is likely to affect productivity in different ways than a similar-sized cohort of graduates in the arts. But this differential effect is not captured in the usual aggregated proxies of human capital. However, international surveys, such as the Adult Literacy and Life Skills survey or the Programme for the International Assessment of Adult Competencies (PIAAC), which the OECD is currently developing, can provide internationally comparable multidimensional skills assessments.

Cross-country growth regressions usually assume that the impact of education is linear and constant across countries. However, research suggests that the assumption of constant growth effects of education across countries is unfounded. There is also evidence of diminishing effects on growth above an average of 7.5 years of education (see the Definitions and methodologies section). This is well below the OECD average of 11.8 years in formal education (see Indicator A1).

Much remains uncertain in education-growth research. As noted above, it is still unclear whether education and increases in the stock of human capital affect the level of GDP or its growth rate. Policy-relevant questions that could be addressed by further research include:

- How is growth affected by investment in different stages of education (from pre-school to advanced tertiary education and work-related training)?
- After how many years, and at which levels of education, do diminishing growth returns become important?
- How is growth affected by investment in different types of education, such as engineering disciplines or the arts?
- How is growth affected by the quality of education?
- How, if at all, are growth effects from the expansion of one stage of education affected by the level of attainment achieved at an earlier stage?

Education and health: an overview of the connections

More education and higher levels of qualification are associated with a lower incidence of a variety of physical and mental health disorders. Such relationships have been observed across countries, as well as across income, age and ethnic groups. The interactions involved are both direct and indirect, and in some instances vary over the lifecycle (an ongoing OECD project, entitled the Social Outcomes of Learning, examines a range of outcomes from education, including those in health). Better identification of the full range and magnitude of the effects of education on health could provide a new calculus for public investment decisions in education.

A large number of studies suggest that education has a positive causal impact on good health. However, the methodological challenges to establishing causality are significant. For instance, physical and mental ability, as well as the characteristics of parents, may bring about both higher educational attainment and better health status. Similarly, individuals' time preferences – whether they are more oriented to the present or future – may partly determine their investments in both education and health. From the other direction, health status itself is positively associated with educational attainment, although the effect of health on educational achievement may be small for adults. Research suggests three key routes through which higher levels of education can affect health status:

- *Effects on incomes and employment* Education lowers probabilities of unemployment and economic inactivity: states associated with low physical and mental health. People with higher levels of educational attainment are also more likely to work in occupations that they find fulfilling, and in which physical hazards are less serious. The better educated also generally have higher wages and occupational status. Higher incomes can facilitate access to health care (depending on the terms of health care provision in each country) and help to avoid stresses resulting from financial insecurity. Higher wages brought about by higher educational attainment also raise the opportunity cost of behaviours likely to impair health. In the United States, it is estimated that economic factors are responsible for around half of the impact of education on physical health in adults over the age of 60.

- *Effects on health-related behaviours* Health-related behavioural change may have many causes, including increased awareness of health issues and superior access to and comprehension of relevant information (although some studies show schooling to have a positive effect on health even when health knowledge is held constant). Education may also make individuals more future oriented, thus raising their incentives to make longer-term investments in health. The impact of behavioural change stemming from more education varies across health conditions. Research has found positive associations between higher levels of education and healthier dietary practices, a lower incidence of smoking and excessive alcohol consumption, increased levels of exercise, and even the more frequent use of seat belts.

  Education is also associated in positive ways with the use of health-related services. For instance, evidence from the United States indicates that more literate men tend to present for prostate cancer at an earlier stage of the disease. Similarly, lower reading ability in women is associated with lower utilisation of mammography. Research on women in the United Kingdom has shown adult learning to have an important impact on the use of preventative screening, independently of income, occupation or social class. Better educated individuals may even exercise influence on the design of health services, for instance through lobbying activities.

  In this context, analytical and policy interest has recently focused on 'health literacy' – the capacities of individuals to "obtain, process, and understand basic health information and services needed to make appropriate health decisions" (Rudd *et al.,* 1999). Large numbers of adults possess a level of literacy below the reading requirements of health-related documentation, especially among at-risk population subgroups. Research on 958 English-speaking patients presenting for non-urgent care at a walk-in clinic in Atlanta, Georgia (United States), showed that almost half of those studied were unable or limited in their ability to understand directions for medication or hospital documents (Rudd *et al.,* 1999). When health literacy is inadequate, access to care can be curtailed and the efficacy of treatment impaired. Lower functional health literacy may also be associated with higher overall costs in health care. Furthermore, deficient literacy skills give rise to ethical considerations in the context of procedures that require informed consent from patients. Indeed, the full impact of inadequate health literacy has not yet been measured.

- *Psychosocial effects* In a variety of ways, education affects how people cope with a range of stresses encountered in daily life. Education can augment individuals' self-esteem, problem-solving and social skills, personal control, and social engagement, all of which can increase the capacity to respond positively to adversity. Evidence from the United Kingdom has shown that among both men and women a low level of basic skills more than doubles the likelihood of experiencing depressive symptoms.

A positive relationship between education and better health does not hold across all conditions (and in some instances, the relationship only exists for lower levels of education). For example, more education is not linked to lower rates of anxiety disorders. And higher levels of education are associated with a higher incidence of eating disorders and complaints such as allergies and chronic fatigue syndrome (a relationship that may reflect diagnostic biases). Research indicating a decline in mental health among adolescents and young adults in a number of OECD countries has also raised concern about the possible damaging effects of academic stress and competitive and/or unsupportive learning environments.

The educational attainment of parents also affects the health of their children in a variety of ways. Greater parental schooling has been found to have a positive effect on childhood and adolescent health, even accounting for such variables as birth-weight, the age at which a woman becomes a mother, family income and congenital abnormalities. And more educated mothers are less likely to engage in a range of behaviours damaging to the foetus or young child.

The existing evidence suggests that the magnitude of education's effects on health is sizeable. As the average age of OECD populations rises, and as the costs of providing health care increases more rapidly than GDP growth in many countries, policy makers may need to pay increased attention to the implications of such evidence: the better educated are more likely to invest in preventative care, more likely to use a range of medical services in effective and efficient ways, and more likely to be in better health.

Still, more research is required on the ways in which education affects health. For instance, the precise role of education and instructional modalities in the mental health of young adults is unclear, and merits further research, as does the complex issue of how education affects the ability to cope with different kinds of stress. Research might also help to elucidate how specific interventions in education affect health outcomes. For instance, due in part to the difficulty of directly measuring time preference, evidence on the relationship between schooling and time preference is incomplete. Confirmation that schooling and parental practices cause time preferences to change could be of direct policy relevance. For example, such evidence might lead to a conclusion that general interventions focused on increasing students' future orientation could be more beneficial than specific health campaigns (in this regard, it is noteworthy that in many countries information on the dangers of smoking is readily available, and yet more educated individuals still smoke less then others. This fact might reflect greater future orientation stemming from greater educational attainment).

Definitions and methodologies

In connection with the sub-section "Estimating the macroeconomic returns to education: challenges and outstanding questions", an assessment of how different specifications of human capital affect international comparative estimates of stocks of human capital is provided in Wösmann (2003). Evidence that the growth effects of education are not constant across countries and diminish above an average of 7.5 years of education is provided in Krueger and Lindhal (2001). This section has also drawn heavily on Sianesi and Van Reenan (2003) and on De la Fuente and Ciccone (2003).

With reference to the Evidence and explanations section, see *The Sources of Economic Growth in OECD Countries* (OECD, 2003b) and *The New Economy: Beyond the Hype* (OECD, 2001a).

The sub-section "Education and health: an overview of the connections" has drawn on Grossman and Kaestner (1997), Hammond (2002), Groot and van den Brink (2004), The Nuffield Foundation (2004), Rudd *et al.* (1999) and Feinstein *et al*. (2005).

IMPACT OF DEMOGRAPHIC TRENDS ON EDUCATION PROVISION

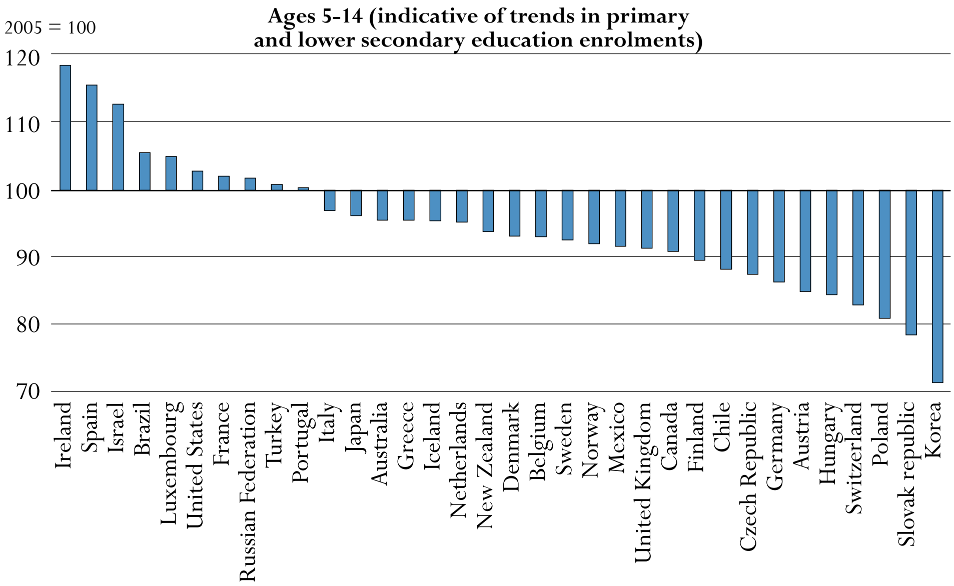
This indicator examines the trends in population numbers over the next ten years and illustrates the impact that these population trends can have on the size of the student population and the corresponding provision of educational services in countries.

Key results

Chart A11.1. Expected demographic changes within the youth population aged 5-14, over the next decade (2005-2015)

The chart shows the projected change between 2005 and 2015 in the population aged 5-14, broadly corresponding to the age of students in primary and lower secondary education, between 2005 and 2015

In 23 of the 30 OECD countries as well as in the partner country Chile, the size of the student population in compulsory schooling is set to decline over the next ten years with significant implications for the allocation of resources and the organisation of schooling in countries. This trend is most dramatic in Korea where the population aged 5-14 years is projected to decline by 29%.



Countries are ranked in descending order of the change in the size of the 5- to-14-year-old population.
Source: OECD Table A11.1. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/850142374718

Other highlights of this indicator

- Sharp downward trends of 30% or more are projected in the population aged 15-to-19 years, broadly corresponding to upper secondary school age, in the Czech Republic, Poland and the Slovak Republic and in the partner country the Russian Federation, with likely impacts on the numbers graduating from upper secondary education and therefore on the pool of students entering tertiary education.
- In some countries, the population decline in the school age population has occurred earlier, and ten years from now will be impacting on the adult population and correspondingly to the flow of new graduates and highly qualified people in the population. For instance, in Spain, the population aged 20-to-29 years is set to decline by 34% over the next ten years.
- Taken together, the population trends over the next ten years present both opportunities and challenges to countries for resourcing education services.

Policy context

The number of young people in the population influences both the rate of renewal of labour force qualifications and the amount of resources and organisational effort which a country must invest in its education system. Other things being equal, countries with larger proportions of young people in the population must allocate a larger proportion of their national income to initial education and training than those with smaller youth populations but similar participation rates (see also Indicator B2).

Projections of the relative size of the school-age population help to predict changes in the number of students and resources needed. However, these predictions have to be interpreted with caution. At the lowest level of education enrolment rates are close to 100% (see Indicator C1) and the number of students closely follows demographic changes. This is not the case in upper secondary and higher education.

Evidence and explanations

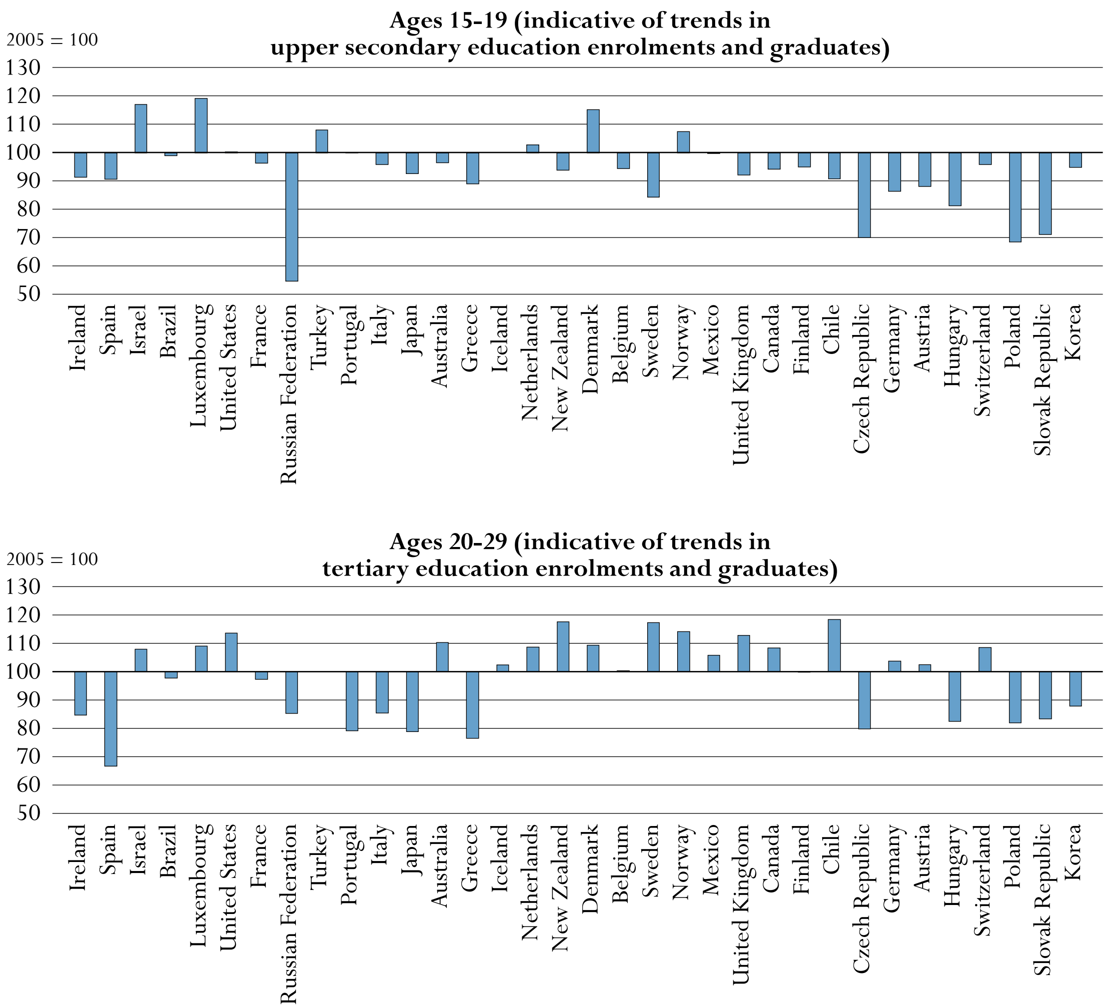
The size of the population aged 5-to-14 years, broadly equivalent to the population of compulsory age schooling, is set to decline in 23 of the 30 OECD countries and in the partner country Chile over the next ten years. These trends can have significant implications for the organisation and resourcing of the educational services, presenting difficult management challenges such as surplus capacity in schools, school reorganisation and even school closures. Countries where these challenges appear to be greatest over the next decade are Poland and the Slovak Republic where student numbers in primary and lower secondary education can be expected to fall by around 20% and even more so in Korea where the population is set to decline by almost 30% (Chart A11.1).

Ireland and Spain, however, present notable exceptions to this trend. In both of these countries, the decline in numbers of the young school-age population, which had been a feature of their demography, has now been reversed and the population of compulsory school age is expected to increase by 19 and 16% respectively over the next decade.

For the population aged 15-to-19 years, broadly corresponding to the ages of the upper secondary school population, the trends are similarly downward overall but it is evident that countries are at different stages in their demographic cycles. The Czech Republic, Poland and the Slovak Republic and the partner country the Russian Federation face the largest reductions in the population corresponding to upper secondary education over the next ten year with reductions of around 30% or more in each case. Without corresponding increases in school participation and graduation rates at this level (see Indicators C1 and A2 for current levels), this can have a significant impact on the numbers graduating from upper secondary education and correspondingly the numbers eligible for entry to tertiary education (Chart A11.2).

Among 20-to-29 year olds, the age group broadly corresponding to tertiary education, there is a more mixed picture of population trends, although overall the projection is for a decline in population numbers of 3%. Demographic decline is particularly evident in Spain, where the population aged 20-to-29 years is projected to reduce by some 34% over the next ten years. Again, unless there are corresponding increases in participation rates in tertiary education (see Indicators C1 and C2 for current levels), this trend can be expected to result in a significant reduction in the flow of new graduates and highly qualified people in the population. Countries

Chart A11.2. Expected demographic changes within the youth population aged 15-19 and 20-29, over the next decade (2005-2015)



Countries are ranked in descending order of the change in the size of the 5- to-14-year-old population (see Chart A11.1).
Source: OECD Table A11.1. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).
StatLink: http://dx.doi.org/10.1787/850142374718

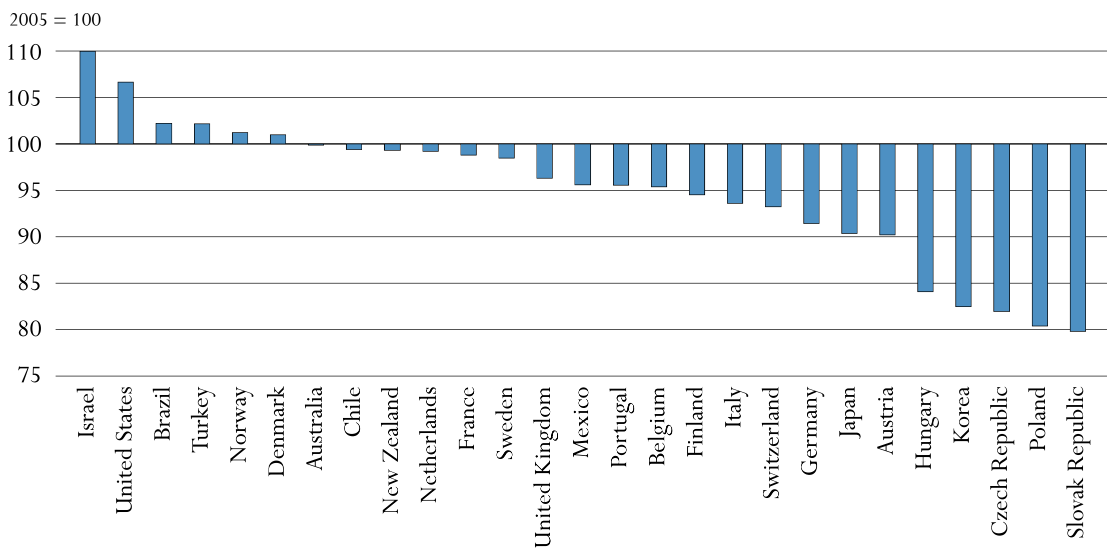
facing similar but less severe trends are Czech Republic, Greece, Japan and Portugal where the population decline in the age group corresponding to tertiary study is projected to fall by 20% or more (Chart A11.2).

In contrast, increases are projected in the population aged 20-to-29 years in 15 OECD countries as well as in the partner countries Chile and Israel, with the most notable increases expected in Chile (18%), New Zealand (17%) and Sweden (17%). For these countries, assuming participation rates in tertiary education remain at least at their current levels, the flow of highly qualified manpower might be expected to increase. However, such increases could place the financing of tertiary education under some additional pressure.

Demographic changes and their follow through to student numbers have obvious implications for the funding of education services. Chart A11.3 shows the estimated impact of demographic trends on total expenditure on educational institutions over the next decade. The estimates assume that participation rates and rates of expenditure per student remain at their current levels. This may or may not be a likely scenario for some countries given other factors that may change over this period, but these estimates can helpfully illustrate the funding and other policy choices that countries may face. Under these assumptions, the population trends over the next ten years would imply a reduction in the level of educational expenditure in all but four OECD countries as well as in the partner country Chile, arguably providing more opportunity to increase participation rates or expenditure per student in these countries. The population trends would imply the greatest opportunity for this in Czech Republic, Hungary, Korea, Poland and the Slovak Republic.

In contrast, the population projections for the United States indicate relatively strong growth over the next decade and if these feed through to similar increases in student numbers, the United States may face funding pressures accordingly.

Chart A11.3. Estimated impact of demographic trends on total expenditure on educational institutions over the next decade, assuming current participation rates and rates of expenditure per student (2005-2015)



Countries are ranked in decending order of the projected change in total expenditure on educational institutions between 2005 and 2015.
Source: OECD Table A11.1. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).
StatLink: http://dx.doi.org/10.1787/850142374718

Definitions and methodologies

The population projections are taken from the UN Population Database. The changes in the sizes of the respective populations over the period 2005 to 2015 are expressed as percentages relative to the size of the population in 2005 (index = 100). The statistics cover residents in the country, regardless of citizenship and of educational or labour market status. It is possible that nationally available population projections do not exactly match those in the UN Population Database.

The estimates of the projected change in the level of total expenditure on educational institutions between 2005 and 2015 are derived from a weighted average of the projected change in student numbers by level, weighted by expenditure by level. The projected change in student numbers is estimated from the projected population changes as follows: 0-to-4-year-olds for pre-primary, 5-to-14-year-olds for primary and lower secondary, 15-to-19-year-olds for upper secondary and 20-to-29-year-olds for tertiary education. The proportions of expenditure by level used in the calculation are derived from Table B2.1c which shows expenditure by level as a percentage of GDP.

Thus, the projected change in expenditure assumes current participation rates and current rates of expenditure per student.

Table A11.1

Demographic trends between 2005 and 2015 and indicative impact on educational expenditure, student enrolments and graduate numbers

	Change in the size of the population 2005-2015 (2005=100)						Illustrative impact of demographic change between 2005 and 2015			
	Age group									
	0-4	5-14	15-19	20-29	30+	All persons	Estimated[1] percentage change in the level of total expenditure on educational institutions between 2005 and 2015	Estimated[2] percentage change in enrolments in primary and lower secondary education between 2005 and 2015	Estimated[3] percentage change in the number graduates from upper secondary education between 2005 and 2015	Estimated[4] percentage change in the numbers of new tertiary graduates between 2005 and 2015
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
OECD countries										
Australia	107	96	97	110	116	110	0	-4	-3	10
Austria	93	85	88	102	105	101	-10	-15	-12	2
Belgium	94	93	94	100	104	101	-5	-7	-6	0
Canada	102	91	94	108	114	109	m	-9	-6	8
Czech Republic	97	88	70	80	108	99	-18	-12	-30	-20
Denmark	91	93	115	109	103	102	1	-7	15	9
Finland	101	90	95	100	106	102	-5	-10	-5	0
France	95	102	96	97	106	103	-1	2	-4	-3
Germany	99	86	86	104	102	100	-9	-14	-14	4
Greece	94	96	89	76	109	101	m	-4	-11	-24
Hungary	91	85	81	82	105	97	-16	-15	-19	-18
Iceland	95	95	100	102	115	108	m	-5	0	2
Ireland	104	119	91	85	123	113	m	19	-9	-15
Italy	87	97	96	85	103	100	-6	-3	-4	-15
Japan	93	96	93	79	105	100	-10	-4	-7	-21
Korea	90	71	95	88	116	103	-18	-29	-5	-12
Luxembourg	103	105	119	109	115	113	m	5	19	9
Mexico	91	92	100	106	132	111	-4	-8	0	6
Netherlands	88	95	103	109	105	103	-1	-5	3	9
New Zealand	97	94	94	117	111	107	-1	-6	-6	17
Norway	97	92	108	114	106	105	1	-8	8	14
Poland	101	81	69	82	111	99	-20	-19	-31	-18
Portugal	93	100	100	79	110	103	-4	0	0	-21
Slovak Republic	97	79	71	83	113	100	-20	-21	-29	-17
Spain	99	116	91	66	111	103	m	16	-9	-34
Sweden	106	93	84	117	104	103	-2	-7	-16	17
Switzerland	93	83	96	108	104	101	-7	-17	-4	8
Turkey	97	101	108	100	128	113	2	1	8	0
United Kingdom	100	91	92	113	105	103	-4	-9	-8	13
United States	105	103	100	113	111	109	7	3	0	13
OECD average	97	94	94	97	110	104	-6	-6	-6	-3
Partner countries										
Brazil	97	106	99	98	127	112	2	6	-1	-2
Chile	102	88	91	118	120	110	-1	-12	-9	18
Israel	100	113	117	108	124	117	11	13	17	8
Russian Federation	104	102	55	85	102	95	m	2	-45	-15

1. Trends in expenditures follow projections of population as follows: 0-to-4 year olds for pre-primary, 5- to-14 for primary and lower secondary, 15-to-19 for upper secondary, 20-to-29 for tertiary education. They assume current relative rates of expenditure per student by level of education and current participation rates.
2. Trends in enrolments in primary and secondary education follow projections of the population aged 5-to-14.
3. Trends in the number of upper secondary graduates follow projections of the population aged 15-to-19 and assume current graduation rates.
4. Trends in the number of new tertiary graduates follow projections of the population aged 20-to-29 and assume current graduation rates.

Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.

Please refer to the Reader's Guide for information concerning the symbols replacing missing data

StatLink: http://dx.doi.org/10.1787/850142374718

Chapter

B

FINANCIAL AND HUMAN RESOURCES INVESTED IN EDUCATION

Classification of educational expenditure

Educational expenditure in this indicator are classified through three dimensions:

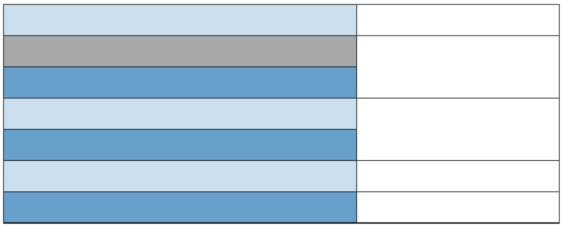
- The first dimension – represented by the horizontal axis in the diagram below – relates to the location where spending occurs. Spending on schools and universities, education ministries and other agencies directly involved in providing and supporting education is one component of this dimension. Spending 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, transports, 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 the light blue colour), and households and other private entities (indicated by the mid-blue colour). Where private expenditure on education is subsidised by public funds, this is indicated by cells in the dark blue colour.

Public sources of funds | Private sources of funds | Private funds publicly subsidised

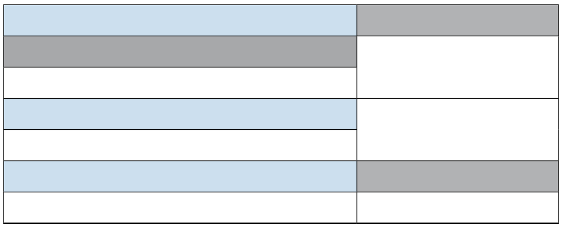
	Spending on educational institutions (*e.g.* schools, universities, educational administration and student welfare services)	**Spending on education outside educational institutions** (*e.g.* private purchases of educational goods and services, including private tutoring)
Spending on educational core 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

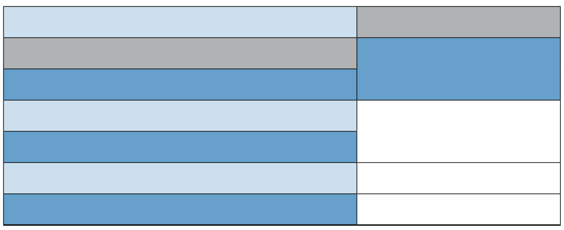
For Indicators B1, B2 and B3



For Indicators B4 and B5



For Indicator B6



INDICATOR B1

EDUCATIONAL EXPENDITURE PER STUDENT

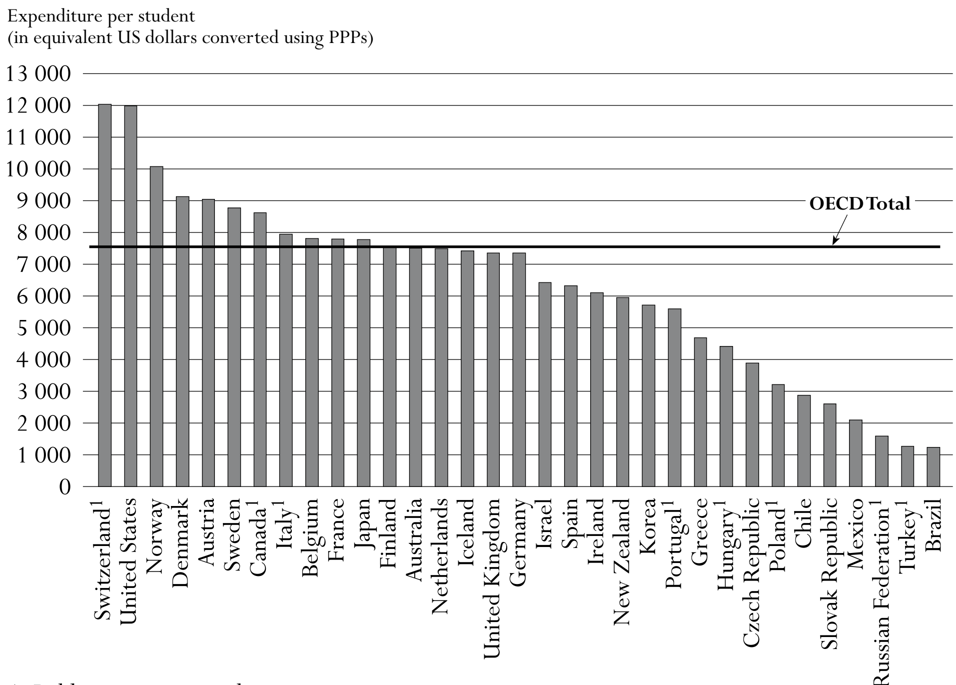
This indicator provides an assessment of the investment made in each student. Expenditure per student is largely influenced by teacher salaries (see Indicators B6 and D3), pension systems, teaching materials and facilities, the programme orientation provided to pupils/students (see Indicator C2) and the number of students enrolled in the education system (see Indicator C1). Policies put in place to attract new teachers or to reduce average class size or staffing patterns (see Indicator D2) have also contributed to changes in expenditure per student.

Key results

Chart B1.1. Annual expenditure on educational institutions per student in primary through tertiary education (2003)

Expenditure on educational institutions per student gives a measure of unit costs in formal education. This chart expresses annual expenditure on educational institutions per student in equivalent US dollars converted using purchasing power parities, based on full-time equivalents

OECD countries as a whole spend USD 7 471 per student annually between primary and tertiary education, USD 5 055 per primary student, USD 6 936 per secondary student and USD 14 598 per tertiary student, but these averages mask a broad range of expenditure across countries. As represented by the simple average across all OECD countries, countries spend twice as much per student at the tertiary level than at the primary level.



1. Public institutions only.

Countries are ranked in descending order of expenditure on educational institutions per student.

Source: OECD. Table B1.1a. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/717773424252

Other highlights of this indicator

- Excluding R&D activities and ancillary services, expenditure on educational core services in tertiary institutions represents on average USD 7 774 and ranges from USD 4 500 or below in Greece, Poland, the Slovak Republic and Turkey to more than USD 9 000 in Canada, Denmark, Norway, Switzerland, the United Kingdom and the United States.
- The programme orientation provided to students at secondary level influences the level of expenditure per student in most of the OECD and partner countries. The 14 OECD countries for which data are available spend on average USD 1 130 more per student in upper secondary vocational programmes than in general programmes.
- OECD countries spend on average USD 77 204 per student over the theoretical duration of primary and secondary studies. The cumulative expenditure for each primary and secondary student ranges from less than USD 40 000 in Mexico, Poland, the Slovak Republic and Turkey, and the partner countries Brazil, Chile and the Russian Federation, to USD 100 000 or more in Austria, Denmark, Iceland, Italy, Luxembourg, Norway, Switzerland and the United States.
- Lower unit expenditure does not necessarily lead to lower achievement and it would be misleading to equate lower unit expenditure generally with lower quality of educational services. For example, the cumulative expenditure per student between primary and secondary education of Korea and the Netherlands are below the OECD average and yet both were among the best-performing countries in the PISA 2003 survey.
- In some OECD countries, low annual expenditure per student at the tertiary level still translates into high overall costs per tertiary student because students participate in tertiary studies over a long period of time.
- Countries with low levels of expenditure per student can nevertheless show distributions of investment relative to GDP per capita similar to those countries with high levels of spending per student. For example, Hungary, Korea, Poland and Portugal – countries with expenditure per student and GDP per capita below the OECD average at primary, secondary and post-secondary non-tertiary level of education – spend a higher proportion of money per student relative to GDP per capita than the OECD average.
- Expenditure on education tends to rise over time in real terms, as teachers' pay (the main component of costs) rises in line with general earnings. However the rate of the rise may indicate the extent to which countries contain costs and raise productivity. This differs considerably across educational sectors. Expenditure per student at primary, secondary and post-secondary non-tertiary levels increased by 30% or more between 1995 and 2003 in Australia, Greece, Hungary, Ireland, Mexico, the Netherlands, Poland, Portugal, the Slovak Republic and Turkey, and in the partner country Chile. At the tertiary level, however, spending per student has in some cases fallen, as expenditure does not keep up with expanding student numbers.

Policy context

Annual and cumulative expenditure on education per student in absolute terms and relative to GDP per capita

Effective schools require the right combination of trained and talented personnel, adequate facilities, state-of-the-art equipment and motivated students ready to learn. The demand for high-quality education, which can translate into higher costs per student, must be balanced against placing undue burden on taxpayers.

As a result, the question of whether the resources devoted to education yield adequate returns to the investments made figures prominently in the public debate. Although it is difficult to assess the optimal volume of resources required to prepare each student for life and work in modern societies, international comparisons of spending on education per student can provide a starting point for evaluating the effectiveness of different models of educational provision.

Trends in the development of expenditure on education per student

Policy makers must balance the importance of improving the quality of educational services with the desirability of expanding access to educational opportunities, notably at the tertiary level. The comparative review of how trends in educational expenditure per student have evolved shows that in many OECD countries the expansion of enrolments, particularly in tertiary education, has not always been paralleled by changes in educational investment.

Finally, decisions on the allocation of funds among the various levels of education are also important. For example, some OECD countries emphasise broad access to higher education while others invest in near-universal education for children as young as three or four years of age.

Evidence and explanations

What this indicator covers and what it does not cover

The indicator shows direct public and private expenditure on educational institutions in relation to the number of full-time equivalent students enrolled in these institutions.

Public subsidies for students' living expenses have been excluded to ensure international comparability of the data. Expenditure data for students in private educational institutions are not available for certain OECD countries, and some other countries do not provide complete data on independent private institutions. Where this is the case, only the expenditure on public and government-dependent private institutions has been taken into account. Note that variation in expenditure on education per student may reflect not only variation in the material resources provided to students (*e.g.* variations in the ratio of students to teaching staff) but also variation in relative salary and price levels.

At the primary and secondary levels, educational expenditure is dominated by spending on instructional services; at the tertiary level, other services – particularly those related to R&D activities or ancillary services – can account for a significant proportion of educational spending. Indicator B6 provides further information on how spending is distributed by different types of services provided.

Expenditure on education per student in equivalent US dollars

Annual expenditure per student on educational institutions from primary through tertiary education provides an assessment of the investment made in each student. OECD countries as a whole spend on average USD 7 471 per student annually for students enrolled in primary through tertiary education. In 10 out of 33 OECD and partner countries, spending on education falls between USD 7 000 and 8 000 per student. Spending on education at these levels ranges from USD 4 000 per student or less in the Czech Republic, Mexico, Poland, the Slovak Republic and Turkey, and the partner countries Brazil, Chile and the Russian Federation, to more than USD 9 000 per student in Austria, Denmark, Norway, Switzerland and the United States (Table B1.1a). The drivers of expenditure per student vary across countries: among the five countries with the highest expenditure per student enrolled in primary through tertiary education, Switzerland and the United States are two of the countries with the highest teachers' salaries at the secondary level (see Indicator D3), whereas Austria, Denmark and Norway are among the countries with the lowest student to teaching staff ratio (see Indicator D2).

Even if overall spending per student is similar in some OECD countries, the ways in which resources are allocated across the different levels of education vary widely. OECD countries as a whole spend USD 5 055 per student at the primary level, USD 6 936 per student at the secondary level and USD 14 598 per student at the tertiary level. At the tertiary level, these totals are influenced by high expenditure in a few large OECD countries, most notably Canada and the United States. Spending on education per student in a typical OECD country (as represented by the simple mean across all OECD countries) amounts to USD 5 450 at the primary level, USD 6 962 at the secondary level and USD 11 254 at the tertiary level (Table B1.1a and Chart B1.2).

These averages mask a broad range of expenditure on education per student across OECD and partner countries. At the primary level, expenditure on educational institutions ranges from less than USD 1 000 per student in Turkey and the partner country Brazil to USD 11 481 per student in Luxembourg. Differences among OECD countries are even greater at the secondary level, where spending on education per student varies by a factor of 15, from USD 1 121 in Brazil to USD 17 078 in Luxembourg. Expenditure on education per tertiary student ranges from USD 2 451 in the Russian Federation to more than USD 24 000 in Switzerland and the United States (Table B1.1a).

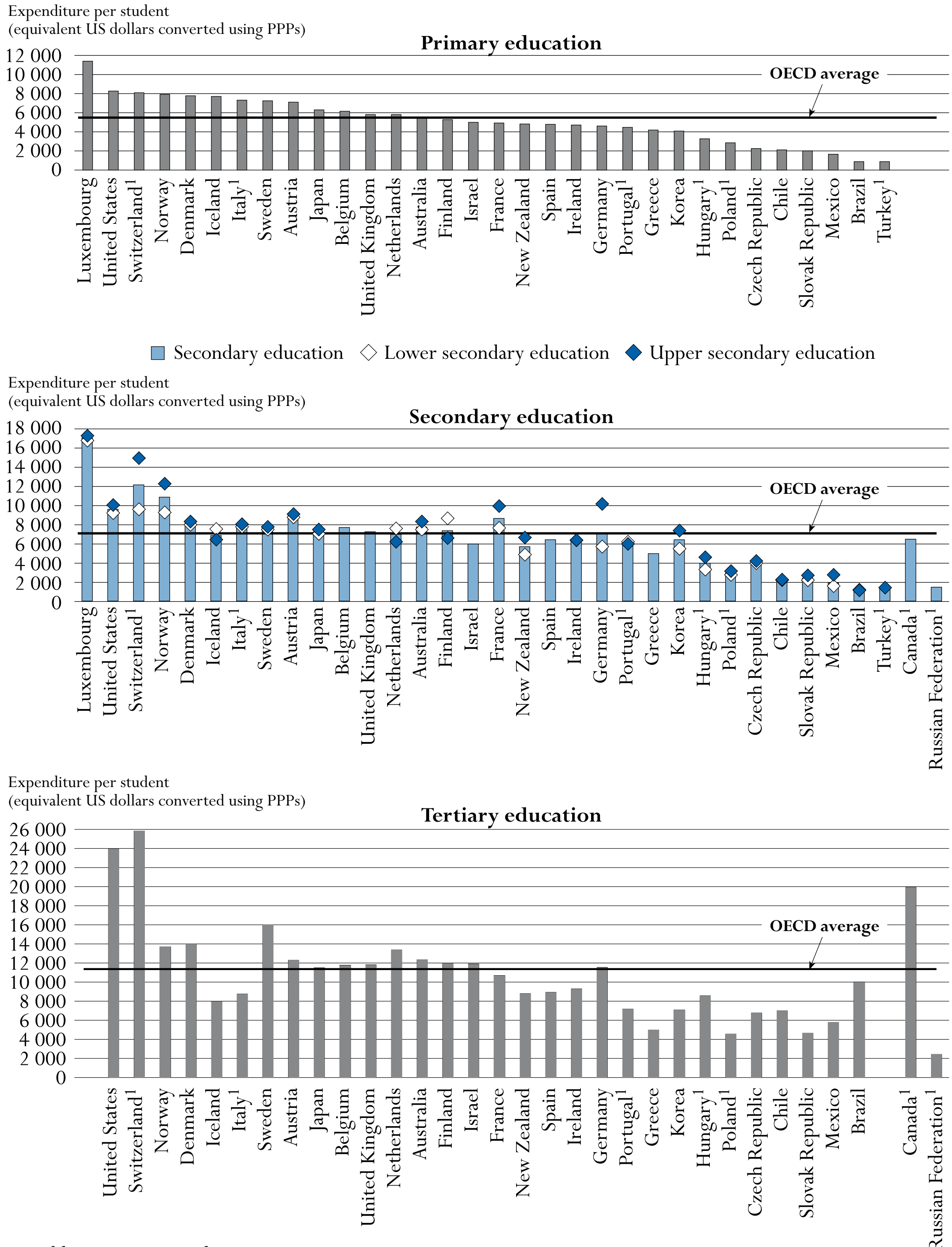
These comparisons are based on purchasing power parities for GDP, not on market exchange rates. They therefore reflect the amount of a national currency required to produce the same basket of goods and services in a given country as that produced by the US dollar in the United States.

Differences in educational expenditure per student between general and vocational programmes

The programme orientation provided to students at the secondary level influences the level of expenditure per student in most of the OECD and partner countries. In the 14 OECD countries for which data are available, expenditure per student in upper secondary vocational programmes represents USD 1 130 more than in general programmes. Only Austria, the Czech Republic, Luxembourg and Mexico show less than 15 % difference between expenditure per student in upper secondary general and vocational programmes (Table B1.1b).

Chart B1.2. Annual expenditure on educational institutions per student for all services, by level of education (2003)

In equivalent US dollars converted using PPPs, based on full-time equivalents



1. Public institutions only.

Countries are ranked in descending order of expenditure per student in primary education.

Source: OECD. Table B1.1a. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

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The countries with large dual-system apprenticeship programmes (*e.g.* Austria, Germany, Luxembourg, the Netherlands and Switzerland) at upper secondary level tend to be those with the higher difference between expenditure per student enrolled in general and vocational programmes. Austria, Germany and Switzerland spend respectively USD 929, 6 782 and 5 310 more per student in vocational programmes than in general programmes. Exceptions to this pattern are Luxembourg, with approximately the same expenditure per student between the two types of programme, and the Netherlands, where expenditure per student enrolled in general programmes is higher than that for apprenticeship programmes. The latter is partly explained by the underestimation of the expenditures of private enterprises on dual vocational programmes in Luxembourg and the Netherlands. Among the four other countries – Australia, the Czech Republic, Finland and the Slovak Republic – with 60% or more of upper secondary students enrolled in vocational programmes, Australia is the only country that spends more per student enrolled in general programmes than in vocational programmes (Table B1.1b and Table C2.5).

Expenditure on educational core services per student

On average, OECD countries for which data are available spend USD 5 332 on core educational services at primary, secondary and post secondary non-tertiary levels, which corresponds to 85% of the total expenditure per student at these levels. In 14 out of the 24 OECD and partner countries with available data, ancillary services provided by primary, secondary and post-secondary non-tertiary institutions account for less than 5% of the total expenditure per student. This proportion exceeds 10% of the total expenditure per student in a small group of countries including Finland, France, Hungary and the Slovak Republic.

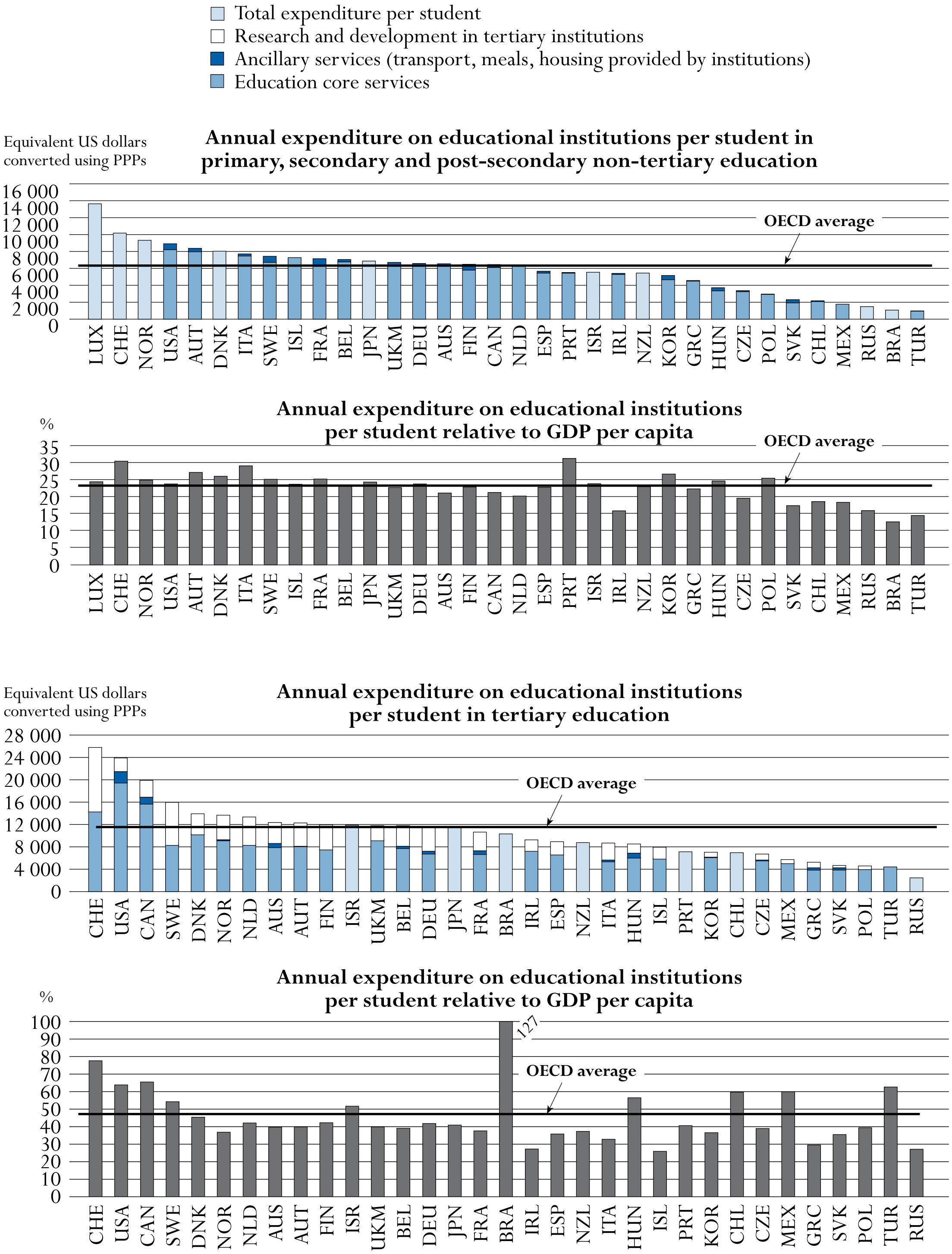
More differences in expenditure per student on core educational services compared to total expenditure are observed at the tertiary level. Naturally, OECD countries in which most R&D is performed by tertiary educational institutions tend to report higher expenditure per tertiary student than countries in which a large part of R&D is performed in other public institutions or by industry. Excluding R&D activities and ancillary services, expenditure on core educational services in tertiary institutions represents on average USD 7 774 and ranges from USD 4 500 or below in Greece, Poland, the Slovak Republic and Turkey to more than USD 9 000 in Canada, Denmark, Norway, Switzerland, the United Kingdom and the United States (Table B1.1c).

On average, expenditure on R&D and ancillary services at the tertiary level represents respectively 29 and 4% of all tertiary expenditure per student. In 8 out of 25 OECD countries for which tertiary expenditure is available for every service category – Australia, Finland, France, Germany, Italy, the Netherlands, Sweden and Switzerland – R&D expenditure and ancillary services in tertiary institutions represents 35% or more of total tertiary expenditure per student. On a per student basis this can translate into significant amounts, as in Australia, Finland, Germany, the Netherlands, Norway, Sweden, Switzerland and the United States expenditure for R&D and ancillary services in tertiary institutions amounts to more than USD 4 500 per student (Chart B1.3 and Tables B1.1c).

Differences in educational expenditure per student between levels of education

Expenditure on education per student exhibits a common pattern throughout OECD countries: in each OECD country, spending rises sharply from primary to tertiary education. This pattern can be understood by looking at the main determinants of expenditure, particularly the location and mode of educational provision. The vast majority of education still takes place in traditional

Chart B1.3. Annual expenditure on educational institutions per student relative to GDP per capita, by service category and level of education (2003)



Countries are ranked in descending order of expenditure per student for all services.
Source: OECD. Tables B1.1c and B1.4. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).
Please refer to the Reader's Guide for the list of country codes used in this chart.

StatLink: http://dx.doi.org/10.1787/717773424252

school settings with (generally) similar organisation, curriculum, teaching style and management. These shared features are likely to lead to similar patterns of unit expenditure.

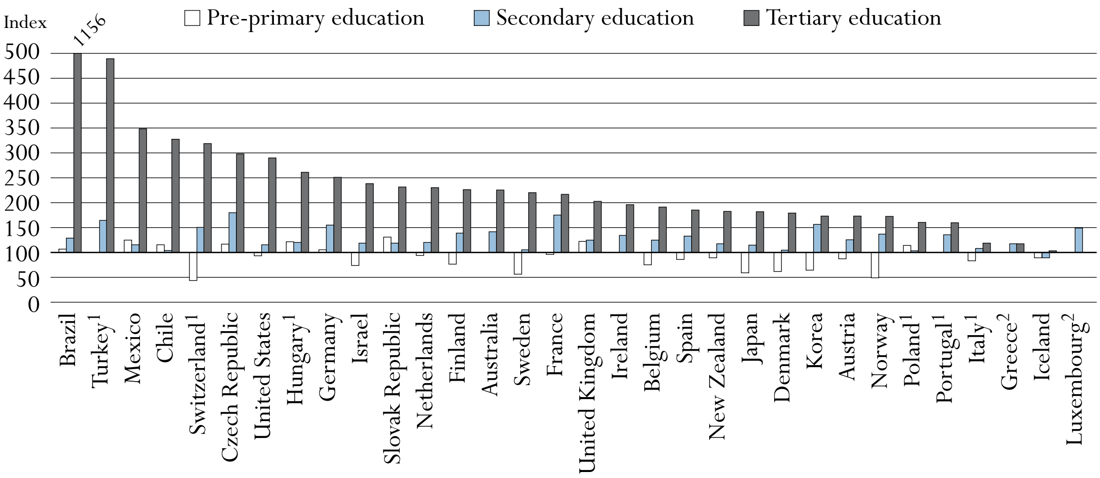
Comparisons of the distribution of expenditure between levels of education indicate the relative emphasis placed on education at different levels in various OECD countries, as well as of the relative costs of providing education at those levels.

Although expenditure on education per student rises with the level of education (from primary to tertiary) in almost all OECD and partner countries, the relative sizes of the differentials vary markedly among countries (Chart B1.4). At the secondary level, expenditure on education per student is, on average, 1.3 times that at the primary level, although the difference ranges from less than 1.0 in Iceland to 1.6 or more in the Czech Republic, France, Germany, Korea and Turkey: four OECD countries (except Germany) that have significantly increased the proportion of the population attaining upper secondary education during the last four decades (see Indicator A1).

Although OECD countries spend, on average, 2.1 times as much on education per student at the tertiary level than at the primary level, spending patterns vary widely among countries. For example, whereas Greece, Iceland, and Italy only spend between 1.1 and 1.5 times as much on a student in tertiary education as on a student in primary education, Mexico, Switzerland and Turkey, and the partner countries Brazil and Chile, spend more than 3.0 times on a student at the tertiary level (Chart B1.4).

Chart B1.4. Annual expenditure on educational institutions per student at various levels of education for all services relative to primary education (2003)

Primary education = 100



Note: A ratio of 300 for tertiary education means that expenditure on educational institutions per tertiary student is three times the expenditure on educational institutions per primary student. A ratio of 50 for pre-primary education means that expenditure on educational institutions per pre-primary student is half the expenditure on educational institutions per primary student.

1. Public institutions only.
2. Primary includes pre-primary education.

Countries are ranked in descending order of expenditure on educational institutions per student in tertiary education relative to primary education.

Source: OECD. Table B1.1a. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

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B1

Distribution of expenditure on educational institutions relative to number of students enrolled

The money invested in the education system of OECD countries can be compared to the proportion of students enrolled at each level of education. Table B1.2 shows the relationship between the two and analyses the different strategies put in place by countries to allocate the expenditure between the levels of education.

On average among the 28 OECD countries for which data are available, 66% of all expenditure on educational institutions is allocated to primary, secondary and post-secondary non-tertiary education while 74% of students are enrolled at this level of education. The difference between the two figures exceeds 10 percentage points in Australia, Canada, Hungary, Japan, Mexico, the Slovak Republic, Switzerland, Turkey and the United States, and the partner countries Brazil, Chile and Israel (Table B1.2).

Compared to primary, secondary and post-secondary non-tertiary education, there are significant differences between the proportion of money invested and the proportion of students enrolled in tertiary education. On average among the 28 OECD countries for which data are available, 25% of all expenditure on educational institutions is allocated to tertiary education, whereas only 15% of students are enrolled in tertiary education. The difference between the two proportions in tertiary education ranges from below 7 percentage points in Austria, France, Greece, Iceland, Italy, Korea, Norway, Poland and Portugal to more than 15 percentage points in Canada, Switzerland, Turkey, the United States, and the partner countries Brazil and Chile (Table B1.2).

Educational expenditure per student over the theoretical duration of primary and secondary education

OECD countries spend on average USD 77 204 per student over the theoretical duration of primary and secondary studies. Although the theoretical duration of primary and secondary studies is quite similar – between 12 and 13 years in 30 out of 34 OECD and partner countries – the cumulative expenditure per student varies considerably. The cumulative expenditure for each primary and secondary student ranges from less than USD 40 000 in Mexico, Poland, the Slovak Republic and Turkey, and the partner countries Brazil, Chile and the Russian Federation, to USD 100 000 or more in Austria, Denmark, Iceland, Italy, Luxembourg, Norway, Switzerland and the United States (Table B1.3a and Chart B1.5a).

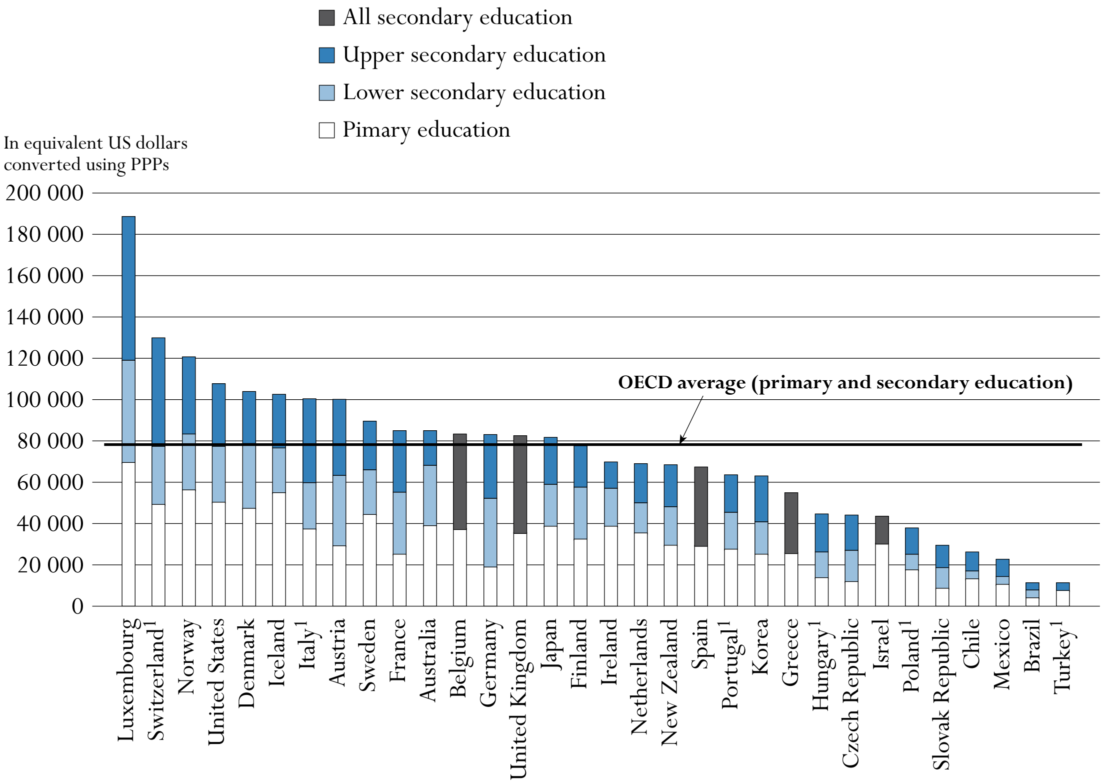
Lower unit expenditure does not necessarily produce lower achievement and it would be misleading to equate lower unit expenditure generally with lower quality of educational services. Cumulative spending per student between primary and secondary education is moderate in Korea and the Netherlands, and both were among the best-performing countries in the PISA 2003 survey. By contrast, spending per student exceeds USD 100 000 in Italy and the United States, while both performed below the OECD average in the PISA 2003 survey.

Educational expenditure per student over the average duration of tertiary studies

Both the typical duration and the intensity of tertiary education vary among OECD countries. Therefore, the differences among countries in annual expenditure on educational services per student (as shown in Chart B1.2) do not necessarily reflect the variation in the total cost of educating the typical tertiary student.

Chart B1.5a. Cumulative expenditure on educational institutions per student over the theoretical duration of primary and secondary studies (2003)

Annual expenditure on educational institutions per student multiplied by the theoretical duration of studies, in equivalent US dollars converted using PPPs



1. Public institutions only.

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. Table B1.3a. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

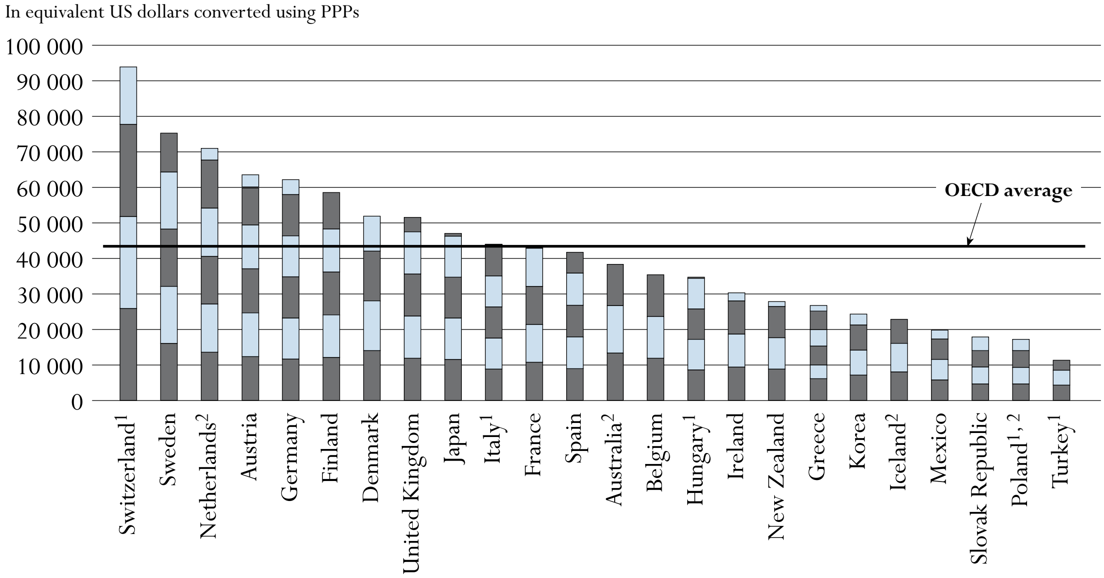
StatLink: http://dx.doi.org/10.1787/717773424252

Today, students can choose from a range of institutions and enrolment options to find the best fit for their degree objectives, abilities and personal interests. Many students enrol on a part-time basis while others work while studying or attend more than one institution before graduating. These varying enrolment patterns can affect the interpretation of expenditure on education per student.

In particular, comparatively low annual expenditure on education per student can result in comparatively high overall costs of tertiary education if the typical duration of tertiary studies is long. Chart B1.5b shows the average expenditure incurred per student throughout the course of tertiary studies. The figures account for all students for whom expenditure is incurred, including those who do not finish their studies. Although the calculations are based on a number of simplified assumptions (see Annex 3 at *www.oecd.org/edu/eag2006*) and therefore should be treated with some caution, some striking shifts in the rank order of OECD and partner countries between the annual and aggregate expenditure can be noted.

Chart B1.5b. Cumulative expenditure on educational institutions per student over the average duration of tertiary studies (2003)

Annual expenditure on educational institutions per student multiplied by the average duration of studies, in equivalent US dollars converted using PPPs



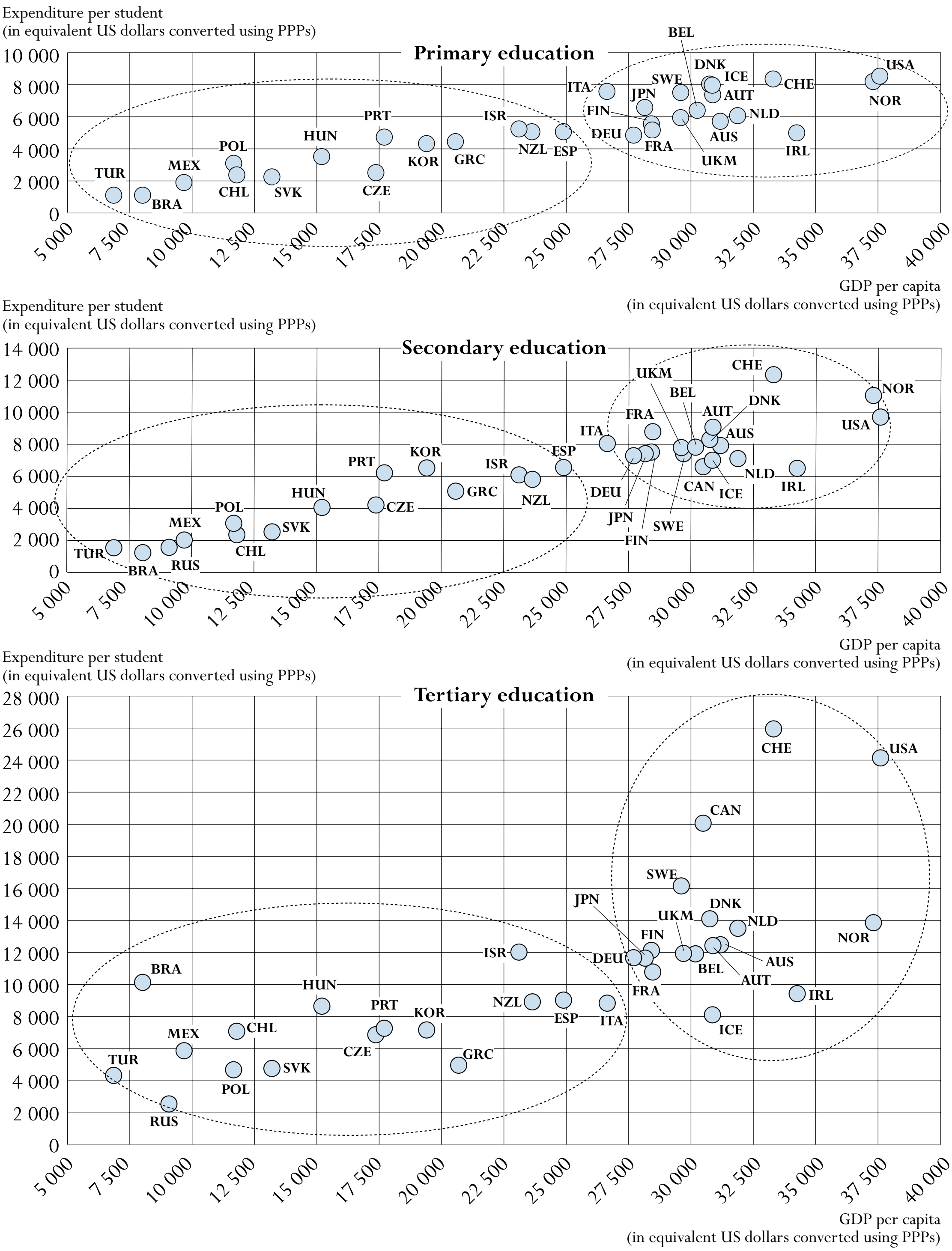
Note: Each segment of the bar represents the annual expenditure on educational institutions per student.The number of segments represents the number of years a student remains on average in tertiary education.
1. Public institutions only.
2. Tertiary-type A and advanced research programmes only.
Countries are ranked in descending order of the total expenditure on educational institutions per student over the average duration of tertiary studies.
Source: OECD. Table B1.3b. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).
StatLink: http://dx.doi.org/10.1787/717773424252

For example, annual spending per tertiary student in Japan is about the same as in Germany: USD 11 556 in Japan compared with USD 11 594 in Germany (Table B1.1a). But because of differences in the tertiary degree structure (see Indicator A2), the average duration of tertiary studies is a little bit more than one year longer in Germany than in Japan (5.4 years in Germany, compared with 4.1 years in Japan). As a consequence, the cumulative expenditure for each tertiary student is almost USD 15 000 lower in Japan than in Germany (USD 47 031 compared with USD 62 187) (Chart B1.5b and Table B1.3b).

The total cost of tertiary-type A studies in Switzerland (USD 150 942) is more than twice as high as in the other reporting countries, except Germany (Table B1.3b). These differences must, of course, be interpreted in light of differences in national degree structures as well as possible differences among OECD countries in the academic level of the qualifications of students leaving university. While similar trends are observed in tertiary-type B studies, the total cost of these studies tends to be much lower than those of tertiary type-A programmes, largely because of their shorter duration.

Chart B1.6. Annual expenditure on educational institutions per student relative to GDP per capita (2003)

In equivalent US dollars converted using PPPs, by level of education



Note: Please refer to the Reader's Guide for the list of country codes used in this chart.
Source: OECD. Tables B1.1a, B1.4 and Annex 2. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/717773424252

Educational expenditure per student in relation to GDP per capita

Expenditure on education per student relative to GDP per capita is a spending measure that takes OECD countries' relative wealth into account. Since education is universal at lower levels, spending on education per student at the lower levels of education relative to GDP per capita can be interpreted as the resources spent on young people relative to a country's ability to pay. At higher levels of education, this measure is affected by a combination of national income, spending and enrolment rates. At the tertiary level, for example, OECD countries can be relatively high on this measure if a large proportion of their wealth is spent on educating a relatively small number of students.

The relationship between GDP per capita and expenditure per student is multifaceted and complex. Chart B1.6 shows the co-existence of two different relationships between two distinct groups of countries (see ovals in Chart B1.6). Countries with a GDP per capita equivalent to less than USD 25 000 demonstrate a clear positive relationship between spending on education per student and GDP per capita at primary and secondary levels of education (the Czech Republic, Greece, Hungary, Korea, Mexico, New Zealand, Poland, Portugal, the Slovak Republic, Spain and Turkey, and the partner countries Brazil, Chile, Israel and the Russian Federation). Poorer OECD countries tend to spend less per student than richer OECD countries.

By contrast, there is a considerable variation in spending on education per student among OECD countries with a GDP per capita greater than USD 25 000 (see the ovals in Chart B1.6). Finland, France and Japan, for example, are countries with similar levels of GDP per capita that spend very different proportions of their GDP per capita on both the secondary and tertiary levels of education. Thus, the proportion of GDP per capita spent per secondary student in Finland and Japan at 26 % is at the level of the OECD average, while for France (at 30%) the proportion is above average. However, France spends 38% of GDP per capita per tertiary student, whereas Finland and Japan spent 43 and 41% respectively (Table B1.4 and Chart B1.3).

Expenditure on education per student averages 20% of GDP per capita at the primary level, 26% at the secondary level and 43% at the tertiary level (Table B1.4). Countries with low levels of expenditure per student can nevertheless show distributions of investment relative to GDP per capita which are similar to countries with a high level of spending per student. For example, Hungary, Korea, Poland and Portugal – countries with expenditure per student and GDP per capita below the OECD average at primary, secondary and post-secondary non-tertiary level of education – spend more per student relative to GDP per capita than the OECD average. Similarly, Hungary, Mexico and Turkey and the partner country Chile spend more than 56% of GDP per capita on each tertiary-level student, which is among the highest proportions after Canada, Switzerland and the United States which spend respectively 66, 78 and 64 % of GDP per capita on each tertiary-level student. Brazil has the highest proportion, with 127% of GDP per capita spent per each tertiary-level student. However, this high level of expenditure is allocated to a small number of students because only 2% of the students enrolled in all levels of education combined are enrolled at the tertiary level in Brazil (Tables B1.2 and B1.4 and Chart B1.3).

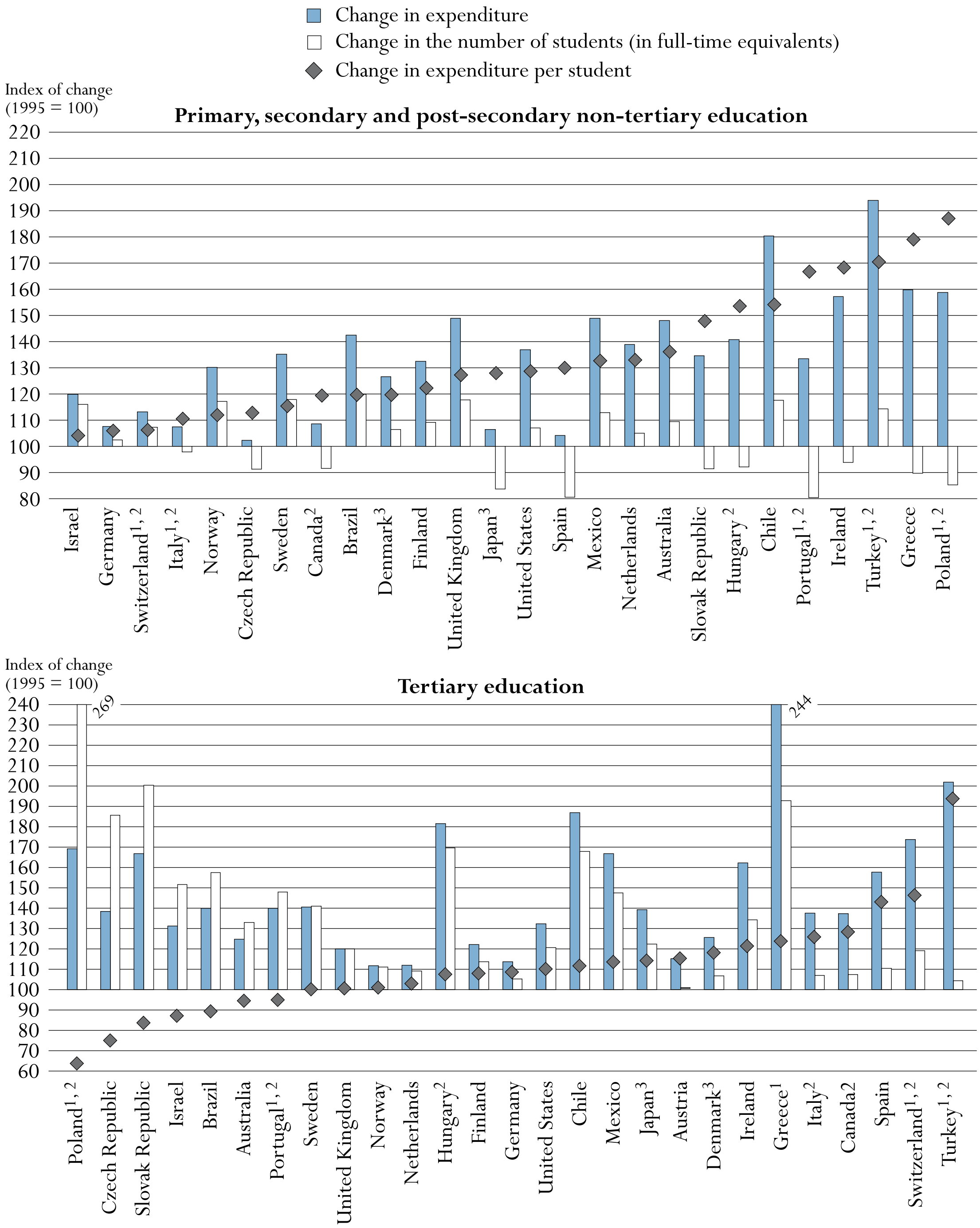
Change in expenditure on education per student between 1995 and 2003

The number of young people in a population influences both the enrolment rate and the amount of resources and organisational effort which a country must invest in its education system.

B1

Chart B1.7. Changes in the number of students as well as changes in expenditure on educational institutions per student, by level of education (1995, 2003)

Index of change between 1995 and 2003 (1995=100, 2003 constant prices)



1. Public expenditure only.
2. Public institutions only.
3. Post-secondary non-tertiary included in both upper secondary and tertiary education.

Countries are ranked in ascending order of change in expenditure on educational institutions per student.

Source: OECD. Table B1.5. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/717773424252

Thus, the size of the youth population in a given country shapes the potential demand for initial education and training. The higher the number of young people, the greater the potential demand for educational services. Table B1.5 and Chart B1.7 show, in absolute terms and at 2003 constant prices, the effects of changes in enrolment and total expenditure between 1995 and 2003 on educational expenditure per student.

Expenditure per primary, secondary and post-secondary non-tertiary student increased in every country between 1995 and 2003. In 16 out of the 26 OECD and partner countries for which data are available, changes exceed 20% between 1995 and 2003 and this increase is of 30% or more in Australia, Greece, Hungary, Ireland, Mexico, the Netherlands, Poland, Portugal, the Slovak Republic, and Turkey, and the partner country Chile. The only countries where the increase in expenditure on education per primary, secondary and post-secondary non-tertiary student is 10% or below for the same period are Germany, Italy and Switzerland, and the partner country Israel. (Table B1.5 and Chart B1.7).

Although institutional arrangements are often slow in adapting to changing demographic conditions, changes in enrolments do not seem to have been the main factor driving changes in expenditure per primary, secondary and post-secondary non-tertiary student. Japan, Poland, Portugal and Spain are exceptions to this pattern, where a drop of more than 10% in enrolments combined with a slight rise in expenditure on education for Japan and Spain, and a sharp spending increase for Poland and Portugal have led to a significant increase in spending on education per student. By contrast, in Greece, Hungary, Ireland, and the Slovak Republic, an increase of more than 30% in education budgets, coupled with a slight decrease in enrolments, has emphasised the increase in spending per primary, secondary and post-secondary non-tertiary student (Table B1.5 and Chart B1.7).

Other exceptions are Mexico, Norway, Sweden, Turkey and the United Kingdom, and the partner countries Brazil, Chile and Israel: the eight OECD and partner countries with the highest increase in the aggregate number of primary, secondary and post-secondary non-tertiary students between 1995 and 2003. In Mexico, Norway, Turkey and the United Kingdom, and partner countries Brazil and Chile, increases in expenditure outpaced rising enrolments, leading to an increase in expenditure per student whereas in partner country Israel, an increase in student numbers was counterbalanced by a similar increase in educational spending (Table B1.5 and Chart B1.7).

The pattern is different at the tertiary level of education. In 7 out of 27 OECD and partner countries for which data are available – Australia, the Czech Republic, Poland, Portugal and the Slovak Republic, and in the partner countries Brazil and Israel – expenditure on tertiary education per student declined between 1995 and 2003. In all of these countries, this decline was mainly the result of a rapid increase (more than 30%) in the number of tertiary students during the same period (Chart B1.7). On the other hand, expenditure per student at the tertiary level rose significantly in Greece, Hungary, Ireland and Mexico, and in the partner country Chile despite a growth in enrolment of 93, 70, 34, 48 and 68%, respectively. Among the 27 OECD and partner countries, Austria, Canada, Denmark, Germany, Italy, the Netherlands and Turkey were the only countries in which the number of tertiary students increased by less than 10% (Table B1.5 and Chart B1.7).

Definitions and methodologies

Data refer to the financial year 2003 and are based on the UOE data collection on education statistics administered by the OECD in 2005 (for details see Annex 3 at *www.oecd.org/edu/eag2006*). Expenditure on education per student at a particular level of education is calculated by dividing the total expenditure on educational institutions at that level by the corresponding full-time equivalent enrolment. Only those 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 US dollars by dividing the national currency figure by the purchasing power parity (PPP) index for GDP. The PPP exchange rate 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 (Annex 2 gives further details).

The OECD average is calculated as the simple average over all OECD countries for which data are available. The OECD total reflects the value of the indicator if the OECD region is considered as a whole (see the Reader's Guide for details).

Table B1.5 shows the changes in expenditure on educational institutions per student between the financial years 1995 and 2003. OECD countries were asked to collect the 1995 data according to the definitions and the coverage of UOE 2005 data collection. All expenditure data, as well as the GDP for 1995, are adjusted to 2003 prices using the GDP price deflator.

Expenditure on education per student relative to GDP per capita is calculated by expressing expenditure on education per student in units of national currency as a percentage of GDP per capita, 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).

Expected expenditure over the average duration of tertiary studies (Table B1.3b) is calculated by multiplying current annual expenditure by the typical duration of tertiary studies. The methodology used for the estimation of the typical duration of tertiary studies is described in Annex 3 (*www.oecd.org/edu/eag2006*). For the estimation of the duration of tertiary education, data are based on a special survey carried out in OECD countries in 2005.

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 which he or she obtains for successful completion of specific course units during a specified reference period. OECD countries that can accurately account for part-time enrolment will have higher expenditure per full-time equivalent student than OECD countries that cannot differentiate between different modes of student attendance.

Note that data appearing in earlier editions of this publication may not always be comparable to data shown in the 2006 edition due to changes in definitions and coverage that were made as a result of the OECD expenditure comparability study (see Annex 3 at *www.oecd.org/edu/eag2006* for details on changes).

Further references

The following additional material relevant to this indicator is available on the Web at *http://dx.doi.org/10.1787/717773424252:*

- ***Table B1.1d Annual expenditure on educational institutions per student for core services (2003)***

Table B1.1a.
Annual expenditure on educational institutions per student for all services (2003)
In equivalent US dollars converted using PPPs for GDP, by level of education, based on full-time equivalents

		Pre-primary education (for children 3 years and older)	Primary education	Secondary education			Post-secondary non-tertiary education	Tertiary education (including R&D activities)			All tertiary education excluding R&D activities	Primary to tertiary education
				Lower secondary education	Upper secondary education	All secondary education		Tertiary-type B education	Tertiary-type A & advanced research programmes	All tertiary education		
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
OECD countries	Australia	m	5 494	7 442	8 362	7 788	7 341	7 792	13 331	12 406	8 645	7 527
	Austria	6 205	7 139	8 719	9 189	8 943	x(4)	10 382	12 507	12 344	8 116	9 063
	Belgium	4 663	6 180	x(5)	x(5)	7 708	x(5)	x(9)	x(9)	11 824	8 139	7 831
	Canada[1, 2]	x(5)	x(5)	x(5)	x(5)	6 482	x(7)	23 780	18 567	19 992	16 937	8 641
	Czech Republic	2 660	2 273	3 939	4 241	4 088	2 051	3 339	7 185	6 774	5 698	3 898
	Denmark	4 824	7 814	7 958	8 401	8 183	x(4, 9)	x(9)	x(9)	14 014	10 190	9 154
	Finland	4 069	5 321	8 608	6 654	7 402	x(5)	3 985	12 060	12 047	7 506	7 578
	France	4 744	4 939	7 603	9 992	8 653	5 195	8 925	11 303	10 704	7 330	7 807
	Germany	4 865	4 624	5 627	10 232	7 173	10 097	6 299	12 457	11 594	7 282	7 368
	Greece	x(2)	4 218	x(5)	x(5)	4 954	4 181	2 602	6 071	4 924	3 757	4 686
	Hungary[1]	3 985	3 286	3 269	4 620	3 948	x(4)	8 427	8 583	8 576	6 885	4 427
	Iceland	6 781	7 752	7 475	6 459	6 898	x(4, 9)	m	8 023	8 023	5 809	7 438
	Ireland	m	4 760	6 329	6 428	6 374	5 759	x(9)	x(9)	9 341	7 223	6 118
	Italy[1]	6 116	7 366	7 688	8 108	7 938	m	7 443	8 777	8 764	5 658	7 963
	Japan	3 766	6 350	6 991	7 552	7 283	x(4, 9)	7 638	12 913	11 556	m	7 789
	Korea	2 628	4 098	5 425	7 442	6 410	a	4 021	9 138	7 089	6 213	5 733
	Luxembourg	x(2)	11 481	16 754	17 364	17 078	m	m	m	m	m	m
	Mexico	2 069	1 656	1 495	2 790	1 918	a	x(9)	x(9)	5 774	4 998	2 095
	Netherlands	5 497	5 836	7 566	6 271	6 996	5 723	m	13 537	13 444	8 338	7 501
	New Zealand	4 325	4 841	4 803	6 730	5 693	8 016	6 064	9 738	8 832	m	5 963
	Norway	3 895	7 977	9 208	12 380	10 919	x(5)	x(9)	x(9)	13 772	9 310	10 105
	Poland[1]	3 269	2 859	2 693	3 184	2 951	6 866	m	4 653	4 589	3 960	3 221
	Portugal[1]	4 489	4 503	6 158	6 022	6 094	a	x(9)	x(9)	7 200	m	5 611
	Slovak Republic	2 641	2 020	2 106	2 737	2 401	x(4)	x(4)	4 678	4 678	4 299	2 602
	Spain	4 151	4 829	x(5)	x(5)	6 418	x(5)	7 997	9 131	8 943	6 563	6 346
	Sweden	4 091	7 291	7 446	7 848	7 662	2 867	x(9)	x(9)	16 073	8 278	8 792
	Switzerland[1]	3 558	8 131	9 538	15 014	12 209	8 485	7 579	27 682	25 900	14 335	12 071
	Turkey[1]	m	869	a	1 428	1 428	a	x(9)	x(9)	m	4 248	1 266
	United Kingdom	7 153	5 851	x(5)	x(5)	7 290	x(5)	x(9)	x(9)	11 866	9 130	7 376
	United States	7 755	8 305	9 156	10 105	9 590	m	x(9)	x(9)	24 074	21 566	12023
	OECD average	*4 508*	*5 450*	*6 560*	*7 582*	*6 962*	*4 439*	~	~	*11 254*	*8 093*	*6 827*
	OECD total	*4 959*	*5 055*	~	~	*6 936*	~	~	~	*14 598*	*12 208*	*7 471*
	EU19 average	*4 589*	*5 399*	*6 831*	*7 419*	*6 961*	*4 749*	~	~	*9 872*	*6 962*	*6 519*
Partner countries	Brazil[2]	926	870	1 105	1 152	1 121	a	x(9)	x(9)	10 054	m	1 242
	Chile[3]	2 470	2 139	2 124	2 281	2 225	a	3 128	8 382	7 011	m	2 876
	Israel	3 718	5 017	x(5)	x(5)	5 959	3 723	8 372	12 941	11 945	m	6 436
	Russian Federation[1]	m	x(5)	x(5)	x(5)	1 436	x(5)	1 733	2 741	2 451	m	1 600

1. Public institutions only.
2. Year of reference 2002.
3. Year of reference 2004.
Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

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Table B1.1b.

Annual expenditure on educational institutions per student for all services, by type of programme (2003)

In equivalent US dollars converted using PPPs for GDP, by level of education, based on full-time equivalents

		Secondary education									Post-secondary non-tertiary education		
		Lower secondary education			Upper secondary education			All secondary education					
		All programmes	General programmes	Vocational programmes	All programmes	General programmes	Vocational programmes	All programmes	General programmes	Vocational programmes	All programmes	General programmes	Vocational programmes
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
OECD countries	Australia	7 442	7 474	7 094	8 362	8 814	7 343	7 788	7 894	7 265	7 341	a	7 341
	Austria	8 719	8 719	a	9 189	8 243	9 172	8 943	8 623	9 172	m	m	m
	Belgium	x(7)	x(7)	x(7)	x(7)	x(7)	x(7)	7 708	x(7)	x(7)	x(7)	x(7)	x(7)
	Canada[1,2]	x(7)	x(7)	x(7)	x(7)	x(7)	x(7)	6 482	x(7)	x(7)	m	m	m
	Czech Republic	3 939	3 924	7 634	4 241	3 795	4 357	4 088	3 903	4 374	2 051	2 986	1 961
	Denmark	7 958	7 958	a	8 401	x(4)	x(4)	8 183	x(7)	x(7)	m	m	m
	Finland	8 608	8 608	a	6 654	4 975	7 729	7 402	7 204	7 729	x(7)	a	x(9)
	France	7 603	7 603	a	9 992	x(4)	x(4)	8 653	x(7)	x(7)	5 195	x(10)	x(10)
	Germany	5 627	5 627	x(6)	10232	5 962	12 744	7 173	5 680	12 744	10 097	6 430	10 727
	Greece	x(7)	x(7)	x(7)	x(7)	x(7)	x(7)	4 954	x(7)	x(7)	4 181	m	m
	Hungary[1]	3 269	x(1)	x(1)	4 620	3 642	5 590	3 948	3 321	5 752	x(7)	x(7)	x(7)
	Iceland	7 475	m	a	6 459	m	m	6 898	m	a	a	a	a
	Ireland	6 329	6 329	a	6 428	x(4)	x(4)	6 374	x(7)	x(7)	5 759	x(10)	x(10)
	Italy[1]	7 688	7 688	a	8 108	x(4)	x(4)	7 938	x(7)	x(7)	m	m	m
	Japan	6 991	6 991	a	7 552	x(4)	x(4)	7 283	x(7)	x(7)	x(7)	m	m
	Korea	5 425	m	m	7 442	x(4)	x(4)	6 410	x(7)	x(7)	m	m	m
	Luxembourg	16 754	16 754	a	17 364	17 780	17 172	17 078	17 025	17 172	m	m	m
	Mexico	1 495	1 779	m	2 790	2 760	3 046	1 918	2 116	823	a	a	a
	Netherlands	7 566	7 191	8 164	6 271	7 600	5 676	6 996	7 307	6 709	5 723	a	5 723
	New Zealand	4 803	m	m	6 730	x(4)	x(4)	5 693	x(7)	x(7)	8 016	m	m
	Norway	9 208	9 208	a	12 380	x(4)	x(4)	10 919	x(7)	x(7)	x(4)	x(4)	x(4)
	Poland[1]	2 693	2 693	a	3 184	x(4)	x(4)	2 951	x(7)	x(7)	6 866	m	m
	Portugal[1]	6 158	m	m	6 022	x(4)	x(4)	6 094	x(7)	x(7)	m	m	m
	Slovak Republic	2 106	2 106	a	2 737	1 893	3 061	2 401	2 064	3 073	x(7)	x(8)	x(9)
	Spain	x(7)	x(7)	x(7)	x(7)	x(7)	x(7)	6 418	x(7)	x(7)	a	a	a
	Sweden	7 446	7 446	a	7 848	7 029	8 632	7 662	7 296	8 632	2 867	7 378	1 497
	Switzerland[1]	9 538	9 538	a	15 014	11 530	16 840	12 209	10 029	16 840	8 485	5 519	10 139
	Turkey[1]	a	a	a	1 428	1 168	1 811	1 428	1168	1 811	a	a	a
	United Kingdom	x(7)	x(7)	x(7)	x(7)	x(7)	x(7)	7 290	x(7)	x(7)	m	m	m
	United States	9 156	9 156	a	10 105	10 105	a	9 590	9590	a	m	a	m
	OECD average	*6 560*	*6 840*	*5 765*	*7 582*	*6 807*	*7 936*	*6 962*	*6 659*	*7 854*	*6 053*	*5 578*	*6 231*
Partner countries	Brazil[2]	1 105	x(1)	x(1)	1 152	x(4)	x(4)	1 121	x(7)	x(7)	a	a	a
	Chile[3]	2 124	2 124	a	2 281	2 450	1 983	2 225	2 297	1 983	a	a	a
	Israel	x(7)	x(7)	x(7)	x(7)	x(7)	x(7)	5 959	x(7)	x(7)	3 723	3 723	a
	Russian Federation[1]	x(7)	x(7)	x(7)	x(7)	x(7)	x(7)	1 436	1 383	1 911	x(7)	x(8)	x(9)

1. Public institutions only.
2. Year of reference 2002.
3. Year of reference 2004.
Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).
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Table B1.1c.
Annual expenditure per student on core services, ancillary services and R&D (2003)
In equivalent US dollars 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 education			Tertiary education			
		Educational core services	Ancillary services (transport, meals, housing provided by institutions)	Total	Educational core services	Ancillary services (transport, meals, housing provided by institutions)	Research & development	Total
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
OECD countries	Australia	6 292	292	6 584	7 904	741	3 761	12 406
	Austria	8 009	390	8 399	8 045	71	4 228	12 344
	Belgium	6 810	262	7 072	7 722	417	3 686	11 824
	Canada[1, 2, 3]	6 142	341	6 482	15 689	1 248	3 054	19 992
	Czech Republic	3 253	144	3 397	5 479	219	1 076	6 774
	Denmark[1]	x(3)	x(3)	8 011	10 190	a	3 824	14 014
	Finland	5 811	691	6 501	7 506	n	4 540	12 047
	France	6 278	902	7 181	6 708	621	3 374	10 704
	Germany	6 451	143	6 594	6 718	564	4 311	11 594
	Greece	4 525	63	4 587	3 302	455	1 167	4 924
	Hungary[3]	3 353	387	3 740	5 994	891	1 691	8 576
	Iceland[1]	7 319	a	7 319	5 809	x(4)	2 214	8 023
	Ireland	5 323	124	5 446	7 223	x(7)	2 118	9 341
	Italy[3]	7 483	271	7 754	5 375	283	3 106	8 764
	Japan[1]	x(3)	x(3)	6 842	x(7)	x(7)	x(7)	11 556
	Korea	4 679	496	5 174	6 098	115	876	7 089
	Luxembourg	x(3)	x(3)	13 621	m	m	m	m
	Mexico[4]	1 763	m	1 763	4 998	m	776	5 774
	Netherlands	6 351	88	6 439	8 335	3	5 106	13 444
	New Zealand	x(3)	x(3)	5 419	x(7)	x(7)	x(7)	8 832
	Norway	x(3)	x(3)	9 300	9 105	205	4 462	13 772
	Poland[3]	2 950	9	2 959	3 957	3	628	4 589
	Portugal[3]	5 481	38	5 519	x(7)	x(7)	x(7)	7 200
	Slovak Republic[1]	1 936	358	2 293	3 872	427	380	4 678
	Spain	5 483	200	5 682	6 563	m	2 379	8 943
	Sweden	6 724	729	7 453	8 278	n	7 795	16 073
	Switzerland[3]	x(3)	x(3)	10 150	14 335	x(4)	11 565	25 900
	Turkey[3]	946	39	986	4 248	x(4)	m	m
	United Kingdom	6 363	378	6 741	9 130	m	2 735	11 866
	United States	8 257	678	8 935	19 538	2 028	2 508	24 074
	OECD average	*5 332*	*305*	*6 278*	*7 774*	*436*	*3 254*	*11 254*
	EU19 average	*5 446*	*304*	*6 284*	*6 729*	*282*	*3 067*	*9 872*
Partner countries	Brazil[2]	x(3)	x(3)	1 009	x(7)	x(7)	x(7)	10 054
	Chile[5]	2 099	82	2 182	x(7)	x(7)	x(7)	7 011
	Israel	x(3)	x(3)	5 505	x(7)	x(7)	x(7)	11 945
	Russian Federation	x(3)	x(3)	1 436	x(7)	x(7)	x(7)	2 451

1. Some levels of education are included with others. Refer to "x" code in Table B1.1a for details.
2. Year of reference 2002.
3. Public institutions only.
4. Research and development expenditure and thus total expenditure is underestimated.
5. Year of reference 2004.
Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

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Table B1.2.
Distribution of expenditure (as a percentage) on educational institutions compared to number of students enrolled at each level of education (2003)

The table shows the distribution of educational expenditure and of students across levels of education. The number of students is adjusted to the financial year. E.g. when reading the first and second columns, in the Czech Republic, 9 % of all expenditure on educational institutions is allocated to pre-primary education whereas 13 % of pupils/students are enrolled at this level of education.

		Pre-primary education (for children 3 years and older)		Primary, secondary and post-secondary non-tertiary education		All tertiary education		Not allocated by level		All levels of education	
		Proportion of expenditure on educational institutions	Proportion of students enrolled, based on full-time equivalents	Proportion of expenditure on educational institutions	Proportion of students enrolled, based on full-time equivalents	Proportion of expenditure on educational institutions	Proportion of students enrolled, based on full-time equivalents	Proportion of expenditure on educational institutions	Proportion of students enrolled, based on full-time equivalents	Proportion of expenditure on educational institutions	Proportion of students enrolled, based on full-time equivalents
		(1)		(2)		(3)		(4)		(5)	
OECD countries	Australia	1.7	2.8	71.3	81.3	26.8	15.7	0.1	0.1	100	100
	Austria	9.5	13.2	69.3	72.2	20.7	14.6	n	n	100	100
	Belgium	9.7	15.6	66.9	70.9	21.3	13.5	2.1	n	100	100
	Canada[1, 2]	x(2)	4.9	60.9	76.3	39.1	16.9	n	n	100	98
	Czech Republic	9.2	13.3	65.3	73.9	22.7	12.9	2.8	n	100	100
	Denmark	11.7	20.6	60.6	64.3	24.9	15.1	2.7	n	100	100
	Finland	6.2	11.0	64.8	71.7	28.9	17.3	n	n	100	100
	France	11.1	17.1	66.9	68.2	21.6	14.7	0.5	n	100	100
	Germany	9.7	13.6	65.6	72.9	22.6	13.4	2.2	0.1	100	100
	Greece	x(2)	6.7	67.1	65.9	29.9	27.3	3.1	n	100	100
	Hungary[1]	14.5	16.5	59.2	71.6	22.5	11.9	3.8	n	100	100
	Iceland	11.4	13.0	65.8	73.7	13.5	13.3	9.3	n	100	100
	Ireland	m	m	m	m	m	m	m	m	m	m
	Italy[1]	9.1	11.5	70.2	70.2	20.7	18.3	n	n	100	100
	Japan	3.9	8.3	62.2	72.3	26.4	18.2	7.5	1.2	100	100
	Korea	2.1	4.7	58.3	67.5	34.4	27.8	5.2	n	100	100
	Luxembourg	m	m	m	m	m	m	m	m	m	m
	Mexico	11.4	11.8	66.3	80.9	19.6	7.3	2.7	n	100	100
	Netherlands	7.4	9.8	67.4	76.5	25.2	13.7	n	n	100	100
	New Zealand	4.3	5.9	71.9	79.2	22.2	15.0	1.6	n	100	100
	Norway	4.5	11.2	70.4	72.3	22.9	16.0	2.1	n	100	100
	Poland[1]	9.3	9.2	69.9	76.2	20.8	14.6	n	n	100	100
	Portugal	7.2	11.3	70.2	70.5	19.2	18.1	3.4	n	100	100
	Slovak Republic	12.0	12.3	64.8	76.3	19.7	11.4	3.5	n	100	100
	Spain	11.1	16.0	63.4	66.9	25.5	17.1	n	n	100	100
	Sweden	7.4	14.6	66.3	72.1	26.3	13.3	n	n	100	100
	Switzerland[1]	3.8	10.8	66.9	78.3	27.8	10.9	1.6	n	100	100
	Turkey[1]	m	2.0	71.2	89.5	28.8	8.4	n	n	100	100
	United Kingdom	6.1	6.2	75.2	82.1	18.7	11.6	a	a	100	100
	United States	5.6	8.4	55.9	72.9	38.6	18.7	a	n	100	100
	OECD average	*8.0*	*10.8*	*66.1*	*73.8*	*24.8*	*15.2*	*1.9*	*n*	*100*	*100*
Partner countries	Brazil[2]	7	10	73	88	19	2	n	n	100	100
	Chile[3]	8	9	60	78	32	13	n	n	100	100
	Israel	10	18	57	68	23	13	10	2	100	100
	Russian Federation[1]	15	m	56	m	18	m	11	m	100	m

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2. Year of reference 2002.
3. Year of reference 2004.
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Table B1.3a.

Cumulative expenditure on educational institutions per student over the theoretical duration of primary and secondary studies (2003)

In equivalent US dollars converted using PPPS for GDP, by level of education

		Average theoretical duration of primary and secondary studies (in years)				Cumulative expenditure per student over the theoretical duration of primary and secondary studies (in U.S. dollars)				
		Primary education	Lower secondary	Upper secondary education	Total primary and secondary education	Primary education	Lower secondary	Upper secondary education	All secondary education	Total primary and secondary education
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
OECD countries	Australia	7.0	4.0	2.0	13.0	38 455	29 766	16 724	46 490	84 945
	Austria	4.0	4.0	4.0	12.0	28 558	34 875	36 757	71 632	100 190
	Belgium	6.0	2.0	4.0	12.0	37 082	x(8)	x(8)	46 248	83 329
	Canada[1,2]	6.0	3.0	3.0	12.0	x(9)	x(9)	x(9)	x(9)	77 789
	Czech Republic	5.0	4.0	4.0	13.0	11 365	15 757	16 965	32 723	44 087
	Denmark	6.0	4.0	3.0	13.0	46 884	31 833	25 203	57 036	103 920
	Finland	6.0	3.0	3.0	12.0	31 926	25 823	19 961	45 784	77 710
	France	5.0	4.0	3.0	12.0	24 697	30 410	29 976	60 387	85 084
	Germany	4.0	6.0	3.0	13.0	18 498	33 764	30 696	64 557	83 055
	Greece	6.0	3.0	3.0	12.0	25 309	x(8)	x(8)	29 724	55 033
	Hungary[1]	4.0	4.0	4.0	12.0	13 144	13 075	18 479	31 555	44 699
	Iceland	7.0	3.0	4.0	14.0	54 267	22 424	25 836	48 260	102 527
	Ireland	8.0	3.0	2.0	13.0	38 078	18 987	12 856	31 843	69 921
	Italy[1]	5.0	3.0	5.0	13.0	36 829	23 065	40 542	63 608	100 437
	Japan	6.0	3.0	3.0	12.0	38 103	20 972	22 655	43 627	81 730
	Korea	6.0	3.0	3.0	12.0	24 586	16 274	22 327	38 602	63 187
	Luxembourg	6.0	3.0	4.0	13.0	68 886	50 261	69 458	119 719	188 605
	Mexico	6.0	3.0	3.0	12.0	9 939	4 486	8 371	12 857	22 796
	Netherlands	6.0	2.0	3.0	11.0	35 015	15 133	18 812	33 945	68 959
	New Zealand	6.0	4.0	3.0	13.0	29 044	19 212	20 191	39 403	68 446
	Norway	7.0	3.0	3.0	13.0	55 841	27 623	37 140	64 762	120 603
	Poland[1]	6.0	3.0	4.0	13.0	17 153	8 080	12 737	20 817	37 970
	Portugal[1]	6.0	3.0	3.0	12.0	27 019	18 475	18 065	36 540	63 559
	Slovak Republic	4.0	5.0	4.0	13.0	8 078	10 528	10 947	21 474	29 552
	Spain	6.0	4.0	2.0	12.0	28 971	x(8)	x(8)	38 508	67 479
	Sweden	6.0	3.0	3.0	12.0	43 744	22 339	23 544	45 884	89 628
	Switzerland[1]	6.0	3.0	3.5	12.5	48 788	28 613	52 549	81 162	129 950
	Turkey[1]	8.0	a	3.0	11.0	6 949	a	4 285	4 285	11 233
	United Kingdom	6.0	3.0	3.5	12.5	35 103	x(8)	x(8)	47 385	82 489
	United States	6.0	3.0	3.0	12.0	49 830	27 469	30 315	57 784	107 614
	OECD average	*5.9*	*3.3*	*3.3*	*12.4*	*31 511*	*~*	*~*	*45 672*	*77 204*
Partner countries	Brazil[2]	4.0	4.0	3.0	11.0	3 478	4 420	3 457	7 877	11 356
	Chile[3]	6.0	2.0	4.0	12.0	12 836	4 249	9 125	13 373	26 209
	Israel	6.0	3.0	3.0	12.0	30 102	x(8)	x(8)	13 347	43 449
	Russian Federation[1]	4.0	5.0	3.0	12.0	x(9)	x(9)	x(9)	x(9)	17 231

1. Public institutions only.
2. Year of reference 2002.
3. Year of reference 2004.
Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).
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Table B1.3b.

Cumulative expenditure on educational institutions per student over the average duration of tertiary studies (2003)

In equivalent US dollars converted using PPPS for GDP, by type of programme

		Method[1]	Average duration of tertiary studies (in years)			Cumulative expenditure per student over the average duration of tertiary studies (in U.S. dollars)		
			Tertiary-type B education	Tertiary-type A and advanced research programmes	All tertiary education	Tertiary-type B education	Tertiary-type A and advanced research programmes	All tertiary education
			(1)	(2)	(3)	(4)	(5)	(6)
OECD countries	Australia	CM	m	2.87	2.87	m	38 260	m
	Austria	CM	2.78	5.60	5.30	28 863	70 037	65 424
	Belgium	CM	2.41	3.67	2.99	x(6)	x(6)	35 392
	Canada		m	m	m	m	m	m
	Czech Republic		m	m	m	m	m	m
	Denmark	AF	2.10	3.84	3.70	x(6)	x(6)	51 852
	Finland	CM	a	4.85	4.85	a	58 489	58 489
	France[2]	CM	3.00	4.74	4.02	26 775	53 575	43 030
	Germany	CM	2.37	6.57	5.36	14 935	81 817	62 187
	Greece	CM	5.00	5.26	5.25	13 010	31 935	25 850
	Hungary[3]	CM	2.00	4.05	4.05	16 854	34 763	34 734
	Iceland	CM	1.96	2.84	2.68	m	22 785	m
	Ireland	CM	2.21	4.02	3.24	x(6)	x(6)	30 264
	Italy[3]	AF	m	5.14	5.01	m	45 115	43 906
	Japan	CM	2.11	4.51	4.07	16 117	58 239	47 031
	Korea	CM	2.07	4.22	3.43	8 324	38 561	24 316
	Luxembourg		m	m	m	m	m	m
	Mexico	AF	x(2)	3.42	3.42	x(6)	x(6)	19 747
	Netherlands	CM	m	5.24	m	m	70 932	m
	New Zealand	CM	1.87	3.68	3.05	11 339	35 836	26 938
	Norway	CM	m	m	m	m	m	m
	Poland[3]	CM	m	3.68	m	m	17 123	m
	Portugal[3]		m	m	m	m	m	m
	Slovak Republic	AF	2.47	3.90	3.82	x(6)	x(6)	17 870
	Spain	CM	2.15	5.54	4.66	17 193	50 585	41 673
	Sweden	CM	2.26	4.93	4.68	x(6)	x(6)	75 221
	Switzerland[3]	CM	2.19	5.45	3.62	16 573	150 942	93 869
	Turkey[3]	CM	2.73	2.37	2.65	x(6)	x(6)	11 275
	United Kingdom[2]		3.52	5.86	4.34	x(6)	x(6)	51 529
	United States		m	m	m	m	m	m
	OECD average		*2.38*	*4.42*	*3.94*	*~*	*~*	*43 030*

1. Either the Chain Method (CM) or an Approximation Formula (AF) was used to estimate the duration of tertiary studies.
2. Average duration of tertiary studies estimated based on national methodology.
3. Public institutions only.

Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/717773424252

B1

Table B1.4.
Annual expenditure on educational institutions per student for all services relative to GDP per capita (2003)
By level of education, based on full-time equivalents

		Pre-primary education (for children 3 years and older)	Primary education	Secondary education			Post-secondary non-tertiary education	Tertiary education (including R&D activities)			All tertiary education excluding R&D activities	Primary to tertiary education
				Lower secondary education	Upper secondary education	All secondary education		Tertiary-type B education	Tertiary-type A & advanced research programmes	All tertiary education		
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
OECD countries	Australia	m	18	24	27	25	24	25	43	40	28	24
	Austria	20	23	28	30	29	x(4)	34	41	40	26	29
	Belgium	15	21	x(5)	x(5)	26	x(5)	x(9)	x(9)	39	27	26
	Canada[1, 2]	x(5)	x(5)	x(5)	x(5)	21	x(7)	78	61	66	56	28
	Czech Republic	15	13	23	25	24	12	19	42	39	33	23
	Denmark	16	25	26	27	27	x(4, 9)	x(9)	x(9)	46	33	30
	Finland	14	19	30	23	26	x(5)	14	43	43	26	27
	France	17	17	27	35	30	18	31	40	38	26	28
	Germany	18	17	20	37	26	37	23	45	42	26	27
	Greece	x(2)	21	x(5)	x(5)	24	20	13	30	24	18	23
	Hungary[1]	26	22	22	31	26	x(4)	56	57	57	46	29
	Iceland	22	25	24	21	22	x(4, 9)	m	26	26	19	24
	Ireland	m	14	19	19	19	17	x(9)	x(9)	27	21	18
	Italy[1]	23	28	29	31	30	m	28	33	33	21	30
	Japan	13	23	25	27	26	x(4, 9)	27	46	41	m	28
	Korea	14	21	28	39	33	a	21	47	37	32	30
	Luxembourg	x(2)	21	x(5)	x(5)	31	x(5)	m	m	m	m	m
	Mexico	22	17	16	29	20	a	x(9)	x(9)	60	52	22
	Netherlands	17	18	24	20	22	18	m	43	42	26	24
	New Zealand	18	21	20	29	24	34	26	41	38	m	25
	Norway	10	21	25	33	29	x(5)	x(9)	x(9)	37	25	27
	Poland[1]	28	25	23	27	25	59	m	40	40	34	28
	Portugal[1]	25	26	35	34	35	a	x(9)	x(9)	41	m	m
	Slovak Republic	20	15	16	21	18	x(4)	x(4)	x(4)	36	33	20
	Spain	17	19	x(5)	x(5)	26	x(5)	32	37	36	26	26
	Sweden	14	25	25	27	26	10	x(9)	x(9)	54	28	30
	Switzerland[1]	11	24	29	45	37	26	23	83	78	43	36
	Turkey[1]	m	13	a	21	21	a	x(9)	x(9)	m	63	19
	United Kingdom	24	20	x(5)	x(5)	25	x(5)	x(9)	x(9)	40	31	25
	United States	21	22	24	27	26	m	x(9)	x(9)	64	57	32
	OECD average	*18*	*20*	*23*	*28*	*26*	*18*	*30*	*44*	*43*	*33*	*26*
	EU19 average	*18*	*19*	*23*	*28*	*25*	*17*	*29*	*41*	*40*	*32*	*25*
Partner countries	Brazil[2]	12	11	14	15	14	a	x(9)	x(9)	127	m	16
	Chile[3]	21	18	18	20	19	a	27	72	60	m	25
	Israel	16	22	x(5)	x(5)	26	16	36	56	52	m	28
	Russian Federation[1]	m	x(5)	x(5)	x(5)	16	x(5)	19	31	27	m	18

1. Public institutions only.
2. Year of reference 2002.
3. Year of reference 2004.
Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/717773424252

Table B1.5.

