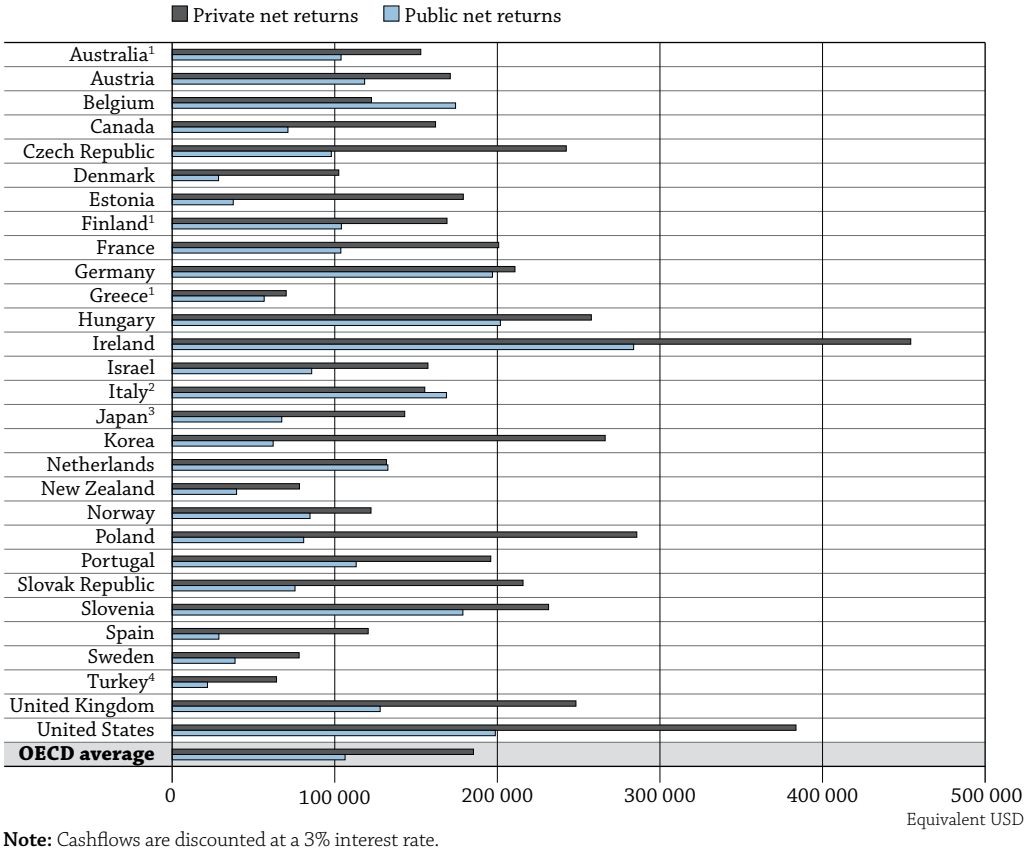
WHAT ARE THE INCENTIVES TO INVEST IN EDUCATION?

- Individuals completing tertiary education benefit from substantial returns on investment: they are more likely to be employed and earn more than individuals without tertiary education do.
- On average across OECD countries, the financial return for tertiary-educated people is around twice as large as for those with an upper secondary or post-secondary non-tertiary education.
- Not only does education pay off for individuals, but the public also benefits from a large proportion of tertiary-educated individuals through greater tax revenues and social contributions.
- The net public return on investment for a man with tertiary education is over USD 105 000 across OECD countries – almost three times the amount of public investment in his education. For a woman, the public return is over USD 60 000, which is almost twice the amount of public investment in her education.

Chart A7.1. Net private and public returns associated with a man attaining tertiary education (2010)

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



Note: Cashflows are discounted at a 3% interest rate.
1. Year of reference 2009.
2. Year of reference 2008.
3. Year of reference 2007.
4. Year of reference 2005.
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/10.1787/888933116452

Context

Higher educational achievement benefits both individuals and society, not only financially, but in the well-being with which it is also associated, such as better health outcomes and more civically engaged societies. 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, benefits 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 (see Box A7.1 in *Education at a Glance 2013* [OECD, 2013a]).

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. The magnitude of this effect also depends on expected wage levels and the probability of finding a job with or without having tertiary qualifications. As the labour market for young adults worsens (see Indicator C5) the effect of foregone earnings is reduced, making tertiary education a less costly investment. 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. Data from 2010 (used in this volume), when the effects of the global economic crisis were already strongly felt, show that both private and public returns are larger for individuals with tertiary education compared to those with upper secondary and post-secondary non-tertiary education.

It should be kept in mind that a host of education-related and contextual factors not reflected in this indicator affect the returns to education. These include, for example, the field of study, countries' specific economic situation, labour market context and institutional setting, as well as social and cultural factors.

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 350 000 for men and USD 250 000 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, the Netherlands (for a woman), Norway and the United States**. In these countries, they amount to at least USD 260 000 for a man and USD 160 000 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 39 000** compared with a man who did not complete that level of education. **For a woman, the public return is USD 24 000**.
- With few exceptions, **the net private returns related to attaining a tertiary education exceed those related to attaining upper secondary or post-secondary non-tertiary education**. Only in Norway and Sweden does upper secondary or post-secondary non-tertiary education bring higher returns to men.
- **Across OECD countries, individuals invest about USD 50 000 to earn a tertiary degree.** In Japan, the Netherlands and the United States, average investment exceeds USD 100 000 when direct and indirect costs are taken into account.

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 the "unemployment effect", is also a benefit (see *Definitions* section below).

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 involves 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 2013* [OECD, 2013a]) to better understand the results. The limitations of the calculations, and underlying concepts and assumptions, are presented in the *Methodology* section at the end of this chapter.

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 Ireland, the Slovak Republic and the United States, this level of education generates USD 160 000 or more over a man's working life (Table A7.1a).

Benefits for an individual are generally based on gross earnings and reduced risk of unemployment. In all 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, Ireland and the Slovak Republic, the better labour market prospects for a man with this level of education are valued at USD 80 000 or more (Table A7.1a).

