



## *Education at a Glance 2007*

### *OECD Briefing Note*

*for*

*Austria*

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.

In response to this need, the OECD Directorate for Education devotes a major effort to the development and analysis of quantitative, internationally comparable indicators, which are published annually in *Education at a Glance*. These indicators enable educational policy makers and practitioners alike 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.

This note contrasts **key findings for Austria** with **global trends among OECD countries**, under the headings: quantity and quality challenges, equity challenges, and resource and efficiency challenges.

*Education at a Glance 2007*, as well as its executive summary, all data and web-only tables, can be downloaded free of charge at [www.oecd.org/de/bildungaufeinenblick](http://www.oecd.org/de/bildungaufeinenblick).

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## **QUANTITY AND QUALITY CHALLENGES**

*Previous editions of **Education at a Glance** have shown how demands for more and better education have driven a massive quantitative expansion of education systems in OECD countries, particularly at the tertiary level of education. What has been the impact of this on labour market returns? Has the increasing supply of well-educated labour been matched by the creation of an equivalent number of high-paying jobs? Or one day will everyone have a university degree and work for the minimum wage?*

*It is certainly conceivable that at least some new graduates will end up doing jobs that do not require graduate skills and that they will obtain these jobs at the expense of less highly qualified workers. Such a crowding-out effect may be associated with a relative rise in unemployment among people with low qualifications (as higher-qualified workers take their jobs), but also potentially with a reduction in the pay premium associated with tertiary qualifications (as a rise in graduate supply outstrips any rise in demand for graduate skills).*

***Education at a Glance 2007** examines this question and the results suggest that the expansion has had a positive impact for individuals and economies and that there are, as yet, no signs of an “inflation” of the labour-market value of qualifications.*

### **Global trends**

***Education systems continue to expand at a rapid pace.***

- In most OECD countries, among adults aged 55 to 64 (who entered the workforce in the 1960s and early 1970s) between 7 and 27% have completed higher education, except in Canada and the United States where more than 30% have done so. Among younger adults aged 25 to 34, at least 30% have obtained tertiary qualifications in 19 countries and over 40% have in 6 countries (Indicator A1). On average, the proportion of the population with tertiary qualifications has risen from 19 to 32% of the population between these two groups.
- Although most countries have seen at least some growth in tertiary enrolments (Indicator C2) and in tertiary attainment, the rate of expansion has varied widely from one country to another and from one time period to another. Much of the growth has come from periods of rapid, policy-driven expansion in certain countries. Korea, Ireland and Spain, for example, more than doubled the proportion of tertiary graduates entering the workforce between the late 1970s and the late 1990s from initially low levels. In the United States and Germany, however, the proportion remained largely unchanged, with relatively high levels in the United States and comparatively low levels in Germany (Indicator A1).
- Current rates of graduation from traditional universities range from around 20% or less in Austria, Germany and Turkey to more than 40% in Australia, Denmark, Finland, Iceland, Italy, the Netherlands, New Zealand, Norway and Poland.

***Current entry rates to tertiary education suggest that***

### **Key results for Austria**

***In Austria, tertiary qualifications continue to expand but not as rapidly as in many countries...***

- In Austria 18% of the adult population aged 25-to-64 years are qualified to the tertiary level, well below the OECD average of 26% (Table A1.3a). Despite being among the lowest levels in the OECD in university-level attainment, Austria has seen growth in tertiary qualifications over past generations, rising from 14% among 55-to-64-year-olds to 20% among 25-to-34-year-olds. However, its relative standing among OECD countries has fallen slightly, from rank 21 among 55-to-64-year-olds to rank 23 among 25-to-34-year-olds (Table A1.3a).
- Rates of current participation suggest that graduation rates will continue to increase slowly in Austria compared to other OECD countries. The increase in tertiary enrolment between 1995 and 2004, which will influence graduation rates, was, at 3%, considerably below the OECD average level of 41% (Table B1.5).
- The university graduation rates tend to be higher in countries where the programmes provided are of shorter duration. More than two thirds of all OECD students graduate from programmes with a duration of three to less than five years, whereas the proportion is 26 % in Austria and less than 60% in European countries (Table A3.1).
- On average across OECD countries, the graduation rate for shorter, vocationally oriented programmes represents 8.9%, and 1.3% for programmes leading to advanced research qualifications and is at the level of the OECD average (respectively 7.6 and 2.0 % in Austria – Table A3.1 ).

***Entry to university-level programmes in Austria has increased over the last decade but Austria has not***

### *the expansion will continue.*

- 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 university-level programmes (tertiary-Type A) in 2005. Entry rates in university-level programmes substantially increased between 1995 and 2005, by 18 percentage points on average in OECD countries. Between 2000 and 2005 alone, the growth exceeded 10 percentage points in more than one-quarter of the 24 OECD countries with comparable data. The proportion of students who enter non-university tertiary programmes (tertiary-Type B) is generally smaller, with an OECD average of 15% of young people entering such programmes, compared with an average of 54% for university-level programmes.

### *Almost a third of those who enter a tertiary programme do not complete it successfully.*

- On average across the 19 OECD countries with comparable data, 30% of tertiary students fail to successfully complete a programme equivalent to this level of education. In Greece and New Zealand less than 60% of those who have entered tertiary education will graduate from either a tertiary-type A or a tertiary-type B programme in contrast to their counterparts in the Flemish Community of Belgium, France, Ireland and Japan, where the survival rate is at or above 76%.