Change in expenditure on educational institutions for all services per student relative to different factors, by level of education (1995, 2003)

Index of change between 1995 and 2003 (GDP deflator 1995=100, 2003 constant prices)

		Primary, secondary and post-secondary non-tertiary education			Tertiary education		
		Change in expenditure	Change in the number of students	Change in expenditure per student	Change in expenditure	Change in the number of students	Change in expenditure per student
OECD countries	Australia	148	109	135	125	133	94
	Austria	108	m	m	115	101	115
	Belgium	m	m	m	m	m	m
	Canada	109	92	119	138	107	128
	Czech Republic	102	91	112	139	186	74
	Denmark[1]	127	106	119	126	107	118
	Finland	132	109	121	122	114	107
	France	m	m	m	m	m	m
	Germany	108	102	105	114	105	108
	Greece[1,2]	160	90	178	244	193	126
	Hungary[3]	141	92	153	182	170	107
	Iceland	m	m	m	m	m	m
	Ireland	157	94	168	163	134	121
	Italy[2,3] (tertiary: Italy[3])	107	98	110	137	107	128
	Japan[1]	106	84	127	139	123	114
	Korea	m	91	m	m	159	m
	Luxembourg	m	m	m	m	m	m
	Mexico	149	113	132	167	148	113
	Netherlands	139	105	132	112	109	103
	New Zealand[2]	158	m	m	111	m	m
	Norway	130	117	111	112	111	100
	Poland[2,3]	159	85	186	170	269	63
	Portugal[2,3]	133	80	166	140	148	95
	Slovak Republic[1]	135	91	147	167	201	83
	Spain	104	81	129	158	111	143
	Sweden	135	118	115	141	141	100
	Switzerland[2,3]	113	107	105	174	119	146
	Turkey[2,3]	194	114	170	202	104	194
	United Kingdom	149	118	126	120	120	100
	United States	137	107	128	133	121	110
	OECD average	*133*	*100*	*133*	*146*	*138*	*106*
	EU19 average	*124*	*97*	*127*	*147*	*145*	*101*
Partner countries	Brazil	142	120	119	140	158	89
	Chile	180	118	153	186	168	111
	Israel	119	116	102	130	152	86
	Russian Federation	m	m	m	m	m	m

1. Some levels of education are included with others. Refer to "x" code in table B1.1a for details.
2. Public expenditure only.
3. Public institutions only.

Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

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EXPENDITURE ON EDUCATIONAL INSTITUTIONS RELATIVE TO GROSS DOMESTIC PRODUCT

INDICATOR B2

Education expenditure as a percentage of GDP shows how a country prioritises education in relation to its overall allocation of resources. Tuition fees and investment in education from private entities other than households (see Indicator B5) have a strong impact on differences in the overall amount of financial resources that OECD countries devote to their education systems, especially at the tertiary level.

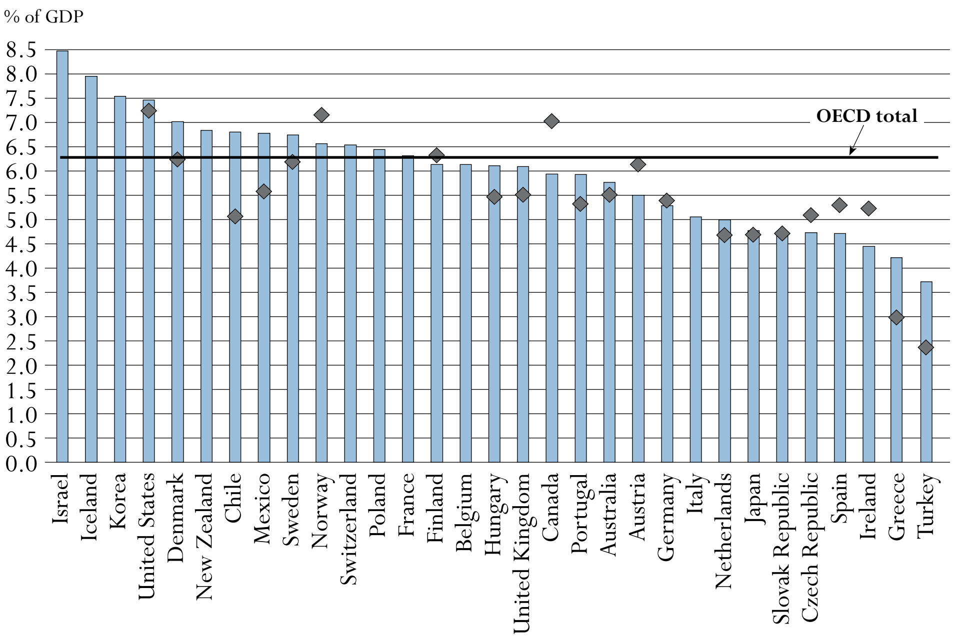
Key results

Chart B2.1. Expenditure on educational institutions as a percentage of GDP for all levels of education (1995, 2003)

This chart measures educational investment through the share of national income that each country devotes to spending on educational institutions. It captures both direct and indirect expenditure on educational institutions from both public and private sources of funds.

□ 2003 ◆ 1995

OECD countries spend 6.3% of their collective GDP on educational institutions. The increase in spending on education between 1995 and 2003 fell behind the growth in national income in approximately one-third of the 22 OECD and partner countries for which data are available.



Countries are ranked in descending order of total expenditure from both public and private sources on educational institutions in 2003.
Source: OECD. Table B2.1a. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).
StatLink: http://dx.doi.org/10.1787/633760656440

Other highlights of this indicator

- Around two-thirds of expenditure on educational institutions, or 3.9% of the combined GDP in the OECD area, is devoted to primary, secondary and post-secondary non-tertiary education.
- Tertiary education accounts for more than one-quarter of the combined OECD expenditure on educational institutions (1.9% of the combined GDP).
- Canada, Korea and the United States spend 2.4, 2.6 and 2.9% of their GDP respectively on tertiary institutions. These three countries, along with the partner country Chile, show the highest proportions of private expenditure at the tertiary level of education.
- More people are completing upper secondary and tertiary education than ever before, and in many countries the expansion has been accompanied by massive financial investments. In total, expenditure on educational institutions increased in all countries between 1995 and 2003. The increase is usually larger for tertiary education than for the combined primary to post-secondary non-tertiary level of education.
- At the tertiary level of education, over the period 1995-2003, the increase of expenditure is more pronounced from 2000 than before 2000 in half of the countries. Between 2000 and 2003, expenditure increased by more than 30 percentage points in the Czech Republic, Greece, Hungary, Mexico, Poland, the Slovak Republic and Switzerland.
- The size of the school-age population shapes the potential demand for initial education and training and therefore affects expenditure on educational institutions. If the structure of the population in each country were adjusted to the OECD average level, total educational expenditure as a percentage of GDP would be expected to be more than 15% higher in Germany, Italy and Japan, while it would be lower by approximately 30% in Mexico and Turkey. Expenditure at the tertiary level as a percentage of GDP would decrease by 25% in Turkey and increase by up to 18% in Sweden.

Policy context

This indicator provides a measure of the relative proportion of a nation's wealth that is invested in educational institutions. Expenditure on education is an investment that can help foster economic growth, enhance productivity, contribute to personal and social development, and reduce social inequality. Relative to gross domestic product, expenditure on education shows the priority given to education by each country in terms of allocating its overall resources. The proportion of total financial resources devoted to education is one of the key choices made in each OECD country; this is an aggregate choice made by government, enterprise and individual students and their families. If the social and private returns on investment in education are sufficiently large, there is an incentive for enrolment to expand and total investment to increase.

The indicator also includes a comparative review of changes in educational investment over time. In deciding how much is allocated to education, governments must assess demands for increased spending in areas such as teachers' salaries and educational facilities. This indicator can provide a point of reference as it shows how the volume of educational spending, relative to the size of national wealth and in absolute terms, has evolved over time in various OECD countries.

Evidence and explanations

What this indicator does and does not cover

This indicator covers expenditure on schools, universities and other public and private institutions involved in delivering or supporting educational services. Expenditure on institutions is not limited to expenditure on instructional services but also includes public and private expenditure on ancillary services for students and families, where these services are provided through educational institutions. At the tertiary level, spending on research and development can also be significant and is included in this indicator, to the extent that the research is performed by educational institutions.

Not all spending on educational goods and services occurs within educational institutions. For example, families may purchase textbooks and materials commercially or seek private tutoring for their children outside educational institutions. At the tertiary level, student living costs and forgone earnings can also account for a significant proportion of the costs of education. All such expenditure outside educational institutions is excluded from this indicator, even if it is publicly subsidised. Public subsidies for educational expenditure outside institutions are discussed in Indicators B4 and B5.

Overall investment relative to GDP

All OECD countries invest a substantial proportion of national resources in education. Taking into account both public and private sources of funds, OECD countries as a whole spend 6.3% of their collective GDP on educational institutions at the pre-primary, primary, secondary and tertiary levels. Under current conditions of tight constraints on public budgets, such a large spending item is subject to close scrutiny by governments looking for ways to reduce or limit the growth of expenditure.

The highest spending on educational institutions can be observed in Denmark, Iceland, Korea and the United States, and the partner country Israel, with at least 7.0% of GDP accounted for by public and private spending on educational institutions, followed by Mexico, New Zealand, Norway, Sweden and Switzerland, and the partner country Chile with more than 6.5%. Seven out of 29 OECD countries for which data are available, however, spend less than 5% of GDP on educational institutions, and in Greece, Ireland and Turkey this figure is only between 3.7 and 4.5% (Table B2.1a).

The national resources devoted to education depend on a number of interrelated factors of supply and demand. For example, OECD countries with high spending levels may be enrolling larger numbers of students, while countries with low spending levels may either be limiting access to higher levels of education or delivering educational services in a particularly efficient manner. The distribution of enrolment among sectors and fields of study may also differ, as may the duration of studies and the scale and organisation of related educational research. Finally, large differences in GDP among OECD countries imply that similar percentages of GDP spent on education can translate into very different absolute amounts per student (see Indicator B1).

Expenditure on educational institutions by level of education

Differences in spending on educational institutions are most striking at the pre-primary level of education. Here, spending ranges from less than 0.1% of GDP in Australia to 0.8% or more in Denmark, Hungary, Iceland and Mexico, and the partner country Israel (Table B2.1c). Differences at the pre-primary level can be explained mainly by participation rates among younger children (see Indicator C1), but are also sometimes a result of the extent to which private early childhood education is covered by this indicator. In Ireland, for example, the majority of early childhood education is delivered in private institutions that are not yet covered in the Irish data collection. Moreover, high-quality early childhood education and care are not only provided by the educational institutions covered by this indicator but often also in more informal settings. Inferences on access to and quality of early childhood education and care should therefore be made with caution.

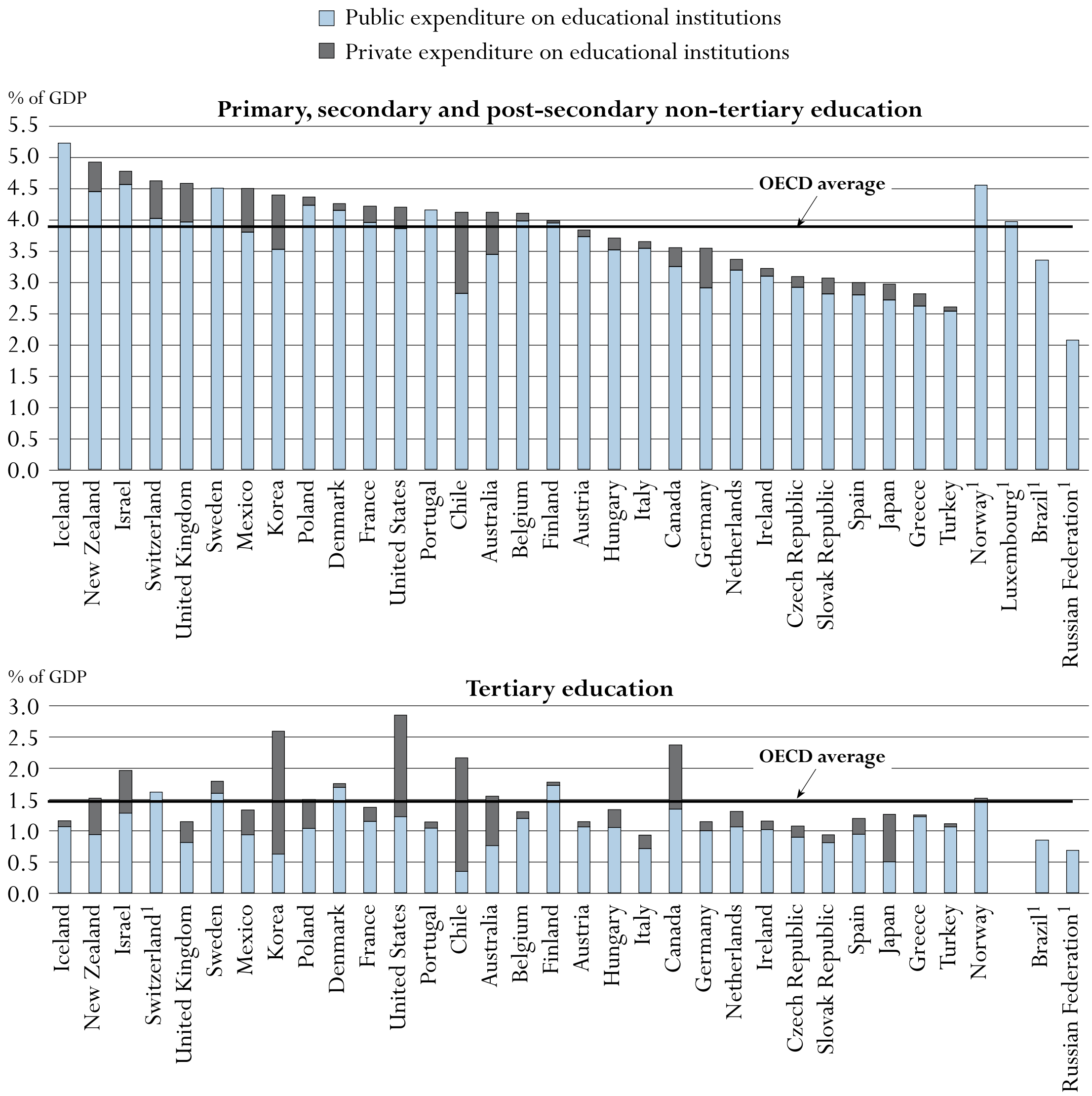
On average, among OECD countries, around two-thirds of expenditure on educational institutions is devoted to primary, secondary and post-secondary non-tertiary education. Because enrolment in primary and lower secondary education is almost universal in OECD countries, and participation rates in upper secondary education are high (see Indicators C1 and C2), these levels account for the bulk of expenditure on educational institutions: 3.9% of the combined OECD GDP (Chart B2.2). At the same time, significantly higher spending on education per student at the upper secondary and tertiary levels causes the overall investment in these levels to be higher than enrolment numbers alone would suggest.

More than one-quarter of combined OECD expenditure on educational institutions is accounted for by tertiary education. At this level of education, pathways available to students, programme durations and the organisation of teaching vary greatly among OECD countries, leading to greater differences in the level of expenditure allocated to tertiary education. On the one hand, Korea and the United States spend respectively 2.6 and 2.9% of their GDP on tertiary institutions and these two countries are also two of the three countries with the highest proportion of private expenditure on tertiary education. Canada, Denmark, Finland and Sweden, as well as the partner countries Chile and Israel, also show high levels of spending, with 1.8% or more of GDP devoted to tertiary institutions. On the other hand, the proportion of GDP spent on

B2

Chart B2.2. Expenditure on educational institutions as a percentage of GDP (2003)

From public and private sources, by level of education, source of funds and year



1. Public expenditure only.

Countries are ranked in descending order of expenditure from both public and private sources on educational institutions in primary, secondary and post-secondary non-tertiary education.

Source: OECD. Table B2.1b. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/633760656440

tertiary institutions in Belgium, France, Iceland, Mexico, Portugal and the United Kingdom is below the OECD average; however, these countries are among the OECD countries where the proportion of GDP spent on primary, secondary and post-secondary non-tertiary education is above the OECD average (Chart B2.2). In Switzerland, a moderate proportion of GDP spent on tertiary institutions translates to one of the highest levels of spending per tertiary student, due to a comparatively low tertiary enrolment rate and a high GDP (Tables B2.1b and B1.2).

Changes in overall educational spending between 1995 and 2003

More people are completing upper secondary and tertiary education than ever before (see Indicator A1), and in many countries, this expansion has been accompanied by massive financial investment. In the 18 OECD countries for which comparable trend data are available for all levels of education combined, public and private investment in education increased by 7% or more between 1995 and 2003 in real terms. Australia, Denmark, Finland, the Netherlands, the Slovak Republic, Sweden, the United Kingdom and the United States increased expenditure on education by 30 to 50% while Hungary, Ireland and Mexico increased spending by more than 50%. The trend is similar when public investment is considered separately: public expenditure on educational institutions rose by 6% or more in all the 24 OECD countries for which data are available between 1995 and 2003 for all levels of education combined. Of the OECD countries for which no data on private spending are available – Greece, Italy, New Zealand, Poland, Portugal, Switzerland and Turkey – all except Italy showed an increase in public spending on educational institutions of over 25% (Table B2.2).

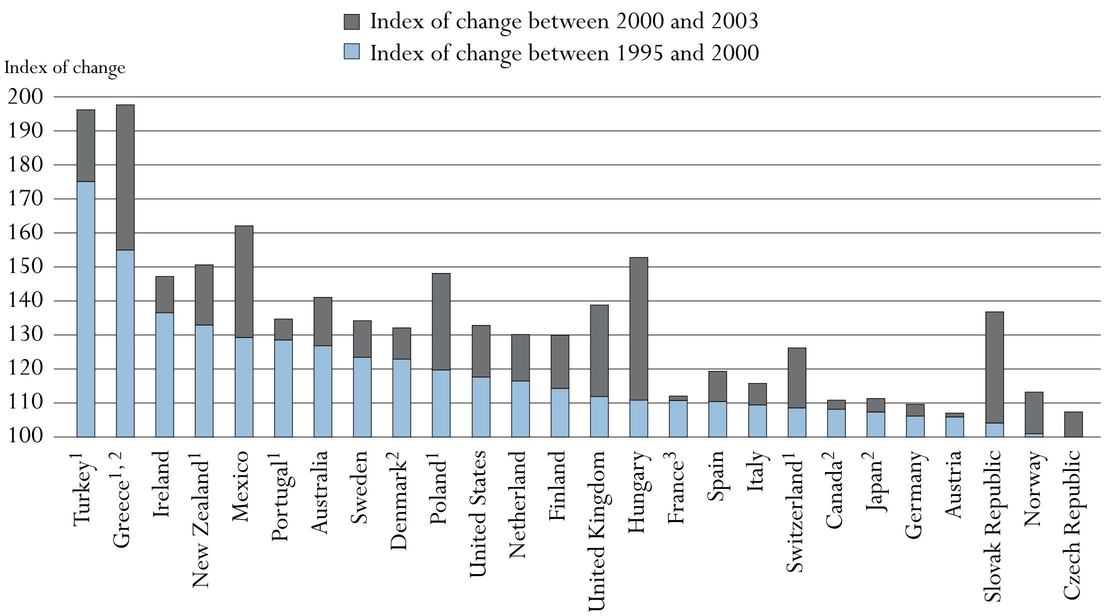
Countries vary in the levels of education at which spending has increased over the period 1995 to 2003, but in most countries, expenditure in tertiary education increased in higher proportions compared to primary, secondary and post-secondary non-tertiary education. Denmark, Finland and the United States – OECD countries with a comparably high increase (about 30%) in absolute spending on educational institutions between 1995 and 2003 for all levels of education combined – as well as Austria, Germany, Ireland, Sweden and Turkey invested additional resources in similar proportions in primary, secondary and post-secondary non-tertiary and tertiary education combined (Table B2.2). Australia, the Netherlands, New Zealand, Norway and the United Kingdom invested most of the increases between 1995 and 2003 in primary, secondary and post-secondary non-tertiary education. Conversely, in Canada, the Czech Republic, Greece, Hungary, Japan, the Slovak Republic, Spain and Switzerland, increases in spending on tertiary education surpassed increases at the primary, secondary and post-secondary non-tertiary levels by more than 20 percentage points (Table B2.3).

During the period 1995 to 2003, the variation of expenditure on educational institutions was not necessarily constant over time – whether for all levels of education combined or for each level of education considered separately. Across OECD countries, the increase of expenditure for all levels of education is greater before 2000 than from 2000 in nearly two-thirds of the countries with available data. This does not solely result from the difference in the length of time over which the variation is measured, as the average annual variation is larger over the period 1995 to 2000 than over the period 2000 to 2003 for more than one-third of the countries. This slower growth of expenditure for 2000 to 2003 is particularly marked in Denmark, Portugal, Sweden and Turkey. The reverse pattern is true for the Czech Republic, Hungary, Mexico, the Slovak Republic and the United Kingdom (Table B2.3 and Chart B2.3a).

Over the period 1995 to 2003, spending on the various levels of education evolved quite differently. Expenditure on primary to post-secondary non-tertiary education follow the same trends as for all levels of education combined. At the tertiary level, however, the increase is more pronounced from 2000 than before 2000 in more than half of the countries (and in two-thirds of the countries if based on the average annual variation). The increase of expenditure is more marked from 2000 than before 2000 particularly in the Czech Republic, Greece, New Zealand, Norway, Poland, the Slovak Republic and Switzerland. On the contrary, the increase of expenditure from 2000 is significantly smaller than from before 2000 in Canada, Italy, Portugal, Spain and Turkey. Ireland has even shown a decrease in expenditure on tertiary education since 2000 (Table B2.3 and Chart B2.3b).

However, to make a sound interpretation, these variations over time should be viewed in light of the trends in national income. The increase in spending on education between 1995 and 2003 tended to fall behind the growth in national income in a third of the 22 OECD and partner countries for which data are available. The most notable differences are observed in Austria, Canada, Ireland, Norway and Spain, where the proportion of GDP spent on education decreased by 0.4 or more percentage points between 1995 and 2003 (Table B2.1a). In Ireland, the strong growth of GDP hides a significant increase in spending on educational institutions when spending on education is considered as a proportion of GDP, while education in the Czech Republic did not benefit significantly from growth in GDP. Both countries were already among the OECD countries spending a lower proportion of GDP on education in 1995 and have now fallen further behind (Table B2.1a, Table B2.3 and Annex 2, and Chart B2.5 available on the web). By contrast, the proportion of GDP spent on education increased by 0.8 percentage points or more between 1995 and 2003 in Denmark, Greece, Mexico and Turkey and the partner country Chile: five countries that significantly increased their investment at the tertiary level between 1995 and 2003 (Tables B2.1a, B2.1b and B2.3).

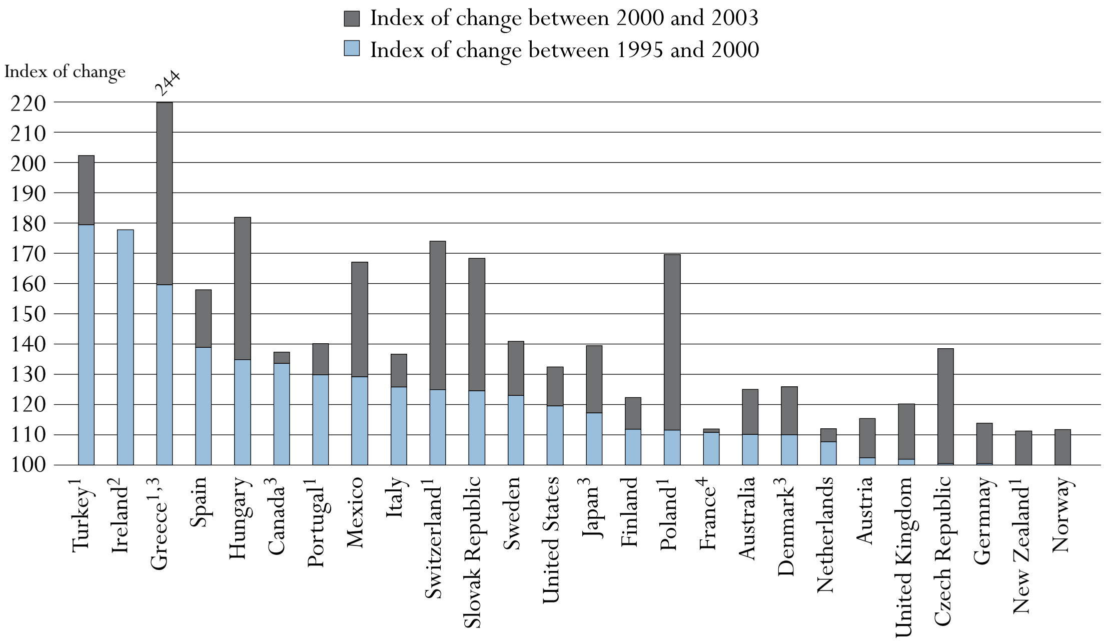
Chart B2.3a. Change in expenditure on educational institutions between 1995 and 2003 for all levels of education combined (1995=100, 2003 constant prices)



1. Public expenditure only.
2. Some levels of education are included with others. Refer to "x" code in Table B1.1a for details.
3. Data refer to 1995-2002.
Countries are ranked in descending order of change between 1995 and 2000 in total expenditure from both public and private sources on educational institutions.
Source: OECD. Table B2.3. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/633760656440

Chart B2.3b. Change in expenditure on educational institutions between 1995 and 2003 for tertiary education (1995=100, 2003 constant prices)



1. Public expenditure only.
2. Expenditure on educational institutions decreased by 15 percentage points between 2000 and 2003.
3. Some levels of education are included with others. Refer to "x" code in Table B1.1a for details.
4. Data refer to 1995-2002.

Countries are ranked in descending order of change between 1995 and 2000 in total expenditure from both public and private sources on educational institutions.

Source: OECD. Table B2.3. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/633760656440

Important factors influencing national expenditure on education

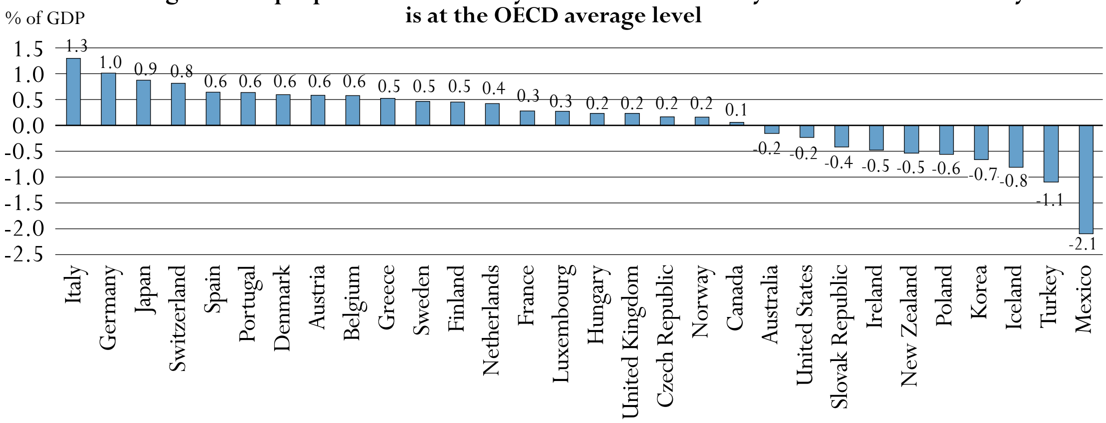
The amount of national resources devoted to education depends on a number of interrelated factors of supply and demand, such as the demographic structure of the population, enrolment rates, income per capita, national levels of teachers' salaries, and the organisation and delivery of instruction.

The size of the school-age population in a particular country shapes the potential demand for initial education and training. The larger the number of young people, the greater the potential demand for educational services. Among OECD countries of comparable national income, a country with a relatively large youth population will have to spend a higher percentage of its GDP on education so that each young person in that country has the opportunity to receive the same quantity of education as young people in other OECD countries. Conversely, if the youth population is relatively small, the same country will be required to spend less of its wealth on education in order to achieve similar results. Denmark, Mexico and New Zealand, for example, spend a comparable proportion of their GDP on educational institutions (7.0, 6.8 and 6.8% respectively), but 5-to-29-year-olds make up a large proportion of the population in New Zealand and Mexico compared to Denmark. As a consequence, if demographic patterns were the same in these three countries (Table B2.1a and Chart B2.4), Denmark would have to increase the proportion of its wealth devoted to educational institutions.

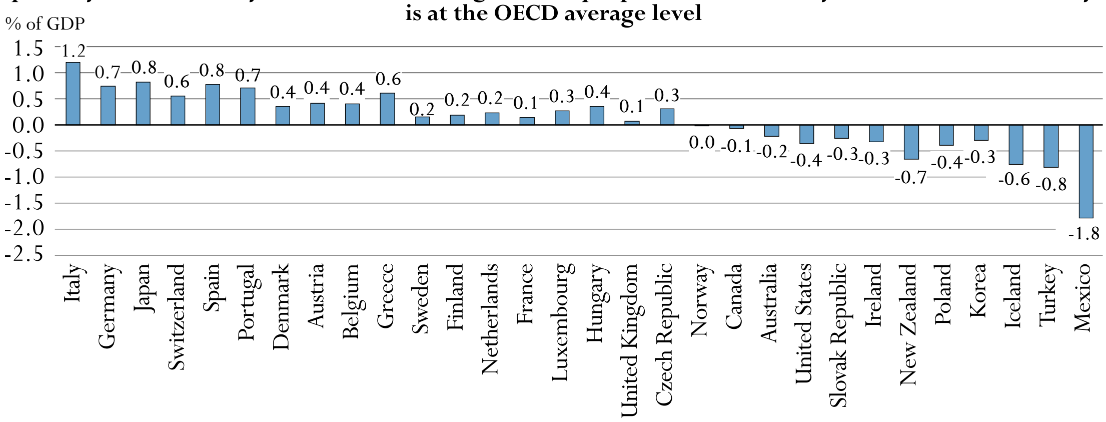
B2

Chart B2.4. Impact of demography on expenditure on educational institutions as a percentage of GDP (2003)

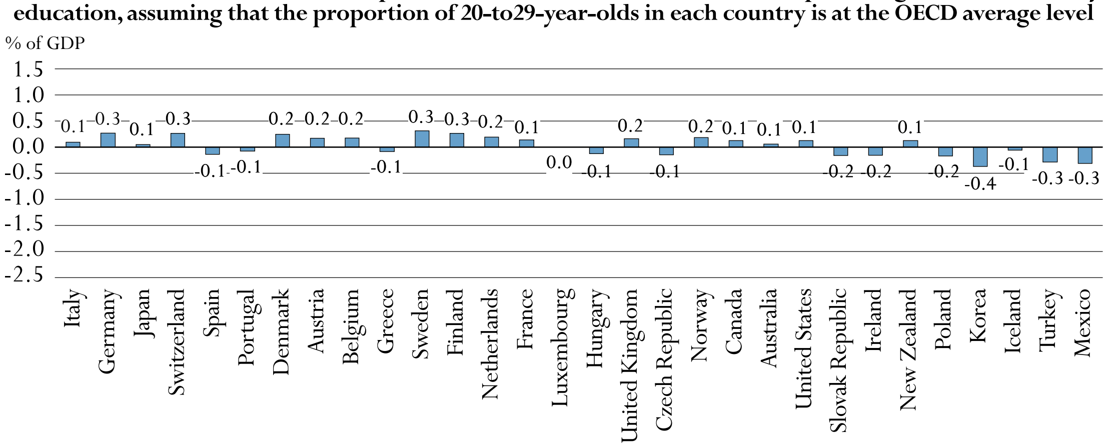
A. Estimated increase/decrease in expenditure on educational institutions as a percentage of GDP, assuming that the proportion of 5-to-19-year-olds and 20-to29-year-olds in each country is at the OECD average level



B. Estimated increase/decrease in expenditure on educational institutions as a percentage of GDP in primary and secondary education, assuming that the proportion of 5-to-19-year-olds in each country is at the OECD average level



C. Estimated increase/decrease in expenditure on educational institutions as a percentage of GDP in tertiary education, assuming that the proportion of 20-to29-year-olds in each country is at the OECD average level



Countries are ranked in descending order of the estimated increase/decrease in expenditure as a percentage of GDP, assuming that demographic patterns in each country (all levels of education combined) are at the OECD average.
Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

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In order to show the effect of demography on educational expenditure, Chart B2.4 presents the variation in expenditure as a percentage of GDP if the structure of the population in each country were adjusted to the OECD average level. The impact of such a demographic change on educational expenditure varies according to the extent of the difference in the proportion of youth in the population between a specific country and the OECD average level.

In Germany, Italy and Japan, countries among those with the lowest proportion of 5-to-29-year-olds in the total population, educational expenditure as a percentage of GDP would be expected to rise by more than 15% (increases of 1.0, 1.3 and 0.9 percentage points of GDP respectively) if the relative size of the youth population were at the level of the OECD average. In Mexico and Turkey, by contrast, expenditure on education would be expected to decrease by about 30% (decrease of 2.1 and 1.1 percentage points of GDP) if the proportion of 5-to-29-year-olds were at the level of the OECD average. In countries with a proportion of youth population close to the OECD average level, the expenditure on educational institutions would change very slightly. This is the case of Canada and Australia for example (Chart B2.4).

As the proportion of the population enrolled in tertiary education is smaller than the proportion of the population enrolled in primary, secondary and post-secondary non-tertiary education (and is quite small whatever the country) the demographic change depicted here would be expected to mainly affect expenditure at the primary to post-secondary non-tertiary level rather than expenditure at the tertiary level. Chart B2.4 confirms this pattern: expenditure on educational institutions in tertiary education as a percentage of GDP would increase or decrease by a maximum of 0.4 percentage points. However, these changes can still represent a decrease of as much as 25% of expenditure at the tertiary level (Turkey) or an increase of as much as 18% (Sweden).

Definitions and methodologies

Data refer to the financial year 2003 and are based on the UOE data collection on education statistics administered by the OECD in 2005 (for details see Annex 3 at *www.oecd.org/edu/eag2006*). Expenditure on educational institutions, as covered by this indicator, includes expenditure on both instructional and non-instructional educational institutions. Instructional educational institutions are educational institutions which directly provide instructional programmes (*i.e.* teaching) to individuals in an organised group setting or through distance education. Business enterprises or other institutions providing short-term courses of training or instruction to individuals on a one-to-one basis are not included. Non-instructional educational institutions provide administrative, advisory or professional services to other educational institutions, although they do not enrol students themselves. Examples include national, state and provincial ministries or departments of education; other bodies that administer education at various levels of government or analogous bodies in the private sector: and organisations that provide such education-related services as vocational or psychological counselling, placement, testing, financial aid to students, curriculum development, educational research, building operations and maintenance services, transportation of students, and student meals and housing.

This broad definition of institutions ensures that expenditure on services, which are provided in some OECD countries by schools and universities and in others by agencies other than schools, are covered on a comparable basis.

The distinction by source of funds is based on the initial source of funds and does not reflect subsequent public-to-private or private-to-public transfers. For this reason, subsidies to households and other entities, such as subsidies for tuition fees and other payments to educational institutions, are included in public expenditure in this indicator. Payments from households and other private entities to educational institutions include tuition and other fees, net of offsetting public subsidies. A detailed discussion of public subsidies can be found in Indicator B5.

The OECD average is calculated as the simple average of all OECD countries for which data are available. The OECD total reflects the value of the indicator if the OECD region is considered as a whole (see the Reader's Guide for details).

Tables B2.1a, B2.1b and B2.2 show expenditure on educational institutions for the financial year 1995. The data on expenditure for 1995 were obtained by a special survey in 2002 and updated in 2003; expenditure for 1995 was adjusted to methods and definitions used in the 2003 UOE data collection.

Data for 1995 are expressed in 2003 price levels. Charts B2.1, B2.3a and B2.3b and Tables B2.2 and B2.3 present an index of change in expenditure on institutions and GDP between 1995 and 2003. All expenditure, as well as 1995 GDP, is adjusted to 2003 prices using the GDP deflator.

For comparisons over time, the OECD average accounts only for those OECD countries for which data are available for all reported reference years.

Note that data appearing in earlier editions of this publication may not always be comparable to data shown in the 2006 edition due to changes in definitions and coverage that were made as a result of the OECD expenditure comparability study (for details on changes, see Annex 3 at *www.oecd.org/edu/eag2006*).

Further references

The following additional information relevant to this indicator is available on the Web at *http://dx.doi.org/10.1787/633760656440:*

- ***Chart B2.5. Changes in expenditure on educational insitutions from public and private sources and changes in GDP (1995, 2003)***

Table B2.1a.

Expenditure on educational institutions as a percentage of GDP, for all levels of education (1995, 2000, 2003)

From public and private sources, by source of fund and year

		2003			2000			1995		
		Public[1]	Private[2]	Total	Public[1]	Private[2]	Total	Public[1]	Private[2]	Total
OECD countries	Australia	4.3	1.5	5.8	4.4	1.4	5.8	4.5	1.0	5.5
	Austria	5.2	0.3	5.5	5.3	0.3	5.6	5.8	0.3	6.1
	Belgium	5.9	0.2	6.1	m	m	m	m	m	m
	Canada[3]	4.6	1.3	5.9	5.1	1.2	6.4	6.2	0.8	7.0
	Czech Republic	4.3	0.4	4.7	3.8	0.4	4.3	4.8	0.3	5.1
	Denmark	6.7	0.3	7.0	6.4	0.3	6.6	6.0	0.2	6.2
	Finland	6.0	0.1	6.1	5.6	0.1	5.7	6.2	x	6.3
	France	5.8	0.5	6.3	m	m	m	m	m	m
	Germany	4.4	0.9	5.3	4.2	1.0	5.2	4.4	0.9	5.4
	Greece	4.0	0.2	4.2	3.7	0.2	4.0	2.9	n	3.0
	Hungary	5.5	0.6	6.1	4.4	0.6	5.0	4.8	0.6	5.4
	Iceland	7.5	0.5	8.0	5.6	0.5	6.1	m	m	m
	Ireland	4.1	0.3	4.4	4.1	0.4	4.5	4.7	0.5	5.2
	Italy	4.6	0.4	5.1	4.5	0.4	4.9	4.8	m	m
	Japan	3.5	1.2	4.8	3.5	1.2	4.7	3.5	1.1	4.7
	Korea	4.6	2.9	7.5	3.9	2.5	6.4	m	m	m
	Luxembourg	m	m	m	m	m	m	m	m	m
	Mexico	5.6	1.2	6.8	4.7	0.8	5.5	4.6	1.0	5.6
	Netherlands	4.6	0.4	5.0	4.2	0.4	4.5	4.4	0.2	4.7
	New Zealand	5.7	1.2	6.8	5.6	m	m	4.8	m	m
	Norway	6.5	0.1	6.6	m	m	m	6.8	0.4	7.1
	Poland	5.8	0.7	6.4	4.9	n	5.1	5.3	m	m
	Portugal	5.8	0.1	5.9	5.6	0.1	5.7	5.3	n	5.3
	Slovak Republic	4.3	0.5	4.7	3.9	0.1	4.1	4.6	0.1	4.7
	Spain	4.2	0.5	4.7	4.2	0.6	4.8	4.5	0.8	5.3
	Sweden	6.5	0.2	6.7	6.2	0.2	6.4	6.1	0.1	6.2
	Switzerland	6.0	0.6	6.5	5.2	0.4	5.6	5.3	m	m
	Turkey[3]	3.6	0.1	3.7	3.4	0.0	3.4	2.3	n	2.3
	United Kingdom	5.1	1.0	6.1	4.5	0.7	5.2	4.8	0.7	5.5
	United States	5.4	2.1	7.5	4.8	2.2	7.0	5.0	2.2	7.2
	OECD average	*5.2*	*0.7*	*5.9*	~	~	~	~	~	~
	OECD total	*4.9*	*1.3*	*6.3*	~	~	~	~	~	~
	EU19 average	*5.2*	*0.4*	*5.6*	~	~	~	~	~	~
	OECD average for countries with 1995, 2000 and 2003 data (24 countries)	*5.0*	*0.7*	*5.7*	*4.7*	*0.6*	*5.3*	*4.8*	*0.6*	*5.4*
Partner countries	Brazil[3]	4.4	m	m	4.1	m	m	3.7	m	m
	Chile[4]	3.5	3.3	6.8	3.2	1.4	4.6	2.9	2.2	5.1
	Israel	7.0	1.5	8.5	6.6	1.6	8.2	7.0	1.5	8.5
	Russian Federation	3.7	m	m	3.0	m	m	m	m	m

1. Including public subsidies to households attributable for educational institutions, as well as direct expenditure on educational institutions from international sources.
2. Net of public subsidies attributable for educational institutions.
3. Year of reference 2002.
4. Year of reference 2004.
Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

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Table B2.1b.

Expenditure on educational institutions as a percentage of GDP, by level of education (1995, 2000, 2003)

From public and private sources, by source of fund and year

		Primary, secondary and post-secondary non-tertiary education					Tertiary education				
		2003			2000	1995	2003			2000	1995
		Public[1]	Private[2]	Total	Total	Total	Public[1]	Private[2]	Total	Total	Total
OECD countries	Australia	3.4	0.7	4.1	4.1	3.7	0.8	0.8	1.5	1.5	1.7
	Austria	3.7	0.1	3.8	4.0	4.2	1.1	0.1	1.1	1.0	1.2
	Belgium	4.0	0.1	4.1	m	m	1.2	0.1	1.3	m	m
	Canada[3, 4]	3.2	0.3	3.6	3.6	4.5	1.3	1.0	2.4	2.5	2.3
	Czech Republic	2.9	0.2	3.1	2.8	3.7	0.9	0.2	1.1	0.8	1.0
	Denmark[3]	4.1	0.1	4.3	4.1	4.0	1.7	0.1	1.8	1.6	1.6
	Finland	3.9	n	4.0	3.6	4.0	1.7	0.1	1.8	1.7	1.9
	France	4.0	0.3	4.2	m	m	1.1	0.2	1.4	m	m
	Germany	2.9	0.6	3.5	3.5	3.7	1.0	0.1	1.1	1.0	1.1
	Greece[3]	2.6	0.2	2.8	3.0	2.3	1.2	n	1.3	0.9	0.8
	Hungary	3.5	0.2	3.7	2.9	3.6	1.0	0.3	1.3	1.1	1.0
	Iceland[3]	5.2	n	5.2	4.7	m	1.1	0.1	1.2	0.9	m
	Ireland	3.1	0.1	3.2	2.9	3.8	1.0	0.1	1.2	1.5	1.3
	Italy	3.5	0.1	3.6	3.3	m	0.7	0.2	0.9	0.9	0.8
	Japan[3]	2.7	0.3	3.0	2.9	3.0	0.5	0.8	1.3	1.1	1.0
	Korea	3.5	0.9	4.4	3.6	m	0.6	2.0	2.6	2.3	m
	Luxembourg[3]	4.0	m	m	m	m	m	m	m	m	m
	Mexico	3.8	0.7	4.5	3.8	4.0	0.9	0.4	1.3	1.0	1.1
	Netherlands	3.2	0.2	3.4	3.0	2.9	1.1	0.3	1.3	1.2	1.4
	New Zealand	4.5	0.5	4.9	m	m	0.9	0.6	1.5	m	m
	Norway	4.6	m	m	3.8	4.3	1.5	0.1	1.5	1.3	1.7
	Poland	4.2	0.1	4.4	3.6	3.6	1.0	0.5	1.5	0.9	0.8
	Portugal	4.2	n	4.2	4.1	3.8	1.0	0.1	1.1	1.1	0.9
	Slovak Republic[3]	2.8	0.3	3.1	2.7	3.1	0.8	0.1	0.9	0.8	0.8
	Spain	2.8	0.2	3.0	3.2	3.8	0.9	0.3	1.2	1.1	1.0
	Sweden	4.5	n	4.5	4.3	4.2	1.6	0.2	1.8	1.6	1.6
	Switzerland	4.0	0.6	4.6	4.3	m	1.6	m	m	1.1	m
	Turkey[4]	2.5	0.1	2.6	2.4	1.7	1.1	0.1	1.1	1.0	0.7
	United Kingdom	4.0	0.6	4.6	3.8	3.9	0.8	0.3	1.1	1.0	1.2
	United States	3.9	0.3	4.2	3.9	3.9	1.2	1.6	2.9	2.7	2.7
	OECD average	*3.6*	*0.3*	*3.9*	~	~	*1.1*	*0.4*	*1.4*	~	~
	OECD total	*3.5*	*0.4*	*3.9*	~	~	*1.0*	*0.9*	*1.9*	~	~
	EU19 average	*3.6*	*0.2*	*3.7*	~	~	*1.1*	*0.2*	*1.3*	~	~
	OECD average for countries with 1995, 2000 and 2003 data	~	~	*3.7*	*3.5*	*3.6*	~	~	*1.4*	*1.3*	*1.3*
Partner countries	Brazil[4]	3.4	m	m	3.0	2.6	0.8	m	m	0.8	0.7
	Chile[5]	2.8	1.3	4.1	4.6	3.1	0.3	1.8	2.2	2.3	1.7
	Israel	4.6	0.2	4.8	4.7	5.0	1.3	0.7	2.0	1.9	1.9
	Russian Federation	2.1	m	m	1.7	m	0.7	m	m	0.9	m

1. Including public subsidies to households attributable for educational institutions, as well as 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 B1.1a for details.
4. Year of reference 2002.
5. Year of reference 2004.

Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

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Table B2.1c.
Expenditure on educational institutions as a percentage of GDP, by level of education (2003)
From public and private sources[1]

		Pre-primary education (for children 3 years and older)	Primary, secondary and post-secondary non-tertiary education				Tertiary education			All levels of education combined (including undistributed programmes)
			All primary, secondary and post-secondary non-tertiary education	Primary and lower secondary education	Upper secondary education	Post-secondary non-tertiary education	All tertiary education	Tertiary-type B education	Tertiary-type A education and advanced research programmes	
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
OECD countries	**Australia**	0.1	4.1	3.1	0.9	0.1	1.5	0.2	1.4	5.8
	Austria	0.5	3.8	2.5	1.3	n	1.1	0.1	1.1	5.5
	Belgium[2]	0.6	4.1	1.5	2.6	x(4)	1.3	x(6)	x(6)	6.1
	Canada[3]	x(2)	3.6	x(2)	x(2)	x(7)	2.4	0.9	1.4	5.9
	Czech Republic	0.4	3.1	1.8	1.2	0.1	1.1	0.1	1.0	4.7
	Denmark	0.8	4.3	3.0	1.2	x(4, 6)	1.8	x(6)	x(6)	7.0
	Finland	0.4	4.0	2.6	1.4	x(4)	1.8	n	1.8	6.1
	France	0.7	4.2	2.6	1.6	n	1.4	0.3	1.1	6.3
	Germany	0.5	3.5	2.1	1.3	0.2	1.1	0.1	1.1	5.3
	Greece[2]	x(2)	2.8	1.2	1.5	0.1	1.3	0.2	1.0	4.2
	Hungary	0.8	3.7	2.1	1.6	x	1.3	0.1	1.3	6.1
	Iceland	0.9	5.2	x(2)	x(2)	x(4, 6)	1.2	m	1.2	8.0
	Ireland	m	3.2	2.4	0.7	0.2	1.2	x(6)	x(6)	4.4
	Italy	0.5	3.6	2.2	1.4	0.1	0.9	n	0.9	5.1
	Japan	0.2	3.0	2.1	0.9	x(4, 6)	1.3	0.2	1.0	4.8
	Korea	0.2	4.4	3.0	1.4	a	2.6	0.6	2.0	7.5
	Luxembourg	x(2)	4.0	2.9	1.0	x(2)	m	m	m	m
	Mexico	0.8	4.5	3.5	0.9	a	1.3	x(6)	x(6)	6.8
	Netherlands	0.4	3.4	2.6	0.7	n	1.3	m	1.3	5.0
	New Zealand	0.3	4.9	3.1	1.6	0.2	1.5	0.3	1.3	6.8
	Norway	0.3	4.6	3.0	1.5	x(4)	1.5	x(6)	x(6)	6.6
	Poland	0.6	4.4	2.9	1.3	n	1.5	x(6)	x(6)	6.4
	Portugal	0.4	4.2	3.0	1.2	m	1.1	x(6)	x(6)	5.9
	Slovak Republic	0.6	3.1	1.8	1.2	x(4)	0.9	x(4)	0.9	4.7
	Spain	0.5	3.0	3.0	x(3)	x(3)	1.2	0.2	1.0	4.7
	Sweden	0.5	4.5	3.2	1.3	n	1.8	x(6)	x(6)	6.7
	Switzerland	0.2	4.6	2.8	1.7	0.1	1.6	n	1.6	6.5
	Turkey[3]	m	2.6	1.8	0.8	a	1.1	x(6)	x(6)	3.7
	United Kingdom[2]	0.4	4.6	1.5	3.1	x(4)	1.1	x(6)	x(6)	6.1
	United States	0.4	4.2	3.1	1.1	m	2.9	x(6)	x(6)	7.5
	OECD average	***0.5***	***3.9***	***2.5***	***1.4***	***0.1***	***1.4***	***0.2***	***1.2***	***5.9***
	OECD total	***0.4***	***3.9***	***2.6***	***1.3***	***0.1***	***1.9***	***x(6)***	***x(6)***	***6.3***
	EU19 average	***0.5***	***3.8***	***2.4***	***1.4***	***0.1***	***1.3***	***0.1***	***1.1***	***5.6***
Partner countries	**Brazil[3]**	0.3	3.2	2.5	0.7	a	0.8	x(6)	x(6)	4.4
	Chile[4]	0.5	4.1	2.8	1.4	a	2.2	0.3	1.9	6.8
	Israel	0.9	4.8	2.5	2.2	n	2.0	0.4	1.5	8.5
	Russian Federation	0.5	2.1	x(2)	x(2)	x(2)	0.7	0.1	0.5	3.7

1. Including international sources.
2. Column 3 only refers to primary education and column 4 refers to all secondary education.
3. Year of reference 2002.
4. Year of reference 2004.
Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/633760656440

Table B2.2.
Change in expenditure on educational institutions (1995, 2003)
Index of change between 1995 and 2003 in expenditure on educational institutions from public and private sources, by level of education (GDP deflator (1995=100), 2003 constant prices)

		All levels of education			Primary, secondary and post-secondary non-tertiary education			Tertiary education		
		Public expenditure on educational institutions	Private expenditure on educational institutions	Total expenditure on educational institutions from both public and private sources	Public expenditure on educational institutions	Private expenditure on educational institutions	Total expenditure on educational institutions from both public and private sources	Public expenditure on educational institutions	Private expenditure on educational institutions	Total expenditure on educational institutions from both public and private sources
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
OECD countries	Australia	132	174	141	145	167	148	93	185	125
	Austria	108	89	107	109	79	108	111	216	115
	Belgium	m	m	m	m	m	m	m	m	m
	Canada[1,2]	106	133	111	106	148	109	137	138	138
	Czech Republic	113	68	108	106	62	102	160	81	139
	Denmark[1]	131	173	132	126	140	127	122	698	126
	Finland	130	x(3)	130	131	x(6)	132	121	x(9)	122
	France	m	m	m	m	m	m	m	m	m
	Germany	110	108	110	109	101	108	111	128	114
	Greece[1]	198	m	m	160	m	m	244	m	m
	Hungary	156	128	153	146	86	141	178	198	182
	Iceland	m	m	m	m	m	m	m	m	m
	Ireland	165	110	159	157	171	157	199	89	163
	Italy	109	m	m	107	m	m	118	222	137
	Japan[1]	109	117	111	106	111	106	132	145	139
	Korea	m	m	m	m	m	m	m	m	m
	Luxembourg	m	m	m	m	m	m	m	m	m
	Mexico	160	174	162	149	151	149	149	228	167
	Netherlands	131	127	130	139	133	139	109	124	112
	New Zealand	151	m	m	158	m	m	111	m	m
	Norway	m	m	113	m	m	130	m	m	112
	Poland	148	m	m	159	m	m	170	m	m
	Portugal	135	m	m	133	m	m	140	m	m
	Slovak Republic[1]	126	484	137	125	1 296	135	151	426	167
	Spain	126	86	119	111	55	104	163	142	158
	Sweden	133	227	134	135	69	135	132	237	141
	Switzerland	126	m	m	113	m	m	174	m	m
	Turkey	196	m	m	194	m	m	202	m	m
	United Kingdom	134	176	139	146	175	149	106	179	120
	United States	139	120	133	135	167	137	167	115	133
	OECD average	~	~	*129*	~	~	*129*	~	~	*137*
Partner countries	Brazil[2]	136	m	m	142	m	m	140	m	m
	Chile[3]	175	214	192	180	213	189	117	209	186
	Israel	122	125	123	120	105	119	131	130	130
	Russian Federation	m	m	m	m	m	m	m	m	m

1. Some levels of education are included with others. Refer to "x" code in Table B1.1a for details.
2. Year of reference 2002.
3. Year of reference 2004.
Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/633760656440

Table B2.3.

Change in expenditure on educational institutions (1995, 2000, 2001, 2002, 2003)

Index of change between 1995 and 2003 in expenditure on educational institutions from public and private sources, by level of education (GDP deflator (1995=100), 2003 constant price)

		All levels of education					Primary, secondary and post-secondary non-tertiary education					Tertiary education				
		1995	2000	2001	2002	2003	1995	2000	2001	2002	2003	1995	2000	2001	2002	2003
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
OECD countries	Australia	100	127	133	137	141	100	134	141	143	148	100	110	113	121	125
	Austria	100	106	108	109	107	100	108	105	107	108	100	102	117	111	115
	Belgium	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Canada[1]	100	108	111	m	111	100	95	95	m	109	100	134	141	m	138
	Czech Republic	100	90	95	98	108	100	88	91	93	102	100	101	109	118	139
	Denmark[1]	100	123	131	133	132	100	119	125	124	127	100	110	129	136	126
	Finland	100	114	117	123	130	100	113	118	124	132	100	112	113	117	122
	France	100	111	111	112	m	100	111	111	112	m	100	111	111	112	m
	Germany	100	106	107	109	110	100	106	107	108	108	100	101	102	106	114
	Greece[1,2]	100	155	165	174	198	100	147	136	144	160	100	160	216	243	244
	Hungary	100	111	120	134	153	100	100	107	120	141	100	135	145	162	182
	Iceland	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Ireland	100	137	142	147	159	100	122	133	140	157	100	178	167	167	163
	Italy	100	110	121	112	116	100	97	112	107	111	100	126	135	139	137
	Japan[1]	100	107	108	109	111	100	103	105	106	106	100	117	118	120	139
	Korea	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Luxembourg	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Mexico	100	129	138	148	162	100	124	137	135	149	100	129	123	172	167
	Netherlands	100	117	123	127	130	100	121	129	136	139	100	108	110	109	112
	New Zealand[2]	100	133	133	142	151	100	140	139	149	158	100	96	100	106	111
	Norway	100	101	105	m	113	100	105	129	121	130	100	91	92	103	112
	Poland[2]	100	120	134	135	148	100	125	142	144	159	100	112	163	166	170
	Portugal[2]	100	129	135	134	135	100	131	137	137	133	100	130	139	128	140
	Slovak Republic	100	104	109	117	137	100	104	107	117	135	100	125	148	150	167
	Spain	100	110	113	115	119	100	101	101	102	104	100	139	147	151	158
	Sweden	100	123	124	135	134	100	123	123	133	135	100	123	126	135	141
	Switzerland[2]	100	109	114	120	126	100	104	109	113	113	100	125	135	149	174
	Turkey[2]	100	175	167	176	196	100	174	166	171	194	100	179	170	191	202
	United Kingdom	100	112	120	131	139	100	115	123	136	149	100	102	109	118	120
	United States	100	118	125	126	133	100	120	127	131	137	100	120	122	119	133
	OECD average	*100*	*119*	*123*	*129*	*136*	*100*	*117*	*121*	*126*	*133*	*100*	*122*	*131*	*138*	*146*
	EU19 average	*100*	*116*	*122*	*126*	*135*	*100*	*114*	*118*	*123*	*131*	*100*	*122*	*135*	*139*	*147*

1. Some levels of education are included with others. Refer to "x" code in Table B1.1a for details.
2. Public expenditure only.
Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/633760656440

PUBLIC AND PRIVATE INVESTMENT IN EDUCATIONAL INSTITUTIONS

INDICATOR B3

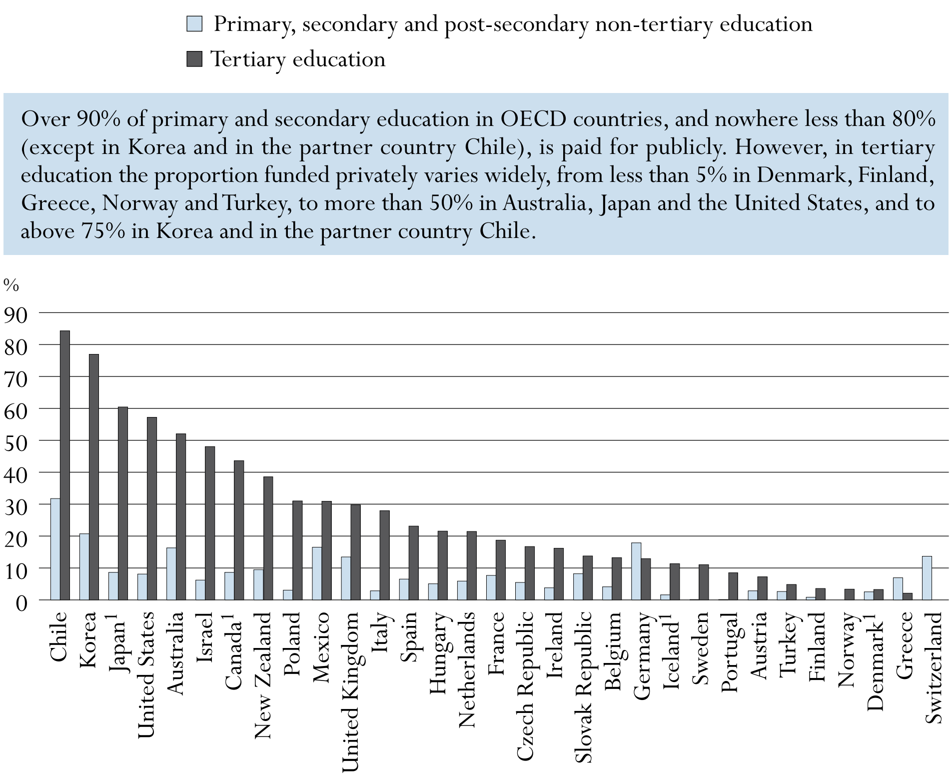
This indicator examines the proportion of public and private funding allocated to educational institutions for each level of education. It also provides the breakdown of private funding between household expenditure and expenditure from private entities other than households. This indicator sheds some light on the widely debated issue of how the financing of educational institutions should be shared between private entities and the public, particularly those at the tertiary level. The higher the amount of household expenditure required for educational institutions, the stronger the pressure on families. Thus access to tertiary studies may be influenced both by the amount of private expenditure needed and by the financial subsidies to households that are analysed in Indicator B5.

Key results

Chart B3.1. Share of private expenditure on educational institutions (2003)

The chart shows private spending on educational institutions as a percentage of total spending on educational institutions. This includes all money transferred to such institutions through private sources, including public funding via subsidies to households, private fees for educational services or other private spending (e.g. on accommodation) that passes through the institution.

Over 90% of primary and secondary education in OECD countries, and nowhere less than 80% (except in Korea and in the partner country Chile), is paid for publicly. However, in tertiary education the proportion funded privately varies widely, from less than 5% in Denmark, Finland, Greece, Norway and Turkey, to more than 50% in Australia, Japan and the United States, and to above 75% in Korea and in the partner country Chile.



1. Some levels of education are included with others. Refer to "x" code in Table B1.1a for details.
Countries are ranked in descending order of the share of private expenditure on educational institutions for tertiary education.
Source: OECD. Tables B3.2a and B3.2b. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).
StatLink: http://dx.doi.org/10.1787/403751686342

Other highlights of this indicator

- Between 1995 and 2003, among countries for which comparable data are available, the share of public funding for all levels of education combined decreased in as many countries as it increased.
- The share of tertiary spending from private sources rose substantially in some countries between 1995 and 2003, but this was not the case at other levels of education.
- On average among the 18 OECD countries for which trend data are available, the share of public funding in tertiary institutions slightly decreased between 1995 and 2000 and every year between 2001 and 2003.
- The share of public funding at the tertiary level in OECD countries represents on average 76% in 2003.
- Compared to other levels of education, tertiary institutions and to a lesser extent pre-primary institutions obtain the largest proportions of funds from private sources: respectively 24% and 19% of funds at these levels come from private sources.
- In tertiary education, households cover 76% of all private expenditure. Private expenditure from other entities than households is still significant, representing 10% or more in Australia, Canada, Hungary, Korea, the Netherlands, Sweden, the United Kingdom and the United States, and the partner country Israel.

Policy context

Cost-sharing between participants in the education system and society as a whole is an issue under discussion in many OECD countries. This question is especially relevant for pre-primary and tertiary education, where full or nearly full public funding is less common.

As new client groups participate in a wider range of educational programmes and choose among more opportunities from increasing numbers of providers, governments are forging new partnerships to mobilise the necessary resources to pay for education and to share costs and benefits more equitably.

As a result, public funding is more often seen as providing only a part (although a very important part) of investment in education and the role of private sources has become more important. Some stakeholders are concerned that this balance should not become so tilted as to discourage potential learners. Thus, changes in a country's public/private funding shares can provide important context for changing patterns and levels of participation within its educational system.

Evidence and explanations

What this indicator does and does not cover

Governments can spend public funds directly on educational institutions or use them to provide subsidies to private entities for the purpose of education. When reporting on the public and private proportions of educational expenditure, it is therefore important to distinguish between the initial sources of funds and the final direct purchasers of educational goods and services.

Initial public spending includes both direct public expenditure on educational institutions and transfers to the private sector. To gauge the level of public expenditure, it is necessary to add together the components showing direct public expenditure on educational institutions and public subsidies for education. Initial private spending includes tuition fees and other student or household payments to educational institutions, less the portion of such payments offset by public subsidies.

The final public and private proportions are the percentages of educational funds spent directly by public and private purchasers of educational services. Final public spending includes direct public purchases of educational resources and payments to educational institutions and other private entities. Final private spending includes tuition fees and other private payments to educational institutions.

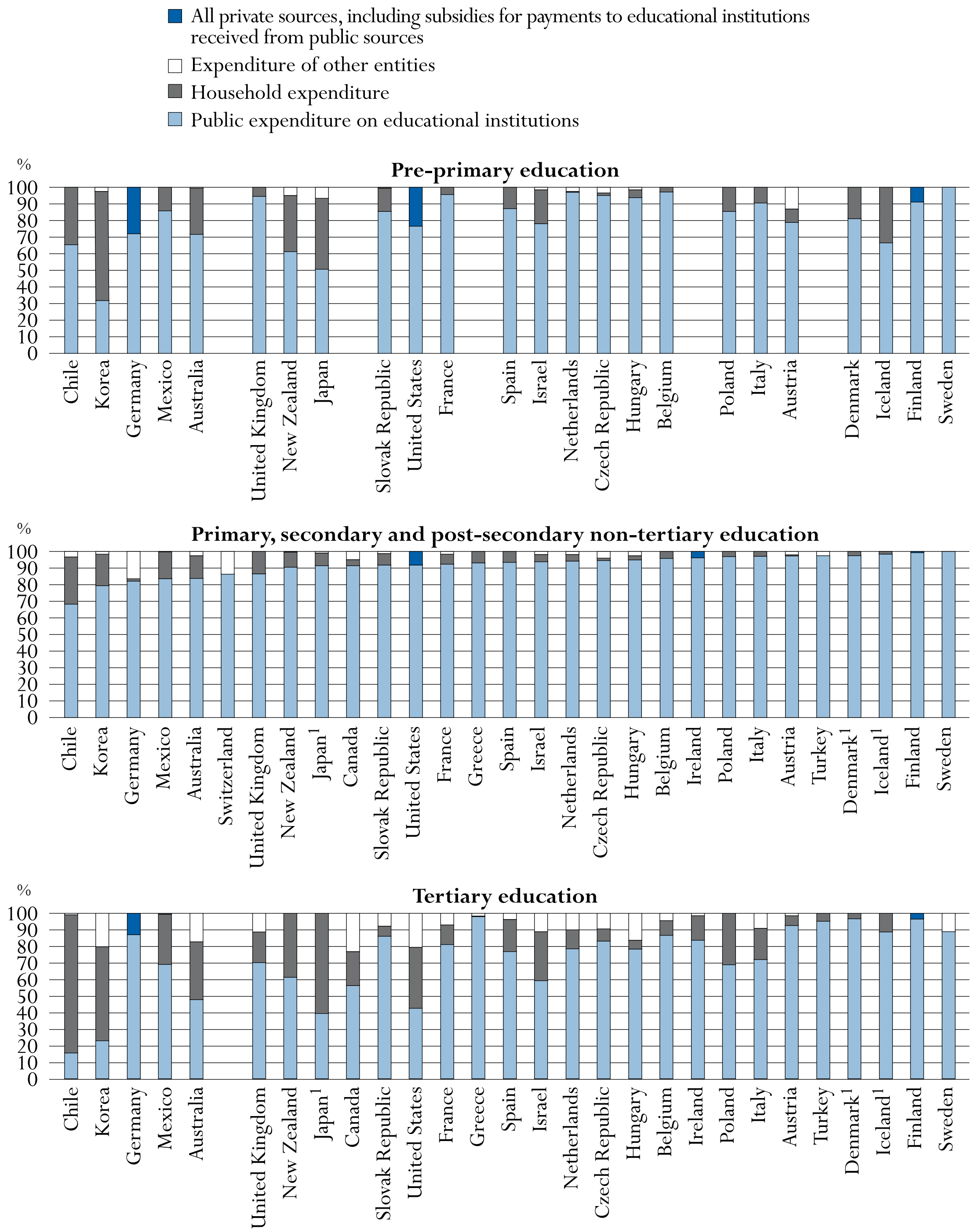
Not all spending on instructional goods and services occurs within educational institutions. For example, families may purchase textbooks and materials commercially or seek private tutoring for their children outside educational institutions. At the tertiary level, student living costs and forgone earnings can also account for a significant proportion of the costs of education. All such expenditure outside educational institutions, even if it is publicly subsidised, is excluded from this indicator. Public subsidies for educational expenditure outside institutions are discussed in Indicators B4 and B5.

Public and private expenditure on educational institutions at all levels of education

Educational institutions are still mainly publicly funded, although there is a substantial and growing degree of private funding at the tertiary level of education. On average across OECD countries, 88% of all funds for educational institutions come directly from public sources. In addition, 0.5% is channelled to institutions via public subsidies to households (Table B3.1).

Chart B3.2. Distribution of public and private expenditure on educational institutions (2003)

By level of education



1. Some levels of education are included with others. Refer to "x" code in Table B1.1a for details.

Countries are ranked in ascending order of the proportion of public expenditure on educational institutions in primary, secondary and post-secondary non-tertiary education.

Source: OECD. Tables B3.2a and B3.2b. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/403751686342

In all the OECD countries for which comparable data are available, private funding represents 12% of all funds on average. This proportion varies widely among countries and only nine OECD and two partner countries report a share of private funding above the OECD average. In Australia, Canada, Japan and the United States, private funds constitute around one-quarter of all educational expenditure and exceed 39% in Korea and partner country Chile (Table B3.1).

Public and private expenditure on educational institutions in pre-primary, primary, secondary and post-secondary non-tertiary education

The share of private expenditure on education and how this varies among countries depends on the level of education.

Investment in early childhood education is of key importance in order to build a strong foundation for lifelong learning and to ensure equitable access to learning opportunities later in school. In pre-primary education, the private share of total payments to educational institutions is more important than for all levels of education combined and represents on average 19%, but this proportion is very uneven between countries, ranging from 5% or less in the Czech Republic, France, the Netherlands and Sweden, to well over 25% in Australia, Germany, Iceland, New Zealand and partner country Chile, to around 50% in Japan, and over 68% in Korea (Table B3.2a). Except in Austria and the Netherlands, the major part of private funding is covered by households.

Public funding dominates the primary, secondary and post-secondary non-tertiary levels of education in OECD and partner countries: on average the rate among OECD countries is 93%. Nevertheless, the proportions of private funding exceed 13% in Australia, Germany, Korea, Mexico, Switzerland and the United Kingdom, and the partner country Chile (Table B3.2a and Chart B3.2). The importance of public funding may result from the fact that primary, secondary and post-secondary non-tertiary education are usually perceived as a public good with mainly public returns. In most countries, at the primary, secondary and post-secondary non-tertiary level, the share of private expenditure results from household expenditure and comprises mainly expenditure on tuition. In Germany and Switzerland, however, most private expenditure is accounted for by contributions from the business sector to the dual system of apprenticeship at the upper secondary and post-secondary non-tertiary levels.

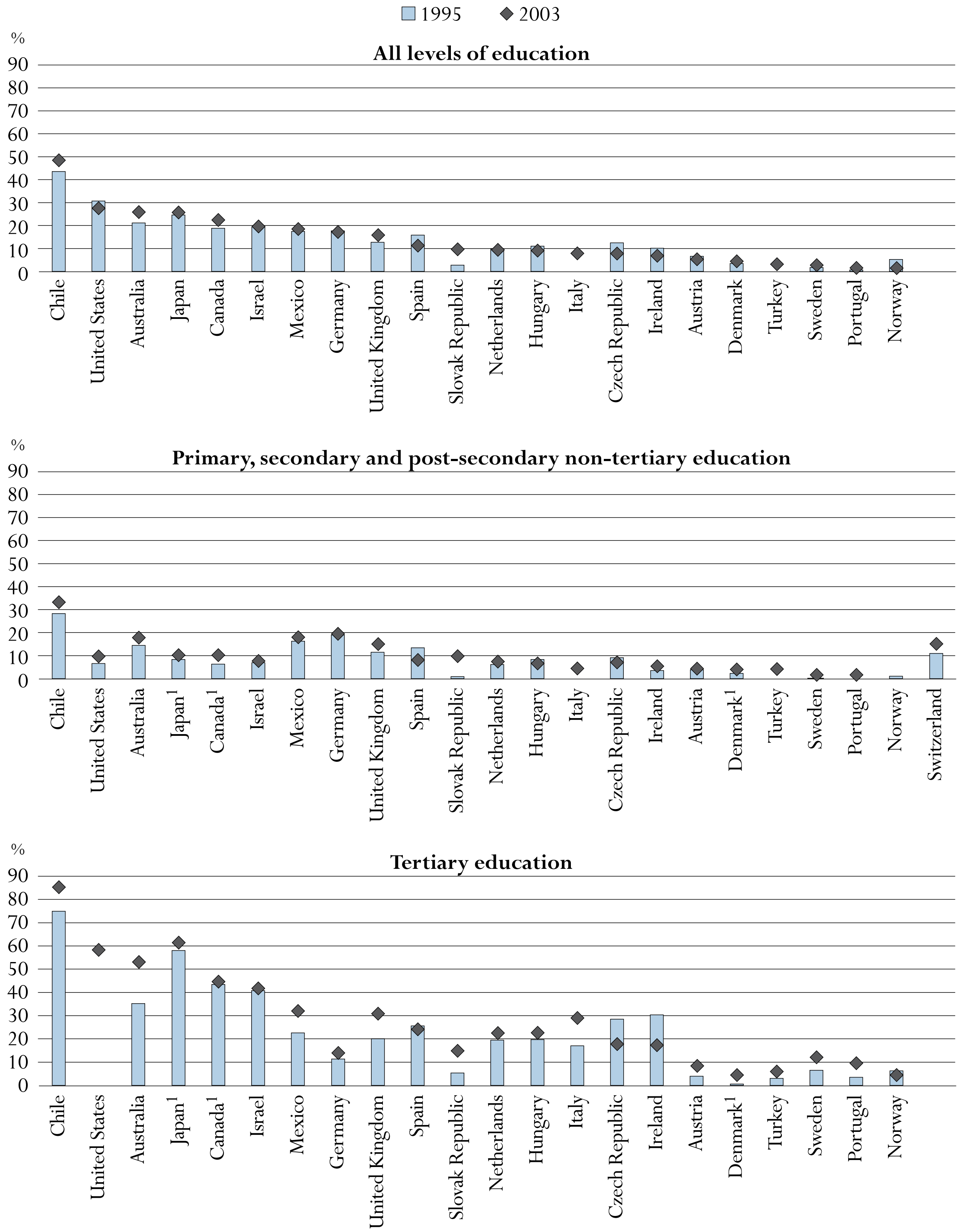
Between 1995 and 2003, among the 20 OECD and partner countries with comparable data available, there was a small decrease in the share of public funding at primary, secondary and post-secondary non-tertiary levels in approximately two-thirds of countries. Twelve countries recorded shifts from public to private funding, but the increase in the private share is more than 2 percentage points only in Canada (from 6.3 to 8.7%), the Slovak Republic (from 0.9 to 8.2%), Switzerland (10.9 to 13.6%) and the United Kingdom (from 11.5 to 13.5), as well as in the partner country Chile (from 28.2 to 31.7%). Funding shifts in the opposite direction, towards public funding, are notable in other countries; the share of public funding increased by between 3 and 7 percentage points in the Czech Republic (from 90.9 to 94.5%), Hungary (from 91.7 to 94.9%) and Spain (86.6 to 93.4%) (Chart B3.3 and Table B3.2a).

Public and private expenditure on educational institutions in tertiary institutions

In all OECD and partner countries except Germany and Greece, the private proportion of educational expenditure is far higher at the tertiary level than at the primary, secondary and

Chart B3.3. Share of private expenditure on educational institutions (1995, 2003)

Percentage



1. Some levels of education are included with others. Refer to "x" code in Table B1.1a for details.

Countries are ranked in descending order of the share of private expenditure on educational institutions in 2003 for all levels of education.

Source: OECD. Tables B3.1, B3.2a and B3.2b. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/403751686342

post-secondary non-tertiary levels and represents on average more than one-fifth of total expenditure on educational institutions at this level. At the tertiary level, the high private returns in the form of better employment and income opportunities (see Indicator A9) suggest that a greater contribution by individuals to the costs of tertiary education may be justified, provided, of course, that governments can ensure that funding is accessible to students irrespective of their economic background (see Indicator B5).

The proportion of expenditure on tertiary institutions covered by individuals, businesses and other private sources, including subsidised private payments, ranges from less than 5% in Denmark, Finland, Greece, Norway and Turkey, to more than 50% in Australia, Japan and the United States, and over 75% in Korea and the partner country Chile (Chart B3.2 and Table B3.2b). In Korea, around 80% of tertiary students are enrolled in private universities, where more than 70% of budgets are derived from tuition fees. The contribution of private entities other than households to the financing of educational institutions is on average higher for tertiary education than for other levels of education. In one-quarter of OECD and partner countries – Australia, Canada, Hungary, Korea, the Netherlands, Sweden, the United Kingdom, the United States, and the partner country Israel – the proportion of expenditure on tertiary institutions covered by private entities other than households represents 10% or more.

In many OECD countries, the growth in tertiary participation (see Indicator C2) represents a response to heavy demand, both individual and social. Just as many tertiary structures and programmes were designed for a different era, so too were its funding mechanisms. The share of public funding at the tertiary level represents on average in OECD countries 76% in 2003. On average among the 18 OECD countries for which trend data are available, the share of public funding in tertiary institutions slightly decreased between 1995 and 2000 and every year between 2001 and 2003 (Table B3.3).

In one-half of the OECD and partner countries with comparable data in 1995 and 2003, private share increased by more than 3 percentage points. This increase exceeds 9 percentage points in Australia, Italy and the United Kingdom, as well as the partner country Chile, whereas only the Czech Republic, Ireland and to a lesser extent Norway and Spain show significant decrease in the private share allocated to tertiary educational institutions (Table B3.2b and Chart B3.3). In Australia, the main reason for the increase in the private share of spending on tertiary institutions between 1995 and 2003 was changes to the Higher Education Contribution Scheme (HECS) that took place in 1997. The changes in HECS were part of a reform process aimed at providing more funds for higher education, partly through increased student/former student contributions (see Indicator B5).

The amounts paid by students and their families to cover tuition fees and other education-related expenditures differ among OECD countries according to taxation and spending policies, and the willingness of governments to support students (see Table B5.2 and Chart B5.3). This willingness is influenced by students' enrolment status (full-time or part-time), age and residency (whether they are living at home). To some extent, however, the guidelines used in establishing eligibility for these subsidies are breaking down. Mature students, whose numbers are increasing, are more likely to have established their own households and to prefer part-time or distance learning to full-time, on-campus study.

Changes in the proportion of private expenditure compared to changes in the real level of public-sector spending on tertiary education

It is notable that rises in private educational expenditure have not generally gone hand in hand with cuts (in real terms) in public expenditure on education at the tertiary level or at the primary, secondary and post-secondary non-tertiary level. On the contrary, public investment in education has increased in most of the OECD countries for which 1995 to 2003 data are available, regardless of changes in private spending (see Table B2.2). In fact, many OECD countries with the highest growth in private spending have also shown the highest increase in public funding of education. This indicates that increasing private spending on tertiary education tends to complement, rather than replace, public investment. The main exception to this is Australia, where the shift towards private expenditure at tertiary level has been accompanied both by a fall in the level of public expenditure in real terms and by a significant increase of public subsidies provided to tertiary students.

Definitions and methodologies

Data refer to the financial year 2003 and are based on the UOE data collection on education statistics administered by the OECD in 2005 (for details see Annex 3 at *www.oecd.org/edu/eag2006*).

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. Private spending includes all direct expenditure on educational institutions, whether partially covered by public subsidies or not. Public subsidies attributable to households, included in private spending, are shown separately.

A portion of the budgets of educational institutions is related to ancillary services offered to students, including student welfare services (student meals, housing and transportation). Part of the cost for these services is covered by fees collected from students and is included in the indicator.

Other private entities include private businesses and non-profit organisations, including religious organisations, charitable organisations, and business and labour associations. Expenditure by private companies on the work-based element of school and work-based training of apprentices and students are also taken into account.

The data on expenditure for 1995 were obtained by a special survey updated in 2003 in which expenditure for 1995 was adjusted to methods and definitions used in the current UOE data collection.

Note that data appearing in earlier editions of this publication may not always be comparable to data shown in the 2006 edition due to changes in definitions and coverage that were made as a result of the OECD expenditure comparability study (for details on changes, see Annex 3 at *www.oecd.org/edu/eag2006*).

Table B3.1.

Relative proportions of public and private expenditure on educational institutions for all levels of education (1995, 2003)

Distribution of public and private sources of funds for educational institutions after transfers from public sources, by year

		2003					1995				
			Private sources					Private sources			
		Public sources	Household expenditure	Expenditure of other private entities	All private sources[1]	Private: of which, subsidised	Public sources	Household expenditure	Expenditure of other private entities	All private sources[1]	Private: of which, subsidised
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
OECD countries	Australia	73.9	19.6	6.5	26.1	0.2	78.9	13.7	7.4	21.1	0.5
	Austria	94.5	2.5	2.9	5.5	0.9	93.4	3.4	3.2	6.6	1.5
	Belgium	94.2	4.9	0.9	5.8	1.8	m	m	m	m	m
	Canada[2]	77.4	10.4	12.2	22.6	0.4	81.2	7.7	11.1	18.8	m
	Czech Republic	92.1	2.8	5.1	7.9	m	87.5	x(9)	x(9)	12.5	6.2
	Denmark	95.5	4.5	n	4.5	m	96.5	3.5	n	3.5	n
	Finland	97.9	x(4)	x(4)	2.1	n	m	m	m	m	m
	France	90.4	7.1	2.6	9.6	1.5	m	m	m	m	m
	Germany	82.6	x(4)	11.0	17.4	n	82.3	x(9)	11.6	17.7	a
	Greece	94.5	4.9	0.6	5.5	m	m	m	m	m	m
	Hungary	90.8	3.4	5.8	9.2	n	89.0	5.0	6.0	11.0	n
	Iceland	91.0	9.0	m	9.0	n	m	m	m	m	m
	Ireland	93.0	6.6	0.4	7.0	n	89.8	9.7	0.5	10.2	m
	Italy	91.9	6.4	1.7	8.1	0.9	m	m	m	m	m
	Japan	74.1	23.1	2.8	25.9	m	75.4	22.7	2.0	24.6	m
	Korea	60.0	32.0	8.1	40.0	0.9	m	m	m	m	m
	Luxembourg	m	m	m	m	m	m	m	m	m	m
	Mexico	81.3	18.5	0.2	18.7	1.0	82.6	17.4	m	17.4	m
	Netherlands	90.4	5.8	3.8	9.6	0.9	90.2	6.4	3.4	9.8	1.8
	New Zealand	83.0	16.6	0.5	17.0	m	m	m	m	m	m
	Norway	98.4	1.6	m	1.6	m	94.8	x(9)	x(9)	5.2	n
	Poland	89.4	10.6	m	10.6	m	m	m	m	m	a
	Portugal	98.3	1.7	m	1.7	m	99.4	0.6	m	0.6	m
	Slovak Republic	90.2	7.3	2.5	9.8	m	97.2	x(9)	x(9)	2.8	m
	Spain	88.6	10.5	0.9	11.4	0.5	84.2	x(9)	x(9)	15.8	0.4
	Sweden	97.1	0.1	2.8	2.9	a	98.3	0.1	1.6	1.7	m
	Switzerland	m	m	m	m	m	m	m	m	m	m
	Turkey	96.7	1.4	1.8	3.3	n	m	m	m	m	m
	United Kingdom	84.0	13.9	2.1	16.0	0.1	87.3	x(9)	x(9)	12.7	3.5
	United States	72.3	19.9	7.8	27.7	m	69.3	x(9)	x(9)	30.7	m
	OECD average	*88.0*	*~*	*~*	*12.0*	*0.5*	*~*	*~*	*~*	*~*	*~*
	EU19 average	*92.0*	*~*	*~*	*8.0*	*0.5*	*~*	*~*	*~*	*~*	*~*
Partner countries	Brazil	m	m	m	m	m	m	m	m	m	m
	Chile[3]	51.4	46.3	2.3	48.6	0.8	56.4	42.4	1.2	43.6	m
	Israel	80.2	15.1	4.7	19.8	2.3	80.5	13.0	6.4	19.5	1.3
	Russian Federation	m	m	m	m	m	m	m	m	m	m

1. Including subsidies attributable to payments to educational institutions received from public sources.
2. Year of reference 2002.
3. Year of reference 2004.

Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/403751686342

Table B3.2a.

Relative proportions of public and private expenditure on educational institutions, as a percentage, by level of education (1995, 2003)

Distribution of public and private sources of funds for educational institutions after transfers from public sources, by year

		Pre-primary education (for children 3 years and older)					Primary, secondary and post-secondary non-tertiary education					Primary, secondary and post-secondary non-tertiary education				
		2003					2003					1995				
			Private sources					Private sources					Private sources			
		Public sources	Household expenditure	Expenditure of other private entities	All private sources[1]	Private: of which, subsidised	Public sources	Household expenditure	Expenditure of other private entities	All private sources[1]	Private: of which, subsidised	Public sources	Household expenditure	Expenditure of other private entities	All private sources[1]	Private: of which, subsidised
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
OECD countries	Australia	71.7	27.8	0.6	28.3	n	83.7	13.7	2.6	16.3	n	85 5	10.5	4.0	14.5	0.7
	Austria	78.8	8.2	13.0	21.2	0.4	97.2	0.8	2.0	2.8	0.7	96.2	1.9	1.9	3.8	0.6
	Belgium	97.2	2.8	m	m	0.3	95.9	4.1	m	m	1.2	m	m	m	m	m
	Canada[2,3]	x(6)	x(7)	x(8)	x(9)	x(6)	91.3	3.7	5.0	8.7	x(6)	93.7	3.0	3.4	6.3	x(11)
	Czech Republic	95.0	1.5	3.4	5.0	m	94.5	1.4	4.1	5.5	m	90.9	x(14)	x(14)	9.1	6.8
	Denmark[3]	81.0	19.0	n	19.0	m	97.5	2.5	m	2.5	m	97.8	2.2	m	2.2	n
	Finland	91.1	x(4)	x(4)	8.9	n	99.2	x(9)	x(9)	0.8	n	m	m	m	m	m
	France	95.6	4.4	n	4.4	n	92.4	6.0	1.6	7.6	1.5	m	m	m	m	m
	Germany	72.1	x(4)	x(4)	27.9	n	82.1	x(9)	16.3	17.9	n	81.0	x(14)	x(14)	19.0	a
	Greece	x(6)	x(7)	x(8)	x(9)	m	93.0	7.0	m	7.0	m	m	m	m	m	m
	Hungary	93.7	4.7	1.6	6.3	n	94.9	2.6	2.5	5.1	n	91.7	4.4	3.9	8.3	n
	Iceland[3]	66.5	33.5	m	33.5	n	98.4	1.6	m	1.6	n	m	m	m	m	m
	Ireland	m	m	m	m	m	96.2	x(9)	x(9)	3.8	m	96.5	x(14)	x(14)	3.5	m
	Italy	90.6	9.4	n	9.4	0.3	97.1	2.8	0.1	2.9	n	m	m	m	m	m
	Japan[3]	50.6	42.7	6.7	49.4	m	91.3	7.7	0.9	8.7	m	91.7	7.7	0.5	8.3	m
	Korea	31.7	65.7	2.5	68.3	3.7	79.3	19.1	1.6	20.7	0.9	m	m	m	m	m
	Luxembourg	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Mexico	85.9	14.0	0.1	14.1	0.3	83.5	16.3	0.1	16.5	1.1	83.8	16.2	m	16.2	m
	Netherlands	97.0	0.6	2.4	3.0	a	94.1	4.2	1.7	5.9	0.7	93.9	5.1	1.0	6.1	1.4
	New Zealand	61.2	34.0	4.8	38.8	m	90.5	9.1	0.4	9.5	m	m	m	m	m	m
	Norway	84.6	15.4	m	15.4	n	m	m	m	m	m	99.0	x(14)	x(14)	1.0	x(11)
	Poland	85.5	14.5	m	14.5	m	96.9	3.1	m	3.1	m	m	m	m	m	m
	Portugal	m	m	m	m	m	99.9	0.1	m	0.1	m	100.0	n	a	n	m
	Slovak Republic[3]	85.5	14.0	0.5	14.5	a	91.8	6.9	1.4	8.2	m	99.1	x(14)	x(14)	0.9	m
	Spain	87.2	12.8	m	12.8	n	93.4	6.6	m	6.6	n	86.6	12.5	0.9	13.4	m
	Sweden	100.0	n	n	n	n	99.9	0.1	a	0.1	a	99.9	0.2	a	0.2	m
	Switzerland	m	m	m	m	m	86.4	n	13.6	13.6	0.7	89.1	n	10.9	10.9	1.1
	Turkey	m	m	m	m	m	97.4	m	2.6	2.6	a	m	m	m	m	m
	United Kingdom	94.6	5.4	n	5.4	a	86.5	13.5	n	13.5	n	88.5	11.5	n	11.5	n
	United States	76.6	x(4)	x(4)	23.4	a	91.9	x(9)	x(9)	8.1	a	93.4	x(14)	x(14)	6.6	m
	OECD average	*81.5*	~	~	*18.5*	*0.3*	*92.7*	~	~	*7.4*	*0.4*	~	~	~	~	~
	EU19 average	*89.7*	~	~	*10.3*	*0.4*	*94.6*	~	~	*5.5*	*0.4*	~	~	~	~	~
Partner countries	Brazil	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Chile[4]	65.5	34.5	0.1	34.5	m	68.3	28.3	3.3	31.7	m	71.8	27.5	0.7	28.2	m
	Israel	78.0	20.5	1.5	22.0	m	93.8	4.3	1.8	6.2	1.4	93.1	3.5	3.4	6.9	0.8
	Russian Federation	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m

1. Including subsidies attributable to payments to educational institutions received from public sources. To calculate private funds net of subsidies, subtract public subsidies (columns 5, 10, 15) from private funds (columns 4, 9, 14). To calculate total public funds, including public subsidies, add public subsidies (columns 5, 10, 15) to direct public funds (columns 1, 6, 11).
2. Year of reference 2002.
3. Some levels of education are included with others. Refer to "x" code in Table B1.1a for details.
4. Year of reference 2004.

Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/403751686342

Table B3.2b.

Relative proportions of public and private expenditure on educational institutions, as a percentage, for tertiary education (1995, 2003)

Distribution of public and private sources of funds for educational institutions after transfers from public sources, by year

		Tertiary education									
		2003					1995				
			Private sources					Private sources			
		Public sources	Household expenditure	Expenditure of other private entities	All private sources[1]	Private: of which, subsidised	Public sources	Household expenditure	Expenditure of other private entities	All private sources[1]	Private: of which, subsidised
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
OECD countries	Australia	48.0	34.8	17.2	52.0	0.9	64.8	20.0	15.2	35.2	n
	Austria	92.7	5.9	1.4	7.3	1.6	96.1	1.9	2.0	3.9	4.6
	Belgium	86.7	8.8	4.5	13.3	4.7	m	m	m	m	m
	Canada[2,3]	56.4	20.6	23.0	43.6	0.9	56.6	16.7	26.7	43.4	22.3
	Czech Republic	83.3	7.3	9.4	16.7	m	71.5	3.3	25.2	28.5	8.7
	Denmark	96.7	3.3	n	3.3	m	99.4	0.6	n	0.6	n
	Finland	96.4	x(4)	x(4)	3.6	n	m	m	m	m	m
	France	81.3	11.8	6.9	18.7	2.3	m	m	m	m	m
	Germany	87.1	x(4)	x(4)	12.9	n	88.6	x(9)	x(9)	11.4	a
	Greece	97.4	0.4	2.2	2.6	m	m	m	m	m	m
	Hungary	78.5	5.3	16.2	21.5	n	80.3	4.8	14.9	19.7	n
	Iceland[3]	88.7	11.3	m	11.3	n	m	m	m	m	m
	Ireland	83.8	14.7	1.5	16.2	4.2	69.7	28.3	2.0	30.3	m
	Italy	72.1	18.9	9.0	27.9	4.5	82.9	12.7	4.4	17.1	0.1
	Japan[3]	39.7	60.3	x(2)	60.3	m	42.0	58.0	x(7)	58.0	m
	Korea	23.2	56.7	20.2	76.8	0.7	m	m	m	m	m
	Luxembourg	m	m	m	m	m	m	m	m	m	m
	Mexico	69.1	30.4	0.5	30.9	0.8	77.4	22.6	m	22.6	m
	Netherlands	78.6	11.5	9.9	21.4	1.5	80.6	10.1	9.3	19.4	2.5
	New Zealand	61.5	38.5	m	38.5	m	m	m	m	m	m
	Norway	96.7	3.3	m	3.3	m	93.7	x(9)	x(9)	6.3	n
	Poland	69.0	31.0	m	31.0	m	m	m	m	m	m
	Portugal	91.5	8.5	m	8.5	m	96.5	3.5	m	3.5	m
	Slovak Republic[3]	86.2	6.0	7.8	13.8	m	94.6	x(9)	x(9)	5.4	m
	Spain	76.9	19.4	3.7	23.1	2.0	74.4	19.4	6.2	25.6	2.0
	Sweden	89.0	n	11.0	11.0	a	93.6	n	6.4	6.4	a
	Switzerland	m	m	m	m	m	m	m	m	m	m
	Turkey	95.2	4.8	m	4.8	m	97.0	3.0	m	3.0	0.7
	United Kingdom	70.2	18.5	11.2	29.8	0.6	80.0	x(9)	x(9)	20.0	n
	United States	42.8	36.7	20.4	57.2	m	m	m	m	m	m
	OECD average	*76.4*	~	~	*23.6*	*1.5*	~	~	~	~	~
	EU19 average	*84.3*	~	~	*15.7*	*1.2*	~	~	~	~	~
Partner countries	Brazil	m	m	m	m	m	m	m	m	m	m
	Chile[4]	15.8	83.3	0.9	84.2	2.5	25.1	72.5	2.4	74.9	m
	Israel	59.3	29.6	11.1	40.7	5.6	59.2	24.3	16.5	40.8	3.0
	Russian Federation	m	m	m	m	m	m	m	m	m	m

1. Including subsidies attributable to payments to educational institutions received from public sources. To calculate private funds net of subsidies, subtract public subsidies (columns 5, 10) from private funds (columns 4, 9). To calculate total public funds, including public subsidies, add public subsidies (columns 5, 10) to direct public funds (columns 1, 6).
2. Year of reference 2002.
3. Some levels of education are included with others. Refer to "x" code in Table B1.1a for details.
4. Year of reference 2004.
Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).
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Table B3.3.
Trends in relative proportions of public expenditure[1] on educational institutions, for tertiary education (1995, 2000, 2001, 2002, 2003)

		1995 (%)	2000 (%)	2001 (%)	2002 (%)	2003 (%)
OECD countries	**Australia**	64.8	51.0	51.3	48.7	48.0
	Austria	96.1	96.3	94.6	91.6	92.7
	Belgium	m	m	84.1	86.0	86.7
	Canada	56.6	61.0	58.6	m	56.4
	Czech Republic	71.5	85.4	85.3	87.5	83.3
	Denmark	99.4	97.6	97.8	97.9	96.7
	Finland	m	97.2	96.5	96.3	96.4
	France	m	85.8	85.6	85.7	m
	Germany	88.6	91.8	91.3	91.6	87.1
	Greece	m	99.7	99.6	99.6	97.4
	Hungary	80.3	76.7	77.6	78.7	78.5
	Iceland	m	94.9	95.0	95.6	88.7
	Ireland	69.7	79.2	84.7	85.8	83.8
	Italy	82.9	77.5	77.8	78.6	72.1
	Japan	42.0	44.9	43.1	41.5	39.7
	Korea	m	23.3	15.9	14.9	23.2
	Luxembourg	m	m	m	m	m
	Mexico	77.4	79.4	70.4	71.0	69.1
	Netherlands	80.6	78.2	78.2	78.1	78.6
	New Zealand	m	m	m	62.5	61.5
	Norway	93.7	96.3	96.9	96.3	96.7
	Poland	m	m	m	69.7	69.0
	Portugal	96.5	92.5	92.3	91.3	91.5
	Slovak Republic	94.6	91.2	93.3	85.2	86.2
	Spain	74.4	74.4	75.5	76.3	76.9
	Sweden	93.6	88.1	87.7	90.0	89.0
	Switzerland	m	m	m	m	m
	Turkey	97.0	95.4	95.8	90.1	95.2
	United Kingdom	80.0	67.7	71.0	72.0	70.2
	United States	m	m	m	45.1	42.8
	OECD average	***81.2***	***80.2***	***80.0***	***78.1***	***76.2***
	OECD average for countries with data available for all reference years (18 OECD countries)	***82.6***	***81.3***	***81.4***	***80.7***	***79.7***
	EU19 average for countries with data available for all reference years (13 countries)	***85.6***	***84.4***	***85.2***	***85.0***	***83.6***
Partner countries	**Brazil**	m	m	m	m	m
	Chile	25.1	18.3	19.6	17.0	15.8
	Israel	59.2	56.5	56.8	53.4	59.3
	Russian Federation	m	m	m	m	m

1. Public expenditure on educational institutions excludes international funds.
Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.
StatLink: http://dx.doi.org/10.1787/403751686342

TOTAL PUBLIC EXPENDITURE ON EDUCATION

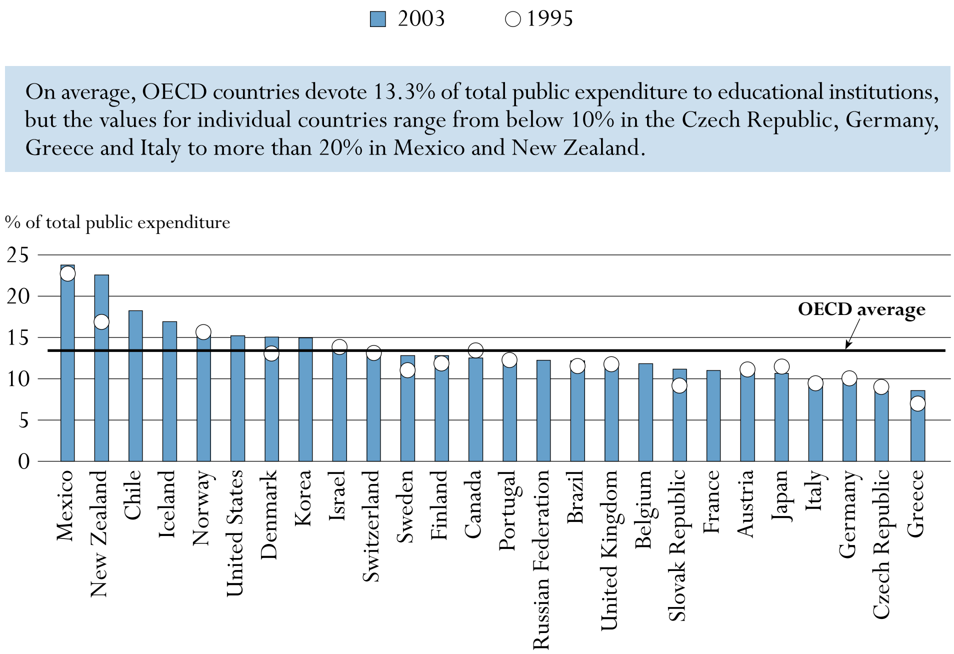
Public expenditure on education as a percentage of total public expenditure indicates the value placed on education relative to that of other public investments such as health care, social security, defence and security. It provides an important context for the other indicators on expenditure, particularly for Indicator B3 (the public and private shares of educational expenditure), as well as quantification of an important policy lever in its own right.

Key results

Chart B4.1. Total public expenditure on education as a percentage of total public expenditure (1995, 2003)

The chart shows direct public expenditure on educational institutions plus public subsidies to households (which include subsidies for living costs) and other private entities, as a percentage of total public expenditure, by level of education and year. This must be interpreted in the context of public sectors that differ in the size and breadth of responsibility from country to country.

On average, OECD countries devote 13.3% of total public expenditure to educational institutions, but the values for individual countries range from below 10% in the Czech Republic, Germany, Greece and Italy to more than 20% in Mexico and New Zealand.



Countries are ranked in descending order of total public expenditure on education at all levels of education as a percentage of total public expenditure in 2003.
Source: OECD. Table B4.1. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).
StatLink: http://dx.doi.org/10.1787/086554011765

Other highlights of this indicator

- Public funding of education is a social priority, even in OECD countries with little public involvement in other areas.
- In OECD countries, public funding of primary, secondary and post-secondary non-tertiary education is on average three times that of tertiary education, mainly due to largely universal enrolment rates but also because the private share in expenditure tends to be higher at the tertiary level. This ratio varies by country from less than double in Canada, Denmark and Finland to more than five times in Korea and partner country Chile. The latter figure is indicative of the relatively high proportion of private funds that go into tertiary education in Korea and the partner country Chile.
- Between 1995 and 2003, public budgets as a percentage of GDP tended to decline. Education, however, took a growing share of total public expenditure in most countries, although it did not on average grow as fast as GDP. In Denmark, Greece, New Zealand, the Slovak Republic and Sweden, there have been particularly significant shifts in public funding in favour of education.
- On average among OECD countries, 83% of public expenditure on education is transferred to public institutions. In three-quarters of the OECD countries as well as in the partner country Brazil, the share of public expenditure on education transferred to public institutions exceeds 80%. The share of public expenditure transferred to the private sector is larger at the tertiary level than at primary to post-secondary non-tertiary levels and reaches 28% on average among OECD countries with available data.

Policy context

If the public benefits from a particular service are greater than the private benefits, then markets alone may fail to provide these services adequately and governments may need to become involved. Education is one area where all governments intervene to fund or direct the provision of services. As there is no guarantee that markets will provide equal access to educational opportunities, government funding of educational services ensures that education is not beyond the reach of some members of society.

This indicator focuses on public expenditure on education but also evaluates how public expenditure has changed over time in absolute terms and relative to total governmental spending. Since the second half of the 1990s, most OECD countries have made serious efforts to consolidate public budgets. Education has had to compete with a wide range of other areas covered in government budgets for public financial support. To examine this evolution, the indicator evaluates the change in educational expenditure in absolute terms, and relative to changes in the size of public budgets.

Evidence and explanations

What this indicator does and does not cover

This indicator shows total public expenditure on education, which includes direct public expenditure on educational institutions as well as public subsidies 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). Unlike the preceding indicators, this indicator also includes public subsidies that are not attributable to household payments for educational institutions, such as subsidies for student living costs.

OECD countries differ in the ways in which they use public money for education. Public funds may flow directly to schools 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 student living costs.

Total public expenditure on all services, excluding education, includes expenditure on debt servicing (*e.g.* interest payments) that are not included in public expenditure on education. The reason for this exclusion is that some countries cannot separate interest payment outlays for education from those for other services. This means that public expenditure on education as a percentage of total public expenditure can be underestimated in countries where interest payments represent a high proportion of total public expenditure on all services.

It is important to examine public investment in education in conjunction with private investment, as shown in Indicator B3, in order to get a total picture of investment in education.

Overall level of public resources invested in education

On average, OECD countries devoted 13.3% of total public expenditure to education in 2003. However, the values for individual countries range from below 10% in the Czech Republic, Germany, Greece and Italy, to more than 20% in Mexico and New Zealand (Chart B4.1).

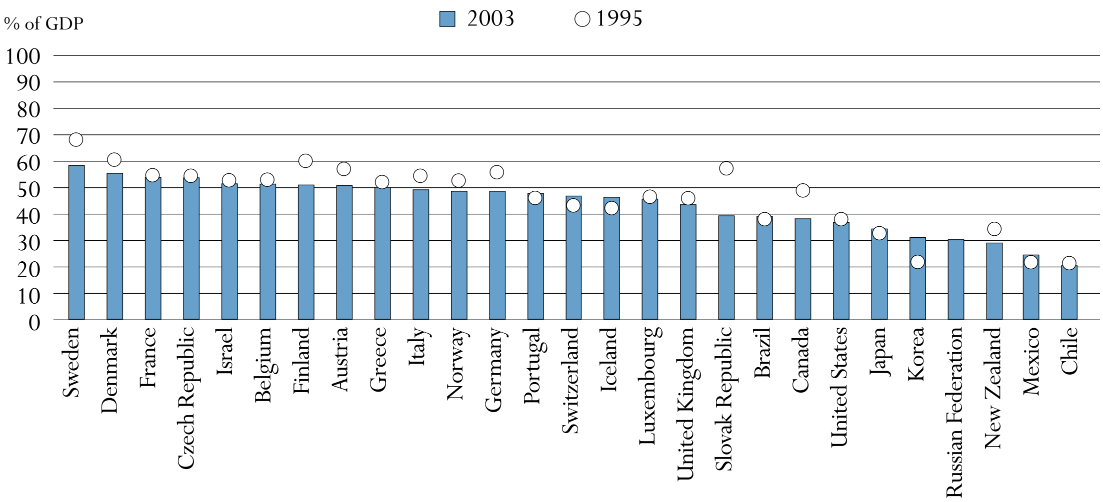
As in the case of spending on education in relation to GDP per capita, these values must be interpreted in the context of student demography and enrolment rates.

The public-sector proportion of funding of the different levels of education varies widely among OECD countries. In 2003, OECD and partner countries spent between 5.3% (Greece) and 16.3% (Mexico) of total public expenditure on primary, secondary and post-secondary non-tertiary education, and between 1.6% (Italy) and 5.5 (New Zealand) on tertiary education. On average in OECD countries, public funding of primary, secondary and post-secondary non-tertiary education is three times that of tertiary education, mainly due to enrolment rates (see Indicator C1) or because the private share in expenditure tends to be higher at the tertiary level. This ratio varies by country from less than two times in Canada, Denmark and Finland to as high as more than five times in Korea and the partner country Chile. The latter figure is indicative of the relatively high proportion of private funds that go into tertiary education in Korea and in the partner country Chile (Table B4.1).

Public funding of education is a social priority, even in OECD countries with little public involvement in other areas. When public expenditure on education is examined as a proportion of total public spending, the relative sizes of public budgets (as measured by public spending in relation to GDP) must be taken into account.

Across OECD countries, when the size of public budgets relative to GDP is compared with the proportion of public spending committed to education, it is evident that even in countries with relatively low rates of public spending, education is awarded a very high level of priority. For instance, the share of public spending that goes to education in Korea, Mexico and the United States is among the highest of OECD countries (Chart B4.1); yet total public spending accounts for a relatively low proportion of GDP in these countries (Chart B4.2). Among partner countries, a similar situation is observed in Chile.

Chart B4.2. Total public expenditure as a percentage of GDP (1995, 2003)



Note: This chart represents public expenditure on all services and not simply public expenditure on education.
Countries are ranked in descending order of total public expenditure as a percentage of GDP in 2003.
Source: OECD. Annex 2. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

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Although the overall pattern is not clear, there is some evidence to suggest that countries with high rates of public spending spend proportionately less on education; only two of the top ten countries for public spending on public services overall – Denmark and the partner country Israel – are among the top ten public spenders on education (Charts B4.1 and B4.2).

Typically, from 1995 to 2003, public expenditure on education grew faster than total public spending, but not as fast as national income. The process of budget consolidation puts pressure on education along with every other service. Nevertheless, with the exception of Canada, the Czech Republic and Japan, spending on education grew at least as fast as spending in other public areas between 1995 and 2003; on average, the proportion of public budgets spent on education in OECD countries grew from 12.0% in 1995 to 13.3% in 2003. The figures suggest that the greatest increases in the share of public expenditure on education between 1995 and 2003 took place in Denmark (increasing from 12.7% to 15.1%), Greece (6.6% to 8.6%) New Zealand (16.5% to 22.6%), the Slovak Republic (8.8% to 11.2%) and Sweden (10.7% to 12.8%).

