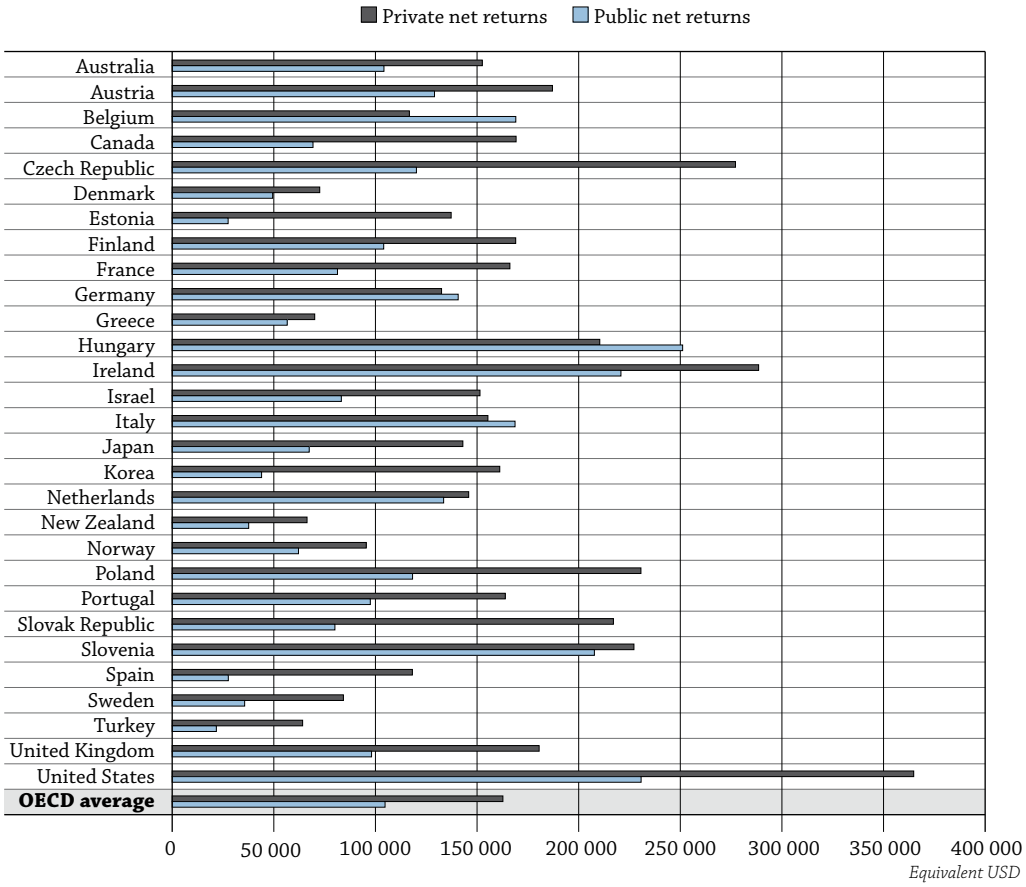
WHAT ARE THE INCENTIVES TO INVEST IN EDUCATION?

- The private returns on investment in tertiary education are substantial.
- Not only does education pay off for individuals, but the public also benefits in the form of greater tax revenues and social contributions.
- The net public return on investment for a man in tertiary education is over USD 100 000 across OECD countries – almost three times the amount of public investment in that man's education. For a woman, the public return is around USD 60 000, which is almost twice the amount of public investment.

Chart A7.1. Net private and public returns associated with a man attaining tertiary education (2009)

As compared with returns from upper secondary or post-secondary non-tertiary education



Notes: Turkey refers to 2005. Japan refers to 2007. Italy, the Netherlands and Poland refer to 2008. All other countries refer to 2009. Cashflows are discounted at a 3% interest rate.
Countries are shown in alphabetical order.
Source: OECD. Tables A7.3a and A7.4a. See Annex 3 for notes (*www.oecd.org/edu/eag.htm*).
StatLink http://dx.doi.org/10.1787/888932846633

Context

Higher educational achievement benefits both individuals and society, not only financially, but in the well-being with which it is also associated. For individuals, having a higher education improves chances for employment and reduces the risk of unemployment. Better opportunities in the labour market (see Indicator A5) and higher earnings expectations (see Indicator A6) are

strong incentives for individuals to invest in education and postpone consumption and earnings for future rewards. Society, in turn, profits through reduced public expenditure on social welfare programmes and revenues earned through taxes paid once individuals enter the labour market.

It is crucial for policy makers to understand the economic incentives for individuals to invest in education. For instance, large increases in labour-market demand for more highly educated workers can drive up earnings and returns before supply catches up. That signals a need for additional investment in education. In countries with rigid labour laws and structures that tend to limit differences in wages across the board, this signal will be weaker.

An understanding of the returns from education is also relevant for policies that address access to education, taxes and the costs of further education for the individual. It is important, then, to consider the balance between private and public returns together with the information from other indicators in this publication. It is not sufficient to consider only the public rate of return to determine the optimal amount governments should invest in education (Box A7.1). Large discrepancies between private and public returns may indicate that there might be distorting tax schemes in effect or that education is being disproportionately subsidised.

In countries with lengthy tertiary programmes and relatively high incomes after upper secondary or post-secondary non-tertiary education, the effect of foregone earnings is considerable (see Indicator B1). The magnitude of this effect also depends on expected wage levels and the probability of finding a job. As the labour market for young adults worsens (see Indicator C5), investment costs fall. Since more highly educated people tend to fare better in the labour market in times of economic hardship (see Indicator A5), larger earnings differentials add to the benefit to both the individual and society. In coming editions of *Education at a Glance*, data from 2010 and 2011, when the effects of the global economic crisis were most strongly felt, are likely to show even greater incentives to invest in education from both private and public sources.

Other findings

- **Gross earnings benefits from tertiary education**, compared with the income of a person with an upper secondary or post-secondary non-tertiary education, **are USD 330 000 for men and USD 240 000 for women across OECD countries**.
- **Gross earning benefits for an individual attaining an upper secondary or post-secondary non-tertiary degree**, compared to benefits for an individual who has not attained this level of education, **are particularly high** in Austria, Norway and the United States. They amount to at least USD 250 000 for a man and USD 150 000 for a woman.
- On average across the 28 OECD countries with available data, **the public return** (net present value) **for a man who completed upper secondary or post-secondary non-tertiary education is about USD 38 000** compared with a man who did not complete that level of education. **For a woman, the public return is USD 22 000**.
- With few exceptions, **the net private returns related to attaining a tertiary education exceed those related to upper secondary or post-secondary non-tertiary education**. Only in Denmark and Sweden does upper secondary or post-secondary non-tertiary education bring higher returns to both men and women. In Norway and Korea, upper secondary or post-secondary non-tertiary education returns exceed tertiary education returns for men; in New Zealand, the same is true for women.
- **Across OECD countries, individuals invest about USD 55 000 to obtain a tertiary degree**. In Japan, the Netherlands, the United Kingdom and the United States, average investment exceeds USD 100 000 when direct and indirect costs are taken into account.

A7

Analysis

Financial returns on investment in education

This indicator provides information on the costs and benefits of education and the incentives to invest in education. It assesses the economic benefits of education for an individual by estimating the earnings premiums of higher levels of education, taking into consideration the direct and indirect costs and benefits of attaining those levels of education. Besides higher earnings compared to individuals with lower education levels, the probability of finding work, expressed in monetary terms by the variable called «unemployment effect», is also a benefit.

Costs include direct costs, notably tuition fees, and indirect costs due to higher income taxes, social contributions levies, loss of salary because of delayed entry into the labour market, and fewer entitlements to social transfers, such as housing allowances, family allowances or supplemental social welfare benefits. In addition, social contributions and income taxes account for a certain percentage of the income and tend to be higher for individuals with more advanced education because they tend to earn more.

The economic benefits and costs of tertiary education are compared to those of upper secondary or post-secondary non-tertiary education; for upper secondary or post-secondary non-tertiary education, below upper secondary education is used as a point of reference. In the calculations, women are benchmarked against women, and men against men. The calculations are done separately for men and women, and no average is computed to account for differences by gender in earnings differentials and unemployment rates.

To provide information on the costs and benefits of education and the incentives to invest in education is a difficult undertaking that implicates some methodological and analytical considerations. Investing in education, by both individuals and governments, implies a complex interaction of factors and effects that are beyond those taken into account here. Thus, this indicator should be interpreted in the context of other indicators in this volume (and in *Education at a Glance 2012*) to better understanding the results. The limitations of the calculations, and underlying concepts and assumptions, are presented in the *Methodology* section at the end of this indicator.

Incentives for individuals to invest in education

Upper secondary or post-secondary non-tertiary education

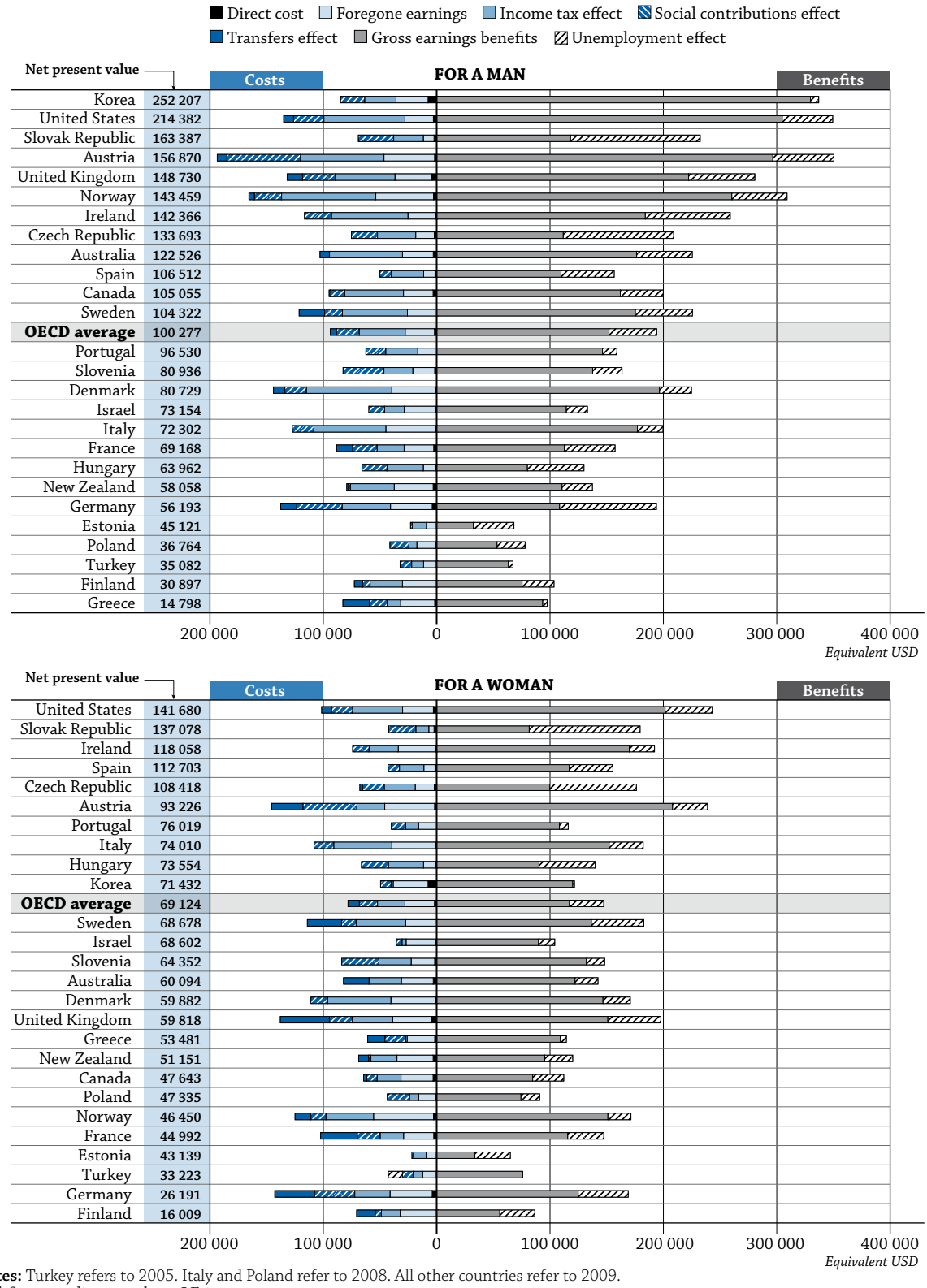
Across OECD countries, a man who invests in upper secondary or post-secondary non-tertiary education can expect a net gain of around USD 100 000 during his working life compared to a man who has attained below upper secondary education. However, the amount varies significantly among countries: in Austria, Korea, Norway and the United States, this level of education generates USD 200 000 or more over a working life (Table A7.1a).