Direct costs, foregone earnings, income tax effects, social transfers and social contribution effects (see *Definitions* section below) are all considered part of the costs of education. The direct costs of education for a man and a woman are the same. The direct costs for an individual investing in an upper secondary or post-secondary non-tertiary education are negligible in all countries (representing, on average, less than 2% and a maximum of 6% of benefits). Therefore, the main investment cost is foregone earnings – what a student could potentially earn if not in school. 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 (Tables A7.1a and A7.1b).

Good labour-market prospects for both men and women who have not attained 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, the Netherlands and Norway, they exceed USD 42 000 for an individual (both women and men) (Tables A7.1a and A7.1b).

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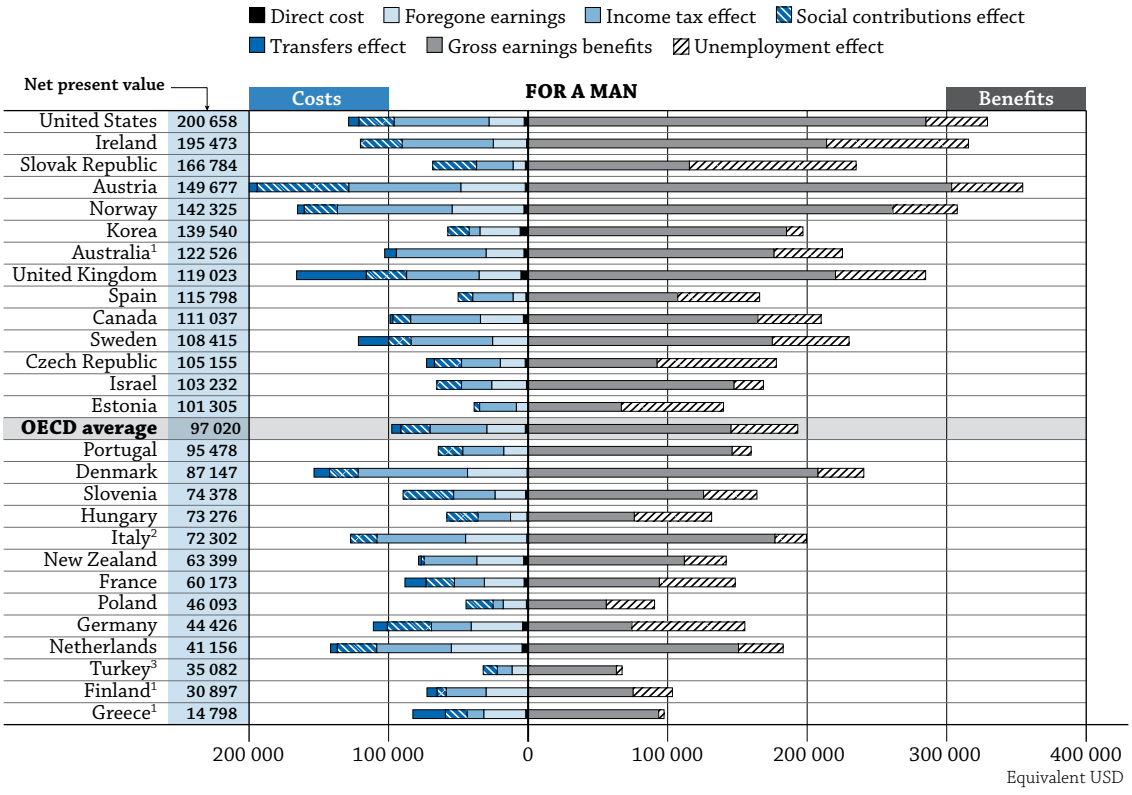
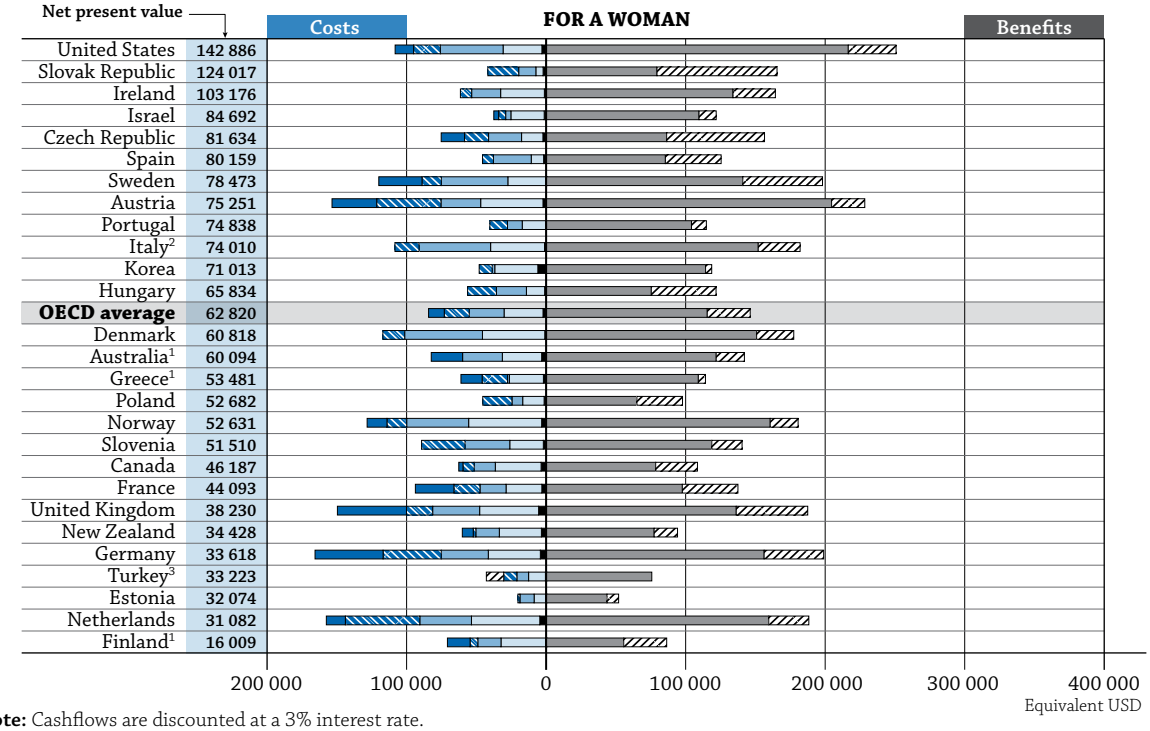
Chart A7.2. Private costs and benefits for a man and for a woman attaining upper secondary or post-secondary non-tertiary education (2010)

As compared with costs and benefits for below upper secondary education





Note: Cashflows are discounted at a 3% interest rate.
1. Year of reference 2009.
2. Year of reference 2008.
3. Year of reference 2005.