Distribution of public expenditure to the public and private sectors

The vast majority of public funds on education are directed at public institutions: an average of 83% of public expenditure is transferred to public institutions among OECD countries. In three-quarters of the OECD countries, as well as in Brazil, the share of public expenditure on education transferred to public institutions exceeds 80%. However, significant public funds are transferred to private institutions or given directly to households to spend in the institution of their choice in a number of countries: more than 20% of public expenditure is distributed (directly or indirectly) to the private sector in Denmark, New Zealand, Norway, the United Kingdom and in the partner countries Chile and Israel. In Belgium and the Netherlands, the majority of public funds goes to government-dependant institutions that are managed by private bodies but operate otherwise under the aegis of the regular education system (Table B4.2).

On average among OECD countries, at the primary, secondary and post-secondary non-tertiary levels, 11% of public funding designated for educational institutions is spent in privately managed institutions. Belgium and the Netherlands are the only countries where the majority of funds goes to privately managed institutions. Public funding transfers to private households and other private entities are generally not a significant feature at primary, secondary and post-secondary non-tertiary levels. On average among OECD countries, these transfers represent 3% of public expenditure on education and exceed 10% only in Denmark.

At the tertiary level, on average among OECD countries, the majority of public funds are still directed at public institutions, but the share of public expenditure transferred to the private sector is larger than at primary to post-secondary non-tertiary level and reaches 28% on average among countries with available data. There are, however, substantial variations among countries in the share of public expenditure devoted to the private sector. In the United Kingdom (where there are no public tertiary institutions), Belgium and the Netherlands, as well as the partner country Israel, public expenditure is mainly devoted to privately managed institutions. The share of public expenditure indirectly transferred to the private sector is larger at the tertiary level than below as it is more typical for households/students to receive some transfers of public funding at the tertiary level than at other levels. On average, 17% of public funding is indirectly transferred to the private sector at the tertiary level. These transfers result partly from financial aid attributed to tertiary students through scholarships, grants and loans (see Indicator B5). The proportion of public expenditure indirectly transferred to the private sector is superior to 30% in Australia, Denmark, New Zealand and Norway and, among partner countries, in Chile.

Definitions and methodologies

Data refer to the financial year 2003 and are based on the UOE data collection on education statistics administered by the OECD in 2005 (for details see Annex 3 at *www.oecd.org/edu/eag2006*). Educational expenditure is expressed as a percentage of a country's total public sector expenditure and as a percentage of GDP. Public educational expenditure includes expenditure on educational institutions and subsidies for students' living costs and for other private expenditure outside institutions. Public expenditure on education includes expenditure by all public entities, including ministries other than the ministry of education, local and regional governments and other public agencies.

Total public expenditure, also referred to as total public spending, corresponds to the non-repayable current and capital expenditure of all levels of government: central, regional and local. Current expenditure includes final consumption expenditure, property income paid, subsidies and other current transfers (*e.g.* social security, social assistance, pensions and other welfare benefits). Figures for total public expenditure have been taken from the OECD National Accounts Database (see Annex 2) and use the System of National Accounts 1993.

The glossary at *www.oecd.org/edu/eag2006* gives a definition of public, government-dependent private and independent private institutions.

Note that data appearing in earlier editions of this publication may not always be comparable to data shown in the 2006 edition due to changes in definitions and coverage that were made as a result of the OECD expenditure comparability study (for details on changes, see Annex 3 at *www.oecd.org/edu/eag2006*).

Further references

The following additional material relevant to this indicator is available on the Web at
http://dx.doi.org/10.1787/086554011765:

- ***Table B4.3a. Initial sources of public educational funds and final purchasers of educational resources by level of government for primary, secondary and post-secondary non-tertiary education (2003)***
- ***Table B4.3b. Initial sources of public educational funds and final purchasers of educational resources by level of government for tertiary education (2003)***

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Table B4.1.
Total public expenditure on education (1995, 2003)

Direct public expenditure on educational institutions plus public subsidies to households (which include subsidies for living costs) and other private entities, as a percentage of GDP and as a percentage of total public expenditure, by level of education and year

		Public expenditure[1] on education as a percentage of total public expenditure				Public expenditure[1] on education as a percentage of GDP			
		2003			1995	2003			1995
		Primary, secondary and post-secondary non-tertiary education	Tertiary education	All levels of education combined	All levels of education combined	Primary, secondary and post-secondary non-tertiary education	Tertiary education	All levels of education combined	All levels of education combined
OECD countries	Australia	m	m	m	13.7	3.6	1.1	4.8	5.0
	Austria	7.5	2.5	10.8	10.8	3.8	1.3	5.5	6.0
	Belgium	7.9	2.6	11.8	m	4.0	1.3	6.1	m
	Canada[2, 3]	8.2	4.3	12.5	13.1	3.3	1.7	5.0	6.5
	Czech Republic	5.7	1.8	8.5	8.7	3.1	0.9	4.5	4.6
	Denmark[3]	8.8	4.5	15.1	12.7	4.8	2.5	8.3	7.7
	Finland	8.0	4.1	12.8	11.5	4.1	2.1	6.5	6.8
	France	7.5	2.2	11.0	m	4.0	1.2	5.9	m
	Germany	6.3	2.5	9.7	9.7	3.1	1.2	4.7	4.6
	Greece	5.3	2.5	8.0	6.6	2.6	1.5	4.3	3.1
	Hungary	m	m	m	12.9	3.7	1.2	5.9	5.3
	Iceland[3]	11.9	2.9	17.0	m	5.6	1.4	7.8	m
	Ireland	m	m	m	12.2	3.2	1.1	4.4	5.0
	Italy	7.4	1.6	9.9	9.1	3.6	0.8	4.9	4.9
	Japan[3]	7.9	1.8	10.7	11.1	2.7	0.6	3.7	3.6
	Korea	11.5	2.0	15.0	m	3.5	0.6	4.6	m
	Luxembourg[3]	8.9	m	m	m	4.1	m	m	m
	Mexico	16.3	4.0	23.8	22.4	4.0	1.0	5.8	4.6
	Netherlands	m	m	m	m	3.4	1.3	5.1	5.1
	New Zealand	16.1	5.5	22.6	16.5	4.8	1.6	6.8	5.6
	Norway	9.9	4.8	15.7	15.3	4.8	2.3	7.6	7.4
	Poland	m	m	m	11.9	4.2	1.1	5.8	5.3
	Portugal[3]	8.9	2.2	12.4	11.9	4.2	1.1	5.9	5.4
	Slovak Republic[3]	7.3	2.2	11.2	8.8	2.9	0.9	4.4	5.0
	Spain	m	m	m	10.6	2.8	1.0	4.3	4.6
	Sweden	8.3	3.7	12.8	10.7	4.8	2.2	7.5	7.2
	Switzerland	8.8	3.5	13.0	12.8	4.1	1.6	6.0	5.4
	Turkey	m	m	m	m	2.5	1.2	3.7	2.4
	United Kingdom	8.8	2.4	11.9	11.4	4.0	1.1	5.4	5.2
	United States	10.4	4.0	15.2	m	3.9	1.5	5.7	m
	OECD average	*9.0*	*3.1*	*13.3*	*12.0*	*3.8*	*1.3*	*5.5*	*5.3*
	EU19 average	*7.6*	*2.7*	*11.2*	*10.6*	*3.7*	*1.3*	*5.5*	*5.4*
Partner countries	Brazil[2]	8.8	2.5	12.2	11.2	3.4	1.0	4.7	3.9
	Chile[4]	14.0	2.6	18.3	m	2.8	0.5	3.7	m
	Israel	8.9	2.5	13.7	13.5	4.6	1.3	7.0	7.0
	Russian Federation	6.9	2.3	12.3	m	2.1	0.7	3.7	m

1. Public expenditure presented in this table includes public subsidies to households for living costs, which are not spent on educational institutions. Thus the figures presented here exceed those on public spending on institutions found in Table B2.1a.
2. Year of reference 2002.
3. Some levels of education are included with others. Refer to "x" code in Table B1.1a for details.
4. Year of reference 2004.
Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

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Table B4.2.

Distribution of total public expenditure on education (2003)

Public expenditure on education transferred to educational institutions and public transfers to the private sector as a percentage of total public expenditure on education, by level of education

		Primary, secondary and post-secondary non-tertiary education			Tertiary education			All levels of education combined		
		Direct public expenditure on public institutions	Direct public expenditure on private institutions	Indirect public transfers and payments to the private sector	Direct public expenditure on public institutions	Direct public expenditure on private institutions	Indirect public trans-fers and payments to the private sector	Direct public expenditure on public institutions	Direct public expenditure on private institutions	Indirect public transfers and payments to the private sector
OECD countries	Australia	77.1	19.7	3.1	65.0	n	35.0	x	x	10.7
	Austria	98.4	0.3	1.3	81.3	0.7	18.0	93.2	1.6	5.2
	Belgium	44.8	52.7	2.5	35.2	48.9	15.8	43.9	50.9	5.1
	Canada[1, 2]	98.1	1.9	m	77.6	0.4	22.0	91.1	1.4	7.6
	Czech Republic	91.5	3.6	4.9	92.8	1.0	6.2	92.6	2.8	4.6
	Denmark[2]	79.3	6.4	14.3	67.8	n	32.2	76.5	3.9	19.6
	Finland	90.8	5.9	3.3	74.4	7.7	17.9	85.7	6.5	7.8
	France	84.3	12.6	3.1	86.6	5.2	8.2	85.7	10.5	3.8
	Germany	83.2	12.0	4.8	81.6	1.2	17.2	80.6	11.9	7.5
	Greece	99.7	a	0.3	94.0	a	6.0	97.9	a	2.1
	Hungary	85.1	9.2	5.7	80.5	4.7	14.7	86.0	7.3	6.7
	Iceland[2]	95.0	1.4	3.6	68.0	7.9	24.1	90.0	2.4	7.6
	Ireland	95.6	n	4.4	86.2	n	13.8	93.3	n	6.7
	Italy	95.2	2.8	2.0	81.2	1.8	17.0	92.9	2.5	4.6
	Japan[2]	96.3	3.5	0.2	68.6	12.8	18.6	90.7	6.1	3.3
	Korea	82.8	15.4	1.8	61.9	33.5	4.6	81.2	16.6	2.3
	Luxembourg[2]	97.7	m	2.3	m	m	m	m	m	m
	Mexico	94.6	n	5.3	94.1	n	5.9	95.1	n	4.9
	Netherlands	22.9	70.6	6.5	a	74.1	25.9	17.5	71.4	11.1
	New Zealand	89.0	3.7	7.3	55.1	1.5	43.4	79.7	4.3	16.1
	Norway	88.0	6.4	5.6	59.6	3.7	36.7	78.1	6.6	15.3
	Poland	m	m	m	m	m	m	m	m	m
	Portugal[2]	92.5	6.1	1.4	97.4	m	2.6	92.4	6.1	1.5
	Slovak Republic[2]	93.8	4.2	2.0	91.5	a	8.5	94.2	2.8	3.0
	Spain	84.6	14.1	1.3	90.1	2.0	7.9	86.2	11.0	2.8
	Sweden	87.3	6.4	6.3	66.9	4.7	28.4	81.5	6.2	12.3
	Switzerland	90.5	7.3	2.2	93.6	4.5	2.0	91.3	6.5	2.2
	Turkey	99.2	m	0.8	86.7	0.1	13.2	95.1	n	4.8
	United Kingdom	76.7	23.2	0.2	a	75.3	24.7	63.0	32.0	5.0
	United States	99.8	0.2	a	70.3	11.8	17.8	91.5	3.8	4.7
	OECD average	*86.7*	*10.7*	*3.4*	*71.7*	*11.2*	*17.4*	*83.2*	*10.2*	*6.7*
	EU19 average	*83.5*	*13.5*	*3.7*	*71.0*	*14.2*	*15.6*	*80.2*	*13.4*	*6.4*
Partner countries	Brazil[1]	95.0	a	5.0	88.0	a	12.0	93.5	a	6.5
	Chile[3]	61.0	38.5	0.5	34.6	30.7	34.6	57.8	36.9	5.3
	Israel	73.8	24.7	1.5	5.1	84.9	10.1	63.3	33.6	3.1
	Russian Federation	m	m	m	m	m	m	m	m	m

1. Year of reference 2002.
2. Some levels of education are included with others. Refer to "x" code in Table B1.1a for details.
3. Year of reference 2004.

Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

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INDICATOR B5

TUITION FEES CHARGED BY TERTIARY INSTITUTIONS AND SUPPORT FOR STUDENTS AND HOUSEHOLDS THROUGH PUBLIC SUBSIDIES

This indicator examines the relationships between annual tuition fees charged by institutions, direct and indirect public spending on educational institutions, and public subsidies to households for student living costs. It considers whether financial subsidies for households are provided in the form of grants or loans and poses related questions central to this discussion: Are scholarships/grants and loans more appropriate in countries with higher tuitions fees charged by institutions? Are loans an effective means to help increase the efficiency of financial resources invested in education and shift some of the cost of education to the beneficiaries of educational investment? Or are student loans less appropriate than grants in encouraging low-income students to pursue their education? While these questions cannot be answered here, this indicator presents the policies for tuition fees and subsidies in different OECD countries.

Key results

Chart B5.1. Average annual tuition fees charged by tertiary-type A public institutions (school year 2003-2004)

The chart shows the annual tuition fees charged by tertiary-type A public institutions for full-time national students in equivalent US dollars converted using PPPs. Countries in bold indicate that tuition fees refer to public institutions but that more than two-thirds of students are enrolled in private institutions.

There are large differences between OECD and partner countries for which data are available in the average tuition fees charged by tertiary-type A public institutions. There are no tuition fees charged by public institutions in seven OECD countries, but one-third of countries have annual tuitions fees charged by public institutions for national students that exceed USD 2 000. Among the EU19 countries, only the Netherlands and the United Kingdom have annual tuitions fees that represent more than USD 1 000 per full-time student; these relate to government-dependent institutions.

Note: This chart does not take into account grants, subsidies or loans that partially or fully offset the student's tuition fees.

1. Public institutions do not exist at this level of education and all the students are enrolled in government-dependent institutions.

Source: OECD. Table B5.1. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/540845273375

Other highlights of this indicator

- In OECD countries where students are required to pay tuition fees, public subsidies are of particular importance in providing students with access to educational opportunities regardless of their financial situation. In, for example, Australia, New Zealand and the United Kingdom, and the partner country Chile, closely regulated public subsidies are earmarked for payments to educational institutions.

- Low annual tuition fees charged by tertiary-type A institutions are not associated systematically with a low proportion of subsidies provided to households/students. Except Iceland, all the Nordic countries with no tuition fees devote more than 10% of total public expenditure on tertiary education for scholarships/grants designed to help students cover their living expenses.

- An average of 17% of public spending on tertiary education is devoted to supporting students, households and other private entities. In Australia, Denmark, New Zealand, Norway and Sweden, and the partner country Chile, public subsidies to households account for about 28% or more of public tertiary education budgets.

- Subsidised student loan systems operate in some countries with high levels of participation at the tertiary level. It is notable, for instance, that Australia, New Zealand, Norway and Sweden, which are among OECD countries reporting the largest subsidies in the form of student loans at tertiary education, also have some of the highest rates of entry into tertiary education of OECD countries.

Policy context

Decisions taken by policy makers on the amount of tuition fees charged by educational institutions have an influence both on the cost of tertiary studies to students and on the resources available to institutions at the tertiary level. Subsidies to students and their families also act as policy levers through which governments can encourage participation in education – particularly among students from low-income families – by covering part of the cost of education and related expenses. Governments can thereby seek to address issues of access and equality of opportunity. The success of such subsidies must therefore be judged, at least in part, through examination of indicators of participation, retention and completion. Furthermore, public subsidies play an important role in indirectly financing educational institutions.

Channelling funding for institutions through students may also help to increase competition between institutions. Since aid for student living costs can serve as a substitute for work, public subsidies may enhance educational attainment by enabling students to study full-time and to work fewer hours or not at all.

Public subsidies come in many forms: as means-based subsidies, as family allowances for all students, as tax allowances for students or their parents, or as other household transfers. Unconditional subsidies (such as tax reductions or family allowances) may provide less of an incentive for low-income students to participate in education than means-tested subsidies. However, they may still help reduce disparities between households with and without children in education.

Evidence and explanations

What this indicator does and does not cover

This indicator shows average tuition fees charged in public and private institutions at tertiary-type A level. The indicator does not distinguish tuition fees by type of programmes but shows an overview of tuition fees at tertiary-type A level by type of institution and presents the proportions of students that do or do not receive scholarships/grants fully or partially covering tuition fees. Amounts of tuition fees and associated proportions of students should be interpreted with caution as they result from the weighted average of the main Tertiary-type A programmes and do not cover all the educational institutions.

This indicator also shows the proportion of public spending on tertiary education transferred to students, families and other private entities. Some of these funds are spent indirectly on educational institutions, for example, when subsidies are used to cover tuition fees. Other subsidies for education do not relate to educational institutions, such as subsidies for student living costs.

The indicator distinguishes between scholarships and grants, which are non-repayable subsidies, and loans, which must be repaid. It does not, however, distinguish among different types of grants or loans, such as scholarships, family allowances and subsidies in kind.

Governments can also support students and their families by providing tax reductions and tax credits. These subsidies are not covered here.

The indicator reports the full volume of student loans in order to provide information on the level of support which current students receive. It does not take repayments into account, even though these can reduce the real costs of loans substantially. The gross amount of loans, including scholarships and grants, provides an appropriate measure of financial aid to current participants in education. Although interest payments and repayments of the principal by borrowers would be taken into account in order to assess the net cost of student loans to public and private lenders, such payments are not usually made by current students but rather by former students. In most countries, moreover, loan repayments do not flow to the education authorities, and thus the money is not available to them to cover other educational expenditures.

Given that no internationally comparable method is currently available to calculate the net costs of student loan programmes, loans must be treated according to the likely use of the data. The OECD indicators therefore take the full amount of scholarships and loans (gross) into account when discussing financial aid to current students.

It is also common for governments to guarantee the repayment of loans to students made by private lenders. In some OECD countries, this indirect form of subsidy is as significant as, or more significant than, direct financial aid to students. However, for reasons of comparability, the indicator only takes into account the amounts relating to public transfers for private loans that are made to private entities (not the total value of loans generated).

Some OECD countries also have difficulties quantifying the amount of loans attributable to students. Therefore, data on student loans should be treated with some caution.

Annual tuition fees charged by tertiary-type A educational institutions

Large differences are observed among OECD and partner counties in the average tuition fees charged by tertiary-type A educational institutions. There are no tuition fees charged by public institutions in seven OECD countries including the Nordic countries, the Czech Republic and the Slovak Republic. By contrast, one-third of countries have annual tuitions fees for national students charged by public institutions that exceed USD 2 000. In the United States, tuition fees for national students reach more than USD 4 500 in public institutions. Among the EU19 countries, only the Netherlands and the United Kingdom have annual tuitions fees that represent more than USD 1 000 per full-time national student, but these fees related to government dependent private institutions (Table B5.1 and Chart B5.1).

There is no unique model observed in OECD and partner countries for the financing of tertiary-type A institutions and no clear relationship between the amount of tuition fees charged to students and the amount of financial support that these students may receive to cover tuition fees. Thus OECD countries with high levels of tuition fees are not necessarily those where the proportions of students receiving scholarships/grants to cover tuition fees are the highest. The five countries where tuition fees charged by tertiary-type A public educational institutions exceed USD 3 600 – Australia, Korea, Japan and the United States, and partner country Chile – present different patterns. In Japan, full-time students enrolled in tertiary-type A programmes do not receive scholarship/grants in support of the tuition fees from the government, whereas this is the case for around three out of four students in Australia, almost one out of two in Korea and one out of four students in the United States. In Japan, some students who excel academically but have difficulty in financing their studies may benefit from reduced tuition and/or admission fees or be exempt from paying these fees entirely.

B5

On the contrary, countries among those with the lowest levels of tuition fees charged in public institutions for tertiary-type A programmes may have quite significant proportions of students who receive scholarships and grants that fully cover tuition fees. In the Flemish community of Belgium, as well as in France, Portugal and Spain, tuition fees represent less than USD 900 per year, and still around one or more students out of five receives a public subsidy that fully covers the tuition fees (Table B5.1).

The amount of tuition fees charged by public educational institutions may differ among students enrolled in the same programme. Several countries make a distinction in the amount of tuition fees charged according to the citizenship of students. In Austria, for example, average tuition fees charged by public institutions for students who are not citizens from EU or EEA countries are twice the amount of fees charged for other students. This kind of differentiation also appears in Australia, Canada, the Slovak Republic, Turkey, the United Kingdom and the United States and will be extended to Denmark from the 2006-2007 academic year. In those countries, the variation of tuition fees according to citizenship is always significant except in the Slovak Republic. In other countries, the non-national students may pay from twice to nearly ten times the amount charged to a national student and the difference is most striking in the United Kingdom where EU citizens are charged on average USD 1 794 against up to USD 17 874 for students with another citizenship (Table B5.1). This type of policy differentiation may check the flows of international students (see Indicator C3) unless those students receive some financial support from their country of citizenship.

Annual tuition fees charged by private institutions

Annual tuition fees charged by private institutions vary considerably across OECD and partner countries as well as within countries themselves. Most OECD and partner countries charge higher tuition fees in private institutions than in public institutions. Finland and Sweden are the only countries where there are no tuition fees in either public or private institutions. However, variation within countries tends to be highest in countries with the biggest proportions of student enrolled in tertiary-type A independent private institutions. By contrast, tuition fees charged by public and government dependent institutions are not so different in most countries. The greater autonomy of independent private institutions compared with public and government-dependent institutions partly explains this fact. Korea and Japan, for example, have around three-quarters of students enrolled in independent private institutions and at the same time show the highest variation between their own independent private institutions (Indicator C2 and Table B5.1).

Public subsidies to households and other private entities

OECD countries spend an average of 0.4% of their GDP on public subsidies to households and other private entities for all levels of education combined. The proportion of educational budgets spent on subsidies to households and private entities is much higher at the tertiary level than at primary, secondary and post-secondary non-tertiary levels and represents 0.25% of GDP. The subsidies are the largest in relation to GDP at tertiary level in Norway (0.85% of GDP), followed by Denmark (0.80%), New Zealand (0.72%), Sweden (0.61%) and Australia (0.40%) (Table B5.2, as well as Table B5.3 available on the Web).

OECD countries spend, on average, 17% of their public budgets for tertiary education on subsidies to households and other private entities (Chart B5.2). In Australia, Denmark, New Zealand, Norway and Sweden, and the partner country Chile, public subsidies account for 28% or more of public spending on tertiary education. Only Korea, Poland, Portugal and Switzerland spend less than 5% of their total public spending on tertiary education on subsidies (Table B5.2).

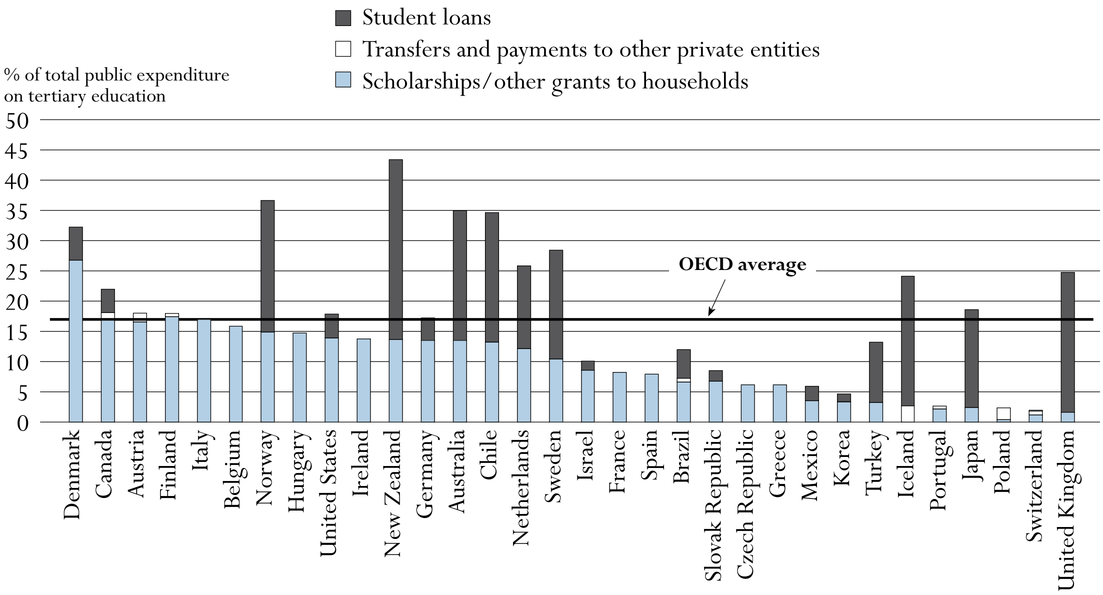
How subsidies are used: student living costs and tuition fees

Low annual tuition fees charged by institutions are not systematically associated with a low proportion of subsidies provided to households/students. Except for Iceland, the Nordic countries with no tuition fees charged by public educational institutions have devoted, for example, more than 10% of the total public expenditure to the attribution of scholarships/grants to students to cover living expenses, whereas scholarships/grants represents only 3 % of the total public expenditure in Korea (Tables B5.1 and B5.2).

In OECD countries where students are required to pay tuition fees, public subsidies are of particular importance in order to provide students with access to educational opportunities, regardless of their financial situation. For example, in Australia, New Zealand and the United Kingdom, and the partner country Chile, public subsidies are earmarked for payments to educational institutions and are closely regulated (Tables B5.1 and B5.2). In Australia, under the Higher Education Contribution Scheme (HECS), students can elect to pay their contributions for their university education in advance, semester by semester, and receive a 25% discount, or, they can repay their accumulated contribution through the tax system when their annual income exceeds a minimum threshold. For the purpose of the OECD education indicators, HECS is counted as a loan scheme, although students may not view the delayed payments as a loan. In OECD countries where tuition fees are substantial, a proportion of the public subsidy to households is effectively earmarked for payments to educational institutions, even without an official policy.

Chart B5.2. Public subsidies for education in tertiary education (2003)

Public subsidies for education to households and other private entities as a percentage of total public expenditure on tertiary education, by type of subsidy



Countries are ranked in descending order of the share of scholarships/other grants to households and transfers and payments to other private entities in total public expenditure on education.

Source: OECD. Table B5.2. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

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OECD countries use different mixtures of grants and loans to subsidise students' educational costs

A key question in many OECD countries is whether financial subsidies for households should primarily be provided in the form of grants or loans. Governments subsidise students' living costs or educational costs through different mixtures of grants and loans. Advocates of student loans argue that money spent on loans goes further: if the amount spent on grants were used to guarantee or subsidise loans instead, more aid would be available to students in total, and overall access would be increased. Loans also shift some of the cost of education to those who benefit most from educational investment. Opponents of loans argue that student loans are less effective than grants in encouraging low-income students to pursue their education. They also argue that loans may be less efficient than anticipated because of the various subsidies provided to borrowers or lenders, and due to costs of administration and servicing. Cultural differences across and within countries may also affect students' willingness to take out a student loan.

Chart B5.2 presents the proportion of public educational expenditure dedicated to loans, grants and scholarships, and other subsidies to households at the tertiary level. Grants and scholarships include family allowances and other specific subsidies, but exclude tax reductions. Around one-half of the 31 reporting OECD and partner countries rely exclusively on grants/scholarships and transfers/payments to other private entities. The remaining OECD countries provide both grants or scholarships and loans to students (except Iceland, which relies only on student loans). In general, the highest subsidies to students are provided by those OECD countries offering student loans; in most cases these countries spend an above-average proportion of their budgets on grants and scholarships alone (Chart B5.2 and Table B5.2).

The motivation for governments to introduce a student loan system can often be to reduce the cost of an expanding tertiary sector. The largest subsidies in the form of student loans generally occur in countries with the highest tertiary participation rates, such as Australia, New Zealand, Norway and Sweden (see Indicator C2). Exceptions include Finland, with the third highest tertiary-type A entry rates but without a publicly-funded student loan system, and the United Kingdom, which has tertiary-type A entry rates below the average but one of the largest subsidies in the form of student loans.

Repayment of loans

Repayment of public loans can be a substantial source of income for governments and can decrease the costs of loan programmes significantly. The current reporting of household expenditure on education as part of private expenditure (see Indicator B3) does not take into account the repayment by previous recipients of public loans. These repayments can be a substantial burden to individuals and have an impact on the decision to participate in tertiary education. However, many OECD countries make the repayment of loans dependent on graduates' level of income.

Given that loan repayments are made by former students who took out loans several years earlier, it is difficult to estimate the real costs of loan programmes. Loans are therefore reported on a gross basis only. International comparisons of total repayments in the same reference period cannot be made, since they are heavily influenced by changes in schemes for the distribution of loans and by changes in the numbers of students receiving loans.

Chart B5.3. Types of public subsidies available for tertiary education

X: This type of public subsidies does exist
a: This type of public subsidies does not exist
m: missing

	Australia	Belgium (Fl.)[1]	Belgium (Fr.)	Canada	Czech Republic	Denmark	Finland	France	Hungary	Iceland	Italy	Japan	Korea	Mexico	Netherlands[2]	Norway	New Zealand	Spain	Slovak Republic	Sweden	Switzerland	Turkey	United Kingdom	United States[3]	Chile	Israel
Scholarships and similar grants																										
Scholarships and similar grants (fellowships, awards, boursaries) earmarked for tuition fees.	X	X	X	X	a	a	a	a	a	a	X	a	X	X	X	X	a	X	a	a	a	a	X	X	X	X
Scholarships and similar grants (fellowships, awards, boursaries) for general purposes including living costs	X	X	X	X	X	X	X	X	X	a	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Specific subsidies in cash or kind																										
Housing	X	a	m	m	a	a	X	X	X	a	X	m	m	a	a	X	a	a	X	a	a	X	a	X	a	m
Specific subsidies for transport	X	a	m	m	X	X	a	X	X	a	X	m	m	X	X	X	a	X	X	a	a	m	a	X	a	m
Specific subsidies for medical expenses	a	a	a	m	X	a	a	X	a	a	a	m	m	X	a	m	a	a	X	a	a	X	a	X	a	m
Specific subsidies for books and supplies	X	a	a	m	a	a	a	a	X	a	a	m	m	a	a	a	X	X	a	a	a	X	a	X	a	m
Specific subsidies for social and recreational purposes	a	a	m	m	a	a	a	X	X	a	X	m	m	X	a	X	a	a	X	a	a	X	a	X	a	m
Specific subsidies for studies abroad, including fees to be paid abroad	a	a	a	m	X	a	X	X	X	a	X	m	m	X	a	X	a	a	a	X	a	X	a	X	X	m
Other specific subsidies	a	a	X	m	a	a	X	X	X	a	X	m	m	a	a	X	a	a	m	a	a	X	a	X	m	m
Family allowances or child allowances that are contingent on student status.																										
Family allowances or child allowances that are contingent on student status	X	X	X	m	X	a	a	m	a	a	X	a	a	a	X	X	X	a	X	X	X	a	X	a	a	a
Public and private loans																										
Public student loans that cover tuition fees only	X	a	m	m	a	a	a	a	a	X	a	a	m	X	a	X	X	a	a	a	a	X	a	X	X	X
Public student loans for general purpose including living costs	a	a	m	m	a	X	a	a	X	X	X	X	m	a	X	X	X	a	X	X	X	X	X	X	X	X
Government subsidies or government guarantees for student loans provided by private financial institutions	X	X	a	X	a	a	X	a	a	a	X	a	m	a	a	a	a	m	a	a	a	a	a	X	a	a
Private loans, not subsidies or not guarantees by the government	a	m	m	X	a	X	a	m	a	a	X	m	m	X	X	m	a	m	m	a	X	m	a	X	X	a
Tax credits or deductions																										
Tax credits or deductions for tuition	X	X	m	X	a	a	a	a	X	a	X	a	m	a	X	a	a	a	a	a	a	a	a	X	m	a
Tax credits or deductions to families for support of pupils/ students	a	X	m	X	X	a	a	X	a	a	X	m	m	a	X	a	a	a	X	a	X	a	a	a	m	a
Other tax reductions and tax credits	a	a	m	m	a	a	X	a	a	a	X	m	a	a	a	X	a	a	X	a	a	a	a	a	m	a

1. Specific subsidies in cash or in kind are not paid to the student but to the institutions that have a specific budget for students' facilities (student welfare provisions).
2. Tertiary education excludes ISCED 5B.
3. Subsidies in cash or kind are offered only at some institutions rather than through a systematic federal level.
Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/540845273375

Different forms of public subsidy

Students in 11 out of the 22 reporting OECD and partner countries receive at least three of the specific subsidies in cash and kind listed in Chart B5.3. France, Hungary, Italy, Norway, Turkey and the United States show the biggest diversity in subsidies in cash and kind with at least five types of subsidies provided to tertiary students (see Chart B5.3). The most common subsidies (provided by 11 countries) are for transportation and for studies abroad, followed by specific subsidies for housing and social and recreational purposes available in respectively nine and eight OECD and partner countries. Other specific subsidies for medical services (in the Czech Republic, France, Mexico, the Slovak Republic, Turkey and the United States) and for books and supplies (in Australia, Hungary, New Zealand, Spain, Turkey and the United States) are found in only six countries with available data. Data on specific subsidies, especially those given in kind rather than in cash, are not available for many countries. In Canada, Japan, Korea and the United Kingdom, as well as in the partner country Israel, these specific subsidies exist but cannot be quantified; they are reported as missing in Chart B5.3.

Family and child allowances contingent on student status exist in one half of OECD and partner countries. It varies between countries, however, whether such allowances are provided to the family in which the student grew up (*i.e.* to the student's parents), or to the student's family as an adult (*i.e.* the student's spouse and children). Tax reductions are another important form of public subsidy, but these exist in a limited number of countries compared with family and child allowances contingent on student status. Whereas most scholarships and grants are means-tested or targeted in some other way, tax reductions and family allowances in many cases do not take into account the needs and income of students or their families. Tax reductions are part of the subsidy system in Australia, Belgium (Fl.), Canada, the Czech Republic, Finland, France, Hungary, Italy, the Netherlands, Norway, the Slovak Republic, Switzerland and the United States (Chart B5.3). In some countries, repayments of loans by previous students are subject to tax reductions. Tax reductions do not exist or are negligible in Denmark, Mexico, New Zealand, Spain, Sweden, Turkey and the United Kingdom, and the partner country Israel.

Definitions and methodologies

Data refer to the financial year 2003 and are based on the UOE data collection on education statistics administered by the OECD in 2005 (for details see Annex 3 at *www.oecd.org/edu/eag2006*). Data on tuition fees charged by educational institutions were collected through a special survey undertaken in 2006 and refer to the school year 2003-2004. Amounts of tuition fees and associated proportions of students should be interpreted with caution as they result from the weighted average of the main Tertiary-type A programmes and do not cover all the educational institutions.

Public subsidies to households include the following categories: *i)* grants/scholarships; *ii)* public student loans; *iii)* family or child allowances contingent on student status; i*v)* public subsidies in cash or in kind, specifically for housing, transportation, medical expenses, books and supplies, social, recreational and other purposes; and *v)* interest-related subsidies for private loans.

Expenditure on student loans is reported on a gross basis, that is, without subtracting or netting out repayments or interest payments from the borrowers (students or households). This is because the gross amount of loans including scholarships and grants provides an appropriate measure of the financial aid to current participants in education.

Public costs related to private loans guaranteed by governments are included as subsidies to other private entities. Unlike public loans, only the net cost of these loans is included.

The value of tax reductions or credits to households and students is not included.

Note that data appearing in earlier editions of this publication may not always be comparable to data shown in the 2006 edition due to changes in definitions and coverage that were made as a result of the OECD expenditure comparability study (for details on changes, see Annex 3 at *www.oecd.org/edu/eag2006*).

Further references

The following additional material relevant to this indicator is available on the Web at *http://dx.doi.org/10.1787/540845273375:*

- ***Table B5.3. Public subsidies for households and other private entities as a percentage of total public expenditure on education and GDP, for primary, secondary and post-secondary non-tertiary education (2003)***

Table B5.1.

Estimated annual average tuition fees charged by tertiary-type A educational institutions (school year 2003-2004)

In equivalent US dollars converted using PPPs, by type of institutions, based on full-time students

Amounts of tuition fees and associated proportions of students should be interpreted with caution as they result from the weighted average of the main Tertiary-type A programmes and do not cover all the educational institutions. However, the figures 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.

		Percentage of full-time students enrolled in:		PUBLIC INSTITUTIONS				
					Percentage of students			
		public institutions	private institutions	Annual average tuition fees in USD charged by institutions (for full-time students)	receiving scholarships/grants that fully cover the tuition fees	receiving scholarship/grants that partially cover the tuition fees	not receiving scholarship/grants in support of the tuition fees	*Comments*
		(1)	(2)	(3)	(4)	(5)	(6)	
OECD countries	Australia	99.9	0.1	5 289	n	27.2	72.8	Tuition fees of 3 781 for national students, 10 825 for overseas students.
	Austria	90.0	10.0	853	m	m	m	Tuition fees of 800 for EU/EEA students, 1 600 for others.
	Belgium (Fl.)[1]	48.8	51.2	540	21.5	1.0	77.5	
	Belgium (Fr.)[1]	34.2	65.8	658	12.0	x(4)	88.0	
	Canada	m	m	3 267	m	m	m	Tuition fees of 2 967 for national students, 7 931 for others.
	Czech Republic	95.0	5.0	No tuition fees	a	a	a	
	Denmark	99.7	0.3	No tuition fees	a	a	a	
	Finland	87.0	13.0	No tuition fees	a	a	a	
	France	90.0	10.0	From 156 to 462	24.6	x(6)	75.4	Universities only. The tuition fees include 86% of students enrolled in public institutions at tertiary-type A level of education.
	Germany	m	m	m	m	m	m	
	Greece	m	m	m	m	m	m	
	Hungary	88.3	11.7	351	m	m	m	The term 'tuition fee' is not in use. However, the training of about 85% of students is state-financed (in a centrally regulated limited number), the other part pays a contribution called 'cost-refunding' (which is charged by the institutions). The annual sum of the 'cost-refunding' is different by institutions and by fields of training and there are no exact aggregated data.
	Iceland	87.0	13.0	No tuition fees	a	a	a	
	Ireland	m	m	m	m	m	m	
	Italy	93.7	6.3	983	9.4	9.5	81.1	
	Japan	24.9	75.1	3 747	n	n	100.0	Average tuition fees exclude the admission fee charged by the school for the first year (2 171 on average).
	Korea	22.3	77.7	3623 [1955 to 7743]	9.8	34.4	55.8	First degree programmes only. Average tuition fees exclude the admission fee charged by the school for the first year.
	Luxembourg	a	a	a	a	a	a	
	Mexico	66.1	33.9	m	n	n	100.0	
	Netherlands	a	100.0	a	a	a	a	
	New Zealand[2]	98.1	1.9	2 538	1.0	30.0	69.0	Average tuition fees exclude international students.
	Norway	88.0	12.0	No tuition fees	a	a	a	
	Poland	m	m	m	m	m	m	
	Portugal	72.1	27.9	868	19.2	n	80.8	
	Slovak Republic	99.3	0.7	No tuition fees	a	a	a	Average tuition fees of 182 charged for some non EU/EEA students.
	Spain	87.4	12.6	801 [668 to 935]	20.0	11.0	69.0	
	Sweden	93.3	6.7	No tuition fees	a	a	a	
	Switzerland	95.0	5.0	From 566 to 1 132	12.8	n	87.2	
	Turkey	100.0	n	274	n	n	100.0	Tuition fees of 264 for national students, 864 for others.
	United Kingdom	a	100.0	a	a	a	a	
	United States	69.2	30.8	4 587	x(5)	77.0	23.0	Average tuition fees include only the cost for national (in-state) students. National out-of-state and foreign students pay on average 12 320.
Partner countries	Chile	30.1	69.1	3 845	m	m	m	
	Israel	11.1	88.9	2 300	m	m	m	

1. Tuition fees charged for programmes are the same in public than in private institutions but the distribution of students differs between public and private institutions explaining that the weighted average is not the same.
2. Tertiary-type A includes advanced research programmes.

Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

Table B5.1. *(continued)*

Estimated annual average tuition fees charged by tertiary-type A educational institutions (school year 2003-2004)

In equivalent US dollars converted using PPPs, by type of institutions, based on full-time students

Amounts of tuition fees and associated proportions of students should be interpreted with caution as they result from the weighted average of the main Tertiary-type A programmes and do not cover all the educational institutions. However, the figures 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.

		PRIVATE INSTITUTIONS				
		Annual average tuition fees in USD charged by institutions (for full-time students)	Percentage of students: that receive scholarships/ grants that fully cover the tuition fees	Percentage of students: that receive scholarship/ grants that partially cover the tuition fees	Percentage of students: not receiving scholarship/ grants in support of the tuition fees	*Comments*
		(7)	(8)	(9)	(10)	
OECD countries	**Australia**	**13 420**	n	n	100.0	Tuition fees of 13 420 for national and overseas students.
	Austria	**800**	m	m	m	
	Belgium (Fl.)[1]	**536**	18.6	0.9	80.5	Excluding independent private institutions.
	Belgium (Fr.)[1]	**751**	x(4)	x(4)	x(6)	
	Canada	**m**	m	m	m	
	Czech Republic	**3 449**	m	m	m	
	Denmark	**m**	m	m	m	
	Finland	**No tuition fees**	a	a	a	
	France	**From 500 to 8 000**	m	m	m	
	Germany	**m**	m	m	m	
	Greece	**m**	m	m	m	
	Hungary	**991**	m	m	m	The term 'tuition fee' is not in use. However, the training of about 60% of students is state-financed (in a centrally regulated limited number), the other part pays a contribution called 'cost-refunding' (which is charged by the institutions). The annual sum of the 'cost-refunding' is different by institutions and by fields of training and there are no exact aggregated data.
	Iceland	**3000 [2100 to 4400]**	m	m	m	
	Ireland	**m**	m	m	m	
	Italy	**3 992**	6.7	1.4	91.9	
	Japan	**5 795 [4 769 to 25 486]**	n	n	100.0	Average tuition fees exclude the admission fee charged by the school for the first year (2 030 on average) and the subscription fee for using facilities (1 438 on average).
	Korea	**6 953 [2 143 to 9 771]**	3.9	24.5	71.6	First degree programmes only. Average tuition fees exclude the admission fee charged by the school for the first year.
	Luxembourg	**a**	a	a	a	
	Mexico	**m**	5.0	n	95.0	
	Netherlands	**1 565**	82.5	2.5	15.0	
	New Zealand[2]	**3 075**	n	26.0	74.0	Average tuition fees exclude international students
	Norway	**From 4 000 to 6 500**	m	m	m	Approximate fees for bachelor and master courses in the largest private institutions.
	Poland	**m**	m	m	m	
	Portugal	**3 803**	2.4	11.7	85.9	
	Slovak Republic	**m**	m	m	m	
	Spain	**m**	n	4.7	95.3	
	Sweden	**No tuition fees**	a	a	a	
	Switzerland	**m**	m	m	m	
	Turkey	**From 9 303 to 11961**	1.0	14-19	80-85	
	United Kingdom	**1 794**	m	m	m	Average tuition fees exclude non EU/EEA students (around 10% of students, tuition fees vary from 10 348 to 17 874).
	United States	**17 777**	x(9)	87.0	13.0	Average tuition fees include only national (in-state) students.
Partner countries	**Chile**	**3 822**	m	m	m	
	Israel	**2 442**	m	m	m	Average tuition fees exclude independent private institutions (around 16% students in private institutions, tuition fees vary from 5 432 to 7023).

1. Tuition fees charged for programmes are the same in public than in private institutions but the distribution of students differs between public and private institutions explaining that the weighted average is not the same.
2. Tertiary-type A includes advanced research programmes.

Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

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Table B5.2.

Public subsidies for households and other private entities as a percentage of total public expenditure on education and GDP, for tertiary education (2003)

Direct public expenditure on educational institutions and subsidies for households and other private entities

		Direct expenditure for institutions	Subsidies for education to private entities						Subsidies for education to private entities as a percentage of GDP
			Financial aid to students						
			Scholarships/ other grants to households	Student loans	Total	Scholarships/ other grants to households attributable for educational institutions	Transfers and payments to other private entities	Total	
OECD countries	Australia	65.0	13.5	21.5	35.0	1.2	n	35.0	0.40
	Austria	82.0	16.6	a	16.6	m	1.4	18.0	0.23
	Belgium	84.2	15.8	n	15.8	4.6	n	15.8	0.21
	Canada[1, 2]	78.0	16.8	3.9	20.7	m	1.3	22.0	0.38
	Czech Republic	93.8	6.2	a	6.2	m	n	6.2	0.06
	Denmark	67.8	26.8	5.5	32.2	m	n	32.2	0.80
	Finland	82.1	17.4	n	17.4	n	0.5	17.9	0.37
	France	91.8	8.2	a	8.2	2.6	a	8.2	0.10
	Germany	82.8	13.5	3.7	17.2	n	n	17.2	0.20
	Greece	94.0	6.0	m	6.0	m	a	6.0	0.07
	Hungary	85.3	14.7	a	14.7	n	n	14.7	0.18
	Iceland[2]	75.9	n	21.4	21.4	n	2.7	24.1	0.33
	Ireland	86.2	13.8	n	13.8	4.3	n	13.8	0.15
	Italy	83.0	17.0	n	17.0	5.2	n	17.0	0.14
	Japan[2]	81.4	2.4	16.2	18.6	m	n	18.6	0.11
	Korea	95.4	3.3	1.2	4.6	2.9	0.1	4.6	0.03
	Luxembourg	m	m	m	m	m	m	m	m
	Mexico	94.1	3.5	2.4	5.9	1.1	n	5.9	0.06
	Netherlands	74.1	12.1	13.7	25.9	1.4	m	25.9	0.34
	New Zealand	56.6	13.7	29.8	43.4	m	a	43.4	0.72
	Norway	63.3	14.9	21.8	36.7	m	n	36.7	0.85
	Poland	97.7	0.4	a	0.4	m	2.0	2.3	0.02
	Portugal	97.4	2.2	a	2.2	m	0.5	2.6	0.03
	Slovak Republic[2]	91.5	6.8	1.8	8.5	m	a	8.5	0.07
	Spain	92.1	7.9	n	7.9	2.4	n	7.9	0.08
	Sweden	71.6	10.4	18.0	28.4	a	a	28.4	0.61
	Switzerland	98.0	1.2	0.1	1.3	m	0.6	2.0	0.03
	Turkey	86.8	3.2	10.0	13.2	n	m	13.2	0.16
	United Kingdom	75.3	1.6	23.2	24.7	0.7	n	24.7	0.26
	United States	82.2	13.9	3.9	17.8	m	a	17.8	0.26
	OECD average	*83.1*	*9.8*	*7.1*	*16.6*	*1.6*	*0.3*	*16.9*	*0.25*
Partner countries	Brazil[1]	88.0	6.6	4.7	11.3	n	0.6	12.0	0.11
	Chile[3]	65.4	13.2	21.4	34.6	10.2	m	34.6	0.18
	Israel	89.9	8.6	1.5	10.1	8.6	n	10.1	0.13
	Russian Federation	m	m	m	m	m	m	m	m

1. Year of reference 2002.
2. Some levels of education are included with others. Refer to "x" code in Table B1.1a for details.
3. Year of reference 2004.

Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

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INDICATOR B6

EXPENDITURE IN INSTITUTIONS BY SERVICE CATEGORY AND BY RESOURCE CATEGORY

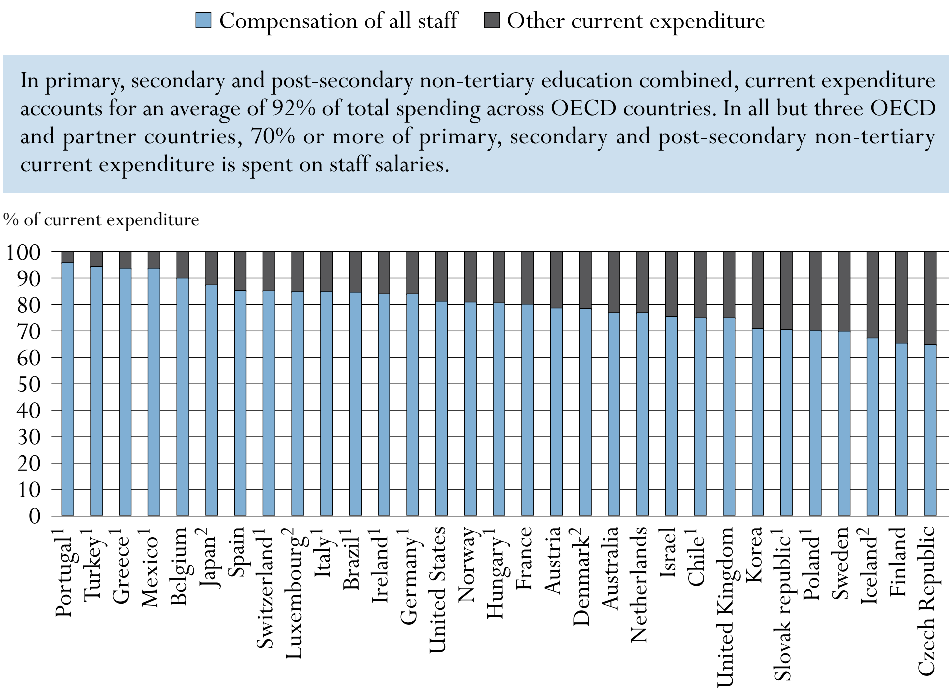
This indicator compares OECD countries with respect to the division of spending between current and capital expenditure, and the distribution of current expenditure by resource category. This indicator is largely influenced by teacher salaries (see Indicator D3), pension systems, teacher age distribution, size of the non-teaching staff employed in education (see Indicator D2 in *Education at a Glance 2005*) and the degree to which expansion in enrolments requires the construction of new buildings. It also compares how OECD countries' spending is distributed by different functions of educational institutions.

Key results

Chart B6.1. Distribution of current expenditure on educational institutions for primary, secondary and post-secondary non-tertiary education (2003)

The chart shows the distribution of current spending on educational institutions by resource category. Spending on education can be broken down into capital and current expenditure. Within current expenditure, one can distinguish resource categories compared to other items and service categories such as spending on instruction compared to ancillary and R&D services. The biggest item in current spending, teacher compensation, is examined further in Indicator D3.

In primary, secondary and post-secondary non-tertiary education combined, current expenditure accounts for an average of 92% of total spending across OECD countries. In all but three OECD and partner countries, 70% or more of primary, secondary and post-secondary non-tertiary current expenditure is spent on staff salaries.



1. Public institutions only.
2. Post-secondary non-tertiary included in both upper secondary and tertiary education.
Countries are ranked in descending order of the share of compensation of all staff on primary, secondary and post-secondary non-tertiary education.
Source: OECD. Table B6.2. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

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Other highlights of this indicator

- OECD countries spend an average of 35% of current expenditure at the tertiary level on purposes other than the compensation of educational personnel. This is explained by the higher cost of facilities and equipment in higher education.
- On average, OECD countries spend 0.2% of their GDP on subsidies for ancillary services provided by primary, secondary and post-secondary non-tertiary institutions. This represents 5% of total spending. At the high end, Finland, France, Korea, the Slovak Republic and Sweden allocate about 10% or more of total spending on educational institutions in percentage of GDP on ancillary services.
- A distinctive feature of tertiary institutions is high spending on R&D, which on average comprises over one-quarter of spending at this level. The fact that some countries spend much more on this item than others helps explain the wide differences in overall tertiary spending. Significant differences among OECD countries in the emphasis on R&D in tertiary institutions also contribute to the observed variation.
- The payment of instructional staff is not as great a share of spending in tertiary institutions as at other levels, because of the higher cost of facilities and equipment.

Policy context

How spending is apportioned between different categories of expenditure can affect the quality of services (*e.g.* teachers' salaries), the condition of educational facilities (*e.g.* school maintenance) and the ability of the education system to adjust to changing demographic and enrolment trends (*e.g.* the construction of new schools).

Comparisons of how different OECD countries apportion educational expenditure among the various resource categories can also provide some insight into variation in the organisation and operation of educational institutions. Decisions on the allocation of resources made at the system level – both budgetary and structural – eventually feed through to the classroom and affect the nature of instruction and the conditions under which it is provided.

This indicator also compares how spending is distributed by different functions of educational institutions. Educational institutions offer a range of educational services in addition to instruction. At the primary, secondary and post-secondary non-tertiary levels, institutions may offer meals, and free transport to and from school or boarding facilities. At the tertiary level, institutions may offer housing and often perform a wide range of research activities as an integral part of tertiary education.

Evidence and explanations

What this indicator does and does not cover

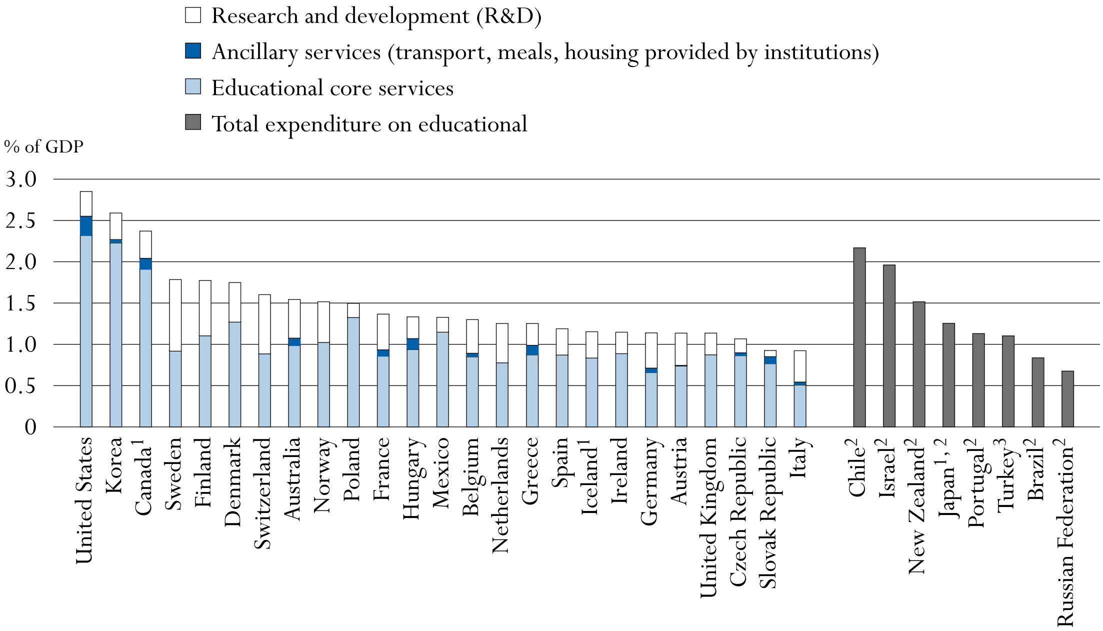
This indicator breaks down educational expenditure by current and capital expenditure and the three main functions typically fulfilled by educational institutions. This includes costs directly attributable to instruction, such as teachers' salaries or school materials, and costs indirectly related to the provision of instruction, such as expenditure on administration, instructional support services, development of teachers, student counselling, or the construction and/or provision of school facilities. It also includes spending on ancillary services such as student welfare services provided by educational institutions. Finally, it includes spending attributable to research and development (R&D) performed at tertiary institutions, either in the form of separately funded R&D activities or in the form of those proportions of salaries and current expenditure in general education budgets that are attributable to the research activities of staff.

The indicator does not include public and private R&D spending outside educational institutions, such as R&D spending in industry. A comparative review of R&D spending in sectors other than education is provided in the OECD Science and Technology Indicators. Expenditure on student welfare services at educational institutions only includes public subsidies for those services. Expenditure by students and their families on services that are provided by institutions on a self-funding basis is not included.

Expenditure on instruction, R&D and ancillary services

Below the tertiary level, educational expenditure is dominated by spending on educational core services. At the tertiary level, other services – particularly those related to R&D activities – can account for a significant proportion of educational spending. Variation among OECD countries in expenditure on R&D activities can therefore explain a significant part of the differences in overall educational expenditure per tertiary student (Chart B6.2). High levels of R&D spending in tertiary educational institutions in Australia, Belgium, Denmark, Finland, France, Germany,

Chart B6.2. Expenditure on educational core services, R&D and ancillary services in tertiary educational institutions as a percentage of GDP (2003)



1. Post-secondary non-tertiary included in both upper secondary and tertiary education.
2. Total expenditure at tertiary level including research and development (R&D) expenditure.
3. Total expenditure at tertiary level excluding research and development (R&D) expenditure.
Countries are ranked in descending order of total expenditure on educational institutions in tertiary institutions.
Source: OECD. Table B6.1. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/028135635270

the Netherlands, Norway, Sweden and Switzerland (between 0.4 and 0.9% of GDP), for example, imply that spending on education per student in these OECD countries would be considerably lower if the R&D component were excluded (see Table B1.1c).

Student welfare services

Student welfare services (as well as services for the general public in some cases) are integral functions of schools and universities in many OECD countries. Countries finance these ancillary services with different combinations of public expenditure, public subsidies and fees paid by students and their families.

On average, OECD countries spend 0.2% of their GDP on subsidies for ancillary services provided by primary, secondary and post-secondary non-tertiary institutions. This represents 5% of total spending on these institutions. At the high end, Finland, France, Korea, the Slovak Republic and Sweden spend about 10% or more of total spending on educational institutions in percentage of GDP on ancillary services (Table B6.1).

In more than two-thirds of OECD countries, the amount spent on ancillary services is higher than the amount spent on subsidies to households at the primary, secondary and post-secondary non-tertiary levels. Exceptions to this pattern are Denmark, Finland, Hungary, Korea, the Netherlands, New Zealand, Sweden and Turkey, where expenditure on subsidies to households is higher (Tables B5.3 and B6.1).

At the tertiary level, ancillary services are more often provided on a self-financed basis. On average, expenditure on subsidies for ancillary services at the tertiary level amounts to less than 0.1% of GDP and represents up to 0.23% in the United States (Tables B6.1).

Current and capital expenditures, and the distribution of current expenditure by resource category

Educational expenditure can first be divided into current and capital expenditure. Capital expenditure comprises spending on assets that last longer than one year and includes spending on the construction, renovation and major repair of buildings. Current expenditure comprises spending on school resources used each year for the operation of schools.

Current expenditure can be further sub-divided into three broad functional categories, which are the compensation of teachers, the compensation of other staff, and other current expenditures (*e.g.* teaching materials and supplies, maintenance of school buildings, preparation of student meals and renting of school facilities). The amount allocated to each of these functional categories will depend in part on current and projected changes in enrolment, on the salaries of educational personnel and on costs of maintenance and construction of educational facilities.

Education takes place mostly in school and university settings. The labour-intensive technology of education explains the large proportion of current spending within total educational expenditure. In primary, secondary, and post-secondary non-tertiary education combined, current expenditure accounts for nearly 92% of total spending on average across all OECD countries.

There is some noticeable variation among OECD countries with respect to the relative proportions of current and capital expenditure: at the primary, secondary and post-secondary non-tertiary levels combined, the proportion of current expenditure ranges from less than 85% in Korea and Luxembourg and the partner country Chile to 97% or more in Austria, Belgium, Canada, Mexico and Portugal (Chart B6.3).

The salaries of teachers and other staff employed in education account for the largest proportion of current expenditure in all OECD countries. On average across the OECD countries, expenditure on the compensation of educational personnel accounts for 80% of current expenditure at the primary, secondary and post-secondary non-tertiary levels of education combined. In all except three OECD countries – the Czech Republic, Finland and Iceland – 70% or more of current expenditure at the primary, secondary and post-secondary non-tertiary levels is spent on staff salaries. The proportion devoted to the compensation of educational personnel is 90% or more in Greece, Mexico, Portugal and Turkey (Chart B6.1).

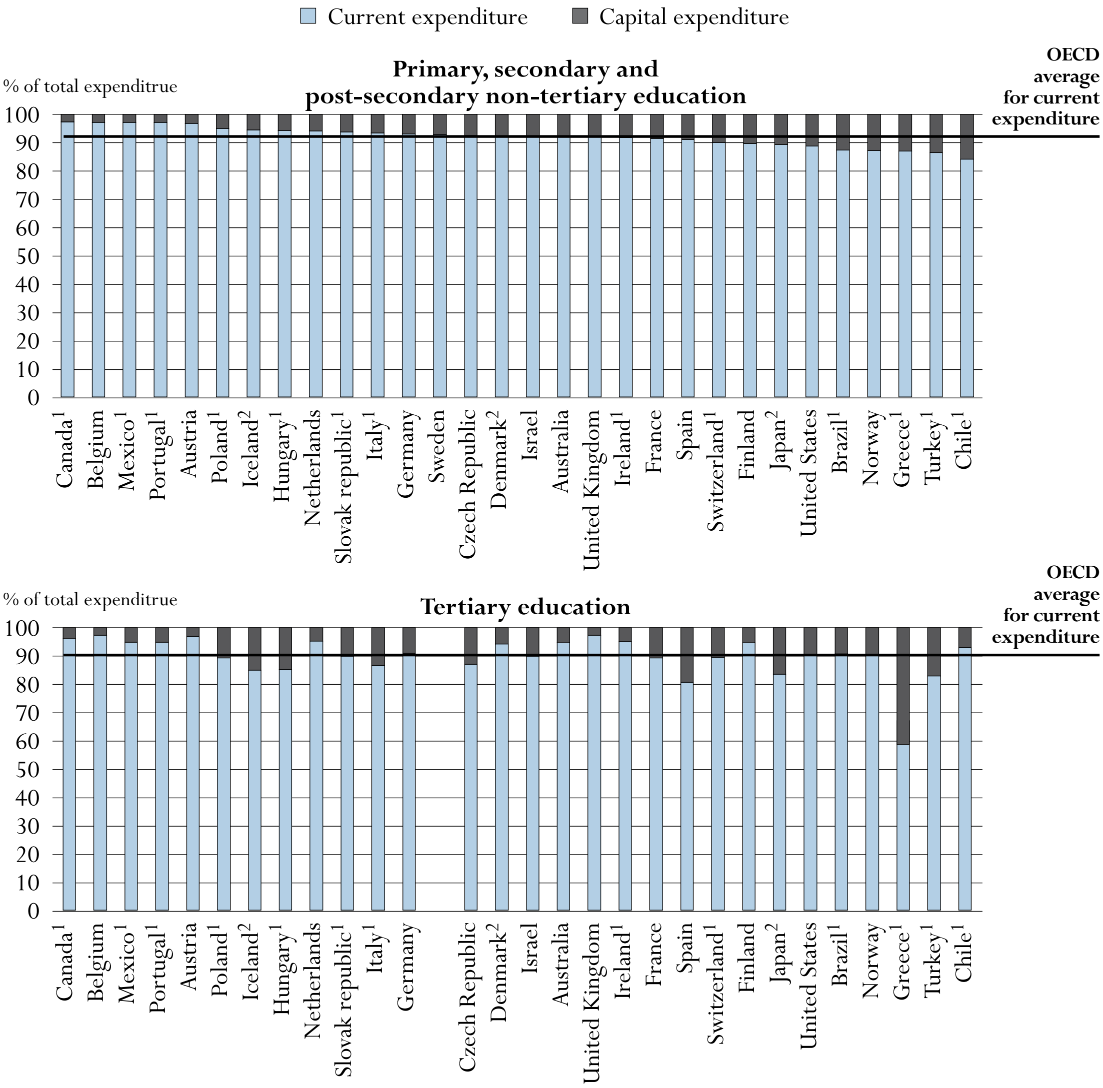
OECD countries with relatively small education budgets (*e.g.* Mexico, Portugal and Turkey) tend to devote a larger proportion of current educational expenditure to the compensation of personnel and a smaller proportion to services that are sub-contracted, such as support services (*e.g.* maintenance of school buildings), ancillary services (*e.g.* preparation of meals for students), and renting of school buildings and other facilities.

Proportions of current expenditure allocated to the compensation of teachers and other staff

In Denmark, France and the United States, around one-quarter of current expenditure in primary, secondary and post-secondary non-tertiary education combined goes towards compensation of non-teaching staff, while in Austria, Ireland and Korea this figure is 10% or less. These differences

Chart B6.3. Distribution of current and capital expenditure on educational institutions (2003)

By resource category and level of education



1. Public institutions only.
2. Post-secondary non-tertiary included in both upper secondary and tertiary education.

Countries are ranked in descending order of the share of current expenditure on primary, secondary and post-secondary non-tertiary education.

Source: OECD. Table B6.2. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

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are likely to reflect the degree to which educational personnel such as principals, guidance counsellors, bus drivers, school nurses, janitors and maintenance workers specialise in non-teaching activities (Table B6.2).

At the tertiary level, the proportion of total expenditure spent on capital outlays is larger than at the primary, secondary and post-secondary non-tertiary levels, generally because of more differentiated and advanced teaching facilities. In 13 out of the 30 OECD and partner countries for which data are available, the proportion spent on capital expenditure at the tertiary level is 10% or more, and in Greece, Spain and Turkey it is above 17% (Chart B6.3).

Differences are likely to reflect how tertiary education is organised in each OECD country, as well as the degree to which expansion in enrolments requires the construction of new buildings.

OECD countries, on average, spend 35% of current expenditure at the tertiary level on purposes other than the compensation of educational personnel. This is explained by the higher cost of facilities and equipment in higher education (Table B6.2).

Definitions and methodologies

Data refer to the financial year 2003 and are based on the UOE data collection on education statistics administered by the OECD in 2005 (for details see Annex 3 at *www.oecd.org/edu/eag2006*).

The distinction between current and capital expenditure is taken from the standard definition used in national income accounting. Current expenditure refers to goods and services consumed within the current year, and requiring recurrent production in order to sustain the provision of educational services. Capital expenditure refers to assets which last longer than one year, including spending on 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 by borrowing. Neither current nor capital expenditure includes debt servicing.

Calculations cover expenditure by public institutions or, where available, that of public and private institutions combined.

Current expenditure other than on the compensation of personnel includes expenditure on services which are sub-contracted, such as support services (*e.g.* maintenance of school buildings), ancillary services (*e.g.* preparation of meals for students) and renting of school buildings and other facilities. These services are obtained from outside providers, unlike the services provided by the education authorities or by the educational institutions themselves using their own personnel.

Expenditure on R&D includes all expenditure on research performed at universities and other tertiary education institutions, regardless of whether the research is financed from general institutional funds or through separate grants or contracts from public or private sponsors. The classification of expenditure is based on data collected from the institutions carrying out R&D rather than on the sources of funds.

Ancillary services are services provided by educational institutions that are peripheral to the main educational mission. The two main components of ancillary services are student welfare services and services for the general public. At primary, secondary, and post-secondary non-tertiary levels, student welfare services include meals, school health services, and transportation to and from school. At the tertiary level, it includes residence halls (dormitories), dining halls, and health care. Services for the general public include museums, radio and television broadcasting, sports and recreational and cultural programmes. Expenditure on ancillary services, including fees from students or households, is excluded.

Educational core services are estimated as the residual of all expenditure, *i.e.* total expenditure on educational institutions net of expenditure on R&D and ancillary services.

Note that data appearing in earlier editions of this publication may not always be comparable to data shown in the 2006 edition due to changes in definitions and coverage that were made as a result of the OECD expenditure comparability study (see Annex 3 at *www.oecd.org/edu/eag2006* for details on changes).

B6

Table B6.1.

Expenditure on institutions by service category as a percentage of GDP (2003)

Expenditure on instruction, R&D and ancillary services in educational institutions and private expenditure on educational goods purchased outside educational institutions

		Primary, secondary and post-secondary non-tertiary education				Tertiary education				
		Expenditure on educational institutions				Expenditure on educational institutions				
		Core educational services	Ancillary services (transport, meals, housing provided by institutions)	Total	Private payments on instructional services/ goods outside educational institutions	Core educational services	Ancillary services (transport, meals, housing provided by institutions)	Research & development at tertiary institutions	Total	Private payments on instructional services/ goods outside educational institutions
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
OECD countries	Australia	3.93	0.18	4.11	0.11	0.99	0.09	0.47	1.55	0.14
	Austria	3.66	0.18	3.83	m	0.74	0.01	0.39	1.14	m
	Belgium	3.95	0.15	4.10	0.12	0.85	0.05	0.41	1.30	0.11
	Canada[1, 2]	3.38	0.18	3.55	m	1.91	0.13	0.33	2.37	0.13
	Czech Republic	2.95	0.13	3.08	0.10	0.87	0.04	0.17	1.07	0.06
	Denmark[1]	x(3)	x(3)	4.25	0.69	1.27	a	0.48	1.75	0.80
	Finland	3.55	0.42	3.98	m	1.11	n	0.67	1.77	m
	France	3.68	0.53	4.21	0.20	0.86	0.08	0.43	1.37	0.08
	Germany	3.46	0.08	3.54	0.19	0.66	0.06	0.42	1.14	0.04
	Greece	2.77	0.04	2.81	0.86	0.84	0.12	0.30	1.25	0.06
	Hungary	3.35	0.35	3.70	m	0.94	0.13	0.26	1.34	m
	Iceland[1]	x(3)	x(3)	5.19	m	0.84	x(8)	0.32	1.16	m
	Ireland[3]	3.14	0.07	3.22	m	0.89	x(8)	0.26	1.15	m
	Italy	3.52	0.12	3.65	0.43	0.51	0.03	0.38	0.93	0.14
	Japan[1]	x(3)	x(3)	2.97	0.78	x(8)	x(8)	x(8)	1.26	0.04
	Korea	3.98	0.42	4.40	m	2.23	0.04	0.32	2.59	m
	Luxembourg	x(3)	x(3)	3.97	m	m	m	m	m	m
	Mexico[3]	4.49	m	4.49	0.25	1.15	m	0.18	1.33	0.06
	Netherlands	3.32	0.05	3.36	0.19	0.78	n	0.48	1.26	0.06
	New Zealand	x(3)	x(3)	4.92	0.01	x(8)	x(8)	x(8)	1.52	n
	Norway	x(3)	x(3)	4.56	m	1.03	n	0.49	1.52	m
	Poland	4.35	0.01	4.36	0.21	1.33	n	0.17	1.50	0.06
	Portugal	4.13	0.03	4.16	0.06	x(8)	x(8)	x(8)	1.13	0.03
	Slovak Republic[1]	2.59	0.48	3.06	0.87	0.77	0.09	0.08	0.93	0.23
	Spain	2.88	0.11	2.99	m	0.87	m	0.32	1.19	m
	Sweden	4.07	0.44	4.51	m	0.92	n	0.87	1.79	m
	Switzerland	x(3)	x(3)	4.62	m	0.89	x(8)	0.72	1.60	m
	Turkey[3]	2.50	0.10	2.60	m	x(8)	x(8)	x(8)	1.11	m
	United Kingdom	4.32	0.26	4.58	m	0.88	m	0.26	1.14	0.20
	United States	3.89	0.30	4.20	a	2.32	0.23	0.30	2.85	a
	OECD average	*3.56*	*0.21*	*3.90*	*0.32*	*1.06*	*0.06*	*0.38*	*1.45*	*0.12*
Partner countries	Brazil[2]	x(3)	x(3)	3.36	m	x(8)	x(8)	x(8)	0.84	m
	Chile[4]	3.96	0.16	4.12	0.03	x(8)	x(8)	x(8)	2.17	0.01
	Israel	x(3)	x(3)	4.79	0.28	x(8)	x(8)	x(8)	1.96	n
	Russian Federation	x(3)	x(3)	2.07	m	x(8)	x(8)	x(8)	0.68	m

1. Some levels of education are included with others. Refer to "x" code in Table B1.1a for details.
2. Year of reference 2002.
3. Research and development expenditure and thus total expenditure is underestimated.
4. Year of reference 2004.
Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

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Table B6.2.

Expenditure on educational institutions by resource category and level of education (2003)

Distribution of total and current expenditure on educational institutions from public and private sources

		Primary, secondary and post-secondary non-tertiary education						Tertiary education					
		Percentage of total expenditure		Percentage of current expenditure				Percentage of total expenditure		Percentage of current expenditure			
		Current	Capital	Compensation of teachers	Compensation of other staff	Compensation of all staff	Other current	Current	Capital	Compensation of teachers	Compensation of other staff	Compensation of all staff	Other current
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
OECD countries	Australia	92.1	7.9	60.0	16.9	76.8	23.2	94.7	5.3	31.8	27.8	59.6	40.4
	Austria	96.8	3.2	68.5	9.9	78.6	21.4	96.9	3.1	41.5	15.6	57.1	42.9
	Belgium	97.2	2.8	71.2	18.7	89.9	10.1	97.3	2.7	55.3	15.1	70.4	29.6
	Canada[1, 2]	97.3	2.7	61.2	15.1	76.3	23.7	96.2	3.8	33.1	34.2	67.3	32.7
	Czech Republic	92.5	7.5	48.7	16.1	64.8	35.2	87.0	13.0	25.7	25.9	51.6	48.4
	Denmark[3]	92.4	7.6	51.9	26.6	78.4	21.6	94.2	5.8	52.0	25.4	77.4	22.6
	Finland	89.6	10.4	53.9	11.4	65.3	34.7	94.7	5.3	35.2	28.0	63.2	36.8
	France	91.5	8.5	57.0	23.1	80.1	19.9	89.3	10.7	51.7	28.4	80.1	19.9
	Germany	93.0	7.0	x(5)	x(5)	83.9	16.1	90.9	9.1	x(11)	x(11)	71.4	28.6
	Greece	87.1	12.9	x(5)	x(5)	93.7	6.3	59.2	40.8	x(11)	x(11)	52.2	47.8
	Hungary[2]	94.4	5.6	x(5)	x(5)	80.5	19.5	85.2	14.8	x(11)	x(11)	69.6	30.4
	Iceland	94.5	5.5	x(5)	x(5)	67.1	32.9	85.0	15.0	x(11)	x(11)	76.8	23.2
	Ireland[2]	91.9	8.1	75.8	8.2	84.0	16.0	95.1	4.9	46.8	23.9	70.8	29.2
	Italy[2]	93.5	6.5	66.2	18.7	84.8	15.2	86.7	13.3	40.4	19.8	60.2	39.8
	Japan[3]	89.4	10.6	x(5)	x(5)	87.4	12.6	83.6	16.4	x(11)	x(11)	64.5	35.5
	Korea	81.1	18.9	62.9	7.9	70.8	29.2	90.5	9.5	30.5	12.8	43.3	56.7
	Luxembourg[2]	81.5	18.5	72.8	12.2	85.0	15.0	m	m	m	m	m	m
	Mexico[2]	97.2	2.8	81.7	11.9	93.6	6.4	94.8	5.2	59.0	18.3	77.3	22.7
	Netherlands	94.2	5.8	x(5)	x(5)	76.7	23.3	95.2	4.8	x(11)	x(11)	74.6	25.4
	New Zealand	m	m	m	m	m	m	m	m	m	m	m	m
	Norway	87.3	12.8	x(5)	x(5)	80.8	19.2	90.5	9.5	x(11)	x(11)	62.8	37.2
	Poland[2]	95.0	5.0	x(5)	x(5)	70.0	30.0	89.2	10.8	x(11)	x(11)	58.2	41.8
	Portugal[2]	97.1	2.9	80.6	15.1	95.7	4.3	94.9	5.1	x(11)	x(11)	72.8	27.2
	Slovak Republic	93.8	6.2	53.9	16.5	70.4	29.6	89.9	10.1	28.6	19.3	47.9	52.1
	Spain	91.1	8.9	74.6	10.6	85.2	14.8	80.6	19.4	58.5	20.5	79.0	21.0
	Sweden	92.8	7.2	50.9	19.0	69.8	30.2	m	m	x(11)	x(11)	59.7	40.3
	Switzerland[2]	90.0	10.0	72.2	12.8	85.0	15.0	89.6	10.4	53.6	24.9	78.4	21.6
	Turkey[2]	86.5	13.5	x(5)	x(5)	94.3	5.7	82.9	17.1	73.5	m	73.5	26.5
	United Kingdom	91.9	8.1	53.0	21.8	74.8	25.2	97.2	2.8	32.4	25.9	58.3	41.7
	United States	88.8	11.2	55.4	25.7	81.1	18.9	90.4	9.6	24.2	31.3	55.5	44.5
	OECD average	*91.8*	*8.2*	*63.6*	*15.9*	*80.2*	*19.8*	*89.7*	*10.3*	*43.0*	*23.4*	*65.5*	*34.5*
Partner countries	Brazil[1]	87.3	12.7	x(5)	x(5)	84.6	15.4	90.6	9.4	x(11)	x(11)	73.6	26.4
	Chile[2, 4]	84.1	15.9	x(5)	x(5)	74.9	25.1	93.1	6.9	x(11)	x(11)	65.0	35.0
	Israel	92.1	7.9	x(5)	x(5)	75.4	24.6	89.9	10.1	x(11)	x(11)	73.6	26.4
	Russian Federation	m	m	m	m	m	m	m	m	m	m	m	m

1. Year of reference 2002.
2. Public institutions only.
3. Some levels of education are included with others. Refer to "x" code in Table B1.1a for details.
4. Year of reference 2004.

Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

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Chapter

C

Access to Education, Participation and Progression

ENROLMENT IN EDUCATION FROM PRIMARY EDUCATION TO ADULT LIFE

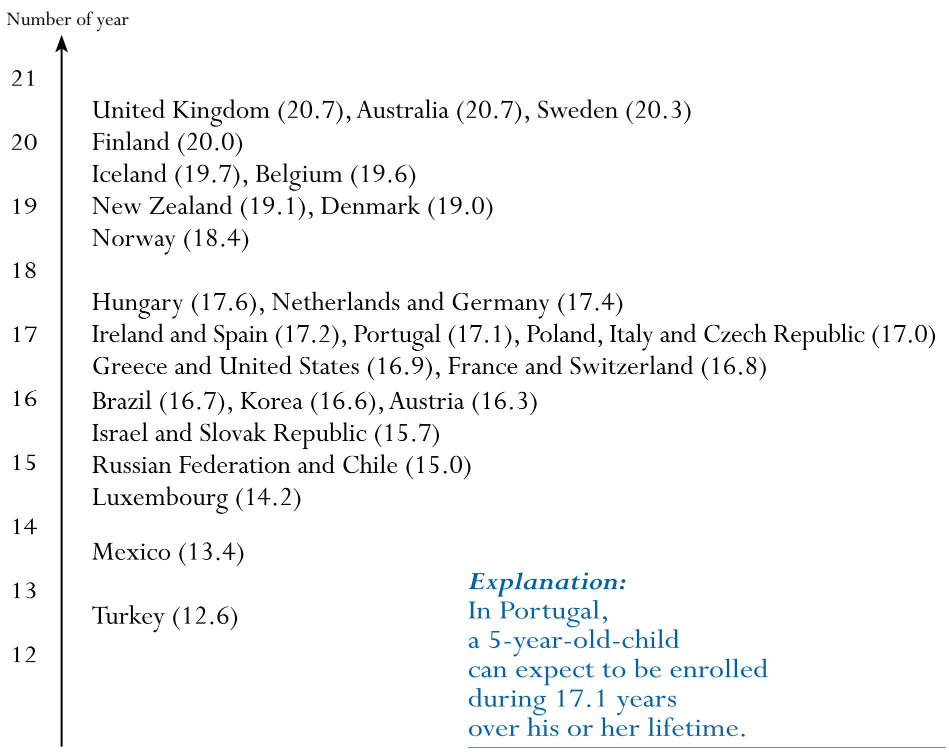
This indicator depicts the structure of the education systems in terms of student participation. It examines enrolment at all levels of education: first by using the number of years, or education expectancy, of full-time and part-time education in which a 5-year-old can be expected to enrol over his or her lifetime, and second, by using information on enrolment rates at various levels of education to examine educational access. Finally, trends in enrolments are used to compare the evolution of access to education from 1995 to 2004.

Key results

Chart C1.1. Education expectancy

This chart shows the average number of years a 5-year-old can expect to be formally enrolled in education during his or her lifetime. The education expectancy is calculated by adding the net enrolment rates for each single year of age from five onwards. When comparing data on education expectancy, however, it is important to note that the length of the school year, intensity of participation and the quality of education vary considerably across countries.

In 24 of 28 OECD and 1 of 4 partner countries with comparable data, individuals participate in formal education for between 16 and 21 years.



Source: OECD. Table C1.1.

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Other highlights of this indicator

- In most OECD countries, virtually all young people have access to at least 12 years of formal education. At least 90% of students are enrolled in an age band spanning 14 or more years in Belgium, Czech Republic, France, Iceland, Japan and Spain. By contrast, Mexico and Turkey have enrolment rates exceeding 90% for a period of only nine and six years. For partner countries Brazil, Chile, Israel and the Russian Federation, the corresponding number of years is respectively 10, 9, 12 and 9 years.
- In more than half of the OECD countries, 70% of children aged 3 to 4 are enrolled in either pre-primary or primary programmes.
- A child can expect to be enrolled at age 4 and under more often in the 19 European countries that are members of the OECD (EU19) than in the other OECD countries. On average, the enrolment rate for children aged 3 to 4 is 73.5% for the EU19 whereas the OECD average is 66.3%.
- Education expectancy for all levels of education combined increased by 1.5 years between 1995 and 2004 in all OECD countries reporting comparable data. A student in an OECD member country can expect to receive 0.6 years more pre-primary, primary, secondary and post-secondary non-tertiary education and 0.9 years more tertiary education in 2004 than in 1995.
- In OECD countries, a 5-year-old can expect to have 17.4 years of education, with females receiving 0.8 more years of education, on average, than males. Australia, Sweden and United Kingdom which have educational expectancy of more than 20 years count between three and six years of part-time education.
- A 17-year-old can expect to spend an average of three years in tertiary education.

Policy context

A well-educated population is critical for a country's economic and social development. Societies therefore have an intrinsic interest in ensuring broad access to a wide variety of educational opportunities for children and adults. Early childhood programmes prepare children for primary education, and can help combat linguistic and social disadvantages as well as provide opportunities to enhance and complement home educational experiences. Primary and secondary education lay down the foundations for a wide range of competencies, and prepare young people to become lifelong learners and productive members of society. Tertiary education, either directly after initial schooling or later in life, provides a range of options for acquiring advanced knowledge and skills.

Evidence and explanations

Virtually all young people in OECD countries have access to basic education. But patterns of participation in and progression through education over the life cycle vary widely among countries.

Overall participation in education

Both the timing and the rate of participation in the pre-school years and after the end of compulsory education differ considerably among countries.

Average length of schooling in 2004

In 24 of 28 OECD and 1 of 4 partner countries, individuals are expected to participate in formal education for between 16 and 21 years. A child in Luxembourg, Mexico, the Slovak Republic, Turkey and the partner countries Chile, Israel and the Russian Federation can expect to be in education for less than 16 years, compared to 19 or more years in Australia, Belgium, Denmark, Finland, Iceland, New Zealand, Sweden and the United Kingdom (Chart C1.2).

Most of the variation in education expectancy among OECD countries comes from differences in enrolment rates in upper secondary education. Relative differences in participation are large at the tertiary level, but apply to a smaller proportion of the cohort and therefore have less of an effect on education expectancy (Table C1.1 and Chart C1.2).

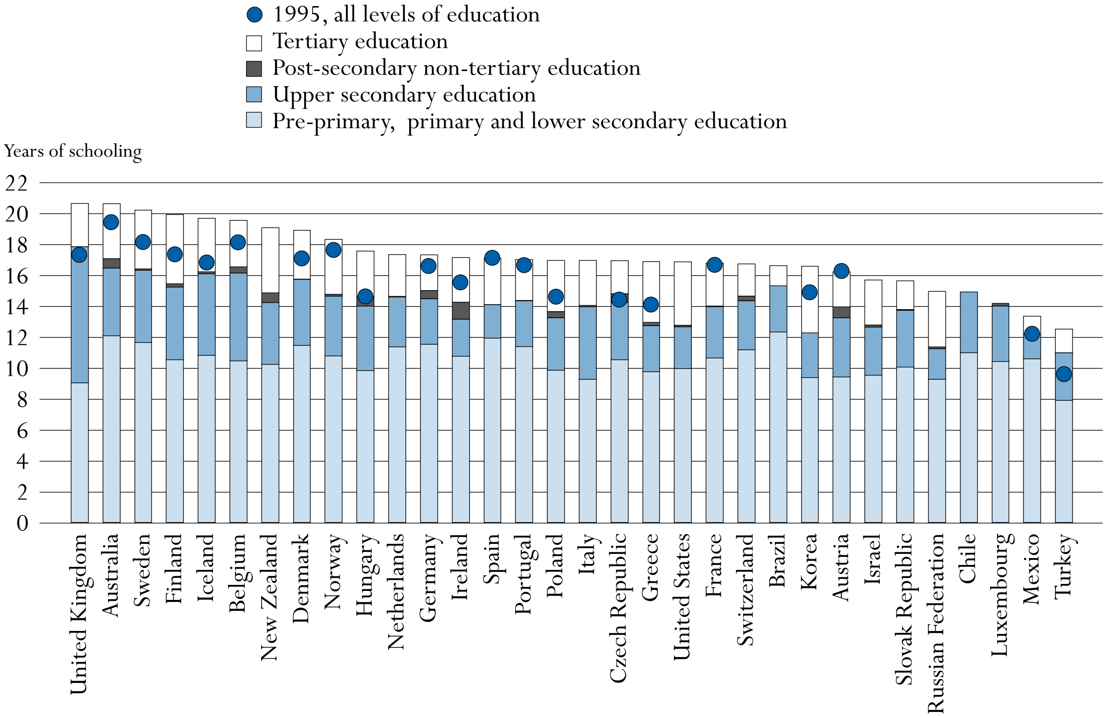
Measures of the average length of schooling like education expectancy are affected by enrolment rates over the life cycle and therefore underestimate the actual number of years of schooling in systems where access to education is expanding.

Nor does this measure distinguish between full-time and part-time participation. OECD countries with a relatively large proportion of part-time enrolments will therefore tend to have relatively high values. In Australia, Belgium, New Zealand, Sweden and the United Kingdom, part-time education accounts for three or more years of education expectancy (Table C1.1).

Education expectancy can be influenced by the status of enrolment (part-time or full-time), the proportion of adults enrolled in education and mainly by those who repeat a grade and the proportion of school leavers. In OECD and partner countries where education expectancy at a given level of education exceeds the number of grades at that level, repeating a level (or, in the case of Australia, the number of adults enrolling in those programmes) has a greater impact on education expectancy than the proportion of students leaving school before completing that level of education.

Chart C1.2. Education expectancy, by level of education (2004)

Under current conditions (excluding education for children under the age of five)



Countries are ranked in descending order of the total school expectancy for all levels of education in 2004.
Source: OECD. Table C1.1. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/555553154612

Enrolment rates are influenced by entry rates into a particular level of education and by the typical duration of studies. A high number of expected years in education, therefore, does not necessarily imply that all young people will participate in education for a long time. Belgium, where 5-year-olds can expect to be in school for more than 19 years, has nearly total enrolment (more than 90%) for 16 years of education. Conversely, Australia, Denmark, Finland, New Zealand, Sweden and the United Kingdom which have equally high school expectancy, have nearly total enrolment (more than 90%) for only 13 or less years of education (Tables C1.1 and C1.2). Enrolment rates in Iceland fall in between, with nearly total enrolment for 14 years of education.

In most OECD countries, virtually all young people have access to at least 12 years of formal education. At least 90% of the population is enrolled in an age band spanning 14 or more years in Belgium, the Czech Republic, France, Iceland, Japan and Spain. By contrast, Mexico and Turkey have enrolment rates exceeding 90% for a period of only nine and six years (Table C1.2).

Gender differences

In OECD countries, a 5-year-old can expect to stay 17.4 years in education. The variation in education expectancy is generally greater for females than for males. In OECD countries, females can expect to receive 0.8 more years of education, on average, than males. The expected duration of enrolment for females exceeds that of males by one year or more in Belgium, Denmark, Finland, Iceland, New Zealand, Norway, Portugal, Spain and the United States and by three years in Sweden and in the United Kingdom. The opposite is true in Germany and the Netherlands, where males can expect to receive 0.2 years more education than females, but particularly in Korea, Switzerland and Turkey, with, respectively, 1.8, 0.6 and 2.1 years more education for males (Table C1.1).

Trends in participation in education

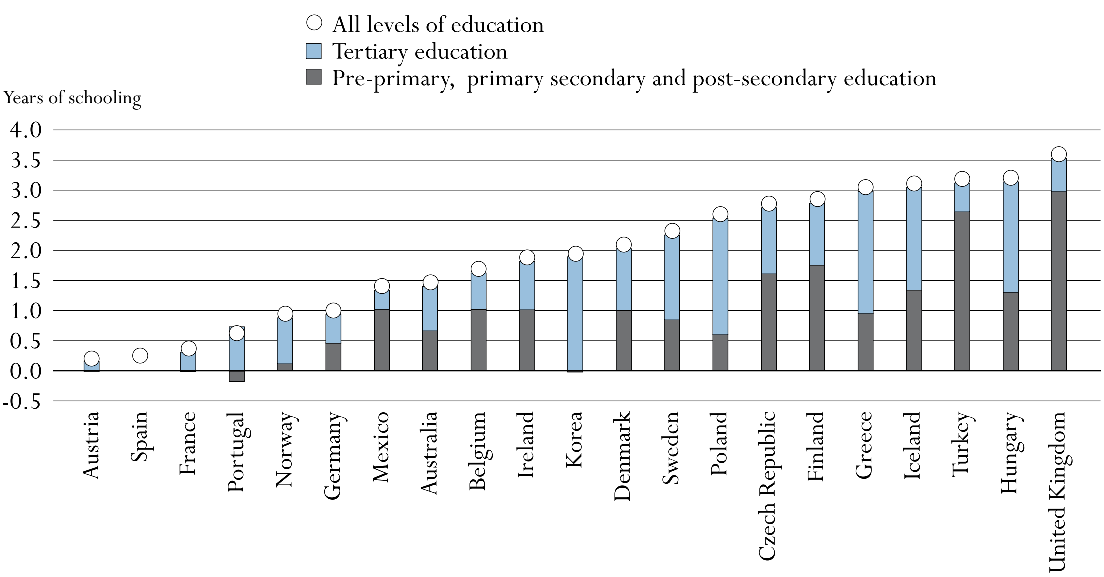
Trends in education show that more people today attain upper secondary and tertiary education compared to the past four decades. Education expectancy increased by around 13% between 1995 and 2004 in all OECD countries for which comparable trend data are available, showing a general increase of participation in education. In the Czech Republic, Finland, Greece, Hungary, Iceland, Poland, Turkey and the United Kingdom, the increase was 16% or higher over this relatively short period (Table C1.1).

Countries have extended participation in education, for example, by making pre-school education almost universal by the age of three, by retaining the majority of young people in education until the end of their teens, or by maintaining 10 to 20% participation among all age groups up to the late 20s.

On average in OECD countries, a student in 2004 can expect to spend around two years more in the education system compared to 1995. This difference over the period ranges from less than one year in Austria, France, Germany, Norway, Portugal and Spain to more than three years in Greece, Hungary, Iceland, Turkey and the United Kingdom (Chart C1.3).

Chart C1.3. Change in expected years of education between 1995 and 2004, by level of education

Under current conditions (excluding education for children under the age of five)



Countries are ranked in ascending order of change in school expectancy between 1995 and 2004 for all levels of education.
Source: OECD. Table C1.1. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/555553154612

OECD countries present different patterns in their change in school expectancy between 1995 and 2004. On the one hand, in Greece, Hungary, Iceland, Korea, Poland and Sweden, the change is mainly due to an increase in participation at the tertiary level; on the other hand, the Czech Republic, Finland, Turkey and the United Kingdom, have mainly extended participation in their pre-primary, primary, secondary and post-secondary non-tertiary education.

Conversely, Austria, France and Spain present stabilised school expectancy between 1995 and 2004 for all levels of education. These three countries were also among those with higher enrolment rates of the young population aged between 5 and 14.

Participation in early childhood education

A child can expect to be enrolled at age 4 and under more often in the EU19 countries than in the other OECD countries. On average, the enrolment rate for children aged 3 to 4 is 73.5% for the EU19 countries whereas the OECD average is 66.3%.

In the majority of OECD and partner countries, full enrolment, which is defined here as enrolment rates exceeding 90%, begins between the ages of 5 and 6. However, in Belgium, the Czech Republic, Denmark, France, Germany, Hungary, Iceland, Italy, Japan, New Zealand, Norway, Portugal, the Slovak Republic, Spain, Sweden and the United Kingdom, at least 70% of children aged 3 to 4 are already enrolled in either pre-primary or primary programmes. Enrolment rates for early childhood education range from less than 25% in Ireland, Korea, Switzerland and Turkey, to over 90% in Belgium, France, Iceland, Italy and Spain, and the partner country Israel (Table C1.2).

Given the impact that early childhood education and care has on building a strong foundation for lifelong learning and on ensuring equitable access to learning opportunities later, pre-primary education is very important. However, institutionally based pre-primary programmes covered by this indicator are not the only form of quality early childhood education and care available. Inferences about access to and quality of pre-primary education and care should therefore be made with caution.

Participation towards the end of compulsory education and beyond

Several factors influence the decision to stay enrolled beyond the end of compulsory education. Young people with insufficient education for example are at a higher risk of unemployment and other forms of exclusion than their well-educated peers. In many OECD countries, the transition from education to employment has become a longer and more complex process that provides the opportunity or the obligation for students to combine learning and work to develop marketable skills (see Indicator C4).

The age at which compulsory education in OECD and partner countries ends, ranges from 14 in Korea, Portugal and Turkey, and the partner countries Brazil and Chile, to 18 in Belgium, Germany and the Netherlands. All other countries lie between the two extremes with compulsory education ending at the ages 15 or 16 (Table C1.2). However, the statutory age at which compulsory education ends does not always correspond to the age at which enrolment is universal.

While participation rates in most OECD and partner countries tend to be high until the end of compulsory education, in Germany, Mexico, the Netherlands, New Zealand, Turkey, the United States and the partner country the Russian Federation, rates drop to below 90% before the age at which students are no longer legally required to be enrolled in school. More than 10% of students also never finish compulsory education in these countries. In Germany, the Netherlands and the United States, this may be due, in part, to the fact that compulsory education ends relatively late at age 18 (age 17, on average, in the United States).

In most OECD and partner countries, enrolment rates gradually decline during the last years of upper secondary education (Table C1.3). More than 20% of the population aged between 15 and 19 is not enrolled in education in Austria, Italy, Luxembourg, Mexico, New Zealand, Portugal, Spain, Turkey, the United Kingdom and the United States, and in the partner countries Brazil, Chile and Israel. By contrast, enrolment rates remain relatively high until the age of 20 to 29 in Australia, Denmark, Finland, Iceland, Poland and Sweden, where enrolment rates for 20-to-29-year-olds still exceed 30% (Table C1.2).

Graduates from upper secondary programmes who decide not to enter the labour market directly as well as people who are already working and want to upgrade their skills can choose from a wide range of post-secondary programmes.

The transition to post-secondary education

Upper secondary students in many education systems can enrol in relatively short programmes (less than two years) to prepare for a certain trade or specific vocational fields. Some OECD countries delay vocational training until after graduation from upper secondary education. While these programmes are offered as advanced upper secondary programmes in some OECD countries (*e.g.* Austria, Hungary and Spain), they are offered as post-secondary education in others (*e.g.* Canada and the United States), although these post-secondary programmes often resemble upper secondary level programmes.

From an internationally comparable point of view, these programmes straddle upper secondary and tertiary education and are therefore classified as a distinct level of education (post-secondary non-tertiary education).

In 26 of the 30 OECD countries, these kinds of programmes are offered to upper secondary graduates. A 17-year-old can expect to receive 0.3 years of post-secondary non-tertiary education on average in OECD countries. This expectation ranges from 0.1 years in Iceland, Italy, Norway, the Slovak Republic, Sweden and the United States to 0.6 years and more in Australia, Austria, the Czech Republic, Hungary, Ireland and New Zealand (Table C1.1).

Participation in tertiary education

Graduates from upper secondary programmes and those in the workforce who want to upgrade their skills can also choose from a wide range of tertiary programmes.

This indicator distinguishes among different categories of tertiary qualifications: *i)* programmes at tertiary-type B level (ISCED 5B); *ii)* programmes at tertiary-type A level (ISCED 5A); and *iii)* advanced research programmes at the doctorate level (ISCED 6). Tertiary-type A programmes are largely theoretically based and designed to provide qualifications for entry into advanced research programmes and highly skilled professions. Tertiary-type B programmes are classified at the same level of competence as tertiary-type A programmes, but are more occupationally oriented and lead to direct labour market access. The programmes are tend not to last as long as type A programmes (typically two to three years), and generally are not deemed to lead to university-level degrees. The institutional location of programmes is used to give a relatively clear idea of their nature (*e.g.* university versus non-university institutions of higher education), but these distinctions have become blurred and are therefore not applied in the OECD indicators.

On average in OECD countries, a 17-year-old can expect to receive 3 years of tertiary education. Tertiary entry rates, drop-out rates and the typical duration of study affect the expectancy of tertiary education. In Australia, Belgium, Denmark, Finland, Greece, Iceland, Korea, New Zealand, Norway, Poland, Spain, Sweden and the United States, tertiary studies typically last for three years or more. By contrast, in Mexico, the Slovak Republic and Turkey, tertiary education usually lasts less than 2 years (Table C1.1 and Indicator C2).

Policies to expand education have put pressure on gaining greater access to tertiary education in many OECD countries. Thus far, this pressure has more than compensated the declines in cohort sizes which had led, until recently, to predictions of stable or declining demand from school leavers in several OECD countries. Whereas some OECD countries are now showing signs of a levelling demand for tertiary education, the overall trend remains on an upward course.

End of compulsory education and decline in enrolment rates

An analysis of the rate of participation by level of education and single year of age shows that there is no close relationship between the end of compulsory education and the decline in enrolment rates. The sharpest decline in enrolment rates occurs in most of the OECD and partner countries, not at the end of compulsory education but at the end of upper secondary education. After the age of 16, however, enrolment rates begin to decline in almost all OECD countries (except in Belgium). On average in the OECD countries, the enrolment rate in secondary education falls from 91% at the age of 16 to 82% at the age of 17, 53% at the age of 18, and 28% at the age of 19. In Belgium, the Czech Republic, Finland, Germany, Japan, Korea, Norway, Poland and Sweden, more than 90% of all 17-year-olds are still enrolled at this level, even though the age at which compulsory education ends is under 17 in most of the countries (Table C1.3).

Definitions and methodologies

Data for the school year 2003-2004 are based on the UOE data collection on education statistics that is administered annually by the OECD, and on the 2005 World Education Indicators Programme.

Except where otherwise noted, figures are based on head counts; that is, they do not distinguish between full-time and part-time study. A standardised distinction between full-time and part-time participants is very difficult because the concept of part-time study is not recognised by some countries. For other OECD countries, part-time education is covered only partially by the reported data.

The average length of time a 5-year-old can expect to be formally enrolled in education during his/her lifetime, or education expectancy, is calculated by adding the net enrolment rates for each single year of age from five onwards (Table C1.1). The education expectancy for a cohort will reflect any tendency to lengthen (or shorten) studies in subsequent years. When comparing data on education expectancy, however, it must be borne in mind that neither the length of the school year nor the quality of education is necessarily the same in each country.

Education expectancy gives a domestic measure of the overall participation in education for a country as the UOE data collection covers all of a country's domestic educational activity (*i.e.* within its own territory), regardless of the delivery mechanism and of the ownership or sponsorship (public or private, national or foreign) of the institution which organises the activity. Table C1.1 also shows the index of change in education expectancy between 1995 and 2004.

Net enrolment rates expressed as percentages in Table C1.2 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.

Data for 1994-1995 are based on a special survey carried out in OECD countries in 2000. OECD countries were asked to report according to the ISCED-97 classification.

Table C1.1.

Education expectancy (2004)

Expected years of education under current conditions (excluding education for children under the age of five)

	Full-time and part-time							Full-time	Part-time	Index of change in school expectancy (1995 = 100)		
	All levels of education combined			Primary and lower secondary education	Upper secondary education	Post-secondary non-tertiary	Tertiary education	All levels of education combined		All levels of education combined	Primary, secondary and post-secondary non-tertiary education	Tertiary education
	M+W	Men	Women	M+W				M+W		M+W		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
OECD countries												
Australia	20.7	20.4	20.9	11.7	4.4	0.6	3.6	14.9	5.8	107	102	126
Austria	16.3	16.1	16.4	8.2	3.8	0.7	2.3	m	m	101	103	108
Belgium[1]	19.6	19.0	20.2	9.4	5.7	0.4	3.0	16.5	3.1	109	107	125
Canada[2]	m	m	m	m	m	0.3	2.9	m	m	m	m	102
Czech Republic	17.0	16.9	17.1	9.0	3.7	0.6	2.1	16.6	0.4	119	111	206
Denmark	19.0	18.1	19.8	9.6	4.3	n	3.2	18.2	0.7	112	108	148
Finland	20.0	19.3	20.7	9.0	4.7	0.2	4.5	18.1	1.9	116	110	130
France	16.8	16.5	17.1	9.5	3.3	n	2.8	16.8	n	102	99	113
Germany	17.4	17.5	17.3	10.2	3.0	0.5	2.3	17.3	0.1	106	103	126
Greece	16.9	16.6	17.3	9.0	3.0	0.2	3.9	16.7	0.3	121	105	207
Hungary	17.6	17.2	18.0	8.1	4.2	0.6	2.9	15.6	2.0	122	109	267
Iceland	19.7	18.5	20.9	9.9	5.3	0.1	3.5	17.5	2.3	118	109	197
Ireland	17.2	17.0	17.5	10.8	2.4	1.1	2.9	16.0	1.2	112	108	138
Italy	17.0	16.6	17.3	8.4	4.7	0.1	2.9	16.9	0.1	m	m	m
Japan	m	m	m	9.1	3.0	m	m	m	m	m	m	m
Korea	16.6	17.5	15.7	8.9	2.9	a	4.3	16.6	n	113	99	179
Luxembourg	14.2	14.1	14.3	9.2	3.6	0.2	m	14.0	0.2	m	m	m
Mexico	13.4	13.2	13.6	9.7	1.6	a	1.2	13.4	n	111	109	137
Netherlands	17.4	17.5	17.3	10.4	3.2	n	2.7	16.8	0.6	m	m	m
New Zealand	19.1	18.2	20.1	10.2	4.0	0.6	4.2	15.3	3.8	m	m	m
Norway[3]	18.4	16.7	18.2	9.9	3.9	0.1	3.6	17.0	1.4	105	108	127
Poland	17.0	16.6	17.5	9.0	3.4	0.4	3.3	15.2	1.8	118	104	242
Portugal	17.1	16.6	17.6	10.5	3.0	n	2.6	17.1	n	103	97	139
Slovak Republic	15.7	15.5	15.9	8.8	3.7	0.1	1.9	14.9	0.8	m	m	m
Spain	17.2	16.6	17.7	11.0	2.2	a	3.0	16.3	0.8	101	96	127
Sweden	20.3	18.8	21.8	9.8	4.7	0.1	3.8	17.0	3.2	113	105	159
Switzerland	16.8	17.1	16.5	9.6	3.2	0.3	2.1	16.2	0.6	m	m	m
Turkey	12.6	13.3	11.2	7.7	3.1	a	1.5	12.6	n	133	129	146
United Kingdom	20.7	19.2	22.2	9.1	8.8	x(5)	2.8	15.3	5.4	121	120	125
United States	16.9	16.3	17.6	9.1	2.7	0.1	4.1	15.0	1.9	m	m	m
OECD average	***17.4***	***17.0***	***17.8***	***9.5***	***3.8***	***0.3***	***3.0***	***16.1***	***1.7***	***113***	***107***	***153***
EU19 average	***17.6***	***17.1***	***18.1***	***9.4***	***4.0***	***0.3***	***2.9***	***16.4***	***1.3***	***112***	***106***	***157***
Partner countries												
Brazil	16.7	16.0	17.3	10.9	3.0	a	1.3	16.7	n	m	m	m
Chile	15.0	15.1	14.8	8.1	3.9	a	m	15.0	n	m	m	m
Israel	15.7	15.4	16.1	8.5	3.1	0.1	2.9	15.3	0.4	m	m	m
Russian Federation	15.0	x(1)	x(1)	8.2	2.0	0.1	3.6	m	m	m	m	m

Note: Mismatches between the coverage of the population data and the student/graduate data mean that the participation/graduation rates for those countries that are net exporters of students may be underestimated (for instance, Luxembourg) and those that are net importers may be overestimated.

1. Excludes the German-speaking Community of Belgium.
2. Year of reference 2002.
3. The total (males + females) includes the 5-year-olds but is not reported in the distribution of 5-year-olds by sex.

Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.

Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

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C1

Table C1.2.
Enrolment rates, by age (2004)
Full-time and part-time students in public and private institutions

		Ending age of compulsory education	Number of years at which over 90% of the population are enrolled	Age range at which over 90% of the population are enrolled	Enrolment rates by age group: 4 and under as a percentage of the population aged 3-4	5-14 as a percentage of the population aged 5-14	15-19 as a percentage of the population aged 15-19	20-29 as a percentage of the population aged 20-29	30-39 as a percentage of the population aged 30-39	40 and over as a percentage of the population aged 40 and over
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
OECD countries	Australia	15	12	5 - 16	42.4	98.5	81.6	32.6	14.0	6.1
	Austria	15	13	5 - 17	65.8	98.5	79.0	18.9	3.2	0.3
	Belgium[1,2]	18	16	3 - 18	120.8	100.4	95.7	28.0	7.9	3.0
	Canada	16	m	m	m	m	m	m	m	m
	Czech Republic	15	15	4 - 18	84.3	99.7	91.4	18.6	3.5	0.3
	Denmark	16	12	4 - 16	87.6	98.0	84.5	36.0	7.2	1.6
	Finland	16	13	6 - 18	41.9	95.1	86.7	41.1	11.5	2.5
	France[1]	16	15	3 - 17	116.3	101.6	87.1	20.8	2.6	a
	Germany	18	12	6 - 17	76.9	97.9	88.8	27.9	2.9	0.2
	Greece	14.5	12	6 - 19	28.3	97.2	85.5	28.0	0.4	n
	Hungary	16	13	4 - 16	81.4	100.5	85.5	23.7	5.6	0.5
	Iceland	16	14	3 - 16	94.1	98.8	84.4	37.3	11.1	3.0
	Ireland	15	12	5 - 16	24.7	100.9	86.9	22.6	3.7	x(8)
	Italy[1]	15	13	3 - 15	104.9	101.6	78.8	19.4	3.1	x(8)
	Japan	15	14	4 - 17	81.4	100.7	m	m	m	m
	Korea	14	12	6 - 17	20.3	93.5	85.2	27.4	1.9	0.4
	Luxembourg	15	11	5 - 15	60.7	96.4	75.4	7.1	0.5	n
	Mexico	15	9	5 - 13	44.5	97.7	41.6	10.0	3.2	0.5
	Netherlands	18	12	5 - 16	36.6	99.6	86.1	25.5	2.9	0.8
	New Zealand	16	12	4 - 15	88.7	100.5	72.5	30.0	12.0	4.7
	Norway	16	12	6 - 17	83.1	98.3	85.7	29.4	7.2	1.8
	Poland	16	12	6 - 17	32.2	94.5	89.8	30.2	4.7	x(8)
	Portugal	14	11	5 - 15	72.0	104.1	72.7	22.6	4.0	0.7
	Slovak Republic	16	11	6 - 16	74.8	97.3	83.3	14.5	2.2	0.3
	Spain[1]	16	14	3 - 16	118.4	101.8	79.6	22.2	3.3	0.9
	Sweden	16	13	6 - 18	85.1	99.1	87.5	35.8	13.5	3.1
	Switzerland	15	12	5 - 16	23.1	99.6	83.3	21.5	3.7	0.4
	Turkey	14	6	8 - 13	2.6	81.2	39.8	9.6	1.5	0.2
	United Kingdom	16	13	4 - 16	76.7	100.4	79.0	27.8	15.6	7.8
	United States	17	11	6 - 16	52.9	97.3	76.5	23.4	5.2	1.5
	OECD average	*16*	*12*		*66.3*	*98.3*	*80.5*	*24.7*	*5.6*	*1.6*
	EU19 average	*16*	*13*		*73.5*	*99.2*	*84.7*	*25.1*	*5.3*	*1.5*
Partner countries	Brazil	14	10	7 - 16	32.8	93.0	79.5	22.1	8.4	2.3
	Chile	14	9	8 - 16	30.6	89.5	71.8	m	m	m
	Israel	15	12	5 - 16	106.2	96.6	64.6	20.3	5.1	0.9
	Russian Federation	15	9	7 - 14	m	90.4	m	m	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. Mismatches between the coverage of the population data and the student/graduate data mean that the participation/graduation rates for those countries that are net exporters of students may be underestimated (for instance, Luxembourg) and those that are net importers may be overestimated.