Benefits for an individual are generally based on gross earnings and reduced risk of unemployment. In most countries, men with an upper secondary or post-secondary non-tertiary education enjoy a significant earnings premium over those who have not attained that level of education. The value of reduced risk of unemployment can also be large. In the Czech Republic, Germany and the Slovak Republic, the better labour market prospects for a man with this level of education are valued at USD 85 000 or more (Table A7.1a).

Direct costs, forgone earnings, income tax effect, social transfers and social contribution effect (see *Definitions* section below) are all considered part of the costs of education. Data for a man attaining upper secondary or post-secondary non-tertiary education show that countries with relatively high income tax effects (estimated at more than USD 65 000) are Austria, Denmark, Ireland, Norway and the United States. The income tax effect is less significant (estimated at less than USD 20 000) in Estonia, Greece, Israel, Poland and Turkey. Austria, Germany, Ireland, Norway, the Slovak Republic, Slovenia, the United Kingdom and the United States are the countries with highest social contributions (estimated at more than USD 23 000). In Denmark, France, Germany, Greece, Sweden and the United Kingdom indirect costs due to reduced rights to welfare and other social benefits (social transfers) amount to more than USD 10 000 (Table A7.1a).

Chart A7.2. Private costs and benefits for a man and for a woman attaining upper secondary or post-secondary non tertiary education (2009)

As compared with returns from below upper secondary education



Notes: Turkey refers to 2005. Italy and Poland refer to 2008. All other countries refer to 2009.
Cashflows are discounted at a 3% interest rate.
Countries are ranked in descending order of the private net present value.
Source: OECD. Tables A7.1a and b. See Annex 3 for notes (*www.oecd.org/edu/eag.htm*).
StatLink http://dx.doi.org/10.1787/888932846652

The direct costs of education for a woman investing in an upper secondary or post-secondary non-tertiary education are usually negligible; the main investment cost is foregone earnings. Foregone earnings vary substantially among countries, depending on the length of education, earnings levels and earning differentials between individuals with upper secondary or post-secondary non-tertiary education and those without it (Table A7.1b).

Good labour-market prospects for individuals, both men and women, who have not attained an upper secondary or post-secondary non-tertiary education increase the costs of further investment in education; so do smaller earnings differentials and longer upper secondary or post-secondary non-tertiary programmes. In Estonia, Hungary, the Slovak Republic, Spain and Turkey, foregone earnings are estimated at less than USD 13 000 for an individual (both women and men), while in Austria, Denmark, Germany, Italy and Norway they exceed USD 36 000 for an individual (Tables A7.1a and b).

Men generally enjoy better financial returns than women after attaining upper secondary or post-secondary non-tertiary education, except in Greece, Hungary, Italy, Poland and Spain. In these countries, the private net present value for women attaining upper secondary or post-secondary education is higher than that for of men. On average across OECD countries, a woman can expect a net gain of USD 69 000 over her working life – about USD 30 000 less than a man. The gender gap in private net returns is particularly pronounced in Austria, Korea, Norway, the United Kingdom and the United States. The difference is largest in Korea, where gross earnings benefits for a man attaining an upper secondary or post-secondary non-tertiary education are around USD 250 000, but only USD 71 000 for a woman. The main reasons for this difference lie in differences in social transfers and unemployment costs between the two genders (Chart A7.2).

Tertiary education

Individuals who hold a tertiary degree can generally expect the highest net returns. On average across OECD countries, the return for tertiary-educated people is around 60% higher than for those with an upper secondary or post-secondary non-tertiary education. With few exceptions, the net private returns related to a tertiary education exceed those of upper secondary or post-secondary non-tertiary education.

The net returns for investing in tertiary education are typically higher for men than for women. Only in Portugal are average returns nearly identical for men and women; in Greece, Spain and Turkey, the returns are higher for women (Tables A7.3a and b).

The value of the gross earnings benefits for men and women with tertiary education is substantial: on average, USD 330 000 for men and USD 240 000 for women. But there are also significant variations between countries.

The Czech Republic, Hungary, Poland and Slovenia are among those countries where earning premiums are above the OECD average despite relatively lower overall costs and income levels compared to other OECD countries. This may be explained by the still relatively low tertiary attainment levels in the working-age population which, in turn, suggests a short supply of higher-educated individuals. This may have driven up wages and wage inequality between tertiary and lower-educated individuals over the years.

Compared with upper secondary or post-secondary non-tertiary education, the impact of unemployment benefits is less pronounced than the earnings differential, on average across OECD countries; but the effects of taxes, social contributions and social transfers, and the direct costs of education are more substantial. In particular, people with tertiary education remain longer in education and thus loose a substantial amount of earnings (foregone earnings) that they could have received if they had joined the labour market earlier.

Private investment costs for tertiary education are very high in some countries. Across OECD countries, individuals invest about USD 55 000 to obtain a tertiary degree. In the Netherlands, the United Kingdom and the United States average investment exceeds USD 100 000 for an individual of either gender when direct and indirect costs are taken into account. On average across OECD countries, direct costs, such as tuition fees, constitute about one-fifth of the total investment made by a tertiary graduate (estimated at USD 11 000 for an individual of either gender) (Tables A7.3a and b).

One way to increase weak labour-market returns is to provide higher education at lower costs to the individual. Apart from subsidising the direct costs of education, a number of countries also provide students with loans and grants to improve incentives and access to education. Whereas grants are transfers made in cash, goods or services for which no repayment is required, loans are transfers that require repayment. This indicator only takes grants into account; it does not report on loans.

Grants are particularly important in Denmark, where they cover more than 40% of the total costs of tertiary education (grants estimated at USD 25 000). In Austria, Finland, the Netherlands and Sweden, grants are estimated at more than USD 8 000, about 15% of the total cost (Tables A7.3a and b).

Data show, however, that countries that have the highest direct costs of tertiary education, notably Australia, Japan, Korea, the United Kingdom and the United States, do not provide grants, or do so only in small amounts. In Australia, the United Kingdom and the United States, grants cover less than 2% of the direct costs of tertiary education. However, many countries, including those offering only small grants, provide student loans, which must be repaid after graduation. Loan regulations, particularly when graduates have to start reimbursing their loans (e.g. once they earn above a certain income threshold, right after graduation, etc.) and the applicable interest rate, vary widely between countries. For most student loans, however, the total amount to be repaid and the amount to be repaid per period depend on actual income earned after graduation. The availability of student loans can encourage students, particularly those from socio-economically disadvantaged backgrounds, to pursue their studies. But because loans must be repaid after graduation – and thus subtracted from earnings benefits – they reduce the financial benefits of education.

Public rate of return on investments in education

Upper secondary or post-secondary non-tertiary education

As mentioned above, higher educational levels tend to translate into higher income levels, on average (see Indicator A6). In this sense, investments in education generate public returns in the form of higher income taxes, increased social insurance payments and fewer social transfers. The public returns on investing in men's and women's upper secondary or post-secondary non-tertiary education are positive in most countries. On average across OECD countries, this level of education generates a public net return of USD 38 000 for a man and USD 22 000 for a women (Tables A7.2a and b).

On average, the public benefits are twice as large as the overall public costs of upper secondary or post-secondary non-tertiary education, for both men and women. In the United Kingdom, public benefits are six times larger than the public costs for a man with this level of education and eight times larger for a woman (Tables A7.2a and b).

Tertiary education

On average across OECD countries, public investment in an individual's tertiary education is USD 39 000 higher than that for an individual's upper secondary or post-secondary education (taking into account public direct spending and indirect costs). Public investment in an individual's tertiary education is highest (more than USD 60 000 higher than for an individual at the lower education level) in Austria, Denmark, Germany, the Netherlands, Norway and Sweden (Chart A7.3).

In most countries, the public returns from tertiary education are substantially higher than the public returns from upper secondary or post-secondary non-tertiary education. This is because of the higher taxes and social contributions that flow from the higher incomes of those with tertiary qualifications. On average across OECD countries, the public net return from an investment in tertiary education is over USD 100 000 for a man and over USD 57 000 for a woman. Taking into account direct costs, foregone earnings, and public grants, the public benefits from a man in tertiary education are four times higher than the public costs, and from a tertiary-educated woman, more than two times higher (Tables A7.4a and b).

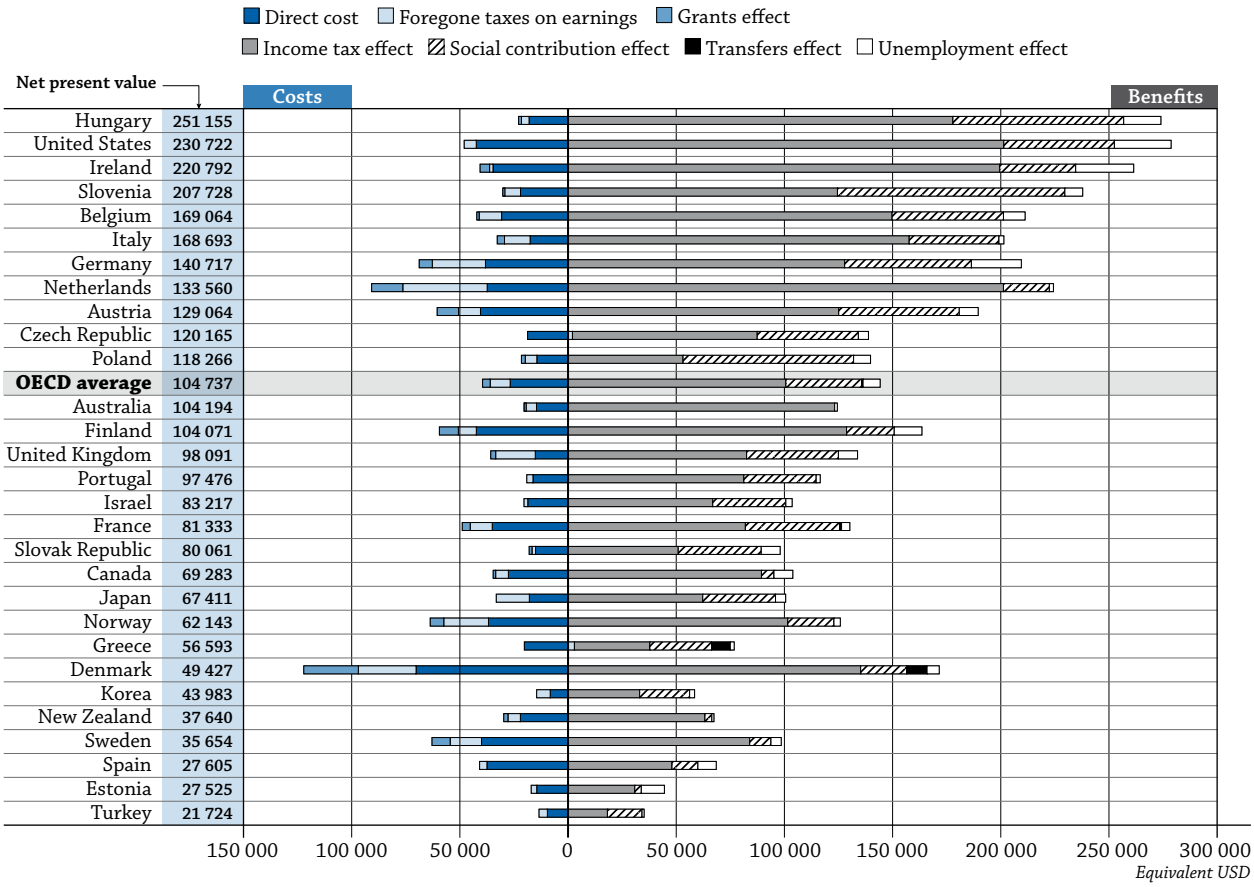
A7

Overall, differences in wages are the source of the differences in returns to both the individual and the public sector. Where the differences between wages are smaller, the returns to higher education are lower. This is particularly true in Denmark, Norway, Sweden and New Zealand. The Nordic countries have generally offset the effects of this weak reward structure by providing a higher-education system that is almost free of charge and by having a generous student-grant system (see Indicator B5).