Countries are ranked in descending order of the private net present value.

Source: OECD. Tables A7.1a and A7.1b. See Annex 3 for notes (*www.oecd.org/edu/eag.htm*).

StatLink http://dx.doi.org/10.1787/888933116471

Data on 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. In Estonia, too, the impact of taxes represents almost 40% of the earnings premium for a man attaining upper secondary or post-secondary non-tertiary education. The income tax effect is less significant (estimated at less than USD 20 000) in Greece, Korea, Poland and Turkey. Austria, Germany, the Netherlands, the Slovak Republic and Slovenia, are the countries with largest proportions of social contributions (amount estimated at more than USD 22 000 for both man and woman) (Tables A7.1a and b). In Austria, Denmark, France, 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 for a man (Table A7.1a).

Men generally enjoy better financial returns than women after attaining upper secondary or post-secondary non-tertiary education, except in Greece, Italy and Poland. In these countries, the private net present value for women attaining upper secondary or post-secondary education is higher than that for men. On average across OECD countries, a woman can expect a net gain of USD 63 000 over her working life – about USD 34 000 less than a man. The gender gap in private net returns is particularly pronounced in Austria, Estonia, Ireland, Korea, Norway and the United Kingdom. The difference is largest in Ireland, where net benefits for a man attaining an upper secondary or post-secondary non-tertiary education are around USD 195 000, but only around half of that, USD 103 000, for a woman. The main reasons for this difference in private returns lie in differences in the unemployment effect between the genders, which, on average, benefits men more than women. This means that having an upper secondary or post-secondary non-tertiary education, compared to not having that credential, increases the chances of employment for men more than it does for women (Chart A7.2).

Tertiary education

Individuals who hold a tertiary degree can expect even higher net returns than individuals who invested only up to the upper secondary level of education. On average across OECD countries, the return for tertiary-educated people is USD 185 000 for a man and USD 130 000 for a woman as compared with a man/woman attaining 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 private returns for investing in tertiary education are typically higher for men than for women. In Greece, New Zealand, 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 350 000 for men and USD 250 000 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 lose 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, including direct and indirect costs, are very high in some countries. Across OECD countries, individuals invest about USD 50 000 to earn a tertiary degree. The average investment exceeds USD 100 000 for a man in Japan and for an individual of either gender in the Netherlands and the United States. 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 10 000 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 (see Box A7.1 for the impact of loans in a limited number of countries).

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The grants effect is particularly important in Denmark and the United States, where they cover around 35% (or USD 29 000) and 26% (or USD 27 000), respectively, of the total costs of tertiary education. In Austria, Finland, the Netherlands and Sweden, grants are estimated at USD 8 000 or more, 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, Canada, the United Kingdom and the United States, provide grants in small amounts compared to the direct costs. In Australia and Canada, grants cover less than 5% of the direct costs of tertiary education. In Japan and Korea, the direct costs of tertiary education are also among the highest, but there is no information about grants. 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 employment status and actual income earned after graduation. The availability of student loans, coupled with adequate information and guidance on how they work, 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 education levels tend to translate into higher income levels, on average (see Indicator A6). In this sense, investments in education generate public returns as tertiary-educated individuals pay higher income taxes and social insurance payments and require 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 net public return of USD 39 000 for a man and USD 24 000 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 nine times larger than the public costs for a man with this level of education and nearly ten times larger for a woman (Tables A7.2a and A7.2b).

Tertiary education

On average across OECD countries, public investment in an individual's tertiary education is USD 38 000 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 50 000 higher than for an individual at the lower education level) in Austria, Denmark, Finland, Germany, the Netherlands, Sweden and the United States (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 105 000 for a man and over USD 60 000 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, 2.5 times higher (Tables A7.4a and b).

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, New Zealand, Norway and Sweden. 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).

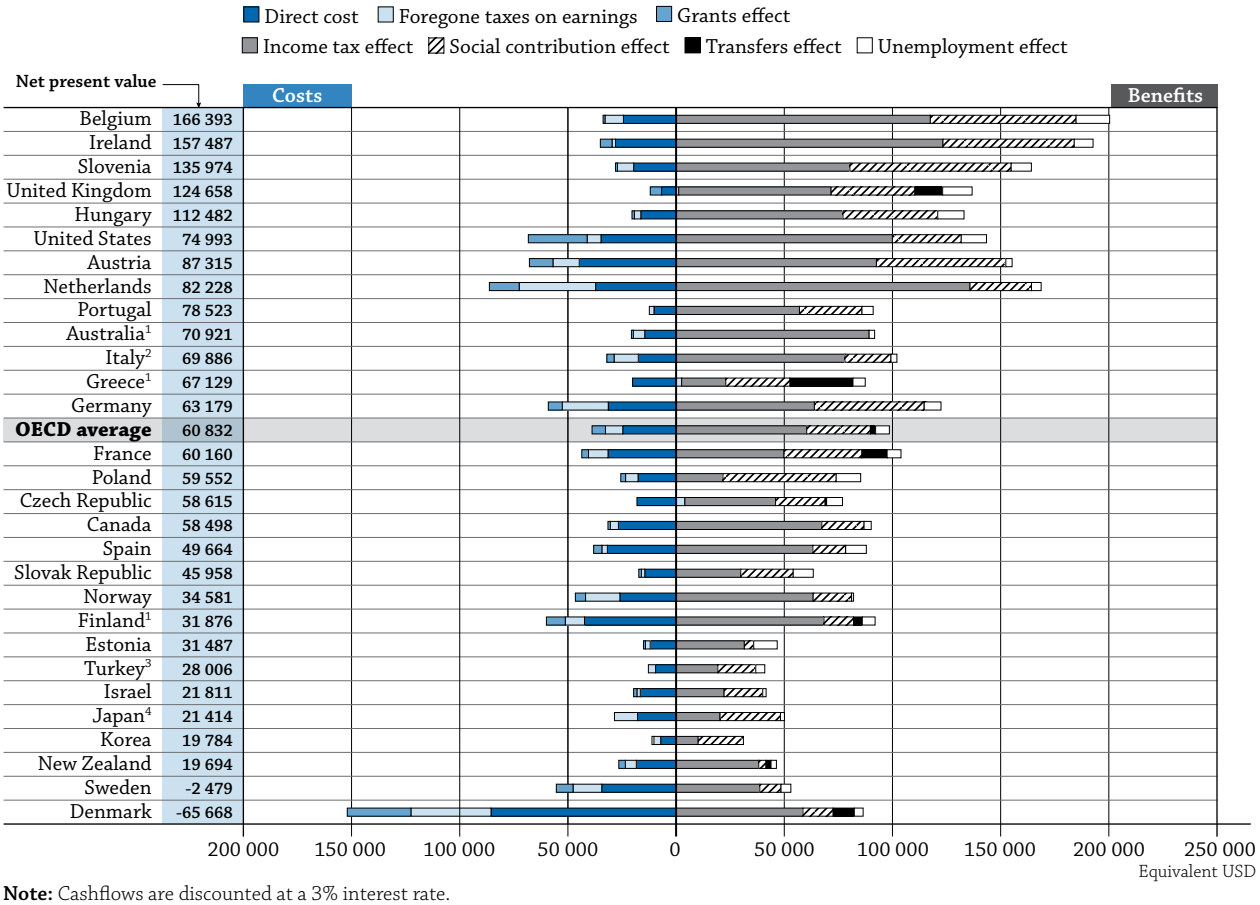
Given that earnings premiums vary substantially among OECD countries, tax payments and benefits to the public sector also vary in ways that are somewhat counter-intuitive. Because earnings premiums are relatively low in the Nordic countries, average tertiary earnings typically fall below the income bracket 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, Belgium, Denmark, Germany, Hungary, Ireland, Italy, the Netherlands, 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.