1. The rates "4 and under as a percentage of the population aged 3 to 4 years old" is overestimated. A significant number of students are younger than 3 years old. The net rates between ages 3 and 5 are around 100%.

2. Excludes the German-speaking Community of Belgium.

Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.

Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

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Table C1.3.
Transition characteristics from age 15 to 20, by level of education (2004)
Net enrolment rates (based on head counts)

		Graduation age at the upper secondary level of education	Age 15: Secondary education	Age 16: Secondary education	Age 16: Post-secondary non-tertiary education	Age 16: Tertiary education	Age 17: Secondary education	Age 17: Post-secondary non-tertiary education	Age 17: Tertiary education	Age 18: Secondary education	Age 18: Post-secondary non-tertiary education	Age 18: Tertiary education	Age 19: Secondary education	Age 19: Post-secondary non-tertiary education	Age 19: Tertiary education	Age 20: Secondary education	Age 20: Post-secondary non-tertiary education	Age 20: Tertiary education
			(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
OECD countries	**Australia**	17-18	98	93	n	n	80	1	4	38	3	26	25	3	35	20	3	37
	Austria	17-19	92	90	n	n	77	13	n	47	24	5	18	14	14	6	5	21
	Belgium[1]	18-19	102	102	n	n	104	n	1	48	7	36	23	8	46	13	3	48
	Canada[2]	18	m	m	n	n	m	6	4	m	7	19	m	5	37	m	2	37
	Czech Republic	18-19	100	100	n	n	98	n	n	82	5	4	35	12	23	7	8	34
	Denmark	19-20	98	93	n	a	86	n	n	81	n	n	60	n	4	36	n	12
	Finland	19	99	96	n	n	95	n	n	93	n	n	34	n	18	17	n	32
	France	18-20	98	96	n	n	89	n	2	52	n	28	25	n	40	10	n	43
	Germany	19	98	97	n	n	91	n	1	83	n	3	42	18	10	20	14	18
	Greece	18	92	97	a	a	68	n	n	17	3	56	34	3	58	n	4	60
	Hungary	18-20	99	94	1	n	89	1	n	54	10	13	20	18	30	10	12	35
	Iceland	18-20	99	93	n	n	83	n	n	75	n	n	69	n	1	39	n	17
	Ireland	17-18	100	96	1	n	76	5	6	29	17	37	3	15	41	1	13	42
	Italy	17-19	95	88	a	a	81	a	a	71	a	6	18	1	35	6	1	36
	Japan	18	101	97	a	a	95	a	m	3	m	m	1	m	m	m	m	m
	Korea	17-18	95	98	a	n	93	a	2	12	a	57	1	a	69	n	a	64
	Luxembourg	18-19	90	84	n	m	81	n	m	69	n	m	51	1	m	30	1	m
	Mexico	18	59	50	a	a	38	a	3	18	a	12	8	a	17	4	a	18
	Netherlands	18-19	101	97	n	n	81	n	6	59	n	19	37	n	28	25	n	33
	New Zealand	17-18	96	85	1	1	67	2	4	27	4	25	12	3	35	9	3	40
	Norway	18-19	99	94	n	n	93	n	n	85	n	n	40	1	13	19	1	29
	Poland	18-20	97	97	a	a	94	n	x(10)	86	n	1	39	6	30	17	9	41
	Portugal	18	89	79	n	a	74	n	a	45	n	19	28	n	26	15	n	30
	Slovak Republic	18-19	99	95	n	n	89	n	n	79	n	3	31	1	22	4	1	28
	Spain	17-18	100	92	a	n	81	a	n	41	a	28	22	a	36	12	a	38
	Sweden	19	99	97	n	n	97	n	n	94	n	1	29	1	13	19	1	24
	Switzerland	18-20	97	90	1	n	86	1	n	76	2	2	46	3	8	20	4	16
	Turkey	16-17	58	53	a	n	31	a	4	16	a	13	x(8)	a	20	m	a	21
	United Kingdom	16-18	102	94	x(2)	n	81	x(5)	2	38	x(8)	23	23	x(11)	32	18	x(14)	34
	United States	18	97	92	m	n	83	m	3	21	m	36	5	m	45	1	m	46
	OECD average		*95*	*91*	*n*	*n*	*82*	*1*	*2*	*53*	*3*	*17*	*28*	*4*	*28*	*14*	*3*	*33*
	EU19 average		*97*	*94*	*n*	*n*	*86*	*1*	*1*	*61*	*4*	*16*	*30*	*5*	*28*	*14*	*4*	*34*
Partner countries	**Brazil**	17-18	88	86	a	n	80	a	1	59	a	5	40	a	9	27	a	11
	Chile	18	96	92	a	n	83	a	n	61	a	m	20	a	m	6	a	m
	Israel	17	97	95	n	n	88	n	n	18	n	8	2	1	12	1	1	13
	Russian Federation	18	74	57	m	m	16	m	m	1	m	m	m	m	m	m	m	m

Note: Mismatches between the coverage of the population data and the student/graduate data mean that the participation/graduation rates for those countries that are net exporters of students may be underestimated (for instance, Luxembourg) and those that are net importers may be overestimated.
1. Excludes the German-speaking Community of Belgium.
2. Year of reference 2002.
Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006).*
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

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INDICATOR C2

PARTICIPATION IN SECONDARY AND TERTIARY EDUCATION

This indicator shows patterns of participation at the secondary level of education and the percentage of the youth cohort that will enter different types of tertiary education during their lives. Entry and participation rates reflect both the accessibility of tertiary education and the perceived value of attending tertiary programmes. This indicator also focuses on the comparative role played by public and private providers of education across OECD and partner countries.

Key points

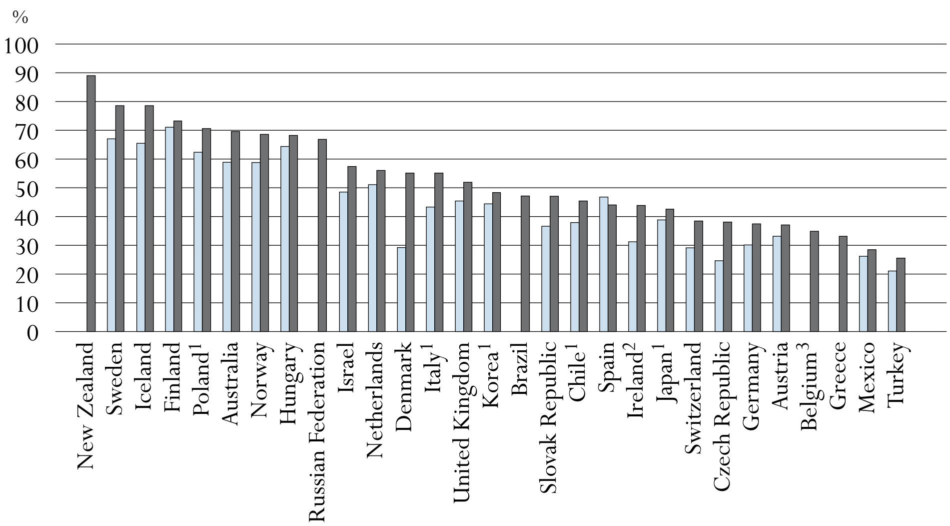
Chart C2.1a. Entry rates into tertiary-type A education (2000, 2004)

Sum of net entry rates for each year of age

The chart shows the proportion of people who enter into tertiary-type A education for the first time, and the change between 2000 and 2004. Entry rates measure the inflow to education at a particular time rather than the stock of students who are already enrolled. They have the advantage over enrolment rates in that the comparability between countries in not distorted by different course lengths.

□ 2000 ■ 2004

In Australia, Finland, Hungary, Iceland, New Zealand, Norway, Poland and Sweden, as well as the partner country the Russian Federation, more than 60% of young people entered tertiary-type A programmes in 2004. Entry rates in tertiary type A increased by more than 10 percentage points between 2000 and 2004 in Australia, the Czech Republic, Denmark, Iceland, Ireland, Italy, the Slovak Republic and Sweden.



1. Entry rate for tertiary-type A programmes calculated as gross entry rate. This applies to Italy and Poland only in 2000.
2. Full-time entrants only.
3. Excludes the German-speaking Community of Belgium.

Countries are ranked in descending order of the entry rates for tertiary-type A education in 2004.

Source: OECD. Table C2.1. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

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Other highlights of this indicator

- Today, 53% of young people in OECD countries will enter tertiary-type A programmes during their lifetime whereas 2% of young people in the 17 OECD countries for which data are comparable, will enter advanced and research programmes during their lifetime.
- The proportion of students who enter tertiary-type B programmes is generally smaller than for tertiary-type A programmes. In OECD countries with available data, 16% of young people, on average, will enter tertiary-type B programmes. The figures range from 4% or less in Italy, Mexico, Norway, Poland and the Slovak Republic to more than 30% in Belgium, Japan, Korea and New Zealand. Changes from 2000 to 2004 are rather contrasted between countries.
- In Belgium, and to a lesser extent in Japan and Korea, wide access to tertiary-type B programmes counterbalances comparatively low rates of entry into tertiary-type A programmes. By contrast, Iceland, Norway, Poland and Sweden have entry rates above the OECD average for tertiary-type A programmes and comparatively very low rates of entry into tertiary-type B programmes. New Zealand stands out as a country with entry rates at both levels that are the highest among OECD countries.
- Traditionally, students typically enter tertiary-type A programmes immediately after having completed upper secondary education. This remains true in many OECD countries.
- In 14 OECD countries, the majority of upper secondary students attend vocational or apprenticeship programmes. Vocational education is school based in most OECD countries.
- Across OECD countries, education at all levels is still predominantly a publicly provided service – 89% of students in primary education are in public institutions – though the private sector is becoming more prominent beyond compulsory education. Privately managed schools now enrol, on average, 11% of primary students, 15% of lower secondary students and 20% of upper secondary students.
- On average among OECD countries, 12% of students enrolled at tertiary-type A education (including advanced research programmes) will follow their studies in independent private institutions. This proportion is two times higher than the EU19 country average.

Policy context

A range of factors, including an increased risk of unemployment and other forms of exclusion for young people with insufficient education, has strengthened the incentive for young people to stay enrolled beyond the end of compulsory education and to graduate from upper secondary education. Graduation from upper secondary education is also becoming the norm in most OECD countries. Most of these upper secondary programmes are primarily designed to prepare students for tertiary studies (see Indicator A2).

High tertiary entry and participation rates help to ensure the development and maintenance of a highly educated population and labour force. Moreover, tertiary education programmes are generally associated with better access to employment (see Indicator A8) and higher earnings (see Indicator A9). Rates of entry into tertiary education are a partial indication of the degree to which a population is acquiring high-level skills and knowledge valued by the labour market in today's knowledge society.

As students have become more aware of the economic and social benefits of tertiary education, entry rates into tertiary-type A and tertiary-type B programmes have risen (see Indicator A3). Tertiary-type A programmes dominate the stock of tertiary enrolments and therefore the volume of resources required as they tend to be longer than other tertiary programmes (see Indicator B1, Table B1.3).

The continued growth in participation and a widening diversity of the backgrounds and interests of those aspiring to tertiary studies means that tertiary institutions will need to expand admissions and adapt their programmes and teaching to the diverse needs of new generations of students.

Evidence and explanations

The curricular content in upper secondary programmes varies, depending on the type of education or occupation for which the programmes are designed. Students can also choose from a wide range of post-secondary programmes as well (see Indicator C1).

Overall access to tertiary education

In OECD countries, tertiary programmes vary in the extent to which they are theoretically based and designed to prepare students for advanced research programmes or professions with high skill requirements (tertiary-type A), or focus on occupationally specific skills so that students can directly enter the labour market (tertiary-type B). For a classification of national educational programmes into these categories, see Annex 3 (*www.oecd.org/edu/eag2006*).

Today, 53% of young people in OECD countries (52% in the EU19 countries) will enter tertiary-type A programmes during their lifetime, assuming that current entry rates continue. In fact, in Australia, Finland, Hungary, Iceland, New Zealand, Norway, Poland and Sweden, as well as in the partner country the Russian Federation, more than 60% of young people enter tertiary-type A programmes. The United States has an entry rate of 63%, but both type A and type B programmes are included in the type A columns as noted in Table C2.1.

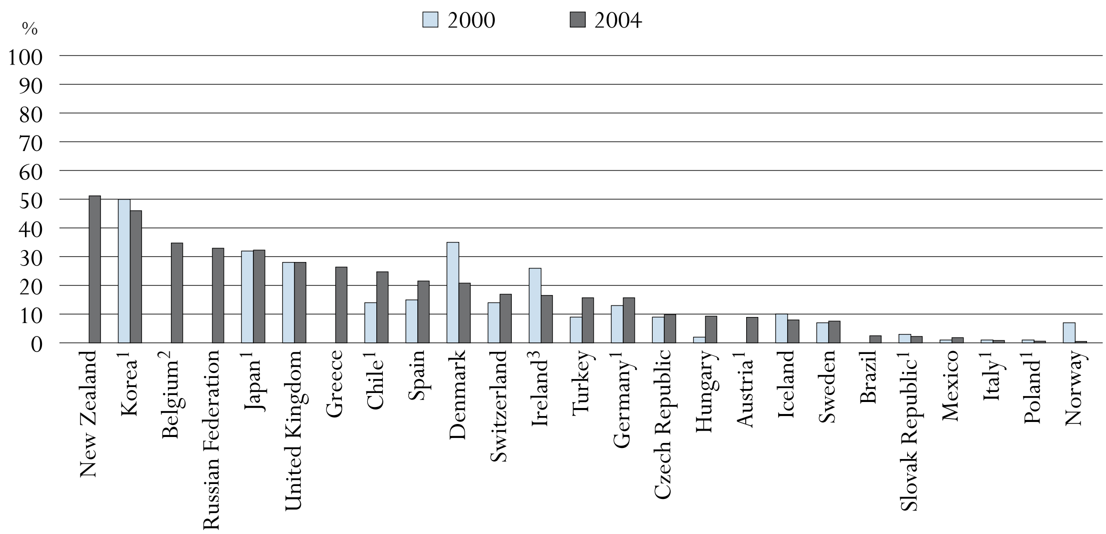
In other OECD countries, the rates of first-time entry into tertiary-type A programmes are considerably lower: the estimated first-time entry rates for Austria, Belgium, the Czech Republic, Germany, Greece and Switzerland are around 35%. The first-time entry rates are particularly low in Mexico and Turkey with respectively 29% and 26%.

The proportion of people who enter tertiary-type B programmes is generally smaller than the proportion entering tertiary-type A programmes. In OECD countries with available data, 16% of young people, on average, will enter tertiary-type B programmes. The OECD country average does not differ significantly from the EU19 country average (13%). The figures range from 4% or less in Italy, Mexico, Norway, Poland and the Slovak Republic, and the partner country Brazil, to more than 30% in Belgium and Japan, and the partner country the Russian Federation, and more than 45% in Korea and New Zealand (Table C2.1. and Chart C2.1b).

In Belgium and to a lesser extent in Japan and Korea, wide access into tertiary-type B programmes counterbalances comparatively low entry rates into tertiary-type A programmes. Other OECD countries, most notably Iceland, Norway, Poland and Sweden, have entry rates above the OECD average for tertiary-type A programmes, and comparatively very low rates of entry into tertiary-type B programmes. New Zealand stands out as a country with entry rates at both levels that are the highest among OECD countries.

On average, in all OECD countries with comparable data, 20% more of today's young people enter into tertiary-type A programmes compared to 2000. Entry rates in tertiary-type A education increased by more than 10 percentage points between 2000 and 2004 in Australia, the Czech Republic, Denmark, Iceland, Ireland, Italy, the Slovak Republic and Sweden. Spain is the only OECD country that shows a slight decrease of entry rates to tertiary-type A programmes, although this decrease is counterbalanced by a significant increase of entry rates in tertiary-type B programmes between 2000 and 2004 (Table C2.1. and Chart C2.1a).

Chart C2.1b. Entry rates into tertiary-type B education (2000, 2004)
Sum of net entry rates for each year of age



1. Entry rate for tertiary-type B programmes calculated as gross entry rate. This applies to Italy, Poland and the Slovak Republic only in 2000.
2. Excludes the German-speaking Community of Belgium.
3. Full-time entrants only.
Countries are ranked in descending order of the entry rates for tertiary-type B education in 2004.
Source: OECD. Table C2.1. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).
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Changes of net entry rates into tertiary-type B programmes between 2000 and 2004 vary among OECD countries, with an increase on average of only two percentage points over this period. This entry rate has slightly increased in most countries, except Denmark, Iceland, Ireland, Korea, Norway and the Slovak Republic, where it has decreased, and in Italy, Japan and Poland where it has been stable (Chart C2.1b). The reclassification of tertiary-type B to tertiary-type A programmes in Denmark after 2000 partly explained the changes observed between 2000 and 2004 (Charts C2.1a and C2.1b).

Almost 2% of today's young people in the 17 OECD countries with comparable data will enter advanced and research programmes during their lifetime. The figures range from less than 1% in Australia, Austria, Iceland, Mexico, Norway and in the partner country Chile, to 3% or more in the Slovak Republic, Sweden and Switzerland (Table C2.1).

Rates of entry into tertiary education should also be considered in light of participation in post-secondary non-tertiary programmes, which are an important alternative to tertiary education in some OECD countries (see Indicator C1).

Age of new entrants into tertiary education

The age structure of entrants into tertiary education varies among OECD countries. Upper secondary graduates may have gone directly to the labour market before enrolling in a tertiary education programme. People entering tertiary-type B programmes may also enter tertiary-type A programmes later in their lives. Tertiary-type A and B entry rates cannot therefore be added together to obtain overall tertiary-level entry rates because entrants might be counted twice.

Traditionally, students enter tertiary-type A programmes immediately after having completed upper secondary education, and this remains true in many OECD countries. For example, in Belgium, the Czech Republic, Greece, Ireland, Italy, the Netherlands, Poland and Spain, more than 80% of all first-time entrants into tertiary-type A programmes are under 23 years of age (Table C2.1).

In other OECD and partner countries, the transition to the tertiary level is often delayed, in some cases by some time spent in the labour force. In these countries, first-time entrants into tertiary-type A programmes are typically older and show a much wider range of age at entry. In Denmark, Iceland, Sweden, the United Kingdom and the partner countries Brazil and Israel, more than half the students enter this level for the first time at the age of 22 or older (Table C2.1). The proportion of older first-time entrants to tertiary-type A programmes may reflect, among other factors, the flexibility of these programmes and their suitability to students outside the typical or modal age cohort. It may also reflect a specific view of the value of work experience for higher education studies, which is characteristic of the Nordic countries and common in Australia, the Czech Republic, Hungary, New Zealand and Switzerland, where a sizeable proportion of new entrants is much older than the typical age of entry. In Australia, Hungary, Iceland, New Zealand and the Nordic countries, more than 20% of first-time entrants are aged 27 or older.

Participation in upper secondary vocational education

In most OECD countries, students do not follow a uniform curriculum at the upper secondary level. Programmes at the upper secondary level are subdivided into three categories based on the degree to which they are oriented towards a specific class of occupations or trades and lead to a labour-market relevant qualification:

- Type 1 (general) education programmes are not designed explicitly to prepare participants for specific occupations or trades, or for entry into further vocational or technical education programmes. Less than 25% of the programme content is vocational or technical.
- Type 2 (pre-vocational or pre-technical) education programmes are mainly designed to introduce participants to the world of work and to prepare them for entry into further vocational or technical education programmes. Successful completion of such programmes does not lead to a labour-market relevant vocational or technical qualification. At least 25% of the programme content should be vocational or technical.
- Type 3 (vocational or technical) education programmes prepare participants for direct entry into specific occupations without further training. Successful completion of such programmes leads to a labour-market relevant vocational or technical qualification.

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 studies at the tertiary level, while in other countries many general programmes do not provide direct access to further education. In all OECD countries, students can choose vocational, pre-vocational or general programmes.

In 14 OECD countries, the majority of upper secondary students attend vocational or apprenticeship programmes. In OECD countries with dual-system apprenticeship programmes (Austria, Germany, Luxembourg, the Netherlands and Switzerland) and in Australia, Belgium, the Czech Republic, Finland, Italy, Norway, the Slovak Republic and the United Kingdom, 60% or more of upper secondary students are enrolled in pre-vocational or vocational programmes. The exceptions are Hungary, Iceland, Spain and Turkey where the majority of students are enrolled in general programmes even though dual-system apprenticeship programmes are offered (Table C2.5).

In most OECD countries, vocational education is school based, with the exception of the United Kingdom, where many vocational programmes correspond to further education programmes. In Austria, the Czech Republic, Iceland and the Slovak Republic, however, about half of the vocational programmes have combined school-based and work-based elements. In Denmark, Germany, Hungary and Switzerland, around 80% or more of students enrolled in vocational programmes have both school-based and work-based elements.

Beyond the secondary level, a number of options exist for further education. One avenue is relatively short, vocationally oriented programmes at the tertiary level. Another is theoretically based programmes, designed to provide sufficient qualifications for entry into advanced research programmes and professions with high skill requirements. These are mainly, but not exclusively, taught at universities.

Participation in tertiary education

Enrolment rates provide another perspective on participation in tertiary education. They reflect both the total number of individuals entering tertiary education and the duration of their studies. The sum of net enrolment rates for each year of age, referred to as the expectancy of tertiary education, gives an overall measure of the amount of tertiary education undertaken by an age cohort rather than by individual participants. In contrast to entry rates, expectancy of tertiary education, which is based on enrolments in both tertiary-type A and tertiary-type B programmes, can be added together.

On average in OECD countries, a 17-year-old can expect to receive three years of tertiary education of which 2.3 years will be full-time. In Finland, Korea, New Zealand and the United States, a student can expect to receive at least four years of tertiary education (full-time and part-time). By contrast, the expectancy of tertiary education is less than two years in Mexico, the Slovak Republic and Turkey, and the partner country Brazil (Table C2.2).

On average in OECD countries, expectancy of enrolment in tertiary-type A programmes (2.4 years) is far higher than that in tertiary-type B programmes (0.5 years), partly because of the shorter duration of tertiary-type B programmes.

Trends in participation

At the tertiary level, changes in enrolment rates are less closely tied to changes in the size of the relevant age cohort than are such changes in primary and secondary education. Chart C2.2 breaks down the change in the number of students enrolled into two components: changes in cohort sizes and changes in enrolment rates.

Participation in tertiary education grew in absolute terms in all OECD countries between 1995 and 2004, on average by 50%. In half of the OECD countries with available data, the number of students enrolled in tertiary education increased by over 30%, and more than doubled in Greece, Hungary, Iceland and Poland (Table C2.2).

Growing demand, reflected in higher enrolment rates, is the main factor driving expansion in tertiary enrolments. Australia, Canada, Iceland, Mexico and Turkey are the only OECD countries where population increases have significantly contributed to higher tertiary enrolments. The actual increase in tertiary students would have been significantly higher in many OECD countries (in particular Denmark, Germany, Hungary and Korea) had the population not decreased.

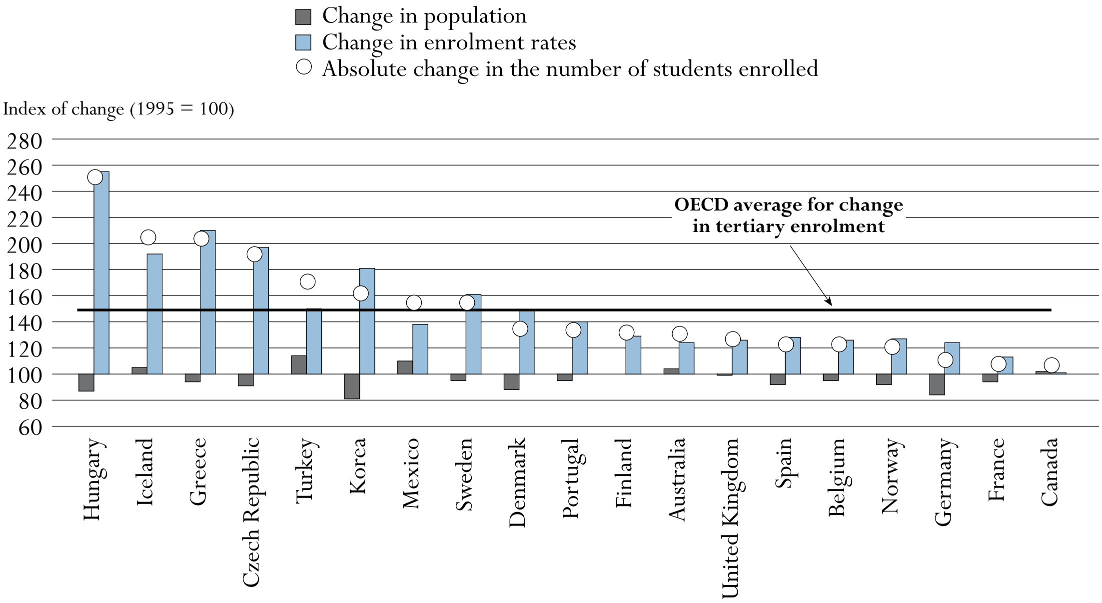
The relative size of the public and the private sector

In OECD and partner countries, education at all levels is still predominantly publicly provided. On average, 89% of primary education students are enrolled in public institutions in the OECD countries, while the figures decline a bit in secondary education, with 83% of lower secondary students and 80% of upper secondary students being taught in public institutions. Private providers generally play a more significant role in tertiary education, with 33% of students of tertiary-type B programmes and 23% of students in tertiary-type A and advanced research programmes studying in private institutions. Moreover, only in tertiary education do independent private providers cater to a significant share of the student population (Tables C2.3 and C2.4).

The pattern varies for individual countries. Belgium and the Netherlands stand out as the only countries where private providers dominate primary and secondary education, with over 50% of students enrolled in the private sector. In both countries (as is generally the case across all countries at primary and secondary level), the private providers are institutions that receive more than 50% of their funding from public sources but have autonomy in their governance. Australia, and Spain comprise a group where similar institutions enrol about 20% or more

Chart C2.2. Change in tertiary enrolment relative to changing participation rates and demography (1995-2004)

Index of change in the number of students enrolled at the tertiary level between 1995 and 2004 and the relative contribution of demographic changes and changing enrolment rates (1995 = 100)



Countries are ranked in descending order of the absolute change in tertiary enrolment.
Source: OECD. Table C2.2. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/230327441661

of primary and secondary students. Such government-dependent providers also become dominant at the upper secondary level in Korea (50% of students) and the United Kingdom (72% of students). In the partner country Chile, the ratio is about 40% for the three levels of education.

At primary and secondary levels, independent private providers (those who receive less than 50% of their funds from government sources) take on a sizeable role only in Japan and Mexico with respectively 30% and 21 % of upper secondary students.

At the tertiary level, the pattern is quite different. The extent of private provision at the tertiary level is greater than it is at the primary and secondary levels, especially for tertiary-type B provision, where private sector enrolments account for around one-third of the total. In both the Netherlands and the United Kingdom, all tertiary education is provided through government-dependent private institutions and such providers also receive more than half of tertiary students in Belgium and the partner country Israel. Independent private providers are more prominent at the tertiary level than at the pre-tertiary levels (an average of 12% of tertiary-types A and B students attend such institutions). This is particularly the case in Japan and Korea, where around three-quarters or more of students are enrolled in such institutions. Independent private providers also have a significant share of the provision amongst tertiary-type B programmes in Switzerland. Although the share is also high in Poland and Portugal, the total numbers enrolled in these programmes are relatively small.

Definitions and methodologies

Data for the school year 2003-2004 are based on the UOE data collection on education statistics administered annually by the OECD.

Table C2.1 shows the sum of net entry rates for all ages. The net entry rate for a specific age is obtained by dividing the number of first-time entrants of that age to 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 the proportion of people in a synthetic age cohort who enter tertiary education, irrespective of changes in population sizes and of differences between OECD countries in the typical entry age. Table C2.1 also shows the 20th, 50th and 80th percentiles of the age distribution of first-time entrants, *i.e.* the age below which 20, 50 and 80% of first-time entrants are to be found.

New (first-time) entrants are students who enrol at the relevant level of education for the first time. Foreign students enrolling for the first time in a post-graduate programme are considered first-time entrants.

Not all OECD countries can distinguish between students entering a tertiary programme for the first time and those transferring between different levels of tertiary education or repeating or re-entering a level after an absence. Thus first-time entry rates for each level of tertiary education cannot be added up to a total tertiary-level entrance rate because it would result in counting entrants twice.

Table C2.2 shows the expected number of years for which 17-year-olds will be enrolled in tertiary education, or the sum of net enrolment rates for people aged 17 and over (divided by 100). This measure is a function of the number of participants in tertiary education and the duration of tertiary studies. Since the denominator also includes those who have never participated in tertiary education, the indicator cannot be interpreted as the average number of years an individual student requires to complete tertiary education.

Table C2.5 shows the distribution of enrolled students in upper secondary education by programme orientation. Pre-vocational and vocational programmes include both school-based programmes and combined school- and work-based programmes that are recognised as part of the education system. Entirely work-based education and training that is not overseen by a formal education authority is not taken into account.

Data for 1994-1995 are based on a special survey carried out in OECD countries in 2000. OECD countries were asked to report according to the ISCED-97 classification.

Table C2.1.
Entry rates into tertiary education and age distribution of new entrants (2004)
Sum of net entry rates for each year of age, by gender and programme destination

		Tertiary-type B			Tertiary-type A						Advanced research programmes			Net entry rates (2000)			
		Net entry rates			Net entry rates			Age at:			Net entry rates			Tertiary-type B	Tertiary-type A		
		M+F	Males	Females	M+F	Males	Females	20th percentile[1]	50th percentile[1]	80th percentile[1]	M+F	Males	Females	M+F	M+F	Males	Females
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
OECD countries	Australia	m	m	m	70	65	74	18.6	20.9	27.4	0.9	1.1	0.8	m	59	52	66
	Austria[2]	9	8	10	37	33	41	19.3	20.6	23.3	0.6	0.8	n	m	33	30	37
	Belgium[3]	35	28	42	34	33	35	18.3	18.9	22.4	m	m	m	m	m	m	m
	Canada	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Czech Republic	10	7	13	38	36	41	19.5	20.4	22.6	2.6	3.2	1.9	9	25	26	24
	Denmark	21	20	21	55	43	68	20.9	22.6	27.1	2.0	2.2	1.7	35	29	27	32
	Finland	a	a	a	73	65	82	19.8	21.5	27.3	m	m	m	a	71	62	81
	France	m	m	m	m	m	m	m	m	m	m	m	m	21	37	30	44
	Germany[2]	16	13	19	37	38	37	20.1	21.4	24.1	m	m	m	13	30	30	30
	Greece	26	26	27	33	30	37	18.1	18.6	19.3	2.2	2.5	1.9	m	m	m	m
	Hungary	9	7	11	68	61	76	19.2	20.9	27.6	1.8	1.9	1.6	2	65	60	70
	Iceland	8	8	8	79	56	102	20.9	23.5	<40	0.6	n	0.8	10	66	48	84
	Ireland[4]	17	18	15	44	39	50	18.3	19.1	20.0	m	m	m	26	31	29	34
	Italy[2, 5]	1	1	1	55	49	62	19.2	19.8	22.1	2.0	1.9	2.0	1	43	38	49
	Japan[2, 5]	32	24	41	43	49	36	m	m	m	1.3	1.8	0.7	32	39	47	30
	Korea[2, 5]	46	44	48	48	52	45	m	m	m	1.8	2.3	1.3	50	45	48	41
	Luxembourg	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Mexico	2	2	1	29	28	29	18.4	19.6	23.7	0.2	0.2	0.1	1	26	27	26
	Netherlands	a	a	a	56	52	61	18.4	19.8	22.7	m	m	m	1	51	48	54
	New Zealand	51	45	57	89	74	104	18.9	21.9	<40	1.9	1.8	1.9	m	m	m	m
	Norway	1	1	1	69	58	80	20.0	21.2	29.0	0.1	0.2	0.1	7	59	45	74
	Poland[5]	1	n	1	71	66	76	19.5	20.4	22.9	m	m	m	1	62	x(14)	x(14)
	Portugal	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Slovak Republic[2]	2	1	4	47	42	52	19.5	20.9	26.9	3.0	3.5	2.5	3	37	38	36
	Spain	22	20	23	44	37	52	18.4	19.1	22.4	m	m	m	15	47	41	53
	Sweden	8	8	8	79	64	94	20.3	22.8	<40	3.0	3.1	2.9	7	67	54	81
	Switzerland	17	20	14	38	39	38	20.0	21.6	26.1	4.4	5.2	3.5	14	29	32	26
	Turkey	16	19	13	26	29	22	18.6	20.0	23.6	n	0.6	n	9	21	26	17
	United Kingdom	28	m	m	52	m	m	18.8	22.4	25.6	2.2	2.5	2.0	28	46	42	49
	United States	x(4)	x(5)	x(6)	63	56	71	19.4	21.2	24.0	m	m	m	14	43	37	49
	OECD average	*16*	*14*	*16*	*53*	*48*	*59*				*1.7*	*1.9*	*1.4*	*14*	*44*	*40*	*47*
	EU19 average	*13*	*10*	*13*	*52*	*46*	*58*				*2.2*	*2.4*	*1.8*	*12*	*45*	*40*	*48*
Partner countries	Brazil	2	3	2	47	42	53	19.7	23.7	<40	1.3	x(10)	x(10)	m	m	m	m
	Chile[2, 5, 6]	25	28	21	46	44	47	m	m	m	0.2	0.2	0.2	14	38	40	35
	Israel	m	m	m	58	52	64	21.4	23.7	27.8	m	m	m	31	49	44	54
	Russian Federation	33	x(1)	x(1)	67	x(4)	x(4)	m	m	m	2.0	x(10)	x(10)	m	m	m	m

Note: Mismatches between the coverage of the population data and the student/graduate data mean that the participation/graduation rates for those countries that are net exporters of students may be underestimated (for instance, Luxembourg) and those that are net importers may be overestimated.

1. Respectively 20%, 50% and 80% of new entrants are below this age.
2. Entry rate for tertiary-type B programmes calculated as gross entry rate. This applies to the Slovak Republic only in 2000.
3. Excludes the German-speaking Community of Belgium.
4. Full-time entrants only.
5. Entry rate for tertiary-type A programmes calculated as gross entry rate. This applies to Italy and Poland only in 2000.
6. Year of reference: 1999.

Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

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Table C2.2.

Expected years in tertiary education and changes in tertiary enrolment (2004)

Expected years under current conditions, by gender and mode of study, and index of change (1995=100)

		Tertiary-type B education			Tertiary-type A education			Total tertiary education (type A, B and advanced research programmes)			Change in enrolment (1995 = 100)		
		Full-time and part-time		Full-time	Full-time and part-time		Full-time	Full-time and part-time		Full-time		Attributable to:	
		M + W	Women	M + W	M + W	Women	M + W	M + W	Women	M + W	Total tertiary education	Change in population	Change in enrolment rates
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
OECD countries	Australia	0.6	0.6	0.2	2.8	3.2	1.9	3.6	3.9	2.2	128	104	124
	Austria	0.3	0.3	x(1)	1.9	2.0	1.9	2.3	2.5	x(7)	100	m	m
	Belgium[1]	1.6	1.8	1.1	1.4	1.4	1.4	3.0	3.3	2.5	120	95	126
	Canada[2]	0.7	0.8	0.6	2.1	2.5	1.5	2.9	3.3	2.1	104	102	101
	Czech Republic	0.2	0.3	0.2	1.8	1.8	1.7	2.1	2.2	2.1	189	91	197
	Denmark	0.4	0.4	0.3	2.7	3.3	2.7	3.2	3.7	3.0	132	88	149
	Finland	n	n	n	4.2	4.6	2.6	4.5	4.9	2.6	129	100	129
	France	0.7	0.7	0.7	2.0	2.2	2.0	2.8	3.1	2.8	105	94	113
	Germany	0.3	0.4	0.3	2.0	1.9	2.0	2.3	2.3	2.3	108	84	124
	Greece	1.4	1.4	1.4	2.4	2.8	2.4	3.9	4.3	3.9	201	94	210
	Hungary	0.2	0.2	0.1	2.7	3.2	1.5	2.9	3.4	1.6	248	87	255
	Iceland	0.2	0.2	0.1	3.3	4.3	2.4	3.5	4.5	2.5	202	105	192
	Ireland	x(7)	x(8)	x(9)	x(7)	x(8)	x(9)	2.9	3.3	2.2	147	m	m
	Italy	n	n	n	2.8	3.2	2.8	2.9	3.3	2.9	116	m	m
	Japan	m	m	m	m	m	m	m	m	m	m	m	m
	Korea	1.7	1.3	1.7	2.6	2.0	2.6	4.3	3.4	4.3	159	81	181
	Luxembourg	m	m	m	m	m	m	m	m	m	m	m	m
	Mexico	n	n	n	1.1	1.1	1.1	1.2	1.2	1.2	152	110	138
	Netherlands	a	a	a	2.7	2.8	2.3	2.7	2.8	2.3	m	m	m
	New Zealand	1.0	1.2	0.4	3.1	3.7	1.6	4.2	4.9	2.0	m	m	m
	Norway	0.1	0.1	0.1	3.4	4.2	2.5	3.6	4.3	2.6	118	92	127
	Poland	n	n	n	3.2	3.8	1.9	3.3	3.9	2.0	269	m	m
	Portugal	n	n	n	2.5	2.9	2.5	2.6	3.0	2.6	131	95	140
	Slovak Republic	0.1	0.1	n	1.7	1.9	1.1	1.9	2.0	1.2	m	m	m
	Spain	0.4	0.5	0.4	2.5	2.8	2.2	3.0	3.4	2.8	120	92	128
	Sweden	0.1	0.1	0.1	3.5	4.2	1.8	3.8	4.6	2.1	152	95	161
	Switzerland	0.4	0.3	0.1	1.5	1.4	1.4	2.1	1.9	1.6	m	m	m
	Turkey	0.4	0.3	0.4	1.1	0.9	1.1	1.5	1.3	1.5	168	114	150
	United Kingdom	0.6	0.8	0.2	2.1	2.3	1.5	2.8	3.2	1.8	124	99	126
	United States	0.9	1.1	0.4	3.2	3.6	2.0	4.1	4.8	2.5	m	m	m
	OECD average	*0.5*	*0.5*	*0.3*	*2.4*	*2.7*	*1.9*	*3.0*	*3.3*	*2.3*	*149*	*96*	*151*
	EU19 average	*0.4*	*0.4*	*0.3*	*2.5*	*2.8*	*2.0*	*2.9*	*3.3*	*2.4*	*~*	*~*	*~*
Partner countries	Brazil	m	m	m	1.3	1.4	x(4)	1.3	1.5	1.3	m	m	m
	Chile	m	m	m	m	m	m	m	m	m	m	m	m
	Israel	0.5	0.5	0.5	2.3	2.7	1.9	2.9	3.3	2.5	m	m	m
	Russian Federation	m	m	m	m	m	m	m	m	m	m	m	m

Note: Mismatches between the coverage of the population data and the student/graduate data mean that the participation/graduation rates for those countries that are net exporters of students may be underestimated (for instance Luxembourg) and those that are net importers may be overestimated.

1. Excludes the German-speaking Community of Belgium.

2. Year of reference 2002.

Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.

Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/230327441661

Table C2.3
Students in tertiary education by type of institution or mode of study (2004)
Distribution of students, by mode of enrolment, type of institution and programme destination

		Type of institution						Mode of study			
		Tertiary-type B education			Tertiary-type A and advanced research programmes			Tertiary-type B education		Tertiary-type A and advanced research programmes	
		Public	Government-dependent private	Independent private	Public	Government-dependent private	Independent private	Full-time	Part-time	Full-time	Part-time
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
OECD countries	Australia	97.1	2.9	n	99.6	n	0.4	35.8	64.2	67.5	32.5
	Austria	69.4	30.6	n	90.3	9.7	n	m	m	100.0	n
	Belgium	47.6	52.4	n	41.4	58.6	n	68.8	31.2	93.4	6.6
	Canada[1]	m	m	m	m	m	m	87.5	12.5	70.1	29.9
	Czech Republic	67.9	31.3	0.8	95.3	a	4.7	95.9	4.1	95.9	4.1
	Denmark	99.1	0.9	a	98.9	1.1	a	63.3	36.7	98.4	1.6
	Finland	70.4	29.6	a	89.4	10.6	a	100.0	a	56.8	43.2
	France	72.0	8.5	19.6	87.3	0.8	11.9	100.0	a	100.0	a
	Germany	63.9	36.1	x(2)	100.0	a	a	83.2	16.8	100.0	a
	Greece	100.0	a	a	100.0	a	a	100.0	a	100.0	a
	Hungary	60.4	39.6	a	85.8	14.2	a	78.9	21.1	52.4	47.6
	Iceland	60.5	39.5	n	87.9	12.1	n	53.4	46.6	75.1	24.9
	Ireland	92.8	a	7.2	92.8	a	7.2	60.0	40.0	84.2	15.8
	Italy	85.2	a	14.8	93.7	a	6.3	100.0	n	100.0	n
	Japan	8.8	a	91.2	27.6	a	72.4	97.2	2.8	89.9	10.1
	Korea	15.0	a	85.0	22.5	a	77.5	m	m	m	m
	Luxembourg	m	m	m	m	m	m	m	m	m	m
	Mexico	96.3	a	3.7	66.1	a	33.9	100.0	a	100.0	a
	Netherlands	a	a	a	n	100.0	a	a	a	81.4	18.6
	New Zealand	73.8	26.2	n	97.9	2.1	n	36.2	63.8	50.8	49.2
	Norway	64.2	35.8	x(2)	86.2	13.8	x(5)	79.6	20.4	71.7	28.3
	Poland	79.2	n	20.8	71.4	a	28.6	100.0	a	59.3	40.7
	Portugal	50.0	a	50.0	73.3	a	26.7	m	m	m	m
	Slovak Republic	87.3	12.7	n	99.1	n	0.9	48.2	51.8	65.1	34.9
	Spain	77.5	15.8	6.7	87.8	n	12.2	99.1	0.9	88.6	11.4
	Sweden	65.1	34.9	a	93.8	6.2	a	93.5	6.5	51.4	48.6
	Switzerland	30.0	38.7	31.3	90.8	7.5	1.7	21.9	78.1	90.3	9.7
	Turkey	98.0	a	2.0	95.3	a	4.7	100.0	a	100.0	a
	United Kingdom	a	100.0	n	a	100.0	n	24.9	75.1	71.2	28.8
	United States	85.4	a	14.6	73.6	a	26.4	48.2	51.8	64.4	35.6
	OECD average	*64.9*	*19.1*	*13.4*	*76.7*	*12.0*	*11.7*	*72.1*	*24.0*	*80.7*	*19.3*
	EU19 average	*66.0*	*21.8*	*7.1*	*77.8*	*16.7*	*5.5*	*76.0*	*17.8*	*82.2*	*17.8*
Partner countries	Brazil	33.9	a	66.1	30.6	a	69.4	m	m	m	m
	Chile	9.4	5.6	85.0	30.1	21.3	48.6	100.0	a	100.0	a
	Israel	35.3	64.7	n	11.2	78.1	10.7	m	m	82.3	17.7
	Russian Federation	95.5	a	4.5	87.0	a	13.0	69.2	30.8	55.0	45.0

1. Year of reference 2002.
Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006).*
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/230327441661

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Table C2.4
Students in primary and secondary education by type of institution or mode of study (2004)
Distribution of students, by mode of enrolment and type of institution

		Type of institution									Mode of study	
		Primary			Lower secondary			Upper secondary			Primary and secondary	
		Public	Government-dependent private	Independent private	Public	Government-dependent private	Independent private	Public	Government-dependent private	Independent private	Full-time	Part-time
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
OECD countries	Australia	71.3	28.7	a	64.6	35.4	a	74.5	25.5	a	77.2	22.8
	Austria	95.5	4.5	x(2)	92.2	7.8	x(5)	89.2	10.8	x(8)	m	m
	Belgium	45.3	54.7	n	43.4	56.6	n	41.5	58.5	n	82.1	17.9
	Canada[1]	m	m	m	m	m	m	m	m	m	100.0	a
	Czech Republic	98.9	1.1	a	98.2	1.8	a	87.1	12.9	a	99.9	0.1
	Denmark	88.3	11.7	a	76.6	23.4	a	97.7	2.3	a	95.6	4.4
	Finland	98.8	1.2	a	95.9	4.1	a	89.1	10.9	a	100.0	a
	France	85.3	14.7	a	78.6	21.2	0.2	69.4	29.8	0.8	100.0	a
	Germany	97.1	2.9	x(2)	92.7	7.3	x(5)	92.1	7.9	x(8)	99.8	0.2
	Greece	92.5	a	7.5	94.6	a	5.4	93.8	a	6.2	97.4	2.6
	Hungary	94.1	5.9	a	93.3	6.7	a	85.0	15.0	a	94.7	5.3
	Iceland	98.9	1.1	n	99.2	0.8	n	94.1	5.5	0.4	92.5	7.5
	Ireland	99.0	a	1.0	100.0	a	n	98.6	a	1.4	99.9	0.1
	Italy	93.1	a	6.9	96.5	a	3.5	94.6	0.6	4.8	99.1	0.9
	Japan	99.1	a	0.9	93.8	a	6.2	69.7	a	30.3	98.7	1.3
	Korea	98.7	a	1.3	80.2	19.8	a	49.6	50.4	a	m	m
	Luxembourg	93.1	0.7	6.2	80.1	12.4	7.5	84.3	8.2	7.5	100.0	n
	Mexico	91.9	a	8.1	87.4	a	12.6	78.9	a	21.1	100.0	a
	Netherlands	31.1	68.9	a	24.1	75.9	a	7.9	92.1	a	98.7	1.3
	New Zealand	88.1	9.8	2.1	84.0	11.3	4.7	76.1	20.0	3.9	91.9	8.1
	Norway	98.1	1.9	x(2)	97.7	2.3	x(5)	89.8	10.2	x(8)	99.0	1.0
	Poland	98.6	0.3	1.1	97.9	0.6	1.6	91.2	0.6	8.3	94.3	5.7
	Portugal	89.8	2.5	7.8	88.5	6.4	5.1	82.4	4.4	13.1	100.0	a
	Slovak Republic	95.5	4.5	n	94.7	5.3	n	91.3	8.7	n	99.0	1.0
	Spain	68.0	28.7	3.3	67.6	29.3	3.1	77.1	12.1	10.8	93.8	6.2
	Sweden	94.4	5.6	a	93.7	6.3	a	93.4	6.5	a	89.7	10.3
	Switzerland	96.2	1.3	2.4	92.9	2.4	4.7	93.2	3.1	3.8	99.8	0.2
	Turkey	98.5	a	1.5	a	a	a	98.2	a	1.8	100.0	a
	United Kingdom	95.0	a	5.0	93.6	0.6	5.8	25.7	71.5	2.8	73.2	26.8
	United States	89.7	a	10.3	91.2	a	8.8	91.2	a	8.8	100.0	a
	OECD average	*89.1*	*8.6*	*2.5*	*82.5*	*11.6*	*2.7*	*79.5*	*16.1*	*4.8*	*95.6*	*4.4*
	EU19 average	*87.0*	*10.9*	*2.3*	*84.3*	*14.0*	*1.9*	*78.5*	*18.6*	*3.3*	*95.4*	*4.6*
Partner countries	Brazil	91.5	a	8.5	90.7	a	9.3	86.8	a	13.2	m	m
	Chile	50.0	43.1	6.9	54.3	38.9	6.8	47.1	45.1	7.7	100.0	a
	Israel	100.0	a	a	100.0	a	a	100.0	a	a	100.0	a
	Russian Federation	99.5	a	0.5	99.7	a	0.3	99.3	a	0.7	100.0	n

1. Year of reference 2002.
Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/230327441661

Table C2.5
Upper secondary enrolment patterns (2004)
Enrolment in public and private institutions by programme destination and type of programme

		Distribution of enrolment by programme destination			Distribution of enrolment by type of programme			
		ISCED 3A	ISCED 3B	ISCED 3C	General	Pre-vocational	Vocational	Of which: combined school and work-based
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
OECD countries	Australia	37.5	a	62.5	37.5	a	62.5	m
	Austria	44.2	47.3	8.5	21.4	6.2	72.4	33.6
	Belgium	51.8	a	48.2	31.8	a	68.2	2.6
	Canada	m	m	m	m	m	m	m
	Czech Republic	69.1	0.4	30.4	20.6	0.2	79.3	36.2
	Denmark	53.2	a	46.8	53.2	a	46.8	46.1
	Finland	100.0	a	a	39.9	a	60.1	11.2
	France	67.9	a	32.1	43.5	a	56.5	11.4
	Germany	38.8	60.6	0.7	38.8	a	61.2	47.0
	Greece	66.0	a	34.0	66.0	a	34.0	a
	Hungary	77.1	a	22.9	76.3	11.6	12.1	12.1
	Iceland	49.1	0.4	50.5	61.5	1.2	37.2	17.0
	Ireland	72.8	a	27.2	66.5	33.5	a	a
	Italy	80.4	3.3	16.4	37.2	37.3	25.5	a
	Japan	75.4	0.8	23.8	75.4	0.8	23.8	a
	Korea	70.5	a	29.5	70.5	a	29.5	a
	Luxembourg	59.3	15.7	24.9	36.1	a	63.9	13.9
	Mexico	89.5	a	10.5	89.5	a	10.5	m
	Netherlands	60.1	a	39.9	30.9	a	69.1	22.9
	New Zealand	m	m	m	m	m	m	m
	Norway	39.5	a	60.5	39.5	a	60.5	m
	Poland	90.2	a	9.8	50.5	a	49.5	a
	Portugal	100.0	a	a	71.5	19.4	9.1	m
	Slovak Republic	79.8	a	20.2	25.9	a	74.1	37.2
	Spain	61.3	n	38.7	61.3	n	38.7	3.8
	Sweden	92.6	a	7.4	46.6	a	53.4	a
	Switzerland	30.7	62.1	7.2	35.2	a	64.8	58.7
	Turkey	91.5	a	8.5	62.7	a	37.3	8.5
	United Kingdom	46.0	x(1)	54.0	28.5	x(6)	71.5	m
	United States	100.0	a	a	100.0	a	a	a
	OECD average	***67.7***	***7.1***	***25.5***	***50.7***	***4.1***	***45.4***	***15.8***
	EU19 average	***70.4***	***4.7***	***25.2***	***45.8***	***6.0***	***48.5***	***15.3***
Partner countries	Brazil	100.0	a	a	95.5	a	4.5	a
	Chile	100.0	a	a	63.9	a	36.1	a
	Israel	96.4	a	3.6	64.8	a	35.2	3.6
	Russian Federation	58.5	12.4	29.1	58.5	12.4	29.1	m

Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

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INDICATOR C3

STUDENT MOBILITY AND FOREIGN STUDENTS IN TERTIARY EDUCATION

This indicator provides a picture of student mobility and the significance of internationalisation of tertiary education in OECD and partner countries. It shows global trends and highlights the major destinations of international students and trends in market shares on the international education market. Some of the factors underlying students' choice of a country of study are also examined. In addition, the indicator looks at the extent of student mobility in different destinations and presents the profile of the international student intake in terms of their distribution by countries and regions of origin, types of programmes, and fields of education. The distribution of students enrolled outside of their country of citizenship by destination is also examined. Lastly, the contribution of international students to the graduate output is examined alongside immigration implications for their host countries. The proportion of international students in tertiary enrolments provides a good indication of the magnitude of student mobility in different countries.

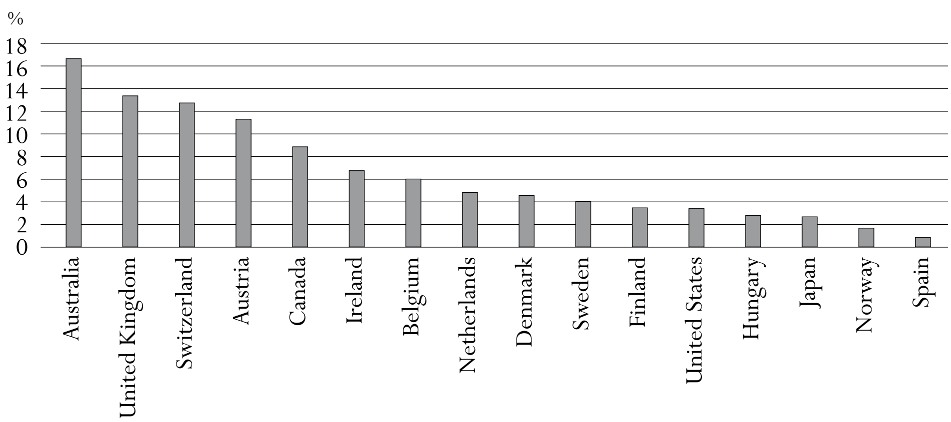
Key results

Chart C3.1. Student mobility in tertiary education (2004)

This chart shows the percentage of international students in tertiary enrolments. According to country-specific immigration legislations and data availability constraints, student mobility is either defined on the basis of students' country of residence or the country where students received their prior education.

Note that the data on the mobility of international students presented in this chart are not comparable with data on foreign students in tertiary education (defined on the basis of citizenship) presented in previous editions of Education at a Glance or elsewhere in this chapter.

Student mobility – *i.e.* international students who travelled to a country different from their own for the purpose of tertiary study – ranges from below 1 to almost 17% of tertiary enrolments. International students are most numerous in tertiary enrolments in Australia, Austria, Canada, Switzerland and the United Kingdom.



Countries are ranked in descending order of the percentage of international students in tertiary education.
Source: OECD. Table C3.1. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/221673686112

Other highlights of this indicator

- In 2004, 2.7 million tertiary students were enrolled outside their country of citizenship. This represented a 8% increase in total foreign student intake reported to the OECD and the UNESCO Institute for Statistics since the previous year.
- France, Germany, the United Kingdom and the United States receive more than 50% of all foreign students worldwide.
- In absolute numbers, international students from France, Germany, Japan and Korea represent the largest numbers from OECD countries. Students from China and India comprise the largest numbers of international students from partner countries.
- In Finland, Spain and Switzerland, more than 14% of international students are enrolled in highly theoretical advanced research programmes. The same holds for foreign students enrolled in France.
- As far as fields of education are concerned, 30% or more of international students are enrolled in sciences, agriculture or engineering in Australia, Finland, Germany, Hungary, Sweden, Switzerland, the United Kingdom and the United States. The same holds for foreign students enrolled in Portugal and the Slovak Republic.
- International graduates contribute to 20% or more of the graduate output for tertiary-type A or advanced research programmes in Australia, Canada, Switzerland and the United Kingdom. The same holds for foreigners graduating from advanced research programmes in Belgium, France and the United States. The contribution of international and foreign graduates to the tertiary graduate output is especially high for advanced research programmes in Belgium, Canada, France, Switzerland, the United Kingdom and the United States.

Policy context

The general trend towards freely circulating capital, goods and services coupled with changes in the openness of labour markets have increased the demand for new kinds of educational provision in OECD countries.

Governments as well as individuals are looking to higher education to play a role in broadening the horizons of students and allowing them to develop a deeper understanding of the multiplicity of languages, cultures and business methods in the world. One way for students to expand their knowledge of other societies and languages and hence to leverage their labour market prospects is to study in tertiary educational institutions in countries other than their own. Indeed, several OECD governments – especially so in the European Union (EU) countries – have set up schemes and policies to promote such mobility to foster intercultural contacts and help to build social networks for the future.

From the macroeconomic perspective, international negotiations on trade liberalisation of services highlight the trade implications of the internationalisation of education service provision. Some OECD countries already show signs of specialisation in education exports. The long term trend towards greater internationalisation of education (Box C3.1) is likely to have a growing impact on countries' balances of payments as a result of tuition fee revenues and domestic consumption of international students. In this perspective, it is worth noting that in addition to student mobility, the cross-border electronic delivery of flexible educational programmes and campuses abroad are also relevant to the trade dimension of international tertiary education, although no comparable data exist yet.

The internationalisation of tertiary education, however, has many more economic outcomes in addition to the short term monetary costs and benefits reflected in the current account balance. It can also provide an opportunity for smaller and/or less developed educational systems to improve the cost efficiency of their education provision. Indeed, training opportunities abroad may constitute a cost-efficient alternative to national provision, and allow countries to focus limited resources on educational programmes where economies of scale can be generated, or expand tertiary education participation despite bottlenecks in education provision.

For individuals, the returns to studying abroad depend to a large extent on both the policies of sending countries regarding financial aid to students going abroad and the policies of countries of destination on tuition fees (Box C3.3) and financial support for international students. The cost of living in countries of study and exchange rates also impact on the cost of international education. On the other side, the long-term returns of an international educational experience depend to a large extent on how international degrees are signalled and valued by local labour markets.

From the perspective of educational institutions, international enrolments constrain the instructional settings and processes insofar as the curriculum and teaching methods may have to be adapted to a culturally and linguistically diverse student body. These constraints are, however, outweighed by the numerous benefits to host institutions. Indeed, the presence of a potential international client base compels institutions to offer programmes that stand out among competitors, a factor that may contribute to the development of a highly reactive, client-driven quality tertiary education. International enrolments can also help institutions to reach the critical mass needed to diversify the range of educational programmes offered as well as increase tertiary institutions' financial resources when foreign students bear the full cost of their education (Box C3.3). Given these advantages, institutions might privilege the enrolment of international students thereby restricting access to domestic students. Yet there is limited evidence of such a phenomenon, with the exception of some prestigious, highly demanded programmes of elite institutions (OECD, 2004d).

The numbers and trends in students enrolled in other countries can provide some idea of the extent of internationalisation of tertiary education. In the future, it will also be important to develop ways to quantify and measure other components of cross-border education.

Evidence and explanations

Concepts and terminology conventions used in this indicator

It is important to specify the concepts and terminology conventions used in this indicator since they have changed this year in comparison with previous editions of *Education at a Glance*.

Previous versions of indicator C3 have focused on foreign students in tertiary education, defined as non-citizens of the country in which they study. Although practical, this concept of foreign students was inappropriate to measure student mobility to the extent that not all foreign students have come to their country of study expressly with the intention to study. In particular, foreign students who are permanent residents in their country of study as a result of immigration – by themselves or by their parents – are included in the total. This results in an overestimation of foreign students' numbers in countries with comparatively low naturalisation rates of their immigrant populations.

In an effort to improve the measurement of student mobility and the comparability of internationalisation data, the OECD – together with Eurostat and the UNESCO Institute for Statistics – revised the instruments in 2005 to gather data on student mobility. According to this new concept, the term "international students" refers to students who have crossed borders expressly with the intention to study. Yet, the measurement of student mobility depends to a large extent on country-specific immigration legislations and data availability constraints. For instance, the free mobility of individuals within the EU and broader European Economic Area (EEA) makes it impossible to derive numbers of international students from visa statistics. In acknowledgment of these country specificities, the data collected by the UNESCO, OECD and Eurostat allow countries to define as international students who are not residents of their country of study or alternatively students who received their prior education in another country, depending on which operational definition is most appropriate in their national context. Overall, the country of prior education is considered a better operational criterion for EU countries in order not to omit intra-EU student mobility (Kelo, Teichler and Wächter, 2005), while the residence criterion is usually a good proxy in countries that require a student visa to enter the country for educational purposes.

The convention adopted here is to use the terminology "international student" when referring to student mobility while the terminology "foreign student" relates to non citizens enrolled in a country (*i.e.* comprises some permanent residents and provides an overestimated proxy of actual student mobility). However since not all countries are yet able to report data on student mobility on the basis of students' country of residence or their country of prior education, some tables and charts present indicators on both international and foreign students – albeit separately to emphasize the need for caution in international comparisons.

It should be noted that all trend analyses are based on numbers of foreign student*s* at different points in time since no time series on student mobility are available yet. Current work aims at filling this gap, and developing retrospective time series on student mobility for future editions of *Education at a Glance*.

Overall picture and trends in foreign student numbers

Trends in foreign student numbers

In 2004, 2.7 million tertiary students were enrolled outside their country of citizenship, of which 2.3 million (or 85%) studied in the OECD area. This represented a 8% increase in total foreign enrolments worldwide since the previous year – or 193 000 additional individuals in absolute numbers. In the OECD area, the increase was even larger with a 9% increase in foreign student numbers over just one academic year.

Since 2000, the number of foreign tertiary students enrolled in the OECD area and worldwide increased by 41%. This amounts to a 9% annual increase on average (Table C3.6).

Compared to 2000, the number of foreign students enrolled in tertiary education increased noticeably in Australia, the Czech Republic, France, Greece, Ireland, Italy, Japan, Korea, the Netherlands, New Zealand and Spain, and in the partner countries Chile and Russian Federation, with indexes of change of 150 or above. By contrast, the number of foreign students enrolled in Austria, Belgium, Canada, the Slovak Republic and the United States grew by about 20% or less and even shrunk in Turkey (Table C3.1).

Interestingly, changes in foreign student numbers between 2000 and 2004 indicate that the growth in foreign enrolments has been larger in the OECD on average than in the 19 EU countries of the OECD with 61 and 52% growth respectively. This pattern suggests that although foreign enrolments increased throughout the OECD with the exception of Turkey, the recent growth in foreign enrolments was even higher outside of the EU area than inside (Table C3.1).

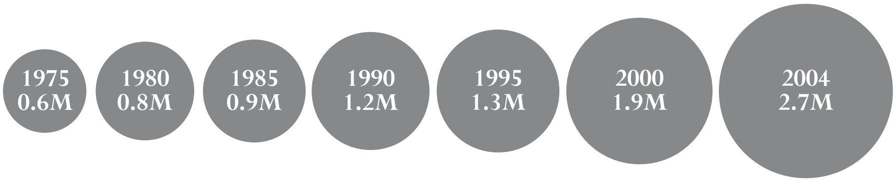
The combination of OECD data with those of the UNESCO Institute for Statistics allows the examination of longer term trends and illustrates the dramatic growth in foreign enrolments over the past 30 years (Box C3.1).

Over the past three decades, the number of students enrolled outside their country of citizenship has grown dramatically from 0.6 million worldwide in 1975 to 2.7 millions in 2004 – a more than four-fold increase. This growth in the internationalisation of tertiary education has accelerated during the past ten years, mirroring the growing globalisation of economies and societies.

The growth in the number of students enrolled abroad since 1975 stems from various driving factors. During the early years, public policies aimed at promoting and nurturing academic, cultural, social and political ties between countries played a key role, especially in the context of the European construction in which building mutual understanding between young Europeans was a major policy objective. Similar rationales motivated North American policies of academic cooperation.

Box C3.1. Long term growth in the number of students enrolled outside their country of citizenship

Growth in internationalisation of tertiary education (1975-2004)



Source: OECD and UNESCO Institute for Statistics (for data on non-OECD countries and up to 1995).

The database on foreign enrolments worldwide combines OECD data since 2000 for OECD and partner countries with data from the UNESCO Institute for Statistics for all countries up to 1995 and other non-OECD countries since 2000. 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.

But over time, driving factors of a more economic nature played an increasing role. Indeed, decreasing transportation costs, the spread of new technologies, and faster, cheaper communication resulted in a growing interdependence of economies and societies in the 1980s and even more so in the 1990s. This tendency was particularly strong in the high technology sector and labour market. The growing internationalisation of labour markets for the highly-skilled fostered individuals' incentives to gain an international experience as part of their studies while the spread of Information and Communication Technology (ICT) lowered information and transaction costs of study abroad and boosted the demand for international education.

In the meantime, the rapid expansion of tertiary education in OECD countries – as well as in most emerging countries more recently (OECD, 2005d) – added financial pressure on education systems. In some countries, foreign students were actively recruited as tertiary institutions increasingly relied upon financial revenues from foreign tuition fees to operate their activities. In a number of other countries by contrast, education abroad was encouraged as a solution to address unmet demand resulting from bottlenecks in education provision in the context of the rapid expansion of tertiary education.

In the past few years, the rise of the knowledge economy and the global competition for skills provided a new driver for the internationalisation of education systems in many OECD countries, whereby the recruitment of foreign students is part of a broader strategy to recruit highly skilled immigrants.

At the institutional level, drivers of international education derive from the additional revenues that foreign students may generate – either through differentiated tuition fees or public subsidies. But tertiary education institutions also have academic incentives to engage in international activities to build or maintain their reputation in the context of academic competition on an increasingly global scale.

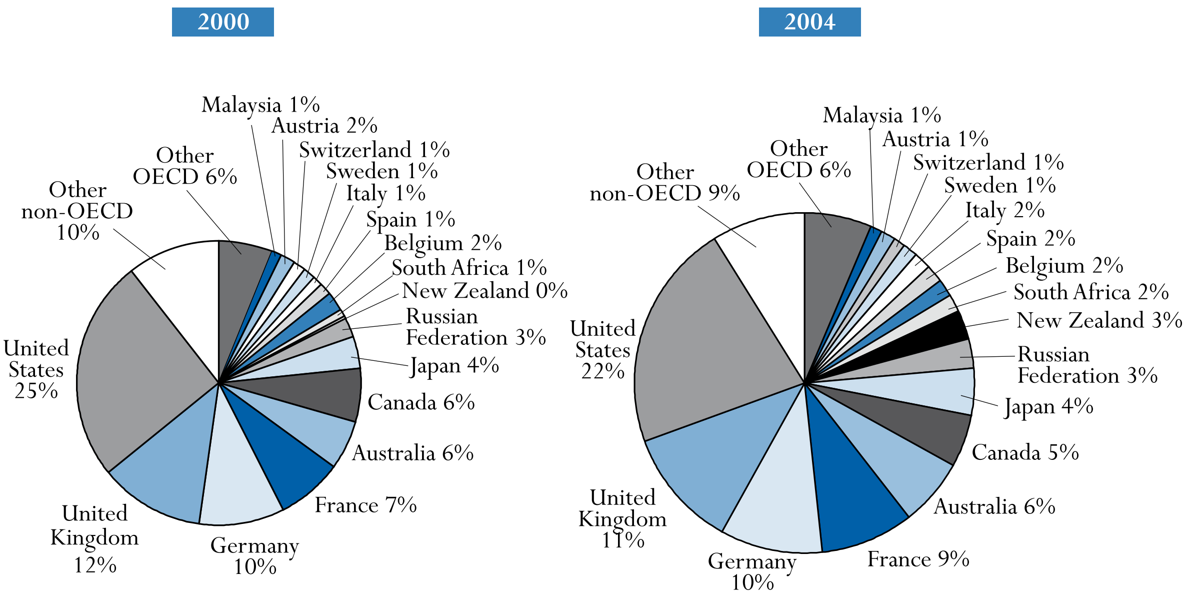
Major destinations of foreign students

In 2004, more than five out of ten foreign students were attracted to a relatively small number of destinations. Indeed, only four countries host the majority of foreign students enrolled outside of their country of citizenship. The United States receives the most foreign students (in absolute terms) with 22% of the total of all foreign students worldwide, followed by the United Kingdom (11%), Germany (10%) and France (9%). Altogether, these four major destinations account for 52% of all tertiary students pursuing their studies abroad (Chart C3.2).

Besides these four major destinations, significant numbers of foreign students are enrolled in Australia (6%), Canada (5%), Japan (4%), New Zealand (3%) and the partner country the Russian Federation (3%).

Chart C3.2. Distribution of foreign students by country of destination (2000, 2004)

Percentage of foreign tertiary students reported to the OECD and UNESCO who are enrolled in each country of destination



Source: OECD and UNESCO Institute for Statistics for most data on non-OECD countries. Table C3.8 (available on the Web at *http://dx.doi.org/10.1787/221673686112*). See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/221673686112

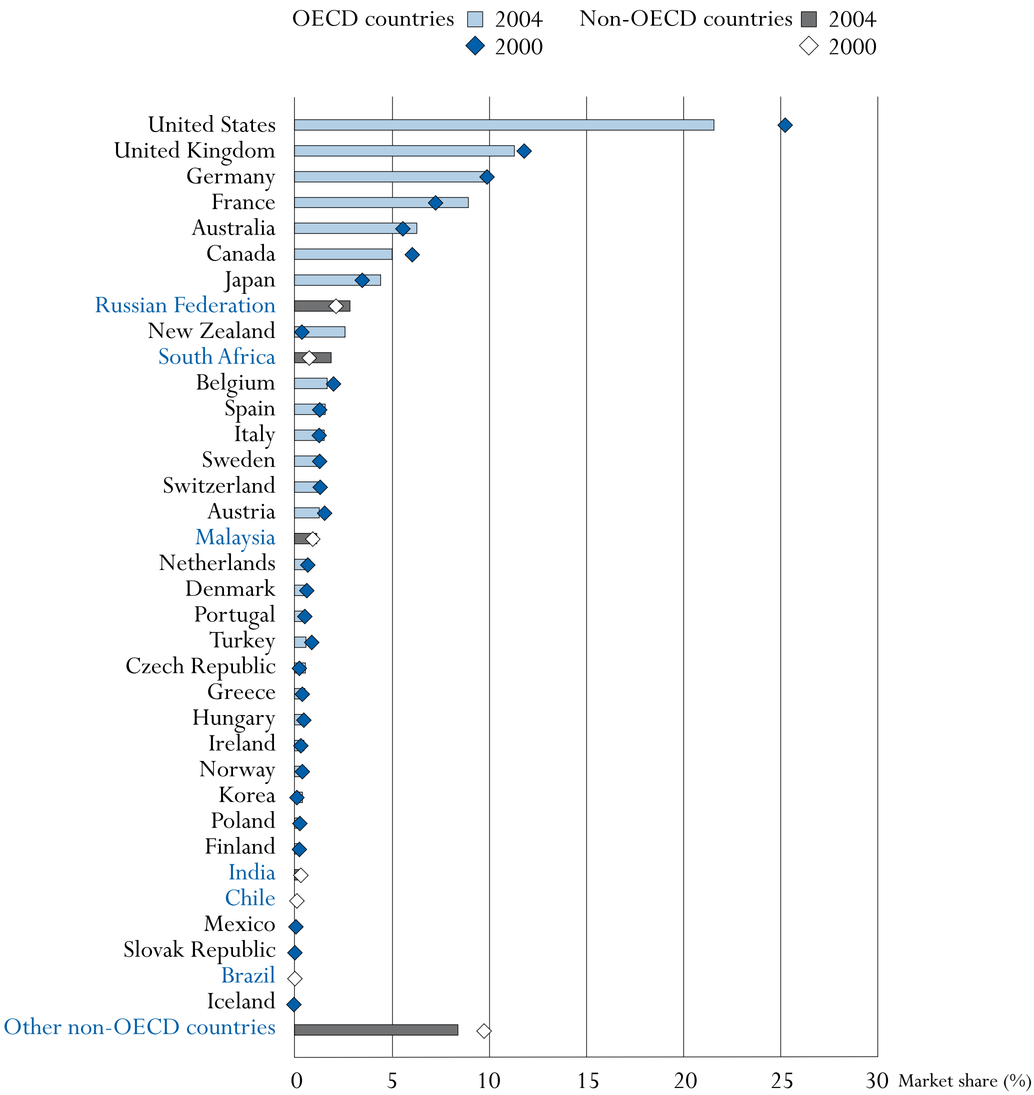
Trends in market shares show the emergence of new players on the international education market

The examination of country-specific trends in market shares on the international education market – measured as the percentage of all foreign students worldwide enrolled in a given destination – sheds light on the dynamics of internationalisation of tertiary education.

The United States saw a significant drop as a preferred destination of foreign students, from 25.3 to 21.6% of the global intake. Canada and the United Kingdom also saw their market share decline by about 1 percentage point over the four year period scrutinised. By contrast the market shares of France, New Zealand and the partner country South Africa expanded by one percentage point or more. The growth in market position was most impressive for New Zealand, thereby positioning the country among the big players in the international education market (Chart C3.3).

Chart C3.3. Trends in international education market shares (2000, 2004)

Percentage of all foreign tertiary students enrolled by destination



Countries are ranked in descending order of 2004 market shares.

Source: OECD and UNESCO Institute for Statistics for most data on non-OECD countries. Table C3.8 (available on the Web at *http://dx.doi.org/10.1787/221673686112*). See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

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These trends underline the different dynamics of international education in OECD and non-OECD countries, and reflect different emphases of internationalisation policies, ranging from pro-active marketing policies in the Asia-Pacific region to a more passive approach in the traditionally dominant United States whose foreign student intakes were also affected by the tightening of the conditions of entry for international students in the aftermath of the events of 11 September 2001 (see Indicator C3, *Education at a Glance 2005* [OECD, 2005d]).

Underlying factors in students' choice of a country of study

Language of instruction: a critical factor in the choice of a country of study

The language spoken and used in instruction is critical for selecting a foreign country in which to study. Therefore, countries whose language of instruction is widely spoken and read (*e.g.* English, French, German and Russian) dominate in the destinations of foreign students, be it in absolute or relative terms. A notable exception is Japan which enrols large numbers of foreign students despite a less widespread language of instruction (Chart C3.3).

The dominance of English-speaking destinations such as Australia, Canada, the United Kingdom and the United States (in absolute numbers) may be largely attributable to the fact that students intending to study abroad are most likely to have learnt English in their home country, and/or wish to improve their English language skills through immersion and study abroad. The rapid increase in foreign enrolments in Australia (index change of 158), Ireland (171) and most importantly New Zealand (456) between 2000 and 2004 can to some extent be attributed to similar linguistic considerations (Table C3.1).

Given this pattern, an increasing number of institutions in non-English-speaking countries now offer courses in English to overcome their linguistic disadvantage in attracting foreign students. This trend is especially noticeable in Nordic countries (Box C3.2).

Impact of tuition fees and cost of living on foreign student destinations

Tuition fees and cost of living are equally important factors for prospective international students when deciding in which country to study.

In the Czech Republic, Denmark, Finland, Iceland, Norway and Sweden, tuition fees do not exist for domestic and international students alike (Box C3.3). This cost pattern associated with the existence of programmes in English probably explains part of the robust growth in the number of foreign students enrolled in some of these countries between 2000 and 2004 (Table C3.1). However, high unit costs in tertiary education at no fee incur a high monetary burden of international students for their countries of destination (see Table B1.1). As a result, Denmark has recently adopted tuition fees for non-EU and non-EEA international students. Similar debates are currently underway in Finland, Norway and Sweden where foreign enrolments grew by more than 40% between 2000 and 2004.

Indeed, the trade benefits of international education are all the more important as countries charge the full cost of education to their international students. Several countries in the Asia-Pacific region have actually made international education an explicit part of their socio-economic development strategies and have initiated policies to attract international students on a revenue-generating or at least self-financing basis. Australia and New Zealand have successfully adopted differentiated tuition fees for international students. In Japan and Korea, although tuition fees

Box C3.2. OECD countries offering tertiary programmes in English (2004)

Use of English language in instruction	Countries
All or nearly all education programmes in the country are offered in English	Australia, Canada[1], Ireland, New Zealand, United Kingdom, United States
Many education programmes in the country are offered in English	Denmark, Finland, Netherlands, Sweden
Some education programmes in the country are offered in English	Belgium (Fl.), Czech Republic, France, Germany, Hungary, Iceland, Japan, Korea, Norway, Poland, Slovak Republic, Switzerland, Turkey
None or nearly no education programmes in the country are offered in English	Austria, Belgium (Fr.), Greece, Italy, Luxembourg, Mexico, Portugal, Spain Brazil, Chile, Israel, Russian Federation

1. In Canada, tertiary institutions are either French (mostly Quebec) or English-speaking.

Note: Assessing the extent to which a country offers a few or many programmes in English is subjective. In doing so, the size of the countries of destination has been taken into account, hence the classification of France and Germany among countries with comparatively few English programmes, despite having more English programmes than Sweden in absolute terms.

Source: OECD, compiled from brochures for prospective international students by OAD (Austria), CHES and NARIC (Czech Republic), Cirius (Denmark), CIMO (Finland), EduFrance (France), DAAD (Germany), Campus Hungary (Hungary), University of Iceland (Iceland), JPSS (Japan), NIIED (Korea), NUFFIC (Netherlands), SIU (Norway), CRASP (Poland), Swedish Institute (Sweden) and Middle-East Technical University (Turkey).

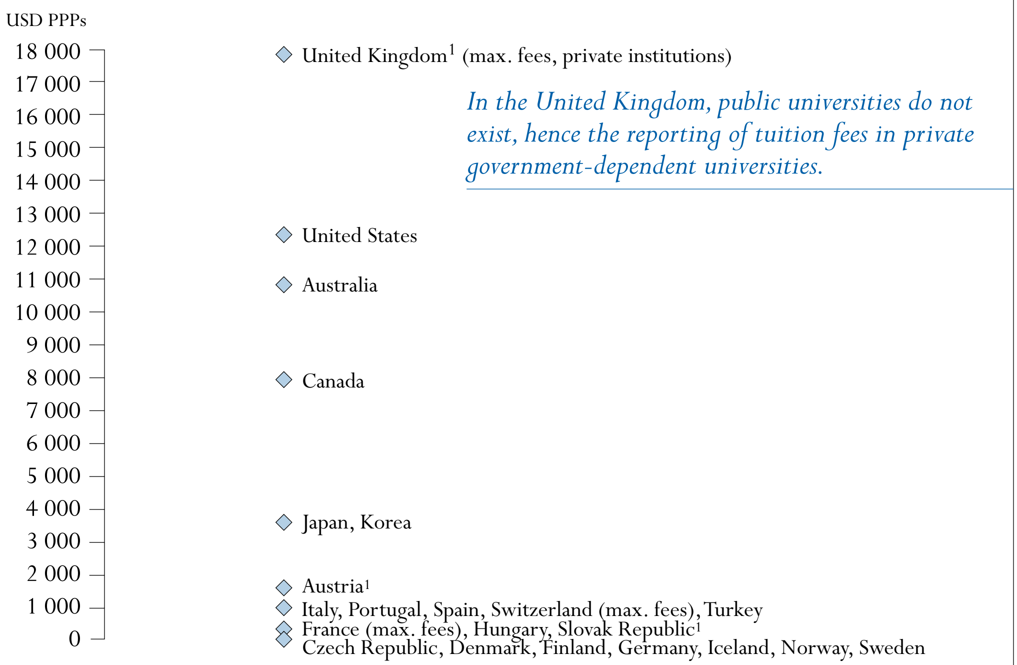
are the same for domestic and international students, foreign enrolments also grew at a robust pace between 2000 and 2004 despite high levels of tuition fees (see Indicator B5). This pattern highlights that tuition costs do not necessarily discourage prospective international students as long as the quality of education provided and its likely returns for individuals make the investment worthwhile. However, in choosing between similar educational opportunities, cost considerations may play a role, especially for students originating from developing countries. In this respect, the comparatively low progress of foreign enrolments in Canada and the United Kingdom between 2000 and 2004 and the deterioration of its market share on the international education market over the same period may be attributed to the comparatively high level of tuition fees charged to international students in the context of fierce competition from other Anglo-Saxon destinations offering similar educational opportunities at a lower cost (Box C3.3).

Other important factors guiding the destinations of foreign students relate to the academic reputation of particular institutions or programmes, the flexibility of programmes with respect to counting time spent abroad towards degree requirements, the limitations of tertiary education provision in the home country, restrictive university admission policies at home, geographical, trade or historical links between countries, future job opportunities, cultural aspirations, and government policies to facilitate credit transfer between home and host institutions. The transparency and flexibility of courses and degree requirements also count. In the recent years, several OECD countries have softened their immigration policies to encourage the temporary or permanent immigration of their international students. As a result, immigration considerations may also guide the directions of some international students choosing between alternative educational opportunities abroad (Tremblay, 2005).

Box C3.3. Level of tuition fees charged for international students in public universities (2004)

Tuition fee structure	Countries
Higher tuition fees for international students than for domestic students	Australia, Austria[1], Belgium[1,2], Canada, Ireland[1], Netherlands[1], New Zealand, Slovak Republic[1], Turkey, United Kingdom[1], United States[3]
Same tuition fees for international and domestic students	France, Greece, Hungary, Italy, Japan, Korea, Mexico[2], Portugal, Spain, Switzerland[2]
No tuition fees for either international or domestic students	Czech Republic, Denmark, Finland, Iceland, Norway, Sweden

Annual average tuition fees charged to international students by public tertiary-type A institutions (2004)



Source: OECD. Table B5.1.

1. For non-European Union or non-European Economic Area students.
2. Some institutions charge higher tuition fees for international students.
3. International students pay the same fees as domestic out-of-state students. However since most domestic students are enrolled in-state, international students pay higher tuition fees than most domestic students in practice.

Extent of student mobility in tertiary education

The foregoing analysis has focused on trends in the absolute numbers of foreign students and their distribution by countries of destination since no time series or global aggregates exist on student mobility.

It is also possible to measure the extent of student mobility in each country of destination if not at the global level, then by examining the proportion of international students in total tertiary enrolments. The advantage of this indicator is that it takes the size of the different tertiary education systems into account and highlights the highly internationalised education systems regardless of their size and the importance of their absolute market share.

Wide variations in the proportion of international students enrolled in OECD and partner countries

Australia, Austria, Switzerland and the United Kingdom display the highest levels of incoming student mobility, measured as the proportion of international students in their total tertiary enrolment. In Australia, 16.6% of tertiary students enrolled in the country have come to the country expressly to pursue their studies. Similarly, international students represent 13.4% of total tertiary enrolments in the United Kingdom, 12.7% in Switzerland and 11.3% in Austria. International enrolments are also significant in relative terms in Canada. By contrast, incoming student mobility remains below 2% of total tertiary enrolments in Norway and Spain (Chart C3.1).

Among countries where data on student mobility are not available, foreign enrolments constitute a large group of tertiary students in France (11%), Germany (11.2%) and New Zealand (28.3%), suggesting significant levels of incoming student mobility. However foreign enrolments – and student mobility – represent 2% or less of total tertiary enrolments in Italy, Korea, Poland, the Slovak Republic, Turkey and the partner countries Chile and Russian Federation (Table C3.1).

Student mobility at different levels of tertiary education

Looking at the proportions of international students at different levels of tertiary education in each country of destination sheds light on patterns on student mobility. A first observation is that with the exception of Canada, tertiary-type B programmes are far less internationalised than tertiary-type A programmes, suggesting that international students are mostly attracted to traditional academic programmes where degree transferability is easier. Among countries where data on student mobility are not available, tertiary-type B programmes also enrol a higher proportion of foreign students than tertiary-type A programmes in Finland, Italy and Spain (Table C3.1).

In Australia and Sweden, the proportions of international students are roughly the same in tertiary-type A and advanced research programmes, suggesting that these countries of destination are successful at attracting students from abroad from the start of their tertiary education, and/or keeping them beyond their first degrees. Among countries where data on student mobility are not available, a similar pattern can be observed in New Zealand and the Slovak Republic.

By contrast, other countries display significantly higher incoming student mobility relative to total enrolments in advanced research programmes than in the tertiary-type A programmes that precede advanced research studies. This pattern is most obvious in Belgium, Canada, Hungary, Spain, Switzerland and the United Kingdom, and in France and Iceland among countries where data on student mobility are not available. It may reflect a strong attractiveness of advanced research programmes in these countries, or a preferred recruitment of international students at higher levels of education to capitalise on their contribution to domestic research and development or in anticipation of their subsequent recruitment as highly qualified immigrants.

Profile of international student intake in different destinations

Importance of Asia among regions of origin

Asian students form the largest group of international students enrolled in countries reporting data to the OECD or the UNESCO Institute for Statistics, with 45% of the total in OECD countries, and 52% of the total in non-OECD countries. In the OECD, the Asian group is followed by Europeans (25%), in particular citizens of the European Union (15%). Students from Africa account for 12% of all international students, while those from North America account for only 4%. Finally, students from South America represent 6% of the total. Altogether, a third of international students enrolled in the OECD area originate from another OECD country (Table C3.2).

In Australia, Canada and the United Kingdom, three of the top destinations of international students in 2004, the numbers of international students originating from Asia have increased significantly over the previous year. The same holds for foreign students in Turkey among countries where data on student mobility are not available.

Main countries of origin of international students

The predominance of students from Asia and Europe among international intakes is also notable. Students from Japan and Korea comprise the largest groups of international students enrolled in the OECD, at 2.8 and 4.3% of the total respectively, followed by students from France and Germany at 2.6% each (Table C3.2).

With respect to international students originating from partner countries, students from China represent by far the largest group, with 15.2% of all international students enrolled in the OECD area (not including an additional 1.6% from Hong Kong, China). Students from China are followed by those from India (5.7%), Morocco, Malaysia and the Russian Federation. Significant numbers of international students also originate from Singapore and Thailand (see Table C3.8, available on the Web at *http://dx.doi.org/10.1787/221673686112*).

International students' intake by level and type of tertiary education highlights specialisations

In some countries a comparatively large proportion of international students are enrolled in tertiary-type B programmes. This is the case in Belgium (26.1%), Canada (29.5%) and Japan (24.3%). Among countries where data on student mobility are not available, foreign enrolments in tertiary-type B programmes also constitute a large group of foreign students in Greece (28.7%) and New Zealand (24.3%) (Table C3.4).

By contrast, other countries see a large proportion of their international students enrolling in highly theoretical advanced research programmes. This is most notably the case in Finland (14.5%), Spain (28.2%) and Switzerland (27%). Among countries where data on student mobility are not available, foreign enrolments in advanced research programmes are also high in France (14.5%).

Such patterns suggest that these countries offer attractive advanced programmes to prospective international graduate students. This concentration can also be observed – although to a more limited extent – among international students in the United Kingdom (11.5%) and foreign students in the Czech Republic (11%). All of these countries are likely to benefit from larger contributions of these high-level foreign students to domestic research and development. In addition, this specialisation can also generate higher tuition revenue per foreign student in the countries charging full tuition costs to foreign students (Box C3.3).

International student intake by field of education underlines magnet centres

As indicated by Table C3.5, sciences attract about one in five international students in Australia (20.2%), Norway (20.5%) and the United States (19.4%) but less than one in fifty in Japan (1.3%) and in Poland (2.1%) among countries where data on student mobility are not available. Other countries showing a large proportion of international students enrolled in sciences are Canada (14.3%), Germany (17.3%), Switzerland (17.0%), the United Kingdom (14.7%) and to a lower extent Sweden (12.4%) and New Zealand (13.6%) among countries where data on student mobility are not available.

The picture changes slightly when considering scientific disciplines in a broader sense – *i.e.* adding agriculture, engineering, manufacturing and construction programmes. Finland receives the largest proportion of its international students in these fields of education, at 42.4%. The proportion of international students enrolled in agriculture, sciences or engineering is also high in Australia (33%), Germany (37.5%), Hungary (33.3%), Sweden (31.4%), Switzerland (34.2%), the United Kingdom (30.7%) and the United States (35.3%). Similarly, among countries where data on student mobility are not available, agriculture, sciences and engineering attract about one in three foreign students in Portugal (30.9%) and the Slovak Republic (30.3%). By contrast, few foreign students are enrolled in agriculture, sciences and engineering in Poland (Chart C3.4).

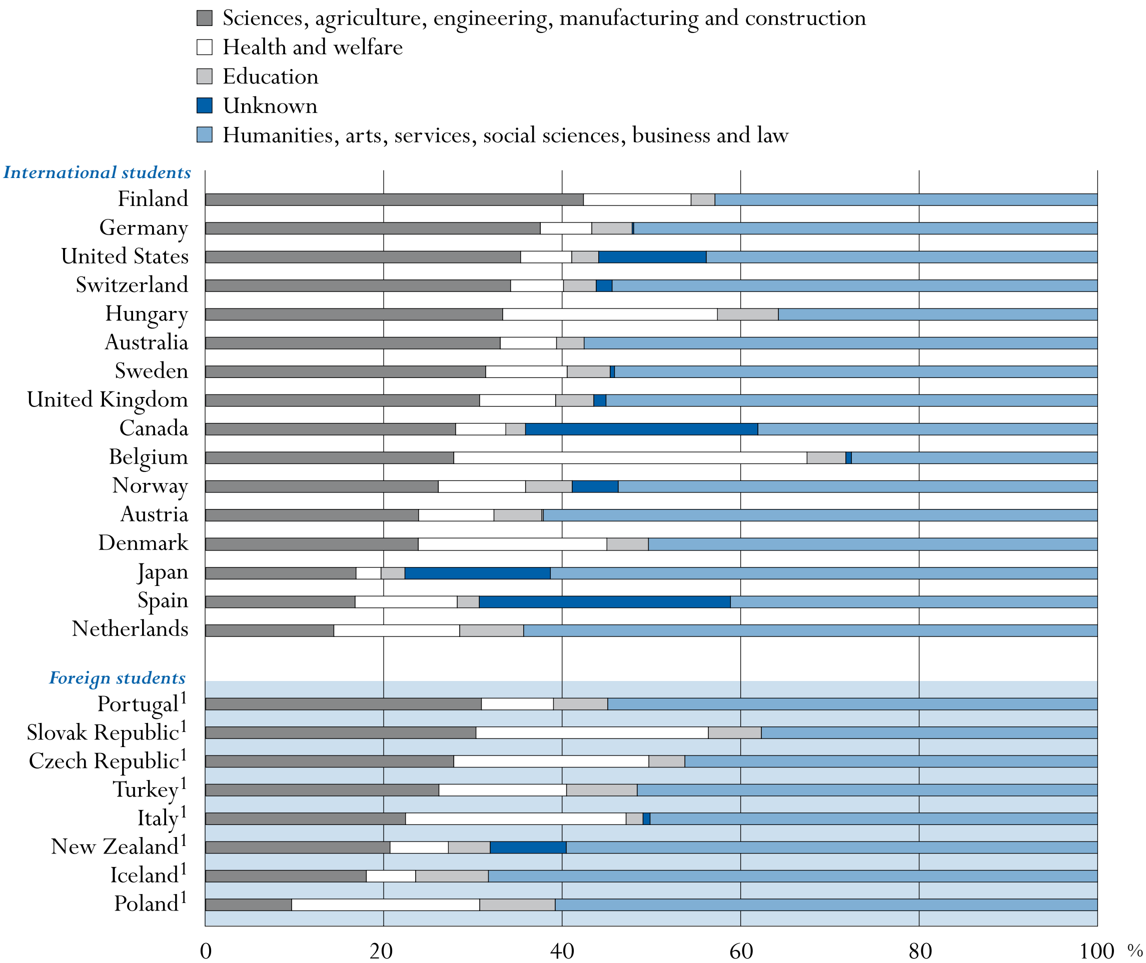
It is noteworthy that most countries enrolling large proportions of their international students in agriculture, sciences and engineering deliver programmes in the English language. In the case of Germany, the large proportion of foreign students in scientific disciplines may also reflect the strong tradition of the country in these fields.

By contrast, non-Anglophone countries tend to enrol a higher proportion of their international students in the humanities and arts fields. Indeed, humanities and arts are favoured by about one in four international students in Austria (24.5%), Germany (23.8%) and Japan (26%). Among countries where data on student mobility are not available, Iceland enrols more than half of its foreign students in the humanities and arts (53%), while this is the case for one in five foreign students in Poland (21.2%).

Social sciences, business and law programmes also attract international students in large numbers. In Australia and the Netherlands, these fields of education enrol nearly half of all international students (at 47.9 and 48.2% respectively). The proportion of international students enrolled in social sciences, business and law is also high in the United Kingdom (39.8%). Among countries where data on student mobility are not available, New Zealand enrols more than half of its foreign students in social sciences business and law while these fields also receive more than 40% of foreign students in Portugal (41.6%) and Turkey (40.7%).

Chart C3.4. Distribution of international and foreign students by field of education (2004)

Percentage of all international and foreign tertiary students enrolled in different fields of education



1. Distribution of foreign students by field of education. These data are not comparable with data on international students and are therefore presented separately.

Countries are ranked in descending order of the proportion of international and foreign students enrolled in sciences, agriculture, engineering, manufacturing and construction.

Source: OECD. Table C3.5. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/221673686112

The situation of health and welfare educational programmes is fairly specific since it depends to a large extent on national policies of medical degree recognition. Health and welfare programmes attract large proportions of international students in EU countries, most notably in Belgium (39.6%), Denmark (21.1%) and Hungary (24.1%). Among countries where data on student mobility are not available, health and welfare programmes are also chosen by one-fifth to one-quarter of foreign students in the Czech Republic (21.9%), Italy (24.7%), Poland (21.1%) and the Slovak Republic (26%). This pattern is related to the existence of quotas in many European countries restricting access to educational programmes in the medical field. This increases the demand for training abroad in other EU countries to bypass these quotas, and to take advantage of EU countries' automatic recognition of medical degrees under the European Medical Directive.

Overall, the concentration of international students in specific disciplines in each country of destination highlights magnet programmes that attract students from abroad in large numbers. This attraction results from many factors on both the supply and demand side.

On the supply side, some destinations offer centres of excellence or traditional expertise able to attract students from other countries in large numbers (*e.g.* Finland and Germany in sciences and engineering). In the humanities and arts, some destinations also have a natural monopoly on some programmes. This is especially obvious for linguistic or cultural studies (*e.g.* Austria, Germany, Iceland and Japan).

On the demand side, the characteristics of international students can help to explain their concentration in some fields of education. For instance, students in scientific disciplines are usually less likely to be fluent in many different languages, which may explain their stronger propensity to study in countries offering education programmes in English, and their lesser propensity to enrol in countries where these are less common (*e.g.* Japan). Similarly, the demand of many Asian students for business training may explain the strong concentration of international students in social sciences, business and law in neighbouring Australia and New Zealand – and to a lesser extent in Japan. Last, EU provisions for the recognition of medical degrees clearly drive the concentration of international students in health and welfare programmes in EU countries.

Destinations of citizens enrolled abroad

When studying in tertiary education outside of their country of citizenship, the vast majority of OECD students enrol in another country of the OECD area. Nevertheless, more than 10% of citizens enrolled abroad do so outside of the OECD area in Greece, Italy, Turkey and the United States. Among partner countries, students from Brazil, Chile, Israel and the Russian Federation also enrol in significant numbers in non-OECD countries to acquire their tertiary education. By contrast, students from Austria, Belgium, France, Iceland, Ireland, Japan, Luxembourg, the Netherlands, New Zealand, Norway, the Slovak Republic and Switzerland display an extremely low propensity to study outside of the OECD area (Table C3.3).

Language considerations, geographic proximity and similarity of education systems are important determinants of the choice of destination. Geographic considerations and differences in entry requirements are likely explanations of the concentration of students from Austria in Germany, from Belgium in France and the Netherlands, from Canada in the United States, from New Zealand in Australia etc. Language issues as well as academic traditions also shed light on the propensity for Anglo-Saxon students to concentrate in other countries of the Commonwealth or in the United States, even those geographically distant. Migration networks also play a role, as illustrated by the concentration of students of Portuguese citizenship in France, students from Turkey in Germany or from Mexico in the United States.

Lastly, international students' destinations also highlight the attractiveness of specific education systems, be it due to considerations of academic reputation, or as a result of subsequent immigration opportunities. In this respect, it is noteworthy that students from China are mostly concentrated in Australia, Germany, Japan, New Zealand, the United Kingdom and the United States – most of which have set up schemes to facilitate the immigration of international students. Similarly, students from India favour Australia, the United Kingdom and the United States; these three destinations attract five in six Indian citizens enrolled abroad.

C3

International students' contribution to tertiary graduate output and immigration implications

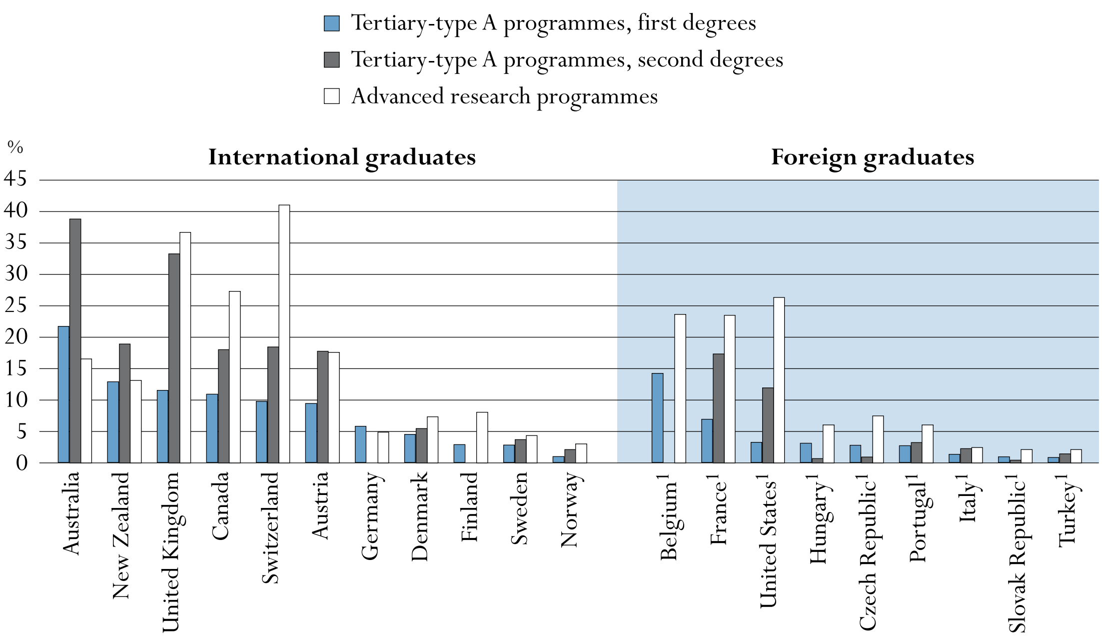
International students' contribution to the graduate output

International students make a significant contribution to the tertiary graduate output of the most internationalised education systems. In some highly internationalised levels of education, this contribution artificially inflates tertiary graduation rates. It is therefore important to examine the contribution of international students to the graduate output of different types of tertiary programmes to assess the extent of this over-estimation (see Indicator A3).

In Australia, Canada, Switzerland and the United Kingdom, more than a quarter of tertiary-type A second degrees or advanced research degrees are awarded to international students. This pattern implies that the true domestic graduate output is significantly over-estimated in overall graduation rates. This over-estimation is most important for tertiary-type A second degree programmes in Australia and advanced research programmes in Switzerland and the United Kingdom, where international graduates represent over 35% of the graduate output. The contribution of international students to the graduate output is also significant – although to a lesser extent – in Austria and New Zealand, and among countries where student mobility data are not available, in Belgium, France and the United States (Chart C3.5).

Chart C3.5. Proportion of international and foreign graduates in tertiary graduate output (2004)

Percentage of all tertiary qualifications awarded to international and foreign students



1. Proportion of foreign graduates in tertiary graduate output. These data are not comparable with data on international graduates and are therefore presented separately.

Countries are ranked in descending order of the proportion of international and foreign graduates in tertiary-type A first degree programmes.

Source: OECD. Table C3.7. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/221673686112

By contrast, the contribution of international students to the tertiary graduate output of Denmark, Finland, Germany, Norway and Sweden is more limited. The same holds for the Czech Republic, Hungary, Italy, Portugal, the Slovak Republic and Turkey (Table C3.7). This makes it more difficult for these countries to capitalise on this external contribution to domestic human capital production

Immigration implications

Indeed, the growth of the new economy over the past two decades has magnified the importance of human capital and educated workforces to economic growth (see Indicator A10). In this context, worldwide competition for highly skilled workers is strong, and international students are increasingly regarded as a potential source of highly skilled immigrants by some OECD countries. Upon completion of their studies, international students master the language of their country of study, are familiar with its culture and their diplomas are known to local employers for those who completed a full programme abroad. This makes them directly employable on the labour market in their country of destination.

Several OECD countries have recently softened their immigration policies to encourage the temporary or permanent immigration of some international students (OECD, 2005a and Tremblay, 2005). Interestingly, the education systems where international students contribute most to the graduate output are those of countries with a long tradition of immigration favouring skilled individuals (Australia, Canada, New Zealand) or countries where the economy relies extensively upon foreign highly skilled workers (Switzerland, United Kingdom, United States).

In this perspective, the contribution of international graduates to the total graduate output can also be seen as a measure of the size of the potential pool of highly skilled immigrants upon which host countries can capitalise to enhance human capital availability in the economy.

Definitions and methodologies

Data sources, definitions and reference period

Data on international and foreign students are based on the UOE data collection on education statistics administered annually by the UNESCO, OECD and Eurostat.

Students are classified as international students if they left their country of origin and moved to another country for the purpose of study. Depending on country-specific immigration legislations, mobility arrangements (e.g. free mobility of individuals within the EU and EEA areas) 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 (*e.g.* EU countries).

Permanent or usual residence in the reporting country is defined according to national legislations. 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 data. The country of prior education is defined as the country in which students obtained the qualification required to enrol in their current level of education, *i.e.* the country where they obtained their upper secondary or post-secondary non-tertiary education for international students enrolled in tertiary-type A and tertiary-type B programmes and the country where they obtained their tertiary-type A education for international students enrolled in advanced research programmes. Country-specific operational definitions of international students are indicated in the tables as well as in Annex 3 (*www.oecd.org/edu/eag2006*).

Students are classified as foreign students if they are not citizens of the country in which the data are collected. While pragmatic and operational, this classification is inappropriate to capture student mobility as a result of differing national policies regarding the naturalisation of immigrants. For instance, while Australia and Switzerland report similar intakes of foreign students relative to their tertiary enrolments – 19.9 and 18.2% respectively – these proportions reflect significant differences in the actual levels of student mobility – 16.6% of tertiary enrolments in Australia and 12.7% in Switzerland. This is because Australia is an immigration country and has a higher propensity to grant permanent residence to its immigrant populations than Switzerland. Therefore, interpretations of data based on the concept of foreign students in terms of student mobility and bilateral comparisons need to be made with caution.

Unless mentioned otherwise, data refer to the academic year 2003-2004.

Methodologies

Data on international and foreign students are obtained from enrolments in their countries of destination. The method of obtaining data on international and foreign students is therefore the same as that used for collecting data on total enrolments, *i.e.* records of regularly enrolled students in an educational programme. Domestic and international students are usually counted on a specific day or period of the year. This procedure allows to measure the proportion of international enrolments in an education system, but the actual number of individuals involved in foreign exchange may be much higher since many students study abroad for less than a full academic year, or participate in exchange programmes that do not require enrolment (*e.g.* inter-university exchange or advanced research short-term mobility). On the other hand, the international student body comprises some distance-learning students who are not, strictly speaking, mobile students. This pattern of distance enrolments is fairly common in tertiary institutions of Australia and the United Kingdom (OECD, 2004d).

Since data on international and foreign students are obtained from tertiary enrolments in their country of destination, the data therefore relate to students that are coming in rather than to students going abroad. Countries of destination covered by this indicator include all of the OECD countries (with the exception of Luxembourg and Mexico) and the partner countries Chile and the Russian Federation, as well as non-OECD countries reporting similar data to the UNESCO Institute for Statistics to derive global figures and to examine the destinations of students and trends in market shares.

Data on students enrolled abroad as well as trend analyses are not based on the numbers of international students, but instead on the numbers of foreign citizens where data consistent across countries and over time are readily available. Yet the data do not include students enrolled in OECD and non-OECD countries that did not report foreign students to the OECD nor to the UNESCO Institute for Statistics. All statements on students enrolled abroad may therefore underestimate the real number of citizens studying abroad (Table C3.3), especially so for countries where numerous citizens study in countries that do not report their foreign students to the OECD or UNESCO Institute for Statistics (*e.g.* China, India).

Table C3.1. displays international as well as foreign enrolments as a proportion of the total enrolment at each level of tertiary education. Total enrolment, used as a denominator, comprises all persons studying in the country (including domestic and international students) but excludes students from that country who study abroad. The table also exhibits changes between 2000 and 2004 in foreign enrolments for all tertiary education.

Tables C3.2, C3.4 and C3.5 show the distribution of international students enrolled in an education system – or foreign students for countries that do not have information on student mobility – according to their country of origin in Table C3.2, according to their level and type of tertiary education in Table C3.4, and according to the field of education they are enrolled in for Table C3.5.

Table C3.3 presents the distribution of citizens of a given country enrolled abroad according to their country of destination (or country of study). As mentioned above, the total number of students enrolled abroad used as a denominator covers only students enrolled in other countries reporting data to the OECD or the UNESCO Institute for Statistics. Therefore, the resulting proportions can be biased and overestimated for countries where large numbers of students study in non-reporting countries.

Table C3.6 shows trends in the absolute number of foreign students reported by OECD countries and worldwide, and the indexes of change between 2003 and 2004 and since 2000 and 2002. It should be noted that the figures are based on the number of foreign students enrolled in countries reporting data to the OECD and to the UNESCO Institute for Statistics. Since data for non-OECD countries that are not OECD partner countries were not included in the past, the figures are not strictly comparable with those published in previous editions of *Education at a Glance*.