Given that earnings premiums vary substantially among OECD countries, tax payments and benefits to the public sector also vary in ways that are somewhat counter-intuitive. Because earnings premiums are relatively low in the Nordic countries, average tertiary earnings typically fall below the income bracket where high marginal taxes are levied. The largest public gains in tax and social security benefits from higher education are most often found in countries where earnings differentials are large, or where average earnings reach high income-tax brackets. In Austria, Germany, Hungary, Ireland, Italy, the Netherlands, Poland, Slovenia and the United States, tertiary-educated individuals pay considerably more in taxes and social contributions. In all these countries, earning premiums are above the OECD average and thus levies for social contribution are also higher.

Chart A7.3. Public costs and benefits for a man attaining tertiary education (2009)

As compared with returns from upper secondary or post-secondary non-tertiary education



Notes: Turkey refers to 2005. Japan refers to 2007. Italy, the Netherlands and Poland refer to 2008. All other countries refer to 2009.
Cashflows are discounted at a 3% interest rate.
Countries are ranked in descending order of the public net present value.
Source: OECD. Table A7.4a. See Annex 3 for notes (*www.oecd.org/edu/eag.htm*).
StatLink http://dx.doi.org/10.1787/888932846671

A number of countries have tax policies that effectively lower the actual tax paid by individuals, particularly by those in high income brackets. Tax relief for interest payments on mortgage debt has been introduced in many OECD countries to encourage homeownership. These benefits favour those with higher education and

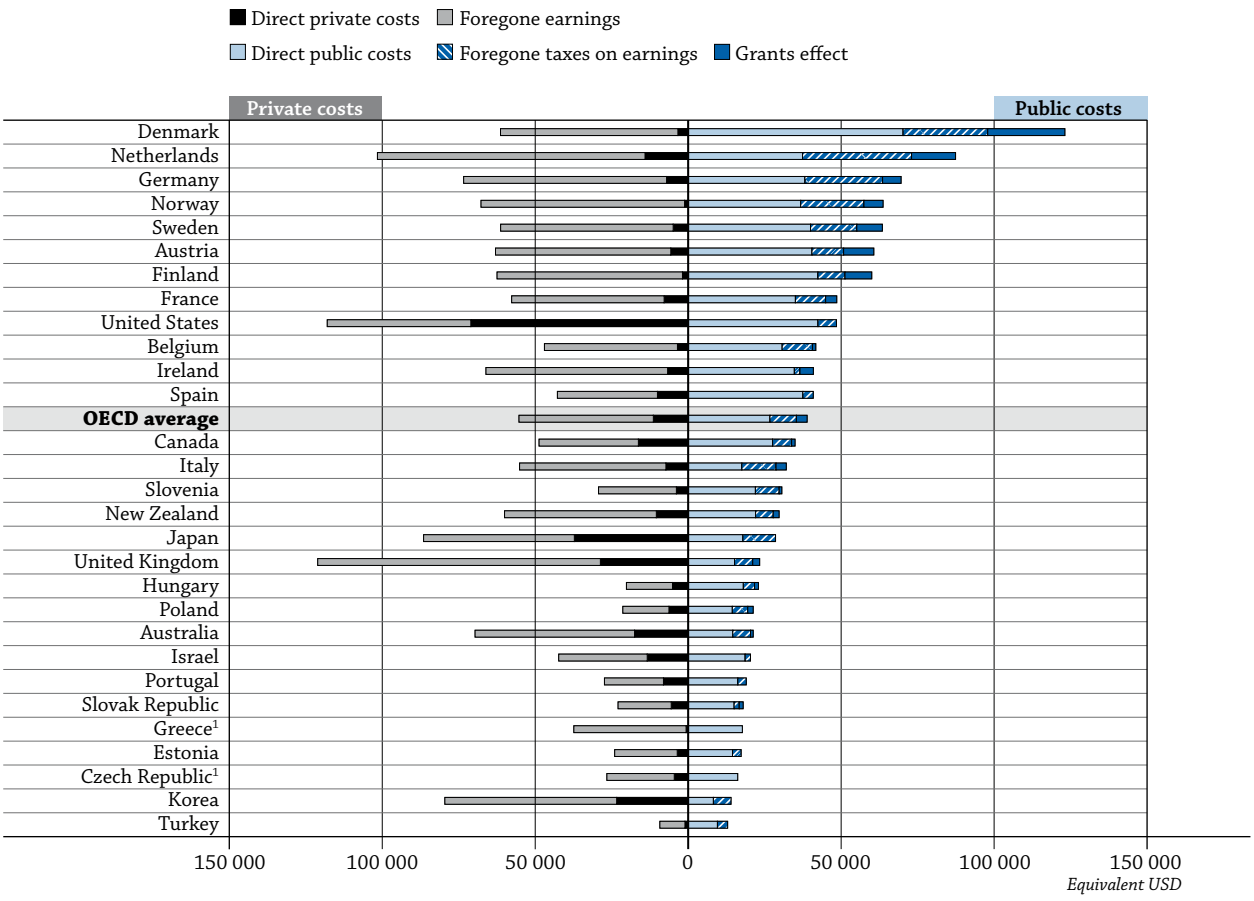
high marginal tax rates. The tax incentives for housing are particularly large in the Czech Republic, Denmark, Finland, Greece, the Netherlands, Norway, Sweden and the United States (See Andrews et al., 2011).

The distribution of costs for education between the public sector and individuals

Direct costs for education are in large part borne by the public sector. On average across OECD countries, individuals carry around 30% of the total private and public direct investment costs in tertiary education. Only in a few countries, notably Australia, Japan, Korea, the United Kingdom and the United States, do private direct costs, such as tuition fees, constitute over half of the overall public and private direct investment costs in tertiary education. Some countries provide grants and loans to individuals to alleviate the financial burden of attaining tertiary education. Grants are awarded based on various criteria, such as outstanding performance or a student's socio-economic background, to encourage young individuals from less-affluent families to pursue their studies. Countries that offer particularly large grants are the Nordic countries of Denmark (USD 25 200), Finland (USD 8700) and Sweden (USD 8 300), as well as Austria (USD 9 900) and the Netherlands (USD 14 400). Interestingly, there appears to be no relationship between direct costs and grants. Countries where grants are higher do not have the highest private direct costs. Conversely, among the five countries where direct costs are the highest, only the United Kingdom provides substantial grants to students (USD 2 200) (Chart A7.4).

Chart A7.4. Public versus private costs for a woman attaining tertiary education (2009)

As compared with returns from upper secondary or post-secondary non-tertiary education



Notes: Turkey refers to 2005. Japan refers to 2007. Italy, the Netherlands and Poland refer to 2008. All other countries refer to 2009.
Cashflows are discounted at a 3% interest rate.
1. For the Czech Republic and Greece, direct public costs refer to the total public costs.
Countries are ranked in descending order of the total public costs.
Source: OECD. Tables A7.3b and A7.4b. See Annex 3 for notes (*www.oecd.org/edu/eag.htm*).
StatLink http://dx.doi.org/10.1787/888932846690

Box A7.1. Understanding private and public returns to education

The private return to education constitutes an important incentive for individuals to invest in post-compulsory education. In this box the word "return" is always used in the sense of the internal rate of return. The internal rate expresses revenues as a percentage return to the investment. A high private return constitutes a strong incentive for individuals to invest in (further) education beyond compulsory schooling. In modern societies, governments share in the benefits and cost of education. They typically tax part of individuals' additional revenue, but also bear part of the cost. As a result, it is possible to calculate public returns to additional investment in education. Like individual returns, these returns indicate the extent to which revenues for the government from additional education exceed the costs of that education that are borne by the government. However, unlike private returns, public returns cannot be used to guide government decisions on investment in education directly. Only a comparison of public returns with private returns can offer useful insights to governments. More specifically, this comparison enables governments to design optimal financing schemes for post-compulsory education.

Human capital theory considers individuals, not governments, as the investors in education. After all, it is an individual who chooses to continue schooling or not. In making that decision, the individual knows that investing more time in school raises wages per unit of time. But given that a working life, or pension age, is finite, the amount of time left to participate in the labour market after further education is reduced. In the absence of government, and assuming perfect markets and rational individuals, human capital theory predicts that individuals will choose exactly the amount of time devoted to education that maximises their income over their lifetime. If, for example, a shift in technology raises the private return to human capital, the model predicts that individuals will invest more time in education than they would otherwise do. The increase in private return is a direct incentive for individuals to find a new allocation of time that maximises their lifetime income.

When governments are introduced into this model, the best they can do is not influence the original decisions of individuals in that hypothetical world. This implies that the rate at which revenues from additional schooling (higher wages) are taxed should be set exactly equal to the rate at which government subsidises the cost of education. In other words, government policy should be neutral (Netherlands Bureau of Economic Policy Analysis, 2012). Progressive tax schemes and taxes on capital income lead to more complicated effects, but the principle of neutrality still holds (Lans Bovenberg and Jacobs, 2005).

Hence, public return should be interpreted with care. The efficiency of government policies on financing further education can be assessed by comparing public return with private return. If the public return exceeds the private return, government is taxing additional labour income that comes with additional schooling at a higher rate than the rate at which government is subsidising education. This will discourage investment in education and will lead to a sub-optimal lifetime income, for both individuals and the government. The opposite is true when the public return is lower than the private return. In this case, the government is subsidising too much, leading individual agents to invest too much in education, which also reduces the level of lifetime income below the maximum level obtainable. An optimal government policy implies the equality of public and private returns, which is just another expression of the neutrality rule.

However, this rule only holds when the two remaining assumptions hold: that markets are perfect and that individuals make rational choices. If these two assumptions no longer apply, governments may have reasons to deviate from the neutrality rule.

...

First, education may have a number of external effects. In addition to individual revenues, an investment in education may result in benefits or disadvantages to others that cannot be internalised by the investor and give rise to market imperfections. The benefits to society as a whole may be greater or lesser than the benefits to individuals. The positive external effects include dissemination of knowledge, civic and social well-being, and lower criminality. Negative external effects may also occur. The literature suggests that social benefits would exceed private benefits, indicating the presence of net positive external effects (Netherlands Bureau of Economic Policy Analysis, 2012). Government subsidies can be used to let individuals internalise these external benefits.

Second, investing in additional education is a rational, long-term decision that implies balancing the more or less known immediate cost of education against uncertain rewards in the future. The literature suggests that individuals may be inclined to undervalue future rewards (see, for example, Laibson, 1997) or they may be highly risk averse. In these cases, individuals may underinvest in education. In these situations, subsidies can be used to correct that behaviour. If external effects are positive, on balance, and behavioural aspects of an individual's decisions tend to lead to suboptimal investment in education, governments should subsidise that investment at a higher rate than the marginal tax rate on labour income. This will lead to a public return that is lower than the private return. But again, the public return cannot be used per se as an incentive for governments to further invest in education.

What does this mean for practical policy? In reality, it is very difficult to arrive at correct and comprehensive estimates of public and private returns. Thus, the figures published in *Education at a Glance* should be interpreted with caution. However, large discrepancies between private and public returns should prompt additional analyses to assess whether government tax schemes or subsidies are strongly distortionary. In addition, public and private returns are useful only in guiding optimal financing schemes for post-compulsory education, i.e. determining how to share costs and benefits between the government and the individual. Education policy is about a lot more.

Definitions

Direct costs are a reflection of how much is spent on students per year from all sources (public, private and households), and are relative to the length of schooling.

Foregone earnings while in education depend largely on the level of earnings that a non-student can expect to receive and the duration of studies. The individual's foregone earnings are net of taxes, social contributions and social transfers.

Foregone taxes on earnings include the taxes, social contributions and social transfers not received by the public sector.

Gross earnings benefits are estimates of the earnings an individual will receive when in the labour market.

The **income tax effect** is the estimated amount received by the public sector from taxes. It is usually the main source of public revenue from investments made in education. It is more pronounced at the tertiary level of education because of progressive income taxes.

The **internal rate of return** indicates at what real interest rate the investment breaks even.

The **net present value** is the difference between the discounted benefits and the discounted investment costs, and represents the additional value that education produces over and above the 3% real interest that is charged on these cash flows.

The **social contribution effect** in the calculations only concerns those paid by individuals and not those paid by employers. The latter are an additional source of public income. In most OECD countries individuals pay social contributions on a flat rate and, as such, differences between education levels are smaller and proportional to earnings levels.

The **transfers effect** concerns the social transfers related to a given level of earnings.

The **unemployment effect** is translated into monetary gains by using the level of earnings for different education categories over the working life.

Methodology

This indicator builds on information collected in other chapters of *Education at a Glance 2012* with one exception: to be able to calculate public returns and examine net benefits for individuals, information from the OECD "Taxing Wages" database is used. The earnings data used are from the earning data collection gathered by the LSO (Labour market and social outcomes of learning) Network (available as relative earnings in *Education at a Glance 2012*, Indicator A8). The data on direct costs of education are from Indicators B1 and B3. Data for the probability of finding a job (unemployment rates for different educational categories and age groups) are from Indicator A7. And the minimum wage is used as an approximation for what a student could potentially earn if not in school in calculating the foregone earnings at the upper secondary or post-secondary non-tertiary level of education.