### *In most countries, the number of science graduates has increased faster than the overall number of graduates.*

- The number of persons with a tertiary science degree per 100,000 employed persons ranges from below 700 in Hungary to above 2200 in Australia, Finland, France, Ireland, Korea, New Zealand and the United Kingdom (Table A3.4).
- The ratio of younger to older age groups with science as a field of study is 3.0, compared with a ratio for all fields of study of 2.3. In Austria and Canada, the ratio is larger than 4.0, in Hungary and Ireland larger than 6.0, and in Portugal and Spain larger than 8.0 (Table A1.5).

### *caught up with other countries...*

- An examination of today's entry rates in universities underlines this trend. While the proportion of the Austria's age cohort entering tertiary-type A programmes was 27% in 1995 – significantly below the OECD average of 37% (Table C2.5) – in 2005 it was 37%, compared to an OECD average of 54% (Table C2.4). In Australia, Finland, Hungary, Iceland, New Zealand, Norway, Poland, Sweden and the United States more than 60% of young people will enter tertiary-type A programmes.

### *... and one-third of entrants does not complete their studies in Austria*

- Only 65% of entrants to university-level education in Austria obtain a degree. This is one of the lowest "survival rate" among OECD countries, where the average is 71%. In New Zealand and the United States only just over 50% of those who enter university-level programmes 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% (Table A3.6).

### *In Austria, the number of tertiary science graduates remains below the OECD average...*

- A comparatively low share of graduates in Austria study science, 9% as compared with the OECD average of 11%. (Table A1.4). In the remaining fields, Austria's performance is above to the OECD average for engineering (15% against 14% in average) and for social science, science business and law (34% against 29% in average).
- In Austria there are 1 139 people with a tertiary science degree per 100,000 employed 25-34-year-olds, compared with an OECD average of 1 675 (Table A3.4).
- Social sciences, business, law and services are the most common subjects of graduates, with these subjects representing more than 40% of the annual university level graduate output (Table A3.3).
- ... with a particularly large gender gap in favour of males.
- The number of females science graduates from tertiary education per 100 000 25-to-34-year-olds in employment is one of the lowest among OECD

countries and significantly lower than that of males (577 against 1 617). It is also much lower than the OECD average (1175) (Table A3.4).

***However, the number of science graduates has increased faster than the OECD average over recent decades***

- A comparison of younger to older age groups with science as a field of study shows the increase in science graduates over recent decades: The ratio of 25-to-34-year-olds with a university-level qualification plus 30-to-39-year-olds with an advanced research qualification to 55-to-64-year-olds with a university-level or advanced research qualification is 4.8 in Austria, compared with an OECD average of 3.0 (Table A1.5).

***The effects of tertiary expansion: a high calibre workforce or the overqualified crowding out the lesser qualified?***

- The labour-market and financial incentives for attaining tertiary qualifications continue to remain high for both men and women, despite the rapid growth in the number of those obtaining qualifications. This can be seen when contrasting the advantages of tertiary education for individuals in terms of higher average earnings, lower risks of unemployment and the public subsidies they receive during their studies, with the costs that individuals incur when studying, such as tuition fees, lost earnings during studies and higher tax rates later in life. In all countries with comparable data, the private rate of return for those who acquire tertiary degrees immediately following school is higher than real interest rates, and often significantly so, at at least 9.8% in all eleven countries for which data are available – except for Denmark, New Zealand and Sweden (Table A9.6).
- The average unemployment rate among those only with lower secondary education is 5 percentage points higher than those whose highest level is upper secondary and 7 points higher than those with tertiary education (Indicator A8). The data show that while unemployment is substantially higher than the average among those with low qualifications, this situation has not worsened in those countries that have expanded tertiary education. However, in those countries that did not expand tertiary education, there has been a rise in the relative risk. Indeed, in these countries a failure to complete upper secondary education is now associated with an 80% greater probability of being unemployed, compared to less than 50% in those countries that have increased tertiary education the most.
- Countries expanding tertiary education attainment more in the late 1990s tended to have a greater fall (or

***Despite being among the lowest levels in the OECD in university-level attainment, the labour-market benefits of tertiary education are high in Austria.***

- In Austria, the earnings advantage for university-level graduates aged 30-to-44 years over persons with an upper secondary qualification is 70%, a very high level. Only the Czech Republic, Hungary, Ireland, Luxembourg, Portugal, the United Kingdom and the United States, have higher earnings differentials. When including all tertiary qualifications, the earnings advantage is, at 48% also higher than the OECD average but figures for the Czech Republic (91%), Germany (50%), Hungary (125%), Ireland (59%), Luxembourg (52%), Poland (69%), Portugal (79%), Switzerland (57%), the United Kingdom (61%) and the United States (75%) are higher (Table A9.1a). Tertiary graduates in Austria also have a much greater chance of finding jobs (Table A8.1a).
- Although both males and females with upper secondary or tertiary attainment have 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. When all levels of education are taken together (*i.e.* total earnings are divided by the total number of income earners, by gender) the earnings of females between the ages of 30 and 44 range from 51% of those of males in Korea, to 84% of those of males in Luxembourg; in Austria it is 57%. The gap in earnings between males and females may be explained by many factors, including differences in the amount of time that males and females spend in the labour force, and the high incidence of part-time work among females. To some extent it may also be due to different career and occupational choices (Table A9.1b).
- The benefits of tertiary education in Austria are visible in improved employment prospects (Table A8.3a). Employment rates for those with tertiary education is 11

smaller rise) in unemployment between 1995 and 2004 than countries with less tertiary expansion. For example, France, Ireland and Korea had the fastest growth in tertiary attainment and close to zero or negative growth in unemployment; Germany, the Czech Republic and the Slovak Republic had low or no growth in tertiary attainment but substantial growth in unemployment among the unqualified (Indicator A1).

percentage points higher relative to upper secondary and post-secondary non-tertiary educated individuals and 32 percentage points higher than for those without upper secondary education. The employment advantage of having a tertiary education has not decreased over the last decade, but one can argue that it has strengthened in more recent years.