Table C3.7 presents the percentage of tertiary qualifications awarded to international students – or foreign students for countries that do not have information on student mobility. It provides an indication of the contribution of international or foreign students to the graduate output of different levels and types of tertiary education.

Last, Table C3.8 (available on the Web at *http://dx.doi.org/10.1787/221673686112*) provides the matrix of foreign students' numbers by country of origin and country of destination, as well as the total number of foreign students in each destination in 2000 and the corresponding market shares in 2000 and 2004.

Further references

The number of expected years of tertiary education is biased upwards in countries with a large proportion of international students in tertiary enrolments. This pattern should be borne in mind when interpreting trends or differences between countries in expected years of tertiary education (see Indicators C1 and C2).

Similarly, the relative importance of international students in the education system affects tertiary graduation rates and may artificially increase them in some fields or levels of education (see Indicator A3).

International students contribute significantly to the tertiary graduate output of some countries. This gives highly internationalised education systems an opportunity to capitalise upon international students to enhance human capital in the economy, and thereby stimulate economic growth (see Indicator A10).

In countries where differentiated tuition fees are applied to international students, student mobility may boost the financial resources of tertiary educational institutions and contribute to the financing of the education system. By contrast, international students may represent a high financial burden for countries where tertiary tuition fees are low or inexistent given the high level of unit costs in tertiary education (see Indicators B1 and B5)

International students enrolled in a country different from their own are only one aspect of the internationalisation of tertiary education. New forms of cross-border education have emerged in the last decade, including the mobility of educational programmes and institutions across borders. Yet, cross-border post-secondary education has developed quite differently and in response to different rationales in different world regions. For a detailed analysis of these issues, as well as trade and policy implications of the internationalisation of tertiary education see *Internationalisation and Trade in Higher Education: Opportunities and Challenges* (OECD, 2004d).

Table C3.1.

Student mobility and foreign students in tertiary education (2000, 2004)

International mobile students enrolled as a percentage of all students (international plus domestic), foreign enrolments as a percentage of all students (foreign and national) and index of change in the number of foreign students

Reading the first column: 8.8% of all students in tertiary education in Canada are international students and 12.7% of all students in tertiary education in Switzerland are international students. According to country-specific immigration legislations and data availability constraints, student mobility is either defined on the basis of students' country of residence (*i.e.* Canada) or the country where students received their prior education (*i.e.* Switzerland). The data presented in this table on student mobility represent the best available proxy of student mobility for each country. *Reading the fifth column:* 10.6% of all students in tertiary education in Canada are non-Canadian citizens, and 18.2% of all students in tertiary education in Switzerland are non-Swiss citizens.

		Student mobility				Foreign enrolments				
		International students as a percentage of all tertiary enrolment				Foreign students as a percentage of all tertiary enrolment				Index of change in the number of foreign students, total tertiary (2000=100)
		Total tertiary	Tertiary-type B programmes	Tertiary-type A programmes	Advanced research programmes	Total tertiary	Tertiary-type B programmes	Tertiary-type A programmes	Advanced research programmes	
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
OECD countries	**Australia**[1]	16.6	6.1	18.7	17.8	19.9	6.3	22.4	26.4	158
	Austria[1]	11.3	m	12.3	16.8	14.1	m	15.4	21.3	111
	Belgium[1]	6.0	3.6	7.3	20.0	9.6	5.9	12.9	31.3	114
	Canada[1,2]	8.8	10.6	7.8	23.3	10.6	5.5	11.6	34.1	116
	Czech Republic	m	m	m	m	4.7	1.2	4.9	7.1	262
	Denmark[1]	4.6	3.2	4.7	7.0	7.9	9.5	7.3	20.4	133
	Finland[3]	3.4	m	3.2	7.0	2.6	3.8	2.3	7.0	142
	France	m	m	m	m	11.0	5.2	11.4	33.9	173
	Germany[3]	m	m	10.0	m	11.2	4.1	12.4	m	139
	Greece	m	m	m	m	2.4	2.0	2.7	n	167
	Hungary[1]	2.8	0.1	2.8	6.9	3.1	0.1	3.1	7.4	130
	Iceland	m	m	m	m	3.3	1.4	3.4	13.7	121
	Ireland[3]	6.7	x(1)	x(1)	x(1)	m	m	m	m	171
	Italy	m	m	m	m	2.0	7.5	2.0	3.6	163
	Japan[1]	2.7	2.6	2.7	x(3)	2.9	2.7	3.0	x(7)	177
	Korea	m	m	m	m	0.3	x(5)	x(5)	x(5)	320
	Luxembourg	m	m	m	m	m	m	m	m	m
	Mexico	m	m	m	m	m	m	m	m	m
	Netherlands[3]	4.8	a	4.9	m	3.9	a	4.0	m	152
	New Zealand	m	m	m	m	28.3	28.0	28.2	36.6	456
	Norway[1]	1.7	0.9	1.6	3.5	4.5	3.4	4.3	18.2	142
	Poland	m	m	m	m	0.4	0.1	0.4	m	133
	Portugal	m	m	m	m	4.1	3.3	3.9	7.8	145
	Slovak Republic	m	m	m	m	1.0	0.1	1.0	1.2	104
	Spain[1]	0.8	m	0.7	5.5	2.3	2.5	1.5	17.5	164
	Sweden[1]	4.0	2.0	4.1	4.5	8.5	6.2	7.9	19.9	143
	Switzerland[3]	12.7	m	12.9	42.5	18.2	13.6	16.8	42.4	137
	Turkey	m	m	m	m	0.8	0.2	1.0	m	87
	United Kingdom[1]	13.4	5.6	14.4	38.6	16.2	10.7	16.6	40.3	135
	United States[1]	3.4	x(1)	x(1)	x(1)	3.4	x(5)	x(5)	x(5)	120
	OECD average	***6.5***	***3.5***	***7.2***	***16.1***	***7.3***	***5.1***	***8.0***	***19.5***	***161***
	EU19 average	***5.8***	***2.4***	***6.4***	***13.3***	***6.5***	***4.1***	***6.8***	***16.7***	***152***
Partner countries	**Brazil**	m	m	m	m	m	m	m	m	m
	Chile	m	m	m	m	0.9	0.3	1.1	5.7	150
	Israel	m	m	m	m	m	m	m	m	m
	Russian Federation	m	m	m	m	0.9	0.3	1.1	m	184

1. For the purpose of measuring student mobility, international students are defined on the basis of their country of residence.
2. Year of reference 2002.
3. For the purpose of measuring student mobility, international students are defined on the basis of their country of prior education.
Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

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Table C3.2.

Distribution of international and foreign students in tertiary education, by country of origin (2004)

Number of international and foreign students enrolled in tertiary education from a given country of origin as a percentage of all international or foreign students in the country of destination, based on head counts

The table shows, for each country, the proportion of international students in tertiary education that come from a given country of origin. When data on student mobility is not available, the table shows the proportion of foreign students in tertiary education that have citizenship of a given country of origin.

Reading the third column: 8.8% of international tertiary students in Denmark are German residents, 0.6% of international tertiary students in Denmark are Greek residents, etc.

Reading the sixth column: 5.0% of international tertiary students in Ireland had their prior education in Germany, 0.4% of international tertiary students in Ireland had their prior education in Greece, etc.

Reading the 14th column: 1.2% of foreign tertiary students in Belgium are German citizens, 1.3% of foreign tertiary students in Belgium are Greek citizens, etc.

		Countries of destination											
		OECD countries											
		INTERNATIONAL students by country of origin											
		Australia[1]	Canada[1,2]	Denmark[1]	Germany[3,4,5]	Ireland[3]	Netherlands[3,4]	Slovak Republic[1]	Spain[1,5]	Sweden[1]	Switzerland[3,5]	United Kingdom[1]	United States[1]
	Countries of origin	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
OECD countries	**Australia**	a	0.4	1.8	0.2	0.4	0.1	n	0.2	1.1	0.3	0.5	0.5
	Austria	0.1	0.1	0.8	2.5	0.3	0.2	0.1	1.0	1.9	2.2	0.4	0.2
	Belgium	n	0.3	1.5	0.7	0.6	4.1	n	2.0	0.9	0.8	0.8	0.1
	Canada	1.9	a	1.0	0.3	2.6	0.1	0.6	0.1	1.2	1.1	1.3	4.7
	Czech Republic	0.1	n	0.1	1.1	0.2	0.1	27.6	0.1	1.1	0.6	0.1	0.2
	Denmark	0.1	0.1	a	0.3	0.1	0.2	n	0.2	1.0	0.3	0.6	0.2
	Finland	n	0.1	0.5	0.5	0.8	0.3	0.1	0.3	3.3	0.3	0.6	0.1
	France	0.3	5.6	5.1	3.2	4.7	0.6	0.1	5.5	6.4	16.1	3.8	1.2
	Germany	0.8	0.8	8.8	a	5.0	16.2	0.1	5.1	10.3	23.4	4.0	1.5
	Greece	n	0.1	0.6	1.7	0.4	0.3	5.3	0.3	0.6	0.8	7.6	0.4
	Hungary	n	n	0.1	1.3	0.1	0.2	0.6	0.1	0.3	0.7	0.1	0.2
	Iceland	n	n	7.3	0.1	n	0.1	n	n	0.1	n	0.1	0.1
	Ireland	0.1	0.1	1.3	0.2	a	0.1	n	0.2	0.3	0.1	4.9	0.2
	Italy	0.1	0.2	1.3	2.1	1.2	0.4	n	5.0	2.4	6.4	1.7	0.6
	Japan	1.9	1.2	0.4	1.0	0.4	0.1	0.3	0.3	0.5	0.9	2.1	7.1
	Korea	2.3	0.1	0.1	1.8	n	0.1	0.1	0.1	0.2	0.4	1.2	9.2
	Luxembourg	n	n	0.6	1.1	0.1	n	n	0.2	n	1.1	0.3	n
	Mexico	0.2	1.1	0.3	0.5	0.1	0.1	n	6.2	0.5	0.6	0.7	2.3
	Netherlands	0.1	0.2	1.1	0.5	0.5	a	n	0.7	2.5	0.6	0.8	0.3
	New Zealand	2.7	0.1	0.5	0.1	n	n	n	n	0.1	0.1	0.2	0.2
	Norway	1.9	0.2	15.3	0.4	1.6	0.3	1.9	0.2	0.9	0.4	1.2	0.3
	Poland	0.1	0.2	1.2	6.3	0.7	0.7	1.2	1.1	1.8	1.7	0.3	0.5
	Portugal	n	0.1	0.1	0.3	0.2	0.2	n	9.1	0.5	0.4	0.9	0.2
	Slovak Republic	0.1	n	n	0.6	0.1	0.1	a	0.1	0.4	0.6	0.1	0.1
	Spain	0.1	0.2	3.0	2.3	2.2	1.0	0.2	a	4.1	1.8	2.0	0.6

1. International students are defined on the basis of their country of residence.
2. Year of reference 2002.
3. International students are defined on the basis of their country of prior education.
4. Excludes advanced research programmes.
5. Excludes tertiary-type B programmes.
6. Foreign students are defined on the basis of their country of citizenship, these data are not comparable with data on international students and are therefore presented separately in the table.

Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

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Table C3.2. *(continued-1)*

Distribution of international and foreign students in tertiary education, by country of origin (2004)

Number of international and foreign students enrolled in tertiary education from a given country of origin as a percentage of all international or foreign students in the country of destination, based on head counts

The table shows, for each country, the proportion of international students in tertiary education that come from a given country of origin. When data on student mobility is not available, the table shows the proportion of foreign students in tertiary education that have citizenship of a given country of origin.

Reading the third column: 8.8% of international tertiary students in Denmark are German residents, 0.6% of international tertiary students in Denmark are Greek residents, etc.

Reading the sixth column: 5.0% of international tertiary students in Ireland had their prior education in Germany, 0.4% of international tertiary students in Ireland had their prior education in Greece, etc.

Reading the 14th column: 1.2% of foreign tertiary students in Belgium are German citizens, 1.3% of foreign tertiary students in Belgium are Greek citizens, etc.

		Countries of destination											
		OECD countries											
		INTERNATIONAL students by country of origin											
		Australia[1]	Canada[1,2]	Denmark[1]	Germany[3,4,5]	Ireland[3]	Netherlands[3,4]	Slovak Republic[1]	Spain[1,5]	Sweden[1]	Switzerland[3,5]	United Kingdom[1]	United States[1]
	Countries of origin	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
OECD countries	**Sweden**	0.6	0.2	5.7	0.4	0.5	0.2	0.3	0.5	a	0.7	1.1	0.5
	Switzerland	0.2	0.3	1.8	0.9	0.2	0.1	n	1.2	1.0	a	0.5	0.3
	Turkey	0.1	0.3	0.4	3.3	0.1	0.8	0.2	n	0.1	1.5	0.7	2.0
	United Kingdom	1.0	0.7	14.6	1.0	17.0	0.5	0.3	2.2	1.4	1.0	a	1.5
	United States	2.1	6.5	6.0	1.7	15.8	0.4	0.4	2.5	3.2	1.7	4.5	a
	Total from OECD countries	*17.1*	*19.3*	*81.0*	*36.5*	*55.9*	*27.6*	*39.5*	*44.8*	*48.3*	*66.5*	*43.1*	*35.0*
Partner countries	**Brazil**	0.2	0.4	0.4	0.8	0.1	0.2	0.1	3.8	0.2	1.1	0.4	1.4
	Chile	0.1	0.1	0.1	0.3	n	n	0.1	2.8	0.2	0.4	0.1	0.3
	China	17.0	7.2	6.1	11.5	8.7	4.3	0.1	0.7	0.7	2.5	15.9	15.4
	India	9.4	1.1	0.6	1.9	2.5	0.1	0.3	0.1	0.2	0.9	4.9	13.9
	Israel	0.2	0.3	0.5	0.5	n	0.3	7.5	0.2	n	0.2	0.4	0.6
	Russian Federation	0.3	0.6	0.7	5.5	0.6	0.6	1.7	0.4	0.3	2.0	0.6	1.0
	Main geographic regions												
	Total from Africa	*3.3*	*10.0*	*2.4*	*9.0*	*4.6*	*3.4*	*6.2*	*13.9*	*0.7*	*9.6*	*8.9*	*6.7*
	Total from Asia	*76.0*	*20.2*	*11.0*	*30.3*	*28.3*	*9.1*	*23.7*	*3.2*	*3.1*	*9.7*	*46.9*	*62.3*
	Total from Europe	*6.3*	*12.2*	*74.1*	*47.6*	*38.3*	*28.4*	*67.8*	*45.8*	*43.3*	*71.3*	*34.3*	*12.8*
	of which, from EU19 countries	*3.4*	*8.7*	*44.8*	*16.8*	*33.6*	*24.3*	*6.6*	*32.4*	*35.7*	*56.1*	*29.6*	*7.5*
	Total from North America	*3.9*	*6.9*	*6.9*	*2.0*	*18.4*	*0.5*	*1.0*	*2.6*	*4.5*	*2.8*	*5.9*	*4.8*
	Total from Oceania	*3.8*	*0.5*	*2.3*	*0.2*	*0.5*	*0.1*	*n*	*0.2*	*1.2*	*0.4*	*0.7*	*0.8*
	Total from South America	*1.1*	*5.2*	*1.8*	*3.6*	*0.6*	*1.9*	*1.2*	*34.2*	*1.2*	*6.3*	*2.9*	*12.2*
	Not specified	*5.5*	*45.0*	*1.5*	*7.2*	*9.2*	*56.7*	*n*	*n*	*46.0*	*n*	*0.4*	*0.4*
	Total from all countries	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*

1. International students are defined on the basis of their country of residence.
2. Year of reference 2002.
3. International students are defined on the basis of their country of prior education.
4. Excludes advanced research programmes.
5. Excludes tertiary-type B programmes.
6. Foreign students are defined on the basis of their country of citizenship, these data are not comparable with data on international students and are therefore presented separately in the table.

Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

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Table C3.2. *(continued-2)*

Distribution of international and foreign students in tertiary education, by country of origin (2004)

Number of international and foreign students enrolled in tertiary education from a given country of origin as a percentage of all international or foreign students in the country of destination, based on head counts

The table shows, for each country, the proportion of international students in tertiary education that come from a given country of origin. When data on student mobility is not available, the table shows the proportion of foreign students in tertiary education that have citizenship of a given country of origin.
Reading the third column: 8.8% of international tertiary students in Denmark are German residents, 0.6% of international tertiary students in Denmark are Greek residents, etc.
Reading the sixth column: 5.0% of international tertiary students in Ireland had their prior education in Germany, 0.4% of international tertiary students in Ireland had their prior education in Greece, etc.
Reading the 14th column: 1.2% of foreign tertiary students in Belgium are German citizens, 1.3% of foreign tertiary students in Belgium are Greek citizens, etc.

	Countries of destination																			
	OECD countries																	Non-OECD countries		
	FOREIGN students by country of origin																			
	Austria[5,6]	Belgium[6]	Czech Republic[6]	Finland[6]	France[6]	Greece[6]	Hungary[6]	Iceland[6]	Italy[6]	Japan[6]	Korea[6]	New Zealand[6]	Norway[6]	Poland[4,6]	Portugal[6]	Turkey[6]	Total OECD destinations	Chile[6]	Total non-OECD destinations[6]	Total all reporting destinations
Countries of origin	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)
OECD countries																				
Australia	0.1	0.1	n	0.3	0.1	n	n	0.6	0.1	0.3	0.3	3.8	0.2	0.1	0.2	0.2	**0.4**	0.8	**0.1**	**0.4**
Austria	a	0.1	0.1	0.5	0.2	n	0.2	1.2	0.5	n	n	n	0.3	0.3	0.1	0.1	**0.5**	0.3	**n**	**0.5**
Belgium	0.2	a	n	0.3	1.2	0.1	n	0.4	0.4	n	0.1	n	0.2	0.1	0.5	n	**0.5**	0.2	**n**	**0.5**
Canada	0.2	0.3	n	0.9	0.5	n	0.5	1.2	0.3	0.2	1.0	0.5	0.4	1.9	1.1	n	**1.8**	1.6	**0.2**	**1.6**
Czech Republic	1.5	0.2	a	0.6	0.3	n	0.1	1.4	0.4	n	n	n	0.3	2.6	n	n	**0.3**	0.1	**n**	**0.3**
Denmark	0.2	0.1	n	0.6	0.1	n	n	10.8	0.2	n	n	0.1	7.4	0.1	n	n	**0.3**	0.2	**n**	**0.3**
Finland	0.4	0.2	n	a	0.1	n	0.2	5.7	0.2	n	n	n	2.4	0.1	0.1	n	**0.3**	0.3	**0.1**	**0.2**
France	1.2	30.2	0.1	1.7	a	n	0.4	2.9	2.0	0.2	0.1	0.3	1.0	0.4	7.3	0.1	**2.6**	3.7	**0.2**	**2.2**
Germany	18.1	1.2	0.6	3.5	2.8	0.7	5.9	10.6	3.3	0.3	0.4	1.2	4.0	2.2	1.9	0.8	**2.6**	4.7	**0.3**	**2.3**
Greece	0.7	1.3	0.9	0.6	1.0	a	1.3	0.2	17.6	n	n	n	0.1	0.4	0.1	7.4	**1.9**	n	**1.4**	**1.9**
Hungary	4.0	0.2	0.1	1.3	0.2	n	a	0.2	0.5	0.1	n	n	0.3	0.8	n	n	**0.3**	n	**0.1**	**0.3**
Iceland	0.1	n	n	0.3	n	n	0.2	a	n	n	n	n	2.0	n	n	n	**0.1**	n	**n**	**0.1**
Ireland	0.1	0.1	0.1	0.4	0.2	n	0.1	0.4	n	n	n	n	0.2	0.1	0.1	n	**0.8**	0.1	**n**	**0.8**
Italy	18.5	6.2	n	1.2	2.0	0.1	0.2	1.8	a	0.1	n	n	0.6	0.2	1.0	0.1	**1.4**	0.9	**1.5**	**1.4**
Japan	0.8	0.4	0.1	1.2	1.0	n	0.2	1.0	0.6	a	8.5	1.3	0.3	0.2	n	0.1	**2.8**	0.6	**0.2**	**2.4**
Korea	1.0	0.1	0.1	0.4	1.0	n	0.1	0.2	0.1	19.7	a	0.1	0.2	0.5	n	0.2	**4.3**	0.6	**0.7**	**3.7**
Luxembourg	1.0	3.3	n	n	0.7	n	n	n	0.1	n	n	n	n	n	0.3	n	**0.3**	n	**n**	**0.3**
Mexico	0.1	0.2	n	0.4	0.6	n	n	0.8	0.4	0.1	0.2	0.1	0.3	0.1	0.1	n	**1.0**	4.0	**0.3**	**0.9**
Netherlands	0.4	6.9	n	0.9	0.3	n	n	1.6	0.3	0.1	n	n	1.3	n	0.3	n	**0.5**	0.5	**n**	**0.5**
New Zealand	n	n	n	0.1	n	n	n	n	n	0.1	0.3	a	0.1	n	n	n	**0.3**	n	**n**	**0.3**
Norway	0.2	0.1	0.7	0.8	0.1	n	5.1	4.5	0.3	n	n	0.4	a	5.6	0.1	n	**0.6**	0.5	**n**	**0.6**
Poland	4.0	0.9	0.9	1.6	1.4	0.2	0.8	3.1	2.5	0.1	0.1	n	1.1	a	0.4	n	**1.2**	0.1	**0.2**	**1.0**
Portugal	0.1	1.7	0.3	0.3	1.1	n	n	0.2	0.2	n	n	n	0.3	0.1	a	n	**0.5**	n	**0.1**	**0.4**
Slovak Republic	4.5	0.1	51.8	0.3	0.2	n	18.9	0.6	0.4	n	n	n	0.4	1.5	n	n	**0.7**	n	**n**	**0.7**
Spain	1.0	2.9	n	1.3	1.7	0.1	0.3	1.4	1.0	0.1	0.1	n	0.7	0.2	3.0	n	**1.1**	2.8	**0.2**	**1.0**

1. International students are defined on the basis of their country of residence.
2. Year of reference 2002.
3. International students are defined on the basis of their country of prior education.
4. Excludes advanced research programmes.
5. Excludes tertiary-type B programmes.
6. Foreign students are defined on the basis of their country of citizenship, these data are not comparable with data on international students and are therefore presented separately in the table.

Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/221673686112

Table C3.2. *(continued-3)*

Distribution of international and foreign students in tertiary education, by country of origin (2004)

Number of international and foreign students enrolled in tertiary education from a given country of origin as a percentage of all international or foreign students in the country of destination, based on head counts

The table shows, for each country, the proportion of international students in tertiary education that come from a given country of origin. When data on student mobility is not available, the table shows the proportion of foreign students in tertiary education that have citizenship of a given country of origin.

Reading the third column: 8.8% of international tertiary students in Denmark are German residents, 0.6% of international tertiary students in Denmark are Greek residents, etc.

Reading the sixth column: 5.0% of international tertiary students in Ireland had their prior education in Germany, 0.4% of international tertiary students in Ireland had their prior education in Greece, etc.

Reading the 14th column: 1.2% of foreign tertiary students in Belgium are German citizens, 1.3% of foreign tertiary students in Belgium are Greek citizens, etc.

		Countries of destination																			
		OECD countries																	Non-OECD countries		
		FOREIGN students by country of origin																			
		Austria[5,6]	Belgium[6]	Czech Republic[6]	Finland[6]	France[6]	Greece[6]	Hungary[6]	Iceland[6]	Italy[6]	Japan[6]	Korea[6]	New Zealand[6]	Norway[6]	Poland[4,6]	Portugal[6]	Turkey[6]	Total OECD destinations	Chile[6]	Total non-OECD destinations[6]	Total all reporting destinations
	Countries of origin	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)
OECD countries	**Sweden**	0.5	0.1	0.3	6.8	0.3	n	0.8	6.1	0.3	0.1	n	0.3	9.8	1.4	0.1	n	**0.6**	1.1	**0.1**	**0.5**
	Switzerland	0.8	0.3	n	0.5	0.6	n	0.1	1.0	2.6	n	0.1	n	0.3	0.1	0.4	1.8	**0.5**	0.3	**n**	**0.5**
	Turkey	6.0	0.8	n	0.7	1.0	0.3	0.3	0.6	0.4	0.1	0.2	n	0.5	0.1	n	a	**1.2**	n	**1.4**	**1.3**
	United Kingdom	0.6	0.6	1.8	2.2	1.1	0.1	0.2	1.6	0.6	0.3	0.1	0.5	2.7	0.3	0.6	1.1	**1.1**	1.2	**0.2**	**0.9**
	United States	1.0	0.5	0.6	2.5	1.1	0.2	1.9	5.9	0.9	1.1	3.1	2.9	2.5	6.7	1.3	0.2	**1.9**	24.1	**1.2**	**1.8**
	Total from OECD countries	*67.3*	*59.0*	*58.5*	*32.0*	*21.0*	*2.3*	*38.1*	*66.5*	*36.2*	*23.2*	*14.8*	*12.0*	*39.8*	*26.2*	*19.1*	*12.3*	*32.5*	*48.7*	*8.7*	*28.9*
Partner countries	**Brazil**	0.2	0.4	n	0.3	0.7	n	n	0.4	1.5	0.4	0.2	n	0.4	0.3	11.4	n	**0.8**	3.2	**0.4**	**0.8**
	Chile	0.1	0.3	n	0.1	0.2	n	n	0.2	0.4	n	n	0.1	0.6	n	n	n	**0.2**	a	**0.2**	**0.2**
	China	2.2	3.5	0.1	16.5	4.8	0.1	0.7	2.2	0.7	64.6	60.0	35.1	3.8	0.6	0.4	0.7	**15.2**	1.1	**0.1**	**13.0**
	India	0.2	0.4	0.3	1.7	0.2	n	0.4	0.4	0.7	0.2	1.4	2.5	1.2	1.3	0.1	n	**5.7**	0.2	**n**	**5.7**
	Israel	0.1	0.1	0.7	0.3	0.1	0.3	5.5	0.6	2.3	n	n	n	0.2	0.3	n	0.1	**0.4**	0.3	**n**	**0.4**
	Russian Federation	1.0	1.1	2.7	14.4	1.1	0.9	1.8	6.1	1.3	0.3	1.5	0.3	5.4	4.7	0.2	4.3	**1.4**	0.2	**0.5**	**1.2**
	Main geographic regions																				
	Total from Africa	*1.7*	*25.7*	*1.9*	*11.3*	*46.7*	*1.8*	*1.9*	*2.0*	*8.9*	*0.8*	*1.0*	*0.3*	*8.6*	*3.4*	*59.6*	*2.4*	*11.7*	*0.2*	*19.2*	*12.8*
	Total from Asia	*14.0*	*9.3*	*7.6*	*28.4*	*15.4*	*83.6*	*14.4*	*9.0*	*10.8*	*94.3*	*89.8*	*46.7*	*14.7*	*15.9*	*1.8*	*63.5*	*45.0*	*2.9*	*51.9*	*46.0*
	Total from Europe	*81.7*	*60.5*	*66.5*	*53.8*	*21.7*	*13.7*	*81.0*	*76.5*	*70.2*	*2.2*	*3.1*	*3.6*	*49.2*	*70.9*	*17.8*	*33.5*	*25.3*	*17.9*	*18.5*	*24.3*
	of which, from EU19 countries	*43.1*	*54.9*	*4.1*	*20.2*	*12.8*	*1.3*	*9.7*	*45.2*	*26.8*	*1.2*	*1.0*	*2.8*	*31.0*	*6.1*	*15.3*	*9.7*	*15.0*	*16.2*	*m*	*m*
	Total from North America	*1.2*	*0.7*	*0.6*	*3.3*	*1.7*	*0.3*	*2.5*	*7.2*	*1.2*	*1.3*	*4.1*	*3.4*	*2.9*	*8.6*	*4.7*	*0.2*	*3.8*	*25.7*	*1.4*	*3.5*
	Total from Oceania	*0.1*	*0.1*	*n*	*0.4*	*0.1*	*n*	*n*	*0.6*	*0.1*	*0.5*	*0.6*	*5.6*	*0.3*	*0.1*	*0.2*	*0.2*	*0.9*	*0.8*	*0.2*	*0.8*
	Total from South America	*1.1*	*2.5*	*0.9*	*2.0*	*4.0*	*0.1*	*0.2*	*4.5*	*8.1*	*1.0*	*1.4*	*0.4*	*2.5*	*0.9*	*15.5*	*0.1*	*5.7*	*52.5*	*8.7*	*6.1*
	Not specified	*0.2*	*1.1*	*22.4*	*0.7*	*10.5*	*0.5*	*n*	*0.2*	*0.7*	*n*	*n*	*39.9*	*21.9*	*0.1*	*0.4*	*0.1*	*7.6*	*m*	*n*	*7.6*
	Total from all countries	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*

1. International students are defined on the basis of their country of residence.
2. Year of reference 2002.
3. International students are defined on the basis of their country of prior education.
4. Excludes advanced research programmes.
5. Excludes tertiary-type B programmes.
6. Foreign students are defined on the basis of their country of citizenship, these data are not comparable with data on international students and are therefore presented separately in the table.

Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/221673686112

C3

Table C3.3.

Citizens studying abroad in tertiary education, by country of destination (2004)

Number of students enrolled in tertiary education in a given country of destination as a percentage of all students enrolled abroad, based on head counts

The table shows, for each country, the proportion of students studying in tertiary education abroad that study in a given country of destination.

Reading the second column: 7.1% of Czech citizens enrolled in tertiary education abroad study in Austria, 9.9% of German citizens enrolled in tertiary education abroad study in Austria, etc.

Reading the first row: 6.9% of Australian citizens enrolled in tertiary education abroad study in Canada, 3.5% of Australian citizens enrolled in tertiary education abroad study in Germany, etc.

	Countries of destination															
	OECD countries															
	Australia[1]	Austria[2]	Belgium	Canada[4]	Czech Republic	Denmark	Finland	France	Germany[2,3]	Greece	Hungary	Iceland	Ireland	Italy	Japan	Korea
Countries of origin	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
OECD countries																
Australia	a	0.2	0.4	6.9	n	0.4	0.3	2.2	3.5	n	n	n	0.6	0.4	3.7	0.3
Austria	1.1	a	0.4	1.4	0.1	0.3	0.3	4.0	56.0	n	0.3	n	0.3	1.7	0.3	n
Belgium	0.6	0.7	a	2.8	n	0.2	0.2	26.0	9.3	0.1	n	n	0.7	1.6	0.3	0.1
Canada	7.9	0.1	0.3	a	n	0.2	0.2	3.2	1.4	n	0.2	n	0.8	0.3	0.7	0.3
Czech Republic	1.6	7.1	1.0	2.0	a	0.3	0.7	9.4	35.1	0.1	0.2	0.1	0.4	2.1	0.5	n
Denmark	1.6	1.0	0.6	3.2	n	a	0.7	4.7	10.6	n	n	0.8	0.3	1.0	0.3	n
Finland	0.8	1.4	0.7	1.5	0.1	1.3	a	3.3	10.6	n	0.3	0.3	1.0	1.0	0.4	0.1
France	0.9	0.7	23.4	11.1	n	0.3	0.2	a	11.7	n	0.1	n	1.1	1.4	0.5	n
Germany	2.2	9.9	0.8	2.3	0.1	1.2	0.4	10.8	a	0.2	1.2	0.1	1.0	2.2	0.5	0.1
Greece	0.1	0.5	1.1	0.4	0.3	0.1	0.1	4.5	14.8	a	0.3	n	0.1	14.0	n	n
Hungary	0.8	16.7	1.2	1.5	0.2	0.7	1.3	6.7	38.5	n	a	n	0.2	2.3	1.3	n
Iceland	0.5	0.8	0.3	1.5	0.1	37.1	0.8	1.7	5.2	n	0.7	a	n	0.6	0.2	n
Ireland	0.9	0.2	0.3	1.1	0.1	0.3	0.2	2.9	2.7	n	n	n	a	0.1	0.1	n
Italy	0.4	13.9	6.1	0.8	n	0.3	0.2	10.4	18.1	n	0.1	n	0.3	a	0.2	n
Japan	5.2	0.4	0.3	2.8	n	0.1	0.2	3.8	4.1	n	n	n	0.1	0.4	a	1.5
Korea	4.0	0.3	0.1	3.4	n	n	n	2.4	5.6	n	n	n	n	n	23.7	a
Luxembourg	0.1	4.9	21.3	0.2	n	n	n	24.8	30.1	0.1	n	n	0.2	0.4	n	n
Mexico	1.5	0.2	0.4	6.3	n	0.2	0.1	5.9	4.0	n	n	n	0.1	0.6	0.5	0.1
Netherlands	1.3	1.0	25.1	3.4	0.1	0.9	0.6	5.0	15.3	n	n	0.1	0.5	0.8	0.5	n
New Zealand	68.5	0.1	n	2.4	n	0.2	0.1	0.6	1.0	n	n	n	0.1	0.1	1.3	0.4
Norway	20.8	0.4	0.2	1.5	0.7	11.1	0.4	2.1	5.1	n	4.3	0.1	1.3	0.7	0.2	n
Poland	0.7	4.5	1.3	2.6	0.4	1.2	0.4	10.7	50.6	0.1	0.4	n	0.3	3.3	0.3	n
Portugal	0.3	0.4	6.0	2.5	0.3	0.3	0.2	21.2	15.1	n	n	n	0.2	0.7	0.2	n
Slovak Republic	0.7	9.6	0.4	0.7	49.1	0.1	0.1	2.8	10.4	n	15.6	n	0.1	0.9	0.1	n
Spain	0.3	1.2	4.6	0.8	n	0.6	0.4	14.2	21.8	n	0.1	n	1.0	1.5	0.3	n
Sweden	7.5	1.3	0.3	2.4	0.3	6.6	3.9	4.8	6.0	0.1	0.7	0.2	0.4	0.9	0.6	n
Switzerland	2.8	2.5	1.1	4.3	n	0.5	0.4	14.2	21.0	n	0.1	n	0.2	10.4	0.4	0.1
Turkey	0.5	3.7	0.6	0.9	n	0.3	0.1	4.2	50.7	0.1	0.1	n	n	0.3	0.3	n
United Kingdom	6.4	0.7	1.1	9.7	1.0	1.8	0.7	10.2	8.4	0.1	0.1	n	8.4	1.0	1.6	n
United States	7.4	0.7	0.4	16.9	0.2	0.6	0.4	5.8	7.3	0.1	0.5	0.1	4.3	0.7	2.7	0.7
Total from OECD countries	*3.6*	*2.8*	*3.3*	*3.8*	*1.1*	*0.9*	*0.3*	*6.2*	*14.2*	*n*	*0.6*	*n*	*0.9*	*1.8*	*3.4*	*0.2*
Partner countries																
Brazil	1.7	0.2	0.7	3.1	n	0.3	0.1	8.0	8.2	n	n	n	n	2.9	2.0	0.1
Chile	1.1	0.2	1.5	3.5	n	0.4	0.1	6.7	8.1	n	n	n	n	2.3	0.4	n
China	7.4	0.2	0.4	4.8	n	0.3	0.3	3.0	6.6	n	n	n	0.3	n	20.0	1.7
India	12.1	n	0.1	3.3	n	0.1	0.1	0.4	3.3	n	n	n	0.2	0.2	0.2	0.1
Israel	2.1	0.3	0.4	5.6	0.8	0.4	0.2	2.5	8.2	0.3	5.2	n	n	6.7	0.3	n
Russian Federation	1.2	0.9	1.2	3.5	1.1	0.9	3.0	6.8	29.9	0.4	0.6	0.1	0.2	1.3	1.0	0.4

Note: The proportion of students abroad is based only on the total of students enrolled in countries reporting data to the OECD and to the UNESCO Institute for Statistics.

1. Data by country of origin relate to international students defined on the basis of their country of residence.
2. Excludes tertiary-type B programmes.
3. Excludes advanced research programmes.
4. Year of reference 2002.

Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/221673686112

Table C3.3. *(continued)*

Citizens studying abroad in tertiary education, by country of destination (2004)

Number of students enrolled in tertiary education in a given country of destination as a percentage of all students enrolled abroad, based on head counts

The table shows, for each country, the proportion of students studying in tertiary education abroad that study in a given country of destination.

Reading the second column: 7.1% of Czech citizens enrolled in tertiary education abroad study in Austria, 9.9% of German citizens enrolled in tertiary education abroad study in Austria, etc.

Reading the first row: 6.9% of Australian citizens enrolled in tertiary education abroad study in Canada, 3.5% of Australian citizens enrolled in tertiary education abroad study in Germany, etc.

		Countries of destination															
		OECD countries													Non-OECD countries		
		Netherlands[3]	New Zealand	Norway	Poland[3]	Portugal	Slovak Republic	Spain[2]	Sweden	Switzerland[2]	Turkey	United Kingdom[1]	United States[1]	Total OECD destinations	Chile	Total non-OECD destinations	Total all reporting destinations
	Countries of origin	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)
OECD countries	**Australia**	0.4	27.6	0.2	0.1	0.3	n	0.4	3.0	0.7	0.3	16.0	28.9	**96.9**	0.4	**3.1**	**100**
	Austria	1.2	0.2	0.3	0.2	0.1	n	1.6	3.9	7.1	0.1	10.6	7.3	**98.9**	0.1	**1.1**	**100**
	Belgium	18.1	0.1	0.2	n	0.7	n	2.7	1.9	2.8	n	22.1	7.5	**98.9**	0.1	**1.1**	**100**
	Canada	0.2	1.0	0.1	0.4	0.4	n	0.2	0.9	0.7	n	9.9	68.8	**98.3**	0.2	**1.7**	**100**
	Czech Republic	0.8	0.2	0.6	2.9	n	6.3	1.0	3.4	2.6	n	5.1	14.9	**98.3**	0.1	**1.7**	**100**
	Denmark	1.4	1.3	13.9	0.1	0.1	n	0.9	15.7	1.5	0.1	25.2	13.0	**98.0**	0.2	**2.0**	**100**
	Finland	1.3	0.2	3.0	0.1	0.1	n	0.8	41.0	1.1	n	18.8	6.2	**95.3**	0.2	**4.7**	**100**
	France	0.7	0.4	0.2	0.1	2.0	n	2.9	2.6	6.7	n	19.7	11.9	**98.8**	0.3	**1.2**	**100**
	Germany	9.0	1.4	0.8	0.3	0.5	n	2.4	4.6	12.1	0.2	19.6	14.1	**98.1**	0.4	**1.9**	**100**
	Greece	0.4	n	n	0.1	n	0.2	0.3	0.6	0.6	2.2	44.6	4.2	**89.3**	n	**10.7**	**100**
	Hungary	1.2	0.1	0.5	0.9	0.1	0.2	0.8	2.3	2.6	n	4.6	12.4	**97.0**	n	**3.0**	**100**
	Iceland	1.3	0.3	8.0	n	n	n	0.6	14.5	0.4	n	9.9	15.3	**99.8**	n	**0.2**	**100**
	Ireland	0.4	0.1	0.1	n	0.1	n	0.5	0.9	0.2	n	82.5	5.7	**99.5**	n	**0.5**	**100**
	Italy	0.8	0.1	0.2	n	0.4	n	4.1	1.6	10.0	n	11.6	7.4	**86.9**	0.1	**13.1**	**100**
	Japan	0.1	1.5	0.1	n	n	n	0.2	0.4	0.4	n	10.4	66.5	**98.6**	n	**1.4**	**100**
	Korea	0.1	0.1	n	n	n	n	0.1	0.1	0.2	n	3.5	53.5	**97.3**	n	**2.7**	**100**
	Luxembourg	0.3	n	n	n	0.8	n	0.2	0.1	3.8	n	12.1	0.7	**100.0**	n	**0.0**	**100**
	Mexico	0.2	0.2	0.1	n	0.1	n	10.8	0.7	0.5	n	8.1	54.4	**95.1**	0.8	**4.9**	**100**
	Netherlands	a	0.2	1.3	n	0.4	n	1.7	5.2	2.6	n	20.1	12.3	**98.6**	0.2	**1.4**	**100**
	New Zealand	0.1	a	0.2	n	n	n	0.1	0.7	0.2	n	8.3	14.6	**98.9**	n	**1.1**	**100**
	Norway	0.7	1.9	a	2.9	0.1	0.2	1.0	9.7	0.7	n	23.5	9.5	**99.1**	0.2	**0.9**	**100**
	Poland	1.1	n	0.4	a	0.2	0.1	1.5	3.0	1.6	n	3.2	9.6	**97.4**	n	**2.6**	**100**
	Portugal	1.2	0.1	0.3	0.1	a	n	14.7	1.3	5.5	n	20.8	6.9	**98.2**	n	**1.8**	**100**
	Slovak Republic	0.3	n	0.3	0.8	n	a	0.4	0.6	1.2	n	1.0	3.7	**99.1**	n	**0.9**	**100**
	Spain	2.5	n	0.3	0.1	1.8	n	a	3.6	6.0	n	22.1	13.2	**96.5**	0.5	**3.5**	**100**
	Sweden	0.8	1.6	8.7	0.8	0.1	n	1.5	a	1.8	n	24.3	22.4	**98.1**	0.4	**1.9**	**100**
	Switzerland	0.6	0.2	0.4	0.1	0.7	n	3.9	2.8	a	2.7	14.2	15.1	**98.9**	0.2	**1.1**	**100**
	Turkey	1.3	n	0.1	n	n	n	n	0.3	1.3	a	3.6	21.0	**89.6**	n	**10.4**	**100**
	United Kingdom	2.3	1.5	1.3	0.1	0.4	n	2.3	3.2	1.4	0.6	a	32.8	**97.0**	0.2	**3.0**	**100**
	United States	0.6	4.2	0.7	1.2	0.5	n	1.6	2.3	0.8	0.1	28.7	a	**89.6**	2.7	**10.4**	**100**
	Total from OECD countries	***1.6***	***1.0***	***0.6***	***0.3***	***0.4***	***0.1***	***1.7***	***2.5***	***3.0***	***0.2***	***16.1***	***25.0***	***95.7***	***0.3***	***4.3***	***100***
Partner countries	**Brazil**	0.4	0.1	0.2	0.1	8.4	n	7.8	0.6	1.2	n	5.1	35.6	**86.8**	0.8	**13.2**	**100**
	Chile	0.4	0.7	0.9	n	n	n	20.5	3.8	1.2	n	3.8	21.0	**77.1**	a	**22.9**	**100**
	China	0.5	6.4	0.1	n	n	n	0.1	0.3	0.2	n	12.5	23.1	**88.4**	n	**11.6**	**100**
	India	0.1	1.3	0.1	0.1	n	n	n	0.4	0.2	n	11.3	61.5	**95.5**	n	**4.5**	**100**
	Israel	1.0	0.1	0.2	0.2	n	0.8	0.8	0.3	0.4	0.2	9.5	25.4	**71.8**	0.1	**28.2**	**100**
	Russian Federation	0.8	0.5	1.8	1.0	0.1	0.1	0.9	1.9	1.5	1.7	4.9	14.4	**81.9**	n	**18.1**	**100**

Note: The proportion of students abroad is based only on the total of students enrolled in countries reporting data to the OECD and to the UNESCO Institute for Statistics.

1. Data by country of origin relate to international students defined on the basis of their country of residence.
2. Excludes tertiary-type B programmes.
3. Excludes advanced research programmes.
4. Year of reference 2002.

Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/221673686112

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Table C3.4.
Distribution of international and foreign students in tertiary education, by level and type of tertiary education (2004)

		Tertiary-type B programmes	Tertiary-type A programmes	Advanced research programmes	Total tertiary programmes
		(1)	(2)	(3)	(4)
	International students by level and type of tertiary education				
OECD countries	**Australia**[1]	6.0	90.0	3.9	**100**
	Austria[1,2,3]	m	90.3	9.7	**100**
	Belgium[1]	26.1	66.7	7.2	**100**
	Canada[1,4]	29.5	64.7	5.8	**100**
	Denmark[1]	9.0	87.5	3.6	**100**
	Finland[3,5]	m	85.5	14.5	**100**
	Hungary[1]	0.2	95.2	4.6	**100**
	Ireland	m	m	m	**m**
	Japan[1]	24.3	75.7	x(2)	**100**
	Korea	m	m	m	**m**
	Luxembourg	m	m	m	**m**
	Mexico	m	m	m	**m**
	Netherlands[5,6]	a	100.0	m	**100**
	Norway[1]	1.1	94.6	4.3	**100**
	Spain[1,3]	m	71.8	28.2	**100**
	Sweden[1]	1.9	92.2	5.9	**100**
	Switzerland[3,5]	m	73.0	27.0	**100**
	United Kingdom[1]	9.6	78.9	11.5	**100**
	United States	m	m	m	**m**
	Foreign students by level and type of tertiary education				
	Czech Republic[7]	2.7	86.3	11.0	**100**
	France[7]	11.2	74.4	14.5	**100**
	Germany[6,7]	5.5	94.5	m	**100**
	Greece[7]	28.7	71.3	n	**100**
	Iceland[7]	2.0	96.5	1.4	**100**
	Italy[7]	4.0	92.7	3.3	**100**
	New Zealand[7]	24.3	73.3	2.4	**100**
	Poland[6,7]	0.1	99.9	m	**100**
	Portugal[7]	1.0	90.6	8.4	**100**
	Slovak Republic[7]	0.4	92.7	6.9	**100**
	Turkey[7]	8.0	92.0	x(2)	**100**
Partner countries	**Brazil**	m	m	m	**m**
	Chile	m	m	m	**m**
	Israel	m	m	m	**m**
	Russian Federation[6,7]	8.8	91.2	m	**100**

1. International students are defined on the basis of their country of residence.
2. Based on the number of registrations, not head-counts.
3. Excludes tertiary type B programmes.
4. Year of reference 2002.
5. International students are defined on the basis of their country of prior education.
6. Excludes advanced research programmes.
7. Foreign students are defined on the basis of their country of citizenship, these data are not comparable with data on international students and are therefore presented separately in the table.

Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/221673686112

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Table C3.5.
Distribution of international and foreign students in tertiary education, by field of education (2004)

		Agriculture	Education	Engineering, manufacturing and construction	Health and welfare	Humanities and arts	Sciences	Services	Social sciences, business and law	Not known or unspecified	Total all fields of education
	International students by field of education										
OECD countries	**Australia**[1]	0.7	3.1	12.1	6.3	8.2	20.2	1.5	47.9	n	**100**
	Austria[1,2,3]	1.6	5.4	12.0	8.5	24.5	10.3	1.1	36.5	0.2	**100**
	Belgium[1]	11.3	4.4	7.3	39.6	8.5	9.2	4.0	15.1	0.6	**100**
	Canada[1,3,4]	1.1	2.2	12.5	5.6	9.6	14.3	1.2	27.3	26.1	**100**
	Denmark[1]	1.8	4.7	12.9	21.1	18.9	9.1	0.8	30.7	n	**100**
	Finland[3,5]	2.3	2.7	30.8	12.0	17.6	9.2	3.0	22.4	n	**100**
	France	m	m	m	m	m	m	m	m	m	**m**
	Germany[3,5,6]	1.5	4.6	18.8	5.8	23.8	17.3	1.3	27.0	0.2	**100**
	Greece	m	m	m	m	m	m	m	m	m	**m**
	Hungary[1]	11.8	6.8	14.0	24.1	13.6	7.5	2.2	20.0	n	**100**
	Ireland	m	m	m	m	m	m	m	m	m	**m**
	Japan[1]	2.4	2.7	13.1	2.8	26.0	1.3	2.2	33.1	16.3	**100**
	Korea	m	m	m	m	m	m	m	m	m	**m**
	Luxembourg	m	m	m	m	m	m	m	m	m	**m**
	Mexico	m	m	m	m	m	m	m	m	m	**m**
	Netherlands[5,6]	1.8	7.2	5.8	14.1	13.0	6.7	3.1	48.2	n	**100**
	Norway[1]	1.4	5.2	4.1	9.8	17.1	20.5	3.1	33.6	5.1	**100**
	Spain[1,3]	1.9	2.5	8.1	11.4	11.9	6.8	1.6	27.6	28.2	**100**
	Sweden[1]	1.1	4.8	17.9	9.1	17.6	12.4	1.8	34.8	0.5	**100**
	Switzerland[3,5]	1.1	3.7	16.0	5.9	19.1	17.0	2.5	32.9	1.8	**100**
	United Kingdom[1]	0.8	4.3	15.2	8.5	14.4	14.7	1.0	39.8	1.3	**100**
	United States[1]	0.3	3.0	15.6	5.7	11.0	19.4	1.9	31.0	12.0	**100**
	Foreign students by field of education										
	Czech Republic[7]	2.3	4.1	14.3	21.9	11.2	11.2	1.5	33.6	n	**100**
	Iceland[7]	1.6	8.2	4.9	5.5	53.0	11.5	1.8	13.5	n	**100**
	Italy[7]	1.8	1.9	14.4	24.7	18.5	6.3	1.4	30.3	0.8	**100**
	New Zealand[7]	0.6	4.7	6.5	6.5	5.2	13.6	1.7	52.8	8.5	**100**
	Poland[6,7]	0.7	8.5	6.9	21.1	21.2	2.1	2.6	37.0	n	**100**
	Portugal[7]	1.6	6.1	19.4	8.0	7.8	9.9	5.5	41.6	n	**100**
	Slovak Republic[7]	10.3	6.0	13.3	26.0	13.5	6.7	5.9	18.2	n	**100**
	Turkey[7]	2.5	7.9	15.0	14.3	6.5	8.6	4.4	40.7	n	**100**

1. International students are defined on the basis of their country of residence.
2. Based on the number of registrations, not head-counts.
3. Excludes tertiary type B programmes.
4. Year of reference 2002.
5. International students are defined on the basis of their country of prior education.
6. Excludes advanced research programmes.
7. Foreign students are defined on the basis of their country of citizenship, these data are not comparable with data on international students and are therefore presented separately in the table and chart.

Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

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Table C3.6.
Trends in the number of foreign students enrolled outside their country of origin (2000 to 2004)
Number of foreign students enrolled in tertiary education outside their country of origin, head counts

	Number of foreign students					Index of change (2004)		
	2004	2003	2002	2001	2000	2003=100	2002=100	2000=100
Foreign students enrolled worldwide	2 651 144	2 458 212	2 230 165	1 946 378	1 875 567	108	119	141
Foreign students enrolled in OECD countries	2 257 752	2 073 994	1 899 767	1 656 478	1 604 123	109	119	141

Note: Figures are based on the number of foreign students enrolled in OECD and non-OECD countries reporting data to the OECD and the UNESCO Institute for Statistics, in order to provide a global picture of foreign students worldwide. The coverage of these reporting countries has evolved over time, therefore missing data have been imputed wherever necessary to ensure the comparability of time series over time. Given the inclusion of UNESCO data for non-OECD countries and the imputation of missing data, the estimates of the number of foreign students may differ from those published in previous editions of Education at a Glance.
Source: OECD and the UNESCO Institute for Statistics for most data on non-OECD countries. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

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Table C3.7.
Percentage of tertiary qualifications awarded to international and foreign students, by type of tertiary education (2004)
Calculations based on the number of graduates

	Proportion of international graduates in total graduate output				
	Tertiary-type A programmes		Tertiary-type B programmes		Advanced research programmes
	First degrees	Second degrees	First degrees	Second degrees	
	(1)	(2)	(3)	(4)	(5)
International graduates					
OECD countries					
Australia[1]	21.7	38.9	m	m	16.6
Austria[2]	9.4	17.8	m	m	17.6
Canada[1]	10.9	18.1	2.4	x(3)	27.3
Denmark[1]	4.5	5.5	3.0	a	7.4
Finland[2,3]	2.9	m	m	a	8.1
Germany[2]	5.8	a	m	a	4.9
Greece	m	m	m	m	m
Iceland	m	m	m	m	m
Ireland	m	m	m	m	m
Japan	m	m	m	a	m
Korea	m	m	m	m	m
Luxembourg	m	m	m	m	m
Mexico	m	m	m	a	m
Netherlands	m	m	a	a	m
New Zealand[2]	12.9	18.9	20.3	n	13.2
Norway[1]	0.9	2.1	2.4	a	3.0
Poland	m	m	m	a	m
Spain	m	m	m	a	m
Sweden[1]	2.8	3.7	0.8	a	4.4
Switzerland[2]	9.7	18.5	m	m	41.1
United Kingdom[1]	11.5	33.3	6.4	m	36.8
Foreign graduates					
Belgium[4]	14.2	m	5.4	6.4	23.7
Czech Republic[4]	2.7	0.9	2.3	a	7.5
France[4]	6.9	17.4	m	a	23.5
Hungary[4]	3.1	0.7	0.2	m	6.0
Italy[4]	1.3	2.3	m	a	2.5
Portugal[4]	2.7	3.3	2.2	a	6.1
Slovak Republic[4]	0.9	0.4	m	a	2.1
Turkey[4]	0.8	1.4	0.1	a	2.1
United States[4]	3.2	12.0	1.7	a	26.4

1. International graduates are defined on the basis of their country of residence.
2. International graduates are defined on the basis of their country or prior education.
3. Year of reference 2003.
4. Foreign graduates are defined on the basis of their country of citizenship, these data are not comparable with data on international graduates and are therefore presented separately in the table and chart.
Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/221673686112

EDUCATION AND WORK STATUS OF THE YOUTH POPULATION

This indicator shows the years that young people are expected to spend in education, employment and non-employment and examines the education and employment status of young people by gender. During the past decade, young people have spent more time in initial education, delaying their entry into the world of work. Part of this additional time is spent combining work and education, a practice that is widespread in some countries. Once young people have completed their initial education, access to the labour market is often impeded by spells of unemployment or non-employment, although this situation affects males and females differently. Based on the current situation of persons between the ages of 15 and 29, this indicator gives a picture of major trends in the transition from school to work.

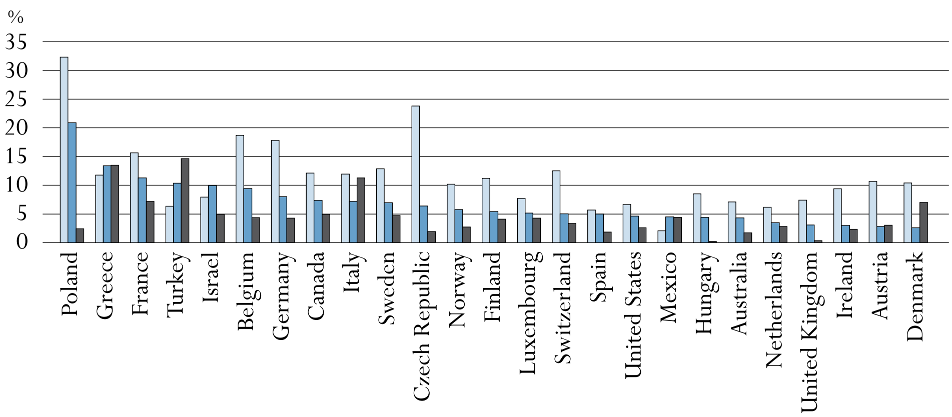
Key results

Chart C4.1. Share of the 25-to-29-year-olds who are unemployed and not in education, by level of educational attainment (2004)

In this chart, the height of the bars indicates the percentage of 25-to-29-year-olds not in education and unemployed, for each level of attainment.

- Below upper secondary education
- Upper secondary and post-secondary non-tertiary education
- Tertiary education

At the end of the transition period, when most young people have finished studying, access to employment is linked to the education level attained. Not attaining an upper secondary qualification is clearly a serious handicap. Conversely, tertiary education offers a premium for most job seekers.



Countries are ranked in descending order of the ratio of the population not in education and unemployed to the 25-to-29-year-old population having attained upper secondary and post-secondary non-tertiary education.
Source: OECD. Table C4.3. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).
StatLink: http://dx.doi.org/10.1787/244741462084

Other highlights of this indicator

- On average across OECD member countries, a young person aged 15 in 2004 can expect to continue in formal education for a little under seven years. In 18 of the 29 countries for which data are available, including Israel, this period ranges from five and a half years to seven and a half years. However, the range of this figure is wide, from a low of 3 years to a high of 9.7 years.

- In addition to the expected number of years spent in education, a young person aged 15 can expect to hold a job for 6 of the 15 years to come, to be unemployed for a total of 0.9 years and to be out of the labour market for 1.3 years.

- The percentage of 20-to-24-year-olds not in education ranges from 50 to 70% in 19 out of 27 OECD countries for which data are available. In 19 OECD countries, a higher proportion of female 15-to-19-year-olds take part in education than do males of the same age group. Males in the 15-to-19-year-old age group are more likely to be employed.

- In some countries, education and work largely occur consecutively, while in other countries they are concurrent. Work-study programmes, relatively common in European countries, offer coherent vocational education routes to recognised occupational qualifications. In other countries, initial education and work are rarely associated.

Policy context

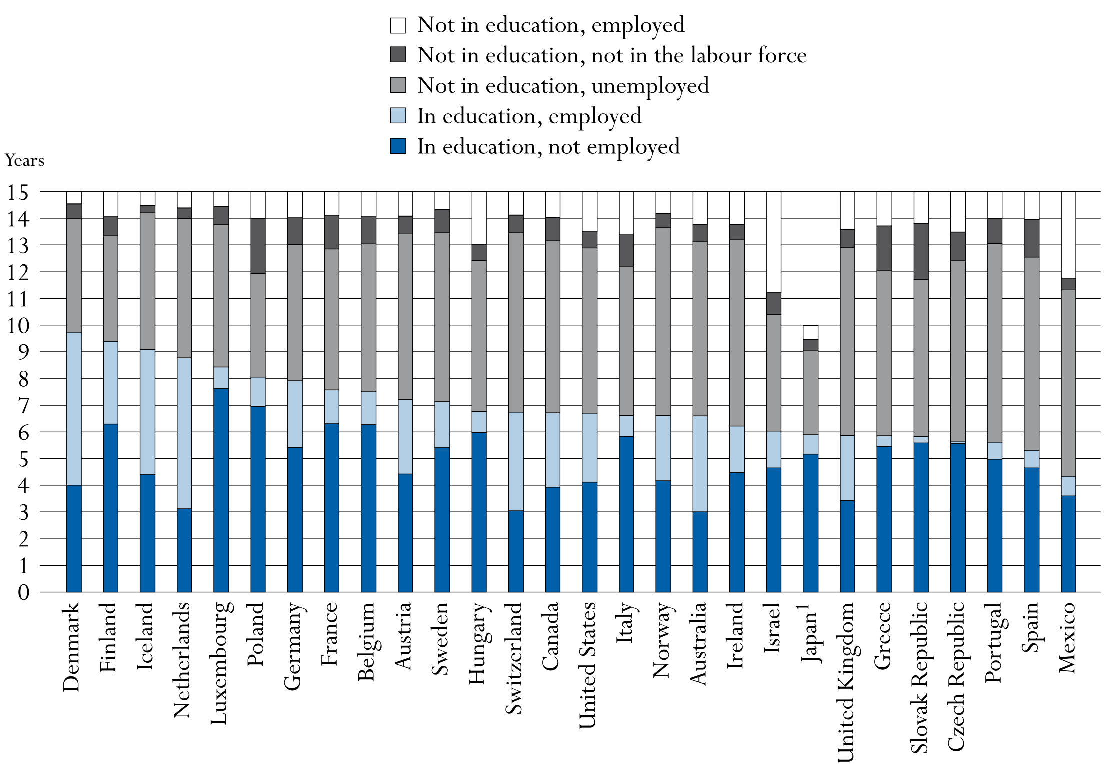
All OECD countries are experiencing rapid social and economic changes that make the transition to working life more uncertain for younger individuals. In some OECD countries, education and work largely occur consecutively, while in other OECD countries they may be concurrent. The ways in which education and work are combined can significantly affect the transition process. Of particular interest, for example, is the extent to which working (beyond the usual summer jobs for students) while studying may facilitate entry into the labour force.

Evidence and explanations

On average, a young person aged 15 in 2004 can expect to continue in education for close to seven years (Table C4.1a). This average figure refers to all 15-year-olds, and some will evidently continue in education for a longer period while others will do so for a shorter time. In 18 of the 29 countries studied, including Israel, the average 15-year-old can expect to spend from 5.5 to 7.5 additional years in education. However, a large gap separates the groups at each extreme: with Denmark, Finland, Iceland, Luxembourg, the Netherlands and Poland (more than eight years in education on average) on the one hand, and Mexico, Spain and Turkey (with less than five and half years on average) on the other.

Chart C4.2. Expected years in education and not in education for 15-to-29-year-olds (2004)

Number of years, by work status



1. Data refer to 15-to-24-year-olds.

Countries are ranked in descending order of the expected years in education of the youth population.

Source: OECD. Table C4.1a. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

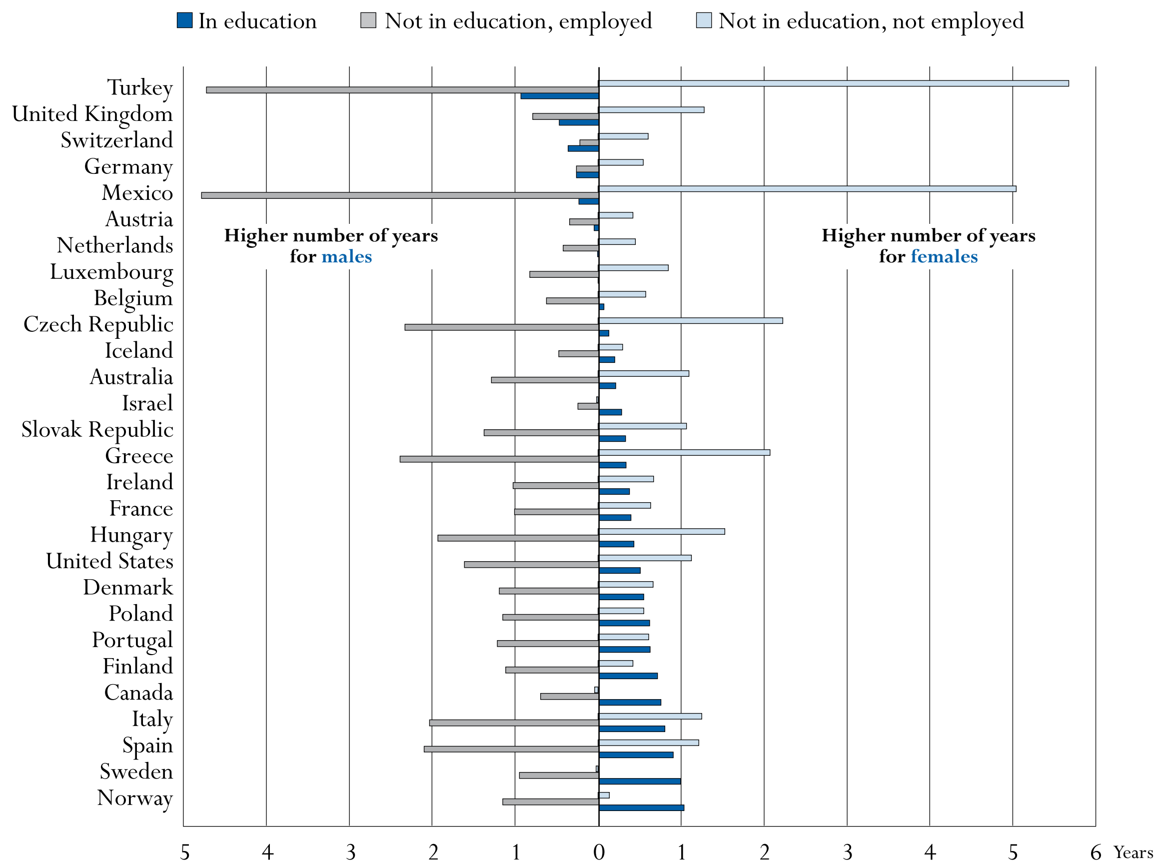
StatLink: http://dx.doi.org/10.1787/244741462084

In addition to the average 6.9 years spent in education, a young person aged 15 can expect to hold a job for 6.0 of the 15 years to come, to be unemployed for a total of 0.9 years and to be out of the labour market for 1.3 years, neither in education nor seeking work (Table C4.1a).

The average cumulative duration of unemployment varies significantly among countries. This reflects differences in youth employment rates as well as differences in the duration of education. The cumulative average duration of unemployment is six months or less in Denmark, Iceland, Ireland, Japan, Mexico, the Netherlands and Norway, but more than two years in Poland and the Slovak Republic.

The average overall number of expected years in education is higher for females (7.0 years compared with 6.7 for males). In all countries except Austria, Germany, Luxembourg, Mexico, Switzerland, Turkey and the United Kingdom, females spend more years in education than males. In Turkey, however, female students can expect to receive nearly one year less of education than their male counterparts (Chart C4.3).

Chart C4.3. Gender difference in expected years in education and not in education for 15-to-29-year-olds (2004)



Countries are ranked in descending order of the difference between females and males in expected years in education of the 15-to-29-year-olds.
Source: OECD. Table C4.1a. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/244741462084

By and large, males and females differ very little in terms of the expected number of years in unemployment, even though expected periods of unemployment tend to be longer for males. While the situation is similar for both genders in many countries, females appear to be at a particular advantage in Canada, Finland, Germany, Poland, the Slovak Republic and Turkey. Periods of unemployment for females exceed those for males in only six countries: Denmark, Greece, Luxembourg, Portugal, Spain and Switzerland (Table C4.1a).

Whereas young males can expect to spend 1.6 years neither in education nor in employment between the ages of 15 and 29, the average figure for females is 2.7 years. In the Czech Republic, Greece, Hungary, Mexico, the Slovak Republic and Turkey, there is a much stronger tendency for young females to leave the labour market and to spend time out of the educational system and not working. In some countries – Austria, Canada, Finland, Germany, Iceland, Japan, Norway, Portugal and Sweden – young males and young females do not differ by more than half a year in this measure.

Conversely, relative to males, females between the ages of 15 and 29 in all OECD countries can expect a lower duration of employment after education; this is partially a consequence of the time spent in education, but is also attributable to other factors such as time spent in childrearing (Table C4.1a).

Combining work and education

Countries differ not only in the duration of education, but also in how education is combined with work experience. The 27 OECD countries which provide data on youth transitions show differences in both the duration of education and how education is combined with work experience or work study programmes (Table C4.2a). On average, 16.5% of 15-to-19-year-olds combine education with work. However, in Austria, Germany, Norway and the United States this figure is equal to or above 20%. In Australia, Canada, Switzerland and the United Kingdom, the figure is close to or above 30%.

The employment status of males and females during the years spent in education is broadly similar, except in Australia, Austria, the Czech Republic, Germany, the Slovak Repubic and the United Kingdom, where noticeably more men participate in work-study programmes among 15-to-19-year-olds. In Australia, Canada, the United Kingdom and the United States, more females than males in the 20-to-24-year-old age group combine work outside school hours with education (Tables C4.2b and C4.2c).

Entry into the labour market after initial education

The transition from education to work occurs at different points in time in different OECD countries, depending on a range of educational and labour market characteristics. As they grow older, young people spend less time in education and more in the labour force. On average, almost 17% of 15-to-19-year-olds are not in education. This average rises to almost 60% for 20-to-24-year-olds and above 84% for 25-to-29-year-olds (Table C4.2a). However, in many OECD countries young people begin their transition to work later, and in some cases over a longer period. This reflects not only the demand for education, but also the general state of the labour market, the length and orientation of educational programmes in relation to the labour market and the prevalence of part-time education.

Overall, older non-students are much more likely to be employed than non-students aged 15 to 19, while a higher percentage of male than female non-students are working. A significantly higher share of females than males are out of the labour force. This is particularly so for the 25-to-29-year-old age group, which is likely to reflect, in part, time spent in child-bearing and child-rearing (Tables C4.2b and C4.2c).

Employment-to-population ratios among young adults not in education provide information on the effectiveness of transition frameworks and thus help policy makers to evaluate transition policies. In 17 out of 27 OECD countries, and in the partner country Israel, 10% or less of 15-to-19-year-olds are not in education and working, which may suggest that few young people have left school early. While the average of employment-to-population ratios for 20-to-24-year-olds not in education exceeds 42 %, the ratios in some OECD countries such as Denmark and Finland are considerably lower (Table C4.2a).

Unemployment among young non-students

Young people represent the principal source of new skills. In most OECD countries, education policy seeks to encourage young people to complete at least upper secondary education. Since many jobs in the current labour market require ever higher general skill levels, persons with low attainment are often penalised. Differences in unemployment rates among young non-students by level of educational attainment are an indicator of the degree to which further education improves the economic opportunities of young adults.

The unemployment rate by age group is the most common measure used for describing the labour market status of young people. However, unemployment rates do not take educational circumstances into account. For instance, an unemployed young person counted in the numerator may, in some OECD countries, be enrolled in education. And the denominator may include young people in vocational training, provided they are apprenticed. Hence, if almost all young people in a particular age group are still in education, the unemployment rate will reflect only the few present in the labour market. It may therefore appear very high, particularly among the youngest cohort who have usually left the education system with particularly low qualifications.

The ratio of unemployed non-students to the total age cohort is therefore a more appropriate way to reflect the likelihood of youth unemployment (Table C4.3). This is because young people who are looking for a job while still in education are usually seeking part-time or temporary work while studying, unlike those entering the labour market after leaving school.

On average, completing upper secondary education reduces this unemployment ratio (*i.e.* unemployment among non-students as a percentage of the age cohort) among 20-to-24-year-olds by 6.4 percentage points and that of 25-to-29-year-olds by 4.9 percentage points (Table C4.3). In 16 out of 27 OECD countries, the unemployment ratio among 20-to-24-year-olds not in education is equal to or less than 8% for those with upper secondary or post-secondary non-tertiary education. In the same age group, this proportion remains below 8% for those without upper secondary education in only five OECD countries: Denmark, Mexico, the Netherlands, Spain and Turkey. Since it has become the norm in most OECD countries to complete upper secondary education, many young persons who do not complete this level of education are much more likely to have employment difficulties during entry to the labour market.

At the end of the transition period, between the ages of 25 and 29, when most young people have finished studying, differences in access to employment are linked to the education level attained. Not attaining an upper secondary qualification is clearly a serious handicap. Conversely, tertiary education offers a premium for most job seekers.

In 15 OECD countries, for upper secondary graduates aged 25 to 29, the ratio of persons not in education and unemployed to the cohort population is at or above 5%. In a few OECD countries, even young people who have completed tertiary-level education are subject to considerable unemployment risk when they enter the labour market. At the tertiary level of attainment, among 20-to-24-year-olds, the ratio of unemployed non-students to the cohort population is on average 6.3% – and in some cases significantly more than 10% – in Greece, Italy, the Slovak Republic and Turkey (Table C4.3).

Focusing on the key transition period (*i.e.* ages 20 to 24) illustrates the changes both in the prevalence of unemployment and in withdrawal from the labour force – both representing non-employment – among individuals who have left education. Between 1998 and 2004, important changes are evident in several countries (Table C4.4). In some Mediterranean countries, where the proportion of non-employment is rather high, the improvement is notable, such as in Greece, Italy and Spain. Turkey presents an exception, with a non-employment ratio that is the highest of the OECD countries. Central and Eastern European countries have mixed profiles over this time period: there is a regular decrease of non-employment in Hungary, while the Czech Republic has remained unchanged.

However, the situation has been remarkably stable over the last six years for several countries: at a low level of the non-employment ratio in Denmark, Iceland and Luxembourg, at an intermediate level in France and the United Kingdom, and at a high level in Turkey. Other profiles are less pronounced, but a general picture appears. With the exception of Norway , which show a trend increase in the non-employment ratio, and Switzerland, with a pronounced 'V' curve with a low point in 2000, most countries show a regular fall of unemployment and withdrawal from the labour force from 1998 to 2001, followed by a stabilization or even an increase of unemployment and withdrawal from the labour force to 2004. In Australia, Canada, Finland, Greece, Hungary, Italy and the Slovak Republic, the decrease continues into 2004.

Definition and methodologies

The statistics presented here are calculated from labour force survey data on age-specific proportions of young people in each of the specified categories. These proportions are then totalled over the 15-to-29-year-old age group to yield the expected number of years spent in various states. For countries providing data from the age of 16 only, it is assumed that all 15-year-olds are in education and out of the labour force. This assumption tends to increase the average number of expected years in education compared to *Education at a Glance 2004* (OECD, 2004c).

Persons in education include those attending part-time as well as full-time, where the coverage of education should be as close as possible to that of formal education in administrative sources on enrolment. Therefore, non-formal education or educational activities of very short duration (for example, at the work place) should be excluded.

Data for this indicator are collected as part of the annual OECD Labour Force Survey (for certain European countries the data come from the annual European Labour Force Survey, see Annex 3) and usually refer to the first quarter, or the average of the first three months of the calendar year, thereby excluding summer employment. The labour force status categories shown in this section are defined according to International Labour Organisation (ILO) guidelines, with one exception. For the purposes of these indicators, persons in work-study programmes (see below) have been classified separately as being in education and employed, without reference to their ILO labour force status during the survey reference week, since they may not necessarily be in the work component of their programmes during that week and may therefore not be employed then. The category *other employed* includes individuals employed according to the ILO definition, but excludes those attending work-study programmes who are already counted as employed. Finally, the category *not in the labour force* includes individuals who are not working and who are not unemployed, *i.e.* individuals who are not looking for a job.

Work-study programmes combine work and education as parts of an integrated, formal education or training activity, such as the dual system in Germany; *apprentissage* or *formation en alternance* in France and Belgium; internship or co-operative education in Canada; and apprenticeship in Ireland. Vocational education and training take place both in school settings and working environments. Students or trainees can be paid or not, usually depending on the type of job and the course or training.

Enrolment counts are estimated on the basis of self-reports collected during labour force surveys that often correspond only imprecisely with enrolments obtained from administrative sources shown elsewhere in this publication, for several reasons. First, age may not be measured in the same way. For example, in administrative data, both enrolment and age are measured on 1 January in OECD countries in the northern hemisphere, whereas in some labour force surveys, enrolment is measured in the reference week, while the age recorded is the age that will be attained at the end of the calendar year, even if the survey is conducted in the early part of the year. This means that recorded enrolment rates may occasionally reflect a population that is almost one year younger than the specified age range. At ages when movements out of education may be significant, this affects enrolment rates. Second, young people may be enrolled in several programmes and can sometimes be counted twice in administrative statistics but only once in a labour force survey. Moreover, not all enrolments may be captured in administrative statistics, particularly in profit-making institutions. Third, the programme classification used in the self-reports in labour force surveys does not always correspond to the qualification standards used for administrative data collections.

The principle behind the estimation of expected years in education is that knowledge of the share of young adults in or out of education is used as a basis for assumptions about how long a typical individual will spend in different labour and educational states.

The unemployment-to-population and the employment-to-population ratios are calculated by dividing the total number of persons unemployed or employed by the number of persons in the population.

With respect to Table C4.4b, a break in the time series is noted for Finland. In 2004, military conscripts in Finland were not included in the data, whereas in previous years conscripts were included in the category "Not in education, not employed".

C4

Further references

The following additional material relevant to this indicator is available on the Web at *http://dx.doi.org/10.1787/244741462084*

- ***Expected years in education and not in education for 15-to 29-year-olds (1998-2004)***
  Table C4.1b:Trends by gender
- ***Percentage of the youth population in education and not in education (2004)***
  Table C4.2b Young males
  Table C4.2c:Young females
- ***Trends in the percentage of young population in education and not in education (1995-2004)***
  Table C4.4b:Trends for young males
  Table C4.4c:Trends for young females

Table C4.1a
Expected years in education and not in education for 15-to-29-year-olds (2004)
By gender and work status

OECD countries		Expected years in education			Expected years not in education			
		Not employed	Employed (including work study programmes)	Sub-total	Employed	Unemployed	Not in the labour force	Sub-total
Australia	Males	3.1	3.4	**6.5**	7.2	0.7	0.6	**8.5**
	Females	3.0	3.8	**6.7**	5.9	0.5	1.9	**8.3**
	M+F	3.0	3.6	**6.6**	6.5	0.6	1.2	**8.4**
Austria	Males	4.0	3.2	**7.3**	6.4	0.7	0.6	**7.7**
	Females	4.8	2.4	**7.2**	6.0	0.6	1.2	**7.8**
	M+F	4.4	2.8	**7.2**	6.2	0.6	0.9	**7.8**
Belgium	Males	6.2	1.3	**7.5**	5.8	1.1	0.6	**7.5**
	Females	6.4	1.2	**7.6**	5.2	0.9	1.3	**7.4**
	M+F	6.3	1.2	**7.5**	5.5	1.0	0.9	**7.5**
Canada	Males	3.9	2.4	**6.4**	6.8	1.1	0.7	**8.6**
	Females	4.0	3.2	**7.1**	6.1	0.6	1.2	**7.9**
	M+F	3.9	2.8	**6.7**	6.5	0.8	1.0	**8.3**
Czech Republic	Males	5.5	0.1	**5.6**	7.9	1.1	0.3	**9.4**
	Females	5.6	0.1	**5.7**	5.6	1.0	2.7	**9.3**
	M+F	5.6	0.1	**5.7**	6.8	1.1	1.5	**9.3**
Denmark	Males	3.8	5.7	**9.5**	4.9	0.4	0.2	**5.5**
	Females	4.2	5.8	**10.0**	3.7	0.6	0.7	**5.0**
	M+F	4.0	5.7	**9.7**	4.3	0.5	0.5	**5.3**
Finland	Males	6.2	2.9	**9.1**	4.5	0.9	0.5	**5.9**
	Females	6.5	3.3	**9.8**	3.4	0.5	1.4	**5.2**
	M+F	6.3	3.1	**9.4**	4.0	0.7	0.9	**5.6**
France	Males	6.1	1.3	**7.4**	5.8	1.3	0.5	**7.6**
	Females	6.6	1.2	**7.3**	4.8	1.1	1.3	**7.2**
	M+F	6.3	1.3	**7.6**	5.3	1.2	0.9	**7.4**
Germany	Males	5.4	2.6	**8.1**	5.2	1.2	0.5	**6.9**
	Females	5.5	2.3	**7.8**	5.0	0.7	1.5	**7.2**
	M+F	5.4	2.5	**7.9**	5.1	1.0	1.0	**7.1**
Greece	Males	5.3	0.4	**5.7**	7.4	1.3	0.6	**9.3**
	Females	5.6	0.4	**6.0**	5.0	2.0	2.0	**9.0**
	M+F	5.5	0.4	**5.9**	6.2	1.6	1.3	**9.1**
Hungary	Males	5.9	0.7	**6.6**	6.6	0.8	1.1	**8.4**
	Females	6.1	0.9	**7.0**	4.7	0.5	2.9	**8.0**
	M+F	6.0	0.8	**6.8**	5.7	0.6	2.0	**8.2**
Iceland	Males	4.6	4.4	**9.0**	5.4	0.3	0.3	**6.0**
	Females	4.2	5.0	**9.2**	4.9	0.2	0.7	**5.8**
	M+F	4.4	4.7	**9.1**	5.1	0.2	0.5	**5.9**
Ireland	Males	4.3	1.7	**6.1**	7.5	0.7	0.8	**8.9**
	Females	4.7	1.7	**6.4**	6.5	0.4	1.7	**8.6**
	M+F	4.5	1.7	**6.2**	7.0	0.5	1.2	**8.8**
Italy	Males	5.5	0.7	**6.2**	6.6	1.2	1.0	**8.8**
	Females	6.2	0.8	**7.0**	4.5	1.2	2.2	**8.0**
	M+F	5.8	0.8	**6.6**	5.6	1.2	1.6	**8.4**
Japan[1]	Males	5.4	0.7	**6.1**	3.0	0.5	0.3	**3.9**
	Females	5.0	0.7	**5.7**	3.3	0.3	0.7	**4.3**
	M+F	5.2	0.7	**5.9**	3.2	0.4	0.5	**4.1**
Luxembourg	Males	7.6	0.8	**8.5**	5.7	0.6	0.2	**6.5**
	Females	7.7	0.8	**8.4**	4.9	0.7	0.9	**6.6**
	M+F	7.6	0.8	**8.5**	5.3	0.7	0.6	**6.5**
Mexico	Males	3.5	1.0	**4.5**	9.5	0.5	0.6	**10.5**
	Females	3.7	0.5	**4.2**	4.7	0.3	5.7	**10.8**
	M+F	3.6	0.7	**4.4**	7.0	0.4	3.2	**10.6**

1. Data refer to 15-to-24-year-olds.
Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/244741462084

Table C4.1a *(continued)*

Expected years in education and not in education for 15-to-29-year-olds (2004)

By gender and work status

			Expected years in education			Expected years not in education			
			Not employed	Employed (including work study programmes)	Sub-total	Employed	Unemployed	Not in the labour force	Sub-total
OECD countries	**Netherlands**	Males	3.1	5.7	**8.8**	5.4	0.5	0.3	**6.2**
		Females	3.2	5.6	**8.8**	5.0	0.3	0.9	**6.2**
		M+F	3.1	5.6	**8.8**	5.2	0.4	0.6	**6.2**
	Norway	Males	4.2	1.9	**6.1**	7.6	0.6	0.6	**8.9**
		Females	4.2	3.0	**7.2**	6.4	0.4	1.0	**7.8**
		M+F	4.2	2.4	**6.6**	7.0	0.5	0.8	**8.4**
	Poland	Males	6.7	1.1	**7.8**	4.5	2.3	0.5	**7.2**
		Females	7.3	1.1	**8.4**	3.3	1.8	1.5	**6.6**
		M+F	7.0	1.1	**8.1**	3.9	2.1	1.0	**6.9**
	Portugal	Males	4.7	0.6	**5.3**	8.0	0.9	0.8	**9.7**
		Females	5.3	0.7	**5.9**	6.8	1.0	1.2	**9.1**
		M+F	5.0	0.6	**5.6**	7.4	0.9	1.0	**9.4**
	Slovak Republic	Males	5.5	0.2	**5.7**	6.6	2.4	0.3	**9.3**
		Females	5.7	0.3	**6.0**	5.2	1.8	2.0	**9.0**
		M+F	5.6	0.2	**5.8**	5.9	2.1	1.2	**9.2**
	Spain	Males	4.3	0.6	**4.9**	8.3	1.3	0.6	**10.1**
		Females	5.1	0.7	**5.8**	6.2	1.5	1.5	**9.2**
		M+F	4.7	0.7	**5.3**	7.2	1.4	1.0	**9.7**
	Sweden	Males	5.4	1.3	**6.7**	6.8	1.0	0.6	**8.3**
		Females	5.5	2.1	**7.6**	5.8	0.7	0.8	**7.4**
		M+F	5.4	1.7	**7.1**	6.3	0.9	0.7	**7.9**
	Switzerland	Males	3.1	3.9	**6.9**	6.8	0.6	0.6	**8.1**
		Females	3.0	3.5	**6.6**	6.6	0.7	1.2	**8.4**
		M+F	3.1	3.7	**6.8**	6.7	0.6	0.9	**8.2**
	Turkey	Males	3.0	0.4	**3.4**	8.1	1.6	1.9	**11.6**
		Females	2.3	0.2	**2.5**	3.3	0.7	8.5	**12.5**
		M+F	2.7	0.3	**3.0**	5.8	1.2	5.1	**12.0**
	United Kingdom	Males	3.9	2.2	**6.1**	7.4	0.8	0.6	**8.9**
		Females	3.0	2.7	**5.6**	6.6	0.5	2.2	**9.4**
		M+F	3.4	2.4	**5.9**	7.0	0.7	1.4	**9.1**
	United States	Males	4.1	2.3	**6.5**	7.0	0.7	0.9	**8.5**
		Females	4.2	2.8	**7.0**	5.4	0.5	2.1	**8.0**
		M+F	4.1	2.6	**6.7**	6.2	0.6	1.5	**8.3**
	OECD average	***Males***	***4.8***	***2.0***	***6.7***	***6.7***	***1.0***	***0.6***	***8.3***
		Females	***4.9***	***2.1***	***7.0***	***5.2***	***0.8***	***1.9***	***8.0***
		M+F	***4.9***	***2.0***	***6.9***	***6.0***	***0.9***	***1.3***	***8.1***
	EU19 average	***Males***	***5.2***	***1.8***	***7.0***	***6.4***	***1.1***	***0.6***	***8.0***
		Females	***5.5***	***1.8***	***7.3***	***5.2***	***0.9***	***1.6***	***7.7***
		M+F	***5.4***	***1.8***	***7.1***	***5.8***	***1.0***	***1.1***	***7.9***
Partner country	**Israel**	Males	4.6	1.3	**5.9**	4.5	0.8	3.8	**9.1**
		Females	4.7	1.5	**6.2**	4.2	0.9	3.7	**8.8**
		M+F	4.7	1.4	**6.0**	4.4	0.8	3.7	**9.0**

1. Data refer to 15-to-24-year-olds.

Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.

Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/244741462084

Table C4.2a.
Percentage of the youth population in education and not in education (2004)
By age group and work status

		Age group	In education					Not in education				Total in education and not in education
			Students in work-study programmes[1]	Other employed	Unemployed	Not in the labour force	Sub-total	Employed	Unemployed	Not in the labour force	Sub-total	
OECD countries	Australia	15-19	7.0	29.5	5.3	36.6	**78.4**	14.1	4.0	3.5	**21.6**	**100**
		20-24	4.7	20.8	1.8	11.7	**39.0**	48.7	4.7	7.7	**61.0**	**100**
		25-29	0.7	12.3	0.9	3.8	**17.7**	65.0	3.9	13.4	**82.3**	**100**
	Austria	15-19	20.4	3.4	1.0	58.4	**83.3**	9.3	4.4	3.0	**16.7**	**100**
		20-24	2.8	6.3	0.8	20.4	**30.3**	56.8	6.1	6.8	**69.7**	**100**
		25-29	0.5	6.3	0.3	5.8	**13.0**	72.6	4.6	9.8	**87.0**	**100**
	Belgium	15-19	1.5	2.5	0.4	87.6	**92.1**	3.1	1.7	3.2	**7.9**	**100**
		20-24	0.8	4.1	0.6	33.3	**38.8**	44.4	10.6	6.3	**61.2**	**100**
		25-29	0.9	2.6	0.5	2.0	**6.0**	74.3	9.2	10.5	**94.0**	**100**
	Canada	15-19	a	28.1	6.3	46.5	**81.0**	11.5	3.5	4.0	**19.0**	**100**
		20-24	a	20.1	1.7	18.5	**40.2**	46.7	6.7	6.3	**59.8**	**100**
		25-29	a	7.5	0.5	5.4	**13.5**	71.0	6.6	8.9	**86.5**	**100**
	Czech Republic	15-19	19.6	0.3	0.1	70.1	**90.0**	4.4	3.5	2.2	**10.0**	**100**
		20-24	0.5	0.7	0.1	30.9	**32.3**	49.2	10.6	8.0	**67.7**	**100**
		25-29	0.0	0.4	0.0	3.4	**3.8**	71.6	7.0	17.5	**96.2**	**100**
	Denmark	15-19	c	1.4	3.5	39.1	**91.2**	7.3	0.6	0.9	**8.8**	**100**
		20-24	c	5.0	3.4	20.9	**61.8**	29.7	5.0	3.5	**38.2**	**100**
		25-29	c	14.5	2.5	13.1	**45.4**	45.2	4.8	4.5	**54.6**	**100**
	Finland	15-19	a	0.8	5.3	74.5	**90.3**	4.4	1.8	3.5	**9.7**	**100**
		20-24	a	4.5	5.5	30.9	**59.6**	27.0	6.8	6.6	**40.4**	**100**
		25-29	a	12.6	2.9	9.5	**39.9**	46.3	5.6	8.3	**60.1**	**100**
	France	15-19	5.9	1.6	0.6	83.4	**91.5**	3.2	3.1	2.2	**8.5**	**100**
		20-24	3.7	6.9	1.2	33.4	**45.2**	37.2	11.2	6.3	**54.8**	**100**
		25-29	0.6	7.7	0.9	4.0	**13.2**	66.7	10.4	9.7	**86.8**	**100**
	Germany	15-19	18.5	3.5	1.0	70.4	**93.4**	3.0	1.9	1.7	**6.6**	**100**
		20-24	14.1	5.8	0.5	23.6	**44.0**	38.5	9.6	7.9	**56.0**	**100**
		25-29	2.0	5.6	0.4	9.7	**17.6**	62.8	8.9	10.7	**82.4**	**100**
	Greece	15-19	1.4	0.1	0.7	82.3	**84.4**	6.4	4.4	4.8	**15.6**	**100**
		20-24	2.6	0.7	1.6	31.7	**36.7**	41.0	14.7	7.7	**63.3**	**100**
		25-29	1.8	1.2	0.7	3.3	**7.0**	68.0	12.9	12.1	**93.0**	**100**
	Hungary	15-19	a	0.4	0.2	89.9	**90.4**	3.4	1.4	4.8	**9.6**	**100**
		20-24	a	6.1	0.4	37.3	**43.8**	37.6	5.9	12.6	**56.2**	**100**
		25-29	a	7.9	0.2	4.8	**12.9**	63.2	4.5	19.4	**87.1**	**100**
	Iceland	15-19	c	0.7	0.0	a	**82.8**	14.6	1.1	1.5	**17.2**	**100**
		20-24	c	4.9	0.3	a	**61.8**	32.1	2.2	3.9	**38.2**	**100**
		25-29	c	10.5	0.0	a	**41.3**	52.8	1.3	4.6	**58.7**	**100**
	Ireland	15-19	11.8	0.2	0.4	68.2	**80.6**	10.9	2.3	6.2	**19.4**	**100**
		20-24	12.7	1.5	0.5	19.9	**34.6**	53.2	4.5	7.7	**65.4**	**100**
		25-29	4.7	3.7	0.2	3.6	**12.1**	73.5	3.9	10.5	**87.9**	**100**
	Italy	15-19	1.3	0.3	0.9	80.3	**82.7**	7.6	3.7	6.0	**17.3**	**100**
		20-24	4.7	1.3	1.7	32.9	**40.7**	38.3	10.3	10.8	**59.3**	**100**
		25-29	4.3	3.0	1.6	10.6	**19.6**	57.2	9.2	14.0	**80.4**	**100**
	Luxembourg	15-19	0.4	1.0	0.4	91.3	**93.2**	4.2	1.7	0.9	**6.8**	**100**
		20-24	0.2	5.0	1.0	51.7	**57.9**	32.1	6.5	3.5	**42.1**	**100**
		25-29	0.1	9.4	0.6	8.2	**18.3**	69.9	5.1	6.6	**81.7**	**100**
	Mexico	15-19	a	7.1	0.5	47.3	**54.9**	28.0	2.2	14.9	**45.1**	**100**
		20-24	a	4.7	0.4	15.2	**20.3**	52.3	3.2	24.2	**79.7**	**100**
		25-29	a	1.9	0.1	2.4	**4.4**	65.4	2.7	27.6	**95.6**	**100**

1. Students in work-study programmes are considered to be both in education and employed, irrespective of their labour market status according to the ILO definition.
Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/244741462084

C4

Table C4.2a. *(continued)*

Percentage of the youth population in education and not in education (2004)

By age group and work status

		Age group	In education: Students in work-study programmes[1]	In education: Other employed	In education: Unemployed	In education: Not in the labour force	In education: Sub-total	Not in education: Employed	Not in education: Unemployed	Not in education: Not in the labour force	Not in education: Sub-total	Total in education and not in education
OECD countries	**Netherlands**	15-19	3.0	41.4	5.2	39.5	**89.0**	7.6	1.4	1.9	**11.0**	**100**
		20-24	2.9	27.5	2.0	13.7	**46.1**	44.8	4.1	5.0	**53.9**	**100**
		25-29	0.9	11.4	0.9	3.5	**16.7**	71.9	3.8	7.6	**83.3**	**100**
	Norway	15-19	a	27.6	6.2	50.2	**84.0**	12.5	c	c	**16.0**	**100**
		20-24	a	17.1	2.7	21.0	**40.8**	49.6	4.0	5.6	**59.2**	**100**
		25-29	a	6.2	c	8.6	**15.4**	72.0	4.8	7.8	**84.6**	**100**
	Poland	15-19	a	3.0	0.5	93.0	**96.5**	0.9	1.5	1.1	**3.5**	**100**
		20-24	a	9.7	7.4	40.4	**57.5**	18.4	17.5	6.6	**42.5**	**100**
		25-29	a	8.3	1.8	5.5	**15.5**	53.7	19.6	11.2	**84.5**	**100**
	Portugal	15-19	a	1.4	c	72.6	**74.4**	15.2	4.2	6.2	**25.6**	**100**
		20-24	a	5.1	1.0	31.7	**37.8**	48.7	7.4	6.1	**62.2**	**100**
		25-29	a	5.3	0.6	5.4	**11.3**	74.7	6.7	7.3	**88.7**	**100**
	Slovak Republic	15-19	15.9	0.1	0.3	71.5	**87.8**	4.3	5.8	2.0	**12.2**	**100**
		20-24	0.2	2.6	0.4	24.3	**27.5**	44.7	19.9	7.9	**72.5**	**100**
		25-29	0.0	1.8	0.1	2.5	**4.5**	66.6	15.8	13.1	**95.5**	**100**
	Spain	15-19	0.4	2.3	1.3	71.8	**75.9**	13.8	6.2	4.1	**24.1**	**100**
		20-24	0.5	5.7	2.3	30.2	**38.7**	45.0	10.2	6.0	**61.3**	**100**
		25-29	0.3	4.0	1.3	5.7	**11.3**	69.3	10.3	9.1	**88.7**	**100**
	Sweden	15-19	a	14.3	4.8	67.7	**86.8**	7.2	2.6	3.4	**13.2**	**100**
		20-24	a	11.8	1.9	28.6	**42.3**	44.1	7.7	6.0	**57.7**	**100**
		25-29	a	8.7	1.4	10.8	**20.9**	68.6	6.7	3.8	**79.1**	**100**
	Switzerland	15-19	33.2	8.9	1.5	41.4	**84.9**	7.9	2.5	4.7	**15.1**	**100**
		20-24	10.6	11.4	1.1	14.1	**37.2**	51.8	5.2	5.8	**62.8**	**100**
		25-29	1.2	9.7	0.4	4.2	**15.6**	72.3	5.1	7.0	**84.4**	**100**
	Turkey	15-19	a	1.8	0.3	41.4	**43.5**	21.2	4.4	30.9	**56.5**	**100**
		20-24	a	2.3	0.8	9.9	**13.0**	39.1	10.6	37.2	**87.0**	**100**
		25-29	a	1.6	0.3	1.2	**3.1**	54.0	8.4	34.5	**96.9**	**100**
	United Kingdom	15-19	3.5	24.9	3.8	36.9	**69.1**	20.7	5.1	5.2	**30.9**	**100**
		20-24	2.1	11.3	1.0	22.0	**36.3**	49.6	4.5	9.5	**63.7**	**100**
		25-29	0.8	8.4	0.4	3.6	**13.2**	69.9	3.7	13.2	**86.8**	**100**
	United States	15-19	a	21.4	3.8	58.7	**83.9**	9.2	2.3	4.6	**16.1**	**100**
		20-24	a	20.6	1.6	13.1	**35.2**	47.9	5.7	11.1	**64.8**	**100**
		25-29	a	8.8	0.4	3.7	**13.0**	68.7	4.1	14.3	**87.0**	**100**
	OECD average	***15-19***	8.0	8.5	2.1	64.2	**82.8**	9.5	3.0	4.9	**17.2**	*100*
		20-24	5.4	8.3	1.6	25.4	**40.7**	42.5	8.0	8.8	**59.3**	*100*
		25-29	2.7	6.7	0.8	5.6	**15.8**	65.5	7.0	11.7	**84.2**	*100*
	EU19 average	***15-19***	8.4	5.4	1.7	71.0	**86.4**	7.2	3.0	3.3	**13.6**	*100*
		20-24	5.2	6.4	1.8	29.4	**42.7**	41.1	9.1	7.1	**57.3**	*100*
		25-29	2.5	6.5	0.9	6.1	**15.9**	65.6	8.0	10.5	**84.1**	*100*
Partner country	**Israel**	15-19	a	4.0	0.9	64.0	**68.9**	5.6	1.5	24.0	**31.1**	**100**
		20-24	a	11.2	1.3	16.1	**28.6**	30.5	8.4	32.6	**71.4**	**100**
		25-29	a	13.0	1.3	6.6	**20.9**	53.9	7.1	18.1	**79.1**	**100**

1. Students in work-study programmes are considered to be both in education and employed, irrespective of their labour market status according to the ILO definition.

Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.

Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/244741462084

Table C4.3.

Percentage of the cohort population not in education and unemployed (2004)

By level of educational attainment, age group and gender

OECD countries		Below upper secondary education			Upper secondary and post-secondary non-tertiary education			Tertiary education		All levels of education			
		15-19	20-24	25-29	15-19[1]	20-24	25-29	20-24[1]	25-29	15-19	20-24	25-29	15-29
Australia	Males	4.1	14.2	8.8	4.6	3.3	4.2	3.7	2.0	4.3	5.7	4.5	4.8
	Females	3.0	7.3	5.4	5.0	2.9	4.5	2.5	1.5	3.7	3.6	3.4	3.6
	M+F	3.6	11.1	7.1	4.8	3.1	4.3	3.0	1.7	4.0	4.7	3.9	4.2
Austria	Males	3.0	15.4	11.8	4.8	5.3	2.8	3.4	2.6	3.3	6.9	3.7	4.6
	Females	3.2	8.5	9.7	6.3	3.1	2.9	0.9	3.5	3.9	3.8	3.9	3.9
	M+F	3.1	12.0	10.6	5.7	4.2	2.8	1.8	3.1	3.6	5.3	3.8	4.3
Belgium	Males	0.9	21.1	19.2	7.2	9.3	7.0	6.5	7.0	2.3	11.2	9.7	7.8
	Females	0.5	18.3	18.1	2.7	9.8	12.2	5.1	2.2	1.1	10.3	8.7	6.7
	M+F	0.7	19.9	18.7	4.9	9.5	9.4	5.6	4.4	1.7	10.6	9.2	7.3
Canada	Males	3.8	16.5	14.7	5.6	8.7	8.8	6.3	6.4	4.4	9.2	8.4	7.4
	Females	1.8	8.9	8.0	4.3	4.1	5.4	2.8	3.8	2.6	4.1	4.6	3.8
	M+F	2.9	13.4	12.1	4.9	6.6	7.3	4.2	4.9	3.5	6.7	6.5	5.6
Czech Republic	Males	1.4	30.8	28.4	19.3	10.9	5.3	6.1	2.3	3.8	12.5	6.5	7.6
	Females	1.3	19.0	19.7	15.0	7.6	7.5	7.4	1.6	3.2	8.6	7.6	6.7
	M+F	1.4	25.3	23.8	17.1	9.3	6.4	6.9	1.9	3.5	10.6	7.0	7.1
Denmark	Males	c	5.4	14.0	5.9	5.3	1.1	8.0	3.3	0.3	5.3	3.3	2.9
	Females	0.9	6.8	6.7	0.0	4.2	4.4	c	9.9	0.8	4.6	6.4	4.1
	M+F	0.4	6.0	10.4	2.7	4.7	2.6	4.8	7.0	0.6	5.0	4.8	3.5
Finland	Males	1.1	13.3	11.3	c	9.4	6.5	c	4.0	1.8	9.9	6.5	6.2
	Females	1.2	6.3	11.0	c	2.9	4.0	c	4.1	1.8	3.7	4.6	3.4
	M+F	1.2	10.5	11.2	c	6.0	5.4	c	4.1	1.8	6.8	5.6	4.8
France	Males	3.0	23.9	16.3	5.5	10.5	11.1	7.2	7.4	3.5	12.3	10.7	8.6
	Females	1.7	23.3	14.8	3.9	9.0	11.4	5.4	7.0	2.2	10.1	10.0	7.3
	M+F	2.4	23.7	15.6	4.7	9.8	11.3	6.2	7.2	2.9	11.2	10.4	7.9
Germany	Males	1.6	15.6	22.9	13.3	11.7	9.6	6.2	4.9	2.0	12.5	10.8	8.3
	Females	1.5	9.3	13.0	5.4	5.9	6.1	5.4	3.8	1.7	6.7	6.8	5.0
	M+F	1.5	12.6	17.8	8.8	8.8	8.0	5.7	4.3	1.8	9.6	8.8	6.7
Greece	Males	2.3	15.4	11.2	6.0	10.6	9.9	13.9	13.9	3.2	11.8	10.9	9.0
	Females	2.3	18.7	12.7	14.1	15.9	16.9	24.0	13.2	5.5	17.5	15.0	13.1
	M+F	2.3	16.7	11.8	10.2	13.4	13.4	20.6	13.5	4.4	14.7	12.9	11.0
Hungary	Males	1.4	14.6	10.6	5.8	5.7	5.1	0.3	0.3	2.0	7.3	5.4	5.0
	Females	0.3	6.0	6.2	2.9	4.2	3.7	0.5	0.2	0.8	4.5	3.5	3.0
	M+F	0.9	10.7	8.5	4.3	5.0	4.4	0.4	0.2	1.4	5.9	4.5	4.0
Iceland	Males	c	c	c	c	c	c	c	c	c	c	c	1.9
	Females	c	c	c	c	c	c	c	c	c	c	c	1.3
	M+F	c	c	c	c	c	c	c	c	c	c	c	1.6
Ireland	Males	2.3	13.5	12.1	4.4	3.2	3.8	3.7	2.4	2.8	5.1	5.0	4.4
	Females	1.2	10.2	5.2	3.2	2.5	2.2	4.4	2.3	1.8	3.9	2.6	2.8
	M+F	1.8	12.2	9.4	3.8	2.8	3.0	4.1	2.3	2.3	4.5	3.8	3.6
Italy	Males	3.3	15.4	11.3	5.9	7.7	7.3	11.7	11.5	3.6	10.2	9.1	7.9
	Females	2.9	17.4	12.7	8.6	8.2	7.1	13.4	11.1	3.8	10.4	9.2	8.1
	M+F	3.1	16.2	11.9	7.4	8.0	7.2	12.9	11.3	3.7	10.3	9.2	8.0
Luxembourg	Males	0.7	8.0	8.9	2.0	4.7	5.5	5.3	4.4	1.3	5.0	5.5	3.9
	Females	1.1	13.9	6.8	3.3	7.4	4.7	8.7	4.2	2.2	8.1	4.8	5.0
	M+F	0.9	11.4	7.7	2.7	6.0	5.2	7.2	4.3	1.7	6.5	5.1	4.4
Mexico	Males	2.6	3.6	2.8	7.3	2.9	5.1	3.1	4.5	2.7	3.5	3.2	3.1
	Females	1.5	2.4	1.4	5.5	6.4	4.3	3.8	4.3	1.6	2.9	2.2	2.2
	M+F	2.1	3.0	2.1	6.1	5.4	4.5	3.4	4.4	2.2	3.2	2.7	2.7

Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/244741462084

Table C4.3. *(continued)*

Percentage of the cohort population not in education and unemployed (2004)

By level of educational attainment, age group and gender

			Below upper secondary education			Upper secondary and post-secondary non-tertiary education			Tertiary education		All levels of education			
			15-19	20-24	25-29	15-19[1]	20-24	25-29	20-24[1]	25-29	15-19	20-24	25-29	15-29
OECD countries	Netherlands	Males	1.5	8.1	6.2	2.0	3.3	3.4	3.9	3.2	1.6	4.8	3.9	3.4
		Females	1.2	6.4	6.1	1.1	2.2	3.5	4.0	2.5	1.2	3.4	3.6	2.7
		M+F	1.4	7.4	6.2	1.5	2.7	3.5	3.9	2.8	1.4	4.1	3.8	3.1
	Norway	Males	3.0	13.2	11.1	1.5	4.4	6.6	1.9	3.1	1.9	4.7	5.7	4.2
		Females	2.1	5.9	8.7	0.8	3.6	4.7	0.9	2.5	1.1	3.2	3.8	2.8
		M+F	2.6	10.9	10.2	1.1	4.0	5.8	1.2	2.8	1.5	4.0	4.8	3.5
	Poland	Males	0.8	29.1	35.3	9.8	19.3	21.4	0.2	1.8	0.9	10.1	10.4	7.4
		Females	0.3	20.0	28.1	6.0	14.9	20.3	0.3	3.0	0.5	7.3	9.2	5.9
		M+F	0.6	25.5	32.3	8.0	17.1	20.9	0.2	2.4	0.7	8.7	9.8	6.7
	Slovak Republic	Males	3.3	c	c	c	c	c	6.4	10.1	8.5	23.7	17.2	17.0
		Females	2.4	c	c	c	c	c	18.4	7.2	5.5	16.4	14.1	12.6
		M+F	2.9	c	c	c	c	c	13.9	8.5	7.0	20.1	15.7	14.8
	Spain	Males	3.4	6.7	4.7	1.9	2.7	4.2	1.2	1.5	2.1	3.2	2.8	2.8
		Females	3.4	8.3	7.0	1.6	2.8	5.8	1.7	2.2	2.0	3.4	3.8	3.2
		M+F	3.4	7.3	5.7	1.7	2.8	5.0	1.5	1.9	2.0	3.3	3.3	3.0
	Sweden[2]	Males	1.5	12.2	12.9	c	9.7	7.1	3.4	5.2	3.8	8.8	6.9	6.8
		Females	1.3	11.6	12.8	c	6.5	6.9	2.0	4.4	2.4	5.9	6.1	5.1
		M+F	1.4	11.9	12.9	c	8.2	7.0	2.6	4.7	3.1	7.4	6.5	6.0
	Switzerland	Males	m	m	m	m	5.3	4.8	m	3.0	2.9	6.0	4.6	4.2
		Females	m	m	m	m	5.0	5.2	m	4.0	m	6.6	5.7	4.5
		M+F	6.1	19.2	12.5	m	5.1	5.0	m	3.4	2.5	6.3	5.1	4.3
	Turkey	Males	5.2	14.9	11.4	8.4	13.0	12.1	29.0	15.2	6.0	15.1	12.1	10.9
		Females	1.4	2.2	1.8	7.4	9.6	7.3	30.7	13.9	2.7	6.6	4.2	4.5
		M+F	3.4	7.5	6.4	8.0	11.5	10.3	29.9	14.6	4.4	10.7	8.4	7.8
	United Kingdom	Males	8.9	12.0	9.7	4.2	4.4	3.8	0.4	0.5	2.7	2.4	1.9	2.3
		Females	4.4	9.7	5.5	2.6	3.1	2.4	0.2	0.2	1.6	1.7	1.1	1.5
		M+F	6.8	10.7	7.4	3.4	3.7	3.1	0.3	0.4	2.2	2.1	1.5	1.9
	United States	Males	1.6	12.0	5.8	6.1	5.5	5.4	3.5	2.9	2.6	6.2	4.6	4.5
		Females	1.0	10.4	7.7	5.3	4.7	3.8	3.9	2.4	2.0	5.2	3.7	3.6
		M+F	1.4	11.3	6.7	5.7	5.1	4.6	3.7	2.6	2.3	5.7	4.2	4.1
	OECD average	*Males*	*2.7*	*14.6*	*13.1*	*6.3*	*7.4*	*6.7*	*5.9*	*4.9*	*3.0*	*8.5*	*6.9*	*6.0*
		Females	*1.8*	*10.9*	*10.0*	*5.0*	*6.1*	*6.6*	*6.7*	*4.6*	*2.3*	*6.5*	*6.0*	*4.9*
		M+F	*2.3*	*13.2*	*11.6*	*5.6*	*6.8*	*6.7*	*6.3*	*4.7*	*2.6*	*7.5*	*6.5*	*5.5*
	EU19 average	*Males*	*2.4*	*15.3*	*14.5*	*6.5*	*7.9*	*6.8*	*5.2*	*4.8*	*2.7*	*9.1*	*7.2*	*6.4*
		Females	*1.7*	*12.6*	*11.5*	*5.1*	*6.5*	*7.2*	*6.4*	*4.6*	*2.3*	*7.2*	*6.7*	*5.6*
		M+F	*2.2*	*14.1*	*13.0*	*5.8*	*7.2*	*7.0*	*5.8*	*4.7*	*2.5*	*8.1*	*7.0*	*6.0*
Partner country	Israel	Males	5.1	14.9	8.6	1.3	9.0	9.1	1.1	4.4	1.7	7.9	6.8	5.3
		Females	3.9	14.0	6.8	1.3	13.5	11.0	2.4	5.4	1.4	8.9	7.5	5.8
		M+F	4.6	14.6	7.9	1.3	10.9	10.0	1.9	4.9	1.5	8.4	7.1	5.6

1. Differences between countries in these columns in part reflect the fact that the average age of graduation varies across countries. For instance, in some countries a smaller share of 15-to-19-year-olds attain upper secondary education simply because graduation typically occurs at 19. This means that the denominator in the ratio for the reported columns will be smaller than those where graduation occurs at an earlier age.
2. 15-year-olds are not included.
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/244741462084

Table C4.4a.