In calculating the returns to education, the approach taken here is the net present value (NPV) of the investment. In this framework, lifetime costs and benefits are transferred back to the start of the investment. This is done by discounting all cash flows back to the beginning of the investment with a set rate of interest (discount rate). The choice of interest rate is difficult, as it should reflect not only the overall time horizon of the investment, but also the cost of borrowing or the perceived risk of the investment. To keep things simple, and to make the interpretation of results easier, the same discount rate is applied across all OECD countries.

To arrive at a reasonable discount rate, long-term government bonds have been used as a benchmark. The average long-term interest rate across OECD countries was approximately 4.4% in 2009 (OECD Finance Database [OECD, 2013]). Assuming that countries' central banks have succeeded in anchoring inflation expectations at or below 2% per year, this implies a real interest rate of 2% to 3%. The 3% real discount rate used in this indicator reflects the fact that calculations are made in constant prices. The change in the discount rate has a substantial impact on the net present value of education.

Discounting the costs and benefits to the present value with this interest rate makes the financial returns on the overall investment and values of the different components comparable across time and countries. Using the same unit of analysis also has the advantage of making it possible to add or subtract components across different education levels or between the private and public sectors to understand how different factors interact.

NPV calculations are based on the same method as internal rate of return (IRR) calculations. The main difference between the two methods lies in how the interest rate is set. For calculations developed within the IRR framework, the interest rate is raised to the level at which the economic benefits equal the cost of the investment. It pinpoints the discount rate at which the investment breaks even.

In calculating the private NPV, investment costs include after-tax foregone earnings adjusted for the probability of finding a job (unemployment rate) and direct private expenditures on education. Both of these investment streams take into account the duration of studies. On the benefit side, age-earnings profiles are used to calculate the earnings differential between different education levels. These gross earnings differentials are adjusted for differences in income taxes, social contributions and social transfers, including housing benefits and social assistance related to earnings level, to arrive at net earnings differentials. The cash flows are further adjusted for probability of finding a job. The calculations are done separately for men and women to account for differences in earnings differentials and unemployment rates.

In calculating the public NPV, public costs include lost tax receipts during the years of schooling (income tax and social contributions) and public expenditures, taking into account the duration of studies. Lost tax receipts are low in some countries because young individuals earn less. Public expenditures on education include direct expenditures, such as teachers' salaries or spending for the construction of school buildings, purchase of textbooks, etc., and public-private transfers, such as public subsidies to households for scholarships and other grants, and to other private entities for providing training at the workplace, etc. The benefits for the public sector are additional tax and social contribution receipts associated with higher earnings and savings on transfers, i.e. housing benefits and social assistance that the public sector does not have to pay because of higher earnings.

It is important to consider some of the broad conceptual limitations on the estimates of financial returns discussed here. For instance:

- To calculate returns over the lifetime, 64 is used as the upper age limit in all countries. However, the pension entry age varies widely between countries. A few years more or less in the labour market can make a substantial difference in the returns to education for an individual and the public. Thus, it is likely that in countries where the retirement age deviates significantly from 64, return rates are over- or underestimated.
- As earnings generally increase with educational attainment, individuals with higher levels of education typically consume more goods and services, and thus pay additional value-added taxes (VAT) on their consumption. Public returns are thus underestimated in this indicator.
- Individuals with higher earnings also tend to pay more into their pensions and, after leaving the labour force, will have a further income advantage that is not taken into account in the calculations here. Better-educated individuals also tend to live longer, entailing additional public costs that are also not taken into account here.
- Many governments have programmes that provide loans to students at low interest rates. Loans can provide a strong incentive for individuals to pursue their studies and reduce the costs of attaining higher education. Yet, as loans have to be repaid later, they also reduce the financial benefits of education. These subsidies can often make a substantial difference in the returns to education for the individual, but they are not included here.
- Direct costs are most notably tuition fees, but also costs for educational materials or daily expenses that are associated with a change in residence required to pursue a specific educational programme. These are not taken into consideration.
- The data reported are accounting-based values only. The results no doubt differ from econometric estimates that would use the same data on the micro level (i.e. data from household or individual surveys) rather than a lifetime stream of earnings derived from average earnings.
- For upper secondary or post-secondary non-tertiary education, caution is required when interpreting foregone earnings, as the minimum wage is used as an approximation.

Given these factors, the returns on education in different countries should be assessed with caution.

The approach used here estimates future earnings for individuals with different levels of education, based on knowledge of how average present gross earnings vary by level of attainment and age. However, the relationship between different levels of educational attainment and earnings may differ in the future, as technological, economic and social changes may all alter how wage levels relate to education levels.

Differences in returns across countries partly reflect different institutional and non-market conditions that bear on earnings, such as institutional conditions that limit flexibility in relative earnings.

In estimating benefits, the effect of education on the likelihood of finding employment when an individual wants to work is taken into account. However, this also makes the estimate sensitive to the stage in the economic cycle at which the data are collected. As more highly educated individuals typically have a stronger attachment to the labour market, the value of education generally increases in times of slow economic growth.

The calculations also involve a number of restrictive assumptions needed for international comparability. For calculating the investments in education, foregone earnings have been standardised at the level of the legal minimum wage or the equivalent in countries in which earnings data include part-time work. When no national minimum wage was available, the wage was selected from wages set in collective agreements. This assumption aims to counterbalance the very low earnings recorded for 15-24 year-olds that led to excessively high estimates in earlier editions of *Education at a Glance*. In the Czech Republic, Hungary, Japan, the Netherlands, Portugal and the United Kingdom, actual earnings are used in calculating foregone earnings, as part-time work is excluded in these earnings data collections.

Cost and benefits for upper secondary or post-secondary non-tertiary education cannot be computed for Belgium and the Netherlands because upper secondary or post-secondary non-tertiary education is compulsory in both countries. The fact that upper secondary education is compulsory in these countries prevents a consistent application of the methodology for this indicator, because it uses an investment approach. The investment approach assumes that individuals make a choice to invest in a given level of education in order to obtain the benefits. In countries where a particular level of education is compulsory, individuals do not face this choice, therefore by making the methodology is inapplicable in these instances.

For further information on the methodology, see OECD, 2011, and Annex 3 at *www.oecd.org/edu/eag.htm*.

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

References

Andrews, D., A. Caldera Sánches and A. Johansson (2011), "Housing Markets and Structural Policies in OECD Countries", *OECD Economics Department Working Papers*, No. 836, OECD Publishing. *http://dx.doi.org/10.1787/5kgk8t2k9vf3-en*

Laibson, D. (1997), "Golden Eggs and Hyperbolic Discounting", *Quarterly Journal of Economics*, May, pp. 443-477.

Lans Bovenberg, A. and B. Jacobs (2005), «Redistribution and Education Subsidies are Siamese Twins», *Journal of Public Economics*, Vol. 89 (11-12), pp. 2005-2035.

Netherlands Bureau of Economic Policy Analysis (2012), «Increases of Private Contribution to Higher Education», The Hague.

OECD (2011), "A User's Guide to Indicator A9 : Incentives to Invest in Education" (available at *www.oecd.org/edu/eag2011*).

OECD (2013), «Exchange Rates (USD monthly averages)», Monthly Monetary and Financial Statistics (MEI) (database), *http://stats.oecd.org/Index.aspx?QueryId=169* (accessed 13 May 2013).

Indicator A7 Tables

A7

Table A7.1a. Private costs and benefits for a man attaining upper secondary or post-secondary non-tertiary education (2009)

As compared with a man attaining lower secondary education, in equivalent USD converted using PPPs for GDP

		Year	Direct costs	Foregone earnings	Total costs	Gross earnings benefits	Income tax effect	Social contribution effect	Transfers effect	Unemployment effect	Total benefits	Net present value	Internal rate of return
			(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
OECD	Australia	2009	- 3 019	- 27 156	**- 30 175**	176 400	- 64 407	0	- 8 303	49 011	**152 701**	**122 526**	19.9%
	Austria	2009	- 1 890	- 44 642	**- 46 532**	296 619	- 73 664	- 64 903	- 8 442	53 792	**203 402**	**156 870**	13.1%
	Belgium[1]		m	m	**m**	m	m	m	m	m	**m**	**m**	m
	Canada	2009	- 3 176	- 26 160	**- 29 336**	161 993	- 51 689	- 12 759	- 1 050	37 895	**134 391**	**105 055**	13.9%
	Chile		m	m	**m**	m	m	m	m	m	**m**	**m**	m
	Czech Republic	2009	- 2 116	- 16 417	**- 18 533**	111 711	- 33 748	- 22 963	0	97 226	**152 226**	**133 693**	23.8%
	Denmark	2009	- 767	- 38 878	**- 39 645**	196 594	- 75 388	- 18 916	- 10 020	28 105	**120 374**	**80 729**	11.8%
	Estonia	2009	- 252	- 8 833	**- 9 085**	32 324	- 12 566	- 1 362	0	35 810	**54 206**	**45 121**	16.9%
	Finland	2009	- 178	- 30 022	**- 30 201**	75 381	- 28 532	- 6 632	- 7 202	28 082	**61 097**	**30 897**	7.8%
	France	2009	- 2 632	- 26 088	**- 28 720**	112 593	- 23 972	- 21 496	- 13 971	44 735	**97 888**	**69 168**	10.9%
	Germany	2009	- 3 973	- 36 807	**- 40 779**	108 511	- 42 779	- 39 984	- 14 061	85 286	**96 973**	**56 193**	8.2%
	Greece	2009	- 1 780	- 30 044	**- 31 824**	93 624	- 11 870	- 15 658	- 23 320	3 845	**46 622**	**14 798**	4.1%
	Hungary	2009	- 823	- 11 014	**- 11 837**	80 092	- 31 994	- 22 087	0	49 789	**75 800**	**63 962**	19.4%
	Iceland		m	m	**m**	m	m	m	m	m	**m**	**m**	m
	Ireland	2009	- 688	- 24 715	**- 25 403**	184 104	- 67 498	- 23 665	0	74 829	**167 770**	**142 366**	20.4%
	Israel	2009	- 1 120	- 27 472	**- 28 592**	114 461	- 17 425	- 13 778	0	18 488	**101 746**	**73 154**	10.1%
	Italy	2008	- 986	- 43 886	**- 44 872**	177 073	- 63 514	- 18 903	0	22 519	**117 174**	**72 302**	8.1%
	Japan[2]		m	m	**m**	m	m	m	m	m	**m**	**m**	m
	Korea	2009	- 7 620	- 28 267	**- 35 888**	329 758	- 27 699	- 21 179	0	7 215	**288 094**	**252 207**	12.6%
	Luxembourg		m	m	**m**	m	m	m	m	m	**m**	**m**	m
	Mexico		m	m	**m**	m	m	m	m	m	**m**	**m**	m
	Netherlands[1]		m	m	**m**	m	m	m	m	m	**m**	**m**	m
	New Zealand	2009	- 3 128	- 34 334	**- 37 462**	110 659	- 38 760	- 2 339	- 711	26 671	**95 519**	**58 058**	8.1%
	Norway	2009	- 2 859	- 50 874	**- 53 734**	260 393	- 83 124	- 24 042	- 4 703	48 669	**197 192**	**143 459**	13.2%
	Poland	2008	- 916	- 16 602	**- 17 518**	53 311	- 6 965	- 16 753	0	24 689	**54 282**	**36 764**	10.3%
	Portugal	2009	0	- 16 727	**- 16 727**	146 280	- 28 260	- 17 439	0	12 676	**113 256**	**96 530**	12.2%
	Slovak Republic	2009	- 2 358	- 9 468	**- 11 826**	118 139	- 26 127	- 31 086	0	114 287	**175 214**	**163 387**	34.6%
	Slovenia	2009	- 1 803	- 19 322	**- 21 125**	137 605	- 25 432	- 35 986	0	25 875	**102 061**	**80 936**	15.9%
	Spain	2009	- 1 464	- 10 001	**- 11 465**	109 692	- 28 649	- 9 921	0	46 855	**117 977**	**106 512**	21.2%
	Sweden	2009	- 21	- 25 769	**- 25 790**	175 330	- 57 342	- 15 777	- 22 368	50 269	**130 112**	**104 322**	16.3%
	Switzerland		m	m	**m**	m	m	m	m	m	**m**	**m**	m
	Turkey	2005	- 336	- 11 218	**- 11 554**	63 318	- 10 584	- 10 115	0	4 017	**46 637**	**35 082**	9.5%
	United Kingdom	2009	- 4 880	- 31 944	**- 36 824**	222 261	- 52 477	- 29 089	- 13 494	58 353	**185 553**	**148 730**	13.9%
	United States	2009	- 2 930	- 25 106	**- 28 036**	304 861	- 71 514	- 26 707	- 8 675	44 454	**242 418**	**214 382**	20.6%
	OECD average		- 1 989	- 25 837	**- 27 826**	152 042	- 40 615	- 20 136	- 5 243	42 055	**128 103**	**100 277**	14.5%
	EU21 average		- 1 529	- 24 510	**- 26 039**	135 069	- 38 376	- 22 923	- 6 271	47 612	**115 110**	**89 071**	14.9%
Other G20	Argentina		m	m	**m**	m	m	m	m	m	**m**	**m**	m
	Brazil		m	m	**m**	m	m	m	m	m	**m**	**m**	m
	China		m	m	**m**	m	m	m	m	m	**m**	**m**	m
	India		m	m	**m**	m	m	m	m	m	**m**	**m**	m
	Indonesia		m	m	**m**	m	m	m	m	m	**m**	**m**	m
	Russian Federation		m	m	**m**	m	m	m	m	m	**m**	**m**	m
	Saudi Arabia		m	m	**m**	m	m	m	m	m	**m**	**m**	m
	South Africa		m	m	**m**	m	m	m	m	m	**m**	**m**	m
	G20 average		m	m	**m**	m	m	m	m	m	**m**	**m**	m

Notes: Values are based on the difference between men who attained an upper secondary or post-secondary non-tertiary education compared with those who have not attained that level of education.