- The indicators provide no evidence that the lesser qualified are crowded out from the labour market and there is much to point to the opposite: that the least educated individuals benefit in terms of better employment opportunities when more people enter higher education. In addition, an analysis of trends in the absolute level of unemployment for upper-secondary educated adults suggests that changes in the level of unemployment during the period 1995 to 2004 are unrelated to changes in tertiary attainment levels. In fact, for both upper and lower secondary unemployment, there is no statistically significant correlation between an expansion in tertiary attainment and movement in unemployment rates after controlling for growth in GDP. There is, however, a significant correlation between increases in tertiary and upper secondary attainments and the fall in relative unemployment for lower-secondary educated adults. All this suggests that employment prospects among the least well-educated are principally tied to growth in the economy and in general to productivity, to which an adequate supply of high-skilled labour can potentially contribute.
- Furthermore, higher qualifications do not create unemployment among those with tertiary qualifications or a slump in their pay. Although this does not imply that tertiary graduates enter jobs in line with their qualifications, it still indicates that the benefits of higher education have not deteriorated as higher education has expanded. And while there have been some small rises in the relative risk of unemployment for graduates, this has been no worse where tertiary attainment has expanded fastest.
- In all OECD countries graduates face much lower levels of unemployment than do other groups. In terms of pay, the data suggest some curbing of an increasing advantage for tertiary graduates where their supply has risen fastest, but not a general fall. This evidence corroborates similar results from cross-sectional studies, suggesting that lower-educated groups share in the benefit of more tertiary education and that the extra skills produced have largely been absorbed by the labour market. It is interesting to note that positive effects seem to be more pronounced in recent years, contradicting the notion that tertiary education, so far, is expanding too rapidly.

***The internationalisation of tertiary education is proceeding rapidly.***

- In 2005, over 2.7 million tertiary students were enrolled outside their country of citizenship. This represented a 5% increase in total foreign student intake reported to the OECD and the UNESCO Institute for Statistics from the previous year.
- 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 18% of tertiary enrolments. International students are most numerous in tertiary enrolments in Australia, Austria, France, New Zealand, Switzerland and the United Kingdom.
- 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 economies.
- In Spain, Switzerland and the United States, and the partner economy Brazil, more than 15% of international students are enrolled in advanced research programmes.
- 30% or more of international students are enrolled in sciences, agriculture or engineering in Finland, Germany, Hungary, Sweden, Switzerland, the United Kingdom and the United States. International graduates contribute to 20% or more of the graduate output for tertiary-type A programmes in Australia and the United Kingdom. The same holds for foreigners graduating in Belgium. The contribution of international and foreign graduates to the tertiary graduate output is especially high for advanced research programmes in Belgium, Switzerland, the United Kingdom and the United States.

***The share of the international education market is relatively modest in Austria (size effect) ...***

- Five countries (Australia, France, Germany, the United Kingdom and the United States) together receive nearly 60 per cent of all tertiary foreign students studying in the OECD area (Austria receives 1 per cent) [Chart C3.2].

***The share of the international education market is relatively modest in Austria (size effect) ...***

- Australia, Austria, France, New Zealand, 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 Austria, 11.0% of tertiary students enrolled in the country have come to the country expressly to pursue their studies. Similarly, international students represent 17.3% of total tertiary enrolments in Australia, 10.8% in France, 17% in New Zealand, 13.2% in Switzerland and 13.9% in the United Kingdom, with the numbers of such students in Austria having increased by 14% between 2000 and 2005 (93% for OECD countries on average) (Table C3.1).
- With many more students coming to study in Austria at the tertiary level (34 484 students) than travel from Austria to study elsewhere (11 921), Austria is a net importer of tertiary students (Table C3.8 on the web).
- The majority of international students studying in Austria come from Germany (7 069 students), Italy (6 248), Bosnia and Herzegovina (2 093) and Turkey (1 857) (Table C3.8 on the web).
- The most popular subjects for international students to study in Hungary are social sciences, business and law, which are studied by around one third of these students (Table C3.5).
- Of the 11 921 Austrian tertiary students studying elsewhere, the most popular destinations are Germany (52%) and the United Kingdom (11%) (Table C3.8 on the web).

## ***EQUITY CHALLENGES***

*While individuals with high level qualifications continue to see strong labour-market returns, those without strong baseline qualifications, defined by the OECD as those who have not attained a qualification at the upper secondary level, have seen rapidly deteriorating labour-market prospects in most countries. It is therefore increasingly important for education and training systems to ensure that young adults leave schools with strong baseline qualifications or attain these subsequently.*

*Education at a Glance 2007 completes the data on the graduate output at the upper secondary level and the incidence and intensity of job-related non-formal education with new data on the relationship between social background and both learning outcomes at schools and participation in university-level education. The strength of the relationship between the socio-economic background of individuals and their educational outcomes provides one way of examining to what extent countries are using their potential in generating future human capital and allows for assessment of equity in the distribution of learning opportunities.*

### ***Global trends***

*In most OECD countries, upper secondary education is becoming universal, but in some countries a sizeable minority is left behind.*