Trends in the percentage of the youth population in education and not in education (1995-2004)

By age group and work status

	Age group	1995			1998			1999			2000		
		In education	Not in education		In education	Not in education		In education	Not in education		In education	Not in education	
		Total	Employed	Not employed	Total	Employed	Not employed	Total	Employed	Not employed	Total	Employed	Not employed
OECD countries													
Australia	15-19	**73.4**	16.7	9.9	**77.3**	13.8	8.8	**78.2**	14.4	7.4	**79.5**	13.7	6.8
	20-24	**27.0**	56.1	16.9	**32.7**	51.3	16.0	**34.9**	50.6	14.5	**35.9**	50.9	13.3
	25-29	**11.4**	67.1	21.5	**13.7**	67.1	19.2	**15.0**	66.5	18.5	**15.5**	65.5	19.0
Austria	15-19	**m**	m	m	**m**	m	m	**m**	m	m	**m**	m	m
	20-24	**m**	m	m	**m**	m	m	**m**	m	m	**m**	m	m
	25-29	**m**	m	m	**m**	m	m	**m**	m	m	**m**	m	m
Belgium	15-19	**86.1**	3.3	10.5	**85.3**	3.9	10.8	**89.4**	3.7	6.8	**89.9**	3.6	6.5
	20-24	**37.5**	43.6	19.0	**40.6**	42.5	16.9	**43.7**	38.6	17.7	**43.8**	40.2	16.0
	25-29	**6.8**	74.2	19.0	**9.3**	72.4	18.2	**14.4**	67.7	17.9	**11.8**	72.5	15.7
Canada	15-19	**82.9**	9.5	7.6	**83.0**	9.6	7.5	**82.3**	10.4	7.3	**82.1**	10.7	7.2
	20-24	**36.2**	46.4	17.4	**39.0**	44.5	16.5	**39.0**	46.4	14.6	**37.9**	47.8	14.3
	25-29	**12.1**	67.0	20.9	**12.6**	69.2	18.2	**12.3**	70.5	17.2	**12.4**	71.5	16.2
Czech Republic	15-19	**69.8**	23.7	6.5	**77.1**	15.8	7.2	**75.6**	14.8	9.7	**82.1**	10.0	7.9
	20-24	**13.1**	67.1	19.8	**17.1**	64.3	18.5	**19.6**	59.8	20.6	**19.7**	60.0	20.3
	25-29	**1.1**	76.1	22.9	**1.8**	75.1	23.1	**2.4**	71.7	25.9	**2.4**	72.1	25.6
Denmark	15-19	**88.4**	8.7	3.0	**90.3**	7.9	1.8	**85.8**	10.8	3.4	**89.9**	7.4	2.7
	20-24	**50.0**	39.3	10.7	**55.0**	38.0	7.0	**55.8**	36.6	7.6	**54.8**	38.6	6.6
	25-29	**29.6**	59.0	11.4	**34.5**	57.8	7.7	**35.5**	56.7	7.8	**36.1**	56.4	7.5
Finland	15-19	**m**	m	m	**m**	m	m	**m**	m	m	**m**	m	m
	20-24	**m**	m	m	**m**	m	m	**m**	m	m	**m**	m	m
	25-29	**m**	m	m	**m**	m	m	**m**	m	m	**m**	m	m
France	15-19	**96.2**	1.3	2.5	**95.6**	1.3	3.1	**95.7**	1.0	3.3	**95.3**	1.5	3.3
	20-24	**51.2**	31.3	17.5	**53.5**	30.0	16.5	**53.1**	29.4	17.5	**54.2**	31.7	14.1
	25-29	**11.4**	67.5	21.0	**11.4**	66.5	22.1	**11.9**	66.6	21.4	**12.2**	69.2	18.6
Germany	15-19	**m**	m	m	**91.6**	5.0	3.4	**89.4**	6.1	4.5	**87.4**	6.8	5.7
	20-24	**m**	m	m	**36.3**	48.8	15.0	**34.2**	49.1	16.7	**34.1**	49.0	16.9
	25-29	**m**	m	m	**13.9**	68.4	17.7	**13.6**	68.2	18.2	**12.7**	69.8	17.5
Greece	15-19	**80.0**	9.6	10.5	**80.1**	10.1	9.8	**81.8**	7.9	10.3	**82.7**	8.3	9.0
	20-24	**29.2**	43.0	27.8	**27.9**	44.5	27.6	**30.1**	43.6	26.3	**31.6**	43.4	25.0
	25-29	**4.7**	65.2	30.2	**4.2**	66.4	29.4	**5.5**	66.7	27.8	**5.2**	66.6	28.1
Hungary	15-19	**82.5**	6.7	10.8	**78.2**	10.0	11.8	**79.3**	9.2	11.6	**83.7**	7.7	8.6
	20-24	**22.5**	44.4	33.1	**26.5**	45.9	27.6	**28.6**	47.7	23.6	**32.3**	45.7	22.0
	25-29	**7.3**	56.8	35.9	**7.4**	58.9	33.7	**8.7**	60.1	31.3	**9.4**	61.4	29.2
Iceland	15-19	**59.5**	25.7	14.8	**82.2**	15.1	2.7	**81.6**	17.0	1.4	**83.1**	14.8	2.1
	20-24	**33.3**	52.6	14.0	**47.8**	45.9	6.3	**44.8**	48.4	6.8	**48.0**	47.7	4.3
	25-29	**24.1**	64.7	11.1	**32.8**	57.4	9.8	**34.7**	58.8	6.5	**34.9**	59.2	5.9
Ireland	15-19	**m**	m	m	**m**	m	m	**79.4**	15.4	5.2	**80.0**	15.6	4.4
	20-24	**m**	m	m	**m**	m	m	**24.6**	64.6	10.8	**26.7**	63.6	9.7
	25-29	**m**	m	m	**m**	m	m	**3.1**	82.4	14.5	**3.3**	83.4	13.3
Italy	15-19	**m**	m	m	**75.4**	9.5	15.2	**76.9**	8.3	14.8	**77.1**	9.8	13.1
	20-24	**m**	m	m	**35.8**	34.1	30.1	**35.6**	34.5	29.9	**36.0**	36.5	27.5
	25-29	**m**	m	m	**16.5**	54.1	29.4	**17.7**	53.4	28.9	**17.0**	56.1	26.9
Luxembourg	15-19	**82.7**	9.3	8.0	**88.6**	5.3	6.1	**89.2**	5.8	5.0	**92.2**	6.1	1.7
	20-24	**36.5**	52.7	10.8	**40.4**	50.1	9.5	**47.2**	43.2	9.6	**42.8**	48.9	8.2
	25-29	**8,3**	71,6	20,1	**11,9**	74,0	14,1	**11,3**	74,1	14,6	**11,6**	75,5	12,9
Mexico	15-19	**45.0**	31.8	23.2	**46.9**	33.8	19.3	**49.6**	32.7	17.7	**47.9**	33.8	18.3
	20-24	**15.9**	53.4	30.7	**17.1**	55.4	27.4	**19.1**	54.8	26.1	**17.7**	55.2	27.1
	25-29	**4.6**	62.0	33.4	**4.2**	65.2	30.6	**4.9**	65.0	30.1	**4.0**	65.8	30.2

Notes: Due to incomplete data, some averages have not been calculated. Break in Austrian time series is due to a change in survey methodology from 2003 to 2004. Break in French time series is due to a change in methodology: age is measured in the reference week from 2004, as is the participation in education.

Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.

Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/244741462084

Table C4.4a. *(continued-1)*

Trends in the percentage of the youth population in education and not in education (1995-2004)

By age group and work status

			1995			1998			1999			2000		
			In education	Not in education		In education	Not in education		In education	Not in education		In education	Not in education	
		Age group	Total	Employed	Not employed	Total	Employed	Not employed	Total	Employed	Not employed	Total	Employed	Not employed
OECD countries	Netherlands	15-19	m	m	m	89.7	7.6	2.7	88.2	8.9	3.0	80.6	15.7	3.7
		20-24	m	m	m	50.5	42.0	7.5	50.7	42.5	6.7	36.5	55.2	8.2
		25-29	m	m	m	24.4	64.9	10.7	25.0	65.2	9.8	5.0	83.0	12.1
	Norway	15-19	m	m	m	92.1	6.0	1.9	91.9	6.4	1.7	92.4	5.9	1.7
		20-24	m	m	m	40.2	51.4	8.4	38.4	53.8	7.8	41.7	50.3	8.0
		25-29	m	m	m	14.4	76.1	9.6	17.2	74.4	8.3	17.5	72.1	10.4
	Poland	15-19	89.6	4.2	6.2	91.0	4.2	4.8	93.2	2.3	4.6	92.8	2.6	4.5
		20-24	23.7	42.5	33.8	30.8	45.3	23.9	33.1	39.7	27.2	34.9	34.3	30.8
		25-29	3.1	67.5	29.4	5.7	70.5	23.8	5.4	68.0	26.6	8.0	62.9	29.1
	Portugal	15-19	72.4	18.5	9.1	71.6	20.1	8.3	72.3	19.6	8.1	72.6	19.7	7.7
		20-24	37.8	46.6	15.6	32.4	55.7	12.0	34.9	53.2	11.9	36.5	52.6	11.0
		25-29	11.6	70.9	17.4	9.5	74.8	15.8	11.5	75.1	13.4	11.0	76.6	12.5
	Slovak Republic	15-19	70.1	14.0	15.9	69.4	12.3	18.3	69.6	10.1	20.4	67.3	6.4	26.3
		20-24	14.8	54.9	30.3	17.4	56.3	26.3	17.4	51.2	31.4	18.1	48.8	33.1
		25-29	1.6	65.5	32.9	1.1	71.6	27.2	1.6	70.2	28.2	1.3	66.9	31.8
	Spain	15-19	77.3	11.2	11.5	80.2	9.9	9.8	79.3	11.3	9.4	80.6	11.4	8.0
		20-24	40.0	34.2	25.8	44.3	35.7	20.1	43.6	38.8	17.6	44.6	40.3	15.0
		25-29	14.6	51.5	33.9	15.3	57.3	27.5	15.2	59.6	25.1	16.2	62.4	21.4
	Sweden	15-19	87.4	6.9	5.6	90.9	4.3	4.7	91.5	4.9	3.7	90.6	5.8	3.6
		20-24	38.8	43.7	17.5	42.6	44.3	13.1	43.8	45.2	11.0	42.1	47.2	10.7
		25-29	19.9	67.0	13.2	24.9	65.0	10.0	22.5	68.1	9.5	21.9	68.9	9.2
	Switzerland	15-19	65.6	10.2	24.2	85.5	9.6	4.8	84.4	8.0	7.6	84.6	7.5	7.9
		20-24	29.5	59.2	11.3	34.8	54.2	11.0	35.8	55.8	8.4	37.4	56.7	5.9
		25-29	10.6	76.2	13.2	10.1	77.9	12.1	10.4	79.3	10.3	15.0	73.9	11.1
	Turkey	15-19	38.7	34.2	27.2	40.2	32.1	27.7	42.9	30.2	26.9	39.2	29.6	31.2
		20-24	10.3	46.5	43.2	13.4	44.7	42.0	13.1	45.6	41.4	12.7	43.1	44.2
		25-29	2.7	59.6	37.8	2.9	60.4	36.7	3.4	57.7	38.8	2.9	58.8	38.3
	United Kingdom	15-19	m	m	m	m	m	m	m	m	m	77.0	15.0	8.0
		20-24	m	m	m	m	m	m	m	m	m	32.4	52.2	15.4
		25-29	m	m	m	m	m	m	m	m	m	13.3	70.3	16.3
	United States	15-19	81.5	10.7	7.8	82.2	10.5	7.3	81.3	11.3	7.4	81.3	11.7	7.0
		20-24	31.5	50.7	17.8	33.0	52.6	14.4	32.8	52.1	15.1	32.5	53.1	14.4
		25-29	11.6	71.4	17.0	11.9	72.7	15.4	11.1	73.2	15.7	11.4	72.8	15.8
	OECD average	*15-19*				*80.2*	*11.2*	*8.6*	*80.4*	*11.3*	*8.4*	*80.5*	*11.2*	*8.3*
		20-24				*35.2*	*46.9*	*18.0*	*35.6*	*46.9*	*17.5*	*35.4*	*47.7*	*16.9*
		25-29				*12.8*	*67.1*	*20.1*	*13.1*	*67.5*	*19.4*	*12.5*	*68.5*	*19.0*
	EU19 average	*15-19*				*83.7*	*8.5*	*7.8*	*83.5*	*8.7*	*7.7*	*83.6*	*9.0*	*7.3*
		20-24				*36.7*	*45.2*	*18.1*	*37.3*	*44.9*	*17.9*	*36.5*	*46.4*	*17.1*
		25-29				*12.8*	*66.5*	*20.7*	*12.8*	*67.1*	*20.1*	*11.7*	*69.1*	*19.3*
Partner country	Israel	15-19	m	m	m	m	m	m	m	m	m	m	m	m
		20-24	m	m	m	m	m	m	m	m	m	m	m	m
		25-29	m	m	m	m	m	m	m	m	m	m	m	m

Notes: Due to incomplete data, some averages have not been calculated. Break in Austrian time series is due to a change in survey methodology from 2003 to 2004. Break in French time series is due to a change in methodology: age is measured in the reference week from 2004, as is the participation in education.

Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.

Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/244741462084

Table C4.4a. *(continued-2)*

Trends in the percentage of the youth population in education and not in education (1995-2004)

By age group and work status

		Age group	2001			2002			2003			2004		
			In education	Not in education		In education	Not in education		In education	Not in education		In education	Not in education	
			Total	Employed	Not employed	Total	Employed	Not employed	Total	Employed	Not employed	Total	Employed	Not employed
OECD countries	**Australia**	15-19	**79.5**	13.0	7.6	**79.7**	13.3	7.0	**79.6**	13.6	6.8	**78.4**	14.1	7.5
		20-24	**36.5**	49.6	13.9	**38.7**	48.1	13.2	**39.7**	47.0	13.3	**39.0**	48.7	12.3
		25-29	**15.8**	67.0	17.2	**16.5**	65.7	17.8	**17.7**	64.7	17.6	**17.7**	65.0	17.3
	Austria	15-19	**m**	m	m	**81.5**	12.1	6.3	**83.6**	10.7	5.6	**83.3**	9.3	7.3
		20-24	**m**	m	m	**29.4**	58.9	11.7	**30.3**	59.3	10.4	**30.3**	56.8	12.9
		25-29	**m**	m	m	**10.3**	77.3	12.4	**12.5**	75.2	12.3	**13.0**	72.6	14.4
	Belgium	15-19	**89.7**	4.1	6.2	**89.6**	3.6	6.8	**89.1**	3.8	7.1	**92.1**	3.1	4.9
		20-24	**44.2**	42.8	13.0	**38.2**	44.4	17.4	**39.9**	43.0	17.1	**38.8**	44.4	16.9
		25-29	**15.0**	69.5	15.5	**5.8**	77.0	17.2	**8.9**	72.8	18.3	**6.0**	74.3	19.7
	Canada	15-19	**83.0**	10.7	6.3	**82.2**	11.2	6.6	**81.9**	11.3	6.9	**81.0**	11.5	7.5
		20-24	**38.7**	46.9	14.3	**38.8**	47.2	14.0	**39.0**	48.0	12.9	**40.2**	46.7	13.0
		25-29	**13.2**	71.3	15.6	**14.5**	69.0	16.5	**14.4**	70.4	15.3	**13.5**	71.0	15.5
	Czech Republic	15-19	**87.0**	6.2	6.8	**88.3**	5.7	6.0	**89.0**	5.2	5.8	**90.0**	4.4	5.7
		20-24	**23.1**	58.9	18.1	**25.7**	56.2	18.1	**28.7**	53.3	18.0	**32.3**	49.2	18.5
		25-29	**3.0**	72.1	25.0	**2.9**	73.3	23.8	**3.0**	73.0	24.1	**3.8**	71.6	24.5
	Denmark	15-19	**86.8**	9.4	3.8	**88.7**	8.9	2.4	**89.8**	7.3	3.0	**91.2**	7.3	1.5
		20-24	**55.3**	38.1	6.6	**55.3**	37.4	7.3	**57.7**	34.1	8.2	**61.8**	29.7	8.5
		25-29	**32.4**	60.0	7.6	**35.0**	58.3	6.7	**40.2**	50.3	9.6	**45.4**	45.2	9.3
	Finland	15-19	**m**	m	m	**m**	m	m	**84.8**	5.5	9.8	**90.3**	4.4	5.3
		20-24	**m**	m	m	**m**	m	m	**51.3**	32.2	16.5	**59.6**	27.0	13.4
		25-29	**m**	m	m	**m**	m	m	**27.1**	58.5	14.5	**39.9**	46.3	13.9
	France	15-19	**94.9**	1.7	3.4	**94.6**	1.9	3.4	**m**	m	m	**91.5**	3.2	5.4
		20-24	**53.6**	33.1	13.4	**53.2**	32.5	14.4	**m**	m	m	**45.2**	37.2	17.6
		25-29	**11.4**	70.3	18.3	**11.7**	70.1	18.2	**m**	m	m	**13.2**	66.7	20.0
	Germany	15-19	**88.5**	6.4	5.1	**90.1**	5.2	4.7	**91.2**	4.1	4.7	**93.4**	3.0	3.6
		20-24	**35.0**	48.7	16.4	**38.1**	46.0	15.9	**41.2**	43.1	15.6	**44.0**	38.5	17.5
		25-29	**13.5**	68.5	18.0	**16.3**	66.3	17.4	**17.9**	63.7	18.4	**17.6**	62.8	19.6
	Greece	15-19	**85.3**	7.0	7.7	**86.6**	7.1	6.3	**84.3**	6.3	9.3	**84.4**	6.4	9.2
		20-24	**35.3**	40.8	24.0	**35.6**	41.9	22.5	**38.6**	39.9	21.4	**36.7**	41.0	22.3
		25-29	**6.4**	67.3	26.3	**5.7**	68.7	25.6	**6.9**	69.1	24.0	**7.0**	68.0	25.0
	Hungary	15-19	**85.0**	6.7	8.3	**87.5**	4.5	8.0	**89.7**	3.5	6.8	**90.4**	3.4	6.2
		20-24	**35.0**	45.1	20.0	**36.9**	42.6	20.5	**40.5**	39.6	19.9	**43.8**	37.6	18.6
		25-29	**9.4**	63.4	27.1	**8.6**	63.1	28.3	**12.6**	59.9	27.5	**12.9**	63.2	23.9
	Iceland	15-19	**79.5**	19.0	1.5	**80.9**	14.8	4.3	**m**	m	m	**82.8**	14.6	2.6
		20-24	**50.3**	45.6	4.1	**53.8**	40.1	6.2	**m**	m	m	**61.8**	32.1	6.1
		25-29	**33.8**	61.5	4.8	**36.5**	58.8	4.7	**m**	m	m	**41.3**	52.8	5.9
	Ireland	15-19	**80.3**	15.5	4.1	**81.6**	13.6	4.8	**81.4**	13.4	5.2	**80.6**	10.9	8.5
		20-24	**28.3**	62.4	9.3	**29.0**	60.2	10.8	**30.3**	58.3	11.3	**34.6**	53.2	12.2
		25-29	**3.3**	83.1	13.5	**3.5**	81.8	14.7	**4.8**	80.2	14.9	**12.1**	73.5	14.4
	Italy	15-19	**77.6**	9.8	12.6	**80.8**	8.7	10.5	**m**	m	m	**82.7**	7.6	9.7
		20-24	**37.0**	36.9	26.1	**38.2**	37.5	24.3	**m**	m	m	**40.7**	38.3	21.1
		25-29	**16.4**	58.0	25.6	**15.6**	59.5	24.8	**m**	m	m	**19.6**	57.2	23.2
	Luxembourg	15-19	**91.2**	7.0	1.8	**91.3**	5.7	3.0	**92.2**	5.6	2.2	**93.2**	4.2	2.6
		20-24	**46.7**	44.2	9.0	**47.8**	45.2	7.0	**50.5**	41.3	8.2	**57.9**	32.1	10.0
		25-29	**11.6**	75.9	12.5	**13.9**	74.5	11.6	**13.0**	77.1	9.9	**18.3**	69.9	11.8
	Mexico	15-19	**50.3**	31.9	17.8	**53.4**	29.0	17.5	**54.0**	28.2	17.8	**54.9**	28.0	17.0
		20-24	**19.1**	53.8	27.1	**20.8**	52.6	26.6	**19.8**	52.6	27.6	**20.3**	52.3	27.4
		25-29	**4.1**	64.9	31.0	**4.6**	64.8	30.6	**4.2**	64.8	31.0	**4.4**	65.4	30.2

Notes: Due to incomplete data, some averages have not been calculated. Break in Austrian time series is due to a change in survey methodology from 2003 to 2004. Break in French time series is due to a change in methodology: age is measured in the reference week from 2004, as is the participation in education.

Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006).*

Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/244741462084

Table C4.4a. *(continued-3)*

Trends in the percentage of the youth population in education and not in education (1995-2004)

By age group and work status

		Age group	2001			2002			2003			2004		
			In education	Not in education		In education	Not in education		In education	Not in education		In education	Not in education	
			Total	Employed	Not employed	Total	Employed	Not employed	Total	Employed	Not employed	*Total*	Employed	Not employed
OECD countries	Netherlands	15-19	**79.6**	16.3	4.2	**80.7**	14.7	4.6	**m**	m	m	**89.0**	7.6	3.3
		20-24	**34.4**	56.9	8.7	**35.3**	56.8	7.9	**m**	m	m	**46.1**	44.8	9.1
		25-29	**6.4**	82.3	11.3	**6.2**	80.9	12.9	**m**	m	m	**16.7**	71.9	11.4
	Norway	15-19	**85.8**	11.1	3.0	**85.3**	11.5	3.2	**86.9**	10.4	2.7	**84.0**	12.5	3.5
		20-24	**39.6**	51.7	8.7	**38.5**	51.8	9.7	**38.7**	50.8	10.6	**40.8**	49.6	9.6
		25-29	**13.9**	75.9	10.2	**14.2**	75.0	10.7	**15.4**	71.9	12.7	**15.4**	72.0	12.6
	Poland	15-19	**91.8**	2.4	5.8	**95.9**	1.0	3.1	**95.6**	1.1	3.3	**96.5**	0.9	2.6
		20-24	**45.2**	27.7	27.1	**53.8**	20.8	25.4	**55.7**	18.8	25.5	**57.5**	18.4	24.1
		25-29	**11.4**	59.9	28.7	**14.9**	53.3	31.8	**17.3**	52.4	30.2	**15.5**	53.7	30.8
	Portugal	15-19	**72.8**	19.8	7.4	**72.4**	20.3	7.3	**74.8**	16.4	8.8	**74.4**	15.2	10.4
		20-24	**36.3**	53.3	10.4	**34.7**	53.3	12.0	**35.2**	52.5	12.3	**37.8**	48.7	13.6
		25-29	**11.2**	77.3	11.6	**10.7**	77.1	12.2	**11.7**	73.7	14.6	**11.3**	74.7	14.0
	Slovak Republic	15-19	**67.3**	6.3	26.4	**78.6**	5.8	15.6	**82.2**	5.2	12.6	**87.8**	4.3	7.9
		20-24	**19.4**	45.7	34.9	**22.1**	44.0	33.9	**24.0**	46.4	29.6	**27.5**	44.7	27.8
		25-29	**2.3**	65.0	32.7	**2.9**	66.6	30.5	**2.6**	68.3	29.1	**4.5**	66.6	28.9
	Spain	15-19	**81.4**	11.6	6.9	**81.9**	11.0	7.2	**82.6**	10.1	7.3	**75.9**	13.8	10.4
		20-24	**45.0**	40.7	14.2	**43.4**	41.5	15.1	**43.5**	41.8	14.8	**38.7**	45.0	16.2
		25-29	**17.0**	63.1	19.8	**16.1**	64.2	19.8	**15.4**	65.0	19.5	**11.3**	69.3	19.4
	Sweden	15-19	**88.4**	7.3	4.3	**88.4**	7.0	4.6	**88.7**	7.0	4.2	**86.8**	7.2	5.9
		20-24	**41.2**	48.2	10.6	**41.7**	47.0	11.2	**42.3**	46.0	11.8	**42.3**	44.1	13.7
		25-29	**22.7**	70.0	7.2	**22.4**	69.5	8.1	**22.8**	67.9	9.4	**20.9**	68.6	10.5
	Switzerland	15-19	**85.7**	7.5	6.8	**86.2**	8.0	5.8	**83.6**	8.4	8.0	**84.9**	7.9	7.2
		20-24	**39.3**	52.3	8.4	**38.0**	52.3	9.7	**35.8**	51.5	12.7	**37.2**	51.8	11.0
		25-29	**13.5**	75.1	11.4	**12.7**	74.7	12.6	**12.2**	73.6	14.2	**15.6**	72.3	12.1
	Turkey	15-19	**41.0**	26.7	32.3	**42.2**	24.8	32.9	**45.9**	21.3	32.8	**43.5**	21.2	35.3
		20-24	**12.7**	43.1	44.2	**14.1**	40.6	45.3	**15.8**	36.5	47.8	**13.0**	39.1	47.8
		25-29	**2.6**	57.1	40.2	**3.0**	56.2	40.7	**3.7**	53.2	43.1	**3.1**	54.0	42.8
	United Kingdom	15-19	**76.1**	15.7	8.2	**75.3**	16.2	8.6	**76.3**	14.3	9.4	**68.8**	20.9	10.3
		20-24	**33.5**	51.7	14.8	**31.0**	53.7	15.3	**32.6**	52.1	15.3	**34.9**	51.3	13.8
		25-29	**13.3**	70.6	16.0	**13.3**	70.7	16.0	**15.0**	68.7	16.3	**12.2**	71.3	16.5
	United States	15-19	**81.2**	11.4	7.5	**82.9**	10.2	7.0	**m**	m	m	**83.9**	9.2	6.9
		20-24	**33.9**	50.5	15.6	**35.0**	48.5	16.5	**m**	m	m	**35.2**	47.9	16.9
		25-29	**11.8**	70.5	17.7	**12.3**	70.3	17.4	**m**	m	m	**13.0**	68.7	18.4
	OECD average	*15-19*	*80.4*	*11.4*	*8.2*	*81.8*	*10.6*	*7.6*	*81.9*	*9.7*	*8.4*	**82.8**	9.5	7.7
		20-24	*36.7*	*46.7*	*16.5*	*37.2*	*46.2*	*16.6*	*37.7*	*44.9*	*17.4*	**40.7**	42.6	16.7
		25-29	*12.6*	*68.8*	*18.6*	*12.7*	*68.7*	*18.6*	*13.6*	*67.0*	*19.4*	**15.8**	65.5	18.7
	EU19 average	*15-19*	*83.8*	*9.0*	*7.2*	*85.2*	*8.5*	*6.3*	*85.7*	*7.5*	*6.9*	**86.4**	7.2	6.3
		20-24	*38.1*	*45.6*	*16.3*	*38.3*	*45.5*	*16.2*	*40.1*	*43.8*	*16.1*	**42.6**	41.2	16.2
		25-29	*12.2*	*69.2*	*18.6*	*12.0*	*69.6*	*18.4*	*14.5*	*67.2*	*18.3*	**15.9**	65.7	18.5
Partner country	Israel	15-19	**m**	m	m	**69.4**	6.0	24.6	**69.0**	5.7	25.2	**68.9**	5.6	25.6
		20-24	**m**	m	m	**26.8**	31.7	41.6	**28.1**	27.7	44.2	**28.6**	30.5	40.9
		25-29	**m**	m	m	**19.1**	52.2	28.7	**19.6**	52.7	27.7	**20.9**	53.9	25.3

Notes: Due to incomplete data, some averages have not been calculated. Break in Austrian time series is due to a change in survey methodology from 2003 to 2004. Break in French time series is due to a change in methodology: age is measured in the reference week from 2004, as is the participation in education.

Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.

Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

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INDICATOR C5

PARTICIPATION IN ADULT LEARNING

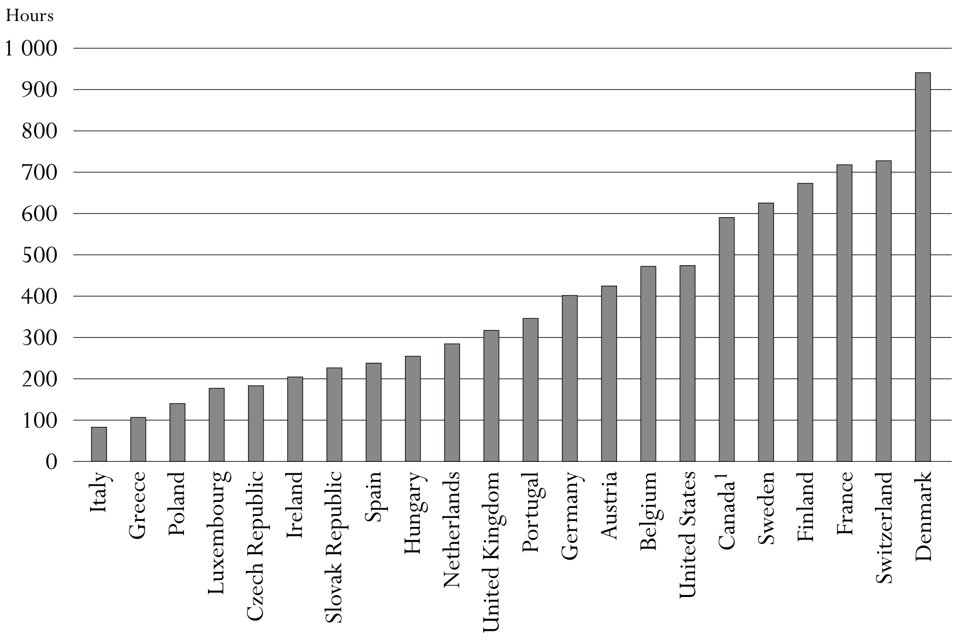
This indicator examines the participation of the adult population in non-formal job-related education and training. This year a new estimation of the expected number of hours in non-formal job-related education and training between the ages of 25 and 64 is included. This calculation refers to the time that a hypothetical individual (facing current conditions in terms of adult learning opportunities at different stages in life) is expected to give to such education and training over a typical working life (a forty year period).

Key results

Chart C5.1. Expected hours in non-formal job-related training (2003)

This chart shows the hours that people in different countries can expect to spend in non-formal job-related education and training over the course of a typical working life.

There are major differences across countries in the time that individuals can expect to spend in non-formal job-related education and training over a typical working life.



1. Year of reference 2002.

Countries are ranked in ascending order of the expected hours in non-formal job-related education and training.

Source: OECD. Table C5.1a. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/558317523300

INDICATOR C5

Other highlights of this indicator

- Adults with higher levels of educational attainment – whether upper-secondary and post-secondary non-tertiary education or tertiary-level education – are more likely to participate in non-formal job-related continuing education and training than adults with lower educational attainment.
- There are major differences in the number of hours that individuals can expect to spend in non-formal job-related education and training over a typical working life. At the tertiary level, this ranges from below 350 hours in Greece, Italy and the Netherlands to more than 1 000 hours in Denmark, Finland, France and Switzerland.
- In all but six countries – Finland, France, Greece, Hungary the Netherlands and Portugal – men can expect to spend more hours in non-formal job-related continuing and education and training than women.

Policy context

The ageing of the population and the skill-intensity bias in labour demand in OECD economies – associated with new technologies, globalisation and organisational change – are among the key reasons why lifelong learning occupies a prominent position in today's policy foreground. Many observers also hold that changes in workplace organisation are leading to shifts in the demand for different types of skills, underpinning the importance of continuing education and training.

Evidence and explanations

Variation across countries in participation rates

There is substantial cross-country variation in participation rates in non-formal job-related continuing education and training. In the OECD, four countries – Denmark, Finland, Sweden and the United States – take the lead, with more than 35% of the population between 25 and 64 years of age having participated in some type of non-formal job-related continuing education and training over the previous 12 months. The participation rate is lower than 10% in Greece, Hungary, Italy, the Netherlands, Poland, Portugal and Spain. Between these two extremes, the incidence of participation in education and training varies greatly; for example, the figure is about 11 % in the Czech Republic and Ireland, but up over twice this rate in Canada and the United Kingdom (Table C5.1a).

Training leads to further training

In addition to these large variations in participation rates, a striking pattern is that adult education and training increases with one's level of initial qualifications (Table C5.1a). In all countries, the participation rate varies significantly according to prior levels of educational attainment. In other words, all countries share inequalities in the incidence of adult learning. On average for the OECD countries surveyed, participation in adult non-formal job-related education and training is 14 percentage points higher for individuals who have attained a tertiary level of education than for persons who have only attained an upper secondary or post-secondary non-tertiary education. Similarly, participation is 10 percentage points higher for individuals who have attained an upper secondary and post-secondary non-tertiary education than for persons who have only attained a lower secondary education. A greater understanding of the underlying causes of this participation differential by initial education could assist with strategies for promoting lifelong learning among the less qualified.

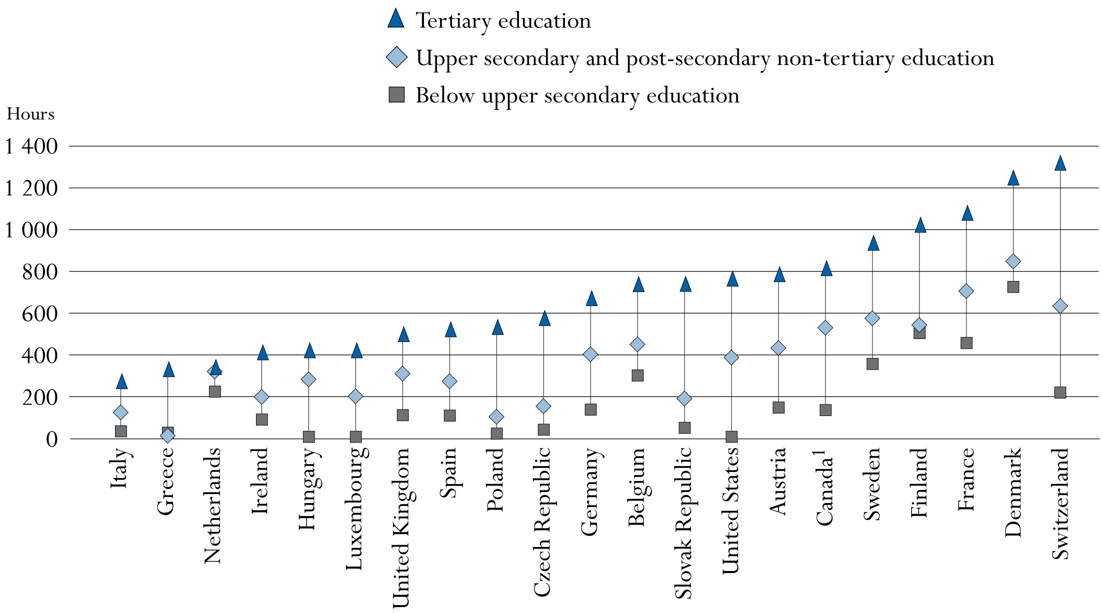
Expected hours in non-formal job-related education and training

Chart C5.2 shows major differences across countries in the number of hours that individuals of different levels of educational attainment can expect to spend in non-formal job-related education and training over a typical working life. At the tertiary level of attainment, this ranges from below 350 hours in Greece, Italy and the Netherlands to more than 1 000 hours in Denmark, Finland, France and Switzerland. In a few countries – Denmark, France and Finland – individuals with a lower secondary level of attainment can expect to spend considerably more hours in non-formal job-related continuing education and training than persons in other countries who have attained a tertiary level of education.

It is illustrative to consider these data in relation to the average annual hours of work. For instance, in Switzerland, individuals at the tertiary level of attainment can expect to register over

Chart C5.2. Expected hours in non-formal job-related education and training by level of educational attainment (2003)

Expected number of hours in non-formal job-related education and training for 25-to-64-year-olds in the population by level of educational attainment



1. Year of reference 2002.

Countries are ranked in ascending order of the expected hours in non-formal job-related training at the tertiary level of education.

Source: OECD. Table C5.1a. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

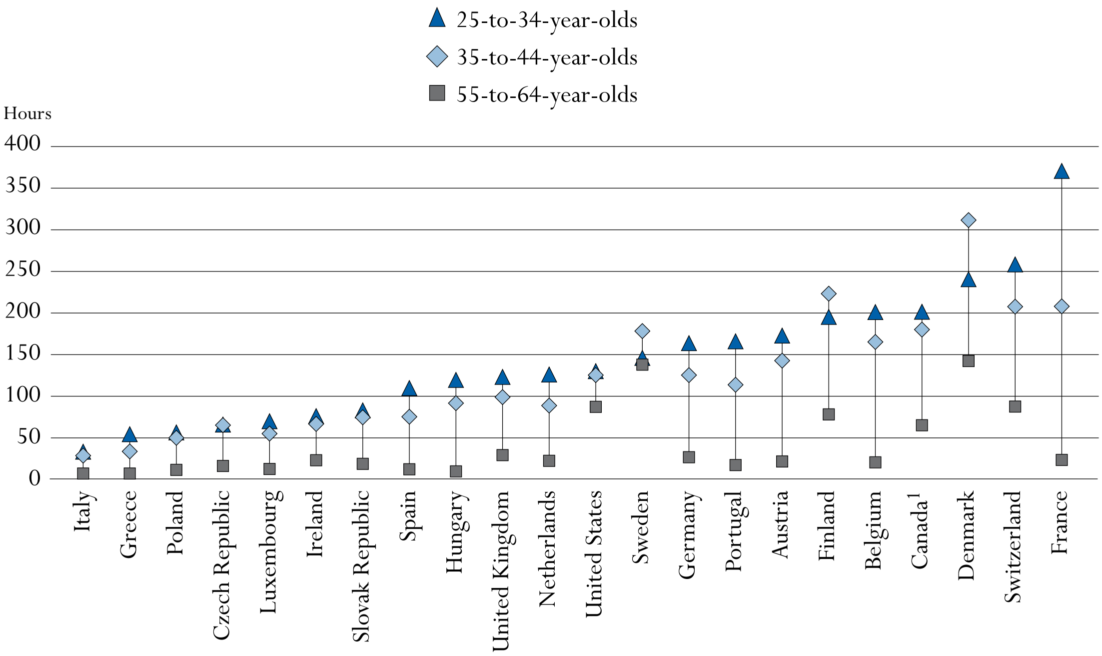
StatLink: http://dx.doi.org/10.1787/558317523300

1 300 hours in non-formal job-related education and training over a typical working life, the highest figure among all OECD countries (Table C5.1a). This implies that during the working life, such individuals can expect to spend the equivalent of over 83% of an average year of work in continuing education and training. Considering all levels of education, lifetime hours in non-formal job-related education and training as a percentage of average annual hours in work range from below 10% in the Czech Republic, Greece, Italy and Poland to 40% and above in Denmark, France, Sweden and Switzerland.

Expected hours in non-formal job-related education and training by age and gender

In most countries, participation in non-formal job-related learning declines with age, although the extent of the decline varies across countries (Chart C5.3). In only four countries is there an increase in expected non-formal job-related learning between the ages of 25 to 34 and 35 to 44: the Czech Republic, Denmark, Finland and Sweden. Only one country, the United States, registers an increase in the expected hours in non-formal job-related education and training between the ages of 35 to 44 and 45 to 54. In Austria, Belgium, France, Hungary and Spain, individuals in the oldest age group (55-to-64-year-olds) have substantially fewer expected hours in non-formal learning than their younger peers. In these countries, the number of expected hours is only around one quarter or less of those of the next youngest age group. This may be due to

Chart C5.3. Expected hours in non-formal job-related education and training for the population, by selected age group (2003)



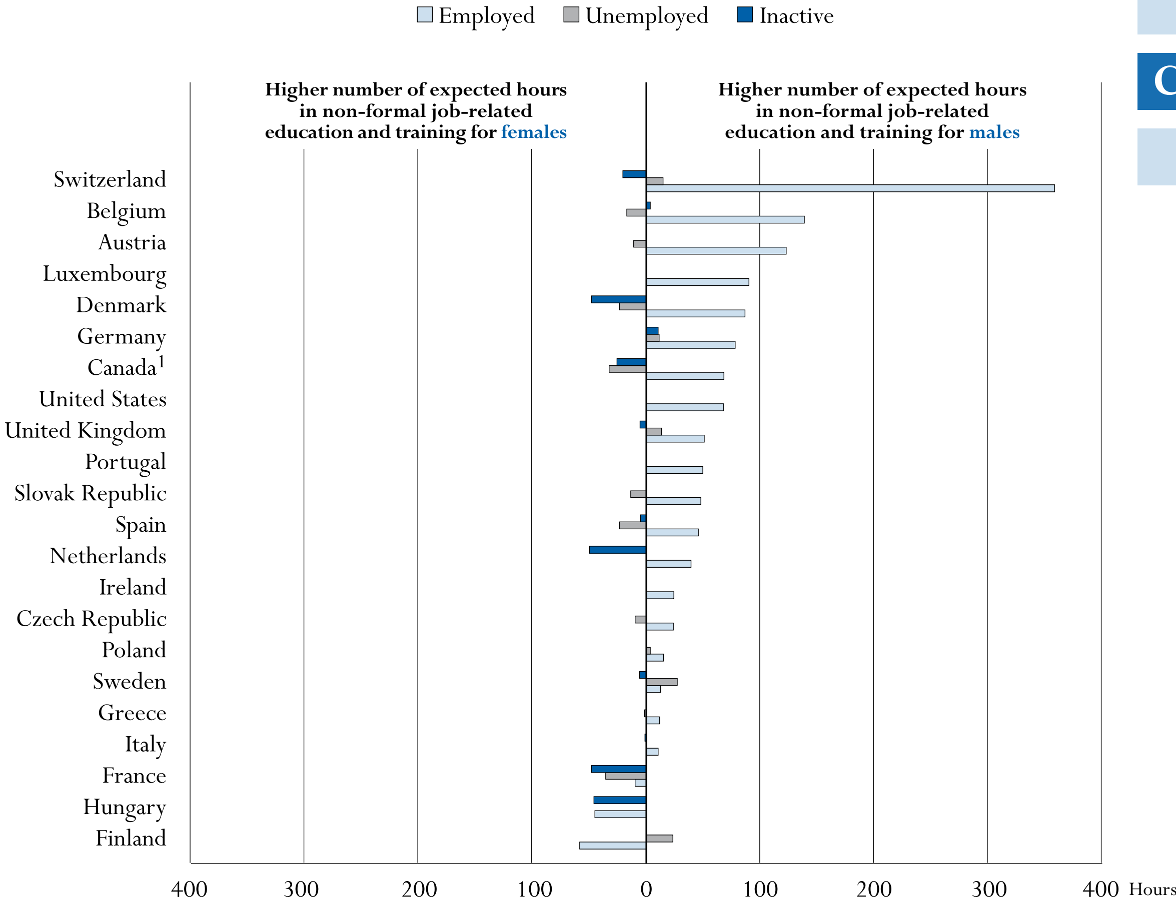
1. Year of reference 2002.
Countries are ranked in ascending order of the expected hours in non-formal job-related education and training of the 25-34 age group.
Source: OECD. Table C5.1b. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).
StatLink: http://dx.doi.org/10.1787/558317523300

older adults placing less value on investment in training and also to employers proposing training less frequently to older workers (possibly in light of the shorter time available for capturing returns on this investment). By presenting data on how hours in training are distributed across age cohorts, Tables C5.1b and C5.1c shed light on whether the concept of lifelong learning is being put into practice in a country, as the more even the distribution of training hours across age groups, the greater the uptake of lifelong learning (both the absolute number of hours in training and their distribution should also be examined in this connection).

Canada, Denmark, Finland, Sweden, Switzerland and the United States are notable in the extent to which they achieve relatively high expected hours in non-formal learning across age groups. Denmark and Sweden are exceptional as regards the high number of expected hours in non-formal learning in the oldest age group, with about 140 hours.

In all but three countries – France, Hungary and Finland – employed men can expect to spend more hours in non-formal job-related education and training than employed women (Chart C5.4). By far the largest gender difference is seen in Switzerland, with employed males registering almost 360 more expected hours than employed females. In all countries except Austria, Belgium and Switzerland the difference between the genders is less than one hundred hours (in favour of males).

Chart C5.4. Gender difference in expected hours in non-formal job-related education and training for 25-to-64-year-olds in the labour force (2003)



1. Year of reference 2002.

Countries are ranked in descending order of the difference between employed females and males in expected hours of non-formal job-related education and training.

Source: OECD. Table C5.1b. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/558317523300

Job-related education and training may also be an effective mechanism for combating unemployment, as it can permit individuals to develop skills that make them more attractive to employers. In the face of changing technologies, work practices and markets, policy-makers in many countries are promoting more general work-related training and informal learning by adults. However, employed workers accumulate many more hours of non-formal job-related education and training than unemployed workers. In all countries, employed workers register significantly higher expected hours in job-related education and training than do the unemployed (Table C5.1b). This is mainly because the time spent in unemployment is generally much shorter than the time spent in employment. However, the time spent in non-formal job-related learning activities during the most recent year was significantly higher for the unemployed than for the employed in all countries (Table C6.3 in *Education at a Glance 2005,* OECD, 2005d).

Definition and methodologies

Data for non-European countries were calculated from country-specific household surveys (see Annex 3 at *www.oecd.org/edu/eag2006*). Data for countries in the European statistical system come from the January 2006 version of the European Labour Force Survey *ad hoc* module "Lifelong Learning 2003". For most European countries, data on hours in job-related activities are available for up to three most recent non-formal learning activities. Data for Canada cover up to five job-related training activities per training participant. Data for the United States cover up to four job-related training activities per training participant.

The analysis in this indicator is focused on non-formal job-related continuing education and training. *Non-formal education* is defined as any organised and sustained educational activities that cannot be considered as formal education according to ISCED and do not lead to a corresponding qualification. Non-formal education may therefore take place both within and outside educational institutions, and may cater to persons of all ages. Depending on country contexts, it may cover educational programmes to impart adult literacy, basic education for out-of-school children, life skills, work skills and general culture. Non-formal education programmes do not necessarily follow the educational ladder system, and may have a differing duration. The term "job-related" refers to education and training activities intended mainly for professional reasons as opposed to personal or social reasons. That is, the respondent takes part in the activity in order to obtain knowledge and/or learn new skills for a current or a future job, increase earnings, improve career opportunities and generally improve his or her opportunities for advancement and promotion.

The calculation of time spent in non-formal job-related learning activities by labour force status (Table C5.1C) is weighted by the time that a hypothetical person is expected to spend as "employed", "unemployed" and "inactive" respectively. For most countries the data refer to the labour force status during a reference week, while the time spent in learning activities refers to all activities during a one-year reference period (prior to the interview), regardless of the labour force status when participating in the learning activity.

Table C5.1a.

Participation rate and expected number of hours in non-formal job-related education and training, by level of educational attainment (2003)

Participation rate and expected number of hours in non-formal job-related education and training for a forty-year period for 25-to-64-year-olds in the population, by gender and educational attainment

		Participation rate during one year				Expected hours in non-formal job-related education and training between the ages of 25 and 64					
		Lower secondary education	Upper secondary and post-secondary non-tertiary education	Tertiary education	All levels of education	Lower secondary education	Upper secondary and post-secondary non-tertiary education	Tertiary education	All levels of education	Average hours of work	Ratio (percentage) of hours in training to annual hours of work
Austria	M+F	5	19	37	19	140	420	767	422	1 550	27
	Males	7	20	34	21	157	468	722	470	m	m
	Females	4	17	40	17	131	366	834	374	m	m
Belgium	M+F	6	15	30	16	293	437	719	469	1 542	30
	Males	8	17	33	18	353	543	768	540	m	m
	Females	4	14	28	14	230	327	668	397	m	m
Canada[1]	M+F	6	20	35	25	128	517	796	586	1 740	34
	Males	8	22	35	25	126	486	863	590	m	m
	Females	5	19	36	25	c	549	738	582	m	m
Czech Republic	M+F	3	10	21	11	34	142	556	182	1 986	9
	Males	6	12	20	13	28	134	562	186	m	m
	Females	2	9	22	9	39	150	553	179	m	m
Denmark	M+F	22	36	54	39	719	836	1 230	934	1 475	63
	Males	25	36	54	39	726	884	1 197	946	m	m
	Females	20	36	54	39	722	780	1 260	922	m	m
Finland	M+F	20	32	54	36	497	530	1 003	669	1 718	39
	Males	18	31	52	33	503	514	975	637	m	m
	Females	21	33	56	39	486	545	1 035	701	m	m
France	M+F	9	19	33	19	450	692	1 061	713	1 441	49
	Males	11	20	34	20	458	567	1 093	664	m	m
	Females	8	17	33	17	440	833	1 039	760	m	m
Germany	M+F	3	10	24	12	130	390	650	398	1 441	28
	Males	3	10	23	12	149	431	672	447	m	m
	Females	3	9	25	11	114	348	626	348	m	m
Greece	M+F	n	3	11	4	c	c	312	106	1 936	5
	Males	1	3	11	4	c	c	316	106	m	m
	Females	n	3	11	3	c	c	c	106	m	m
Hungary	M+F	1	4	9	4	c	270	402	253	m	m
	Males	2	3	8	4	c	177	384	192	m	m
	Females	1	5	10	5	c	370	422	312	m	m
Ireland	M+F	5	10	20	11	82	185	392	203	1 646	12
	Males	6	12	20	11	98	c	401	209	m	m
	Females	3	9	20	10	c	190	385	197	m	m
Italy	M+F	1	6	12	4	26	111	254	82	1 591	5
	Males	2	6	13	4	31	113	264	87	m	m
	Females	1	6	12	4	21	110	244	77	m	m
Luxembourg	M+F	3	12	27	12	c	189	402	176	1 592	11
	Males	4	13	29	13	c	212	436	207	m	m
	Females	2	11	26	10	c	c	c	c	m	m

1. Year of reference 2002.

Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.

StatLink: http://dx.doi.org/10.1787/558317523300

Table C5.1a. *(continued)*

Participation rate and expected number of hours in non-formal job-related education and training, by level of educational attainment (2003)

Participation rate and expected number of hours in non-formal job-related education and training for a forty-year period for 25-to-64-year-olds in the population, by gender and educational attainment

		Participation rate during one year				Expected hours in non-formal job-related education and training between the ages of 25 and 64				Average hours of work	Ratio (percentage) of hours in training to annual hours of work
		Lower secondary education	Upper secondary and post-secondary non-tertiary education	Tertiary education	All levels of education	Lower secondary education	Upper secondary and post-secondary non-tertiary education	Tertiary education	All levels of education		
Netherlands	M+F	5	11	13	9	216	308	322	283	1 354	21
	Males	6	11	12	10	227	292	298	277	m	m
	Females	4	10	14	9	211	328	357	289	m	m
Poland	M+F	1	7	29	9	16	90	513	139	1 984	7
	Males	2	8	27	9	c	104	531	147	m	m
	Females	1	6	31	9	c	76	495	131	m	m
Portugal	M+F	4	15	27	7	232	c	c	343	1 678	20
	Males	4	17	27	8	159	c	c	316	m	m
	Females	3	14	27	7	302	c	c	367	m	m
Slovak Republic	M+F	6	19	37	19	43	178	721	225	1 931	12
	Males	10	21	37	22	c	190	741	240	m	m
	Females	4	16	38	16	c	165	699	212	m	m
Spain	M+F	3	7	14	6	102	261	503	237	1 800	13
	Males	4	9	14	7	116	265	503	247	m	m
	Females	2	6	14	6	87	257	506	226	m	m
Sweden	M+F	24	37	57	40	350	562	917	622	1 563	40
	Males	24	36	56	39	368	617	932	641	m	m
	Females	23	38	58	42	324	502	911	603	m	m
Switzerland	M+F	8	27	44	29	212	621	1 301	723	1 556	46
	Males	9	29	45	33	256	760	1 422	912	m	m
	Females	7	26	43	26	184	514	1 085	551	m	m
United Kingdom	M+F	7	26	46	27	103	297	480	315	1 672	19
	Males	8	26	45	28	131	323	494	344	m	m
	Females	7	27	48	26	81	272	471	287	m	m
United States	M+F	12	32	56	37	c	374	746	471	1 822	26
	Males	c	32	58	37	c	c	790	499	m	m
	Females	c	34	58	39	c	351	704	446	m	m
OECD average	***M+F***	***7***	***17***	***31***	***18***	***210***	***371***	***669***	***389***	***1 668***	***25***
	Males	***8***	***18***	***31***	***19***	***243***	***393***	***684***	***405***	***m***	***m***
	Females	***6***	***17***	***32***	***17***	***241***	***370***	***686***	***384***	***m***	***m***

1. Year of reference 2002.

Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.

StatLink: http://dx.doi.org/10.1787/558317523300

Table C5.1b.

Expected number of hours in non-formal job-related education and training, by age group and labour force status (2003)

Expected number of hours in non-formal job-related education and training by gender, age group and labour force status for all levels of educational attainment

		Expected hours in non-formal job related education and training between the ages of 25 and 64							
		Age group				Labour force status			
		25-34	35-44	45-54	55-64	Employed	Unemployed	Inactive	Total
Austria	M+F	169	141	92	20	373	20	29	**422**
	Males	187	154	101	28	434	13	n	**470**
	Females	150	127	83	14	312	25	26	**374**
Belgium	M+F	197	163	89	20	378	53	37	**469**
	Males	208	202	100	29	447	30	34	**540**
	Females	185	123	79	11	308	47	30	**397**
Canada[1]	M+F	197	178	148	64	497	51	38	**586**
	Males	210	161	146	73	531	34	25	**590**
	Females	184	195	149	55	463	67	51	**582**
Czech Republic	M+F	62	63	42	15	170	8	4	**182**
	Males	65	61	39	21	182	2	n	**186**
	Females	59	65	45	11	158	12	7	**179**
Denmark	M+F	236	309	248	141	745	94	95	**934**
	Males	248	314	233	152	787	82	66	**946**
	Females	224	305	262	130	701	106	115	**922**
Finland	M+F	191	221	180	77	528	85	55	**669**
	Males	199	200	167	72	499	93	n	**637**
	Females	182	243	193	83	557	70	68	**701**
France	M+F	366	206	118	23	493	102	117	**713**
	Males	355	181	105	23	488	83	93	**664**
	Females	377	230	131	22	499	119	141	**760**
Germany	M+F	159	123	91	26	263	92	44	**398**
	Males	188	134	93	32	301	97	50	**447**
	Females	129	111	89	19	223	86	39	**348**
Greece	M+F	50	32	18	6	92	6	4	**106**
	Males	49	28	20	9	96	5	n	**106**
	Females	51	35	16	4	85	7	4	**106**
Hungary	M+F	115	89	40	9	171	10	63	**253**
	Males	93	59	32	9	148	n	30	**192**
	Females	138	119	47	9	194	17	76	**312**
Ireland	M+F	72	64	44	22	181	n	11	**203**
	Males	71	68	45	25	194	n	n	**209**
	Females	73	61	44	19	170	n	9	**197**
Italy	M+F	29	26	20	6	73	3	4	**82**
	Males	30	28	21	8	78	3	3	**87**
	Females	28	25	19	5	68	3	5	**77**
Luxembourg	M+F	66	53	46	12	162	n	n	**176**
	Males	79	64	45	19	205	n	n	**207**
	Females	53	41	47	c	115	n	n	**141**
Netherlands	M+F	122	87	53	21	231	10	41	**283**
	Males	125	78	59	15	250	n	10	**277**
	Females	118	95	47	28	211	5	61	**289**
Poland	M+F	52	48	29	10	127	9	2	**139**
	Males	57	47	29	15	135	10	n	**147**
	Females	47	48	29	7	120	7	n	**131**

1. Year of reference 2002.

Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006).*

Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/558317523300

Table C5.1b. *(continued)*

Expected number of hours in non-formal job-related education and training, by age group and labour force status (2003)

Expected number of hours in non-formal job-related education and training by gender, age group and labour force status for all levels of educational attainment

		Expected hours in non-formal job related education and training between the ages of 25 and 64							
		Age group				Labour force status			
		25-34	35-44	45-54	55-64	Employed	Unemployed	Inactive	Total
Portugal	M+F	162	111	54	16	260	n	23	**343**
	Males	168	91	41	16	286	n	n	**316**
	Females	156	130	65	16	237	n	n	**367**
Slovak Republic	M+F	79	72	56	18	207	13	n	**225**
	Males	81	75	57	28	232	2	n	**240**
	Females	77	70	55	10	184	16	n	**212**
Spain	M+F	105	73	47	11	177	37	20	**237**
	Males	107	76	48	16	200	25	17	**247**
	Females	103	70	46	7	154	49	22	**226**
Sweden	M+F	142	176	167	137	580	29	12	**622**
	Males	151	196	155	139	586	39	4	**641**
	Females	133	156	179	135	574	12	11	**603**
Switzerland	M+F	254	205	177	87	637	47	39	**723**
	Males	328	262	203	119	825	50	24	**912**
	Females	187	152	153	58	467	36	44	**551**
United Kingdom	M+F	119	97	71	28	269	14	33	**315**
	Males	131	104	74	35	294	20	29	**344**
	Females	107	90	68	22	244	7	35	**287**
United States	M+F	126	123	136	86	428	n	n	**471**
	Males	135	126	137	102	463	n	n	**499**
	Females	118	121	135	72	396	n	n	**446**
OECD average	***M+F***	***139***	***121***	***89***	***39***	***320***	***38***	***35***	***389***
	Males	***148***	***123***	***89***	***45***	***348***	***37***	***32***	***405***
	Females	***131***	***119***	***90***	***35***	***293***	***38***	***44***	***373***

1. Year of reference 2002.

Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006).*

Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/558317523300

Table C5.1c.

Expected number of hours in non-formal job-related education and training, by level of educational attainment (2003)

Expected number of hours in non-formal job-related education and training, by age group and labour force status

		Expected hours in non-formal job-related education and training between ages of 25 and 64							
		Age group				Labour force status			
	Level of education	25-34	35-44	45-54	55-64	Employed	Unemployed	Inactive	Total
Austria	Below upper secondary (0/1/2)	58	48	29	5	110	c	c	**140**
	Upper secondary (3/4)	175	136	89	21	368	22	29	**420**
	Tertiary (5/6)	241	250	212	64	714	c	c	**767**
Belgium	Below upper secondary (0/1/2)	127	115	49	3	186	59	48	**293**
	Upper secondary (3/4)	151	171	95	21	340	57	41	**437**
	Tertiary (5/6)	286	205	159	69	640	43	37	**719**
Canada[1]	Below upper secondary (0/1/2)	m	m	m	m	m	m	m	**m**
	Upper secondary (3/4)	m	m	m	m	m	m	m	**m**
	Tertiary (5/6)	m	m	m	m	m	m	m	**m**
Czech Republic	Below upper secondary (0/1/2)	14	7	12	1	23	c	c	**34**
	Upper secondary (3/4)	47	45	38	12	129	9	4	**142**
	Tertiary (5/6)	186	186	114	70	546	c	c	**556**
Denmark	Below upper secondary (0/1/2)	239	243	171	65	455	c	184	**719**
	Upper secondary (3/4)	205	284	199	147	685	86	65	**836**
	Tertiary (5/6)	282	379	362	207	1 011	116	103	**1 230**
Finland	Below upper secondary (0/1/2)	194	149	118	36	273	c	c	**497**
	Upper secondary (3/4)	147	175	146	62	389	102	39	**530**
	Tertiary (5/6)	247	309	277	170	889	c	51	**1 003**
France	Below upper secondary (0/1/2)	245	118	75	12	247	107	96	**450**
	Upper secondary (3/4)	324	227	123	18	470	106	116	**692**
	Tertiary (5/6)	488	291	206	76	809	105	146	**1 061**
Germany	Below upper secondary (0/1/2)	54	39	32	5	46	59	24	**130**
	Upper secondary (3/4)	162	120	87	22	230	109	52	**390**
	Tertiary (5/6)	243	187	153	66	522	86	42	**650**
Greece	Below upper secondary (0/1/2)	11	c	c	c	12	c	c	**15**
	Upper secondary (3/4)	48	26	15	c	76	10	8	**94**
	Tertiary (5/6)	98	91	79	45	285	15	c	**312**
Hungary	Below upper secondary (0/1/2)	45	31	11	c	56	c	c	**90**
	Upper secondary (3/4)	118	99	42	11	170	21	79	**270**
	Tertiary (5/6)	176	120	81	25	337	c	49	**402**
Ireland	Below upper secondary (0/1/2)	29	28	18	8	66	c	c	**82**
	Upper secondary (3/4)	60	56	43	27	161	c	c	**185**
	Tertiary (5/6)	109	113	102	69	371	c	c	**392**
Italy	Below upper secondary (0/1/2)	10	9	5	1	25	c	c	**26**
	Upper secondary (3/4)	27	34	32	17	102	5	3	**111**
	Tertiary (5/6)	90	72	65	28	222	12	21	**254**
Luxembourg	Below upper secondary (0/1/2)	17	6	10	c	33	c	c	**34**
	Upper secondary (3/4)	64	56	57	12	165	c	c	**189**
	Tertiary (5/6)	128	126	98	50	396	c	c	**402**

1. Year of reference 2002.

Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006).*

Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/558317523300

Table C5.1c. *(continued)*

Expected number of hours in non-formal job-related education and training, by level of educational attainment (2003)

Expected number of hours in non-formal job-related education and training, by age group and labour force status

		Expected hours in non-formal job related education and training between ages of 25 and 64							
		Age group				Labour force status			
	Level of education	25-34	35-44	45-54	55-64	Employed	Unemployed	Inactive	Total
Netherlands	Below upper secondary (0/1/2)	92	73	41	11	134	c	78	**216**
	Upper secondary (3/4)	131	87	55	34	254	17	37	**308**
	Tertiary (5/6)	130	103	67	22	294	c		**322**
Poland	Below upper secondary (0/1/2)	6	6	3	1	12	c	c	**16**
	Upper secondary (3/4)	32	32	20	6	78	10	c	**90**
	Tertiary (5/6)	145	169	132	68	497	10	c	**513**
Portugal	Below upper secondary (0/1/2)	88	92	41	10	149	c	c	**232**
	Upper secondary (3/4)	261	145	79	c	463	c	c	**529**
	Tertiary (5/6)	336	226	169	c	764	c	c	**835**
Slovak Republic	Below upper secondary (0/1/2)	11	21	10	1	27	c	c	**43**
	Upper secondary (3/4)	61	58	44	15	159	15	c	**178**
	Tertiary (5/6)	217	218	185	101	703	c	c	**721**
Spain	Below upper secondary (0/1/2)	48	29	19	6	73	22	7	**102**
	Upper secondary (3/4)	86	83	73	18	188	40	33	**261**
	Tertiary (5/6)	180	151	129	43	409	62	32	**503**
Sweden	Below upper secondary (0/1/2)	106	73	107	64	325	c	c	**350**
	Upper secondary (3/4)	123	164	149	125	504	46	12	**562**
	Tertiary (5/6)	183	249	244	241	889	18	10	**917**
Switzerland	Below upper secondary (0/1/2)	108	62	25	17	126	56	c	**212**
	Upper secondary (3/4)	214	175	164	68	552	35	34	**621**
	Tertiary (5/6)	407	352	317	225	1 171	76	54	**1 301**
United Kingdom	Below upper secondary (0/1/2)	30	35	27	12	56	c	c	**103**
	Upper secondary (3/4)	101	93	67	35	254	16	27	**297**
	Tertiary (5/6)	161	140	117	62	442	10	27	**480**
United States	Below upper secondary (0/1/2)	c	c	c	c	c	c	c	**c**
	Upper secondary (3/4)	98	107	97	72	337	c	c	**374**
	Tertiary (5/6)	190	186	223	148	695	c	c	**746**

1. Year of reference 2002.

Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006).*

Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

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Chapter

D

The Learning Environment and Organisation of Schools

INDICATOR D1

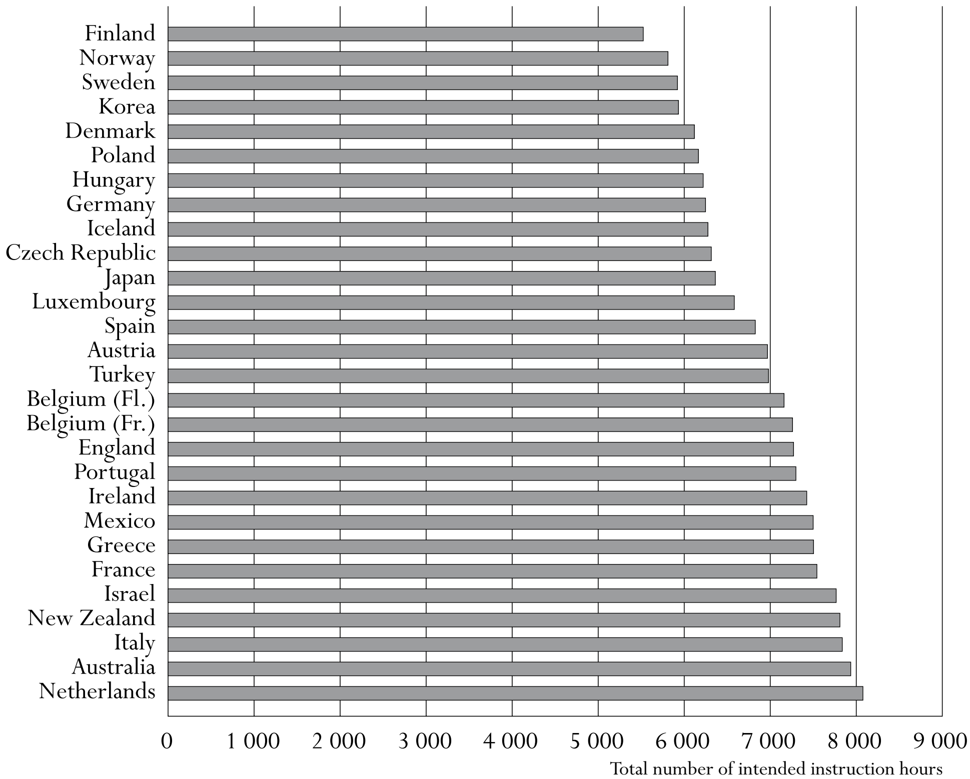
TOTAL INTENDED INSTRUCTION TIME FOR STUDENTS IN PRIMARY AND SECONDARY EDUCATION

This indicator examines the amount of instruction time that students are supposed to receive between the ages of 7 and 15. It also discusses the relationship between instruction time and student learning outcomes.

Key results

Chart D1.1. Cumulative number of intended instruction hours in public institutions between the ages of 7 and 14 (2004)

Students in OECD countries are expected to receive, on average, 6 847 hours of instruction between the ages of 7 and 14, of which 1 570 hours are between ages 7 and 8, 2 494 hours between ages 9 and 11, and 2 785 hours between ages 12 and 14 years. The large majority of intended hours of instruction are compulsory.



Countries are ranked in ascending order of total number of intended instruction hours.
Source: OECD. Table D1.1. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).
StatLink: http://dx.doi.org/10.1787/076822220227

Other highlights of this indicator

- In OECD countries, students between the ages of 7 and 8 receive an average of 758 hours per year of compulsory instruction time and 785 hours per year of intended instruction time in the classroom. Students between the ages of 9 and 11 receive about 50 hours more per year and those aged between 12 and 14 receive nearly 100 hours more per year than those aged between 9 and 11.
- On average among OECD countries, the teaching of reading and writing, mathematics and science comprises nearly 50% of the compulsory instruction time of students aged 9 to 11 and 41% for students aged 12 to 14. For 9-to-11-year-olds, there is great variation among countries in the proportion of compulsory curriculum devoted to reading and writing: from 13% or less in Australia and partner countries Chile and Israel to 30% in France, Mexico and the Netherlands.

Policy context

The amount and quality of time that people spend learning between early childhood and the start of their working lives shape much of their lives both socially and economically. Countries make a variety of choices about instruction, concerning the length of time devoted to instruction overall and the subjects that are compulsorily taught at schools. These choices reflect national priorities and preferences for the education received by students at different ages, as well as general priorities placed on different subject areas.

Instruction time in formal classroom settings comprises a large part of the public investment in student learning. Matching resources with students' needs and using time in an optimal manner, from the perspective of the learner and of public investment, are major challenges for education policy. The costs of education primarily include teacher labour, institutional maintenance and other educational resources. The length of time during which these resources are made available to students (as shown in this indicator) is thus an important factor in the allocation of funding.

Evidence and explanations

What this indicator shows

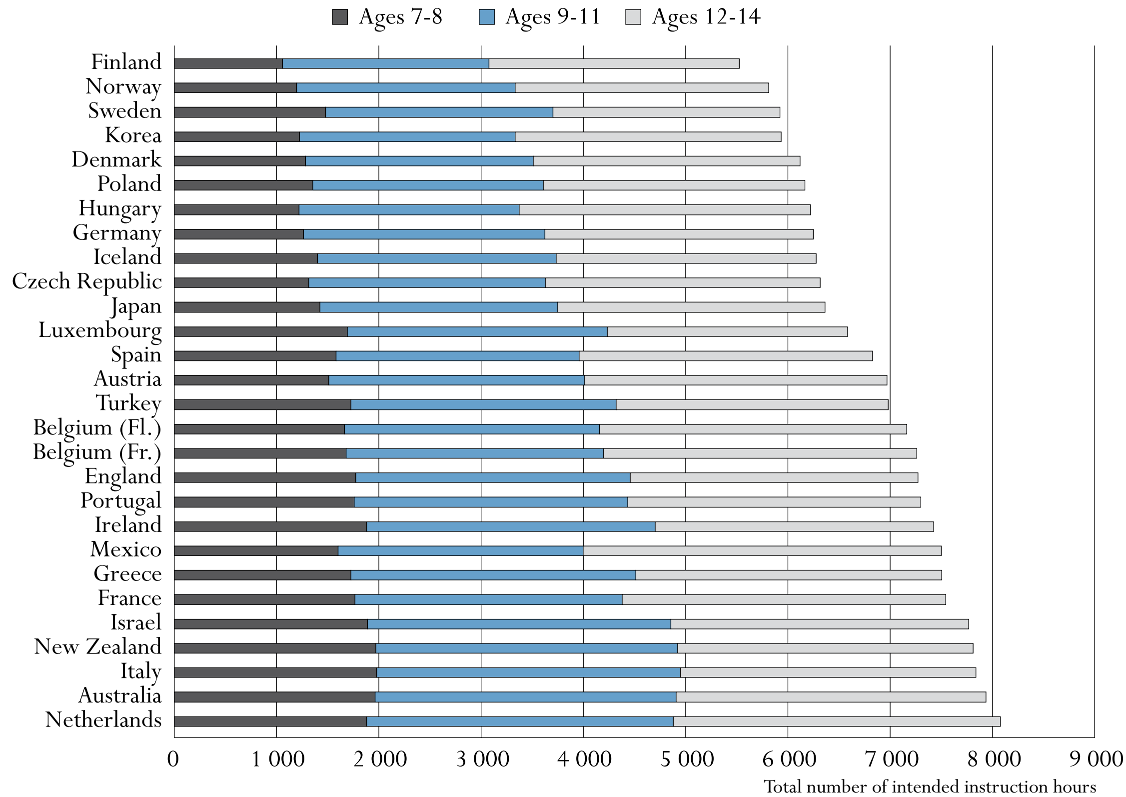
Intended instruction time is an important indicator of the public resources invested in education. This indicator captures intended instruction time as a measure of exposure to learning in formal classroom settings as per public regulations. It also shows how instruction time is allocated to different curricular areas. However, the instruction time in classroom settings is only one aspect of student learning time and this indicator does not cover out-of-school learning activities. The indicator is calculated as the intended net hours of instruction for the grades in which the majority of students are 7 to 15 years of age. Although such data are difficult to compare among countries because of different curriculum policies, they nevertheless provide an indication of how much formal instruction time is considered necessary in order for students to achieve the desired educational goals.

Total intended instruction time: an average of 6 848 hours between ages 7 and 14

Total intended instruction time is an estimate of the number of hours during which students are taught both compulsory and non-compulsory parts of the curriculum.

The total number of instruction hours that students are intended to receive between ages 7 and 14 averages 6 848 hours among OECD countries. However, formal requirements range from 5 523 hours in Finland to over 8 000 hours in the Netherlands. These hours comprise compulsory and non-compulsory hours during which the school is obliged to offer instruction to students. Whereas the total intended instruction time within this age range is a good indicator of students' theoretical workload, it cannot be interpreted as actual instruction students receive over the years they spend in initial education. In some countries with greater student workload, the age band of compulsory education is less and students drop out of the school system earlier, whereas in other countries a more even distribution of study time over more years amounts in the end to a larger number of total instruction hours for all. Table D1.1 shows the age range at which over 90% of the population is in education and Chart D1.2 shows the total amount of intended instruction time students receive between ages 7 and 14.

Chart D1.2. Total number of intended instruction hours in public institutions between the ages of 7 and 14 (2004)



Countries are ranked in ascending order of total number of intended instruction hours.
Source: OECD. Table D1.1. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).
StatLink: http://dx.doi.org/10.1787/076822220227

In some countries, intended instruction time varies considerably among regions or different types of schools. In many countries, local education authorities or schools can determine the number and allocation of hours of instruction. Additional teacher time is often planned for individual remedial teaching or enhancement of the curriculum. On the other hand, time may be lost due to a lack of qualified substitutes to replace absent teachers, or due to student absences.

Annual instruction time should also be examined together with the length of compulsory education, which measures the time during which young people receive full-time educational support from public resources, and during which more than 90% of the population participates in education (see Indicator C1). Intended instruction time does not capture the quality of learning opportunities being provided nor the level or quality of human and material resources involved (for some insight on human resources, see indicator D2, number of teachers relative to the student population).

Compulsory instruction time: *an average of 6 624 hours between ages 7 and 14*

Total compulsory instruction time is an estimate of the number of hours during which students are taught both the compulsory core and compulsory flexible parts of the curriculum.

For 7-to-8-year-olds and 9-to-11-year-olds, total intended instruction time equals total compulsory instruction time in most countries, while for older age groups this is less frequently the case. Intended instruction time is fully compulsory for all age groups between 7 and 14 years in the Czech Republic, Denmark, Germany, Greece, Iceland, Japan, Korea, Luxembourg, Mexico, the Netherlands, Norway, Spain and Sweden. In these countries, except for Greece, Japan and Mexico, education is also fully compulsory at age 15.

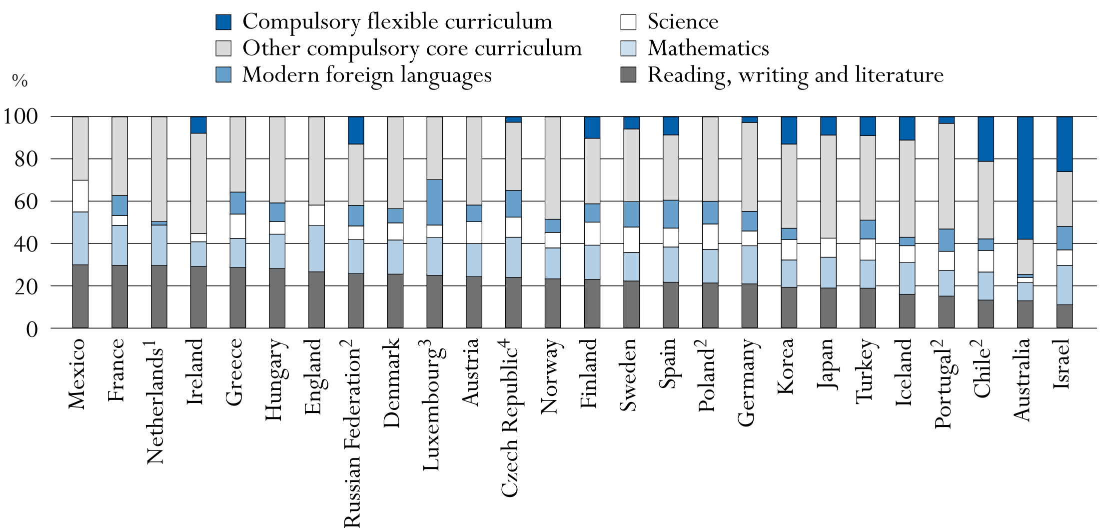
Within the formal education system, OECD countries show an average annual amount of total compulsory instruction time in classroom settings of 758 hours for 7-to-8-year-olds, 808 hours for 9-to-11-year-olds and 894 hours for 12-to-14-year-olds. The average number of compulsory instruction hours per year is 910 for the typical programme in which most 15-year-olds are enrolled (Table D1.1).

Teaching of reading and writing, mathematics and science: at least 41% of compulsory instruction time, on average

In OECD countries students aged 9 to 11, for which study areas are not necessarily organised as separate subject classes, spend an average of nearly 50% of the compulsory curriculum to three basic subject areas: reading and writing (24%), mathematics (16%) and science (9%). On average, 8% of the compulsory curriculum is devoted to modern foreign languages. Together with social studies, the arts and physical education, these seven study areas form part of the curriculum in all OECD countries for these age cohorts (Table D1.2a and Chart D1.3a).

Chart D1.3a. Instruction time per subject as a percentage of total compulsory instruction time for 9-to-11-year-olds (2004)

Percentage of intended instruction time devoted to various subject areas within the total compulsory curriculum



1. Includes 9- and 11-year-olds only.
2. Includes 10-to-11-year-olds only.
3. German as a language of instruction is included in "Reading, writing and literature" in addition to the mother tongue Luxemburgish.
4. For 9-to-10-year-olds, social studies is included in science.
Countries are ranked in descending order of the number of intended instruction hours devoted to reading, writing and literature.
Source: OECD. Table D1.2a. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).
StatLink: http://dx.doi.org/10.1787/076822220227

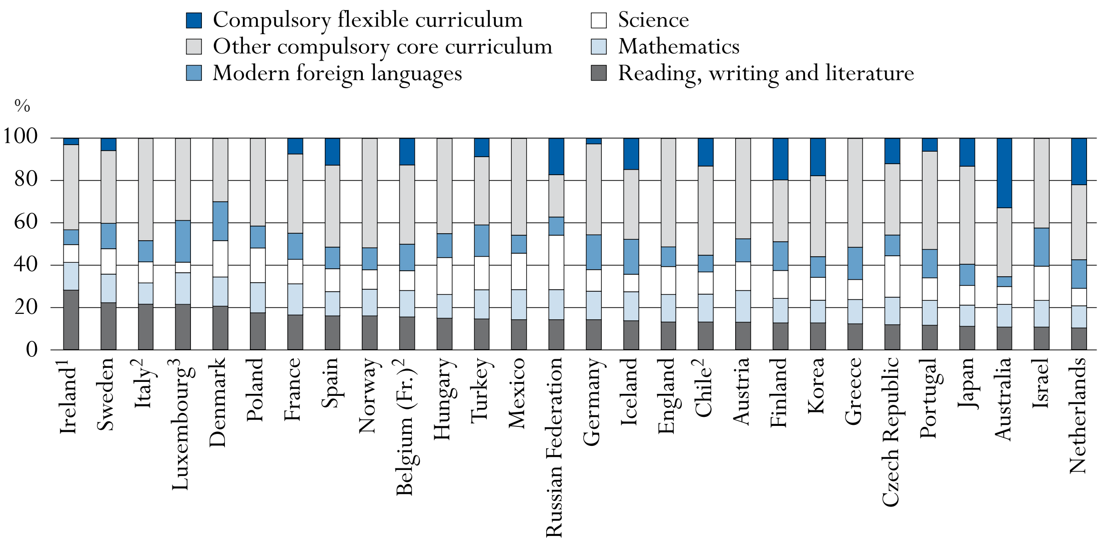
On average, reading and writing account for the greatest share of the curriculum for 9-to-11-year-old students, but the variation in this share among countries is greater than for other subjects; reading and writing accounts for 13% or less of instruction time in Australia and partner countries Chile and Israel, compared with 30% in France, Mexico and the Netherlands. Sizeable variation is also evident in modern foreign languages, which account for 1% or less of instruction time in Australia, England, Japan and Mexico but represent 21% of total compulsory instruction time in Luxembourg.

For 12-to-14-year-old students in OECD countries, an average of 41% of the compulsory curriculum is devoted to three basic subject areas: reading and writing (16%), mathematics (13%) and science (12%). In these age cohorts, a relatively larger part of the curriculum is devoted to modern foreign languages (12%) and social studies (12%), whereas somewhat less time is devoted to the arts (8%). Together with physical education, these seven study areas form part of the compulsory curriculum in all OECD countries for lower secondary students (Table D1.2b and Chart D1.3b).

The variation between countries in the percentage share of subjects within the curriculum for 12-to-14-year-olds is less than it is for 9-to-11-year-olds. Again, the greatest variation is evident in reading and writing with a range from 10% in the Netherlands to 28% in Ireland (reading and writing includes both English and Irish).

Chart D1.3b. Instruction time per subject as a percentage of total compulsory instruction time for 12-to-14-year-olds (2004)

Percentage of intended instruction time devoted to various subject areas within the total compulsory curriculum



1. For 13-to-14-year-olds, arts is included in non-compulsory curriculum.
2. Includes 12-to-13-year-olds only.
3. German as a language of instruction is included in "Reading, writing and literature" in addition to the mother tongue Luxemburgish.

Countries are ranked in descending order of the number of intended instruction hours devoted to reading, writing and literature.

Source: OECD. Table D1.2b. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/076822220227

There is also substantial variation in the percentage of compulsory instruction time devoted to particular subjects for 9-to-11-year-olds compared to 12-to-14-year-olds. On average across OECD countries, the time of compulsory instruction for 12-to-14-year-olds devoted to reading, writing and literature is 33% lower than for 9-to-11-year-olds. Conversely, the time devoted to social studies and modern foreign languages is 33% higher than for 9-to-11-year-olds.

For some countries, these differences are larger than in other countries. The percentage of compulsory instruction time devoted to reading, writing and literature for 12-to-14-year-olds is less than half of that for 9-to-11-year-olds in the Czech Republic, England, Greece, Mexico and the Netherlands. Yet, for Ireland and partner countries Chile and Israel, the difference between the shares is less than 5%. Clearly, countries place a different emphasis upon particular subjects and when those subjects should be taught to students.

On average among OECD countries, the non-compulsory part of the curriculum comprises 3 to 4% of the total intended instruction time for 9-to-11-year-old students as well as for 12-to-14-year-old students. However, among partner countries, non compulsory curriculum represents nearly a third of the compulsory instruction time in Israel for 9-to-11-year-old students. Nevertheless, a considerable amount of additional non-compulsory instruction time can sometimes be provided. For 9-to-11-year-olds, all intended instruction time is compulsory for students in most countries, but the additional non-compulsory part is as high as, 20% in Poland and Turkey, and 15% in Hungary and 32% in partner country Israel. For 12-to-14-year-old students, non-compulsory instruction time is a feature in Australia, the French Community of Belgium, England, Finland, France, Hungary, Ireland, Italy, Poland, Portugal and Turkey, and ranges from 2% in Finland and Portugal to 28% in Hungary (Tables D1.2a and D1.2b).

On average, 4% of compulsory instruction time belongs to the flexible part of the curriculum in the grades where most students are 9-to-11 years of age while the corresponding proportion is 8% for students aged 12 to 14.

In most OECD countries, the number of hours of compulsory instruction is defined. Within the compulsory part of the curriculum, students have varying degrees of freedom to choose the subjects they want to learn. However, for 9-to-11-year-olds, 58% of the compulsory curriculum is operated on a flexible basis in Australia, and up to 81% in the French Community of Belgium. For 12-to-14-year-olds, Australia again has the highest degree of flexibility in the compulsory curriculum (33%), although several other countries allow more than 10% flexibility in the compulsory curriculum (the French Community of Belgium, the Czech Republic, Finland, Iceland, Japan, Korea, the Netherlands and Spain, and the partner countries Chile and the Russian Federation) (Tables D1.2a and D1.2b).

Definitions and methodologies

Data on instruction time are from the 2005 OECD-INES Survey on Teachers and the Curriculum and refer to the school year 2003-2004.

Instruction time for 7-to-15-year-olds refers to the formal number of 60-minute hours per school year organised by the school for class instructional activities for students in the reference school year 2003-2004. For countries with no formal policy on instruction time, the number of hours was estimated from survey data. Hours lost when schools are closed for festivities and celebrations, such as national holidays, are excluded. Intended instruction time does not include non-compulsory time outside the school day, homework, individual tutoring, or private study done before or after school.

- Compulsory curriculum refers to the amount and allocation of instruction time that almost every public school must provide and almost all public sector students must attend. The measurement of the time devoted to specific study areas (subjects) focuses on the minimum common core rather than on the average time spent on study areas, since the data sources (policy documents) do not allow more precise measurement. Total compulsory curriculum comprises the compulsory core curriculum as well as the compulsory flexible curriculum.
- The non-compulsory part of the curriculum refers to the average time of instruction to which students are entitled above the compulsory hours of instruction. These subjects often vary from school to school or from region to region, and may take the form of "non-compulsory elective" subjects.
- Intended instruction time refers to the number of hours per year during which students receive instruction in the compulsory and non-compulsory parts of the curriculum.

For 15-year-olds in Table D1.1, typical instruction time refers to the programme in which most 15-year-olds are enrolled. This can be a programme in lower or upper secondary education, and in most countries it refers to a general programme. If the system channels students into different programme types at this age, an estimation of the average instruction time may have been necessary for the most important mainstream programmes weighted by the proportion of students in the grade level where most 15-year-olds are enrolled. Where vocational programmes are also taken into account in typical instruction time, only the school-based part of the programme should be included in the calculations.

The instruction time for the least demanding programme refers to programmes stipulated for students who are least likely to continue studying beyond mandatory school age or beyond lower secondary education. Such programmes may or may not exist in a country depending on streaming and selection policies. In many countries students are offered the same amount of instruction time in all or most programmes, but there is flexibility in the choice of study areas or subjects. Often such choices have to be made quite early if programmes are long and differ substantially.

Further references

Specific notes on definitions and methodologies regarding this indicator for each country are given in Annex 3 at *www.oecd.org/edu/eag2006*. In addition, a more comprehensive analysis of decision making was published in Indicator D6 of *Education at a Glance 2004* (OECD, 2004c). Information on the underlying decision-making survey is available in *Education at a Glance 2004,* Annex 3 (*www.oecd.org/edu/eag2004*) under the heading "Indicator D6 Locus of decision making at lower secondary levels". The complete decision-making data are available under the heading "Underlying data on decision making for indicator D6".

Table D1.1.

Compulsory and intended instruction time in public institutions (2004)

Average number of hours per year of total compulsory and non-compulsory instruction time in the curriculum for 7 to 8, 9 to 11, 12 to 14 and 15-year-olds

		Age range at which over 90% of the population are enrolled	Average number of hours per year of total compulsory instruction time					Average number of hours per year of total compulsory and non-compulsory instruction time				
			Ages 7-8	Ages 9-11	Ages 12-14	Age 15 (typical programme)	Age 15 (minimum required programme)	Ages 7-8	Ages 9-11	Ages 12-14	Age 15 (typical programme)	Age 15 (minimum required programme)
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
OECD countries	**Australia**	5 - 16	981	982	966	964	949	981	982	1 010	1 020	1 005
	Austria	5 - 16	709	788	938	1033	987	755	835	985	1 080	1 033
	Belgium (Fl.)	3 - 17	a	a	a	a	a	832	832	1 000	1 000	443
	Belgium (Fr.)[1]	3 - 17	840	840	960	1 020	m	840	840	1 020	1 020	m
	Czech Republic	5 - 17	658	770	897	965	394	658	770	897	965	394
	Denmark	4 - 16	641	743	870	840	840	641	743	870	840	840
	England	4 - 15	878	894	905	760	a	888	894	938	950	a
	Finland	6 - 18	530	654	796	858	a	530	673	815	858	a
	France	3 - 17	883	871	961	1 042	a	883	871	1 055	1 148	a
	Germany	6 - 17	631	788	875	892	m	631	788	875	892	m
	Greece	6 - 16	864	928	998	1 089	926	864	928	998	1 307	1 144
	Hungary	4 - 16	555	624	740	763	763	611	718	950	1 106	1 106
	Iceland	3 - 16	700	778	848	863	a	700	778	848	863	a
	Ireland	5 - 16	941	941	848	802	713	941	941	907	891	891
	Italy	3 - 15	941	990	963	908	a	990	990	963	908	a
	Japan	4 - 17	712	776	871	m	a	712	776	871	m	a
	Korea	6 - 17	612	703	867	1 020	a	612	703	867	1 020	a
	Luxembourg	5 - 15	847	847	782	750	a	847	847	782	750	a
	Mexico	6 - 12	800	800	1 167	1 058	a	800	800	1 167	1 124	a
	Netherlands	5 - 16	940	1 000	1 067	m	a	940	1 000	1 067	m	a
	New Zealand	4 - 15	a	a	a	a	a	985	985	962	950	950
	Norway	6 - 17	599	713	827	855	a	599	713	827	855	a
	Poland	6 - 17	564	658	786	827	a	677	752	852	884	a
	Portugal	5 - 14	880	874	937	938	1 233	880	892	954	938	1 233
	Scotland	4 - 15	a	a	a	a	a	a	a	a	a	a
	Slovak Republic	6 - 17	m	m	m	m	m	m	m	m	m	m
	Spain	3 - 16	792	792	956	978	978	792	792	956	978	978
	Sweden	6 - 18	741	741	741	741	a	741	741	741	741	a
	Switzerland	6 - 16	m	m	m	m	m	m	m	m	m	m
	Turkey	8 - 13	720	720	791	959	a	864	864	887	959	a
	United States	6 - 16	m	m	m	m	m	m	m	m	m	m
	OECD average		***758***	***808***	***894***	***910***	***865***	***785***	***831***	***928***	***962***	***911***
	EU19 average		***769***	***819***	***890***	***894***	***854***	***786***	***834***	***928***	***959***	***896***
Partner country	**Israel**	5 - 17	666	749	971	919	a	944	990	971	919	a

1. Ages 12-14 covers ages 12-13 only.

Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.

Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/076822220227

Table D1.2a.

Instruction time per subject as a percentage of total compulsory instruction time for 9-to-11-year-olds (2004)

Percentage of intended instruction time devoted to various subject areas within the total compulsory curriculum

		Compulsory core curriculum														
		Reading, writing and literature	Mathematics	Science	Social studies	Modern foreign languages	Technology	Arts	Physical education	Religion	Practical and vocational skills	Other	TOTAL compulsory core curriculum	Compulsory flexible curriculum	TOTAL compulsory curriculum	Non-compulsory curriculum
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
OECD countries	Australia[1]	13	9	2	3	1	2	4	5	1	n	1	**42**	58	**100**	n
	Austria	24	16	10	3	8	n	18	10	8	x(12)	3	**100**	x(12)	**100**	m
	Belgium (Fl.)[1]	a	a	a	a	a	a	a	a	a	a	a	**a**	a	**a**	a
	Belgium (Fr.)[1]	a	a	a	a	5	a	a	7	7	a	n	**19**	81	**100**	n
	Czech Republic[2]	24	19	9	11	13	n	14	8	n	n	n	**97**	3	**100**	n
	Denmark	26	16	8	4	7	n	22	11	4	n	3	**100**	n	**100**	n
	England	27	22	10	8	n	9	8	7	5	n	5	**100**	n	**100**	n
	Finland	23	16	11	2	9	n	14	9	6	n	n	**90**	10	**100**	3
	France	30	19	5	10	9	3	9	14	n	n	n	**100**	n	**100**	n
	Germany	21	18	7	5	9	1	15	11	7	n	3	**97**	3	**100**	n
	Greece	29	14	11	11	10	n	8	7	7	n	2	**100**	n	**100**	n
	Hungary	28	16	6	7	9	n	15	11	n	4	4	**100**	n	**100**	15
	Iceland	16	15	8	8	4	6	12	9	3	5	3	**89**	11	**100**	n
	Ireland	29	12	4	8	x(13)	n	12	4	10	n	14	**92**	8	**100**	n
	Italy[3]	a	a	a	a	a	a	a	a	a	a	a	**a**	a	**100**	n
	Japan	19	15	9	9	n	n	10	9	n	n	21	**91**	9	**100**	m
	Korea	19	13	10	10	5	2	13	10	n	2	3	**87**	13	**100**	n
	Luxembourg[4]	25	18	6	2	21	n	11	10	7	n	n	**100**	n	**100**	n
	Mexico	30	25	15	20	n	n	5	5	n	n	n	**100**	n	**100**	n
	Netherlands[5]	30	19	x(4)	15	2	2	10	7	4	n	12	**100**	n	**100**	n
	New Zealand	a	a	a	a	a	a	a	a	a	a	a	**a**	a	**a**	a
	Norway	23	15	7	8	6	n	16	7	9	n	9	**100**	n	**100**	n
	Poland[6]	21	16	12	5	11	5	5	12	8	n	4	**100**	n	**100**	20
	Portugal[6]	15	12	9	6	11	12	6	9	n	n	17	**97**	3	**100**	3
	Scotland	a	a	a	a	a	a	a	a	a	a	a	**a**	a	**a**	a
	Slovak Republic	m	m	m	m	m	m	m	m	m	m	m	**m**	m	**m**	m
	Spain	22	17	9	9	13	n	11	11	x(13)	n	n	**91**	9	**100**	n
	Sweden	22	14	12	13	12	x(3)	7	8	x(4)	7	n	**94**	6	**100**	n
	Switzerland	m	m	m	m	m	m	m	m	m	m	m	**m**	m	**m**	m
	Turkey	19	13	10	10	9	n	7	7	7	9	1	**91**	9	**100**	20
	United States	m	m	m	m	m	m	m	m	m	m	m	**m**	m	**m**	m
	OECD average[1]	*24*	*16*	*9*	*8*	*8*	*2*	*11*	*9*	*4*	*1*	*5*	***96***	*4*	***100***	*3*
	EU19 average	*25*	*16*	*9*	*7*	*9*	*2*	*12*	*9*	*4*	*1*	*4*	***97***	*3*	***100***	*3*
Partner countries	Chile[6]	13	13	10	10	5	5	8	5	5	a	2	**79**	21	**100**	m
	Israel	11	19	7	11	11	x(13)	n	7	7	n	n	**74**	26	**100**	32
	Russian Federation[6]	26	16	6	10	10	6	6	6	n	n	n	**87**	13	**100**	m

1. Australia, Belgium (Fr.) and Belgium(Fl.) are not included in the averages.
2. For 9-to-10-year-olds, social studies is included in science.
3. For 9- and 10-year-olds the curriculum is largely flexible, for 11-year-olds it is about the same as for 12 and 13-year-olds
4. German as a language of instruction is included in "Reading, writing and literature" in addition to the mother tongue Luxemburgish.
5. Includes 9- and 11-year-olds only.
6. Includes 10-to-11-year-olds only.

Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006).*

Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/076822220227

Table D1.2b.

Instruction time per subject as a percentage of total compulsory instruction time for 12-to-14-year-olds (2004)

Percentage of intended instruction time devoted to various subject areas within the total compulsory curriculum

		Compulsory core curriculum														
		Reading, writing and literature	Mathematics	Science	Social studies	Modern foreign languages	Technology	Arts	Physical education	Religion	Practical and vocational skills	Other	TOTAL compulsory core curriculum	Compulsory flexible curriculum	TOTAL compulsory curriculum	Non-compulsory curriculum
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
OECD countries	Australia	11	11	8	8	5	7	7	8	1	n	3	**67**	33	**100**	5
	Austria	13	15	13	12	11	n	16	10	7	2	n	**100**	x(12)	**100**	m
	Belgium (Fl.)	a	a	a	a	a	a	a	a	a	a	a	**a**	a	**a**	a
	Belgium (Fr.)[1]	16	13	9	13	13	3	3	9	6	n	3	**88**	13	**100**	6
	Czech Republic	12	13	20	16	10	3	8	7	n	n	n	**88**	12	**100**	n
	Denmark	21	14	17	7	18	n	9	7	3	n	3	**100**	n	**100**	n
	England	13	13	13	13	9	12	9	8	5	n	3	**100**	n	**100**	4
	Finland	13	12	13	5	14	n	9	7	4	4	n	**80**	20	**100**	2
	France	17	15	12	13	12	6	7	11	n	n	n	**93**	7	**100**	10
	Germany	14	14	10	12	16	3	10	9	5	2	2	**97**	3	**100**	n
	Greece	12	11	10	10	15	5	6	8	6	1	16	**100**	n	**100**	n
	Hungary	15	11	17	11	11	3	10	8	n	4	9	**100**	n	**100**	28
	Iceland	14	14	8	6	17	4	7	8	2	4	3	**85**	15	**100**	n
	Ireland[2]	28	13	8	17	7	x(15)	4	5	9	x(15)	5	**97**	3	**100**	7
	Italy[1]	22	10	10	15	10	10	13	7	3	n	n	**100**	n	**100**	n
	Japan	11	10	9	9	10	3	7	9	n	n	18	**87**	13	**100**	m
	Korea	13	11	11	10	10	4	8	8	n	4	5	**82**	18	**100**	n
	Luxembourg[3]	22	15	5	10	20	n	10	8	6	n	5	**100**	n	**100**	n
	Mexico	14	14	17	26	9	n	6	6	n	9	n	**100**	n	**100**	n
	Netherlands	10	10	8	11	14	5	7	9	n	3	n	**78**	22	**100**	n
	New Zealand	a	a	a	a	a	a	a	a	a	a	a	**a**	a	**a**	a
	Norway	16	13	9	11	10	n	8	10	7	n	16	**100**	n	**100**	n
	Poland	18	14	16	9	10	5	4	11	7	n	6	**100**	n	**100**	8
	Portugal	12	12	11	16	13	4	7	9	n	n	11	**94**	6	**100**	2
	Scotland	a	a	a	a	a	a	a	a	a	a	a	**a**	a	**a**	a
	Slovak Republic	m	m	m	m	m	m	m	m	m	m	m	**m**	m	**m**	m
	Spain	16	11	11	10	10	8	11	7	x(13)	x(13)	3	**87**	13	**100**	n
	Sweden	22	14	12	13	12	x(3)	7	8	x(4)	7	n	**94**	6	**100**	n
	Switzerland	m	m	m	m	m	m	m	m	m	m	m	**m**	m	**m**	m
	Turkey	15	14	16	10	15	n	4	6	5	4	3	**91**	9	**100**	12
	United States	m	m	m	m	m	m	m	m	m	m	m	**m**	m	**m**	m
	OECD average	*16*	*13*	*12*	*12*	*12*	*3*	*8*	*8*	*3*	*2*	*5*	*92*	*8*	*100*	*4*
	EU19 average	*16*	*13*	*12*	*12*	*13*	*4*	*8*	*8*	*4*	*1*	*4*	*94*	*6*	*100*	*4*
Partner countries	Chile[1]	13	13	11	11	8	5	11	5	5	a	5	**87**	13	**100**	m
	Israel	11	13	16	21	18	x(3)	4	5	13	n	n	**100**	n	**100**	m
	Russian Federation	14	14	26	9	9	3	3	6	n	n	n	**83**	17	**100**	m

1. Includes 12-to-13-year-olds only.
2. For 13-to-14-year-olds, arts is included in non-compulsory curriculum.
3. German as a language of instruction is included in "Reading, writing and literature" in addition to the mother tongue Luxemburgish.
Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

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INDICATOR D2

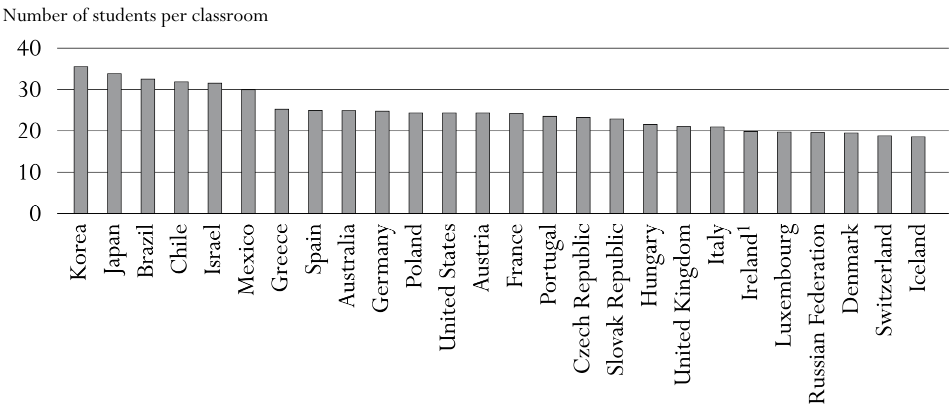
CLASS SIZE AND RATIO OF STUDENTS TO TEACHING STAFF

This indicator examines the number of students per class at the primary and lower secondary levels, the ratio of students to teaching staff at all levels and the breakdown of class sizes and ratio of student to teaching staff between public and private institutions. The indicator illustrates a much discussed aspect of the education students receive and is one of the determinants of the size of the teaching force within countries, along with the total instruction time of students (see Indicator D1), teachers' average working time (see Indicator D4) and the division of teachers' time between teaching and other duties.

Key results

Chart D2.1. Average class size in lower secondary education (2004)

The average class size in lower secondary education is 24 students per class but varies from 30 or more in Japan, Korea, Mexico and partner countries Brazil, Chile and Israel to 20 or less in Denmark, Iceland, Luxembourg and Switzerland, and the partner country the Russian Federation.



1. Public institutions only.

Countries are ranked in descending order of average class size in lower secondary education.

Source: OECD. Table D2.1. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/108323448085

INDICATOR D2

Other highlights of this indicator

- The average class size in primary education is 21, but varies between countries from 34 students per class in Korea to half of that number or less in Iceland, Luxembourg and Portugal, and the partner country the Russian Federation.
- The number of students per class increases by an average of nearly three students between primary and lower secondary education, but ratios of students to teaching staff tend to decrease with increasing levels of education due to more annual instruction time, though this pattern is not uniform among countries.
- On average across OECD countries, the availability of teaching resources relative to student numbers in secondary education is more favourable in private institutions than in public institutions. This is most striking in Mexico where, at the secondary level, there are around 13 more students per teacher in public institutions than there are in private institutions. Consistently, at the lower secondary level, there is one student more per class on average in public institutions than in private institutions.

Policy context

Class size, education quality and education systems

Class size is a hotly debated topic and an important aspect of education policy in many OECD countries. Smaller classes are often perceived to allow teachers to focus more on the individual needs of students and reduce the amount of class time teachers spend dealing with disruptions. Smaller class sizes may also influence parents when they choose schools for their children. In this respect, class size is considered as a way to assess the quality of the school system. For those countries that emphasise the importance of school choice in their education system, class size may be an important determinant of the movement of students between sectors and schools.

Yet evidence on the effects of variations in class size upon student performance is mixed. In what has evolved as a contentious area of research that has produced little in the way of consistent results, there is some evidence that smaller classes may have an impact upon specific groups of students (*e.g.* disadvantaged students).

Numerous factors influence the interaction between teachers and students with class size being just one of them. Other influences include the number of classes or students for which a teacher is responsible, the subject taught, the division of the teacher's time between teaching and other duties, the grouping of students within classes and the practice of team-teaching.

A further reason why there is mixed evidence on the impact of class size may be because there is not sufficient variation in class size to estimate the true effects of this variable on student performance. Also policies to group lower-performing students into smaller classes in order to devote more attention to them may compensate for increased performance gains from smaller classes net of such effects. Finally, the fact that the relationship between class size and student performance is often non-linear makes the effects difficult to estimate.

It should also be considered that the predominance of teacher costs in educational expenditure means that reducing class sizes leads to sharp increases in the costs of education. Therefore, the costs associated with making the large reductions in class size that would be necessary to identify a positive impact upon student performance may be prohibitive for many countries.

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. However, this ratio does not take into account instruction time compared to the length of a teacher's working day, nor how much time teachers spend teaching, and therefore it cannot be interpreted in terms of class size. The number of students per class summarises different factors, but distinguishing between them would allow an understanding of the differences between countries in terms of the quality of the educational system (Box D2.1).

The ratio of students to teaching staff is also an important indicator of the resources devoted to education. A smaller ratio of students to teaching staff may have to be weighted against higher salaries for teachers, increased professional development and teacher training, greater investment in teaching technology, or more widespread use of assistant teachers and other paraprofessionals whose salaries are often considerably lower than those of qualified teachers. Moreover, as larger numbers of children with special educational needs are integrated into normal classes, more use of specialised personnel and support services may limit the resources available for reducing the ratio of students to teaching staff.

The number of teaching and non-teaching staff employed in education per 1 000 students is an indicator of the proportion of a country's human resources devoted to educating the population. The number of persons employed as either teachers or educational support personnel and the level of compensation of educational staff (see Indicator D3) are both important factors affecting the financial resources that countries commit to education.