1. Belgium and the Netherlands are not included in the table because upper secondary education is compulsory.
2. Japan is not included in the table because the data at the lower and upper secondary levels of education are not broken down.

Source: OECD. *Education at a Glance 2012*. See Annex 3 for notes *(www.oecd.org/edu/eag.htm)*.

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

StatLink http://dx.doi.org/10.1787/888932849103

Table A7.1b. Private costs and benefits for a woman attaining upper secondary or post-secondary non-tertiary education (2009)

As compared with a woman attaining lower secondary education, in equivalent USD converted using PPPs for GDP

		Year	Direct costs	Foregone earnings	Total costs	Gross earnings benefits	Income tax effect	Social contribution effect	Transfers effect	Unemployment effect	Total benefits	Net present value	Internal rate of return
			(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
OECD	Australia	2009	- 3 019	- 28 198	**- 31 217**	122 044	- 28 457	0	- 22 467	20 190	**91 311**	**60 094**	12.7%
	Austria	2009	- 1 890	- 43 950	**- 45 840**	208 105	- 24 496	- 47 697	- 27 606	30 761	**139 066**	**93 226**	10.6%
	Belgium[1]		m	m	**m**	m	m	m	m	m	**m**	**m**	m
	Canada	2009	- 3 176	- 28 317	**- 31 493**	84 708	- 21 088	- 9 042	- 2 803	27 362	**79 136**	**47 643**	7.4%
	Chile		m	m	**m**	m	m	m	m	m	**m**	**m**	m
	Czech Republic	2009	- 2 116	- 16 853	**- 18 969**	99 967	- 27 339	- 19 280	- 2 144	76 183	**127 387**	**108 418**	20.7%
	Denmark	2009	- 767	- 39 659	**- 40 426**	146 775	- 55 677	- 14 804	0	24 014	**100 308**	**59 882**	9.9%
	Estonia	2009	- 252	- 9 051	**- 9 303**	33 745	- 11 179	- 1 290	0	31 166	**52 442**	**43 139**	25.9%
	Finland	2009	- 178	- 31 990	**- 32 168**	55 774	- 16 608	- 5 546	- 16 226	30 783	**48 177**	**16 009**	5.5%
	France	2009	- 2 632	- 26 610	**- 29 242**	115 681	- 20 689	- 20 151	- 32 278	31 671	**74 234**	**44 992**	7.8%
	Germany	2009	- 3 973	- 37 238	**- 41 210**	124 880	- 31 103	- 35 604	- 34 860	44 088	**67 401**	**26 191**	5.9%
	Greece	2009	- 1 780	- 24 381	**- 26 160**	109 244	- 1 304	- 18 230	- 15 164	5 096	**79 641**	**53 481**	7.8%
	Hungary	2009	- 823	- 10 788	**- 11 611**	90 284	- 31 059	- 23 601	0	49 541	**85 165**	**73 554**	21.9%
	Iceland		m	m	**m**	m	m	m	m	m	**m**	**m**	m
	Ireland	2009	- 688	- 33 235	**- 33 923**	169 908	- 25 758	- 14 394	0	22 225	**151 980**	**118 058**	21.3%
	Israel	2009	- 1 120	- 25 901	**- 27 021**	90 011	- 3 606	- 4 902	0	14 120	**95 623**	**68 602**	10.3%
	Italy	2008	- 986	- 38 624	**- 39 610**	152 167	- 51 238	- 17 293	0	29 983	**113 620**	**74 010**	8.4%
	Japan[2]		m	m	**m**	m	m	m	m	m	**m**	**m**	m
	Korea	2009	- 7 620	- 30 787	**- 38 407**	120 130	- 1 914	- 9 164	0	787	**109 839**	**71 432**	10.8%
	Luxembourg		m	m	**m**	m	m	m	m	m	**m**	**m**	m
	Mexico		m	m	**m**	m	m	m	m	m	**m**	**m**	m
	Netherlands[1]		m	m	**m**	m	m	m	m	m	**m**	**m**	m
	New Zealand	2009	- 3 128	- 31 941	**- 35 069**	95 339	- 22 970	- 2 033	- 8 738	24 622	**86 220**	**51 151**	9.2%
	Norway	2009	- 2 859	- 52 871	**- 55 731**	151 109	- 41 979	- 13 303	- 13 885	20 239	**102 181**	**46 450**	6.4%
	Poland	2008	- 916	- 14 879	**- 15 794**	74 416	- 8 271	- 19 448	0	16 433	**63 130**	**47 335**	10.5%
	Portugal	2009	0	- 15 946	**- 15 946**	108 338	- 11 302	- 12 754	0	7 683	**91 965**	**76 019**	12.1%
	Slovak Republic	2009	- 2 358	- 4 617	**- 6 975**	81 677	- 11 451	- 23 898	0	97 725	**144 054**	**137 078**	48.4%
	Slovenia	2009	- 1 803	- 20 740	**- 22 543**	132 244	- 28 476	- 32 797	0	15 924	**86 895**	**64 352**	10.5%
	Spain	2009	- 1 464	- 9 868	**- 11 332**	116 983	- 21 569	- 9 851	0	38 471	**124 035**	**112 703**	24.9%
	Sweden	2009	- 21	- 27 283	**- 27 304**	136 537	- 43 847	- 12 740	- 30 163	46 195	**95 982**	**68 678**	11.0%
	Switzerland		m	m	**m**	m	m	m	m	m	**m**	**m**	m
	Turkey	2005	- 336	- 12 058	**- 12 394**	75 879	- 8 395	- 9 432	0	- 12 434	**45 618**	**33 223**	9.2%
	United Kingdom	2009	- 4 880	- 33 859	**- 38 739**	151 062	- 35 926	- 19 985	- 43 256	46 662	**98 557**	**59 818**	9.3%
	United States	2009	- 2 930	- 27 153	**- 30 083**	201 542	- 44 205	- 18 597	- 8 544	41 567	**171 763**	**141 680**	16.5%
	OECD average		- 1 989	- 26 031	**- 28 020**	117 252	- 24 227	- 15 994	- 9 928	30 041	**97 143**	**69 124**	13.7%
	EU21 average		- 1 529	- 24 420	**- 25 950**	117 099	- 25 405	- 19 409	- 11 205	35 811	**96 891**	**70 941**	15.1%
Other G20	Argentina		m	m	**m**	m	m	m	m	m	**m**	**m**	m
	Brazil		m	m	**m**	m	m	m	m	m	**m**	**m**	m
	China		m	m	**m**	m	m	m	m	m	**m**	**m**	m
	India		m	m	**m**	m	m	m	m	m	**m**	**m**	m
	Indonesia		m	m	**m**	m	m	m	m	m	**m**	**m**	m
	Russian Federation		m	m	**m**	m	m	m	m	m	**m**	**m**	m
	Saudi Arabia		m	m	**m**	m	m	m	m	m	**m**	**m**	m
	South Africa		m	m	**m**	m	m	m	m	m	**m**	**m**	m
	G20 average		m	m	**m**	m	m	m	m	m	**m**	**m**	m

Note: Values are based on the difference between women who attained an upper secondary or post-secondary non-tertiary education compared with those who have not attained that level of education.

1. Belgium and the Netherlands are not included in the table because upper secondary education is compulsory.
2. Japan is not included in the table because the data at the lower and upper secondary levels of education are not broken down.

Source: OECD. *Education at a Glance 2012*. See Annex 3 for notes *(www.oecd.org/edu/eag.htm)*.

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

StatLink http://dx.doi.org/10.1787/888932849122

A7

Table A7.2a. Public costs and benefits for a man attaining upper secondary or post-secondary non-tertiary education (2009)

As compared with a man attaining lower secondary education, in equivalent USD converted using PPPs for GDP

		Year	Direct costs	Foregone taxes on earnings	Total costs	Income tax effect	Social contribution effect	Transfers effect	Unemployment effect	Total benefits	Net present value	Internal rate of return
			(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
OECD	Australia	2009	- 15 955	- 3 020	**- 18 975**	55 053	0	8 303	9 355	**72 710**	**53 735**	17.1%
	Austria	2009	- 42 552	- 8 054	**- 50 606**	67 624	55 258	8 442	15 685	**147 010**	**96 404**	9.2%
	Belgium[1]		m	m	**m**	m	m	m	m	**m**	**m**	m
	Canada	2009	- 26 071	- 5 023	**- 31 094**	45 151	10 200	1 050	9 097	**65 497**	**34 403**	6.7%
	Chile		m	m	**m**	m	m	m	m	**m**	**m**	m
	Czech Republic	2009	- 21 277	1 458	**- 19 819**	22 510	12 319	0	21 883	**56 711**	**36 892**	10.2%
	Denmark	2009	- 30 337	- 18 553	**- 48 890**	67 718	15 671	10 020	10 915	**104 324**	**55 434**	7.7%
	Estonia	2009	- 18 857	- 1 210	**- 20 066**	6 687	650	0	6 592	**13 928**	**- 6 138**	1.5%
	Finland	2009	- 21 711	- 4 391	**- 26 103**	23 424	4 855	7 202	6 884	**42 366**	**16 263**	6.5%
	France	2009	- 31 556	- 5 171	**- 36 727**	19 109	15 422	13 971	10 937	**59 440**	**22 713**	6.4%
	Germany	2009	- 27 953	- 14 083	**- 42 036**	29 047	22 523	14 061	31 192	**96 824**	**54 788**	9.4%
	Greece	2009	- 22 045	2 032	**- 20 013**	11 723	15 045	23 320	760	**50 848**	**30 835**	6.0%
	Hungary	2009	- 14 716	- 2 674	**- 17 391**	24 747	13 668	0	15 666	**54 081**	**36 690**	10.0%
	Iceland		m	m	**m**	m	m	m	m	**m**	**m**	m
	Ireland	2009	- 29 498	- 763	**- 30 261**	59 215	19 169	0	12 780	**91 164**	**60 903**	8.1%
	Israel	2009	- 15 405	- 1 650	**- 17 055**	16 363	12 601	0	2 240	**31 204**	**14 148**	5.5%
	Italy	2008	- 32 919	- 10 264	**- 43 183**	59 003	16 776	0	6 638	**82 418**	**39 235**	6.0%
	Japan[2]		m	m	**m**	m	m	m	m	**m**	**m**	m
	Korea	2009	- 24 344	- 2 983	**- 27 327**	27 524	20 643	0	711	**48 878**	**21 551**	4.8%
	Luxembourg		m	m	**m**	m	m	m	m	**m**	**m**	m
	Mexico		m	m	**m**	m	m	m	m	**m**	**m**	m
	Netherlands[1]		m	m	**m**	m	m	m	m	**m**	**m**	m
	New Zealand	2009	- 21 397	- 3 991	**- 25 388**	33 911	1 888	711	5 299	**41 810**	**16 422**	5.3%
	Norway	2009	- 36 851	- 15 816	**- 52 667**	73 644	20 269	4 703	13 253	**111 869**	**59 202**	8.0%
	Poland	2008	- 16 232	- 5 565	**- 21 797**	5 188	11 477	0	7 053	**23 718**	**1 921**	3.4%
	Portugal	2009	- 20 476	- 2 386	**- 22 862**	27 209	16 054	0	2 436	**45 699**	**22 837**	5.5%
	Slovak Republic	2009	- 13 158	- 910	**- 14 068**	18 167	15 854	0	23 191	**57 212**	**43 145**	13.4%
	Slovenia	2009	- 18 800	- 5 902	**- 24 702**	23 126	30 304	0	7 989	**61 419**	**36 716**	8.9%
	Spain	2009	- 19 800	- 1 030	**- 20 830**	24 782	6 967	0	6 822	**38 570**	**17 739**	5.5%
	Sweden	2009	- 28 557	- 6 913	**- 35 470**	46 699	12 285	22 368	14 135	**95 487**	**60 018**	14.8%
	Switzerland		m	m	**m**	m	m	m	m	**m**	**m**	m
	Turkey	2005	- 4 776	- 4 551	**- 9 327**	9 997	9 514	0	1 188	**20 699**	**11 371**	6.4%
	United Kingdom	2009	- 17 187	2 307	**- 14 881**	44 425	24 434	13 494	12 707	**95 060**	**80 179**	21.2%
	United States	2009	- 33 481	- 3 231	**- 36 713**	65 191	23 333	8 675	9 698	**106 897**	**70 185**	10.0%
	OECD average		- 23 304	- 4 705	**- 28 010**	34 894	15 661	5 243	10 196	**65 994**	**37 984**	8.4%
	EU21 average		- 23 757	- 4 560	**- 28 317**	32 245	17 152	6 271	11 904	**67 571**	**39 254**	8.5%
Other G20	Argentina		m	m	**m**	m	m	m	m	**m**	**m**	m
	Brazil		m	m	**m**	m	m	m	m	**m**	**m**	m
	China		m	m	**m**	m	m	m	m	**m**	**m**	m
	India		m	m	**m**	m	m	m	m	**m**	**m**	m
	Indonesia		m	m	**m**	m	m	m	m	**m**	**m**	m
	Russian Federation		m	m	**m**	m	m	m	m	**m**	**m**	m
	Saudi Arabia		m	m	**m**	m	m	m	m	**m**	**m**	m
	South Africa		m	m	**m**	m	m	m	m	**m**	**m**	m
	G20 average		m	m	**m**	m	m	m	m	**m**	**m**	m