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 (Andrews et al., 2011).

Chart A7.3. Public costs and benefits for a woman attaining tertiary education (2010)

As compared with costs and benefits for upper secondary or post-secondary non-tertiary education



Note: Cashflows are discounted at a 3% interest rate.
1. Year of reference 2009.
2. Year of reference 2008.
3. Year of reference 2005.
4. Year of reference 2007.
Countries are ranked in descending order of the public net present value.
Source: OECD. Table A7.4b. See Annex 3 for notes (*www.oecd.org/edu/eag.htm*).
StatLink http://dx.doi.org/10.1787/888933116490

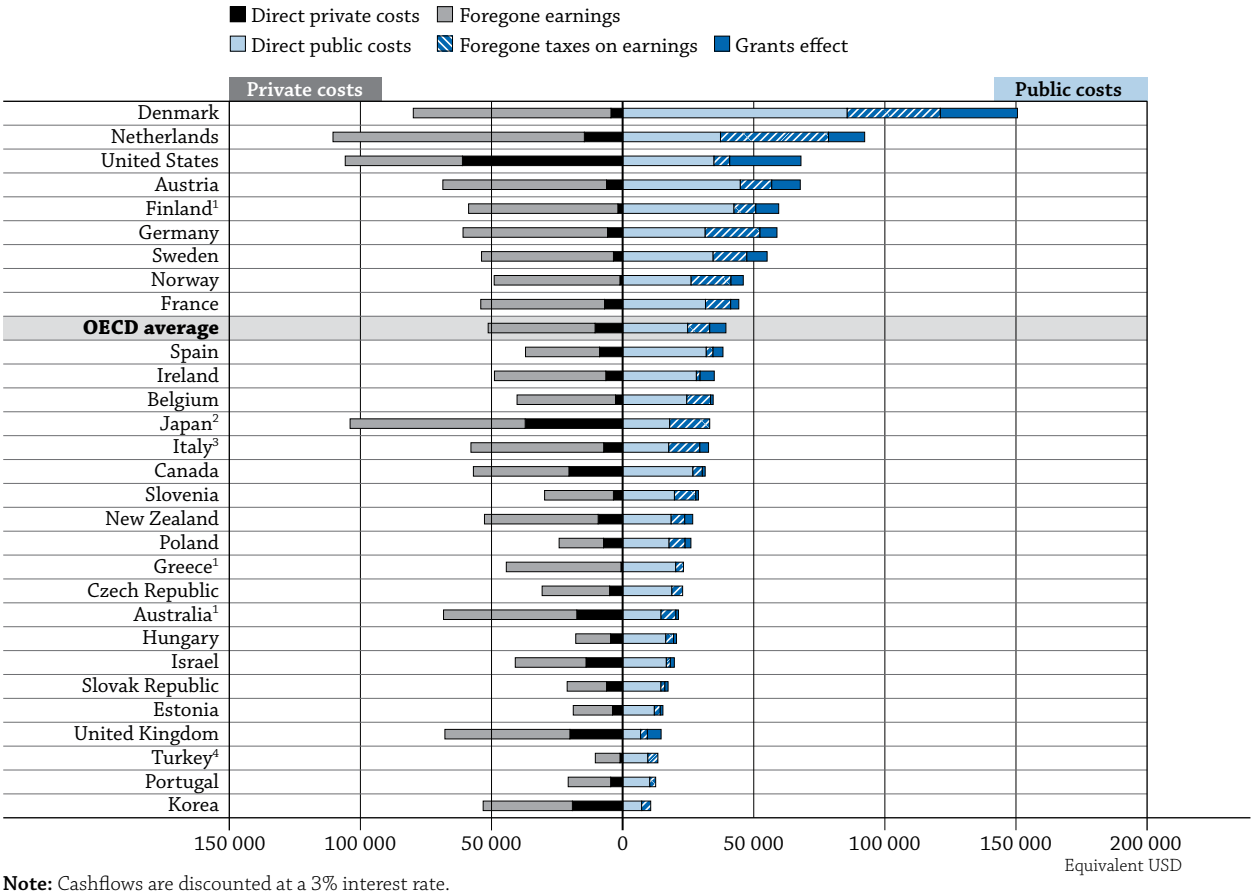
The distribution of costs for education between the public sector and individuals

Direct costs for education are in large part borne by the public sector. For instance, on average across OECD countries, the direct costs for a man attaining tertiary education are around 30% of the total private and public direct investment costs. 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 more than 55% of the overall public and private direct investment costs for 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 29 000), Finland (USD 9 000) and Sweden (USD 8 000), as well as Austria (USD 11 000), the Netherlands (USD 14 000) and the United States (USD 27 000). Interestingly, the available data show no relationship between direct costs and grants. Countries where grants are higher do not have always the highest private direct costs. Conversely, among the five countries where direct costs are the highest (about USD 20 000 or more), only the United Kingdom and the United States provide substantial grants to students (USD 5 000 in the United Kingdom). But there are other government-funded schemes besides grants, including subsidised student loans (Box A7.1) and discounted tuition rates for less economically advantaged students, that can help lower the private cost of accessing tertiary education (Tables A7.3a and A7.4a).