- The proportion of individuals in the population who have successfully completed upper secondary education (see notes on definition at the end) has been rising in almost all OECD countries, and rapidly in some. In more than half of all OECD countries the proportion of 25-to-34-year-olds with upper secondary qualifications now exceeds 80%, and in Canada, the Czech Republic, Korea, the Slovak Republic and Sweden it exceeds 90% (Table A1.2a).
- Those who have attained at least upper secondary education enjoy substantial earnings advantages (Chart A9.4). For many countries, the earnings disadvantage of those without upper secondary qualifications has significantly worsened (Table A9.2a).
- Gender differences in employment and unemployment rates are largest among those without upper secondary education (Chart A8.1)

### ***Key results for Austria***

*Austria ranks high among the OECD countries in having a large proportion of the population with upper secondary education and at the same time large labour market and earning penalties exist for not completing this level of education.*

- Ranked by upper secondary educational attainment in the population, Austria occupies the 9th position among 55-to-64-year-olds in the 29 OECD countries with data (*i.e.* those who completed school some 40 years ago) and 8<sup>th</sup> among 25-to-34-year-olds, who completed school a decade ago. Note that the individuals (25-to-34-year-olds in 2004) in this analysis passed the age of sixteen in between 1985 and 1995. Austria now has higher attainment rates than for instance the United States but still lower than Korea which ranks 23rd among 55-to-64-year-olds but 1st among 25-to-34-year-olds (Table A1.2a).
- Employment rates for those without an upper secondary education stand substantially lower in Austria than for those completed this level of education, 53% compared with 74%. The disadvantage of not having an upper secondary education is thus substantial in terms of employment prospects in Austria as in the rest of the OECD countries (Table A8.3a).
- The penalties from not completing upper secondary education are also visible in the distribution of earnings. The share of 25-to-64-year-olds with low incomes (defined here as half of the country median or less) is in most countries significantly higher among those without upper secondary qualifications than among upper secondary graduates. For Austria, this share is the fourth highest, behind Canada, the United States and the United Kingdom (Table A9.4a). Among 25-to-64-year-olds in Austria without upper secondary qualifications, 33% earn half or less than the national median (the OECD average is 26%), while only 3% (OECD average 2%) are in the group of top earners, whose average earnings exceed

twice the country median (Table A9.4a).

***Schools and societies face major challenges in integrating immigrants.***

- International migration has become a key issue in most OECD countries, sparking intense debate on how immigrants can be successfully integrated into societies and labour markets. OECD PISA adds an important new perspective to the discussion by assessing the educational success of 15-year-old students from immigrant families. It is clear that serious challenges lie ahead for education systems, particularly in Europe. Indicators show that:
- Among the 14 OECD countries with significant immigrant populations, first-generation students lag 48 score points behind their native counterparts on the PISA mathematics scale, equivalent to more than a school year's progress, on average. The performance disadvantage of second-generation students also remains significant, at 40 score points. The disadvantage of students with an immigrant background varies widely across countries, from insignificant amounts in Australia, Canada, New Zealand and Macao-China to more than 90 score points in Belgium and Germany even for second-generation children.
- Second-generation students (who were born in the country of the assessment) tend to perform better than their first-generation counterparts (who were born in another country), as one might expect since they did not need to make transitions across systemic, cultural and linguistic borders. However, the gains vary widely across countries. In Canada, Luxembourg, Sweden and Switzerland and the partner economy Hong Kong-China, second-generation students perform significantly better than first-generation students, with the performance gap reduced by 31 score points in Switzerland and 58 score points in Sweden, while in Germany and New Zealand second-generation students born in these countries perform worse than first-generation students.
- The mathematics achievement of the highest performers among students with an immigrant background varies much less across countries than the achievement of the lowest performing students with an immigrant background.
- Despite performing less well on the whole than native students and generally coming from less advantaged families, students who have experienced immigration first-hand tend to report, throughout the OECD area, higher levels of interest and motivation in mathematics.

***15-year-old students with an immigrant background perform low in Austria relative to their native peers ...***

- Foreign-born 15-year-old students performed 63 score points below their native peers in Austria on the OECD/PISA 2003 mathematics assessment. This performance difference is significantly higher than the average level among OECD countries with significant immigrant populations (48 score points). Furthermore, the mean performance score of foreign-born students was 452 score points, considerably below the OECD average (475 score points), (Table A6.1a).

***and the performance disadvantage of second-generation students also remains significant in Austria ...***

- Second-generation immigrant students in Austria still performed 56 score points below their native peers on the PISA 2003 mathematics assessment. The mean performance score of second-generation students was 459 score points, also considerably below that at the OECD average level (483 score points) (Table A6.1a).
- Austria stands out as one of the countries where the second generation of immigrant students makes the lowest improvements in mathematic performance . Second generation students score only 7 points better than the first generation of students in comparison the OECD average is 8 points. In this sense the integration of immigrants appears to work less well in an international context (with the caution that the populations are not the same) (Table A6.1a).

***Countries vary greatly in how well they succeed in enabling students from blue-collar backgrounds to participate in higher education.***

- When measuring the socio-economic status of students in higher education by their fathers' educational background large differences between countries emerge. In many countries, students are substantially more likely to be in higher education if their fathers completed higher education. Students from such a background are more than twice as likely to be in higher education in Austria, France, Germany, Portugal and the United Kingdom than are students whose fathers did not complete higher education. In Ireland and Spain this ratio drops to 1.1 and 1.5, respectively.
- Among the countries providing information on the socio-economic status of students in higher education it appears that inequalities in previous schooling are reflected in the intake of students from less advantaged backgrounds. Countries providing more equitable access to higher education – such as Finland, Ireland and Spain – were also the countries with the most equal between-school performances, as show by data collected in 2000 by OECD PISA.