Note: Values are based on the difference between men who attained an upper secondary or post-secondary non-tertiary education compared with those who have not attained that level of education.

1. Belgium and the Netherlands are not included in the table because upper secondary education is compulsory.
2. Japan is not included in the table because the data at the lower and upper secondary levels of education are not broken down.

Source: OECD. *Education at a Glance 2012*. See Annex 3 for notes *(www.oecd.org/edu/eag.htm)*.

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

StatLink http://dx.doi.org/10.1787/888932849141

Table A7.2b. Public costs and benefits for a woman attaining upper secondary or post-secondary non-tertiary education (2009)

As compared with a woman attaining lower secondary education, in equivalent USD converted using PPPs for GDP

		Year	Direct costs	Foregone taxes on earnings	Total costs	Income tax effect	Social contribution effect	Transfers effect	Unemployment effect	Total benefits	Net present value	Internal rate of return
			(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
OECD	Australia	2009	- 15 955	- 3 136	**- 19 091**	26 218	0	22 467	2 239	**50 924**	**31 833**	18.4%
	Austria	2009	- 42 552	- 7 929	**- 50 481**	23 951	42 287	27 606	5 954	**99 799**	**49 318**	7.8%
	Belgium[1]		m	m	**m**	m	m	m	m	**m**	**m**	m
	Canada	2009	- 26 071	- 5 437	**- 31 508**	17 830	7 276	2 803	5 025	**32 934**	**1 425**	3.2%
	Chile		m	m	**m**	m	m	m	m	**m**	**m**	m
	Czech Republic	2009	- 21 277	1 497	**- 19 781**	20 002	10 946	2 144	15 671	**48 763**	**28 983**	8.8%
	Denmark	2009	- 30 337	- 18 925	**- 49 263**	49 790	11 689	0	9 001	**70 481**	**21 218**	5.3%
	Estonia	2009	- 18 857	- 1 240	**- 20 096**	6 916	672	0	4 880	**12 469**	**- 7 628**	0.6%
	Finland	2009	- 21 711	- 4 679	**- 26 390**	12 075	3 607	16 226	6 472	**38 380**	**11 989**	6.6%
	France	2009	- 31 556	- 5 275	**- 36 831**	17 923	15 865	32 278	7 052	**73 117**	**36 287**	6.7%
	Germany	2009	- 27 953	- 14 248	**- 42 201**	27 294	26 613	34 860	12 800	**101 567**	**59 366**	10.9%
	Greece	2009	- 22 045	1 649	**- 20 396**	1 347	17 423	15 164	764	**34 699**	**14 303**	4.8%
	Hungary	2009	- 14 716	- 2 620	**- 17 336**	24 816	15 247	0	14 598	**54 660**	**37 324**	10.4%
	Iceland		m	m	**m**	m	m	m	m	**m**	**m**	m
	Ireland	2009	- 29 498	- 1 027	**- 30 524**	24 738	13 916	0	1 498	**40 152**	**9 628**	4.2%
	Israel	2009	- 15 405	- 1 556	**- 16 961**	3 499	4 383	0	626	**8 508**	**- 8 453**	0.7%
	Italy	2008	- 32 919	- 9 033	**- 41 952**	47 153	14 467	0	6 910	**68 530**	**26 578**	5.2%
	Japan[2]		m	m	**m**	m	m	m	m	**m**	**m**	m
	Korea	2009	- 24 344	- 3 145	**- 27 488**	1 904	9 104	0	70	**11 078**	**- 16 410**	-1.3%
	Luxembourg		m	m	**m**	m	m	m	m	**m**	**m**	m
	Mexico		m	m	**m**	m	m	m	m	**m**	**m**	m
	Netherlands[1]		m	m	**m**	m	m	m	m	**m**	**m**	m
	New Zealand	2009	- 21 397	- 3 713	**- 25 110**	19 183	1 618	8 738	4 202	**33 740**	**8 631**	4.8%
	Norway	2009	- 36 851	- 16 437	**- 53 288**	39 007	11 741	13 885	4 534	**69 166**	**15 879**	4.8%
	Poland	2008	- 16 232	- 4 987	**- 21 219**	7 206	15 942	0	4 571	**27 719**	**6 500**	4.2%
	Portugal	2009	- 20 476	- 2 275	**- 22 751**	11 178	11 919	0	958	**24 055**	**1 304**	3.2%
	Slovak Republic	2009	- 13 158	- 444	**- 13 601**	8 542	10 905	0	15 902	**35 349**	**21 747**	9.1%
	Slovenia	2009	- 18 800	- 6 335	**- 25 135**	27 178	29 297	0	4 798	**61 272**	**36 137**	7.8%
	Spain	2009	- 19 800	- 1 016	**- 20 817**	20 119	7 434	0	3 866	**31 420**	**10 603**	4.5%
	Sweden	2009	- 28 557	- 7 319	**- 35 876**	34 935	9 544	30 163	12 109	**86 750**	**50 875**	13.4%
	Switzerland		m	m	**m**	m	m	m	m	**m**	**m**	m
	Turkey	2005	- 4 776	- 4 892	**- 9 668**	10 025	11 264	0	- 3 463	**17 827**	**8 159**	5.8%
	United Kingdom	2009	- 17 187	4 881	**- 12 306**	30 198	16 609	43 256	9 105	**99 167**	**86 861**	20.9%
	United States	2009	- 33 481	- 3 495	**- 36 976**	39 703	15 443	8 544	7 657	**71 346**	**34 370**	6.9%
	OECD average		- 23 304	- 4 659	**- 27 963**	21 259	12 893	9 928	6 069	**50 149**	**22 186**	6.8%
	EU21 average		- 23 757	- 4 407	**- 28 164**	21 965	15 243	11 205	7 606	**56 019**	**27 855**	7.5%
Other G20	Argentina		m	m	**m**	m	m	m	m	**m**	**m**	m
	Brazil		m	m	**m**	m	m	m	m	**m**	**m**	m
	China		m	m	**m**	m	m	m	m	**m**	**m**	m
	India		m	m	**m**	m	m	m	m	**m**	**m**	m
	Indonesia		m	m	**m**	m	m	m	m	**m**	**m**	m
	Russian Federation		m	m	**m**	m	m	m	m	**m**	**m**	m
	Saudi Arabia		m	m	**m**	m	m	m	m	**m**	**m**	m
	South Africa		m	m	**m**	m	m	m	m	**m**	**m**	m
	G20 average		m	m	**m**	m	m	m	m	**m**	**m**	m

Notes: Values are based on the difference between women who attained an upper secondary or post-secondary non-tertiary education compared with those who have not attained that level of education.

1. Belgium and the Netherlands are not included in the table because upper secondary education is compulsory.
2. Japan is not included in the table because the data at the lower and upper secondary levels of education are not broken down.

Source: OECD. *Education at a Glance 2012*. See Annex 3 for notes *(www.oecd.org/edu/eag.htm)*.

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

StatLink http://dx.doi.org/10.1787/888932849160

A7

Table A7.3a. Private costs and benefits for a man attaining tertiary education (2009)

As compared with a man attaining upper secondary or post-secondary non-tertiary education, in equivalent USD converted using PPPs for GDP