Chart A7.4. Public versus private costs for a man attaining tertiary education (2010)

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



Note: Cashflows are discounted at a 3% interest rate.
1. Year of reference 2009.
2. Year of reference 2007.
3. Year of reference 2008.
4. Year of reference 2005.
Countries are ranked in descending order of the total public costs.
Source: OECD. Tables A7.3a and A7.4a. See Annex 3 for notes (*www.oecd.org/edu/eag.htm*).
StatLink http://dx.doi.org/10.1787/888933116509

Box A7.1. Going further in estimating returns to education

Apart from the earnings differentials, which are related to labour market conditions, the major components of the returns to education relate to policy decisions regarding access to education, taxes and the costs of education for the individual. The net present value analysis can be extended in a number of ways, subject to data availability. For instance, the analysis in this chapter takes into account student grant systems and excludes loan systems.

...

This box goes a step further and presents the first attempt to quantify the impact of student loans for tertiary programmes on returns to education, based on information on loans collected through an *ad hoc* survey from the OECD Labour and Social Outcomes of Education (LSO) Network for the 14 countries shown in the chart below (tables available on line).

In this box, the impact of student loans on net present value of attaining tertiary education varies according:

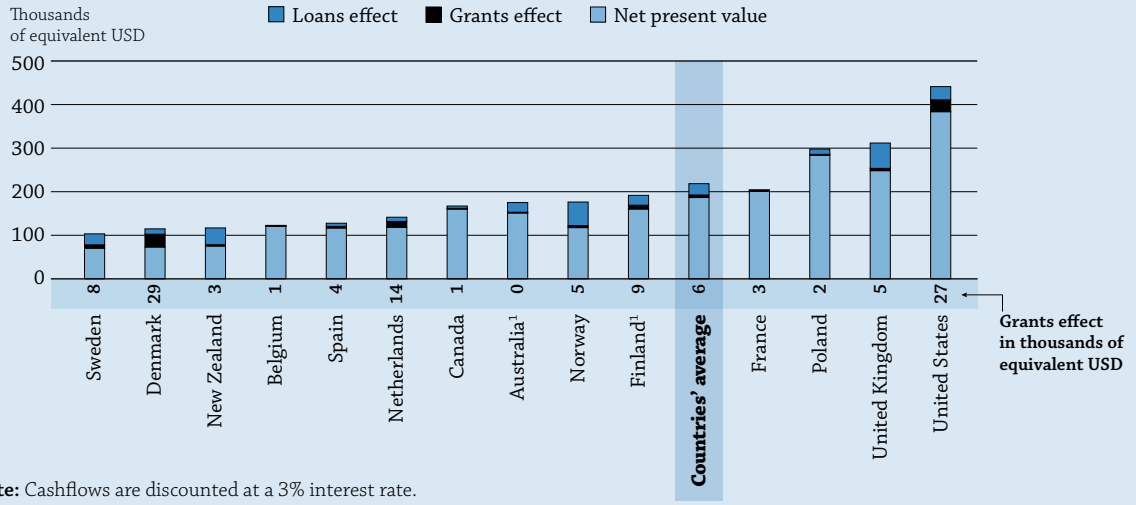
- Access to loans or the percentage of students receiving loans;
- The average amount of a typical student loan;
- The cost or interest rate charged; and
- Remission/forgiveness and default payments, i.e. overall expected proportion of an average loan to be written off/irrecoverable.

There are two broad types of student loans: fixed repayment (also referred to as mortgage-style) loans and income-contingent loans. Both systems imply some costs for the government that guarantees the loan repayment or/and subsidises the interest rates. In theory, the prevalence of income-contingent or fixed-repayment systems should affect the net returns of education, as the remission rate is larger with income-contingent systems (implying larger costs for government but larger benefits for students) (see Box B5.1).

Following the approach to estimating the financial returns to education, based on the investment theory from the finance literature, both the average loan per student per year (based on the percentage of students receiving a loan and the average amount of these loans) and the average interest rate on these loans have been taken into account. The basis for integrating the interest rate on loans is to consider that there is more than one source of financing, and the weight for each element is proportional to its market value. The result is the weighted average cost of capital (WACC), a weighted combination of the loan interest rate and the discount rate (i.e. the interest rate at which banks may borrow funds from the central bank). The WACC allows for calculating a net present value with the gains expressed in monetary units. The remission/forgiveness due to completion of studies on time (or other performance-based incentives) or the default payments for loans guaranteed by the government are integrated into the calculation of the impact of loans on net present values, with a positive effect on net present value. The loans effect presented in this box is therefore a combination of the above components.

Chart A7.a. The contribution of grants and loans on the private net present value for a man attaining tertiary education (2010)

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



Note: Cashflows are discounted at a 3% interest rate.
1. Year of reference 2009.
Countries are ranked in ascending order of the private net present value.
Source: OECD. Table A7.5a, available on line. See Annex 3 for notes (*www.oecd.org/edu/eag.htm*).
StatLink http://dx.doi.org/10.1787/888933116528

...

The results of the survey show that, among the 14 countries with available data, the impact of loans on the net present value indicator is greater in New Zealand, Norway, Sweden, the United Kingdom and the United States than in Canada and the Netherlands, although all of these countries report well-developed student support systems.

This chart also shows the large differences among countries in the average tuition fees charged by tertiary-type A institutions for full-time national students in first-degree programmes, and in the financial support to these students. Australia, Canada, the Netherlands, New Zealand, the United Kingdom and the United States have comparatively high levels of tuition fees and well-developed student loan systems. Denmark, Finland, Norway and Sweden have comparatively low levels of tuition fees and well-developed student support systems (see Indicator B5).