***In some countries, student's expectations for their own educational future are also closely related to their social background.***

- Some 57% of 15-year-olds in OECD countries expect to go to university, but this rate varies from as high as 95% of students in Korea to as low as 21% in Germany. Indicators show that expectations vary within countries according to individual performance levels, gender, socio-economic background and immigrant status. Data collected in 2003 through OECD PISA show that 15-year-olds' expectations for completing a university-level programme are closely linked with their performance in mathematics and reading. Regardless of their relative academic abilities, 15-year-olds from lower socio-economic backgrounds are less likely to expect to complete tertiary education than those from higher socio-economic backgrounds. In most countries, 15-year-old students from immigrant backgrounds are more likely to expect to complete a university-level programme than their native counterparts. The relative expectations of these students are even higher when compared with native students of similar aptitudes and socio-economic backgrounds.

***In Austria, students from a blue-collar background are about one-half as likely to be in higher education as compared with what their proportion in the population would suggest ...***

- Ireland and Spain stand out as providing the most equitable access to higher education, whereas in Austria, France, Germany and Portugal students from a blue-collar background are about one-half as likely to be in higher education as compared with what their proportion in the population would suggest (Indicator A7).

***... and less than one third of those in higher education have fathers with university qualifications.***

- 27% of higher education students' fathers in Austria also had a higher education qualification, while this was only the case for 11% of fathers of men in the same age group (Chart A7.2). Among 11 OECD countries with comparable data, only Portugal had a socio-economically more uneven participation rate than Austria.

***Fewer students in Austria expect to go to university than do students in other countries.***

- The percentage of 15-year olds in Austria who expect to go to a university-level programme is 24%, the lowest of OECD countries after Switzerland and Germany and well behind the highest aspirations held by students in countries such as Australia, Canada, Greece, Korea, Turkey and the United States (Table A4.1a).
- More females than males expect to complete higher education, at 26%, and 23%, respectively (Table A4.3a).
- Even among the Austria's top performers, those who reached the highest levels 5 or 6 on the PISA 2003 mathematics scale, only 58% expect to attain a university-level education, compared with the OECD average of 78% (Table A4.2a). The socio-economically most advantaged quarter of students are 3.0 times more likely to expect to complete a university-level qualification (Table A4.4).

***Initial education alone can no longer satisfy the rising and changing demand for skills, but job-related education and training is still least common among those who need it most.***

- In many countries, non-formal continuing education and training now also plays a significant role in raising the stock of knowledge and skills. In Denmark, Finland, Sweden and the United States, more than 35% of employees take part in non-formal job-related education and training each year. At 27%, the corresponding participation rate in the United Kingdom is also still well above the OECD average of 18%. At the other end of the scale, Greece, Hungary, Italy, the Netherlands, Poland, Portugal and Spain provide such training to fewer than 10% of employees (Table C5.1a).
- In OECD countries, on average, the participation rate in non-formal continuing education and training among employees who have not completed upper secondary education is less than half of the rate among those with upper secondary education and less than a quarter of the rate seen among those with tertiary education. In the United Kingdom these differences are significantly larger than in most OECD countries.

***Participation in non-formal job-related education and training is at the level of the average in Austria but the intensity for those who benefit is relatively high.***

- In Austria, along with France and the Slovak Republic, 19% of employees took part in non-formal job-related education and training in 2003, a participation rate at the level of the OECD average (Table C5.1a).
- The intensity of participation in non-formal job-related education and training in Austria is comparatively high. In Austria, between the ages of 25 and 64, the total expected number of hours in non-formal job-related training per worker is 422, well above the OECD average of 389 hours (Table C5.1a).

***Nevertheless, job-related education and training is still least common among those who need it most.***

- As in all OECD countries, on average, the participation rate in non-formal continuing education and training among employees in Austria is much less for those who have not completed upper secondary education than it is for those with upper secondary education and much less still than those with tertiary education. In Austria, only 5% of those who have not completed upper secondary education and training participated in 2003 in non-formal continuing education and training, compared with 19% for those with upper secondary qualifications and 37% for those with tertiary qualifications. These findings are important because they show continuing inequalities in terms of access to job-related continuing education and training in Austria, as is the case in other countries. They also suggest that continuing education and training currently do not succeed in making up for skill gaps emerging from initial education but rather they tend to reinforce disparities that result from initial education (Table C5.1a).

## **RESOURCE AND EFFICIENCY CHALLENGES**

*The expansion of education has been accompanied by massive financial investments. **Education at a Glance 2007** shows that between 1995 and 2004, and for all levels of education combined, expenditure on educational institutions increased by an average of 42% in OECD countries. The sustainability of the continued expansion will, however, depend on re-thinking how education is financed and how to ensure that it is more efficient. In some countries, spending per student has already begun to decline – most notably in the Czech Republic, Hungary, the United Kingdom and Poland – as enrolments rose faster than spending on tertiary education.*

*While significant additional investments in education will be important, it is equally clear that more money alone will not be enough. Investments in education will also need to become more efficient. The education sector has not yet re-invented itself in ways that other professions have done to improve outcomes and raise productivity. Indeed, the evidence suggests the reverse, namely that productivity in education has generally declined because the quality of schooling has broadly remained constant, while the price of the inputs has markedly increased. As the place and mode of educational provision have largely remained unchanged, the labour-intensiveness of education and the predominance of teachers' salaries in overall costs (with pay scales based on qualifications and automatic increases) have made personnel costs rise over time.*

### **Global trends**

***OECD countries spend 6.2% of their collective GDP on educational institutions, but the increase in spending on education between 1995 and 2004 fell behind growth in national income. There is further scope for enhancing the efficiency of educational spending.***

- 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. Between 1995 and 2004 and for all levels of education combined, expenditure on educational institutions increased in the 24 countries with comparable data for the period. The increase was, on average, 42% in OECD countries. The increase is usually larger for tertiary education than for primary to post-secondary non-tertiary levels of education combined.
- At the tertiary level of education, the increase of expenditure over the period 1995-2004 was more pronounced from 2000 onward than before 2000 in nearly one-half of OECD countries. Between 2000 and 2004, expenditure increased by more than 30 percentage points in the Czech Republic, Greece, Mexico, Poland, the Slovak Republic and Switzerland and the partner economy Chile.
- It is important to relate overall spending on education to the investment made per student. OECD countries as a whole spend USD 7 572 per student annually between primary and tertiary education, that is – USD 5 331 per primary student, USD 7 163 per secondary student and USD 14 027 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.