		Year	Direct costs	Foregone earnings	Total costs	Gross earnings benefits	Income tax effect	Social contribution effect	Transfers effect	Unemployment effect	Grants effect	Total benefits	Net present value	Internal rate of return
			(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
OECD	Australia	2009	- 17 528	- 50 814	**- 68 342**	339 977	- 124 441	0	0	5 363	7	**220 906**	**152 564**	9.0%
	Austria	2009	- 5 689	- 56 184	**- 61 872**	404 385	- 129 756	- 59 771	0	24 265	9 852	**248 975**	**187 103**	11.7%
	Belgium	2009	- 3 514	- 45 409	**- 48 922**	352 354	- 156 492	- 54 714	0	23 422	1 047	**165 617**	**116 694**	10.4%
	Canada	2009	- 16 282	- 30 684	**- 46 966**	287 032	- 96 213	- 7 645	0	31 906	1 103	**216 183**	**169 217**	12.3%
	Chile		m	m	**m**	m	m	m	m	m	m	**m**	**m**	m
	Czech Republic	2009	- 4 692	- 23 017	**- 27 709**	424 850	- 88 209	- 48 588	0	16 814	0	**304 867**	**277 158**	20.1%
	Denmark	2009	- 3 365	- 55 899	**- 59 263**	266 180	- 139 677	- 22 432	- 9 435	12 030	25 189	**131 855**	**72 592**	8.5%
	Estonia	2009	- 3 583	- 18 346	**- 21 929**	150 074	- 40 454	- 4 070	0	53 647	0	**159 197**	**137 268**	22.0%
	Finland	2009	- 1 873	- 56 911	**- 58 784**	343 119	- 138 956	- 24 568	0	39 479	8 730	**227 803**	**169 020**	11.9%
	France	2009	- 7 868	- 51 472	**- 59 340**	338 590	- 83 938	- 45 390	- 880	13 494	3 620	**225 495**	**166 155**	10.1%
	Germany	2009	- 7 061	- 64 242	**- 71 304**	353 025	- 140 458	- 69 031	0	54 278	6 021	**203 835**	**132 531**	9.2%
	Greece	2009	- 690	- 43 715	**- 44 405**	182 193	- 35 679	- 29 437	- 8 700	6 156	0	**114 533**	**70 128**	7.5%
	Hungary	2009	- 5 131	- 14 443	**- 19 575**	464 922	- 188 649	- 85 331	0	37 732	1 283	**229 956**	**210 381**	25.6%
	Iceland		m	m	**m**	m	m	m	m	m	m	**m**	**m**	m
	Ireland	2009	- 6 716	- 50 436	**- 57 152**	512 095	- 219 981	- 41 438	0	90 659	4 361	**345 695**	**288 543**	19.8%
	Israel	2009	- 13 394	- 28 223	**- 41 617**	281 602	- 68 554	- 34 985	0	14 996	0	**193 060**	**151 443**	11.4%
	Italy	2008	- 7 285	- 50 608	**- 57 893**	408 011	- 159 562	- 41 835	0	3 295	3 330	**213 239**	**155 346**	8.1%
	Japan	2007	- 37 215	- 66 750	**- 103 965**	326 614	- 64 523	- 36 039	0	20 931	0	**246 983**	**143 018**	7.4%
	Korea	2009	- 23 378	- 54 050	**- 77 428**	280 071	- 34 128	- 24 344	0	17 002	0	**238 601**	**161 173**	16.0%
	Luxembourg		m	m	**m**	m	m	m	m	m	m	**m**	**m**	m
	Mexico		m	m	**m**	m	m	m	m	m	m	**m**	**m**	m
	Netherlands	2008	- 14 113	- 90 118	**- 104 231**	455 296	- 202 175	- 22 153	0	4 778	14 371	**250 117**	**145 886**	7.9%
	New Zealand	2009	- 10 414	- 49 605	**- 60 019**	188 649	- 64 074	- 3 261	0	3 169	1 891	**126 375**	**66 357**	6.7%
	Norway	2009	- 1 180	- 66 506	**- 67 686**	273 737	- 103 788	- 22 034	0	9 009	6 226	**163 151**	**95 465**	6.7%
	Poland	2008	- 6 291	- 15 995	**- 22 287**	367 019	- 55 868	- 83 937	0	23 960	1 742	**252 917**	**230 630**	23.4%
	Portugal	2009	- 8 085	- 19 784	**- 27 869**	304 147	- 82 653	- 33 871	0	4 128	0	**191 751**	**163 882**	14.9%
	Slovak Republic	2009	- 5 543	- 17 281	**- 22 823**	302 035	- 55 140	- 42 864	0	34 628	1 250	**239 909**	**217 086**	21.5%
	Slovenia	2009	- 3 858	- 25 921	**- 29 779**	475 118	- 128 427	- 109 421	0	19 474	226	**256 970**	**227 191**	18.2%
	Spain	2009	- 10 051	- 32 644	**- 42 695**	188 318	- 53 898	- 14 573	0	41 006	0	**160 853**	**118 157**	10.2%
	Sweden	2009	- 4 913	- 54 097	**- 59 010**	219 203	- 87 765	- 10 739	0	14 209	8 341	**143 249**	**84 239**	7.6%
	Switzerland		m	m	**m**	m	m	m	m	m	m	**m**	**m**	m
	Turkey	2005	- 1 061	- 9 402	**- 10 463**	106 985	- 18 682	- 16 424	0	2 761	0	**74 640**	**64 177**	19.3%
	United Kingdom	2009	- 28 704	- 91 976	**- 120 679**	398 503	- 88 234	- 45 568	0	34 295	2 244	**301 240**	**180 560**	8.2%
	United States	2009	- 71 053	- 43 069	**- 114 122**	667 905	- 220 754	- 57 941	0	89 759	0	**478 969**	**364 847**	12.3%
	OECD average		- 11 398	- 44 055	**- 55 453**	333 173	- 105 901	- 37 669	- 656	25 746	3 477	**218 170**	**162 718**	13.0%
	EU21 average		- 6 951	- 43 925	**- 50 876**	345 472	- 113 798	- 44 487	- 951	27 587	4 580	**218 404**	**167 528**	13.8%
Other G20	Argentina		m	m	**m**	m	m	m	m	m	m	**m**	**m**	m
	Brazil		m	m	**m**	m	m	m	m	m	m	**m**	**m**	m
	China		m	m	**m**	m	m	m	m	m	m	**m**	**m**	m
	India		m	m	**m**	m	m	m	m	m	m	**m**	**m**	m
	Indonesia		m	m	**m**	m	m	m	m	m	m	**m**	**m**	m
	Russian Federation		m	m	**m**	m	m	m	m	m	m	**m**	**m**	m
	Saudi Arabia		m	m	**m**	m	m	m	m	m	m	**m**	**m**	m
	South Africa		m	m	**m**	m	m	m	m	m	m	**m**	**m**	m
	G20 average		m	m	**m**	m	m	m	m	m	m	**m**	**m**	m

Note: Values are based on the difference between men who attained a tertiary education compared with those who have attained an upper secondary or post-secondary non-tertiary education.

Source: OECD. *Education at a Glance 2012*. See Annex 3 for notes *(www.oecd.org/edu/eag.htm)*.

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

StatLink http://dx.doi.org/10.1787/888932849179

Table A7.3b. Private costs and benefits for a woman attaining tertiary education (2009)

As compared with a woman attaining upper secondary or post-secondary non-tertiary education, in equivalent USD converted using PPPs for GDP

		Year	Direct costs	Foregone earnings	Total costs	Gross earnings benefits	Income tax effect	Social contribution effect	Transfers effect	Unemployment effect	Grants effect	Total benefits	Net present value	Internal rate of return
			(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
OECD	Australia	2009	- 17 528	- 52 120	**- 69 648**	253 308	- 91 641	0	0	13 021	7	**174 695**	**105 046**	8.8%
	Austria	2009	- 5 689	- 57 294	**- 62 983**	318 996	- 87 509	- 57 683	0	4 947	9 852	**188 603**	**125 620**	9.1%
	Belgium	2009	- 3 514	- 43 468	**- 46 981**	305 193	- 121 702	- 72 732	0	32 859	1 047	**144 665**	**97 683**	11.0%
	Canada	2009	- 16 282	- 32 449	**- 48 731**	249 037	- 68 337	- 20 011	0	17 718	1 103	**179 511**	**130 780**	12.2%
	Chile		m	m	**m**	m	m	m	m	m	m	**m**	**m**	m
	Czech Republic	2009	- 4 556	- 22 004	**- 26 560**	234 992	- 51 432	- 29 160	0	30 543		**184 943**	**158 383**	17.8%
	Denmark	2009	- 3 365	- 57 986	**- 61 351**	166 763	- 60 038	- 14 206	- 8 679	7 527	25 189	**116 556**	**55 205**	8.5%
	Estonia	2009	- 3 583	- 20 438	**- 24 021**	131 866	- 31 316	- 3 140	0	24 987	0	**122 398**	**98 377**	18.5%
	Finland	2009	- 1 873	- 60 589	**- 62 461**	211 875	- 72 749	- 15 039	- 4 079	21 742	8 730	**150 480**	**88 019**	8.8%
	France	2009	- 7 868	- 49 824	**- 57 692**	212 928	- 43 190	- 32 362	- 8 444	23 641	3 620	**156 192**	**98 499**	8.9%
	Germany	2009	- 7 061	- 66 325	**- 73 387**	244 493	- 73 871	- 55 471	- 123	24 260	6 021	**145 309**	**71 922**	6.8%
	Greece	2009	- 690	- 36 674	**- 37 363**	186 037	- 21 786	- 33 976	- 29 066	26 865		**128 074**	**90 710**	9.6%
	Hungary	2009	- 5 131	- 15 047	**- 20 178**	251 870	- 108 574	- 47 547	0	27 402	1 283	**124 433**	**104 255**	17.6%
	Iceland		m	m	**m**	m	m	m	m	m	m	**m**	**m**	m
	Ireland	2009	- 6 716	- 59 372	**- 66 088**	391 860	- 116 093	- 51 190	0	23 110	4 361	**252 048**	**185 960**	14.2%
	Israel	2009	- 13 394	- 28 918	**- 42 312**	181 036	- 27 193	- 20 924	0	14 996		**147 914**	**105 602**	10.2%
	Italy	2008	- 7 285	- 47 826	**- 55 111**	223 811	- 79 954	- 21 986	0	7 563	3 330	**132 764**	**77 652**	6.9%
	Japan	2007	- 37 215	- 49 265	**- 86 481**	231 306	- 20 848	- 29 117	0	9 951		**191 293**	**104 812**	7.8%
	Korea	2009	- 23 378	- 56 149	**- 79 527**	255 083	- 9 753	- 19 619	0	4 347		**230 058**	**150 531**	8.6%
	Luxembourg		m	m	**m**	m	m	m	m	m	m	**m**	**m**	m
	Mexico		m	m	**m**	m	m	m	m	m	m	**m**	**m**	m
	Netherlands	2008	- 14 113	- 87 458	**- 101 571**	339 338	- 129 641	- 30 381	0	9 467	14 371	**203 152**	**101 581**	7.0%
	New Zealand	2009	- 10 414	- 49 614	**- 60 027**	133 789	- 31 532	- 2 328	- 2 623	3 114	1 891	**102 311**	**42 283**	6.9%
	Norway	2009	- 1 180	- 66 522	**- 67 702**	224 711	- 63 163	- 17 633	0	319	6 226	**150 459**	**82 758**	7.7%
	Poland	2008	- 6 291	- 15 058	**- 21 350**	215 086	- 24 687	- 52 035	0	27 164	1 742	**167 270**	**145 920**	19.9%
	Portugal	2009	- 8 085	- 19 280	**- 27 365**	259 278	- 60 491	- 31 347	0	25 663		**193 104**	**165 739**	16.2%
	Slovak Republic	2009	- 5 543	- 17 363	**- 22 906**	190 019	- 34 361	- 29 863	0	33 017	1 250	**160 062**	**137 156**	18.5%
	Slovenia	2009	- 3 858	- 25 447	**- 29 305**	358 406	- 87 540	- 84 889	0	26 254	226	**212 456**	**183 151**	17.3%
	Spain	2009	- 10 051	- 32 691	**- 42 743**	240 593	- 64 677	- 18 000	0	43 061		**200 976**	**158 234**	12.1%
	Sweden	2009	- 4 913	- 56 388	**- 61 301**	141 448	- 42 879	- 11 081	- 10	16 338	8 341	**112 156**	**50 855**	6.5%
	Switzerland		m	m	**m**	m	m	m	m	m	m	**m**	**m**	m
	Turkey	2005	- 1 061	- 8 185	**- 9 246**	116 530	- 21 267	- 19 627	0	14 075		**89 711**	**80 466**	19.2%
	United Kingdom	2009	- 28 704	- 92 382	**- 121 086**	355 479	- 74 244	- 40 895	- 1 548	21 048	2 244	**262 084**	**140 998**	7.5%
	United States	2009	- 71 053	- 46 918	**- 117 971**	405 817	- 102 914	- 33 654	0	34 571		**303 819**	**185 848**	9.1%
	OECD average		- 11 393	- 43 898	**- 55 291**	242 446	- 62 875	- 30 893	- 1 882	19 640	5 042	**169 914**	**114 622**	11.5%
	EU21 average		- 6 944	- 44 146	**- 51 090**	249 017	- 69 337	- 36 649	- 2 598	22 873	5 725	**167 886**	**116 796**	12.1%
Other G20	Argentina		m	m	**m**	m	m	m	m	m	m	**m**	**m**	m
	Brazil		m	m	**m**	m	m	m	m	m	m	**m**	**m**	m
	China		m	m	**m**	m	m	m	m	m	m	**m**	**m**	m
	India		m	m	**m**	m	m	m	m	m	m	**m**	**m**	m
	Indonesia		m	m	**m**	m	m	m	m	m	m	**m**	**m**	m
	Russian Federation		m	m	**m**	m	m	m	m	m	m	**m**	**m**	m
	Saudi Arabia		m	m	**m**	m	m	m	m	m	m	**m**	**m**	m
	South Africa		m	m	**m**	m	m	m	m	m	m	**m**	**m**	m
	G20 average		m	m	**m**	m	m	m	m	m	m	**m**	**m**	m

Note: Values are based on the difference between women who attained a tertiary education compared with those who have attained an upper secondary or post-secondary non-tertiary education.

Source: OECD. *Education at a Glance 2012*. See Annex 3 for notes *(www.oecd.org/edu/eag.htm)*.