Evidence and explanations

Average class size in primary and lower secondary education

At the primary level, the average class size across OECD countries is 21 students per class, but varies widely among countries. It ranges from 34 students per primary class in Korea to fewer than 20 in Denmark, Greece, Iceland, Italy, Luxembourg, Portugal, the Slovak Republic and Switzerland, and the partner country the Russian Federation. At the lower secondary level, the average class size across OECD countries is 24 students per class and varies from 35 students per class in Korea to fewer than 20 in Denmark, Iceland, Ireland (public institutions only), Luxembourg and Switzerland, and the partner country the Russian Federation (Table D2.1).

Box D2.1. Relationship between class size and ratio of students to teaching staff

The number of students per class results from a number of different elements: the ratio of students to teaching staff, the number of classes or students for which a teacher is responsible, the instruction time of students compared to the length of teachers' working days, the proportion of time teachers spend teaching, the grouping of students within classes and team teaching.

For example, in a school of 48 full-time students and 8 full-time teachers, the ratio of students to teaching staff equals 6. If teachers' working week is estimated to be 35 hours including 10 hours teaching, and if instruction time for each student is 40 hours per week, then whatever the grouping of students in this school, average class size can be estimated as follows:

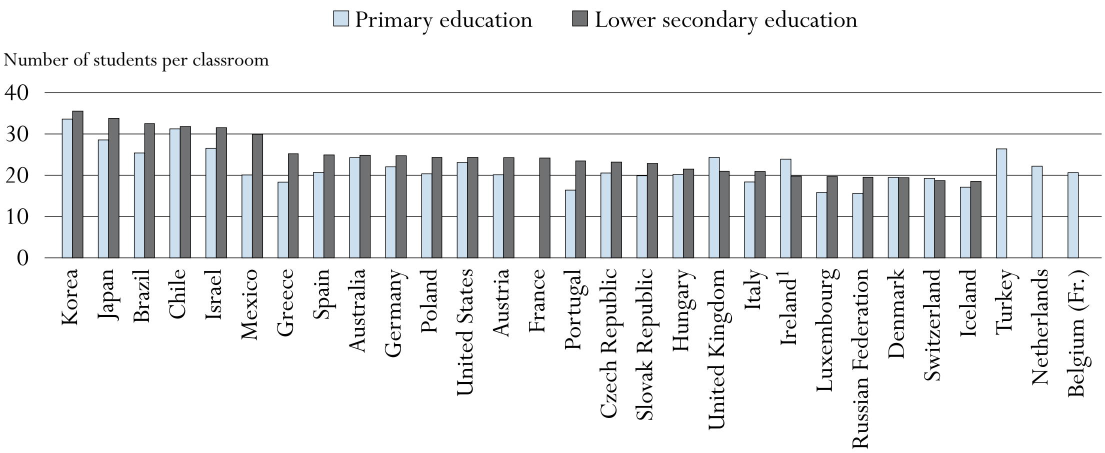
Estimated class size = 6 students per teacher * (40 hours of instruction time per student / 10 hours of teaching per teacher) = 24 students.

Compared to this estimated figure, class size presented in Table D2.1 is defined as the division of students who are following a common course of study, based on the highest number of common courses (usually compulsory studies), and excludes teaching in sub-groups. Thus the estimated class size will be close to the average class size of Table D2.1 where teaching in sub-groups is less frequent (as is the case in primary and lower secondary education).

Because of these definitions, similar student-to-teacher ratios between countries can lead to different class sizes. For example, in primary education, although the Czech Republic and Hungary have different ratios of students to teaching staff (17.9 and 10.7 – see Table D2.2), the class size is similar in both countries (20.6 in the Czech Republic and 20.2 in Hungary – see Table D2.1). The explanation for this lies in the higher proportion of teaching time: in the Czech Republic teachers spend 47.5% of their working time teaching compared with 41.7% in Hungary (see Indicator D4).

The number of students per class tends to increase, on average, by nearly three students between primary and lower secondary education. In Austria, Greece, Japan, Mexico, Portugal, Spain and partner countries Brazil and Israel the increase in average class size exceeds four students, while Denmark, Switzerland and the United Kingdom show a small drop in the number of students per class between these two levels (Chart D2.2). The indicator on class size is limited to primary and lower secondary education because class sizes are difficult to define and compare at higher levels of education, where students often attend several different classes, depending on the subject area.

Chart D2.2. Average class size in educational institutions, by level of education (2004)



1. Public institutions only.
Countries are ranked in descending order of average class size in lower secondary education.
Source: OECD. Table D2.1. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).
StatLink: http://dx.doi.org/10.1787/108323448085

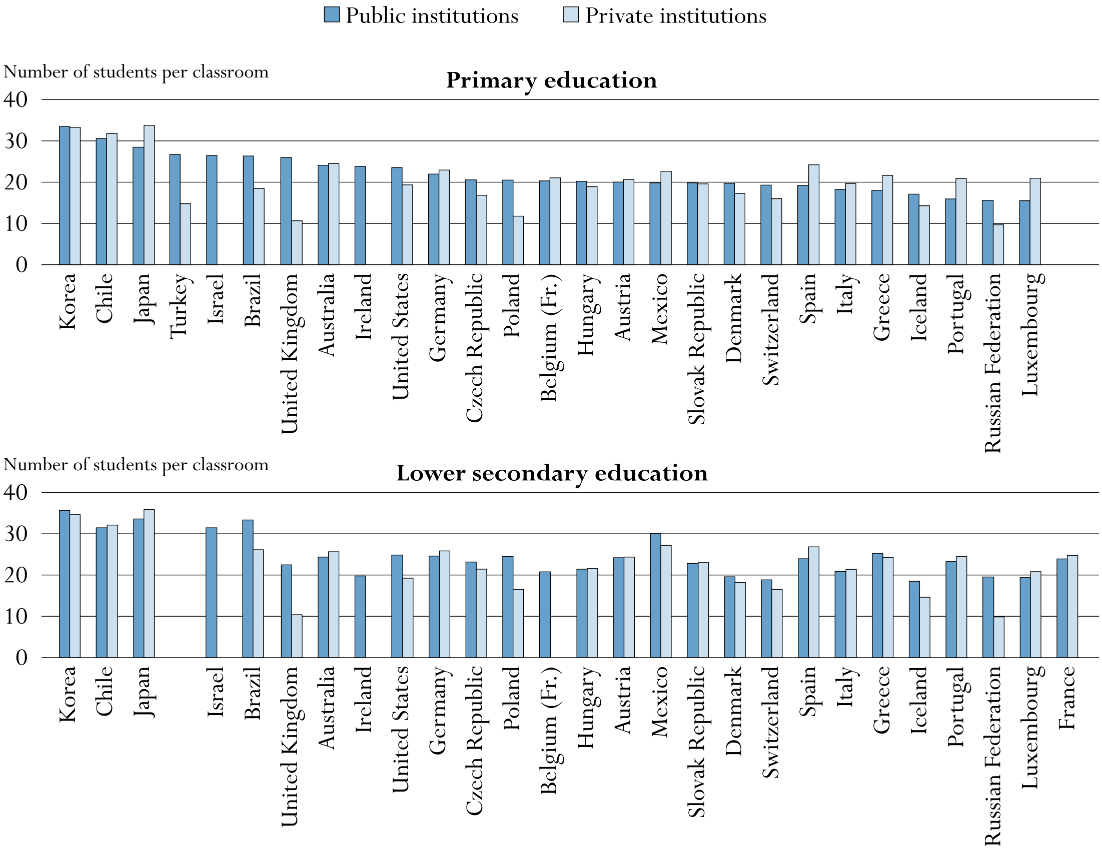
Ratio of students to teaching staff

In primary education, the ratio of students to teaching staff, expressed in full-time equivalents, ranges from more than 26 students per teacher in Korea, Mexico and Turkey, and the partner country Chile, to less than 11 in Hungary and Italy. The OECD average in primary education is 17 students per teacher (Chart D2.4).

There is similar variation among countries in the ratio of students to teaching staff at the secondary level, ranging from about 30 students per full-time equivalent teacher in Mexico to less than 11 in Austria, Belgium, Greece, Luxembourg, Norway, Portugal and Spain, and the partner country the Russian Federation. On average among OECD countries, the ratio of students to teaching staff at the secondary level is around 13, which is close to the ratios in Australia (12), the Czech Republic (13), Finland (13), France (12), Ireland (14), Japan (14), the Slovak Republic (14), Sweden (13) and the United Kingdom (14), and the partner country Israel (13) (Table D2.2).

As the difference in the mean ratios of students to teaching staff between primary and secondary education indicates, there are fewer full-time equivalent students per full-time equivalent teacher as the level of education rises. With the exception of Hungary, Italy, Mexico, Sweden, the United States and partner country Chile, the ratio of students to teaching staff in every OECD country and partner country decreases between primary and secondary levels of education, despite a tendency for class sizes to increase.

Chart D2.3. Average class size in public and private institutions by level of education (2004)



Countries are ranked in descending order of number of students per classroom in public institutions in primary education.
Source: OECD. Table D2.1. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/108323448085

The decrease in the ratio of students to teaching staff from the primary to the secondary level reflects differences in annual instruction time, which tend to increase with the level of education. It may also result from delays in matching the teaching force to demographic changes, or from differences in teaching hours for teachers at different levels and the fact that teachers in secondary education are specialised in some courses whereas in primary education there is often one teacher for almost all courses. The general trend is consistent among countries, but it is not obvious from an educational perspective why a smaller ratio of students to teaching staff should be more desirable at higher levels of education (Table D2.2).

The ratios of students to teaching staff in pre-primary education are shown in Table D2.2. For the pre-primary level, information is also presented on the ratio of students to contact staff (teachers and teacher aides). Some countries make extensive use of teacher aides at the pre-primary level. Eight OECD countries reported smaller ratios of students to contact staff (column 1 of Table D2.2) than students to teaching staff. For countries such as Japan, Sweden and the United Kingdom, this difference is not substantial. But in Germany and Ireland there are significant numbers of teacher aides. The use of these staff means that student to contact staff ratios is over 25% lower than student to teacher ratios in Ireland and Germany.

At the tertiary level, the ratio of students to teaching staff ranges from about 28 students per teacher in Greece to 11 or below in Iceland, Japan, the Slovak Republic and Sweden (Table D2.2). Such comparisons in tertiary education, however, should be made with caution since it is still difficult to calculate full-time equivalent students and teachers on a comparable basis at this level.

In 11 out of the 15 OECD and partner countries with comparable data, the ratio of students to teaching staff is lower in the more occupationally specific tertiary-type B programmes than in tertiary-type A and advanced research programmes (Table D2.2). Germany, Hungary, Ireland and Turkey are the only countries with a higher ratio in tertiary-type B programmes.

Teaching resources in public and private institutions

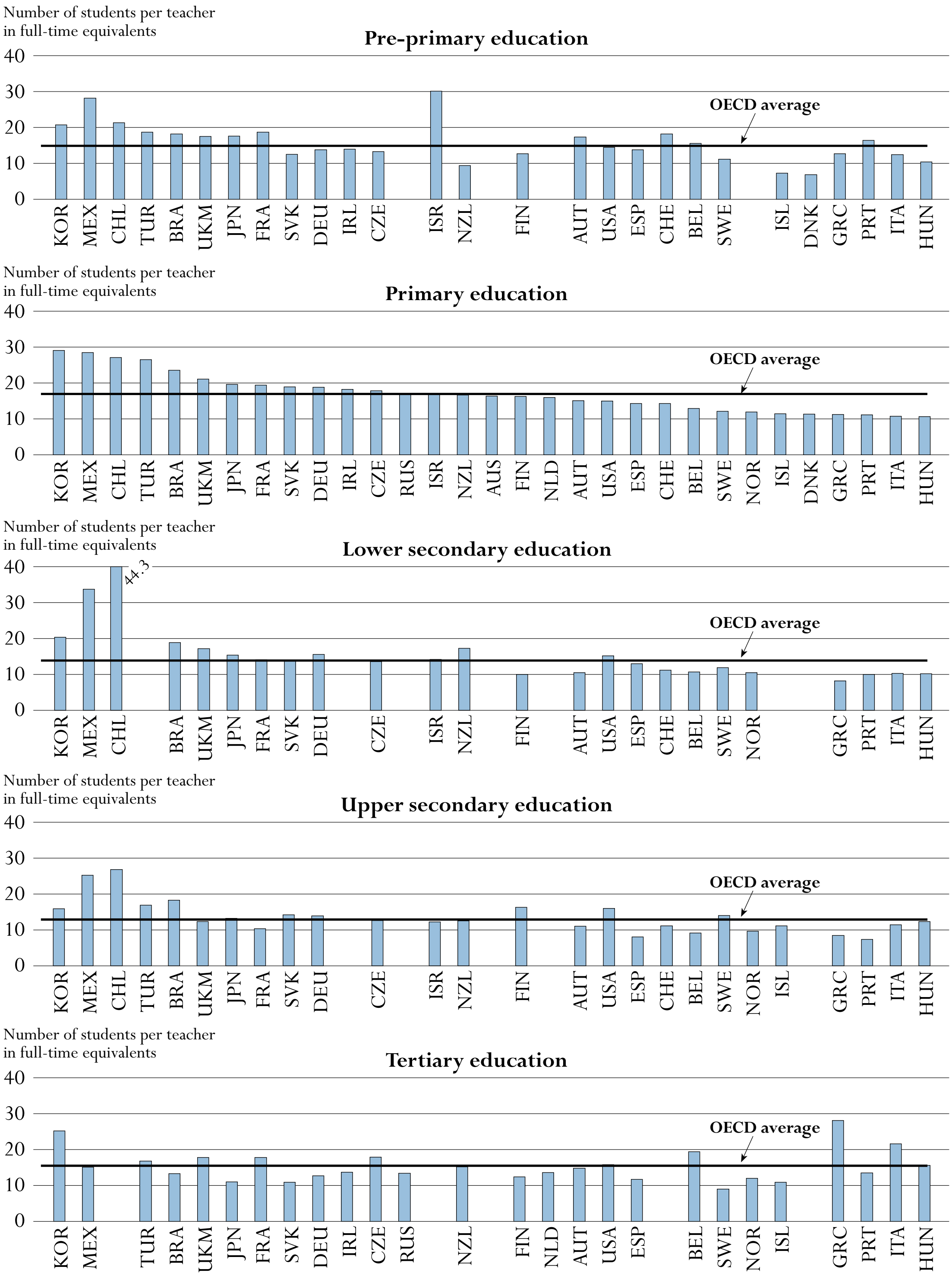
Table D2.3 focuses on the secondary level and illustrates the comparative provision of teaching resources between public and private institutions by examining the ratio of students to teaching staff between the two types of providers. There are numerous reasons why countries possess public and private school sectors. In many countries, a rationale for this division is to facilitate school choice, that is, to broaden the choices available to students and families in their schooling. Considering the importance of class size in discussions of schooling in many countries, differences in class size between public and private schools and institutions may be a driver of differences in enrolment between these sectors.

On average across the OECD countries (and also in partner countries) for which there are data, there are more favourable ratios of students to teaching staff in private institutions at both lower secondary and upper secondary levels, with slightly more than one more student per teacher in public institutions than in private institutions. The most striking examples of this are Mexico and the United Kingdom where, at the lower secondary level, there are at least 12 more students per teacher in public institutions than in private institutions. The difference in Mexico at the upper secondary level is similarly large.

But the reverse pattern in favour of students in public institutions is also evident in some countries. This is most pronounced in Spain at the lower secondary level, where there are some 17 students per teacher in private institutions compared with only 12 students per teacher in public institutions.

While ratios of students to teaching staff provide a measure of the teaching resources available, average class size is more a quality-related measure. In terms of average class size (Chart D2.3 and Table D2.1), on average across the OECD countries for which there are data, average class sizes do not differ between public and private institutions from more than one student per class for primary and lower secondary education. However, this trend disguises marked variation between countries. At the primary level, in the Czech Republic, Poland, Turkey, the United Kingdom and the United States, and in the partner countries Brazil and the Russian Federation, for example, average class sizes in public institutions are notably higher – four students or more per class – though in the first four cases as well as in partner country Russian Federation, the private sector is small (at most 5% of students at the primary level). In contrast, class sizes in private institutions exceed those in public institutions to a similar degree in Japan, Luxembourg, Portugal and Spain.

Chart D2.4. Ratio of students to teaching staff in educational institutions, by level of education (2004)



Note: Please refer to the reader's Guide for list of country codes and country names used in this chart.
Countries are ranked in descending order of number of students per teacher in primary education.
Source: OECD. Table D2.2. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/108323448085

It is interesting to note that in the OECD countries with a substantial private sector (see Table C2.4), there are, on average, only marginal differences in class size between public and private institutions. In these countries (Australia, Belgium [French Community], Denmark, France, Korea, Luxembourg, the Netherlands and Spain, and the partner country Chile), private institutions have only 1.5 students fewer than public institutions. This indicates that in countries where a substantial proportion of students and families have decided to choose private education institutions, class size was not, on average, a significant determinant of those decisions.

The class size comparison between public and private institutions also shows a mixed picture at the lower secondary level, where private education is more prevalent. Lower-secondary average class sizes are larger in private institutions than in public institutions in ten OECD countries and one partner country, though differences tend to be smaller than is the case in primary.

Definitions and methodologies

Data refer to the school year 2003-2004, and are based on the UOE data collection on education statistics that is administered annually by the OECD.

Class sizes have been calculated by dividing the number of students enrolled by the number of classes. In order to ensure comparability among countries, special needs programmes have been excluded. Data include only regular programmes at primary and lower secondary levels of education and exclude teaching in sub-groups outside the regular classroom setting.

The ratio of students to teaching staff has been calculated 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 the specified type of institution.

The breakdown of the ratio of students to teaching staff by type of institution distinguishes between students and teachers in public institutions and in private institutions (government-dependent private institutions and independent private institutions). In some countries the proportion of students in private institutions is small (see Table C2.4).

Instructional personnel:

- Teaching staff refers to professional personnel directly involved in teaching 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 classroom. 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 teacher aides and other paraprofessional personnel.
- Teacher aides and teaching/research assistants include non-professional personnel or students who support teachers in providing instruction to students.

Non-instructional personnel:

- Professional support for students includes professional staff who provide services to students that support their learning. In many cases, these staff originally qualified as teachers but then moved into other professional positions within the education system. This category also includes all personnel employed in education systems who provide health and social support services to students, such as guidance counsellors, librarians, doctors, dentists, nurses, psychiatrists and psychologists, and other staff with similar responsibilities.

- School and higher level management includes professional personnel who are responsible for school management and administration and personnel whose primary responsibility is the quality control and management of higher levels of the education system. This category covers principals, assistant principals, headmasters, assistant headmasters, superintendents of schools, associate and assistant superintendents, commissioners of education and other management staff with similar responsibilities.

- School and higher level administrative personnel includes all personnel who support the administration and management of schools and of higher levels of the education system. The category includes: receptionists, secretaries, typists and word processing staff, book-keepers and clerks, analysts, computer programmers, network administrators, and others with similar functions and responsibilities.

- Maintenance and operations personnel include personnel who support the maintenance and operation of schools, the transportation of students to and from school, school security and catering. This category includes the following types of personnel: masons, carpenters, electricians, maintenance repairers, painters and paperhangers, plasterers, plumbers and vehicle mechanics. It also includes bus drivers and other vehicle operators, construction workers, gardeners and grounds staff, bus monitors and crossing guards, cooks, custodians, food servers and others with similar functions.

D2

Table D2.1.
Average class size, by type of institution and level of education (2004)
Calculations based on number of students and number of classes

		Primary education					Lower secondary education (general programmes)				
		Public institutions	Private institutions: Total private institutions	Private institutions: Government-dependent private institutions	Private institutions: Independent private institutions	TOTAL: Public and private institutions	Public institutions	Private institutions: Total private institutions	Private institutions: Government-dependent private institutions	Private institutions: Independent private institutions	TOTAL: Public and private institutions
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
OECD countries	Australia	24.2	24.5	24.5	a	**24.3**	24.4	25.7	25.7	a	**24.9**
	Austria	20.1	20.7	x(2)	x(2)	**20.1**	24.3	24.4	x(7)	x(7)	**24.3**
	Belgium	m	m	m	m	**m**	m	m	m	m	**m**
	Belgium (Fr.)	20.3	21.1	21.1	a	**20.6**	20.8	m	m	a	**m**
	Canada	m	m	m	m	**m**	m	m	m	m	**m**
	Czech Republic	20.6	16.9	16.9	a	**20.6**	23.2	21.5	21.5	a	**23.2**
	Denmark	19.8	17.3	17.3	a	**19.5**	19.6	18.2	18.2	a	**19.4**
	Finland	m	m	m	a	**m**	m	m	m	a	**m**
	France	m	m	m	m	**m**	24.0	24.8	25.1	13.0	**24.1**
	Germany	22.0	23.0	23.0	x(3)	**22.1**	24.7	25.9	25.9	x(8)	**24.7**
	Greece	18.1	21.7	a	21.7	**18.3**	25.2	24.3	a	24.3	**25.2**
	Hungary	20.3	18.9	18.9	a	**20.2**	21.5	21.6	21.6	a	**21.5**
	Iceland	17.1	14.3	14.3	n	**17.1**	18.5	14.6	14.6	n	**18.5**
	Ireland	23.9	m	a	m	**m**	19.8	m	a	m	**m**
	Italy	18.3	19.7	a	19.7	**18.4**	20.9	21.4	a	21.4	**20.9**
	Japan	28.5	33.9	a	33.9	**28.6**	33.7	36.0	a	36.0	**33.8**
	Korea	33.6	33.4	a	33.4	**33.6**	35.7	34.7	34.7	a	**35.5**
	Luxembourg	15.6	21.0	20.5	21.0	**15.8**	19.4	20.8	20.4	21.7	**19.7**
	Mexico	19.9	22.7	a	22.7	**20.1**	30.1	27.2	a	27.2	**29.9**
	Netherlands	x(5)	x(5)	x(5)	a	**22.2**	m	m	m	a	**m**
	New Zealand	m	m	m	m	**m**	m	m	m	m	**m**
	Norway	a	a	a	a	**a**	a	a	a	a	**a**
	Poland	20.6	11.8	11.3	11.9	**20.4**	24.6	16.5	26.7	14.6	**24.3**
	Portugal	16.0	21.0	25.0	19.9	**16.4**	23.3	24.6	24.6	24.4	**23.5**
	Slovak Republic	19.9	19.6	19.6	n	**19.9**	22.8	23.1	23.1	n	**22.9**
	Spain	19.3	24.3	24.6	22.0	**20.7**	24.0	26.9	27.4	22.7	**24.9**
	Sweden	m	m	m	m	**m**	m	m	m	m	**m**
	Switzerland	19.3	16.0	14.1	16.3	**19.2**	18.9	16.6	18.9	16.1	**18.7**
	Turkey	26.7	14.8	a	14.8	**26.4**	a	a	a	a	**a**
	United Kingdom	26.0	10.7	a	10.7	**24.3**	22.5	10.4	16.9	10.1	**21.0**
	United States	23.6	19.4	a	19.4	**23.1**	24.9	19.3	a	19.3	**24.3**
	OECD average	*21.5*	*20.3*	*19.3*	*20.6*	*21.4*	*23.8*	*22.8*	*23.0*	*20.9*	*24.1*
	EU19 average	*20.0*	*19.1*	*19.8*	*18.1*	*20.0*	*22.5*	*21.8*	*22.9*	*19.0*	*22.8*
Partner countries	Brazil	26.4	18.5	a	18.5	**25.4**	33.4	26.2	a	26.2	**32.5**
	Chile	30.6	31.9	34.0	23.5	**31.2**	31.5	32.2	34.1	24.7	**31.8**
	Israel	26.5	a	a	a	**26.5**	31.5	a	a	a	**31.5**
	Russian Federation	15.6	9.7	a	9.7	**15.6**	19.6	9.9	a	9.9	**19.5**

Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/108323448085

Table D2.2.

Ratio of students to teaching staff in educational institutions (2004)

By level of education, calculations based on full-time equivalents

		Pre-primary education		Primary education	Secondary education			Post-secondary non-tertiary education	Tertiary education		
		Students to contact staff (teachers and teacher aides)	Students to teaching staff		Lower secondary education	Upper secondary education	All secondary education		Tertiary-type B	Tertiary-type A and advanced research programmes	All tertiary education
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
OECD countries	Australia[1]	m	m	16.4	x(6)	x(6)	12.3	m	m	15.5	m
	Austria	14.7	17.4	15.1	10.4	11.0	10.7	9.8	6.6	16.1	14.8
	Belgium	15.6	15.6	12.9	10.6	9.2	9.6	x(5)	x(10)	x(10)	19.4
	Canada	m	m	m	m	m	m	m	m	m	m
	Czech Republic	11.6	13.4	17.9	13.5	12.6	13.1	17.9	17.6	18.0	17.9
	Denmark	m	6.9	x(4)	11.3	m	m	m	m	m	m
	Finland	m	12.7	16.3	10.0	16.2	13.1	x(5)	x(5)	12.4	12.4
	France	m	18.8	19.4	14.1	10.3	12.1	m	13.0	19.4	17.8
	Germany	10.5	13.9	18.8	15.6	13.9	15.1	14.9	13.3	12.6	12.7
	Greece	12.7	12.7	11.3	8.2	8.4	8.3	7.0	23.2	31.7	28.1
	Hungary	m	10.5	10.7	10.2	12.3	11.2	12.7	23.5	15.3	15.6
	Iceland	7.3	7.3	x(4)	11.4	11.1	11.3	n	x(10)	x(10)	10.9
	Ireland	10.3	14.0	18.3	x(6)	x(6)	14.3	x(6)	14.0	13.5	13.7
	Italy	12.5	12.5	10.7	10.3	11.5	11.0	m	5.1	22.5	21.6
	Japan	17.0	17.7	19.6	15.3	13.2	14.1	x(5,10)	8.5	12.3	11.0
	Korea	20.8	20.8	29.1	20.4	15.9	17.9	a	x(10)	x(10)	25.2
	Luxembourg[2]	m	m	m	x(6)	x(6)	9.0	m	m	m	m
	Mexico	28.3	28.3	28.5	33.7	25.2	30.3	a	13.3	15.2	15.1
	Netherlands	m	x(3)	15.9	x(6)	x(6)	15.8	x(6)	x(10)	x(10)	13.6
	New Zealand	9.4	9.4	16.7	17.3	12.5	14.7	11.6	11.7	16.9	15.2
	Norway[2]	m	m	11.9	10.5	9.6	10.0	x(5)	x(10)	x(10)	12.0
	Poland	m	m	m	m	m	m	m	m	18.5	m
	Portugal	m	16.5	11.1	10.0	7.3	8.4	m	x(10)	x(10)	13.5
	Slovak Republic	12.5	12.5	18.9	13.9	14.2	14.0	9.4	10.2	11.0	10.9
	Spain	13.9	13.9	14.3	12.9	8.0	10.8	a	7.4	13.3	11.7
	Sweden	10.9	11.2	12.1	11.9	14.0	12.9	23.4	x(10)	x(10)	9.0
	Switzerland[2]	m	18.2	14.3	11.2	11.1	11.2	m	m	m	m
	Turkey	18.7	18.7	26.5	a	16.9	16.9	a	55.6	13.4	16.8
	United Kingdom[1,3]	17.4	17.6	21.1	17.1	12.3	14.4	x(5)	x(10)	x(10)	17.8
	United States	11.9	14.5	15.0	15.2	16.0	15.5	21.5	x(10)	x(10)	15.8
	OECD average	*15.2*	*14.8*	*16.9*	*13.7*	*12.7*	*13.3*	*12.8*	*15.9*	*16.3*	*15.5*
	EU19 average	*13.0*	*13.8*	*15.3*	*12.0*	*11.5*	*12.0*	*13.6*	*13.4*	*17.0*	*15.7*
Partner countries	Brazil	m	18.3	23.5	18.8	18.3	18.6	a	x(10)	x(10)	13.3
	Chile	m	21.4	27.1	44.3	26.8	33.3	a	m	m	m
	Israel	30.2	30.2	16.9	14.1	12.2	13.0	m	m	m	m
	Russian Federation	m	m	17.0	x(6)	x(6)	10.3	x(6)	11.7	14.0	13.4

1. Includes only general programmes in upper secondary education.
2. Public institutions only.
3. The ratio of students to contact staff refers to public institutions only.

Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/108323448085

Table D2.3.
Ratio of students to teaching staff by type of institution (2004)
By level of education, calculations based on full-time equivalents

		Lower secondary education				Upper secondary education				All secondary education			
			Private				Private				Private		
		Public	Total private	Government Dependent	Independent	Public	Total private	Government Dependent	Independent	Public	Total private	Government Dependent	Independent
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
OECD countries	Australia[1]	x(9)	x(10)	x(11)	a	x(9)	x(10)	x(11)	a	12.4	12.0	12.0	a
	Austria	10.3	12.1	x(2)	x(2)	10.9	12.0	x(6)	x(6)	10.5	12.0	x(10)	x(10)
	Belgium[2]	10.2	m	10.9	m	9.3	m	9.1	m	9.6	m	9.7	m
	Canada	m	m	m	m	m	m	m	m	m	m	m	m
	Czech Republic	13.6	11.5	11.5	a	12.4	14.2	14.2	a	13.0	13.8	13.8	a
	Denmark[3]	11.2	12.5	12.5	a	m	m	m	a	m	m	m	a
	Finland[4]	9.8	14.5	14.5	a	16.8	12.9	12.9	a	13.1	13.2	13.2	a
	France	13.8	15.3	15.3	16.7	9.5	12.6	11.1	16.7	11.6	13.7	13.2	16.7
	Germany	15.6	15.3	15.3	x(3)	14.0	13.2	13.2	x(7)	15.2	14.5	14.5	x(11)
	Greece	8.2	7.9	a	7.9	8.5	7.0	a	7.0	8.4	7.4	a	7.4
	Hungary	10.2	9.7	9.7	a	12.3	12.0	12.0	a	11.2	11.2	11.2	a
	Iceland[3]	11.4	11.3	11.3	n	11.0	13.7	13.7	n	11.3	12.9	12.9	n
	Ireland[2]	x(9)	x(10)	a	x(12)	x(9)	x(10)	a	x(12)	14.3	13.7	a	13.7
	Italy	10.3	9.0	a	9.0	12.1	5.9	a	5.9	11.3	6.6	a	6.6
	Japan[4]	15.5	13.3	a	13.3	12.5	15.1	a	15.1	14.0	14.8	a	14.8
	Korea	20.4	20.5	20.5	a	15.0	16.7	16.7	a	18.1	17.7	17.7	a
	Luxembourg	x(9)	m	m	m	x(9)	m	m	m	9.0	m	m	m
	Mexico	36.1	23.1	a	23.1	29.3	16.6	a	16.6	33.7	19.6	a	19.6
	Netherlands	m	m	m	a	m	m	m	a	m	m	m	a
	New Zealand	17.5	14.0	a	14.0	15.0	7.2	10.4	4.4	16.3	8.1	10.4	6.5
	Norway[2]	10.5	m	m	m	9.6	m	m	m	10.0	m	m	m
	Poland	m	m	m	m	m	m	m	m	m	m	m	m
	Portugal	9.7	12.2	13.8	10.5	7.6	6.1	8.2	5.6	8.6	7.7	10.8	6.5
	Slovak Republic	14.0	13.1	13.1	n	14.3	12.7	12.7	n	14.1	12.9	12.9	n
	Spain	11.5	17.0	x(2)	x(2)	7.4	10.8	x(6)	x(6)	9.6	14.8	x(10)	x(10)
	Sweden	11.9	11.0	11.0	a	13.9	14.7	14.7	a	12.9	12.8	12.8	a
	Switzerland	11.2	m	m	m	11.1	m	m	m	11.2	m	m	m
	Turkey	a	a	a	a	17.3	9.1	a	9.1	17.3	9.1	a	9.1
	United Kingdom[1]	18.8	7.0	a	7.1	13.1	7.9	7.3	7.9	15.7	7.5	7.3	7.6
	United States	15.8	10.6	a	10.6	16.6	11.6	a	11.6	16.2	11.0	a	11.0
	OECD average	*13.8*	*13.0*	*13.3*	*10.2*	*13.0*	*11.6*	*12.0*	*8.3*	*13.4*	*12.1*	*12.3*	*9.2*
	EU19 average	*11.9*	*12.0*	*12.8*	*10.2*	*11.6*	*10.9*	*11.5*	*8.6*	*11.7*	*11.6*	*11.9*	*9.7*
Partner countries	Brazil	20.1	11.3	a	11.3	20.8	10.2	a	10.2	20.5	10.7	a	10.7
	Chile	26.9	25.1	27.4	17.3	25.5	23.4	27.1	13.2	26.1	24.0	27.2	14.3
	Israel	14.1	a	a	a	12.2	a	a	a	13.0	a	a	a
	Russian Federation	10.2	3.8	a	3.8	11.3	m	a	m	10.4	4.9	a	4.9

1. Includes only general programmes in lower and upper secondary education.
2. Upper secondary includes post-secondary non-tertiary education.
3. Lower secondary includes primary education.
4. Upper secondary education includes programmes from post-secondary education.
Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

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INDICATOR D3

TEACHERS' SALARIES

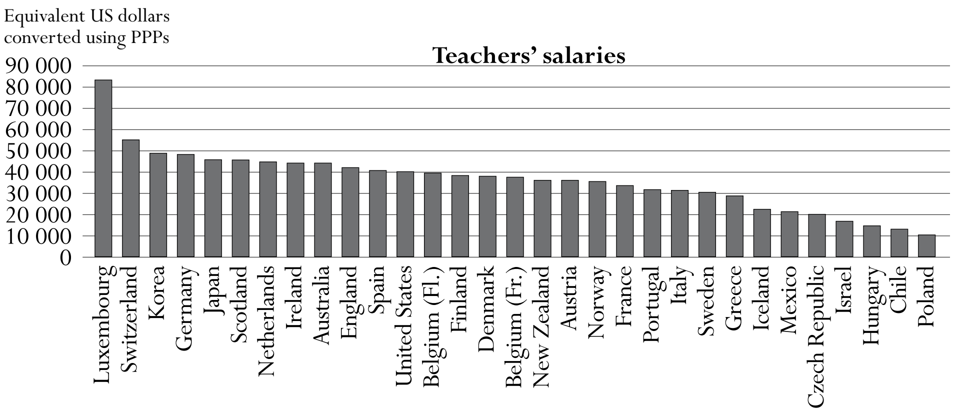
This indicator shows the starting, mid-career and maximum statutory salaries of teachers in public primary and secondary education, and various additional payments and incentive schemes used in teacher rewards systems. Together with average class size (see Indicator D2) and teachers' working time (see Indicator D4), this indicator presents some key measures of the working lives of teachers. Differences in teachers' salaries, along with other factors such as student to staff ratios (see Indicator D2), provide some explanation for differences in expenditure per student (see Indicator B1).

Key results

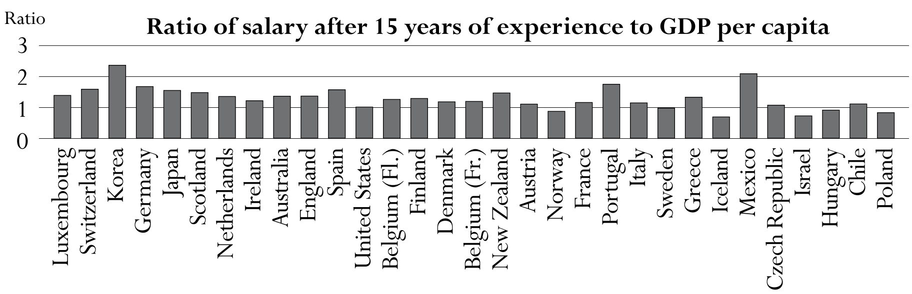
Chart D3.1. Teachers' salaries in lower secondary education (2004)

Annual statutory teachers' salaries in public institutions in lower secondary education, in equivalent US dollars converted using PPPs, and the ratio of salary after 15 years of experience to GDP per capita

Salaries of teachers with at least 15 years experience at the lower secondary level range from about USD 10 000 in Poland to USD 48 000 or more in Germany, Korea and Switzerland and even exceed USD 80 000 in Luxembourg.



Salaries for teachers with at least 15 years experience in lower secondary education are over twice the level of GDP per capita in Korea and Mexico whereas in Iceland and the partner country Israel salaries are less than 75% of GDP per capita.



Countries are ranked in descending order of teachers' salaries in lower secondary education after 15 years of experience and minimum training.
Source: OECD. Table D3.3. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).
StatLink: http://dx.doi.org/10.1787/083407611234

Other highlights of this indicator

- Teachers' salaries have risen in real terms between 1996 and 2004 in virtually all countries, with the largest increases evident in Finland, Hungary and Mexico. Salaries at the primary and upper secondary levels in Spain fell in real terms over the same period, even if they remain above the OECD average level.
- On average, upper secondary teachers' salary per teaching hour exceeds that of primary teachers by 42%, though the difference is lower than 5% in New Zealand and Poland and is greater than 75% in the Netherlands and Spain, where the difference between teaching time at primary and upper secondary level is greatest.
- Salaries at the top of the scale are on average around 70% higher than starting salaries for both primary and secondary education, though this differential usually varies between countries largely in line with the number of years it takes for a teacher to progress through the scale. For instance, top-of-the-scale salaries in Korea are almost three times that of starting salaries, but it takes 37 years to reach the top of the scale. In Portugal, however, the ratio of salaries at the top of the scale to starting salaries is close to that in Korea, but teachers reach the top of salary after 26 years of service.

Policy context

Education systems employ a large number of professionals in an increasingly competitive labour market. Ensuring a sufficient number of skilled teachers is a key concern in all OECD countries. Salaries and working conditions can be important influences in attracting, developing and retaining skilled and effective teachers.

Salary levels are also important in that they reflect the career progression and promotion possibilities available within the teaching profession. Theoretically, a career structure with an age-earnings profile (which depicts salary increases across workers' job tenure) that is flat offers greater incentives to attract qualified individuals into the teaching profession but fewer incentives to reward continued development. In constrast, a steep age-earnings profile offers workers substantial salary increases throughout their work lives. These factors are among those that could influence the career decisions of potential teachers and the types of people who are attracted to the teaching profession.

Teachers' salaries are the largest single cost in providing education, making compensation a critical consideration for policy makers seeking to maintain both the quality of teaching and a balanced education budget. The size of education budgets naturally reflects trade-offs among many interrelated factors, including teachers' salaries, the ratio of students to teaching staff, the instruction time planned for students, and the designated number of teaching hours.

Evidence and explanations

Comparing teachers' salaries

The first part of this indicator compares the starting, mid-career and maximum statutory salaries of teachers with the minimum level of qualifications required for certification in public primary and secondary education. First, teachers' salaries are examined in absolute terms at three career points: starting, mid-career, and top-of-the-scale. Incentive schemes and additional payments made to teachers are illustrated next, followed by teachers' salary changes between 1996 and 2004.

International comparisons of salaries provide simplified illustrations of the compensation received by teachers for their work. This provides only an overall picture of the comparisons of the complete system of compensations and the resultant welfare inferences that can be made. Large differences between the taxing and social benefit systems in OECD countries as well as the use of financial incentives (including regional allowances for teaching in remote regions, family allowances, reduced rates on public transportation, tax allowances on purchasing cultural goods, and other quasi-pecuniary entitlements that contribute to a teacher's basic income) make it important to exercise caution when comparing teachers' salaries.

Statutory salaries as reported in this indicator must be distinguished from the actual wage expenditures incurred by governments and from teachers' average salaries, which are also influenced by other factors such as the age structure of the teaching force or the prevalence of part-time work. Indicator B6 shows the total amounts paid in compensation to teachers. Furthermore, since teaching time and teachers' workload can vary considerably among countries, these factors should be considered when comparing statutory salaries for teachers in different countries (see Indicator D4).

The annual statutory salaries of lower secondary teachers with 15 years of experience range from about USD 10 000 in Poland to over USD 48 000 in Germany, Korea and Switzerland and reach USD 80 000 in Luxembourg (Table D3.1).

In most OECD countries, teachers' salaries increase with the level of education being taught. For example, in Belgium (Fl.), Belgium (Fr.), Finland, Iceland, Luxembourg, the Netherlands and Switzerland, the salary of an upper secondary teacher with at least 15 years experience is at least 29% higher than that of a primary school teacher with the same experience. In contrast, in Australia, England, Greece, Ireland, Japan, Korea, New Zealand, Norway, Poland, Portugal, Scotland and the United States, and the partner country Israel, upper secondary and primary teachers' salaries are more comparable (Table D3.1). The extent of the variation would be influenced by the structure of teachers' salaries up to the mid-career point. In some countries, such as the United States, teachers' salaries are influenced by the educational attainment of teachers. As this attainment is not constant across teachers at all levels across their career, care should be taken in interpreting the extent of differences in salaries of teachers at different levels of primary and secondary education.

Substantial differences in these wage levels could reflect substantial differences in the labour market for teachers. Comparatively large differences in the salaries of teachers at different levels may influence how schools and school systems attract and retain teachers of different levels. It may also influence the extent to which teachers move across different education levels and, with that, the degree of segmentation in the teacher labour market.

Statutory salaries relative to GDP per capita

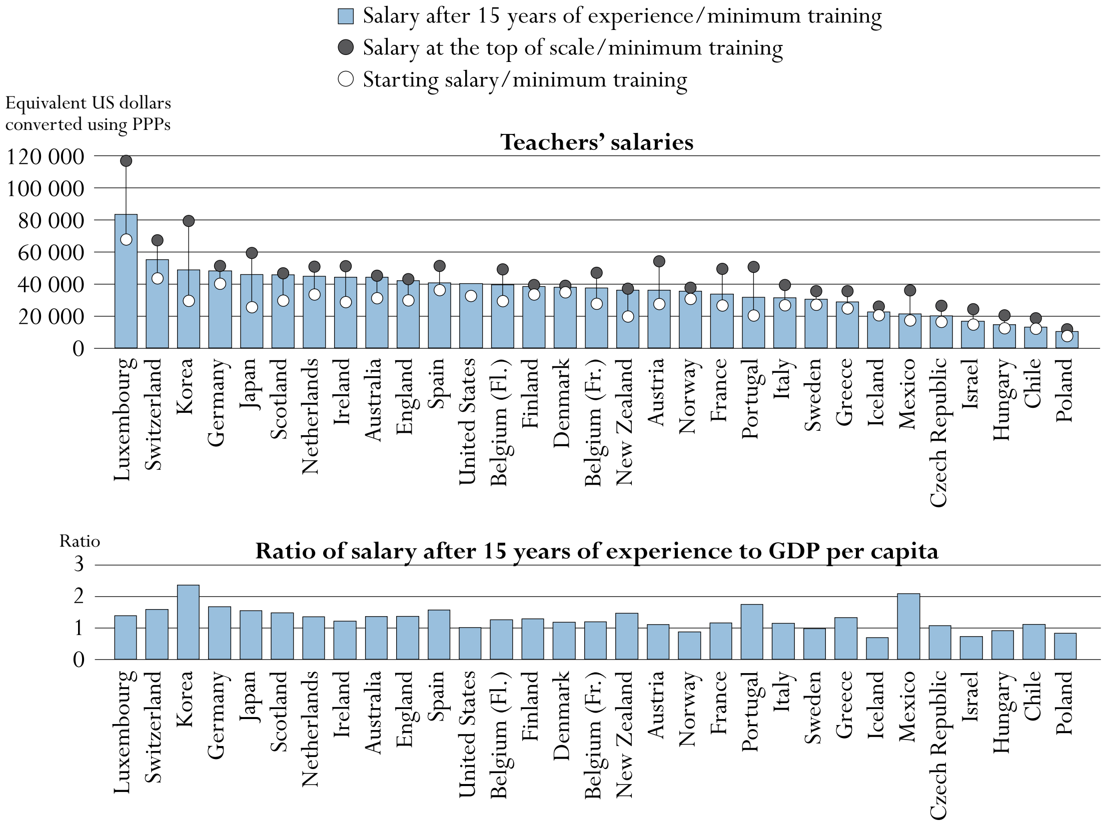
Among other considerations, countries invest in teaching resources relative to their ability to fund educational expenditure. Comparing statutory salaries to GDP per capita is thus another way of assessing the relative value of teachers' salaries among countries. Comparative data on salaries for comparable professions would provide a better benchmark for teacher salaries; since such data are not yet available, comparisons with GDP per capita provide some basis for standardised comparisons.

Salaries for teachers with at least 15 years experience (in primary and lower secondary education) relative to GDP per capita are lowest in Hungary (0.91), Iceland (0.69), Norway (0.87) and Poland (0.83), and the partner country Israel (0.73), and highest in Korea (2.37 in primary and 2.36 in lower secondary), Mexico (2.09, lower secondary) and Turkey (2.44, primary). In upper secondary general education, the lowest ratios are found in Norway (0.87), Poland (0.83), Iceland (0.94) and partner country Israel (0.73), and mid-career salaries relative to the GDP are highest in Korea (2.36) and Turkey (2.30) (Table D3.1).

Some countries, such as the Czech Republic, Hungary, Poland and Turkey, as well as the partner countries Chile and Israel, have both relatively low GDP per capita and low teachers' salaries. Others (*e.g.* Korea, New Zealand, Portugal and Spain) have a relatively low GDP per capita but teachers' salaries that are comparable to those in countries with much higher GDP per capita. Germany, Luxembourg and Switzerland have a high GDP per capita and high teachers' salaries (Chart D3.2 and Table D3.1), whereas Norway has a high GDP per capita, but average mid-career salaries.

Chart D3.2. Teachers' salaries (minimum, after 15 years experience, and maximum) in lower secondary education (2004)

Annual statutory teachers' salaries in public institutions in lower secondary education, in equivalent US dollars converted using PPPs, and the ratio of salary after 15 years of experience to GDP per capita



Countries are ranked in descending order of teachers' salaries in lower secondary education after 15 years of experience and minimum training.
Source: OECD. Table D3.1. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).
StatLink: http://dx.doi.org/10.1787/083407611234

Statutory salaries per hour of net teaching time

An alternative measure of salaries and the cost of teaching time is the statutory salary for a full-time classroom teacher relative to the number of hours per year that teacher is required to spend teaching students (Indicator D4). Although this measure does not adjust salaries for the amount of time that teachers spend in various teaching-related activities, it can nonetheless provide a rough estimate of the cost of the actual time teachers spend in the classroom.

The average statutory salary per teaching hour after 15 years of experience is USD 43 in primary, USD 55 in lower secondary, and USD 63 in upper secondary general education. In primary education, the Czech Republic, Hungary, Mexico, Poland, Turkey and partner country Israel have the lowest salary costs per teaching hour (USD 30 or less). By contrast, salary costs are relatively high in Denmark, Germany, Japan, Korea and Luxembourg (approaching USD 60 or more). There is even more variation in salary cost per teaching hour in general upper secondary schools, ranging from about USD 31 or less in Poland and Turkey, and the partner country Israel, to USD 80 or more in Denmark, Japan, Korea, Luxembourg and the Netherlands (Table D3.1).

Even in countries where statutory salaries are the same in primary and secondary education, salaries per teaching hour are usually higher in upper secondary education than in primary education, since in most countries, secondary teachers are required to teach fewer hours than primary teachers (see Indicator D4). On average among OECD countries, upper secondary teachers' salary per teaching hour exceeds that of primary teachers by around 40%. In Australia, New Zealand, Poland, Scotland and Turkey, this difference is only 10% or less, whereas it is around 60% or more in Finland, France, Greece, Hungary, Iceland and Luxembourg and close to or above 80% in the Netherlands and Spain (Table D3.1). In Spain, the difference between teaching time at primary and upper secondary level is greater than in any other country but the working time required of these teachers at school is the same (Table D4.1). Hence, the large difference between primary and upper secondary teachers' salary per teaching hour does not exist when comparing salary per hour of working time required at school.

Teaching experience and qualifications influence teachers' salary scales

Comparing teachers' gross salaries at the point of entry into the teaching profession, after 15 years of experience, and at the top of the salary scale provides information on the career structure of teachers within countries. Theoretically, a system that offers greater rewards to experience and performance provides greater incentives to perform at a higher level and to stay within the profession.

On average among OECD countries, statutory salaries for primary, lower and upper secondary general teachers with 15 years of experience are 38, 38 and 42% higher, respectively, than starting salaries. The increase to the top of the salary scale is, on average, 69, 70 and 71%. These figures provide an indication of the age-earnings profiles of these teachers across countries. For lower secondary teachers, the average starting salary was USD 27 560 (PPP). After 15 years experience, with minimum training, this figure increases to USD 37 488, and then it reaches USD 45 277 at the top of the salary scale. A similar increase is therefore evident between first, the starting salary and that at 15 years of experience and second, the salary increase between 15 years of experience and the top of the salary scale (reached, on average, after 24 years of experience).

Increases in salaries between points on the age-earnings profile should be seen in the context of the number of years that it takes for a teacher to proceed through the salary scale, a factor which varies substantially across countries. In lower secondary education, teachers in Australia, Denmark, England, New Zealand and Scotland reach the highest step on the salary scale relatively quickly (within 5 to 9 years), while in Austria, the Czech Republic, France, Greece, Hungary, Italy, Japan, Korea, Luxembourg and Spain, and the partner country Israel, teachers reach the top of the salary scale after more than 30 years of service (Table D3.1).

Teachers in Denmark, Finland, Germany, Iceland, Norway and Turkey have, on average, considerably flatter age-earnings profiles than other teachers in the OECD. With the exception of upper secondary teachers in Denmark, teachers at the top of the salary scale only earn up to 30% more than teachers at the bottom of the salary scale in these countries (Table D3.1). Even within this group of countries, there are substantial differences in the age-earnings profiles of teachers. The source of these differences is in the time it takes to reach various levels in the salary scales. On average in OECD countries, it takes just under 24 years for a lower secondary teacher to reach the top of the salary scale. But the increase is not linear across countries. In Denmark, lower secondary teachers reach the top of their salary scale in only 8 years while in Germany it takes 28 years.

While German and Danish teachers both have relatively flat age-earnings profiles, and therefore similarities in education policy issues in this area, the difference in the time it takes to reach the top of the scale may create differences. In Denmark, on average, teachers have reached the top of the salary scale after 8 years. The monetary incentives that come with promotion and commensurate wage increases therefore cease after 8 years implying a steep age earnings profile in the first 8 years of tenure and then a flat profile past that. If retention and motivation are determined, at least in part, by promotion prospects, then difficulties could arise for teachers with more than 8 years of experience. Conversely, this may be part of a broader structure that better reflects the job profile of teachers and their input in schools. Germany, on the other hand, has a relatively flat age-earnings profile where the rise appears to be more gradual; here it takes 28 years to achieve the average of 28% wage increase for lower secondary teachers.

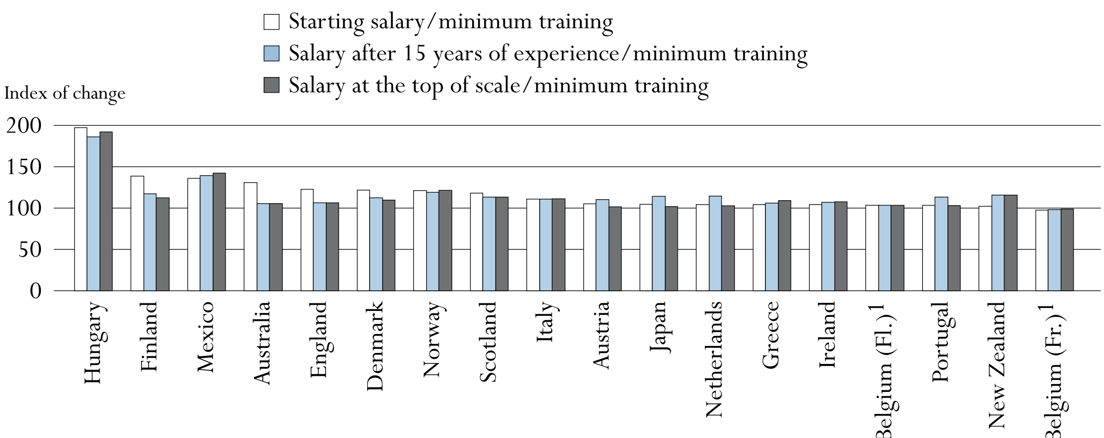
Comparatively steep age-earnings profiles are evident in Austria, Japan, Korea, Mexico and Portugal. Lower secondary teachers in these countries who have reached the top of the salary scale receive salaries that are more than double the salary received by starting teachers. Across these countries, it takes on average 28 years to reach the top of the salary scale, implying a gradual progression. The exception to this is Mexico, where lower secondary school teachers who have progressed from starting salaries to a salary at the top of the scale would have more than doubled their salary in 14 years.

Teachers' salaries between 1996 and 2004

Comparing the index of change between 1996 and 2004 in teachers' salaries, it is evident that they have grown in real terms at both primary and secondary levels in virtually all countries. The biggest increases (more than 75%) across all levels have taken place in Hungary, though these salaries remain below the OECD average. In some countries, however, salaries have fallen in real terms between 1996 and 2004, most notably at the primary and upper secondary levels in Spain (Table D3.3 and Chart D3.3), even if they remain above the OECD average level.

Chart D3.3. Changes in teachers' salaries in lower secondary education, by point in the salary scale (1996, 2004)

Index of change between 1996 and 2004 (1996=100, 2004 price levels using GDP deflators)



1. The data for Belgium in 1996 are based on Belgium as a whole.

Countries are ranked in descending order of index of change between 1996 and 2004 in teachers' starting salaries.

Source: OECD. Table D3.3. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/083407611234

Salary trends have also varied between different points on the salary scale. For instance, starting salaries have risen faster than mid-career or top-of-the-scale salaries for all education levels in Australia, Denmark, England, Finland and Scotland. By contrast, salaries of teachers with at least 15 years experience have risen relatively more quickly (than stating salary) in Austria, Japan, the Netherlands and Portugal, and in the case of New Zealand, top-of-the-scale salaries have risen faster than starting salaries. However, with a relatively short salary scale (eight years to reach the top of the scale), teacher recruitment is in fact a key focus in New Zealand.

The reasons for these changes vary across countries. A possible rationale for increases in starting salaries is a desire to attract new teachers. However, unless salaries also increase at other points, teachers will face flatter age-earnings profiles. Theoretically, the prospect of mostly smaller salary increases across teachers' career span has a negative impact on incentives.

Additional payments: Incentives and allowances

In addition to basic pay scales, many school systems have developed schemes that offer additional payments for teachers, which may take the form of financial remuneration and/or a reduction in the number of teaching hours. Together with the starting salary, such additional payments may affect a person's decision to enter into and stay in the teaching profession. Early career additional payments for graduate teachers may include family allowances and bonuses for working in certain locations, higher initial salaries for higher-than-minimum teaching certification or qualifications and additional compensation for those holding educational qualifications in multiple subjects or with certification to teach students with special educational needs.

In some countries, the reduction of required teaching hours is used to reward experience or long service (*e.g.* in Greece and Iceland). In other countries such as Portugal, teachers can be compensated by a reduction of teaching hours for carrying out special tasks or activities (leading a drama club, or acting as teacher supervisor of student teachers, etc.). Adjustments to base salary may be awarded to teachers in public schools either by the head teacher or school principal, or by government at the local, regional or national level.

Types of additional payments

Data on additional payments can be grouped into three broad areas:

1. Additional payments based on responsibilities assumed by teachers and particular conditions of teaching (*e.g.* additional management responsibilities and/or teaching in high-need regions, disadvantaged schools)

2. Additional payments based upon the demographic characteristics of teachers (*e.g.* age and/or family status)

3. Additional payments based upon teachers' qualifications, training and performance (*e.g.* holding higher than the minimum qualifications and/or completing professional development activities)

Data have not been collected on payment amounts but on whether they are available to teachers and at what level the decision to award such payments are taken (see Tables D3.2a, D3.2b, D3.2c and D3.2d, and Annex 3 at *www.oecd.org/edu/eag2006*).

Additional payments are most often given for particular responsibilities or working conditions. Additional payments for teaching in disadvantaged schools are provided in two-thirds of OECD and partner countries, and seven countries also offer additional payments for teachers who teach in certain fields. These payments may be offered in response to a shortage of teachers in these areas.

Half of OECD countries offer additional payments based on demographic characteristics of teachers. Additional payments to teachers based upon their qualifications, training and performance are less common across OECD and partner countries. Of these, five types of additional payments are offered based upon teachers' initial education and qualification for teaching examination. The most common types of these payments are available for holding either an initial education qualification higher than the minimum requirement and/or a higher than minimum level of teacher certification and training. These are available in just over half of OECD and partner countries with most offering both types of additional payments. Eleven OECD and partner countries offer additional payments for the successful completion of professional development activities.

Another type of additional payment is that made to teachers for outstanding performance in teaching. Thirteen countries offer this payment – the only additional payment that could be classified as a performance incentive. In seven of the thirteen countries (the Czech Republic, Denmark, England, Finland, Hungary, New Zealand and Sweden) that offer this incentive, the decision to award the additional payment can be made at the school-level.

The form of incentive and the method for identifying outstanding performance varies across the thirteen countries that offer this incentive. In Mexico, outstanding performance is calculated based upon the learning achievements of students. Performance rewards can also be based on the assessment of the head teacher (Portugal), or on assessments performed by education administrations (the provincial directorate of education and the ministry of education in Turkey).

Definitions and methodologies

Data are from the 2005 OECD-INES Survey on Teachers and the Curriculum and refer to the school year 2003-2004.

Data on statutory teachers' salaries and bonuses (Tables D3.1 and D3.2) are derived from the 2005 OECD-INES Survey on Teachers and the Curriculum. Data refer to the school year 2003-2004, and are reported in accordance with formal policies for public institutions.

Statutory salaries (Table D3.1) refer to scheduled salaries according to official pay scales. The salaries reported are gross (total sum of money 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 taxes). In table D3.1 salary per hour of net contact divides the annual statutory salary of a teacher (table D3.1) by the annual net teaching time in hours (table D4.1).

Gross teachers' salaries were converted using GDP and purchasing power parities (PPPs) exchange rate data from the OECD National Accounts database. The reference date for GDP per capita is the calendar year 2004, while the period of reference for teachers' salaries is 30 June 2003 to 30 June 2004. The reference date for PPPs is 2003-2004. Data are adjusted for inflation with reference to January 2004. For countries with different financial years (*i.e.* Australia and New Zealand) and countries with slightly different salary periods (*e.g.* Hungary, Iceland, Norway and Spain) from the general OECD norm, a correction to the deflator is made only if this results in an adjustment of over 1%. Small adjustments have been discounted because even for salaries referring to 2003-2004, the exact period for which they apply will only be slightly different. Reference statistics and reference years for teachers' salaries are provided in Annex 2.

For the calculation of changes in teacher salaries (Table D3.3), the GDP deflator is used to convert 1996 salaries to 2004 prices.

Starting salaries refer to the average scheduled gross salary per year for a full-time teacher with the minimum training necessary to be fully qualified at the beginning of the teaching career.

Salaries after 15 years of experience refer to the scheduled annual salary of a full-time classroom teacher with the minimum training necessary to be fully qualified plus 15 years of experience. The maximum salaries reported refer to the scheduled maximum annual salary (top of the salary scale) of a full-time classroom teacher with the minimum training to be fully qualified for the job.

An adjustment to base salary is defined as any difference in salary between what a particular teacher actually receives for work performed at a school and the amount that he or she would be expected to receive on the basis of level of experience (*i.e.*, number of years in the teaching profession). Adjustments may be temporary or permanent, and they can effectively move a teacher off the scale and onto a different salary scale or onto a higher step on the same salary scale.

The data on decision making are taken from the 2003 OECD-INES survey on decision making in public, lower secondary education and refer to the school year 2003-2004. On teacher salary scales, the survey asked which level in the education system decides on the salary scales (excluding bonuses) of teaching staff and how autonomously these decisions are taken.

Further references

Specific notes on definitions and methodologies regarding this indicator for each country are given in Annex 3 at *www.oecd.org/edu/eag2006*.

In addition, a more comprehensive analysis of decision making was published in *Education at a Glance 2004* (OECD, 2004c), Indicator D6. Information on the underlying decision-making survey is available in *Education at a Glance 2004,* Annex 3 (*www.oecd.org/edu/eag2004*) under the heading *Indicator D6 Locus of decision making at lower secondary levels.* The complete decision-making data are available under the heading *Underlying data on decision making for Indicator D6* (*www.oecd.org/edu/eag2004*). As a complement to Table D3.1, which presents teachers' salaries in equivalent US dollars using PPPs, a table with teachers' salaries in equivalent Euros converted using PPPs is included in Annex 2.

Table D3.1.

Teachers' salaries (2004)

Annual statutory teachers' salaries in public institutions at starting salary, after 15 years of experience and at the top of the scale, by level of education, in equivalent US dollars converted using PPPs

		Primary education				Lower secondary education				Upper secondary education			
		Starting salary/ minimum training	Salary after 15 years of experience / minimum training	Salary at top of scale/ minimum training	Ratio of salary after 15 years of experience to GDP per capita	Starting salary/ minimum training	Salary after 15 years of experience / minimum training	Salary at top of scale/ minimum training	Ratio of salary after 15 years of experience to GDP per capita	Starting salary/ minimum training	Salary after 15 years of experience / minimum training	Salary at top of scale/ minimum training	Ratio of salary after 15 years of experience to GDP per capita
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
OECD countries	**Australia**	29 712	43 991	43 991	1.36	30 062	44 139	44 139	1.36	30 062	44 139	44 139	1.36
	Austria	25 446	33 644	50 782	1.03	26 448	36 000	53 149	1.11	26 801	37 035	56 307	1.14
	Belgium (Fl.)	28 168	39 050	47 279	1.24	28 168	39 463	48 118	1.26	34 959	50 476	60 679	1.61
	Belgium (Fr.)	26 335	36 643	44 500	1.17	26 547	37 471	45 903	1.19	33 084	48 200	58 140	1.54
	Czech Republic	15 222	19 994	25 291	1.07	15 222	19 994	25 291	1.07	15 259	20 800	26 356	1.12
	Denmark	33 693	37 925	37 925	1.18	33 693	37 925	37 925	1.18	33 092	46 500	46 500	1.45
	England	28 769	42 046	42 046	1.36	28 769	42 046	42 046	1.36	28 769	42 046	42 046	1.36
	Finland	27 922	32 541	32 541	1.09	32 407	38 318	38 318	1.29	34 825	43 526	43 526	1.46
	France	23 112	31 090	45 872	1.07	25 570	33 548	48 451	1.16	25 928	33 906	48 845	1.17
	Germany	37 718	46 935	48 938	1.63	39 132	48 167	50 284	1.67	42 321	51 883	54 211	1.80
	Greece	23 700	28 646	34 540	1.33	23 700	28 646	34 540	1.33	23 700	28 646	34 540	1.33
	Hungary	11 340	14 512	19 348	0.91	11 340	14 512	19 348	0.91	12 789	17 913	23 930	1.12
	Iceland	19 350	22 396	24 948	0.69	19 350	22 396	24 948	0.69	24 948	30 605	32 153	0.94
	Ireland	26 674	44 185	50 071	1.22	27 587	44 185	50 071	1.22	27 587	44 185	50 071	1.22
	Italy	23 753	28 731	34 951	1.05	25 595	31 291	38 370	1.15	25 595	32 168	40 113	1.18
	Japan	24 469	45 753	58 373	1.55	24 469	45 753	58 373	1.55	24 469	45 761	60 104	1.55
	Korea	28 569	48 875	78 472	2.37	28 449	48 754	78 351	2.36	28 449	48 754	78 351	2.36
	Luxembourg	46 306	63 769	94 380	1.06	66 712	83 390	115 899	1.39	66 712	83 390	115 899	1.39
	Mexico	12 665	16 669	27 606	1.64	16 239	21 192	34 979	2.09	m	m	m	m
	Netherlands	31 235	40 588	45 341	1.23	32 380	44 669	49 760	1.35	32 703	59 762	65 910	1.81
	New Zealand	18 641	36 063	36 063	1.47	18 641	36 063	36 063	1.47	18 641	36 063	36 063	1.47
	Norway	29 618	35 420	36 679	0.87	29 618	35 420	36 679	0.87	29 618	35 420	36 679	0.87
	Poland	6 394	10 263	10 652	0.83	6 394	10 263	10 652	0.83	6 394	10 263	10 652	0.83
	Portugal	19 189	31 635	49 644	1.75	19 189	31 635	49 644	1.75	19 189	31 635	49 644	1.75
	Scotland	28 603	45 616	45 616	1.48	28 603	45 616	45 616	1.48	28 603	45 616	45 616	1.48
	Slovak Republic	m	m	m	m	m	m	m	m	m	m	m	m
	Spain	31 381	36 342	45 334	1.40	35 098	40 663	50 162	1.57	35 792	41 552	51 225	1.61
	Sweden	25 152	29 522	33 849	0.95	25 963	30 420	34 477	0.98	26 991	31 772	36 575	1.02
	Switzerland	39 285	51 956	62 260	1.50	42 445	55 115	66 189	1.59	53 340	69 061	81 462	1.99
	Turkey	16 678	18 416	20 768	2.44	a	a	a	a	15 683	17 421	19 773	2.30
	United States	32 703	39 740	m	1.00	31 439	40 088	m	1.01	31 578	40 043	m	1.01
	OECD average	*25 727*	*35 099*	*42 347*	*1.30*	*27 560*	*37 488*	*45 277*	*1.32*	*28 892*	*40 295*	*48 197*	*1.42*
	EU19 average	*26 006*	*34 684*	*41 945*	*1.20*	*27 926*	*36 911*	*44 401*	*1.26*	*29 055*	*40 064*	*48 039*	*1.37*
Partner countries	**Brazil**	m	m	m	m	m	m	m	m	m	m	m	m
	Chile	10 922	12 976	17 500	1.11	10 922	12 976	17 500	1.11	10 922	13 579	18 321	1.16
	Israel	13 608	16 695	23 235	0.73	13 608	16 695	23 235	0.73	13 608	16 695	23 235	0.73

Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

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Table D3.1. *(continued)*
Teachers' salaries (2004)
Annual statutory teachers' salaries in public institutions at starting salary, after 15 years of experience and at the top of the scale, by level of education, in equivalent US dollars converted using PPPs

		Ratio of salary at top of scale to starting salary			Years from starting to top salary (lower secondary education)	Salary per hour of net contact (teaching) time after 15 years of experience			Ratio of salary per teaching hour of upper secondary to primary teachers (after 15 years of experience)
		Primary education	Lower secondary education	Upper secondary education		Primary education	Lower secondary education	Upper secondary education	
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
OECD countries	Australia	1.48	1.47	1.47	9	50	55	55	1.08
	Austria	2.00	2.01	2.10	34	42	58	62	1.45
	Belgium (Fl.)	1.68	1.71	1.74	27	49	55	75	1.54
	Belgium (Fr.)	1.69	1.73	1.76	27	51	52	73	1.43
	Czech Republic	1.66	1.66	1.73	32	25	31	34	1.37
	Denmark	1.13	1.13	1.41	8	59	59	83	1.40
	England	1.46	1.46	1.46	5	m	m	m	m
	Finland	1.17	1.18	1.25	20	48	64	79	1.65
	France	1.98	1.89	1.88	34	34	53	55	1.63
	Germany	1.30	1.28	1.28	28	59	64	74	1.24
	Greece	1.46	1.46	1.46	33	37	57	60	1.63
	Hungary	1.71	1.71	1.87	40	19	26	32	1.73
	Iceland	1.29	1.29	1.29	18	34	34	55	1.59
	Ireland	1.88	1.82	1.82	22	47	60	60	1.29
	Italy	1.47	1.50	1.57	35	40	53	54	1.37
	Japan	2.39	2.39	2.46	31	71	86	98	1.39
	Korea	2.75	2.75	2.75	37	59	86	89	1.50
	Luxembourg	2.04	1.74	1.74	30	82	130	130	1.58
	Mexico	2.18	2.15	m	14	21	20	m	m
	Netherlands	1.45	1.54	2.02	18	44	60	80	1.83
	New Zealand	1.93	1.93	1.93	8	37	37	38	1.04
	Norway	1.24	1.24	1.24	20	48	54	68	1.42
	Poland	1.67	1.67	1.67	10	15	15	15	1.00
	Portugal	2.59	2.59	2.59	26	36	48	54	1.50
	Scotland	1.59	1.59	1.59	6	48	51	51	1.06
	Slovak Republic	m	m	m	m	m	m	m	m
	Spain	1.44	1.43	1.43	39	41	70	74	1.78
	Sweden	m	m	m	a	m	m	m	m
	Switzerland	1.58	1.56	1.53	25	m	m	m	m
	Turkey	1.25	a	1.26	a	29	a	31	1.07
	United States	m	m	m	m	w	w	w	w
	OECD average	*1.69*	*1.70*	*1.71*	*24*	*43*	*55*	*63*	*1.42*
	EU19 average	*1.65*	*1.64*	*1.70*	*25*	*43*	*56*	*64*	*1.47*
Partner countries	Brazil	m	m	m	m	m	m	m	m
	Chile	1.60	1.60	1.68	m	m	m	m	m
	Israel	1.71	1.71	1.71	36	16	21	25	1.54

Note: Ratio of salary at the top of the scale has not been calculated for Sweden because the underlying salaries are estimates derived from actual rather than statutory salaries.
Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

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Table D3.2a.

Adjustments to base salary for teachers in public institutions (2004)

Types of criteria to adjust base salary awarded to teachers in public institutions

		Criteria based on teaching conditions/ responsibilities						
		Management responsibilities in addition to teaching duties	Teaching more classes or hours than required by full-time contract	Special tasks (career guidance or counselling)	Teaching in a disadvantaged, remote or high cost area (location allowance)	Special activities (e.g. sports and drama clubs, homework clubs, summer school etc.)	Teaching students with special educational needs (in regular schools)	Teaching courses in a particular field
OECD countries	Australia	■	■	■	■		■	
	Austria	■	■	■		■		
	Belgium (Fl.)		■					
	Belgium (Fr.)			■				
	Czech Republic	■	■				■	
	Denmark	■	■	■		■		■
	England	■			■		■	■
	Finland	■	■	■	■	■		
	France	■	■	■	■	■	■	
	Germany	■	■					
	Greece		■	■	■			
	Hungary	■	■	■	■	■	■	■
	Iceland	■	■	■	■	■	■	
	Ireland	■			■			
	Italy	■	■	■	■	■		
	Japan	■	■		■	■	■	
	Korea	■	■		■		■	
	Luxembourg		■	■		■	■	
	Mexico	■	■	■	■			■
	Netherlands						■	
	New Zealand	■		■	■	■	■	■
	Norway	■	■	■	■			■
	Poland	■	■			■	■	
	Portugal	■	■	■		■	■	
	Scotland				■			
	Slovak Republic		■					
	Spain	■		■	■			
	Sweden	■						
	Switzerland	■	■	■		■	■	
	Turkey		■	■	■	■		
	United States	■			■	■	■	■
Partner country	Israel	■	■	■	■		■	

Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

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Table D3.2a. *(continued)*

Adjustments to base salary for teachers in public institutions (2004)

Types of criteria to adjust base salary awarded to teachers in public institutions

		Criteria related to teachers' qualifications, training and performance						Criteria based on demography		
		Holding an initial educational qualification higher than the minimum qualification required to enter the teaching profession	Holding a higher than minimum level of teacher certification or training obtained during professional life	Outstanding performance in teaching	Successful completion of professional development activities	Reaching high scores in the qualification examination	Holding an educational qualification in multiple subjects	Family status (married, number of children)	Age (independent of years of teaching experience)	Other
OECD countries	Australia	■	■					■		■
	Austria							■	■	■
	Belgium (Fl.)		■							■
	Belgium (Fr.)									■
	Czech Republic			■					■	
	Denmark	■	■	■	■		■			
	England	■		■						
	Finland	■		■						■
	France									
	Germany							■	■	
	Greece	■	■					■		
	Hungary	■	■	■	■		■		■	■
	Iceland	■	■		■				■	■
	Ireland	■	■			■				
	Italy							■		
	Japan							■		■
	Korea							■		
	Luxembourg		■		■			■	■	
	Mexico	■	■	■	■	■				■
	Netherlands									
	New Zealand		■	■	■		■			■
	Norway	■	■	■						
	Poland	■	■		■				■	■
	Portugal	■	■	■	■			■		
	Scotland									
	Slovak Republic			■						
	Spain				■			■		
	Sweden			■						
	Switzerland							■		■
	Turkey	■		■	■			■		■
	United States	■	■	■						
Partner country	Israel	■	■		■			■	■	

Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

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Table D3.2b.

Adjustments to base salary for teachers in public institutions made by school principal (2004)

Types of criteria to adjust base salary awarded to teachers in public institutions

		Criteria based on teaching conditions/ responsibilities						
		Management responsibilities in addition to teaching duties	Teaching more classes or hours than required by full-time contract	Special tasks (career guidance or counselling)	Teaching in a disadvantaged, remote or high cost area (location allowance)	Special activities (*e.g.* sports and drama clubs, homework clubs, summer school etc.)	Teaching students with special educational needs (in regular schools)	Teaching courses in a particular field
OECD countries	Australia	■	■	■			■	
	Austria	■	■	■		■		
	Belgium (Fl.)							
	Belgium (Fr.)							
	Czech Republic	■					■	
	Denmark	■		■		■		■
	England	■			■		■	■
	Finland		■	■		■		
	France							
	Germany							
	Greece		■					
	Hungary	■		■		■	■	■
	Iceland	■	■	■		■	■	
	Ireland							
	Italy	■		■		■		
	Japan							
	Korea							
	Luxembourg							
	Mexico							
	Netherlands							
	New Zealand	■		■		■		■
	Norway							
	Poland							
	Portugal	■				■		
	Scotland							
	Slovak Republic		■					
	Spain							
	Sweden	■						
	Switzerland							
	Turkey							
	United States							
Partner country	Israel	■		■			■	

Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

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Table D3.2b. *(continued)*

Adjustments to base salary for teachers in public institutions made by school principal (2004)

Types of criteria to adjust base salary awarded to teachers in public institutions

		Criteria related to teachers' qualifications, training and performance						Criteria based on demography		
		Holding an initial educational qualification higher than the minimum qualification required to enter the teaching profession	Holding a higher than minimum level of teacher certification or training obtained during professional life	Outstanding performance in teaching	Successful completion of professional development activities	Reaching high scores in the qualification examination	Holding an educational qualification in multiple subjects	Family status (married, number of children)	Age (independent of years of teaching experience)	Other
OECD countries	Australia									
	Austria									
	Belgium (Fl.)									
	Belgium (Fr.)									
	Czech Republic			■					■	
	Denmark	■	■	■	■		■			
	England	■		■						
	Finland			■						■
	France									
	Germany									
	Greece									
	Hungary			■						■
	Iceland									
	Ireland									
	Italy									
	Japan									
	Korea									
	Luxembourg									
	Mexico	■			■					■
	Netherlands									
	New Zealand			■	■		■			
	Norway									
	Poland									
	Portugal									
	Scotland									
	Slovak Republic									
	Spain									
	Sweden			■						
	Switzerland									
	Turkey									
	United States									
Partner country	Israel									

Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

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D3

Table D3.2c.
Adjustments to base salary for teachers in public institutions made by local or regional authority (2004)
Types of criteria to adjust base salary awarded to teachers in public institutions

		Criteria based on teaching conditions/ responsibilities						
		Management responsibilities in addition to teaching duties	Teaching more classes or hours than required by full-time contract	Special tasks (career guidance or counselling)	Teaching in a disadvantaged, remote or high cost area (location allowance)	Special activities (e.g. sports and drama clubs, homework clubs, summer school etc.)	Teaching students with special educational needs (in regular schools)	Teaching courses in a particular field
OECD countries	**Australia**	■	■	■	■		■	
	Austria	■						
	Belgium (Fl.)							
	Belgium (Fr.)							
	Czech Republic	■						
	Denmark	■						
	England							
	Finland	■			■			
	France					■		
	Germany	■	■					
	Greece							
	Hungary							
	Iceland	■	■	■	■	■	■	
	Ireland							
	Italy			■				
	Japan	■	■		■	■	■	
	Korea							
	Luxembourg							
	Mexico			■				
	Netherlands							
	New Zealand							
	Norway	■						■
	Poland	■				■	■	
	Portugal							
	Scotland							
	Slovak Republic							
	Spain	■		■	■			
	Sweden							
	Switzerland	■	■	■		■	■	
	Turkey							
	United States	■			■	■		■
Partner country	**Israel**	■	■	■	■			

Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/083407611234

Table D3.2c. *(continued)*

Adjustments to base salary for teachers in public institutions made by local or regional authority (2004)

Types of criteria to adjust base salary awarded to teachers in public institutions

		Criteria related to teachers' qualifications, training and performance						Criteria based on demography		
		Holding an initial educational qualification higher than the minimum qualification required to enter the teaching profession	Holding a higher than minimum level of teacher certification or training obtained during professional life	Outstanding performance in teaching	Successful completion of professional development activities	Reaching high scores in the qualification examination	Holding an educational qualification in multiple subjects	Family status (married, number of children)	Age (independent of years of teaching experience)	Other
OECD countries	**Australia**	■	■					■		■
	Austria									
	Belgium (Fl.)									
	Belgium (Fr.)									
	Czech Republic									
	Denmark									
	England									
	Finland	■		■						
	France									
	Germany								■	
	Greece									
	Hungary									
	Iceland	■	■		■				■	■
	Ireland									
	Italy									
	Japan							■		■
	Korea									
	Luxembourg									
	Mexico	■	■		■					■
	Netherlands									
	New Zealand									
	Norway		■	■						
	Poland									■
	Portugal			■						
	Scotland									
	Slovak Republic			■						
	Spain				■			■		
	Sweden									
	Switzerland									■
	Turkey									
	United States	■	■	■						
Partner country	**Israel**									

Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/083407611234

Table D3.2d.
Adjustments to base salary for teachers in public institutions made by the national authority (2004)
Types of criteria to adjust base salary awarded to teachers in public institutions

		Criteria based on teaching conditions/ responsibilities						
		Management responsibilities in addition to teaching duties	Teaching more classes or hours than required by full-time contract	Special tasks (career guidance or counselling)	Teaching in a disadvantaged, remote or high cost area (location allowance)	Special activities (e.g. sports and drama clubs, homework clubs, summer school etc.)	Teaching students with special educational needs (in regular schools)	Teaching courses in a particular field
OECD countries	Australia							
	Austria	■	■	■		■		
	Belgium (Fl.)		■					
	Belgium (Fr.)			■				
	Czech Republic	■	■				■	
	Denmark	■	■	■				
	England				■			
	Finland	■	■	■	■	■		
	France	■	■	■	■		■	
	Germany							
	Greece			■	■			
	Hungary	■	■	■	■		■	
	Iceland	■	■	■		■	■	
	Ireland	■			■			
	Italy		■	■	■			
	Japan							
	Korea	■	■		■		■	
	Luxembourg		■	■		■	■	
	Mexico	■	■	■	■			■
	Netherlands						■	
	New Zealand			■	■		■	■
	Norway	■	■	■	■			
	Poland		■					
	Portugal	■	■	■			■	
	Scotland				■			
	Slovak Republic							
	Spain							
	Sweden							
	Switzerland							
	Turkey		■	■	■	■		
	United States							
Partner country	Israel	■	■	■	■		■	

Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/083407611234

Table D3.2d. *(continued)*

Adjustments to base salary for teachers in public institutions made by the national authority (2004)

Types of criteria to adjust base salary awarded to teachers in public institutions

		Criteria related to teachers' qualifications, training and performance						Criteria based on demography		
		Holding an initial educational qualification higher than the minimum qualification required to enter the teaching profession	Holding a higher than minimum level of teacher certification or training obtained during professional life	Outstanding performance in teaching	Successful completion of professional development activities	Reaching high scores in the qualification examination	Holding an educational qualification in multiple subjects	Family status (married, number of children)	Age (independent of years of teaching experience)	Other
OECD countries	Australia									
	Austria							■	■	■
	Belgium (Fl.)		■							■
	Belgium (Fr.)									■
	Czech Republic								■	
	Denmark									
	England									
	Finland	■		■						■
	France									
	Germany							■	■	
	Greece	■	■					■		
	Hungary	■	■		■		■		■	■
	Iceland	■	■		■				■	■
	Ireland	■	■			■				
	Italy							■		
	Japan									
	Korea							■		
	Luxembourg		■		■			■	■	
	Mexico	■	■	■	■	■				
	Netherlands									
	New Zealand		■							■
	Norway	■	■							
	Poland	■	■		■				■	
	Portugal	■	■		■			■		
	Scotland									
	Slovak Republic									
	Spain									
	Sweden									
	Switzerland							■		
	Turkey	■		■	■			■		■
	United States									
Partner country	Israel	■	■		■			■	■	

Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/083407611234

Table D3.3.
Change in teachers' salaries (1996 and 2004)
Index of change[1] between 1996 and 2004 in teachers' salaries at starting salary, after 15 years of experience and at the top of the salary scale, by level of education, converted to 2004 price levels using GDP deflators (1996=100)

		Primary education			Lower secondary education			Upper secondary education, general programmes		
		Starting salary/ minimum training	Salary after 15 years of experience/ minimum training	Salary at top of scale/ minimum training	Starting salary/ minimum training	Salary after 15 years of experience/ minimum training	Salary at top of scale/ minimum training	Starting salary/ minimum training	Salary after 15 years of experience/ minimum training	Salary at top of scale/ minimum training
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
OECD countries	Australia	130	105	105	131	106	106	131	106	106
	Austria	105	108	104	106	110	102	101	104	96
	Belgium (Fl.)[2]	106	109	111	104	104	104	104	104	104
	Belgium (Fr.)[2]	99	103	105	98	99	99	98	99	99
	Czech Republic	w	w	w	w	w	w	w	w	w
	Denmark	122	113	110	122	113	110	110	109	104
	England	123	107	107	123	107	107	123	107	107
	Finland	135	119	115	139	118	113	145	128	121
	France	w	w	w	w	w	w	w	w	w
	Germany	w	w	w	w	w	w	w	w	w
	Greece	108	110	112	105	106	109	105	106	109
	Hungary	198	187	193	198	187	193	175	186	198
	Iceland	m	m	m	m	m	m	m	m	m
	Ireland	106	114	109	104	107	108	104	107	108
	Italy	112	112	113	111	111	111	111	111	111
	Japan	105	115	102	105	115	102	105	115	102
	Korea	w	w	w	w	w	w	w	w	w
	Luxembourg	m	m	m	m	m	m	m	m	m
	Mexico	135	134	136	136	140	143	m	m	m
	Netherlands	106	113	103	105	115	103	105	110	102
	New Zealand	102	116	116	102	116	116	102	116	116
	Norway	122	119	122	122	119	122	112	116	112
	Poland	m	m	m	m	m	m	m	m	m
	Portugal	104	114	103	104	114	103	104	114	103
	Scotland	119	114	114	119	114	114	119	114	114
	Slovak Republic	m	m	m	m	m	m	m	m	m
	Spain	97	96	93	m	m	m	95	94	93
	Sweden	w	w	w	w	w	w	w	w	w
	Switzerland	99	98	102	m	m	m	m	m	m
	Turkey	w	w	w	a	a	a	w	w	w
	United States	m	m	m	m	m	m	m	m	m
Partner country	Israel	m	m	m	m	m	m	m	m	m

1. The index is calculated as teacher salary 2004 in national currency * 100/Teacher salary 1996 in national currency * GDP deflator 2004 (1996=100). See Annex 2 for statistics on GDP deflators and salaries in national currencies in 1996 and 2004.
2. The data for Belgium in 1996 are based on Belgium as a whole.
Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/083407611234

INDICATOR D4

TEACHING TIME AND TEACHERS' WORKING TIME

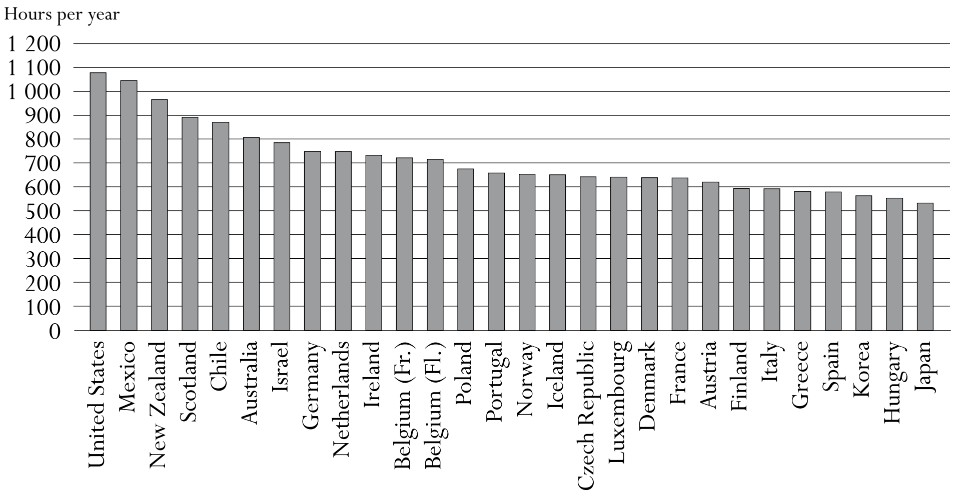
This indicator focuses on the statutory working time of teachers at different levels of education as well as their statutory teaching time. Although working time and teaching time only partly determine the actual workload of teachers, they do give some valuable insights into differences among countries in what is demanded of teachers. Together with teachers' salaries (see Indicator D3) and average class size (see Indicator D2), this indicator presents some key measures of the working conditions of teachers.

Key results

Chart D4.1. Number of teaching hours per year in lower secondary education (2004)

Net contact time in hours per year in public institutions

The number of teaching hours per year in public lower secondary schools averages 704 hours but ranges from 534 hours per year in Japan to over 1 000 hours in Mexico (1 047 hours) and the United States (1 080 hours).



Countries are ranked in descending order of the number of teaching hours per year in lower secondary education.
Source: OECD. Table D4.1. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/421472785265

Other highlights of this indicator

- The number of teaching hours per year in public primary schools averages 805 hours (10 more than in 2003), but ranges from around 650 hours or less in Denmark, Japan and Turkey to 1 080 hours in the United States.
- The average number of teaching hours in upper secondary general education is 663 hours, but ranges from less than 500 in Japan (466 hours) to more than 1 000 hours in the United States (1 080 hours).
- The composition, in terms of days, weeks and hours per day, of teachers' annual teaching time varies considerably. For instance, while teachers in Denmark teach for 42 weeks in the year (at all ISCED levels) compared with 36 weeks per year in Iceland, the total teaching time (in hours) for teachers in Iceland is greater than for teachers in Denmark.
- Regulations of teachers' working time also vary. In most countries, teachers are formally required to work a specific number of hours; in others, teaching time is only specified as the number of lessons per week.

Policy context

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 affects the financial resources which countries need to invest in education. Teaching hours and the extent of non-teaching duties are also important elements of teachers' working conditions and are related to the attractiveness of the teaching profession.

The proportion of working time spent teaching can be interpreted as a measure of teachers' workload, thus providing information on the amount of time available for other activities such as lesson preparation, correction, in-service training and staff meetings.

Evidence and explanations

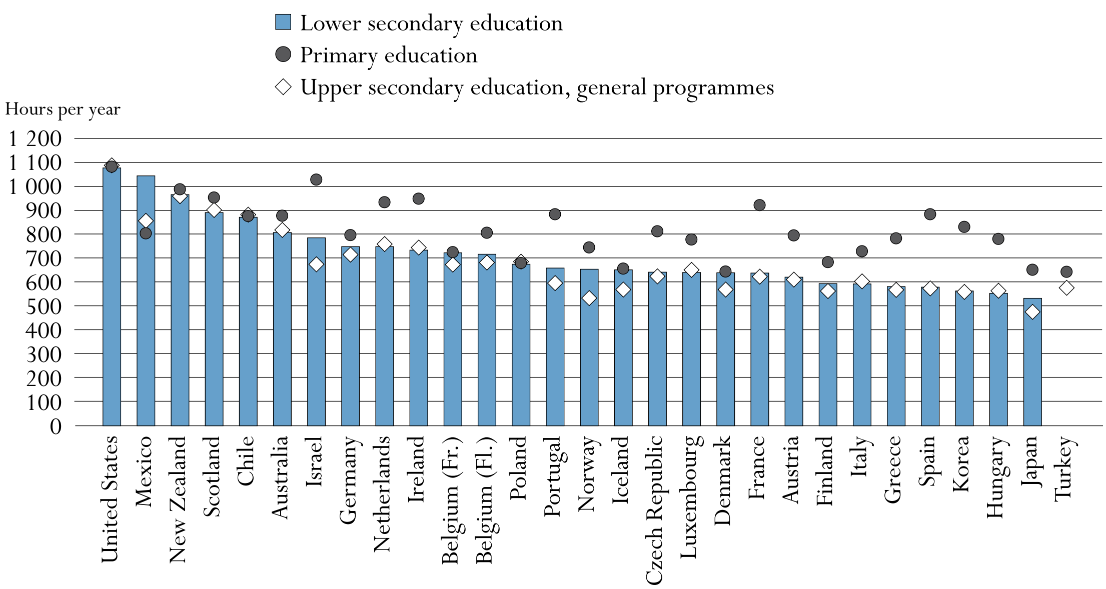
Teaching time in primary education

In both primary and secondary education, countries vary in the number of teaching hours per year required of the average public school teacher. Primary education teaching hours are usually higher than secondary education.

In OECD countries, a primary school teacher teaches an average of 805 hours per year (10 more than last year), but this varies from 650 hours or less in Denmark, Japan and Turkey to 900 hours or more in France, Ireland, the Netherlands, New Zealand and Scotland and over 1 000 hours in the United States and in the partner country Israel (Chart D4.2 and Table D4.1) (see Annex 3 for details at *www.oecd.org/edu/eag2006*).

Chart D4.2. Number of teaching hours per year, by level of education (2004)

Net contact time in hours per year in public institutions



Countries are ranked in descending order of the number of teaching hours per year in lower secondary education.
Source: OECD. Table D4.1. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/421472785265

Teaching time can be distributed quite differently throughout the year. For instance, Korea is the only country in which primary teachers teach for 6 days per week and yet total annual teaching time is around the average because the hours taught per day is less than average. Denmark and Iceland provide an interesting contrast in this respect as both countries have similar annual net teaching time in hours (Chart D4.4). However, teachers in Denmark must complete in principle 200 days of instruction in 42 weeks, compared to 175 days in 36 weeks in Iceland. The number of hours taught per day of instruction provides the explanation for this situation.

Teachers in Iceland must complete 25 less days of instruction than teachers in Denmark, but these days would each include, on average, 3.7 hours of teaching compared to 3.2 in Denmark. Teachers in Iceland must provide just over half-an-hour more teaching time per day of instruction than teachers in Denmark. Therefore, a relatively small difference in teaching time per day can lead to a substantial difference in the number of days of instruction per year teachers must complete.

Teaching time in secondary education

In lower secondary education in OECD countries, teachers teach an average of 704 hours per year. The teaching load ranges from less than 600 hours in Finland (595 hours), Greece (583 hours), Hungary (555 hours), Italy (594 hours), Japan (534 hours), Korea (565 hours) and Spain (581 hours) to more than 1 000 hours in Mexico (1 047 hours) and the United States (1 080 hours) (Chart D4.2 and Table D4.1).

The upper secondary, general education teaching load is usually lighter than in lower secondary education. A teacher of general subjects has an average statutory teaching load of 663 hours per year among OECD countries. Teaching loads range from less than 500 hours in Japan to more than 800 hours in Australia, Mexico and Scotland (and partner country Chile), over 900 hours in New Zealand and over 1 000 hours in the United States (Chart D4.2 and Table D4.1).

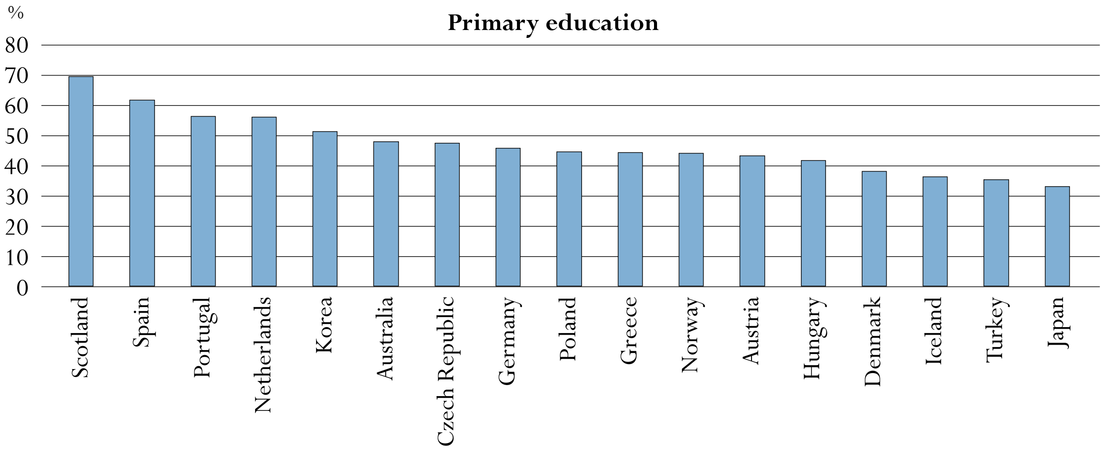
As is the case for primary teachers, the number of hours of teaching time and the number of days of instruction vary across countries. As a consequence, the average hours per day that teachers teach vary widely, ranging at the lower secondary level from three or less hours per day in Hungary and Korea to five hours or more per day in Mexico and New Zealand and six hours per day in the United States. Similarly, at the upper secondary general level, teachers in Denmark, Finland, Greece, Hungary, Korea and Norway teach for three hours or less per day, compared to five hours per day in New Zealand and six hours per day in the United States. Korea provides an interesting example of the differences in the organisation of teachers' work. In Korea, teachers must complete the highest number of days of instruction (220 days) but have the third lowest required number of hours of teaching time for lower secondary and upper secondary teachers (Chart D4.4). The inclusion of breaks between classes as teaching time, by some countries but not others may explain some of these differences.

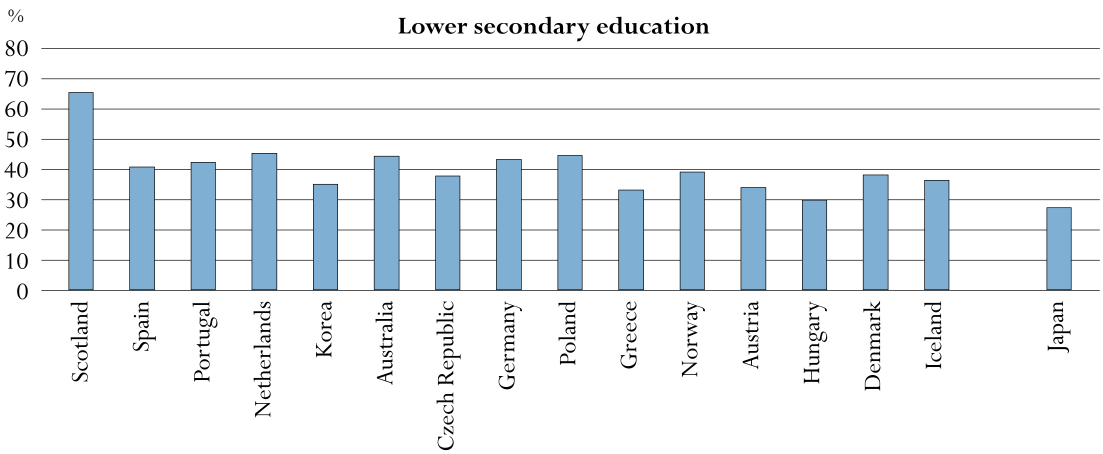
Teaching time contrasts between levels

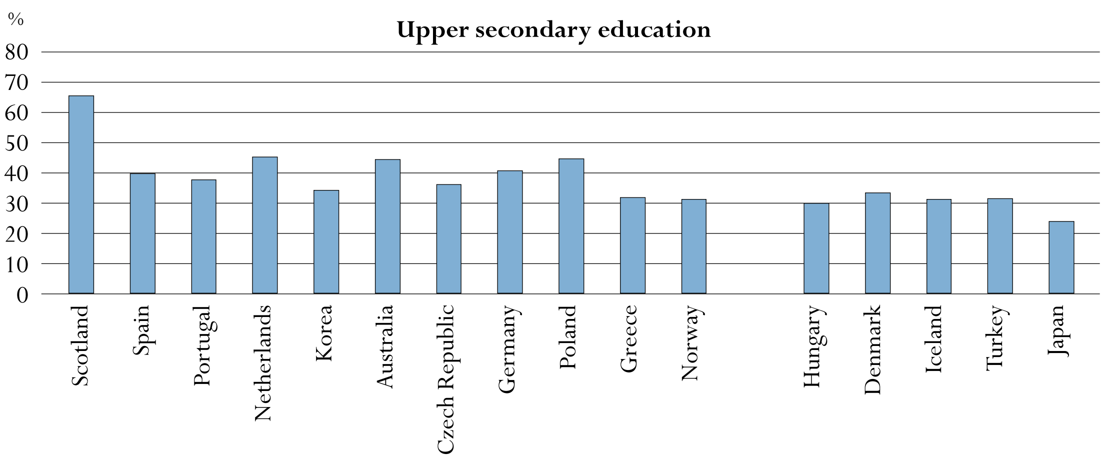
In France, Hungary, Korea, Portugal, Spain and partner country Israel, a primary teacher is required to teach over 220 hours more than a lower secondary teacher and, except in Hungary, 250 hours more than an upper secondary teacher (general programmes). By contrast, there is little or no difference in Belgium (French Community), Denmark, Iceland, New Zealand, Poland

Chart D4.3. Percentage of teachers' working time spent teaching, by level of education (2004)

Net teaching time as a percentage of total statutory working time







Countries are ranked in descending order of the percentage of teachers' working time spent teaching in primary education.
Source: OECD. Table D4.1. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/421472785265

and the United States, and the partner country Chile, between primary and secondary teachers in the number of required instruction hours they must complete. Mexico is the only OECD country that has secondary teachers who complete a significantly greater number of hours of instruction than primary teachers. In Mexico, required teaching hours for lower secondary teachers is just over 30% greater than for primary teachers. Upper secondary teachers in Mexico have a lower number of hours teaching than lower secondary teachers but their required teaching hours are still 6% higher than for primary teachers (Chart D4.1). This is largely because of a heavier daily teaching load.

In interpreting the differences in teaching hours between countries, it should be noted that net contact time, as used for the purpose of this indicator, does not necessarily correspond to teaching load. Whereas contact time in itself is a substantial component, the preparation for classes and necessary follow-up (including correcting students' work) also need to be included in comparisons of teaching loads. Other elements of teaching load (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 when establishing average teaching load. These factors can often only be assessed at the school level.

Teachers' working time

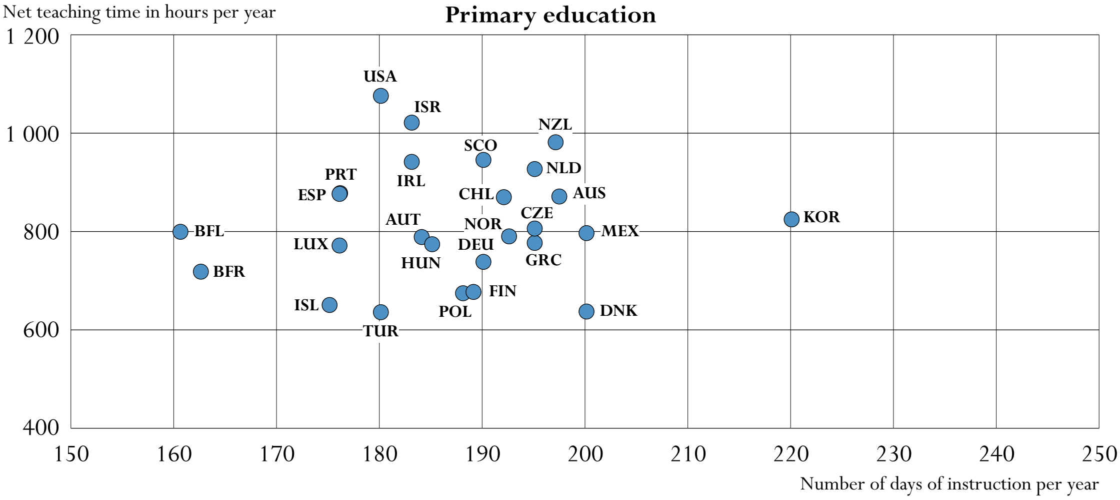
The regulation of teachers' working time varies widely among countries. While some countries formally regulate contact time only, others establish working hours as well. In some countries, time is allocated for teaching and non-teaching activities within the formally established working time.

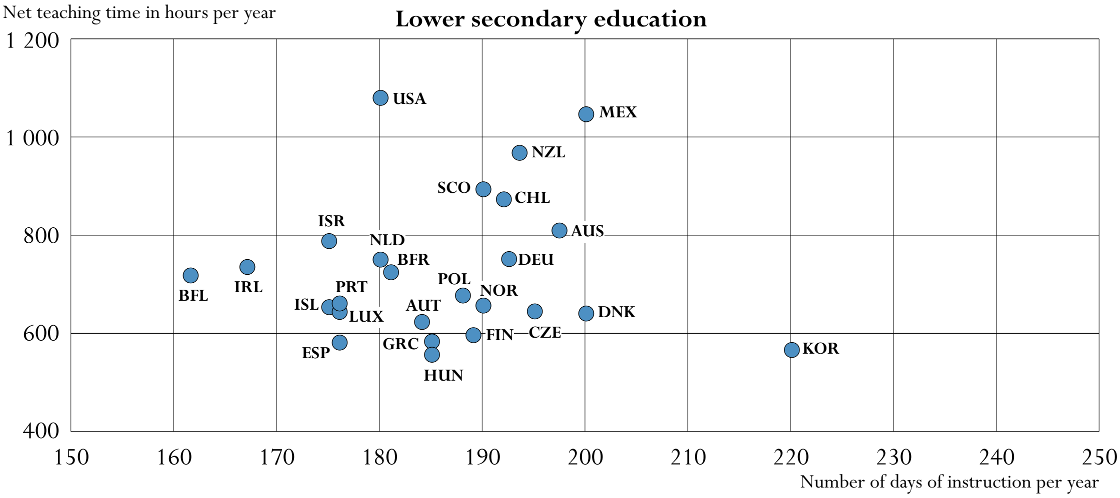
In most countries, teachers are formally required to work a specified number of hours per week to earn their full-time salary; this includes teaching and non-teaching time. Within this framework, however, countries differ in the allocation of time to teaching and non-teaching activities (Chart D4.3). Typically, the number of hours for teaching is specified, but some countries also regulate at the national level the time that a teacher has to be present in the school.

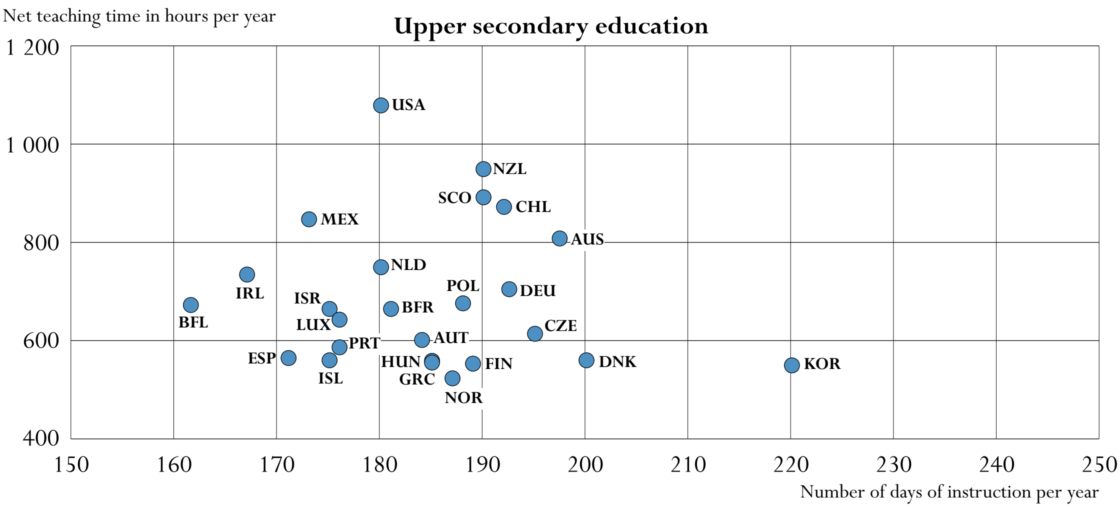
Australia, Belgium (Flemish Community, for primary education), England, Greece, Iceland, Ireland, Italy, Luxembourg, Mexico, Portugal, Spain, Sweden, Turkey and the United States, and the partner country Israel, specify the working time during which teachers are required to be available at school, for both teaching time and non-teaching time. In Greece, legislation requires a reduction of teaching hours in line with years of service. Early-career teachers undertake a teaching time of 21 teaching hours per week. After six years, this is reduced to 19 teaching hours per week and after 12 years, teaching time is reduced to 18 teaching hours per week. Finally, after 20 years of service, teaching time is 16 teaching hours per week, nearly three-quarters that of early career teachers. However, the remaining hours of teachers' working time must be spent within school.

In Austria (primary and lower secondary education), the Czech Republic, Denmark, Germany, Hungary, Japan, Korea, the Netherlands, Norway, Poland and Scotland, the total working time that teachers have to work per year at school or elsewhere is specified (but the split between time spent at school and time spent elsewhere is not specified). In addition, in some countries the number of hours to be spent on non-teaching activities is also (partly) specified. However, it is not specified whether the teachers have to spend the non-teaching hours at school or outside school.

Chart D4.4. Net teaching time in hours by the number of days of instruction (2004)







Note: Please refer to the Reader's Guide for the list of country codes used in this chart.
Source: OECD. Table D4.1. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

StatLink: http://dx.doi.org/10.1787/421472785265

Non-teaching time

In Belgium (French community), Finland, France and New Zealand there are no formal requirements for how much time should be spent on non-teaching duties. However, this does not mean that teachers are totally free in carrying out other tasks. In Austria, provisions concerning teaching time are based on the assumption that the duties of the teacher (including preparing lessons and tests, marking and correcting papers, examinations, and administrative tasks) amount to a total working time of 40 hours per week. In Belgium (French community), the additional non-teaching hours within the school are set at the school level. There are no regulations regarding lesson preparation, correction of tests and marking students' papers, etc. The government defines only the minimum and maximum number of teaching periods (of 50 minutes each) per week at each level of education (Table D4.1).

Definitions and methodologies

Data are from the 2005 OECD-INES Survey on Teachers and the Curriculum and refer to the school year 2003-2004.