### **Key results for Austria**

***Austria has shown increase in educational investment, but not as fast as growth in national income***

- Austria has shown consistent rises in its investment in education, in absolute terms, as observed in most countries over recent years, but not relative to national income: Spending on educational institutions in Austria decreased from 6.1% of GDP in 1995 to 5.5% in 2000 and 5.4% in 2004, slightly below the OECD average of 5.8%. In Austria and one-third of the OECD countries with available data, spending on educational institutions did not match growth in national income, such that expenditure as a proportion of GDP actually declined (Chart B2.1, based on Table B2.1a).

***Education has received a growing share of the public budget in most of the OECD countries but not in Austria***

- The share of public expenditure that is devoted to education has not increased in Austria. Between 1995 and 2004 the share of all public spending devoted to educational institutions, or paid in the form of subsidies to households, remained stable at 10.8 in Austria, while the OECD average increased by 1.1 percentage points from 12.3% to 13.4%. This is below the OECD average, and significantly below the highest levels recorded by Mexico (23.1%) and New Zealand (21%) (Table B4.1).

***Spending on educational institutions did not match growth in national income in Austria but spending per student is significantly above the OECD average at the primary, secondary and tertiary levels...***

- To assess their potential impact on the quality of educational services, the resources invested in education need to be seen in relation to the number of students enrolled. On that measure, spending per student across all levels of education (excluding pre-primary

- 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 of Korea and the Netherlands is below the OECD average and yet both are among the best-performing countries in the OECD PISA 2003 survey.
- 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, and the partner economy Estonia – 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 per student at primary, secondary and post-secondary non-tertiary levels increased by 50% or more between 1995 and 2004 in Greece, Hungary, Ireland, Poland, Portugal, the Slovak Republic and Turkey, and the partner economy Chile. On the other hand, spending per student at the tertiary level has in some cases fallen, as expenditure does not keep up with expanding student numbers
- 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. On the one hand, rising unit costs that are not paralleled by increasing outcomes raise the spectre of falling productivity levels in education. Across OECD countries, there is potential for increasing learning outcomes by 22% while maintaining current levels of resources (output efficiency). The scope for reducing the resources devoted to education while maintaining the current levels of outcomes is slightly larger, at 30% (input efficiency). Differences in estimates of efficiency for different types of school (*e.g.* public and private) tend to be modest, when looking at the OECD as whole, though efficiency savings are greater for smaller schools than for larger schools (Indicator B7).

***Instruction time, teachers' salaries, and student-teacher ratios vary widely among countries.***

- The choices countries make about how many hours and years students spend in the classroom and the subjects they study reflect national priorities and preferences. Budgetary considerations also help shape education: Teachers' salaries represent the largest single cost in providing school education and, as such, are a critical

education) in Austria is, at USD 9 803 (equivalent), above the OECD average of USD 7 061. Spending per student at the primary level (USD 7 669) and at the secondary level (USD 9 446) are significantly above the corresponding OECD average (respectively USD 5 832 and USD 7 276 ). At USD 13 959, spending at the tertiary level also exceeds the OECD average of USD 11 100 (Table B1.1).

- Different supply and demand factors have influenced variation in spending per student across countries. For all levels of education, expenditure increased in Austria between 1995 and 2004 by 8% in absolute terms, while the OECD average increase was 42%. Spending on tertiary institutions increased, at 26%, less than half as fast as the OECD average increase (55%) but this increase was sufficient to counterbalance the increase in the number of student enrolled in tertiary institutions ( 3 % against 41% for the OECD average) (Table B1.5 and B2.3).

***...and cumulative expenditure for each primary and secondary student is among the highest of the OECD countries***

OECD countries spend on average USD 81 485 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 economies Brazil, Chile, Estonia and the Russian Federation, to USD 100 000 or more in Austria, Denmark, Iceland, Luxembourg, Norway, Switzerland and the United States (Table B1.3a).

***Austria also stands out in respect of the high level of spending per child at the pre-primary level, and with a participation rates at the level of the average.***

- In 2004, Austria invested more than any other country other than Iceland, the United Kingdom and the United States per child at the pre-primary level (at USD 6 106) considerably more than the OECD average spending per child of USD 4 741) (Table B1.1a). The rate of participation of 4-year-olds and under as a percentage of the 3-to-4-year-old population in 2005 stands at only 67.5%, at the level of the OECD average of 68.5% but well below the highest rates of participation, many of which are approaching 100% (Table C2.1).