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

StatLink http://dx.doi.org/10.1787/888932849198

A7

Table A7.4a. Public costs and benefits for a man attaining tertiary education (2009)

As compared with a man attaining upper secondary or post-secondary non-tertiary education, in equivalent USD converted using PPPs for GDP

		Year	Direct costs	Foregone taxes on earnings	Grants effect	Total costs	Income tax effect	Social contribution effect	Transfers effect	Unemployment effect	Total benefits	Net present value	Internal rate of return
			(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
OECD	Australia	2009	- 14 588	- 5 652	- 7	**- 20 247**	123 233	0	0	1 208	**124 441**	**104 194**	13.1%
	Austria	2009	- 40 474	- 10 137	- 9 852	**- 60 463**	125 114	55 730	0	8 682	**189 527**	**129 064**	9.3%
	Belgium	2009	- 30 735	- 10 360	- 1 047	**- 42 142**	149 793	51 455	0	9 957	**211 206**	**169 064**	13.3%
	Canada	2009	- 27 580	- 5 892	- 1 103	**- 34 575**	89 400	5 792	0	8 666	**103 858**	**69 283**	8.8%
	Chile		m	m	m		m	m	m	m	**m**	**m**	m
	Czech Republic	2009	- 18 675	2 044	0	**- 16 631**	85 412	46 743	0	4 642	**136 796**	**120 165**	17.2%
	Denmark	2009	- 70 252	- 26 675	- 25 189	**- 122 116**	135 256	21 252	9 435	5 601	**171 544**	**49 427**	4.5%
	Estonia	2009	- 14 486	- 2 513	0	**- 16 999**	30 876	3 001	0	10 647	**44 524**	**27 525**	10.2%
	Finland	2009	- 42 400	- 8 324	- 8 730	**- 59 454**	128 733	22 053	0	12 738	**163 525**	**104 071**	8.3%
	France	2009	- 35 052	- 10 203	- 3 620	**- 48 875**	81 969	43 570	880	3 789	**130 208**	**81 333**	7.5%
	Germany	2009	- 38 170	- 24 581	- 6 021	**- 68 772**	127 860	58 572	0	23 056	**209 489**	**140 717**	9.1%
	Greece	2009	- 20 179	2 956	0	**- 17 223**	34 885	28 464	8 700	1 766	**73 816**	**56 593**	11.6%
	Hungary	2009	- 18 036	- 3 507	- 1 283	**- 22 826**	177 893	78 934	0	17 153	**273 981**	**251 155**	25.4%
	Iceland		m	m	m		m	m	m	m	**m**	**m**	m
	Ireland	2009	- 34 708	- 1 558	- 4 361	**- 40 627**	199 558	35 080	0	26 781	**261 419**	**220 792**	17.0%
	Israel	2009	- 18 626	- 1 695	0	**- 20 321**	66 889	33 788	0	2 861	**103 538**	**83 217**	11.3%
	Italy	2008	- 17 538	- 11 836	- 3 330	**- 32 704**	157 696	41 484	0	2 217	**201 397**	**168 693**	10.1%
	Japan	2007	- 17 897	- 15 254	0	**- 33 151**	62 285	33 612	0	4 665	**100 562**	**67 411**	8.4%
	Korea	2009	- 8 250	- 6 238	0	**- 14 488**	33 093	23 097	0	2 281	**58 472**	**43 983**	17.4%
	Luxembourg		m	m	m		m	m	m	m	**m**	**m**	m
	Mexico		m	m	m		m	m	m	m	**m**	**m**	m
	Netherlands	2008	- 37 382	- 39 015	- 14 371	**- 90 768**	201 244	21 220	0	1 863	**224 327**	**133 560**	7.4%
	New Zealand	2009	- 22 037	- 5 766	- 1 891	**- 29 694**	63 286	3 207	0	842	**67 334**	**37 640**	6.9%
	Norway	2009	- 36 777	- 20 675	- 6 226	**- 63 679**	101 586	21 334	0	2 902	**125 821**	**62 143**	5.7%
	Poland	2008	- 14 435	- 5 361	- 1 742	**- 21 539**	53 177	78 804	0	7 824	**139 805**	**118 266**	15.0%
	Portugal	2009	- 16 226	- 2 822	0	**- 19 048**	81 284	33 419	0	1 821	**116 524**	**97 476**	12.4%
	Slovak Republic	2009	- 15 033	- 1 660	- 1 250	**- 17 943**	50 956	38 359	0	8 689	**98 004**	**80 061**	14.2%
	Slovenia	2009	- 21 977	- 7 917	- 226	**- 30 120**	124 522	105 125	0	8 201	**237 848**	**207 728**	15.8%
	Spain	2009	- 37 506	- 3 361	0	**- 40 867**	48 062	11 981	0	8 429	**68 472**	**27 605**	5.3%
	Sweden	2009	- 39 997	- 14 512	- 8 341	**- 62 850**	83 967	9 847	0	4 690	**98 504**	**35 654**	4.9%
	Switzerland		m	m	m		m	m	m	m	**m**	**m**	m
	Turkey	2005	- 9 567	- 3 814	0	**- 13 381**	18 209	16 010	0	886	**35 106**	**21 724**	9.3%
	United Kingdom	2009	- 15 151	- 18 315	- 2 244	**- 35 710**	82 547	42 425	0	8 830	**133 802**	**98 091**	11.1%
	United States	2009	- 42 430	- 5 543	0	**- 47 973**	201 429	51 098	0	26 168	**278 695**	**230 722**	14.1%
	OECD average		- 26 764	- 9 248	- 3 477	**- 39 489**	100 697	35 016	656	7 857	**144 226**	**104 737**	11.2%
	EU21 average		- 28 921	- 9 883	- 4 580	**- 43 384**	108 040	41 376	951	8 869	**159 236**	**115 852**	11.5%
Other G20	Argentina		m	m	m	**m**	m	m	m	m	**m**	**m**	m
	Brazil		m	m	m	**m**	m	m	m	m	**m**	**m**	m
	China		m	m	m	**m**	m	m	m	m	**m**	**m**	m
	India		m	m	m	**m**	m	m	m	m	**m**	**m**	m
	Indonesia		m	m	m	**m**	m	m	m	m	**m**	**m**	m
	Russian Federation		m	m	m	**m**	m	m	m	m	**m**	**m**	m
	Saudi Arabia		m	m	m	**m**	m	m	m	m	**m**	**m**	m
	South Africa		m	m	m	**m**	m	m	m	m	**m**	**m**	m
	G20 average		m	m	m	**m**	m	m	m	m	**m**	**m**	m

Note: Values are based on the difference between men who attained a tertiary education compared with those who have attained an upper secondary or post-secondary non-tertiary education.

Source: OECD. *Education at a Glance 2012*. See Annex 3 for notes *(www.oecd.org/edu/eag.htm)*.

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

StatLink http://dx.doi.org/10.1787/888932849217

Table A7.4b. Public costs and benefits for a woman attaining tertiary education (2009)

As compared with a woman attaining upper secondary or post-secondary non-tertiary education, in equivalent USD converted using PPPs for GDP

		Year	Direct costs	Foregone taxes on earnings	Grants effect	Total costs	Income tax effect	Social contribution effect	Transfers effect	Unemployment effect	Total benefits	Net present value	Internal rate of return
			(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
OECD	Australia	2009	- 14 588	- 5 797	- 7	**- 20 392**	89 111	0	0	2 530	**91 641**	**71 249**	13.7%
	Austria	2009	- 40 474	- 10 337	- 9 852	**- 60 663**	86 600	56 802	0	1 790	**145 192**	**84 529**	7.1%
	Belgium	2009	- 30 735	- 9 917	- 1 047	**- 41 699**	113 699	68 183	0	12 552	**194 434**	**152 735**	15.7%
	Canada	2009	- 27 580	- 6 231	- 1 103	**- 34 914**	65 263	18 759	0	4 325	**88 347**	**53 433**	8.5%
	Chile		m	m	m		m	m	m	m	**m**	**m**	m
	Czech Republic	2009	- 18 131	1 954	0	**- 16 177**	47 167	25 813	0	7 612	**80 592**	**64 415**	14.1%
	Denmark	2009	- 70 252	- 27 671	- 25 189	**- 123 112**	57 873	13 394	8 679	2 976	**82 923**	**- 40 189**	1.2%
	Estonia	2009	- 14 486	- 2 799	0	**- 17 285**	27 197	2 643	0	4 616	**34 456**	**17 170**	8.0%
	Finland	2009	- 42 400	- 8 862	- 8 730	**- 59 992**	68 219	13 657	4 079	5 912	**91 868**	**31 876**	5.2%
	France	2009	- 35 052	- 9 877	- 3 620	**- 48 548**	40 275	29 147	8 444	6 130	**83 996**	**35 448**	6.2%
	Germany	2009	- 38 170	- 25 378	- 6 021	**- 69 569**	69 954	50 504	123	8 884	**129 465**	**59 896**	6.1%
	Greece	2009	- 20 179	2 480	0	**- 17 699**	20 386	29 703	29 066	5 673	**84 828**	**67 129**	11.7%
	Hungary	2009	- 18 036	- 3 654	- 1 283	**- 22 972**	101 528	42 906	0	11 687	**156 121**	**133 149**	18.2%
	Iceland		m	m	m		m	m	m	m	**m**	**m**	m
	Ireland	2009	- 34 708	- 1 834	- 4 361	**- 40 903**	112 479	49 498	0	5 306	**167 283**	**126 380**	13.7%
	Israel	2009	- 18 626	- 1 737	0	**- 20 363**	26 284	19 949	0	1 883	**48 117**	**27 754**	7.1%
	Italy	2008	- 17 538	- 11 185	- 3 330	**- 32 053**	77 919	21 270	0	2 750	**101 940**	**69 886**	8.0%
	Japan	2007	- 17 897	- 10 654	0	**- 28 551**	20 218	27 924	0	1 822	**49 965**	**21 414**	6.2%
	Korea	2009	- 8 250	- 5 734	0	**- 13 984**	9 689	19 291	0	393	**29 372**	**15 388**	6.5%
	Luxembourg		m	m	m		m	m	m	m	**m**	**m**	m
	Mexico		m	m	m		m	m	m	m	**m**	**m**	m
	Netherlands	2008	- 37 382	- 35 640	- 14 371	**- 87 392**	128 001	28 440	0	3 582	**160 023**	**72 630**	6.2%
	New Zealand	2009	- 22 037	- 5 767	- 1 891	**- 29 695**	30 974	2 276	2 623	611	**36 484**	**6 788**	4.4%
	Norway	2009	- 36 777	- 20 680	- 6 226	**- 63 684**	63 118	17 608	0	70	**80 796**	**17 112**	4.2%
	Poland	2008	- 14 435	- 5 047	- 1 742	**- 21 225**	22 460	46 221	0	8 041	**76 723**	**55 498**	10.9%
	Portugal	2009	- 16 226	- 2 750	0	**- 18 976**	56 926	28 536	0	6 375	**91 837**	**72 861**	11.1%
	Slovak Republic	2009	- 15 033	- 1 668	- 1 250	**- 17 951**	31 258	25 456	0	7 510	**64 223**	**46 272**	11.2%
	Slovenia	2009	- 21 977	- 7 773	- 226	**- 29 975**	83 288	79 108	0	10 033	**172 429**	**142 454**	13.0%
	Spain	2009	- 37 506	- 3 366	0	**- 40 872**	59 154	15 280	0	8 243	**82 677**	**41 805**	6.5%
	Sweden	2009	- 39 997	- 15 126	- 8 341	**- 63 464**	39 273	9 944	10	4 743	**53 970**	**- 9 494**	2.3%
	Switzerland		m	m	m		m	m	m	m	**m**	**m**	m
	Turkey	2005	- 9 567	- 3 320	0	**- 12 887**	19 194	17 528	0	4 171	**40 894**	**28 006**	9.1%
	United Kingdom	2009	- 15 151	- 5 958	- 2 244	**- 23 353**	71 002	39 051	1 548	5 086	**116 686**	**93 333**	14.8%
	United States	2009	- 42 430	- 6 038	0	**- 48 468**	97 093	31 023	0	8 452	**136 568**	**88 100**	9.5%
	OECD average		- 26 746	- 8 633	- 3 477	**- 38 856**	59 848	28 618	1 882	5 302	**95 650**	**56 794**	9.0%
	EU21 average		- 28 893	- 9 220	- 4 580	**- 42 694**	65 733	33 778	2 598	6 475	**108 583**	**65 889**	9.6%
Other G20	Argentina		m	m	m	**m**	m	m	m	m	**m**	**m**	m
	Brazil		m	m	m	**m**	m	m	m	m	**m**	**m**	m
	China		m	m	m	**m**	m	m	m	m	**m**	**m**	m
	India		m	m	m	**m**	m	m	m	m	**m**	**m**	m
	Indonesia		m	m	m	**m**	m	m	m	m	**m**	**m**	m
	Russian Federation		m	m	m	**m**	m	m	m	m	**m**	**m**	m
	Saudi Arabia		m	m	m	**m**	m	m	m	m	**m**	**m**	m
	South Africa		m	m	m	**m**	m	m	m	m	**m**	**m**	m
	G20 average		m	m	m	**m**	m	m	m	m	**m**	**m**	m

Note: Values are based on the difference between women who attained a tertiary education compared with those who have attained an upper secondary or post-secondary non-tertiary education.

Source: OECD. *Education at a Glance 2012*. See Annex 3 for notes *(www.oecd.org/edu/eag.htm)*.

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

StatLink http://dx.doi.org/10.1787/888932849236