Teaching time

Teaching time is defined as the number of hours per year that a full-time teacher teaches a group or class of students according to policy. It is normally calculated as the number of teaching days per annum multiplied by the number of hours a teacher teaches per day (excluding periods of time formally allowed for breaks between lessons or groups of lessons). Some countries, however, provide estimates of teaching time based on survey data.

At the primary level, short breaks between lessons are included if the classroom teacher is responsible for the class during these breaks.

Working time

Working time refers to the normal working hours of a full-time teacher. According to formal policy in a given country, working time can refer to:

- Only the time directly associated with teaching (and other curricular activities for students such as assignments and tests, but excluding annual examinations); or
- The time directly associated with teaching and hours devoted to other activities related to teaching, such as lesson preparation, counselling students, correcting assignments and tests, professional development, meetings with parents, staff meetings and general school tasks.

Working time does not include paid overtime.

Working time in school

Working time in school refers to the time teachers are supposed to spend at work, including teaching and non-teaching time.

Number of teaching weeks and days

The number of teaching weeks refers to the number of weeks of instruction excluding holiday weeks. The number of teaching days is the number of teaching weeks multiplied by the number of days a teacher teaches per week, less the number of days that the school is closed for festivities.

D4

Further references

The following additional material relevant to this indicator is available on the Web at *http://dx.doi.org/10.1787/421472785265:*

- ***Table D4.2. Number of teaching hours per year (1996, 2004)***

Specific notes on definitions and methodologies regarding this indicator for each country are given in Annex 3 (*www.oecd.org/edu/eag2006*).

Table D4.1.
Organisation of teachers' working time (2004)
Number of teaching weeks, teaching days, net teaching hours, and teacher working time over the school year

	Number of weeks of instruction			Number of days of instruction			Net teaching time in hours			Working time required at school in hours			Total statutory working time in hours		
	Primary education	Lower secondary education	Upper secondary education, general programmes	Primary education	Lower secondary education	Upper secondary education, general programmes	Primary education	Lower secondary education	Upper secondary education, general programmes	Primary education	Lower secondary education	Upper secondary education, general programmes	Primary education	Lower secondary education	Upper secondary education, general programmes
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
OECD countries															
Australia	40	40	40	197	197	197	874	809	809	1 215	1 238	1 238	1 824	1 824	1 824
Austria	38	38	38	184	184	184	792	622	602	a	a	a	1 832	1 832	a
Belgium (Fl.)	37	37	37	161	162	162	803	718	673	927	a	a	a	a	a
Belgium (Fr.)	37	37	37	163	181	181	722	724	664	a	a	a	a	a	a
Czech Republic	40	40	40	195	195	195	809	644	614	a	a	a	1 704	1 704	1 704
Denmark	42	42	42	200	200	200	640	640	560	m	m	m	1 680	1 680	1 680
England	38	38	38	190	190	190	a	a	a	1 265	1 265	1 265	a	a	a
Finland	38	38	38	189	189	189	680	595	553	a	a	a	a	a	a
France	35	35	35	m	m	m	918	639	614	a	a	a	a	a	a
Germany	40	40	40	193	193	193	793	751	705	a	a	a	1 736	1 736	1 736
Greece	40	38	38	195	185	185	780	583	559	1 500	1 425	1 425	1 762	1 762	1 762
Hungary	37	37	37	185	185	185	777	555	555	a	a	a	1 864	1 864	1 864
Iceland	36	36	36	175	175	175	653	653	560	1 650	1 650	1 720	1 800	1 800	1 800
Ireland	37	33	33	183	167	167	946	735	735	1 036	735	735	a	a	a
Italy	33	33	33	m	m	m	726	594	594	806	674	674	a	a	a
Japan	35	35	35	m	m	m	648	534	466	a	a	a	1 960	1 960	1 960
Korea	37	37	37	220	220	220	828	565	550	a	a	a	1 613	1 613	1 613
Luxembourg	36	36	36	176	176	176	774	642	642	1 022	890	890	a	a	a
Mexico	41	41	36	200	200	173	800	1 047	848	800	1 167	971	a	a	a
Netherlands	40	37	37	195	180	180	930	750	750	a	a	a	1 659	1 659	1 659
New Zealand	39	39	38	197	194	190	985	968	950	a	a	a	a	a	a
Norway	38	38	37	190	190	187	741	656	524	m	m	m	1 680	1 680	1 680
Poland	39	39	39	188	188	188	677	677	677	a	a	a	1 520	1 520	1 520
Portugal	36	36	36	176	176	176	880	660	586	880	660	586	1 561	1 561	1 561
Scotland	38	38	38	190	190	190	950	893	893	a	a	a	1 365	1 365	1 365
Slovak Republic	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
Spain	37	37	36	176	176	171	880	581	564	1 140	1 140	1 140	1 425	1 425	1 425
Sweden	a	a	a	a	a	a	a	a	a	1 360	1 360	1 360	1 767	1 767	1 767
Switzerland	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
Turkey	38	a	38	180	a	180	639	a	567	870	a	756	1 808	a	1 808
United States	36	36	36	180	180	180	1 080	1 080	1 080	1 332	1 368	1 368	m	m	m
OECD average	*38*	*37*	*37*	*187*	*186*	*185*	*805*	*704*	*663*	*1 129*	*1 131*	*1 087*	*1 698*	*1 691*	*1 690*
EU19 average	*38*	*37*	*37*	*185*	*183*	*183*	*804*	*667*	*641*	*1 104*	*1 019*	*1 009*	*1 656*	*1 656*	*1 640*
Partner countries															
Chile	40	40	40	192	192	192	873	873	873	m	m	m	m	m	m
Israel	43	42	42	183	175	175	1 025	788	665	1 221	945	945	a	a	a

Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/421472785265

INDICATOR D5

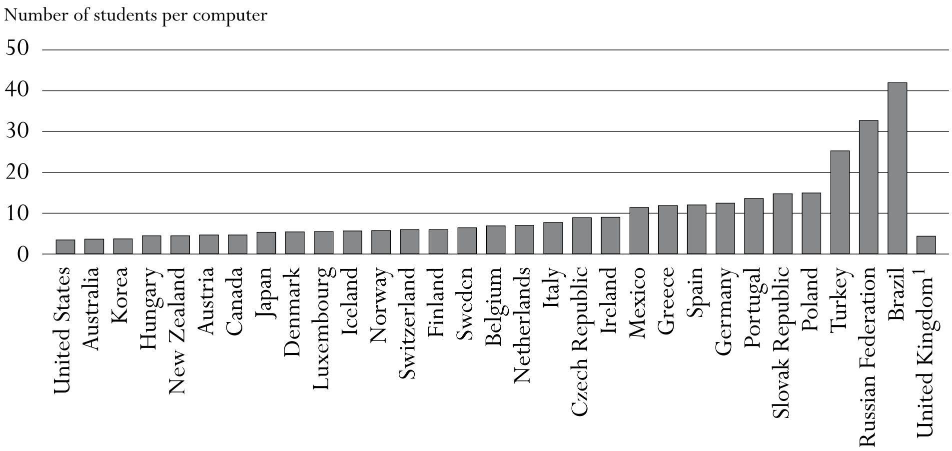
ACCESS TO AND USE OF ICT

This indicator focuses on access to information and communication technology (ICT) in schools across OECD countries, using the PISA 2003 data drawn from the responses of 15-year-old students and their school principals. This data provides information on ICT access for both students and staff within schools. The resulting analysis considers the number of computers in schools per 15-year-old student, the availability of computers to staff, and the perceptions of principals concerning the level of ICT resources in their school.

Key results

Chart D5.1. Number of students per computer (2003)

Virtually all students in OECD countries and partner countries are in schools with at least one computer, but there is substantial variation in the number of computers available to students: around one computer for nearly 3 students in the United States and Australia against one computer for 42 students in the partner country Brazil.



1. Response rate too low to ensure comparability.
Countries are ranked in ascending order of number of students per computer.
Source: OECD PISA 2003 database, Table D5.1.

StatLink: http://dx.doi.org/10.1787/203814216003

Other highlights of this indicator

- On average among OECD countries, the number of computers per student in schools has increased since PISA 2000. This increase has occurred in all but three OECD countries (Denmark, Poland and Portugal).
- There is substantial variation in the level of access students have to computers at schools. Some OECD countries have more than one computer for every five students, while eight OECD countries have, on average, less than one computer per ten students (Germany, Greece, Mexico, Poland, Portugal, the Slovak Republic, Spain and Turkey).
- Even though access to computers is greater at school than at home, 15-year-old students use their computers at home more frequently. Nearly three-quarters of students are using computers at home several times each week.
- Twenty-six per cent of school principals believe that ICT resources are at a level that does not hinder instruction in OECD countries. But there is substantial variation within and between countries. On average across OECD countries, 11% of school principals believe that a lack of ICT resources in their school hinders the instruction of students "a lot".

Policy context

Information technology continues to be an essential element of economic growth in all OECD countries. This is true not just for the growth in the ICT sector, but in the importance of ICT to blue and particularly white-collar employment and across industries as diverse as agriculture, finance, and medicine. For students, ICT skills and abilities will affect employment opportunities as well as how they integrate an increasingly technology-oriented society.

Arguably, students will need a sufficient level of familiarity and mastery of ICT to be successful in their further education and work-life. Following this assumption, schools require sufficient ICT resources for student use and learning, and for teachers and school administrators to operate functionally effective schools and school programmes.

The distribution of resources across and within education systems has long been an important issue for both educational equality and efficiency. Advances in technology in recent years beg the question of whether those without access to ICT resources will be disadvantaged – unable to share the benefits of technological growth. From the perspective of education policy-makers, it is important to consider whether schools in poorer communities provide the ICT resources that are otherwise lacking within the local community.

ICT resources within schools

Computers per student

Across OECD countries, virtually all students attend schools with at least one computer. It is clear that virtually all schools have at least some level of ICT resources. In Australia, Austria, Canada, Hungary, Korea, New Zealand, the United Kingdom and the United States the number of computers per student is more than 0.2, implying five or fewer students per computer. In Germany, Greece, Mexico, Poland, Portugal, the Slovak Republic and Spain, the number of computers per student is less than 0.1, implying 10 or more students per computer. In Turkey and the partner countries Brazil and the Russian Federation there are fewer computers per student, with 25 or more students enrolled at schools per computer (Table D5.1 and Chart D5.1).

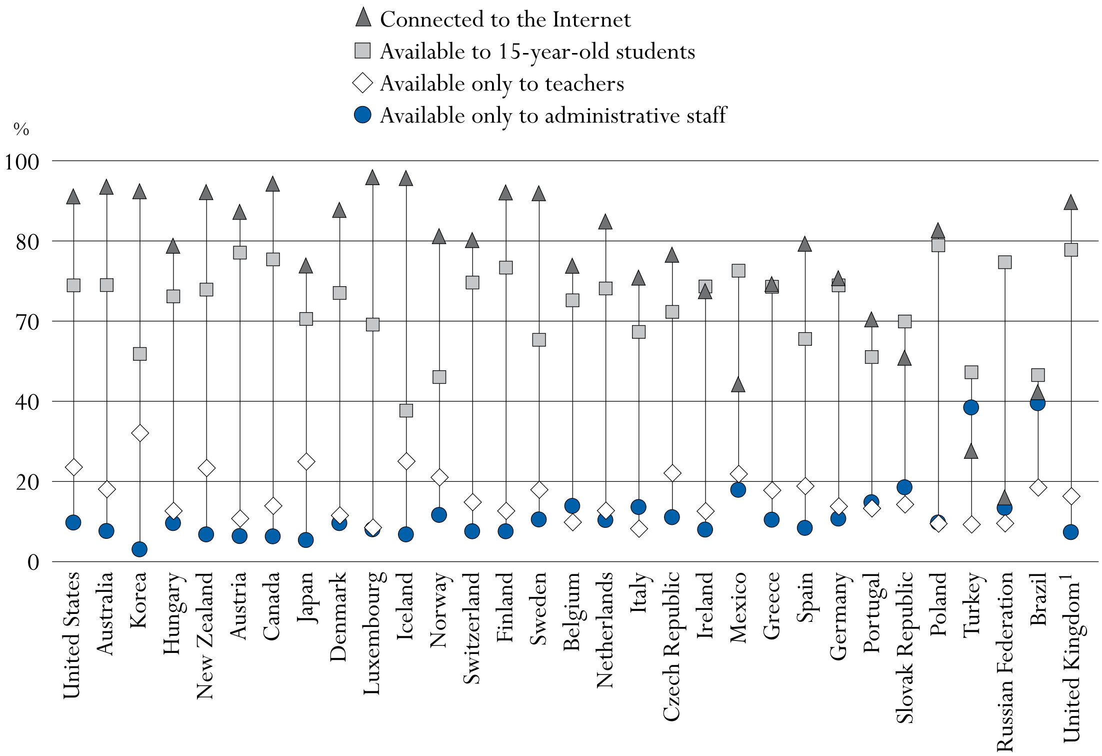
The number of computers per student has increased between 2000 and 2003. In 2000, there were 0.13 computers per student in schools (OECD average). By 2003, this had increased to 0.16 computers per student. This is equivalent to a decrease of nearly 1.5 students per computer in three years so that in 2003 there was 1 computer for every 6.25 students in schools in OECD countries. It is not possible to determine from this data whether this increase in computers is due to policy decisions to increase funding in ICT for schools or because of decreases in the price of computers and other ICT resources between 2000 and 2003.

Growth in the numbers of computers per student has occurred in most OECD countries. However, the number of computers per student has stayed the same in Denmark and has decreased in Norway, Poland and Portugal.

Student, teacher and administrative access to ICT

The number of computers per students illustrates only a portion of the question of the access to ICT. To better comprehend this issue, it is important to analyse who actually has access to the computers. The data used here show the percentage of computers in schools that are available to: 15-year-old students; only to teachers; only to administrative staff (Table D5.1 and Chart D5.2).

Chart D5.2. Percentage of computers available to staff, students and with Internet connection (2003)



1. Response rate too low to ensure comparability.
Countries are ranked in ascending order of number of students per computer.
Source: OECD PISA 2003 database, Table D5.1.

StatLink: http://dx.doi.org/10.1787/203814216003

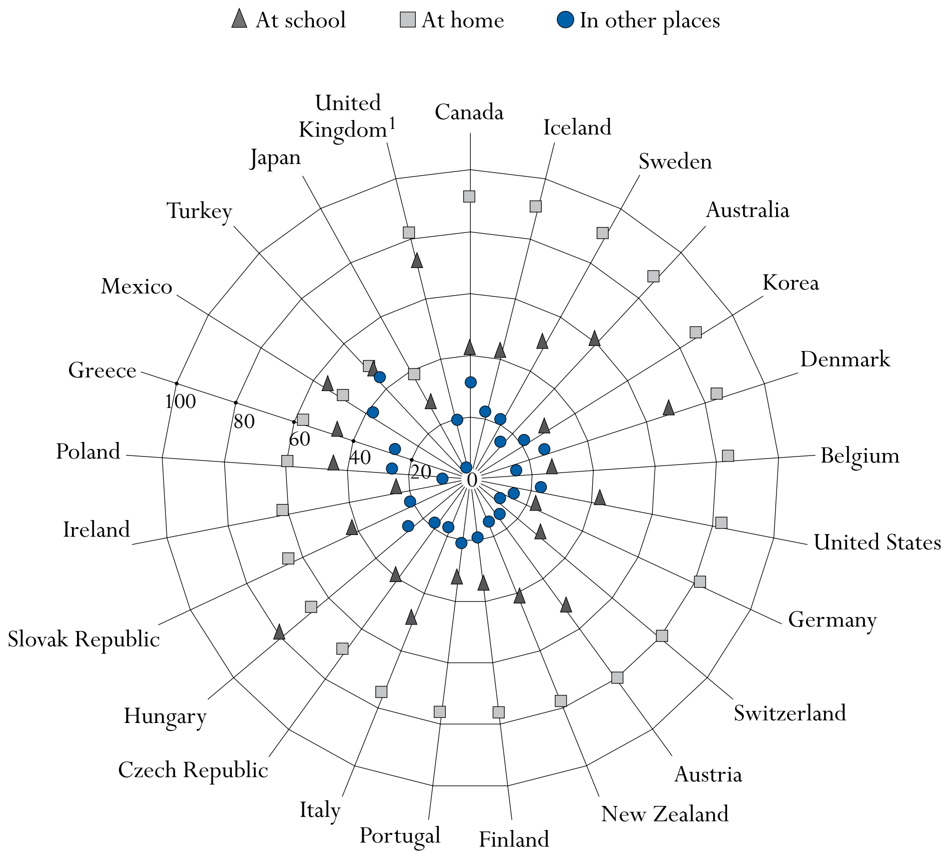
On average, 64% of computers within schools are available to 15-year-old students across OECD countries. Considering that virtually all schools have at least one computer, most 15-year-old students have access to a computer at their school. However, there are substantial differences between countries. In Iceland, Norway, Turkey and partner country Brazil, less than one-half of computers in schools are available to 15-year-old students compared with Austria, Canada and Poland, and the partner country the Russian Federation, where over three-quarters of the school computers are made available. Importantly, this is not strongly correlated with the number of computers in schools. However, there are some countries that have relatively few computers per student and of those computers, relatively few are available to 15-year-old students. For example, Portugal and Spain have fewer computers per student than the OECD average and, of those computers, have a lower percentage available to 15-year-old students.

Students' use of ICT

Even though access to computers is more widespread at school than at home, 15-year-old students use their computers at home more frequently. Nearly three-quarters are using computers at home several times each week. PISA 2003 asked students how often they used a computer at home, at school or at other places. If students responded that they used computers almost every day or a few times each week, they are considered to make frequent use of computers. In all countries except Hungary and Mexico students report that they use computers most frequently at home (rather than at school or in other places) (Chart D5.3).

As students most frequently use computers at their homes, it is important to examine what the level of ICT resources at schools means for students' access to ICT. More comprehensive analysis of this complex issue requires more extensive data and analysis, but there are two important issues that should be considered.

Chart D5.3. Percentage of students frequently using a computer



1. Response rate too low to ensure comparability.
Moving clockwise, countries are ranked in descending order of the percentage of students frequently using computers at home.
Source: OECD PISA 2003 database, Table D5.3.

StatLink: http://dx.doi.org/10.1787/203814216003

First, student access to ICT in schools is of increased importance for those students that have little access at home. On average across OECD countries, 18% of students reported having rare or no use of computers at home (defined as students who reported that they used a computer at their home "less than once a month" or "never"). However, there is considerable variation across countries. In seven OECD countries (Australia, Austria, Belgium, Canada, Denmark, Germany and Switzerland), less than 10% of students reported rare or no use of computers in their homes, and in a further three OECD countries (Iceland, Korea and Sweden), the figures was less than 5%. Conversely, in five OECD countries (the Czech Republic, Hungary, Ireland, Mexico and the Slovak Republic), around one in five students reported rare or no use of computers in their homes, and in a further four OECD countries (Greece, Japan, Poland and Turkey), this rises to more than one in three students. For these countries, increased importance is placed upon access to ICT within schools to counterbalance a lack of use in homes.

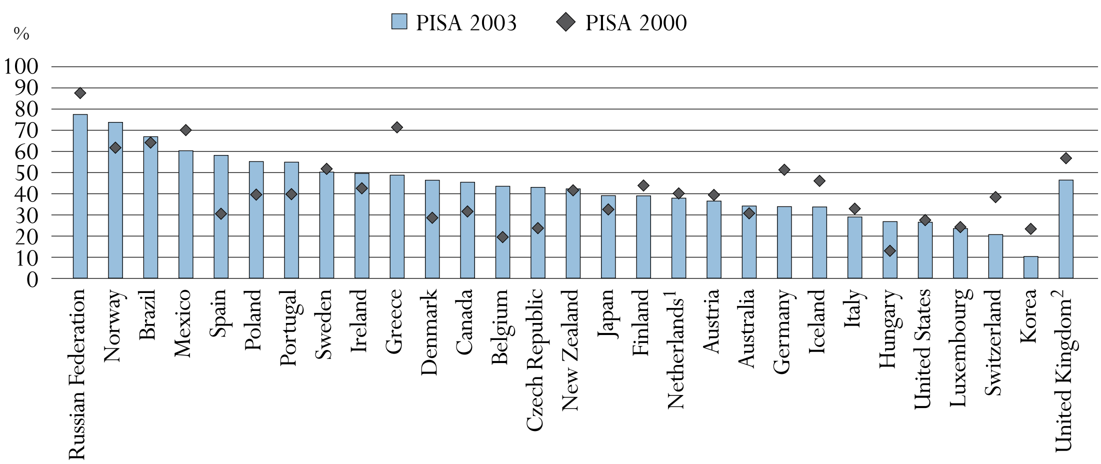
Second, the level of ICT resources in schools is important for the incorporation of ICT into overall student learning and, more specifically, if instruction is hindered by a lack of ICT resources. This is explored in the following sections.

The level of ICT resources and instruction

An important aspect of access to ICT is the issue of the extent to which lack of access hinders instruction, as reported by schools principals. The analysis above looks at the level of ICT within schools and the availability of ICT to students. This is important for issues such as students' familiarity with ICT and students' abilities to utilise ICT in their studies and general life. Analysis of how a lack of ICT resources in schools hinders instruction looks at a combination of two issues: the use of ICT resources in student learning and second, whether those ICT resources are available. The two are linked and have repercussions on the broader issue of student access to ICT.

On average across OECD countries, 26% of principals reported that instruction is not hindered by a lack of ICT resources "at all", 31% reported that it hindered instruction "very little", 33% reported it hindered instruction "to some extent", and 11% said it hindered instruction "a lot" (Table D5.2 and Chart D5.4). Similar findings were evident from the percentage of school principals that reported the extent to which instruction was hindered by a shortage of computer software for instruction.

Chart D5.4. Percentage of students in schools whose principals report that instruction is hindered by a shortage of computers for instruction (2003)



1. Response rate too low to ensure comparability for PISA 2000.
2. Response rate too low to ensure comparability for PISA 2003.
Countries are ranked in descending order of the percentage of students in schools whose principals report that instruction is hindered by a shortage of computers for instruction in PISA 2003.
Source: OECD PISA 2003 database. Table D5.2.
StatLink: http://dx.doi.org/10.1787/203814216003

As stated earlier, principals' perceptions of the extent that instruction is hindered by a shortage of computers for instruction involve two issues: first, the extent of the use of ICT resources in student learning and second, whether those ICT resources are available. This issue can, at least partly, be separated. Analysis of principals' perceptions can be nuanced by comparing these perceptions with the number of computers per student in schools. Across OECD countries, on average, principals who reported that instruction is hindered by a lack of ICT resources had fewer computers per student across their schools (Table D5.2). This would imply that principals believe that fewer computers per student hinders instruction to those students. This magnifies problems in schools where students have poor access to computers and thus less opportunity to gain familiarity and increase their general ICT skills and abilities.

Change has occurred in most countries between 2000 and 2003. In some countries the situation appears to have improved; in others, it seems to have worsened. For most countries, these changes are relatively minor but in others, the percentage of students in schools whose principals report that a shortage of computers hinders instruction to some extent or a lot has changed substantially between 2000 and 2003. In Belgium, Canada, the Czech Republic, Denmark,

Box D5.1. Findings on students' access and use of ICT and their performance in PISA 2003

This indicator includes a comparison of student access to ICT and principals' perceptions of the extent that instruction is hindered by a shortage of ICT resources in their schools. But this does not necessarily translate into an effect upon student performance. A thematic report from PISA 2003 entitled *Are Students Ready for a Technology-Rich World? What PISA Studies Tell Us* (OECD, 2005e) provides a comprehensive analysis of these issues. In regard to the effect upon student performance, the report's main findings were that:

- There is a consistent and significant positive relationship between the years of experience in computer use and mathematics performance, both before and after accounting for socio-economic and systemic variables.
- There is a consistent and significant positive curvilinear relationship between the frequency of computer use at home and mathematics performance, both before and after accounting for socio-economic and systemic variables.
- There is a curvilinear relationship between the frequency of computer use at school and mathematics performance, with moderate users of computers showing the highest mathematics performance while rare and frequent computer users perform at similar levels, once socio-economic and systemic variables have been accounted for.
- With the introduction of a multi-level structure of modelling using selected control variables, the performance gaps between students with access to computers at home and those without are less pronounced than those in the simple linear regression models, but in one-half of OECD countries students with computer access at home perform higher in mathematics than those without. Similarly, there is a performance advantage for students with access to computers at school in at least 10 out of 25 OECD even when the multi-level structure and various background factors are taken into account.

Hungary, Norway, Poland, Portugal and Spain, the hindering of instruction to some extent or a lot due to a shortage of computers has increased. In Belgium, Hungary and Spain, the proportion of students whose principals report this shortage has even doubled between 2000 and 2003. Conversely, the reported effects of shortages have substantially lessened in Germany, Greece, Iceland and Korea, and the partner country the Russian Federation, although not to the same extent.

Definitions and methodologies

The target population studied for this indicator was 15-year-old students. Operationally, this referred to students who were from 15 years and 3 (completed) months to 16 years and 2 (completed) months at the beginning of the testing period and who were enrolled in an educational institution, irrespective of the grade levels or type of institutions in which they were enrolled, and irrespective of whether they participated in school full-time or part-time.

Further references

For further information about PISA 2003, see *Learning for Tomorrow's World – First Results from PISA 2003* (OECD 2004a), *Are Students Ready for a Technology-Rich World? What PISA Studies Tell Us* (OECD, 2005e) and the *PISA 2003 Technical Report* (OECD 2005c) PISA data are also available on the PISA Web site: *www.pisa.oecd.org.*

D5

Table D5.1

Various ICT resources in secondary schools and percentage of various types of computers in schools (2003)

Results based on school principals' reports

	PISA 2003																PISA 2000			
	Percentage of students whose principals report there is at least one computer at school		For students whose principals report there is at least one computer at school:				Out of the number of computers in school, percentage of computers:										For students whose principals report there is at least one computer at school:			
			The number of computers in the school all together		Computers per student		Available to 15-year-old students		Available only to teachers		Available only to administrative staff		Connected to the Internet/ WWW		Connected to a local area network		The number of computers in the school all together		Computers per student	
	%	S.E.	Mean	S.E.	Mean	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	Mean	S.E.	Mean	S.E.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
OECD countries																				
Australia	100	(0.0)	255	(12.9)	0.28	(0.01)	69	(1.1)	18	(0.8)	7	(0.6)	93	(0.9)	93	(1.1)	**184**	(13.5)	**0.22**	(0.01)
Austria	100	(0.0)	128	(11.3)	0.22	(0.01)	77	(1.4)	11	(0.8)	6	(0.3)	87	(1.9)	71	(3.1)	**85**	(7.2)	**0.15**	(0.01)
Belgium	100	(0.0)	89	(3.3)	0.15	(0.01)	65	(1.3)	10	(0.9)	14	(0.6)	74	(1.5)	54	(2.3)	**67**	(3.1)	**0.11**	(0.00)
Canada	100	(0.0)	198	(5.3)	0.22	(0.01)	75	(0.9)	14	(0.5)	6	(0.2)	94	(0.7)	87	(1.6)	**176**	(3.0)	a	a
Czech Republic	100	(0.0)	47	(2.4)	0.11	(0.01)	62	(1.2)	22	(0.9)	11	(0.6)	77	(1.6)	68	(2.6)	**34**	(2.5)	**0.08**	(0.01)
Denmark	100	(0.0)	68	(2.8)	0.19	(0.01)	67	(1.4)	11	(0.9)	9	(0.4)	88	(1.4)	77	(2.2)	**53**	(2.2)	0.19	(0.03)
Finland	100	(0.0)	57	(1.9)	0.17	(0.01)	73	(1.4)	12	(0.7)	7	(0.3)	92	(0.9)	76	(2.9)	**45**	(1.5)	**0.13**	(0.01)
France	w	w	w	w	w	w	w	w	w	w	w	w	w	w	w	w	119	(9.1)	0.13	(0.01)
Germany	100	(0.0)	48	(2.1)	0.08	(0.00)	69	(1.3)	14	(1.5)	10	(0.4)	71	(2.0)	45	(2.9)	**31**	(1.3)	**0.06**	(0.00)
Greece	100	(0.0)	24	(2.7)	0.08	(0.01)	69	(2.2)	18	(1.4)	10	(1.7)	69	(3.7)	56	(4.4)	**15**	(1.5)	**0.05**	(0.00)
Hungary	100	(0.0)	90	(3.6)	0.23	(0.01)	66	(1.5)	12	(0.6)	9	(0.4)	79	(2.0)	79	(2.2)	**61**	(3.7)	**0.16**	(0.01)
Iceland	100	(0.0)	73	(0.2)	0.18	(0.00)	38	(0.1)	25	(0.1)	7	(0.0)	96	(0.1)	89	(0.1)	**39**	(0.1)	**0.12**	(0.00)
Ireland	100	(0.0)	60	(3.4)	0.11	(0.00)	69	(2.1)	12	(1.3)	8	(0.7)	67	(2.6)	36	(3.5)	**41**	(1.7)	**0.08**	(0.00)
Italy	100	(0.0)	77	(3.6)	0.13	(0.01)	57	(1.6)	8	(0.6)	13	(0.7)	71	(2.1)	50	(2.7)	74	(7.2)	**0.10**	(0.00)
Japan	100	(0.0)	128	(7.2)	0.19	(0.02)	61	(1.5)	25	(1.2)	5	(0.3)	74	(2.5)	73	(2.3)	**92**	(4.4)	**0.11**	(0.01)
Korea	100	(0.0)	289	(7.4)	0.27	(0.01)	52	(1.5)	32	(0.6)	3	(0.1)	92	(1.2)	91	(1.4)	**198**	(7.2)	**0.21**	(0.03)
Luxembourg	100	(0.0)	254	(0.2)	0.18	(0.00)	59	(0.0)	8	(0.0)	8	(0.0)	96	(0.0)	95	(0.0)	**159**	(0.1)	**0.11**	(0.00)
Mexico	99	(0.6)	59	(3.6)	0.09	(0.01)	73	(1.7)	22	(2.9)	18	(1.1)	44	(4.2)	51	(4.4)	**32**	(2.3)	**0.06**	(0.01)
Netherlands	100	(0.0)	129	(5.8)	0.14	(0.01)	68	(1.6)	12	(1.1)	10	(0.7)	85	(2.6)	81	(3.0)	**101**	(6.8)	**0.11**	(0.01)
New Zealand	100	(0.0)	232	(8.0)	0.23	(0.01)	68	(1.0)	23	(0.8)	7	(0.3)	92	(1.3)	92	(1.6)	**169**	(5.8)	**0.18**	(0.01)
Norway	100	(0.0)	50	(1.8)	0.18	(0.01)	46	(1.5)	21	(0.9)	11	(0.4)	81	(1.7)	48	(3.2)	m	m	m	m
Poland	100	(0.0)	21	(0.7)	0.07	(0.00)	79	(0.7)	9	(0.6)	10	(0.5)	83	(2.0)	64	(2.8)	**25**	(1.4)	**0.10**	(0.01)
Portugal	100	(0.0)	69	(2.9)	0.07	(0.00)	51	(1.9)	13	(0.6)	15	(0.7)	60	(2.3)	50	(3.4)	**27**	(1.8)	0.09	(0.03)
Slovak Republic	100	(0.0)	29	(1.1)	0.07	(0.00)	60	(1.5)	14	(0.9)	18	(1.1)	51	(1.9)	53	(2.2)	a	a	a	a
Spain	100	(0.0)	52	(2.8)	0.08	(0.00)	56	(1.6)	19	(1.1)	8	(0.5)	79	(1.7)	59	(3.3)	**42**	(2.4)	**0.06**	(0.00)
Sweden	100	(0.0)	85	(3.8)	0.16	(0.00)	55	(1.5)	18	(0.7)	10	(0.4)	92	(1.1)	80	(2.2)	**64**	(3.6)	0.14	(0.01)
Switzerland	100	(0.0)	70	(6.3)	0.17	(0.03)	70	(1.7)	15	(0.9)	7	(0.5)	80	(1.8)	70	(2.9)	**47**	(4.2)	0.14	(0.01)
Turkey	100	(0.0)	25	(3.9)	0.04	(0.00)	47	(4.5)	9	(1.5)	38	(4.2)	28	(3.1)	12	(2.4)	a	a	a	a
United States	100	(0.0)	377	(15.9)	0.30	(0.01)	69	(1.7)	23	(1.4)	9	(1.4)	91	(1.3)	84	(2.0)	**237**	(21.4)	**0.22**	(0.01)
OECD average	*100*	*(0.0)*	*115*	*(1.1)*	*0.16*	*(0.00)*	*64*	*(0.3)*	*16*	*(0.2)*	*10*	*(0.2)*	*78*	*(0.4)*	*68*	*(0.5)*	*87*	*(1.2)*	*0.13*	*(0.00)*
United Kingdom[1]	100	(0.0)	245	(8.2)	0.23	(0.01)	78	(0.9)	16	(1.3)	7	(0.7)	90	(1.3)	88	(1.7)	**140**	(4.8)	**0.14**	(0.00)
Partner countries																				
Brazil	90	(2.6)	23	(4.5)	0.02	(0.00)	47	(2.8)	18	(2.0)	39	(2.5)	42	(3.3)	32	(3.2)	16	(2.7)	0.13	(0.09)
Russian Federation	99	(0.4)	20	(2.2)	0.03	(0.00)	75	(2.4)	9	(0.7)	13	(2.0)	16	(2.5)	34	(2.9)	**12**	(0.8)	**0.02**	(0.00)

Note: Statistically significant differences are marked in bold.

1. Response rate too low to ensure comparability.

Source: OECD PISA 2003 database. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

StatLink: http://dx.doi.org/10.1787/203814216003

Table D5.2.

Percentage of students in secondary schools whose principals report that instruction is hindered by a shortage of ICT resources (2003)

Results based on school principals' reports

		Percentage of students in schools whose principals report that instruction is hindered by a shortage of:															
		Computers for instruction								Computer software for instruction							
		Not at all		Very little		To some extent		A lot		Not at all		Very little		To some extent		A lot	
		%	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**	30	(3.1)	35	(3.1)	28	(2.7)	6	(1.3)	32	(3.3)	37	(2.9)	28	(3.0)	3	(1.0)
	Austria	40	(3.4)	24	(3.1)	30	(2.9)	7	(2.1)	31	(3.5)	31	(3.4)	31	(3.7)	8	(2.2)
	Belgium	22	(2.7)	35	(3.0)	35	(3.7)	9	(1.8)	25	(3.0)	37	(3.2)	31	(3.0)	7	(1.6)
	Canada	20	(2.1)	34	(2.3)	35	(2.3)	11	(1.7)	18	(2.1)	35	(2.5)	39	(2.3)	8	(1.2)
	Czech Republic	23	(3.2)	34	(3.3)	33	(2.9)	10	(2.2)	15	(2.5)	38	(3.4)	37	(3.0)	9	(1.9)
	Denmark	17	(2.8)	36	(3.7)	39	(3.9)	8	(2.4)	14	(2.5)	45	(3.7)	33	(3.5)	7	(1.8)
	Finland	14	(2.5)	47	(4.1)	34	(4.1)	5	(1.8)	10	(2.2)	44	(4.0)	42	(4.2)	5	(1.7)
	France	w	w	w	w	w	w	w	w	w	w	w	w	w	w	w	w
	Germany	34	(3.5)	33	(3.4)	27	(3.3)	7	(1.7)	26	(3.4)	31	(3.2)	34	(3.3)	9	(2.0)
	Greece	26	(4.2)	25	(5.1)	22	(4.9)	27	(4.6)	12	(3.3)	28	(5.6)	30	(5.1)	30	(4.3)
	Hungary	43	(3.8)	30	(3.5)	23	(3.5)	4	(1.1)	22	(3.5)	33	(3.8)	32	(4.0)	13	(2.8)
	Iceland	36	(0.2)	30	(0.2)	31	(0.2)	2	(0.1)	25	(0.2)	40	(0.2)	32	(0.2)	2	(0.1)
	Ireland	24	(3.8)	27	(3.9)	41	(4.3)	8	(2.5)	18	(3.6)	25	(3.9)	37	(4.4)	20	(3.6)
	Italy	35	(3.5)	36	(3.2)	23	(3.1)	6	(1.3)	30	(3.3)	40	(3.6)	22	(3.5)	9	(2.4)
	Japan	27	(3.9)	34	(4.0)	32	(4.1)	7	(2.1)	20	(3.8)	34	(4.1)	38	(4.3)	9	(2.4)
	Korea	57	(3.9)	33	(3.9)	9	(2.1)	2	(1.1)	41	(4.1)	48	(4.1)	9	(2.2)	2	(1.1)
	Luxembourg	26	(0.1)	50	(0.1)	11	(0.0)	12	(0.0)	38	(0.1)	46	(0.1)	12	(0.0)	3	(0.0)
	Mexico	21	(2.7)	19	(2.6)	38	(3.4)	22	(2.7)	21	(2.7)	21	(2.5)	33	(3.6)	25	(3.1)
	Netherlands	30	(3.9)	32	(4.6)	31	(3.9)	7	(1.8)	26	(3.8)	30	(4.1)	33	(4.2)	11	(2.5)
	New Zealand	24	(2.7)	33	(3.3)	38	(3.3)	4	(1.3)	23	(2.4)	40	(3.3)	33	(3.2)	5	(1.2)
	Norway	6	(1.9)	21	(2.8)	55	(3.7)	18	(3.1)	8	(2.2)	31	(3.6)	48	(3.8)	14	(2.6)
	Poland	19	(3.0)	26	(3.0)	40	(3.6)	15	(2.8)	7	(2.1)	21	(3.5)	53	(4.2)	19	(3.1)
	Portugal	18	(3.6)	27	(4.2)	45	(4.0)	10	(2.6)	14	(2.7)	27	(4.2)	51	(4.2)	8	(2.4)
	Slovak Republic	10	(1.8)	23	(2.5)	49	(3.8)	18	(2.5)	4	(1.3)	21	(3.2)	50	(3.7)	25	(2.7)
	Spain	19	(2.9)	23	(3.2)	44	(3.3)	14	(2.4)	15	(2.9)	25	(3.2)	45	(3.9)	16	(2.6)
	Sweden	17	(2.7)	33	(3.8)	42	(3.9)	8	(2.2)	16	(2.8)	37	(3.8)	41	(3.7)	7	(2.0)
	Switzerland	44	(3.7)	35	(3.3)	17	(2.6)	4	(1.3)	27	(3.4)	48	(4.2)	18	(2.9)	7	(1.9)
	Turkey	6	(2.1)	13	(2.9)	37	(4.2)	45	(4.8)	6	(2.0)	16	(3.7)	33	(4.3)	45	(4.4)
	United States	38	(3.7)	35	(2.8)	20	(2.8)	7	(1.7)	36	(3.6)	37	(2.9)	23	(2.8)	4	(1.3)
	OECD average	***26***	***(0.6)***	***31***	***(0.6)***	***33***	***(0.6)***	***11***	***(0.4)***	***21***	***(0.5)***	***34***	***(0.7)***	***34***	***(0.7)***	***12***	***(0.4)***
	United Kingdom[1]	19	(2.5)	34	(3.3)	36	(3.3)	11	(2.2)	17	(2.4)	35	(3.6)	40	(3.2)	7	(1.7)
Partner countries	**Brazil**	22	(3.1)	11	(2.3)	20	(2.7)	47	(3.5)	16	(2.8)	14	(2.9)	17	(2.5)	52	(3.4)
	Russian Federation	13	(2.7)	10	(2.8)	32	(3.7)	46	(3.9)	9	(2.0)	11	(3.0)	35	(3.7)	46	(3.9)

Note: Statistically significant changes are marked in bold.

1. Response rate too low to ensure comparability for 2003 data.

Source: OECD PISA 2003 database, Table 2.5. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

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Table D5.2. *(continued)*

Percentage of students in secondary schools whose principals report that instruction is hindered by a shortage of ICT resources (2003)

Results based on school principals' reports

		Percentage of students in schools whose principals report that a shortage of computers hinders instruction to some extent or a lot				Number of computers per student in schools whose principals report that a shortage of computers hinders instruction							
		PISA 2000		PISA 2003		Not at all		Very little		To some extent		A lot	
		%	S.E.	%	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.
		(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)
OECD countries	Australia	30	(3.9)	34	(2.8)	0.36	(0.02)	0.26	(0.01)	0.24	(0.01)	0.18	(0.02)
	Austria	38	(4.3)	36	(3.4)	0.26	(0.02)	0.22	(0.02)	0.17	(0.02)	0.19	(0.04)
	Belgium	**18**	(2.4)	**43**	(3.3)	0.18	(0.01)	0.15	(0.01)	0.13	(0.01)	0.13	(0.06)
	Canada	**30**	(1.7)	**45**	(2.6)	0.27	(0.03)	0.22	(0.01)	0.19	(0.01)	0.21	(0.02)
	Czech Republic	22	(3.5)	43	(3.2)	0.14	(0.02)	0.13	(0.01)	0.09	(0.01)	0.07	(0.01)
	Denmark	**27**	(3.5)	**46**	(4.4)	0.27	(0.06)	0.21	(0.01)	0.14	(0.01)	0.11	(0.02)
	Finland	43	(3.9)	39	(4.2)	0.22	(0.02)	0.18	(0.01)	0.14	(0.01)	0.12	(0.02)
	France	28	(3.3)	w	w	w	w	w	w	w	w	w	w
	Germany	**50**	(3.8)	**34**	(3.3)	0.10	(0.01)	0.07	(0.00)	0.08	(0.01)	0.05	(0.01)
	Greece	**70**	(4.4)	**49**	(5.8)	0.12	(0.02)	0.08	(0.01)	0.07	(0.01)	0.07	(0.01)
	Hungary	**12**	(2.7)	**27**	(3.5)	0.28	(0.02)	0.23	(0.03)	0.15	(0.01)	0.14	(0.05)
	Iceland	**45**	(0.1)	**34**	(0.2)	0.20	(0.00)	0.18	(0.00)	0.15	(0.00)	0.14	(0.01)
	Ireland	41	(4.5)	50	(4.1)	0.16	(0.01)	0.11	(0.01)	0.09	(0.01)	0.06	(0.01)
	Italy	32	(3.9)	29	(3.1)	0.15	(0.01)	0.13	(0.01)	0.10	(0.01)	0.10	(0.02)
	Japan	31	(4.3)	39	(4.2)	0.22	(0.03)	0.14	(0.01)	0.22	(0.06)	0.21	(0.04)
	Korea	**22**	(3.7)	**10**	(2.4)	0.26	(0.01)	0.29	(0.02)	0.29	(0.03)	0.12	(0.00)
	Luxembourg	**23**	(0.2)	**23**	(0.1)	0.24	(0.00)	0.16	(0.00)	0.17	(0.00)	0.17	(0.00)
	Mexico	69	(3.7)	60	(3.1)	0.13	(0.02)	0.07	(0.01)	0.07	(0.01)	0.08	(0.01)
	Netherlands	39	(6.0)	38	(4.0)	0.15	(0.01)	0.15	(0.01)	0.13	(0.01)	0.15	(0.02)
	New Zealand	40	(3.4)	42	(3.5)	0.26	(0.02)	0.23	(0.01)	0.20	(0.01)	0.22	(0.03)
	Norway	**61**	(4.1)	**74**	(3.1)	0.30	(0.06)	0.22	(0.02)	0.16	(0.01)	0.13	(0.01)
	Poland	**38**	(4.8)	**55**	(3.6)	0.07	(0.01)	0.08	(0.01)	0.06	(0.01)	0.06	(0.01)
	Portugal	**39**	(3.8)	**55**	(4.1)	0.08	(0.00)	0.08	(0.01)	0.07	(0.00)	0.06	(0.00)
	Slovak Republic	a	a	a	a	0.10	(0.01)	0.09	(0.01)	0.07	(0.00)	0.03	(0.00)
	Spain	**29**	(3.8)	**58**	(3.4)	0.10	(0.01)	0.09	(0.01)	0.08	(0.01)	0.07	(0.01)
	Sweden	51	(4.1)	50	(4.1)	0.21	(0.01)	0.16	(0.01)	0.14	(0.01)	0.12	(0.01)
	Switzerland	37	(4.0)	21	(2.9)	0.21	(0.06)	0.15	(0.01)	0.11	(0.01)	0.20	(0.05)
	Turkey	a	a	a	a	0.12	(0.06)	0.03	(0.01)	0.03	(0.00)	0.03	(0.00)
	United States	26	(4.7)	26	(3.0)	0.32	(0.02)	0.30	(0.02)	0.24	(0.01)	0.21	(0.02)
	OECD average	*37*	*(0.7)*	*41*	*(0.7)*	*0.20*	*(0.01)*	*0.16*	*(0.00)*	*0.14*	*(0.00)*	*0.13*	*(0.00)*
	United Kingdom[1]	56	(3.4)	46	(3.3)	0.30	(0.02)	0.23	(0.01)	0.20	(0.01)	0.20	(0.02)
Partner countries	Brazil	63	(3.8)	67	(3.4)	0.06	(0.02)	0.02	(0.01)	0.02	(0.00)	0.01	(0.00)
	Russian Federation	**86**	(2.7)	**77**	(3.7)	0.04	(0.01)	0.05	(0.01)	0.03	(0.00)	0.02	(0.00)

Note: Statistically significant changes are marked in bold.

1. Response rate too low to ensure comparability for 2003 data.

Source: OECD PISA 2003 database, Table 2.5. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

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Table D5.3.

Percentage of 15-year-old students using computers at home, school or other places, by frequency of use (2003)

Results based on students' self-reports

		Percentage of students using computers at school						Percentage of students using computers at home						Percentage of students using computers in other places					
		Frequent use		Moderate use		Rare or no use		Frequent use		Moderate use		Rare or no use		Frequent use		Moderate use		Rare or no use	
		%	S.E.	%	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)	(17)	(18)
OECD countries	**Australia**	59	(1.0)	27	(0.7)	14	(0.7)	87	(0.5)	7	(0.3)	6	(0.3)	14	(0.6)	27	(0.7)	59	(0.6)
	Austria	53	(2.0)	31	(1.5)	16	(1.3)	81	(0.8)	12	(0.6)	6	(0.4)	16	(0.7)	25	(0.8)	59	(1.0)
	Belgium	27	(0.9)	35	(0.9)	39	(1.2)	84	(0.5)	8	(0.4)	9	(0.4)	15	(0.5)	22	(0.6)	63	(0.7)
	Canada	40	(0.9)	31	(0.7)	29	(0.8)	90	(0.3)	4	(0.2)	6	(0.3)	30	(0.5)	34	(0.5)	37	(0.5)
	Czech Republic	41	(1.6)	44	(1.6)	15	(1.4)	70	(0.9)	11	(0.5)	19	(0.7)	19	(0.6)	29	(0.7)	52	(0.9)
	Denmark	68	(1.6)	25	(1.1)	7	(0.7)	84	(0.7)	10	(0.6)	6	(0.4)	25	(0.8)	25	(0.9)	49	(1.1)
	Finland	36	(1.5)	41	(1.0)	23	(1.3)	78	(0.6)	11	(0.4)	11	(0.5)	21	(0.7)	28	(0.7)	52	(0.8)
	Germany	23	(1.2)	28	(1.4)	48	(1.7)	82	(0.6)	10	(0.5)	7	(0.4)	16	(0.7)	19	(0.7)	65	(0.9)
	Greece	45	(2.4)	27	(1.7)	28	(1.9)	57	(1.2)	6	(0.3)	37	(1.3)	26	(0.8)	20	(0.6)	54	(0.8)
	Hungary	80	(1.2)	10	(0.8)	9	(1.0)	67	(1.0)	6	(0.5)	27	(0.9)	26	(0.6)	28	(0.8)	46	(0.9)
	Iceland	41	(0.8)	40	(0.8)	19	(0.7)	89	(0.6)	7	(0.5)	4	(0.4)	21	(0.7)	30	(0.7)	50	(0.9)
	Ireland	24	(1.4)	27	(1.8)	49	(2.3)	61	(0.9)	19	(0.7)	20	(0.8)	9	(0.5)	18	(0.8)	73	(0.9)
	Italy	51	(2.0)	20	(0.9)	30	(1.9)	76	(0.8)	8	(0.4)	16	(0.7)	19	(0.7)	18	(0.5)	64	(0.8)
	Japan	26	(2.3)	33	(2.7)	41	(3.1)	37	(1.2)	22	(0.8)	41	(1.1)	2	(0.3)	5	(0.4)	93	(0.5)
	Korea	28	(1.9)	29	(1.8)	43	(2.6)	86	(0.6)	11	(0.6)	3	(0.3)	21	(0.9)	33	(1.0)	47	(1.2)
	Mexico	54	(1.9)	16	(0.9)	30	(1.7)	48	(1.8)	44	(0.3)	28	(0.3)	37	(1.1)	23	(0.8)	40	(1.2)
	New Zealand	43	(1.2)	26	(0.8)	31	(1.2)	79	(0.7)	8	(0.5)	12	(0.6)	17	(0.7)	26	(0.6)	57	(0.8)
	Poland	44	(1.8)	34	(1.4)	22	(2.4)	59	(1.1)	4	(0.3)	38	(1.1)	25	(0.7)	22	(0.7)	53	(0.9)
	Portugal	34	(1.5)	25	(0.9)	41	(1.6)	78	(0.9)	5	(0.4)	18	(0.8)	23	(0.8)	22	(0.8)	55	(1.1)
	Slovak Republic	42	(1.5)	30	(1.5)	27	(2.0)	65	(1.0)	9	(0.5)	26	(0.9)	21	(0.8)	31	(0.9)	48	(1.2)
	Sweden	48	(1.5)	30	(0.8)	22	(1.2)	89	(0.5)	7	(0.4)	4	(0.3)	20	(0.7)	28	(0.6)	52	(0.8)
	Switzerland	30	(1.4)	36	(1.1)	34	(1.7)	81	(0.6)	12	(0.5)	7	(0.5)	13	(0.7)	17	(0.6)	70	(0.8)
	Turkey	46	(3.5)	8	(0.9)	46	(3.7)	48	(2.1)	3	(0.5)	49	(2.2)	43	(1.2)	21	(0.9)	36	(1.3)
	United States	43	(1.4)	28	(0.9)	29	(1.2)	83	(0.7)	6	(0.4)	11	(0.5)	23	(0.7)	26	(0.8)	51	(1.0)
	OECD average	*44*	*(0.3)*	*28*	*(0.3)*	*28*	*(0.4)*	*74*	*(0.2)*	*9*	*(0.1)*	*18*	*(0.2)*	*21*	*(0.2)*	*24*	*(0.1)*	*55*	*(0.2)*
	United Kingdom[1]	71	(1.4)	15	(0.8)	14	(1.0)	81	(1.0)	9	(0.6)	11	(0.7)	18	(1.0)	27	(0.9)	55	(1.3)
Partner country	**Russian Federation**	43	(2.1)	38	(1.3)	19	(1.7)	43	(2.0)	2	(0.2)	55	(2.0)	36	(1.2)	23	(0.9)	41	(1.1)

1. Response rate too low to ensure comparability.

Source: OECD. See Annex 3 for notes (*www.oecd.org/edu/eag2006*).

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Annex

1

CHARACTERISTICS OF EDUCATIONAL SYSTEMS

The typical graduation age is the age at the end of the last school/academic year of the corresponding level and programme when the degree is obtained. The age is the age that normally corresponds to the age of graduation. (Note that at some levels of education the term "graduation age" may not translate literally and is used here purely as a convention.)

Table X1.1a.
Typical graduation ages in upper secondary education

		Programme orientation		Educational/labour market destination			
		General programmes	Pre-vocational or vocational programmes	ISCED 3A programmes	ISCED 3B programmes	ISCED 3C short programmes[1]	ISCED 3C long programmes[1]
OECD countries	Australia	m	m	17-18	m	m	17-18
	Austria	18	18	18	18	17	a
	Belgium	18	18	18	a	18	18
	Canada	m	m	m	m	m	m
	Czech Republic	19	19	19	19	a	18
	Denmark	19-20	19-20	19-20	a	18-19	19-20
	Finland	19	19	19	a	a	a
	France	18-19	17-20	18-19	19-20	18-19	18-21
	Germany	19	19	19	19	19	a
	Greece	17-18	16-17	17-18	a	16-17	17-18
	Hungary	18-20	16-17	18-20	20-22	16-17	18
	Iceland	20	20	20	19	18	20
	Ireland	17-18	17-18	17-18	a	a	17-18
	Italy	19	19	19	19	17	a
	Japan	18	18	18	18	18	18
	Korea	17-18	17-18	17-18	a	a	17-18
	Luxembourg	19	17-19	17-19	19	17	17-19
	Mexico	18	18	18	a	a	18
	Netherlands	17-18	18-20	17-18	a	18-19	18-20
	New Zealand	m	a	18	17	18-19	17
	Norway	18-19	18-19	18-19	a	16-18	18-19
	Poland	19	20	19-20	a	18	a
	Portugal	17	17	17	m	m	m
	Slovak Republic	18	16-18	19-20	a	17	18-19
	Spain	17	17	17	a	17	17
	Sweden	19	19	19	a	a	19
	Switzerland	18-20	18-20	18-20	18-20	17-19	17-19
	Turkey	16-17	16-17	16-17	a	a	m
	United Kingdom	m	m	m	m	m	m
	United States	18	a	18	a	a	a
Partner countries	Brazil	17	17	17	a	a	a
	Chile	18	18	18	18	a	a
	Israel	18	18	18	18	18	18
	Russian Federation[2]	17	17	17	m	m	m

1. Duration categories for ISCED 3C – Short: at least one year shorter than ISCED 3A/3B programmes; Long: of similar duration to ISCED 3A or 3B programmes.
2. OECD estimate.
Source: OECD

Annex 1

Table X1.1b.
Typical graduation ages in post-secondary non-tertiary education

		Educational/labour market destination		
		ISCED 4A programmes	ISCED 4B programmes	ISCED 4C programmes
OECD countries	Australia	a	a	18-19
	Austria	19	20	20
	Belgium	19	m	19-21
	Canada	m	m	20
	Czech Republic	20	a	20
	Denmark	21-22	a	21-22
	Finland	a	a	25-29
	France	18-21	a	19-21
	Germany	22	22	a
	Greece	a	a	19-20
	Hungary	a	a	19-22
	Iceland	a	a	21
	Ireland	a	a	19
	Italy	a	a	20
	Japan	19	19	19
	Korea	a	a	a
	Luxembourg	a	a	20-25
	Mexico	a	a	a
	Netherlands	a	a	18-20
	New Zealand	18	18	18
	Norway	20-25	a	20-25
	Poland	a	a	21
	Portugal	m	m	m
	Slovak Republic	20-21	a	a
	Spain	18	18	a
	Sweden	19-20	a	19-20
	Switzerland	19-21	21-23	a
	Turkey	a	a	a
	United Kingdom	m	m	m
	United States	a	a	20
Partner countries	Brazil	a	a	a
	Chile	a	a	a
	Israel	21-25	a	a
	Russian Federation	a	a	18

Source: OECD.

Annex 1

Table X1.1c.
Typical graduation ages in tertiary education

		Tertiary-type B (ISCED 5B)	Tertiary-type A (ISCED 5A)				Advanced research programmes (ISCED 6)
			All programmes	3 to less than 5 years	5 to 6 years	More than 6 years	
OECD countries	Australia	19	a	20-22	22-24	24-25	24-28
	Austria	20-22	a	22	23	a	23-26
	Belgium	m	m	m	m	m	25-29
	Canada	m	m	m	m	m	29
	Czech Republic	23	a	22-24	24	a	27
	Denmark	21-25	a	22-24	25-26	27-30	30-34
	Finland	21-22	a	25-29	25-29	30-34	29
	France	20-21	a	21-22	23-24	25	25-26
	Germany	21-22	a	25	26	a	28
	Greece	m	m	21-22	22-24	m	24-28
	Hungary	21	a	21-25	23-26	m	30
	Iceland	22-24	a	23	25	27	29
	Ireland	20	a	22	23	24	27
	Italy	22-23	a	22	23-25	a	27-29
	Japan	20	a	22	23	a	27
	Korea	20	a	21-22	22-23	23-24	26
	Luxembourg	m	m	m	m	m	m
	Mexico	m	m	m	m	m	24-28
	Netherlands	a	22-23	m	m	a	25
	New Zealand	20	a	21-22	22-24	23-24	28
	Norway	20	a	22	24	25	27
	Poland	24-25	a	24	25	m	m
	Portugal	21	a	22	23	25-26	m
	Slovak Republic	21-22	a	21-22	23-24	25	27
	Spain	19	a	20	22	a	25-27
	Sweden	22-23	a	23-25	25-26	a	27-29
	Switzerland	23-29	a	23-26	23-26	28	29
	Turkey	m	m	22-24	22-24	22-24	m
	United Kingdom	20-21	a	21	23	24	24
	United States	20	a	21	m	25	28
Partner countries	Brazil	m	m	m	m	m	m
	Chile	m	m	m	m	m	25
	Israel	20-22	a	23-27	27-29	a	28-30
	Russian Federation	m	m	m	m	m	25-30

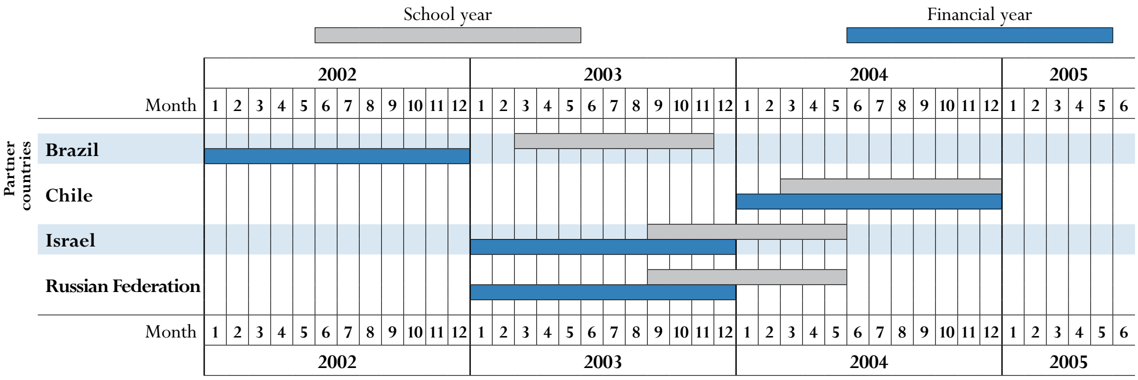
Note: Where tertiary-type A data are available by duration of programme, the graduation rate for all programmes is the sum of the graduation rates by duration of programme.
Source: OECD.

Table X1.2a.
School year and financial year used for the calculation of indicators

Source: OECD.

Table X1.2b.

School year and financial year used for the calculation of indicators



Source: OECD.

Table X1.3.
Summary of completion requirements for upper secondary (ISCED 3) programmes

		ISCED 3A programmes				ISCED 3B programmes				ISCED 3C programmes			
		Final examination	Series of examinations during programme	Specified number of course hours, AND examination	Specified number of course hours only	Final examination	Series of examinations during programme	Specified number of course hours, AND examination	Specified number of course hours only	Final examination	Series of examinations during programme	Specified number of course hours, AND examination	Specified number of course hours only
OECD countries	Australia[1, 2]	Y/N	Y	Y	N	N	Y	N	N	N	Y	N	N
	Austria	Y	Y	Y	N	Y	Y	Y	N	N	Y	Y	N
	Belgium (Fl.)[3]	Y	Y	N	N	a	a	a	a	Y	Y	N	N
	Belgium (Fr.)	Y	Y	N	N	a	a	a	a	Y	Y	N	N
	Canada (Québec)[1]	N	Y	Y	N					N	Y	Y	N
	Czech Republic[1]	Y	Y	Y	N	N	Y	Y	N	Y	Y	Y	N
	Denmark[1]	Y	Y	Y		a	a	a	a	Y	Y	Y	
	Finland	Y/N	Y	Y	N								
	France	Y	N	Y	N	a	a	a	a	Y/N	Y	N	
	Germany	Y	Y	N	N	Y	Y	N	N	a	a	a	a
	Greece[1]	N	Y	N	N					N	Y	N	N
	Hungary	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
	Iceland[1]	Y/N	Y	N	N	Y	Y	N	N	Y/N	Y	N	N
	Ireland[1]	Y	N	N	N	a	a	a	a	Y	Y	Y	N
	Italy	Y	N	Y/N	N	Y	Y/N	Y/N	N	Y	N	Y/N	N
	Japan	N	N	Y	N	N	N	Y	N	N	N	Y	N
	Korea	N	N	N	Y					N	N	N	Y
	Luxembourg	Y	Y	Y	N	Y	Y	Y	N	Y	Y	Y	N
	Mexico	N	Y	Y	N					Y/N	Y	Y	N
	Netherlands[1]	Y	Y	Y	N	a	a	a	a	Y	Y	Y	N
	New Zealand	Y	N	N	N								
	Norway	N	Y	Y	N	a	a	a	a	N	Y	Y	N
	Poland	Y/N	N	N	N	a	a	a	a	Y	N	N	N
	Portugal	m	m	m	m	m	m	m	m	m	m	m	m
	Slovak Republic[1]	Y	N	Y	N					Y	N	Y	N
	Spain	N	Y	Y	N					Y/N	Y/N	Y/N	N
	Sweden	Y/N	Y/N	N	Y/N								
	Switzerland	Y	Y	Y		Y	Y	Y		Y		Y	
	Turkey[1]	N	N	Y	N	N	N	Y	N	N	N	Y	N
	United Kingdom[1]	N[4]	Y	N	N	a	a	a	a		Y	N	N
	United States[1]	20Y/30N	SS	SS	Y[5]	a	a	a	a	a	a	a	a
Partner countries	Israel[1]	Y/N	Y	Y	N	a	a	a	a	Y/N	Y	Y	

Note: Y = Yes; N = No; SS = Some states
1. See Annex 3 for additional notes on completion requirements *(www.oecd.org/edu/eag2006)*.
2. Completion requirements for ISCED 3A vary by state and territory. The information provided represents a generalisation of diverse requirements.
3. Covers general education only.
4. There is usually no final examination, though some ISCED 3A programmes can be completed this way.
5. Almost all states specify levels of Carnegie credits (*i.e.* acquired through completion of a two-semester course in specific subjects, which vary by state).
Source: OECD.
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

Table X1.3. (Country notes)

Summary of completion requirements for upper secondary (ISCED 3) programmes

Australia:

Requirements for graduates in senior secondary education on ISCED 3A level are different in each state and territory as State/Territory Governments are responsible for their education. The information in the table attempts to generalise those diverse requirements. Note that for ISCED3A, programme requirements are different in every state, and for several states, different in every school. However, schools require a number of course hours to be attended and set various special requirements. For example, in senior secondary schools in New South Wales compulsory studies of English language are classified as a special requirement.

Y/N for "final exams" means that in Australia compulsory external exams are required to complete senior secondary schools in some states only. "Y" for "Series of exams and course hours" means series of school based assessments and course hours.

Requirements for ISCED 3B and ISCED 3C vocational courses are nationally unified as educational institutions in every state have to follow nationally agreed standards for vocational training. For ISCED 3B and ISCED 3C, school or work place based assessments, called competencies or outcomes, are required to be passed in order to complete a course. Competency based approach to training allows learners to achieve outcomes in flexible time, therefore hours of learning or training do not determine completion of competencies.

Canada (Quebec):

ISCED 3A covers 2nd cycle programmes of general secondary level education leading to the diploma in secondary studies (DES). To obtain the DES, the student must pass exams in the language of instruction, second language and history as well as completing certain course units.

ISCED 3C covers secondary level professional training programmes which lead to the DEP (Diplôme d'études professionnelles), ASP (Attestation de spécialisation professionnelle) or AFP (Attestation de formation professionnelle). To obtain the DEP or ASP, the students must pass all the courses in the programme and meet any specific pre-conditions of the programmes. To obtain the AFP, the student must pass a certain number of courses such as determined by the college that offers the programme such as general training courses or courses preparing for entry to the labour market.

Czech Republic:

For each of ISECD 3A, 3B and 3C, certificates are awarded at the end of each year based on current assessment. The final examinations in each case are comprehensive.

Denmark:

ISCED 3C – The main course in vocational training is normally completed with a journeyman's test or a similar examination. The test may also be taken after the school period as an actual journeyman's test performed with an employer.

Greece:

ISCED 3A – Students are examined twice, at the end of each year, after compulsory attendance. ISCED 3C – Students are examined at the end of each year, after compulsory attendance.

Iceland:

ISCED 3C – Vocational training/Sailing time and training required to get qualifications.

Ireland:

The Leaving Certificate Applied assessment takes place over two years under three headings: Satisfactory Completion of Modules, Performance of Student Tasks and Performance in the Terminal Examinations. The two-year programme consists of four half-year blocks called Sessions and achievements are credited in each of these Sessions. At the end of each Session a student is credited on satisfactory completion of the appropriate modules. Student Tasks are assessed by external examiners appointed by the Department of Education and Science. These Tasks may be in a variety of formats – written, audio, video, artefact etc. Each student is also required to produce a report on the process of completing the Task. This report may be incorporated in the evidence of task performance. Terminal Examinations are provided in the following areas: English and Communication, Two Vocational Specialisms, Mathematical Applications, Language (Gaeilge Chumarsáideach & Modern European Languages) and Social Education.

Israel:

Students who complete 12th grade, are considered as upper secondary graduates. Matriculation exams are used as an extra indicator for the completion but not the only one.

Number of hours per student in upper secondary education to complete the programme is 110 hours within three years of studying (10th to 12th grade).

The Netherlands:
ISCED 3A – Each course can be finalised by an exam. Together with the result of the final exam the results of these exams determine the final result for the respective study subject.

Since 1999 the Netherlands introduced a new second phase of secondary education. This means that pupils are encouraged and taught to study independently. The number of course hours prescribed by the government now describe the number of hours that a "normal" pupil is expected to need to get familiar with the contents of the course. For each course this number is given by the government. The total number of these "course hours" amounts 1600/year. 1000 hours of them are taken care of during schooltime as part of the educational programme. For the remaining hours pupils are expected to study themselves.

ISCED 3C – Minimum entrance requirement is ISCED 2.

Slovak Republic:
ISCED 3A – Includes practical training in grade 2 and 3 for 2 weeks and in some cases up to 4 weeks for all grades *e.g.* in veterinary medicine

A typical apprenticeship programme comprises one third of practical training (certificate on apprenticeship) extended by increased portion of general subjects which are also included in final examination (matura examination) and which also gives access to higher education.

ISCED 3C – In training for children with special needs, two thirds of the programme represents practical training. The final examination consists only of vocational subjects, including a practical part.

Typical apprenticeship programme comprises one third of practical training.

Turkey:
ISCED 3C – Obligatory vocational training of at least 8 hours per week. Candidates have to pass the assistant mastership exam after 3 years of study or 5 years of work experience.

United Kingdom:
There is usually no final exam, though some ISCED 3A programmes could be completed this way. For the majority of general ISCED 3A programmes such as A levels and Scottish highers there are modular examinations at intervals during the programme as well as at the end. For most subjects, assessed coursework also contributes to the grade. For each separate subject within the programme, there is a range of possible attainment grades. For vocational ISCED 3A programmes such as NVQs there may be some formal tests but the pass criterion is demonstrable competence in the workplace (or simulated workplace). Evidence for the assessment is gathered mainly by direct observation of the candidate performing in a workplace setting, often supplemented by a portfolio of documentary evidence relating to work task undertaken by the candidate.

There are typical course hours especially for general ISCED 3A and general ISCED 3C programmes (less so for vocational programmes), but these are not strictly mandatory and for most programmes it is possible to register for the assessment whether or not the candidate is enrolled in the regular education system.

So, in summary the completion requirements are:

ISCED 3A – General programmes: modular examinations plus assessed coursework. Vocational programmes: direct observation of workplace performance plus portfolios of evidence.

ISCED 3C – General programmes: examinations plus assessed coursework. Vocational programmes: direct observation of workplace performance plus portfolios of evidence.

United States:
The number of states with specific levels of Carnegie credits (*i.e.* academic year course of two semesters) required for high school graduation has remained consistent between 48-50 states. As of 2002, a total of 38 states require 4 credits in english, 25 states require 2.5 or more credits in mathematics, 22 states require 2.5 credits or more in science, and 36 states require 2.5 or more credits in social studies.

Annex

2

REFERENCE STATISTICS

Table X2.1.
Overview of the economic context using basic variables (reference period: calendar year 2003, 2003 current prices)

		Total public expenditure as a percentage of GDP	GDP per capita (in equivalent US dollars converted using PPPs)	GDP deflator (1995 =100)	Final consumption expenditure of households on the territory deflator (1995 =100)
OECD countries	Australia	m	31 100	119.95	117.59
	Austria	50.6	30 797	108.38	112.10
	Belgium	51.1	30 089	111.93	113.39
	Canada	38.0	30 403	114.41	114.44
	Czech Republic	53.5	17 284	150.83	142.09
	Denmark	55.2	30 677	117.31	116.47
	Finland	50.8	28 334	112.64	117.69
	France	53.6	28 373	110.49	108.68
	Germany	48.4	27 619	104.80	108.66
	Greece	49.9	20 479	143.26	139.86
	Hungary	m	15 112	241.87	229.21
	Iceland	46.2	30 774	135.05	128.22
	Ireland	m	34 171	140.17	132.98
	Italy	49.0	26 561	125.13	124.46
	Japan	34.2	28 071	92.88	96.91
	Korea	30.9	19 317	128.07	144.63
	Luxembourg	45.5	55 571	120.38	116.04
	Mexico	24.3	9 585	281.46	279.08
	Netherlands	m	31 792	124.11	122.27
	New Zealand	29.9	23 551	117.03	114.07
	Norway	48.4	37 237	134.16	118.57
	Poland	m	11 583	181.11	188.80
	Portugal	47.6	17 617	132.38	128.24
	Slovak Republic	39.2	13 114	153.34	165.87
	Spain	m	24 812	130.33	125.32
	Sweden	58.2	29 522	111.93	111.41
	Switzerland	46.6	33 217	104.49	104.49
	Turkey	m	6 762	3 615.87	3 626.27
	United Kingdom	43.4	29 609	122.82	117.80
	United States	36.7	37 510	115.45	115.22
Partner countries	Brazil	38.8	7 932	180.57	m
	Chile	20.2	11 696	155.65	m
	Israel	51.3	23 019	149.00	m
	Russian Federation	30.0	8 986	722.47	m

Source: OECD.

Table X2.2.
Basic reference statistics (reference period: calendar year 2003, 2003 current prices)[1]

		Gross Domestic Product (in millions of local currency)[2]	Gross Domestic Product (in millions of local currency)[3]	Total public expenditure (in millions of local currency)	Total population in thousand (mid-year estimates)	Purchasing Power Parity for GDP (PPP) (US dollars=1)	Purchasing Power Parity for GDP (PPP) (Euro Zone=1)	Purchasing Power Parity for private consumption (PPP) (US dollars=1)
OECD countries	**Australia**	838 251	810 525	m	19 984	1.34877	1.5344	1.41788
	Austria	226 968		114 762	8 118	0.90785	1.0328	0.92891
	Belgium	274 582		140 417	10 374	0.87968	1.0008	0.91393
	Canada	1 197 494	1 151 872	455 492	31 660	1.24404	1.4153	1.27656
	Czech Republic	2 555 783		1 366 222	10 202	14.49497	16.4903	15.52777
	Denmark	1 401 891		773 880	5 390	8.4784	9.6455	9.0596
	Finland	143 807		73 020	5 213	0.97362	1.1076	1.10592
	France	1 585 172		849 509	61 800	0.90404	1.0285	0.92925
	Germany	2 163 400		1 046 810	82 520	0.94922	1.0799	0.95457
	Greece	154 153		76 864	11 024	0.68284	0.7768	0.7424
	Hungary	18 650 788		m	10 130	121.83572	138.6072	131.45904
	Iceland	827 863		382 465	289	92.99603	105.7975	102.94153
	Ireland	139 097		m	3 991	1.01993	1.1603	1.1121
	Italy	1 300 929		637 186	58 054	0.84368	0.9598	0.89851
	Japan[4]	497 485 000	497 793 850	170 259 300	127 619	138.87055	157.9870	157.75213
	Korea	724 675 000		223 648 900	47 849	784.03339	891.9606	882.2208
	Luxembourg	23 956		10 894	450	0.95797	1.0898	0.92486
	Mexico	6 891 434		1 675 798	102 708	6.99996	7.9635	7.604
	Netherlands	476 349		m	16 224	0.92353	1.0507	0.93674
	New Zealand	139 225		41 608	4 039	1.46351	1.6650	1.52647
	Norway	1 576 745		763 734	4 565	9.27572	10.5526	10.21135
	Poland	814 922		m	38 195	1.842	2.0956	2.06205
	Portugal	130 511		62 167	10 441	0.70954	0.8072	0.76683
	Slovak Republic	1 201 196		470 367	5 380	17.02628	19.3701	18.38823
	Spain	780 550		m	42 005	0.74892	0.8520	0.76044
	Sweden	2 459 413		1 430 602	8 958	9.29994	10.5801	9.94011
	Switzerland	434 562		202 579	7 405	1.76671	2.0099	1.89279
	Turkey	359 763		m	70 712	0.75243	0.8560	0.82769
	United Kingdom	1 105 919	1 062 822	479 419	59 554	0.62718	0.7135	0.63074
	United States	10 918 500	10 793 275	4 006 627	291 085	1	1.1377	1
	Euro Zone					0.879	1.0000	m
Partner countries	**Brazil**	1 346 027		522 329	177 964	0.99	1.1263	m
	Chile	57 356 964		11 585 918	15 670	312.94	356.0182	m
	Israel	523 259		268 275	6 690	3.398	3.8658	m
	Russian Federation	13 201 100		3 964 872	144 169	10.19	11.5927	m

1. Data on GDP, PPPs and total public expenditure in countries in the Euro zone are provided in Euros.
2. GDP calculated for the fiscal year in Australia and GDP and total public expenditure calculated for the fiscal year in New Zealand.
3. 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 Australia, Canada, Japan, the United Kingdom and the United States.
4. Total public expenditure adjusted to financial year.

Source: OECD.

Annex 2

Table X2.3.

Basic reference statistics (reference period: calendar year 1995, 1995 current prices)[1]

	Gross Domestic Product (in millions of local currency)[2]	Gross Domestic Product (in millions of local currency)[3]	Gross Domestic Product (2003 constant prices, base year=1995)[2]	Total public expenditure (in millions of local currency)	Total population in thousand (mid-year estimates)	Purchasing Power Parity for GDP (PPP) (US dollars=1)	Purchasing Power Parity for private consumption (PPP) (US dollars=1)
OECD countries							
Australia	518 158	502 368	698 862	184 270	18 192	1.31 684	1.37969
Austria	175 526		209 419	98 374	7 948	0.94 936	0.98 335
Belgium	207 782		245 321	107 927	10 137	0.92 135	0.95 232
Canada	798 300	768 883	1 046 630	381 542	29 302	1.21 572	1.27027
Czech Republic	1 466 681		1 694 532	783 678	10 331	11.01 945	12.26405
Denmark	1 019 545		1 195 033	606 983	5 230	8.58 466	8.91 466
Finland	96 145		127 669	56 778	5 108	0.97 906	1.13 104
France[4]	1 168 124		1 383 316	625 707	58 020	0.95 643	1.02 936
Germany	1 848 450		2 064 343	1 012 330	81 661	1.02 597	0.99959
Greece	79 927		107 604	40 783	10 634	0.57 855	0.64 704
Hungary	5 656 608		7 711 212	2 327 299	10 329	59.26 325	61.86 322
Iceland	453 709		613 013	186 845	267	75.1 302	87.62 692
Ireland	53 147		99 237	21 838	3 601	0.81 683	0.89 372
Italy	923 052		1 039 644	492 878	57 301	0.77 536	0.82 553
Japan[5]	496 922 200	491 734 450	535 633 626	157 520 900	125 570	175.48 731	197.74 651
Korea	398 837 700		565 837 585	83 080 800	45 093	690.03 741	685.20 741
Luxembourg	13 215		19 900	6 016	410	1.00 224	0.96 317
Mexico	1 837 019		2 448 479	380 924	90 164	2.92 867	3.17044
Netherlands	315 176		383 809	170 327	15 460	0.9 027	0.91 699
New Zealand	93 387		118 964	31 743	3 707	1.46 091	1.47642
Norway	937 445		1 175 229	483 072	4 358	9.00 797	9.53 392
Poland	329 567		449 955	147 561	38 588	1.13 221	1.25 985
Portugal	80 827		98 589	36 403	10 030	0.61 197	0.63 843
Slovak Republic	576 502		783 352	324 312	5 363	13.04 816	13.24353
Spain	447 206		598 889	192 633	39 388	0.70 822	0.75 011
Sweden	1 787 889		2 197 224	1 199 338	8 827	9.41 585	10.211
Switzerland	372 250		415 873	157 093	7 081	1.99 624	2.10287
Turkey	7 762		9 950	m	61 646	0.0 226	0.02 584
United Kingdom	718 383	689 927	900 432	322 597	58 025	0.62 338	0.64 311
United States	7 342 300	7 261 100	9 457 154	2 717 644	266 588	1	1
Partner countries							
Brazil	646 192		745 444	224 283	152 945	0.63	m
Chile	25 875 699		36 850 056	5 265 291	14 210	247.49	m
Israel	284 833		351 181	147 374	5 545	2.986	m
Russian Federation	1 540 493		1 827 208	m	147 613	1.63	m

1. Data on GDP, PPPs and total public expenditure in countries in the Euro zone are provided in Euros.
2. Australia and New Zealand: GDP and total public expenditure calculated for the fiscal year.
3. 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.
4. Excluding Over Sea Departments (DOM).
5.Total public expenditure adjusted to financial year.
Source: OECD.

Table X2.4.

Annual expenditure on educational institutions per student for all services (2003)

In equivalent US dollars converted using PPPs for private consumption, by level of education, based on full-time equivalents

OECD countries	Pre-primary education (for children 3 years and older)	Primary education	Secondary education			Post-secondary non-tertiary education	Tertiary education (including R&D activities)			All tertiary education excluding R&D activities	Primary to tertiary education
			Lower secondary education	Upper secondary education	All secondary education		Tertiary-type B education	Tertiary-type A & advanced research programmes	All tertiary education		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Australia	m	5 226	7 079	7 954	7 408	6 984	7 412	12 681	11 801	8 223	7 160
Austria	6064	6 978	8 521	8 981	8 740	x(4)	10 147	12 223	12 064	7 932	8 857
Belgium	4488	5 949	x(5)	x(5)	7 419	x(5)	x(9)	x(9)	11 381	7 834	7 538
Canada [1,2]	x(5)	x(5)	x(5)	x(5)	6 317	x(7)	23 174	18 094	19 483	16 506	8 421
Czech Republic	2 483	2 122	3 677	3 959	3 816	1 915	3 117	6 707	6 324	5 319	3 638
Denmark	4 515	7 313	7 448	7 862	7 658	x(4,9)	x(9)	x(9)	13 115	9 537	8 567
Finland	3 582	4 684	7 578	5 858	6 516	x(5)	3 509	10 617	10 606	6 608	6 671
France	4 615	4 805	7 396	9721	8 419	5 054	8 683	10 996	10 414	7 131	7 595
Germany	4 838	4 599	5 596	10 175	7 133	10 040	6 264	12 387	11 529	7 242	7 327
Greece	x(2)	3 880	x(5)	x(5)	4 557	3 846	2 393	5584	4 529	3 456	4 310
Hungary [1]	3 693	3 046	3 030	4 282	3 659	x(4)	7 810	7 955	7 948	6 381	4 103
Iceland	6 125	7 003	6 752	5 835	6 232	x(4,9)	m	7 248	7 248	5 248	6 720
Ireland	m	4 365	5 804	5 895	5 846	5 281	x(9)	x(9)	8 567	6 625	5 611
Italy [1]	5 743	6 916	7 219	7 614	7 453	m	6 989	8 242	8 229	5 313	7 477
Japan	3 316	5 590	6 154	6 648	6 411	x(4,9)	6 724	11 368	10 172	m	6 857
Korea	2 336	3 642	4 821	6 614	5 697	a	3 574	8 121	6 300	5 522	5 095
Luxembourg	x(2)	11 892	17 353	17 986	17 690	m	m	m	m	m	m
Mexico	1 905	1 525	1 377	2 569	1 765	a	x(9)	x(9)	5 315	4 601	1 929
Netherlands	5 419	5 754	7 460	6 182	6 898	5 642	m	13346	13 255	8 220	7 395
New Zealand	4 147	4 641	4 605	6 453	5 458	7685	5 813	9 336	8 468	m	5 717
Norway	3 538	7 246	8 364	11 246	9919	x(5)	x(9)	x(9)	12 510	8 457	9 180
Poland [1]	2 920	2 554	2 406	2 844	2 637	6 133	m	4 157	4 099	3 538	2 878
Portugal [1]	4 154	4 167	5 698	5 572	5 638	a	x(9)	x(9)	6 662	m	5 192
Slovak Republic	2 445	1 870	1 950	2 534	2 223	x(4)	x(4)	4 332	4 332	3 980	2 410
Spain	4 088	4 755	x(5)	x(5)	6 321	x(5)	7 876	8 993	8 807	6 464	6 250
Sweden	3 828	6 821	6 967	7 343	7 168	2 682	x(9)	x(9)	15 038	7 745	8 226
Switzerland [1]	3 321	7 590	8 902	14 014	11 396	7 920	7 074	25 838	24 175	13 380	11 267
Turkey [1]	m	790	a	1 298	1 298	a	x(9)	x(9)	m	3 862	1 151
United Kingdom	7 112	5 818	x(5)	x(5)	7 249	x(5)	x(9)	x(9)	11 799	9079	7 334
United States	7 755	8 305	9 156	10 105	9 590	m	x(9)	x(9)	24 074	21 566	12 023

1. Public institutions only.
2. Year of reference 2002.
Source: OECD.

Table X2.5.

Annual expenditure on educational institutions per student for all services (2003)

in equivalent Euros converted using PPPs for GDP, by level of education, based on full-time equivalents

		Pre-primary education (for children 3 years and older)	Primary education	Secondary education			Post-secondary non-tertiary education	Tertiary education (including R&D activities)			All tertiary education excluding R&D activities	Primary to tertiary education
				Lower secondary education	Upper secondary education	All secondary education		Tertiary-type B education	Tertiary-type A & advanced research programmes	All tertiary education		
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
OECD countries	Australia	m	4 245	5 750	6 461	6 017	5672	6020	10 300	9 585	6 679	5 816
	Austria	4 794	5 516	6 737	7 100	6 910	x(4)	8022	9 663	9 538	6 271	7 002
	Belgium	3 602	4 775	x(5)	x(5)	5 955	x(5)	x(9)	x(9)	9 136	6 288	6 051
	Canada [1, 2]	x(5)	x(5)	x(5)	x(5)	5 009	x(7)	18374	14346	15 447	13 087	6 676
	Czech Republic	2 055	1 756	3 044	3 277	3 158	1 585	2 580	5552	5 234	4 403	3 011
	Denmark	3 727	6 037	6 149	6 491	6 323	x(4,9)	x(9)	x(9)	10 828	7 873	7 073
	Finland	3 144	4 111	6 651	5 141	5 719	x(5)	3079	9 318	9 308	5 800	5 855
	France	3 665	3 816	5 874	7 720	6 686	4 014	6 896	8 733	8 270	5 663	6 032
	Germany	3 759	3 573	4 348	7 906	5 542	7 801	4 867	9 625	8 958	5 627	5 693
	Greece	x(2)	3 259	x(5)	x(5)	3 828	3 231	2 010	5 337	4 328	3 302	4 119
	Hungary [1]	3 079	2 539	2 526	3 569	3 050	x(4)	6 511	6 632	6 626	5 320	3 421
	Iceland	5 239	5 990	5 775	4 991	5 330	x(4,9)	m	6 199	6 199	4 488	5 747
	Ireland	m	3 678	4 890	4 967	4 925	4 449	x(9)	x(9)	7 217	5 581	4 727
	Italy [1]	4 726	5 691	5 940	6 265	6 133	m	5 751	6 782	6 771	4 372	6 153
	Japan	2 910	4 907	5 401	5 835	5 627	x(4,9)	5 902	9 977	8 928	m	6 018
	Korea	2 031	3 166	4191	5 750	4 953	a	3 107	7 060	5 478	4 800	4 429
	Luxembourg	x(2)	8 871	12 945	13 417	13 195	m	m	m	m	m	m
	Mexico	1 599	1 280	1 155	2 156	1 482	a	x(9)	x(9)	4 461	3 862	1 619
	Netherlands	4 247	4 509	5 846	4 845	5 406	4 422	m	10 459	10388	6 442	5 795
	New Zealand	3 342	3 740	3 711	5 200	4 399	6 194	4 685	7 524	6 824	m	4 607
	Norway	3 009	6 164	7 114	9 565	8 437	x(5)	x(9)	x(9)	10 641	7 193	7 808
	Poland [1]	2 525	2 209	2 081	2 460	2 280	5 305	m	3 595	3 545	3 060	2 489
	Portugal [1]	3 469	3 479	4 758	4 653	4 708	a	x(9)	x(9)	5 563	m	4 335
	Slovak Republic	2 040	1 560	1 627	2 114	1855	x(4)	x(4)	3 614	3 614	3 321	2 011
	Spain	3 207	3 731	x(5)	x(5)	4 959	x(5)	6 179	7 055	6 910	5 071	4 903
	Sweden	3 161	5 633	5 753	6 064	5 920	2 215	x(9)	x(9)	12 419	6 396	6 793
	Switzerland [1]	2 749	6 283	7 369	11 600	9 433	6 556	5 856	21 388	20 011	11 076	9 326
	Turkey [1]	m	671	a	1 103	1 103	a	x(9)	x(9)	m	3 282	978
	United Kingdom	5 527	4 520	x(5)	x(5)	5 633	x(5)	x(9)	x(9)	9 168	7054	5 699
	United States	5 992	6417	7074	7 808	7410	m	x(9)	x(9)	18 600	16 663	9 289
	OECD average	*3 963*	*4 791*	*5 766*	*6 665*	*6 120*	*3 902*	~	~	*9 929*	*7 153*	*6 012*
	OECD total	*4 359*	*4 443*	~	~	*6 097*	~	~	~	*12 847*	*10 747*	*6 570*
Partner countries	Brazil [2]	814	764	971	1 013	986	a	x(9)	x(9)	8 838	m	1 092
	Chile [3]	2 172	1 880	1 867	2 005	1 955	a	2 750	7 367	6 163	m	2 528
	Israel	3 268	4 410	x(5)	x(5)	5 238	3 273	7 359	11 375	10 500	m	5 657
	Russian Federation [1]	m	x(5)	x(5)	x(5)	1 262	x(5)	1 524	2 409	2 154	m	1 406

1. Public institutions only.
2. Year of reference 2002.
3. Year of reference 2004.

Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.

Table X2.6a.
Reference statistics used in the calculation of teachers' salaries, by level of education (1996, 2004)

		Teachers' salaries in national currency (1996)[1]								
		Primary education			Lower secondary education			Upper secondary education, general programmes		
		Starting salary / minimum training	Salary after 15 years of experience / minimum training	Salary at top of scale / minimum training	Starting salary / minimum training	Salary after 15 years of experience / minimum training	Salary at top of scale / minimum training	Starting salary / minimum training	Salary after 15 years of experience / minimum training	Salary at top of scale / minimum training
OECD countries	Australia	25 693	46 781	46 781	25 693	46 781	46 781	25 693	46 781	46 781
	Austria	19 911	25 522	40 136	20 598	26 791	42 910	21 891	29 334	48 204
	Belgium (Fl.)[2]	20 479	27 542	32 721	20 950	29 346	35 781	25 998	37 534	45 119
	Belgium (Fr.)[2]	20 479	27 542	32 721	20 950	29 346	35 781	25 998	37 534	45 119
	Czech Republic	w	w	w	w	w	w	w	w	w
	Denmark	200 000	244 000	250 000	200 000	244 000	250 000	218 000	310 000	325 000
	England	12 113	20 423	20 423	12 113	20 423	20 423	12 113	20 423	20 423
	Finland	17 660	23 378	24 051	19 846	27 751	28 928	20 519	28 928	30 610
	France	w	w	w	w	w	w	w	w	w
	Germany	w	w	w	w	w	w	w	w	w
	Greece	10 772	12 854	15 148	11 141	13 223	15 518	11 141	13 223	15 518
	Hungary	341 289	462 618	597 402	341 289	462 618	597 402	435 279	574 067	717 756
	Iceland	m	m	m	m	m	m	m	m	m
	Ireland	18 235	28 189	33 362	19 141	29 872	33 679	19 141	29 872	33 679
	Italy	14 939	18 030	21 864	16 213	19 796	24 233	16 213	20 412	25 442
	Japan	3 462 000	5 917 000	8 475 000	3 462 000	5 917 000	8 475 000	3 462 000	5 917 000	8 733 000
	Korea	w	w	w	w	w	w	w	w	w
	Luxembourg	m	m	m	m	m	m	m	m	m
	Mexico	29 105	38 606	63 264	37 092	47 174	76 196	m	m	m
	Netherlands	21 772	26 537	32 627	22 925	28 847	35 840	23 120	40 273	47 756
	New Zealand	23 000	39 220	39 220	23 000	39 220	39 220	23 000	39 220	39 220
	Norway	165 228	201 446	204 211	165 228	201 446	204 211	178 752	207 309	222 078
	Poland	m	m	m	m	m	m	m	m	m
	Portugal	9 970	15 001	25 902	9 970	15 001	25 902	9 970	15 001	25 902
	Scotland	12 510	20 796	20 796	12 510	20 796	20 796	12 510	20 796	20 796
	Slovak Republic	m	m	m	m	m	m	m	m	m
	Spain	18 609	21 823	27 940	m	m	m	21 582	25 327	31 780
	Sweden	w	w	w	w	w	w	w	w	w
	Switzerland	65 504	87 585	100 847	m	m	m	m	m	m
	Turkey	w	w	w	a	a	a	w	w	w
	United States	m	m	m	m	m	m	m	m	m
Partner country	Israel	m	m	m	m	m	m	m	m	m

1. Data on salaries for countries now in the Euro zone are shown in Euros.
2. Data on teachers' salaries for 1996 refer to Belgium.
Source: OECD.

Table X2.6a. *(continued)*

Reference statistics used in the calculation of teachers' salaries, by level of education (1996, 2004)[1]

		Teachers' salaries in national currency (2004)[2]									
		Primary education			Lower secondary education			Upper secondary education, general programmes			
		Starting salary / minimum training	Salary after 15 years of experience / minimum training	Salary at top of scale / minimum training	Starting salary / minimum training	Salary after 15 years of experience / minimum training	Salary at top of scale / minimum training	Starting salary / minimum training	Salary after 15 years of experience / minimum training	Salary at top of scale / minimum training	GDP deflator 2004 (1996 = 100)
OECD countries	**Australia**	41 041	60 764	60 764	41 524	60 969	60 969	41 524	60 969	60 969	119
	Austria	22 895	30 271	45 691	23 797	32 391	47 821	24 114	33 322	50 662	107
	Belgium (Fl.)	24 797	34 376	41 620	24 797	34 740	42 359	30 775	44 434	53 417	112
	Belgium (Fr.)	23 183	32 258	39 174	23 370	32 986	40 409	29 124	42 431	51 182	112
	Czech Republic	221 023	290 316	367 227	221 023	290 316	367 227	221 561	302 021	382 689	139
	Denmark	287 438	323 539	323 539	287 438	323 539	323 539	282 304	396 695	396 695	115
	England	18 105	26 460	26 460	18 105	26 460	26 460	18 105	26 460	26 460	119
	Finland	27 020	31 490	31 490	31 360	37 080	37 080	33 700	42 120	42 120	113
	France	21 014	28 268	41 708	23 249	30 503	44 053	23 574	30 828	44 411	110
	Germany	35 479	44 149	46 034	36 810	45 308	47 299	39 809	48 804	50 994	106
	Greece	16 100	19 460	23 464	16 100	19 460	23 464	16 100	19 460	23 464	133
	Hungary	1 408 824	1 802 916	2 403 756	1 408 824	1 802 916	2 403 756	1 588 968	2 225 532	2 973 024	200
	Iceland	1 799 424	2 082 660	2 319 972	1 799 424	2 082 660	2 319 972	2 320 000	2 846 000	2 990 000	131
	Ireland	27 034	44 781	50 746	27 959	44 781	50 746	27 959	44 781	50 746	137
	Italy	20 391	24 664	30 003	21 972	26 862	32 938	21 972	27 614	34 434	119
	Japan	3 335 000	6 236 000	7 956 000	3 335 000	6 236 000	7 956 000	3 335 000	6 237 000	8 192 000	93
	Korea	22 697 700	38 830 000	62 344 000	22 601 700	38 734 000	62 248 000	22 601 700	38 734 000	62 248 000	122
	Luxembourg	44 022	60 623	89 723	63 421	79 276	110 181	63 421	79 276	110 181	118
	Mexico	90 158	118 661	196 513	115 599	150 860	249 001	m	m	m	216
	Netherlands	28 636	37 210	41 568	29 686	40 952	45 619	29 982	54 790	60 426	123
	New Zealand	27 726	53 638	53 638	27 726	53 638	53 638	27 726	53 638	53 638	115
	Norway	273 366	326 910	338 538	273 366	326 910	338 538	273 366	326 910	338 538	129
	Poland	11 852	19 022	19 744	11 852	19 022	19 744	11 852	19 022	19 744	153
	Portugal	13 612	22 441	35 216	13 612	22 441	35 216	13 612	22 441	35 216	128
	Scotland	18 000	28 707	28 707	18 000	28 707	28 707	18 000	28 707	28 707	119
	Slovak Republic	m	m	m	m	m	m	m	m	m	147
	Spain	23 644	27 382	34 157	26 445	30 638	37 795	26 968	31 308	38 596	126
	Sweden	232 500	272 900	312 900	240 000	281 200	318 700	249 500	293 700	338 100	110
	Switzerland	68 426	90 497	108 443	73 930	95 999	115 287	92 906	120 290	141 890	105
	Turkey	12887545000	14230765000	16048525000	a	a	a	12118720000	13461940000	15279700000	2 032
	United States	32 703	39 740	m	31 439	40 088	m	31 578	40 043	m	113
Partner country	**Israel**[3]	46 240	56 731	78 954	46 240	56 731	78 954	46 240	56 731	78 954	100

1. For the computation of teachers' salaries in equivalent US dollars shown in Indicator D3, teachers' salaries are converted from national currencies to US dollars using January 2003 PPPs **for GDP** and adjusted for inflation where necessary. Teachers' salaries in equivalent US dollars based on January 2003 PPPs **for final consumption** are shown in table X2.5a of Annex 2.
2. Data on salaries for countries now in the Euro zone are shown in Euros.
3. Reference year 2002.

Source: OECD.

Table X2.6b.
Reference statistics used in the calculation of teachers' salaries (1996, 2003)

		Purchasing power parity for GDP (PPP) (2003)[1]	Purchasing power parity for GDP (PPP) (2004)[1]	Purchasing power parity for GDP (PPP) (January2004)[1]	Gross domestic product (in millions of local currency, calendar year 2004)[1]	Total population in thousands (calendar year 2004)	GDP per capita (in equivalent US dollars, calendar year 2004)[2]	Reference year for 2004 salary data	Adjustments for inflation (2003)
OECD countries	**Australia**	1.35	1.36	1.35	891 524	20 213	32 409	2004	0.98
	Austria	0.91	0.89	0.90	237 039	8 175	32 520	2003/2004	1.00
	Belgium (Fl.)[3]	0.88	0.88	0.88	288 089	10 418	31 390	jan 2004	1.00
	Belgium (Fr.)[3]	0.88	0.88	0.88	288 089	10 418	31 390	2003/2004	1.00
	Czech Republic	14.49	14.55	14.52	2 767 717	10 207	18 643	2003/2004	1.00
	Denmark	8.48	8.41	8.44	1 460 450	5 403	32 141	2004	0.99
	England[4]	0.63	0.63	0.63	1 164 941	59 835	30 833	jan 2004	1.00
	Finland	0.97	0.96	0.97	149 725	5 227	29 782	01 oct. 2004	1.00
	France	0.90	0.91	0.91	1 648 369	62 177	28 992	2003/2004	1.00
	Germany	0.95	0.93	0.94	2 215 650	82 501	28 813	2003/2004	1.00
	Greece	0.68	0.70	0.69	167 169	11 057	21 596	2003	1.02
	Hungary	121.84	126.64	124.24	20 413 478	10 107	15 948	2003/2004	1.00
	Iceland	93.00	92.99	92.99	885 008	293	32 482	2003/2004	1.00
	Ireland	1.02	1.01	1.01	148 556	4 059	36 341	2003/2004	1.00
	Italy	0.84	0.85	0.85	1 351 328	58 130	27 311	2004	0.99
	Japan	138.87	133.72	136.30	504 842 400	127 687	29 567	2003/2004	1.00
	Korea	784.03	784.26	784.15	778 444 600	48 082	20 644	2004	0.99
	Luxembourg	0.96	0.94	0.95	25 664	452	60 188	2003/2004	1.00
	Mexico	7.00	7.24	7.12	7 630 985	104 000	10 139	2003/2004	1.00
	Netherlands	0.92	0.91	0.92	488 642	16 273	32 996	2003/2004	1.00
	New Zealand	1.46	1.48	1.47	148 558	4 084	24 608	2004	0.99
	Norway	9.28	9.18	9.23	1 710 411	4 591	40 568	2003/2004	1.00
	Poland	1.84	1.87	1.85	883 656	38 180	12 410	2003/2004	1.00
	Portugal	0.71	0.71	0.71	135 079	10 524	18 098	2003/2004	1.00
	Scotland[4]	0.63	0.63	0.63	1 164 941	59 835	30 833	2003/2004	1.00
	Slovak Republic	17.03	17.91	17.47	1 325 486	5 382	13 752	2002/2003	1.00
	Spain	0.75	0.76	0.75	837 316	42 692	25 875	2003/2004	1.00
	Sweden	9.30	9.19	9.24	2 573 176	8 994	31 139	2003	1.00
	Switzerland	1.77	1.72	1.74	445 931	7 483	34 710	2003/2004	1.00
	Turkey	752430.00	793050.00	772740	430 511	71 789	7 562	2003/2004	1.00
	United States	1.00	1.00	1.00	11 679 200	293 951	39 732	2003/2004	1.00
Partner country	**Israel**[5]	3.40	3.40	3.40	523 259	6 690	23 018	2003/2004	1.00

1. Data on PPPs and GDP for countries now in the Euro zone are shown in Euros.
2. GDP per capita in national currencies (2003) has been calculated from total population (2003) and total GDP (2003), and has been converted to US dollars using PPPs **for GDP** (2003). These data are available in this table.
3. Data on gross domestic product and total population refer to Belgium.
4. Data on gross domestic product and total population refer to the United Kingdom.
5. Reference year 2002.
Source: OECD.

Annex 2

Table X2.6c.

Teachers' salaries (2004)

Annual statutory teachers' salaries in public institutions at starting salary, after 15 years of experience and at the top of the scale by level of education, in equivalent euros converted using PPPs

		Primary education				Lower secondary education				Upper secondary education			
		Starting salary/ minimum training	Salary after 15 years of experience / minimum training	Salary at top of scale / minimum training	Ratio of salary after 15 years of experience to GDP per capita	Starting salary/ minimum training	Salary after 15 years of experience / minimum training	Salary at top of scale /minimum training	Ratio of salary after 15 years of experience to GDP per capita	Starting salary/ minimum training	Salary after 15 years of experience / minimum training	Salary at top of scale /minimum training	Ratio of salary after 15 years of experience to GDP per capita
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
OECD countries	**Australia**	26 087	38 624	38 624	1.36	26 395	38 754	38 754	1.36	26 395	38 754	38 754	1.36
	Austria	22 342	29 539	44 586	1.03	23 222	31 608	46 665	1.11	23 531	32 516	49 437	1.14
	Belgium (Fl.)	24 732	34 286	41 511	1.24	24 732	34 648	42 248	1.26	30 694	44 318	53 276	1.61
	Belgium (Fr.)	23 122	32 173	39 071	1.17	23 308	32 900	40 303	1.19	29 048	42 320	51 047	1.54
	Czech Republic	13 365	17 555	22 206	1.07	13 365	17 555	22 206	1.07	13 397	18 263	23 141	1.12
	Denmark	29 583	33 298	33 298	1.18	29 583	33 298	33 298	1.18	29 054	40 827	40 827	1.45
	England	25 260	36 916	36 916	1.36	25 260	36 916	36 916	1.36	25 260	36 916	36 916	1.36
	Finland	24 516	28 571	28 571	1.09	28 453	33 643	33 643	1.29	30 577	38 216	38 216	1.46
	France	20 292	27 297	40 276	1.07	22 451	29 455	42 540	1.16	22 764	29 769	42 886	1.17
	Germany	33 116	41 209	42 968	1.63	34 358	42 290	44 149	1.67	37 158	45 554	47 598	1.80
	Greece	20 809	25 151	30 326	1.33	20 809	25 151	30 326	1.33	20 809	25 151	30 326	1.33
	Hungary	9 956	12 741	16 987	0.91	9 956	12 741	16 987	0.91	11 229	15 728	21 010	1.12
	Iceland	16 989	19 664	21 904	0.69	16 989	19 664	21 904	0.69	21 905	26 871	28 230	0.94
	Ireland	23 420	38 794	43 962	1.22	24 221	38 794	43 962	1.22	24 221	38 794	43 962	1.22
	Italy	20 855	25 226	30 687	1.05	22 473	27 474	33 688	1.15	22 473	28 243	35 219	1.18
	Japan	21 484	40 171	51 251	1.55	21 484	40 171	51 251	1.55	21 484	40 178	52 772	1.55
	Korea	25 084	42 912	68 898	2.37	24 978	42 806	68 792	2.36	24 978	42 806	68 792	2.36
	Luxembourg	40 657	55 990	82 865	1.06	58 574	73 217	101 760	1.39	58 574	73 217	101 760	1.39
	Mexico	11 120	14 636	24 238	1.64	14 258	18 607	30 712	2.09	m	m	m	m
	Netherlands	27 424	35 636	39 809	1.23	28 430	39 220	43 689	1.35	28 714	52 471	57 869	1.81
	New Zealand	16 367	31 663	31 663	1.47	16 367	31 663	31 663	1.47	16 367	31 663	31 663	1.47
	Norway	26 005	31 098	32 205	0.87	26 005	31 098	32 205	0.87	26 005	31 098	32 205	0.87
	Poland	5 614	9 011	9 353	0.83	5 614	9 011	9 353	0.83	5 614	9 011	9 353	0.83
	Portugal	16 848	27 776	43 588	1.75	16 848	27 776	43 588	1.75	16 848	27 776	43 588	1.75
	Scotland	25 113	40 051	40 051	1.48	25 113	40 051	40 051	1.48	25 113	40 051	40 051	1.48
	Slovak Republic	m	m	m	m	m	m	m	m	m	m	m	m
	Spain	27 552	31 908	39 803	1.40	30 816	35 702	44 042	1.57	31 426	36 483	44 976	1.61
	Sweden	22 083	25 920	29 720	0.95	22 796	26 709	30 271	0.98	23 698	27 896	32 113	1.02
	Switzerland	34 492	45 618	54 664	1.50	37 267	48 391	58 114	1.59	46 832	60 636	71 524	1.99
	Turkey	14 643	16 169	18 235	2.44	a	a	a	a	13 769	15 296	17 361	2.30
	United States	28 713	34 892	m	1.00	27 603	35 197	m	1.01	27 725	35 158	m	1.01
	OECD average	22 588	30 817	37 181	1.30	24 197	32 914	39 753	1.32	25 368	35 379	42 317	1.42
	EU19 average	22 833	30 452	36 828	1.20	24 519	32 408	38 984	1.26	25 510	35 176	42 179	1.37
Partner countries	**Chile**	9 589	11 393	15 365	1.11	9 589	11 393	15 365	1.11	9 589	11 922	16 086	1.16
	Israel	11 948	14 659	20 401	0.73	11 948	14 659	20 401	0.73	11 948	14 659	20 401	0.73

Source: OECD. See Annex 3 for notes *(www.oecd.org/edu/eag2006)*.
Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

General notes

Definitions

Gross domestic product (GDP) refers to the producers' value of the gross outputs of resident producers, including distributive trades and transport, less the value of purchasers' intermediate consumption plus import duties. GDP is expressed in local money (in millions). For countries which provide this information for a reference year that is different from the calendar year (such as Australia and New Zealand), adjustments are made by linearly weighting their GDP between two adjacent national reference years to match the calendar year.

The **GDP deflator** is obtained by dividing the GDP expressed at current prices by the GDP expressed at constant prices. This provides an indication of the relative price level in a country. Data are based on the year 1995.

GDP per capita is the gross domestic product (in equivalent US dollars converted using PPPs) divided by the population.

Purchasing power parity exchange rates (PPP) are the currency exchange rates that equalise the purchasing power of different currencies. This means that a given sum of money when converted into different currencies at the PPP rates will buy the same basket of goods and services in all countries. In other words, PPPs are the rates of currency conversion which eliminate the differences in price levels among countries. Thus, when expenditure on GDP for different countries is converted into a common currency by means of PPPs, it is, in effect, expressed at the same set of international prices so that comparisons between countries reflect only differences in the volume of goods and services purchased.

Total public expenditure as used for the calculation of the education indicators, corresponds to the non-repayable current and capital expenditure of all levels of government. Current expenditure includes final consumption expenditure (*e.g.* compensation of employees, consumption intermediate goods and services, consumption of fixed capital, and military expenditure), property income paid, subsidies, and other current transfers paid (*e.g.,* social security, social assistance, pensions and other welfare benefits). Capital expenditure is spending to acquire and/or improve fixed capital assets, land, intangible assets, government stocks, and non-military, non-financial assets, and spending to finance net capital transfers.

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The theoretical framework underpinning national accounts has been provided for many years by the United Nations' publication *A System of National Accounts*, which was released in 1968. An updated version was released in 1993 (commonly referred to as SNA93).

OECD Analytical Data Base, January 2006.

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/edu/eag2006*

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Across OECD countries, governments are seeking policies to make education more effective while searching for additional resources to meet the increasing demand for education.

The 2006 edition of *Education at a Glance* enables countries to see themselves in the light of other countries' performance. It provides a rich, comparable and up-to-date array of indicators on the performance of education systems and represents the consensus of professional thinking on how to measure the current state of education internationally.

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- Instruction time per subject for 9-to-14-year-olds.
- A picture of student mobility and the significance of internationalisation of higher education.

The Excel™ spreadsheets used to create the tables and charts in this book are available via the *StatLinks* printed in this book. The tables, charts and the complete Education Database are freely available via the OECD Education Web site at *www.oecd.org/edu/eag2006.*

FURTHER READING
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