***Despite above average spending per student in secondary education, class size in lower secondary schools remains at the level of the OECD average in Austria ...***

- Despite above average spending per secondary-level student, Austria has, with 24.2 students per class, a class size at the lower secondary level of education at the level of the OECD average. Japan and, Korea have the largest classes at this level and in all but nine countries

consideration for policy-makers striving to both maintain the quality of education and to contain spending. While class size has become a hot topic in many OECD countries, evidence on its impact on student performance is mixed. Among the findings on these nuts-and-bolts educational policy issues:

- Students in OECD countries are expected to receive, on average, 6 898 hours of instruction between the ages of 7 and 14, of which: 1 586 hours are between ages 7 and 8; 2 518 hours between ages 9 and 11; and 2 794 hours between ages 12 and 14. The large majority of intended hours of instruction are compulsory.
- In OECD countries, students between the ages of 7 and 8 receive an average of 769 hours per year of compulsory instruction time and 793 hours per year of intended instruction time in the classroom. Students between the ages of 9 and 11 receive about 45 hours more per year, and those aged between 12 and 14 receive just over 90 hours more per year than those aged between 9 and 11.
- 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; in Iceland, Norway and the partner economy Israel, salaries are 75% or less than GDP per capita. Those salaries range from less than USD 16 000 in Hungary to USD 51 000 or more in Germany, Korea and Switzerland, and more than USD 88 000 in Luxembourg.
- The average class size in primary education is 22 students per class, but varies between countries from 33 in Korea to less than half that number in Luxembourg and the partner economy the Russian Federation. From 2000 to 2005, the average class size did not vary significantly, but the differences in class size between OECD countries seem to have diminished. Class size tends to have decreased in countries that had had relatively large class sizes (for example, in Japan, Korea and Turkey) whereas class size tends to have increased in countries with relatively small class sizes (for example, Iceland) (see 2000 data in Table D2.4 on the web only).
- 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.
- In primary and secondary education, OECD countries spend 91% on current expenditure of which 63.5% is for the compensation of teachers, 15.5% for the compensation of other staff, and 19.9% for other current expenditure. At the tertiary level of education, 89.3% is devoted to current expenditure, of which 42.7% is for the compensation of teachers, 23.6% for

there are between 22 and 25 students per primary-level class (the OECD average is 24.1) (Table D2.1).

*... but student to teacher ratios are generally advantageous.*

- Up to upper secondary education the ratio of students to teaching staff is typically lower in Austria compared with the OECD average. In secondary education, Austria together with Belgium, Greece, Italy, Luxembourg, Portugal, and Spain shows the most favourable student to teacher ratios among the OECD countries (Table D2.2).
- The annual instruction time is slightly below the OECD average in primary education but significantly above in secondary education in Austria ...
- The annual compulsory instruction time for a 7-to-8-year-old varies between 990 in Italy and 530 in Finland, with the OECD average level being 769 hours. The corresponding Austrian time is, at 690 hours, below the average. This situation is different at the secondary level of education and at 1 005 hours, Austria has the 6th longest annual intended instruction time for a 15 year-olds among the 26 countries with comparable data (the OECD average is 911 hours) (Table D1.1).
- ... whereas the teaching load for teachers is comparatively low in primary and secondary education.
- The net teaching time for Austrian primary school teachers is, at 774 hours per year, slightly below the OECD average of 803 hours. Moreover, the net teaching time for Austrian upper secondary school teachers is, at 589 hours per year significantly below the OECD average (664 hours) (Table D4.1).

*Teacher salaries are below the average in absolute terms and relative to GDP per capita. This factor has less influence than instruction and teaching time to explain the high level of expenditure per student observed in Austria for secondary education*

- Below-average teacher salaries can not provide part of the explanation for high level of expenditure per student in secondary education. At USD 35 823 for a primary school teacher with minimum training and 15 years of experience, salaries in Austria are below the OECD average of USD 37 603 (equivalent). The same remark can be made for secondary education (Table D3.1).
- Teacher salaries relative to GDP per capita in Austria is also low compared to the OECD average. The ratio of the salary of a primary teacher after 15 years of experience with minimum training to GDP per capita is 1.04 in Austria, compared with an OECD average of 1.28. Hungary, Iceland, Luxembourg, Norway and Sweden are the only other OECD countries with ratios below 1 (Table D3.1).

the compensation of other staff, and 33.8% for other current expenditure (Table B6.2).

***Private sources of funding for education are becoming increasingly important.***

- On average, over 90% of primary and secondary education in OECD countries, and nowhere less than 80% (except in Korea and in the partner economy Chile), is paid for publicly. However, in tertiary education the proportion funded privately varies widely, from less than 5% in Denmark, Finland and Greece, to more than 50% in Australia, Japan and the United States and in partner economy Israel, and to above 75% in Korea and in the partner economy Chile.
- In all countries for which comparable data are available, for all levels of education combined, public funding increased between 1995 and 2004. However, private spending increased even more in nearly three-quarters of these countries. Nevertheless, in 2004, on average 87% of expenditure, for all levels of education combined, was still from public sources.
- The share of tertiary spending from private sources rose substantially in some countries between 1995 and 2004, 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 decreased slightly between 1995 and 2000, as well as every year between 2001 and 2004. However, in general the increase of private investment has not displaced public financing, but rather complemented it.
- In tertiary education, households cover the majority of all private expenditure in all countries with available data, except Greece, Hungary and Sweden. Private expenditure from other entities than households is still significant, representing 10% or more in Australia, Hungary, Italy, Korea, the Netherlands, Sweden, the United Kingdom and the United States, and the partner economy Israel.