In the Netherlands, grants or scholarships have a larger impact on the private net present value than loans, because grants are more widely accessible than loans – more than two in three students receive a grant (compared with one in three students who take advantage of loans) – and because the average amount of a grant is larger than the average amount of a loan. The average cost of loans in the Netherlands is higher than in other countries, but this estimate does not account for specific financial rules, like fiscal deductibility of some education costs, etc.

In Canada, students benefit from relatively high remission rates, i.e. a large proportion of the average loan is expected to be written off if studies are completed. The overall benefit from loans is nonetheless counterbalanced by the relatively high average cost of loans (i.e. the high interest rate that is charged on the loan after studies are completed).

Not surprisingly, the impact of loans is negligible in Belgium, France and Spain, as these countries have comparatively low tuition fees and less-developed student support systems.

Definitions

Adults refers to 25-64 year-olds.

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.

Levels of education: below upper secondary corresponds to ISCED levels 0, 1, 2 and 3C short programmes; **upper secondary or post-secondary non-tertiary** corresponds to ISCED levels 3A, 3B, 3C long programmes, and ISCED level 4; and **tertiary** corresponds to ISCED levels 5A, 5B and 6. See the Reader's Guide at the beginning of the book for a presentation of all ISCED levels.

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 2013* (OECD, 2013a), 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 earnings data collection database, compiled by the LSO (Labour Market and Social Outcomes of Learning) Network (available as relative earnings in *Education at a Glance 2013,* Indicator A6). 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 A5. 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. See Annex 3 (*www.oecd.org/edu/eag.htm*) for additional information.

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 2010 (OECD Finance Database [OECD, 2013b]). 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 benefits 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

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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 age of eligibility for pensions 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. In addition, in countries where a substantial part of the pension system is financed by employers through employer contributions added to salaries, the returns to higher education are typically underestimated compared to countries where pensions are paid by the individual.
- 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.
- In some countries, unemployment compensation is quite generous, while in others unemployed individuals have to rely on social benefits.
- 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.

Costs and benefits for upper secondary or post-secondary non-tertiary education cannot be computed for Belgium 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 methodology, please see OECD, 2011, and Annex 3 at *www.oecd.org/edu/eag.htm*.

Note regarding data from Israel

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

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Tables of Indicator A7

StatLink http://dx.doi.org/10.1787/888933116281

	Table A7.1a	Private costs and benefits for a man attaining upper secondary or post-secondary non-tertiary education (2010)
	Table A7.1b	Private costs and benefits for a woman attaining upper secondary or post-secondary non-tertiary education (2010)
	Table A7.2a	Public costs and benefits for a man attaining upper secondary or post-secondary non-tertiary education (2010)
	Table A7.2b	Public costs and benefits for a woman attaining upper secondary or post-secondary non-tertiary education (2010)
	Table A7.3a	Private costs and benefits for a man attaining tertiary education (2010)
	Table A7.3b	Private costs and benefits for a woman attaining tertiary education (2010)
	Table A7.4a	Public costs and benefits for a man attaining tertiary education (2010)
	Table A7.4b	Public costs and benefits for a woman attaining tertiary education (2010)
WEB	Table A7.5a	Private net present value including grants and loans for a man attaining tertiary education (2010)
WEB	Table A7.5b	Private net present value including grants and loans for a woman attaining tertiary education (2010)
WEB	Table A7.6a	Public net present value including grants and loans for a man attaining tertiary education (2010)
WEB	Table A7.6b	Public net present value including grants and loans for a woman attaining tertiary education (2010)

Table A7.1a. Private costs and benefits for a man attaining upper secondary or post-secondary non-tertiary education (2010)

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	2010	- 2 084	- 46 210	**- 48 294**	303 737	- 80 357	- 65 732	- 10 652	50 975	**197 971**	**149 677**	12.1%
	Belgium[1]		m	m	**m**	m	m	m	m	m	**m**	**m**	m
	Canada	2010	- 3 424	- 30 793	**- 34 217**	164 771	- 50 060	- 13 432	- 1 362	45 338	**145 254**	**111 037**	13.3%
	Chile		m	m	**m**	m	m	m	m	m	**m**	**m**	m
	Czech Republic	2010	- 2 130	- 17 846	**- 19 976**	92 549	- 27 793	- 19 496	- 5 574	85 445	**125 131**	**105 155**	18.2%
	Denmark	2010	- 797	- 42 671	**- 43 468**	207 899	- 78 437	- 20 515	- 11 164	32 831	**130 615**	**87 147**	11.7%
	Estonia	2010	- 249	- 8 196	**- 8 445**	66 894	- 26 383	- 3 919	0	73 157	**109 750**	**101 305**	39.5%
	Finland	2009	- 178	- 30 022	**- 30 201**	75 381	- 28 532	- 6 632	- 7 202	28 082	**61 097**	**30 897**	7.8%
	France	2010	- 2 904	- 28 503	**- 31 407**	94 133	- 21 451	- 20 444	- 15 050	54 391	**91 579**	**60 173**	10.6%
	Germany	2010	- 3 973	- 36 901	**- 40 874**	74 406	- 28 450	- 31 726	- 9 942	81 012	**85 299**	**44 426**	7.5%
	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	2010	- 878	- 11 766	**- 12 644**	76 171	- 23 298	- 22 368	0	55 414	**85 919**	**73 276**	19.3%
	Iceland		m	m	**m**	m	m	m	m	m	**m**	**m**	m
	Ireland	2010	- 1 084	- 23 927	**- 25 011**	214 036	- 65 316	- 29 965	0	101 729	**220 484**	**195 473**	30.3%
	Israel	2010	- 1 215	- 24 905	**- 26 120**	147 712	- 21 659	- 17 721	0	21 021	**129 352**	**103 232**	12.6%
	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	2010	- 5 756	- 28 830	**- 34 587**	185 305	- 7 688	- 15 277	0	11 785	**174 126**	**139 540**	13.1%
	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	2010	- 4 358	- 50 747	**- 55 105**	150 870	- 53 510	- 28 296	- 4 801	31 999	**96 261**	**41 156**	5.7%
	New Zealand	2010	- 3 213	- 33 613	**- 36 827**	112 064	- 37 790	- 2 839	- 1 172	29 961	**100 226**	**63 399**	8.7%
	Norway	2010	- 3 023	- 51 519	**- 54 543**	261 645	- 82 184	- 23 995	- 4 680	46 082	**196 868**	**142 325**	13.0%
	Poland	2010	- 1 276	- 16 640	**- 17 916**	56 062	- 7 234	- 19 415	0	34 594	**64 008**	**46 093**	11.6%
	Portugal	2010	0	- 17 510	**- 17 510**	146 361	- 29 407	- 17 538	0	13 572	**112 987**	**95 478**	12.0%
	Slovak Republic	2010	- 2 007	- 8 802	**- 10 809**	115 675	- 26 205	- 31 402	0	119 524	**177 592**	**166 784**	35.1%
	Slovenia	2010	- 1 833	- 21 943	**- 23 776**	125 817	- 29 689	- 36 241	0	38 266	**98 153**	**74 378**	12.8%
	Spain	2010	- 1 613	- 9 225	**- 10 838**	107 297	- 28 928	- 10 463	0	58 730	**126 636**	**115 798**	35.3%
	Sweden	2010	- 16	- 25 456	**- 25 473**	175 142	- 58 469	- 16 085	- 21 705	55 004	**133 887**	**108 415**	16.5%
	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	2010	- 5 195	- 30 014	**- 35 209**	220 438	- 51 976	- 28 912	- 49 957	64 640	**154 232**	**119 023**	18.2%
	United States	2010	- 2 853	- 25 225	**- 28 078**	285 333	- 68 131	- 25 197	- 7 344	44 074	**228 736**	**200 658**	19.4%
	OECD average		- 2 081	- 27 169	**- 29 250**	147 041	- 40 123	- 20 455	- 6 749	46 556	**126 270**	**97 020**	15.8%
	EU21 average		- 1 755	- 26 332	**- 28 087**	135 451	- 38 990	- 23 353	- 8 388	52 933	**117 653**	**89 566**	16.7%
Partners	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
	Colombia		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
	Latvia		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 an upper secondary or post-secondary non-tertiary education compared with those who have not attained that level of education.

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

Source: OECD. 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.

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A7

Table A7.1b. Private costs and benefits for a woman attaining upper secondary or post-secondary non-tertiary education (2010)

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	2010	- 2 084	- 44 642	**- 46 726**	204 709	- 28 457	- 46 030	- 32 029	23 784	**121 977**	**75 251**	9.0%
	Belgium[1]		m	m	**m**	m	m	m	m	m	**m**	**m**	m
	Canada	2010	- 3 424	- 32 817	**- 36 241**	78 654	- 15 117	- 8 057	- 3 002	29 950	**82 428**	**46 187**	7.1%
	Chile		m	m	**m**	m	m	m	m	m	**m**	**m**	m
	Czech Republic	2010	- 2 130	- 15 299	**- 17 429**	86 525	- 23 652	- 17 196	- 16 740	70 127	**99 064**	**81 634**	19.3%
	Denmark	2010	- 797	- 44 663	**- 45 460**	151 000	- 55 719	- 15 607	0	26 604	**106 278**	**60 818**	9.1%
	Estonia	2010	- 249	- 8 187	**- 8 436**	43 751	- 10 151	- 1 455	0	8 365	**40 510**	**32 074**	31.6%
	Finland	2009	- 178	- 31 990	**- 32 168**	55 774	- 16 608	- 5 546	- 16 226	30 783	**48 177**	**16 009**	5.5%
	France	2010	- 2 904	- 25 642	**- 28 546**	97 781	- 18 674	- 18 682	- 27 615	39 828	**72 639**	**44 093**	8.1%
	Germany	2010	- 3 973	- 37 300	**- 41 272**	156 387	- 33 692	- 41 680	- 48 767	42 644	**74 891**	**33 618**	6.4%
	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	2010	- 878	- 13 082	**- 13 960**	75 548	- 21 486	- 20 637	0	46 369	**79 794**	**65 834**	15.8%
	Iceland		m	m	**m**	m	m	m	m	m	**m**	**m**	m
	Ireland	2010	- 1 084	- 31 344	**- 32 428**	134 069	- 20 768	- 8 056	0	30 359	**135 604**	**103 176**	15.0%
	Israel	2010	- 1 215	- 23 860	**- 25 076**	109 731	- 3 747	- 5 003	- 3 505	12 291	**109 768**	**84 692**	13.0%
	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	2010	- 5 756	- 30 875	**- 36 631**	114 418	- 1 830	- 9 342	0	4 399	**107 644**	**71 013**	11.3%
	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	2010	- 4 358	- 48 974	**- 53 332**	159 683	- 36 998	- 53 343	- 13 638	28 711	**84 414**	**31 082**	5.1%
	New Zealand	2010	- 3 213	- 30 148	**- 33 362**	77 579	- 16 827	- 1 872	- 7 825	16 735	**67 790**	**34 428**	7.7%
	Norway	2010	- 3 023	- 52 322	**- 55 345**	160 744	- 44 395	- 14 122	- 14 220	19 969	**107 976**	**52 631**	6.9%
	Poland	2010	- 1 276	- 15 341	**- 16 618**	65 215	- 7 681	- 20 906	0	32 672	**69 299**	**52 682**	11.7%
	Portugal	2010	0	- 16 952	**- 16 952**	104 322	- 10 554	- 12 633	0	10 654	**91 790**	**74 838**	11.3%
	Slovak Republic	2010	- 2 007	- 5 179	**- 7 187**	79 613	- 12 302	- 22 099	0	85 991	**131 204**	**124 017**	43.8%
	Slovenia	2010	- 1 833	- 24 045	**- 25 877**	118 868	- 32 045	- 31 131	0	21 694	**77 387**	**51 510**	8.8%
	Spain	2010	- 1 613	- 8 881	**- 10 494**	85 625	- 27 101	- 7 802	0	39 931	**90 653**	**80 159**	16.5%
	Sweden	2010	- 16	- 27 231	**- 27 247**	141 055	- 47 672	- 13 857	- 30 949	57 144	**105 720**	**78 473**	11.5%
	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	2010	- 5 195	- 42 268	**- 47 464**	136 400	- 33 662	- 18 761	- 49 494	51 211	**85 693**	**38 230**	6.7%
	United States	2010	- 2 853	- 27 807	**- 30 659**	216 685	- 44 957	- 19 154	- 13 250	34 220	**173 546**	**142 886**	16.7%
	OECD average		- 2 081	- 27 486	**- 29 566**	115 314	- 24 203	- 16 960	- 11 663	29 899	**92 386**	**62 820**	12.5%
	EU21 average		- 1 755	- 26 528	**- 28 282**	113 565	- 25 777	- 20 576	- 13 191	35 892	**89 913**	**61 631**	13.2%
Partners	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
	Colombia		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
	Latvia		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. Data for Belgium are not included in the table because upper secondary education is compulsory.
2. Data at lower and upper secondary levels of education are not broken down.