***OECD countries where students are required to pay tuition fees can nevertheless have also large access to tertiary education.***

- OECD countries where students are required to pay tuition fees and can benefit from particularly large public subsidies do not show lower levels of access to full-length, theory-based bachelor and masters degree university-level programmes, compared to the OECD average. For example, Australia (82%) and New Zealand (79%) have one of the highest entry rates to tertiary-type A education and the Netherlands (59%)

***Private sources of funding provide a below -average share of educational spending in Austria except for pre-primary education ...***

- The Austria's funding was 92.8% public in 2004 compared to 93.4% public in 1995 – in both years this was one of the highest public funding proportions among the 18 OECD members reporting data for both years (Table B3.1). Note that private spending originates both in households and other private entities and can go to private as well as public institutions.
- At the pre-primary level, where the relative proportions of public and private funding range from 100% public in Sweden to 37.9% public and 62.1% private in Korea, the public funding share in the Austria was 70.0% in 2004, significantly below the OECD average of 80.0% (Table B3.2a).

***... but private spending in Austria rose faster than public spending between 1995 and 2004 ...***

- At all levels of education, private spending in Austria rose faster than public spending between 1995 and 2004, with an increase of the private share from 3.8% to 4.7% at the primary and secondary level of education (Table B3.2a)

***... especially in tertiary education with the introduction of tuition fees***

- Public spending on tertiary education in Austria rose by only 23% compared with private spending that have more than doubled between 1995 and 2004. Austria has shown an increase of the private share from 3.9% to 6.3% at the tertiary level of education mainly due to the introduction of tuition fees over this period. However, the proportion funded privately at the tertiary level of education remains low in Austria and represents more than 50% in Australia, Japan, Korea and the United States and in partner economies Israel and Chile (Table B3.2b).

***Among the EU19 countries, only the Netherlands and the United Kingdom have annual tuitions fees that represent more than USD 1 100 per full-time national student***

- Large differences are observed among OECD countries and partner economies in the average tuition fees charged by university-level educational institutions. There are no tuition fees charged by public institutions in the five Nordic countries (Denmark, Finland, Iceland, Norway and Sweden) and in the Czech Republic, Ireland and Poland. By contrast, one-quarter of OECD countries and partner economies have annual tuitions

and the United States (64%) are above the OECD average. The United Kingdom (51%) is just below the OECD average (54%), although entry to tertiary-type A education increased by 4 percentage points between 2000 and 2005.

fees for national students charged by public institutions that exceed USD 1 500. In the United States, tuition fees for national students reach more than USD 5 000 in public institutions. Among the EU19 countries, only the Netherlands and the United Kingdom have annual tuitions fees that represent more than USD 1 100 per full-time national student, but these fees related to government dependent private institutions (Table B5.1a and Chart B5.1).

- Austria, Belgium, France, Ireland, Italy, Poland and Spain are countries where there are relatively low financial barriers to enter tertiary education combined with relatively low subsidies for students, mainly targeted to specific groups. It is noteworthy that the average university-level entry rate in this group of countries is, at 48%, relatively low (Tables B5.1a and C2.4).

## NOTES

- “Educational attainment” is defined as the highest grade completed within the most advanced level attended in the educational system of the country where the education was received. Some countries may also find it useful to present data on educational attainment in terms of the highest grade attended.
- “Lower secondary education” is defined as schooling between the ages of 11 and 13. It generally continues the basic programmes of the primary level, although teaching is typically more subject-focused. Lower secondary education may either be “terminal” (*i.e.* preparing students for entry directly into working life) and/or “preparatory” (*i.e.* preparing students for upper secondary education). This level usually consists of three years of schooling in OECD countries.
- “Non-formal education” is defined as organised and sustained educational activities that are not typically provided in the system of schools, colleges, universities and other formal institutions that constitutes a continuous ladder of full-time education for children and young people. Non-formal education may take place both within and outside educational institutions, and cater to persons of all ages. For detailed definitions, see Indicator C5 in Education at a Glance 2007.
- “Post-secondary non-tertiary education” is defined as programmes straddling the boundary between upper secondary and post-secondary education from an international point of view, even though they might clearly be considered upper secondary or post-secondary programmes in a national context. Although their content may not be significantly more advanced than upper secondary programmes, they 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.
- “Pre-primary education” is defined as the initial stage of organised instruction, designed primarily to introduce very young children to a school-type environment, that is, to provide a bridge between home and a school-based atmosphere. They are centre or school-based, designed to meet the educational and developmental needs of children at least three years of age, and have staff qualified to provide an educational programme for children.
- “Primary education” usually begins at ages five, six or seven and generally lasts six years in OECD countries.

Programmes at the primary level generally require no previous formal education, although it is becoming increasingly common for children to have attended a pre-primary programme before entering primary education. The boundary between pre-primary and primary education is typically the beginning of systematic studies characteristic of primary education, *i.e.* reading, writing and mathematics. It is common, however, for children to begin learning basic literacy and numeracy skills at the pre-primary level.

- “Statutory salaries” refers to teachers’ salaries according to official pay scales. The salaries reported are defined as gross salaries (total sum of money that is paid by the employer for the labour supplied) minus 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.
- “Tertiary-level education” is defined as higher education (HE). Indicators in *Education at a Glance 2007* cover both the current performance of the HE system and the proportion of the adult population (25-to-64-year-olds) who have attained HE qualifications. Tertiary programmes are generally divided by type of course: “tertiary-type A” (largely theory-based and designed to provide sufficient qualifications for entry to advanced research programmes and professions with high skill requirements, such as medicine, dentistry or architecture) and “tertiary-type B” (typically shorter and focused on practical, technical or occupational skills for direct entry into the labour market). “Graduation rate” is defined as the ratio of tertiary graduates to the population at typical age of graduation.
- “Upper secondary” education corresponds to the final stage of secondary education in most OECD countries. Instruction is often more organised along subject-matter lines. The entrance age to this level is typically 15 or 16 years.