Source: OECD. 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.

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Table A7.2a. Public costs and benefits for a man attaining upper secondary or post-secondary non-tertiary education (2010)

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	2010	- 43 971	- 8 869	**- 52 840**	73 918	56 580	10 652	15 590	**156 741**	**103 901**	9.5%
	Belgium[1]		m	m	**m**	m	m	m	m	**m**	**m**	m
	Canada	2010	- 27 754	- 2 945	**- 30 700**	43 075	10 028	1 322	8 540	**62 965**	**32 266**	6.4%
	Chile		m	m	**m**	m	m	m	m	**m**	**m**	m
	Czech Republic	2010	- 21 080	2 849	**- 18 231**	18 550	10 152	5 574	18 586	**52 862**	**34 631**	10.2%
	Denmark	2010	- 32 430	- 20 100	**- 52 530**	69 942	16 687	11 164	12 323	**110 115**	**57 585**	7.6%
	Estonia	2010	- 19 081	- 1 241	**- 20 323**	13 696	1 879	0	14 726	**30 301**	**9 978**	5.5%
	Finland	2009	- 21 711	- 4 391	**- 26 103**	23 424	4 855	7 202	6 884	**42 366**	**16 263**	6.5%
	France	2010	- 33 511	- 5 799	**- 39 310**	15 415	13 033	15 050	13 446	**56 945**	**17 635**	5.9%
	Germany	2010	- 27 953	- 13 996	**- 41 949**	17 205	15 268	9 942	27 703	**70 119**	**28 170**	6.8%
	Greece	2009	- 22 045	2 032	**- 20 013**	11 723	15 045	23 320	760	**50 848**	**30 835**	6.0%
	Hungary	2010	- 15 696	- 2 625	**- 18 321**	16 503	12 994	0	16 168	**45 666**	**27 345**	8.5%
	Iceland		m	m	**m**	m	m	m	m	**m**	**m**	m
	Ireland	2010	- 25 625	- 794	**- 26 419**	55 056	23 939	0	16 285	**95 281**	**68 862**	10.8%
	Israel	2010	- 14 670	- 1 409	**- 16 079**	20 681	16 468	0	2 231	**39 380**	**23 301**	6.7%
	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	2010	- 21 051	- 2 923	**- 23 974**	7 529	14 366	0	1 069	**22 965**	**- 1 009**	2.8%
	Luxembourg		m	m	**m**	m	m	m	m	**m**	**m**	m
	Mexico		m	m	**m**	m	m	m	m	**m**	**m**	m
	Netherlands	2010	- 28 879	- 2 153	**- 31 032**	50 757	20 313	4 801	10 736	**86 607**	**55 575**	9.8%
	New Zealand	2010	- 22 264	- 4 017	**- 26 281**	32 780	2 243	1 172	5 605	**41 800**	**15 519**	5.1%
	Norway	2010	- 38 967	- 16 326	**- 55 292**	73 242	20 424	4 680	12 512	**110 859**	**55 566**	7.6%
	Poland	2010	- 19 278	- 5 994	**- 25 272**	4 952	12 024	0	9 673	**26 648**	**1 377**	3.3%
	Portugal	2010	- 26 371	- 2 429	**- 28 800**	28 325	16 055	0	2 565	**46 945**	**18 145**	4.7%
	Slovak Republic	2010	- 14 722	- 874	**- 15 596**	17 620	15 479	0	24 507	**57 606**	**42 011**	12.3%
	Slovenia	2010	- 19 303	- 6 815	**- 26 119**	25 987	27 826	0	12 116	**65 930**	**39 811**	9.0%
	Spain	2010	- 18 107	- 843	**- 18 950**	23 289	6 766	0	9 336	**39 391**	**20 441**	6.1%
	Sweden	2010	- 29 675	- 6 505	**- 36 180**	46 649	12 257	21 705	15 648	**96 259**	**60 079**	14.3%
	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	2010	- 19 434	4 949	**- 14 485**	44 222	24 322	49 957	12 344	**130 846**	**116 361**	27.1%
	United States	2010	- 34 048	- 3 381	**- 37 429**	61 984	21 854	7 344	9 490	**100 671**	**63 242**	9.1%
	OECD average		- 24 121	- 4 535	**- 28 656**	34 095	15 450	6 748	10 964	**67 257**	**38 601**	8.6%
	EU21 average		- 24 831	- 4 414	**- 29 245**	32 433	16 961	8 388	12 949	**70 731**	**41 486**	8.9%
Partners	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
	Colombia		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
	Latvia		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. Data for Belgium are not included in the table because upper secondary education is compulsory.
2. Data at lower and upper secondary levels of education are not broken down.

Source: OECD. 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/10.1787/888933116338

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Table A7.2b. Public costs and benefits for a woman attaining upper secondary or post-secondary non-tertiary education (2010)

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	2010	- 43 971	- 8 568	**- 52 539**	28 045	41 879	32 029	4 562	**106 516**	**53 977**	8.2%
	Belgium[1]		m	m	**m**	m	m	m	m	**m**	**m**	m
	Canada	2010	- 28 587	- 3 233	**- 31 820**	13 613	6 115	3 002	3 447	**26 176**	**- 5 644**	2.3%
	Chile		m	m	**m**	m	m	m	m	**m**	**m**	m
	Czech Republic	2010	- 21 080	2 442	**- 18 638**	17 417	9 532	16 740	13 901	**57 589**	**38 951**	10.5%
	Denmark	2010	- 32 430	- 21 038	**- 53 468**	49 505	12 177	0	9 644	**71 326**	**17 858**	4.8%
	Estonia	2010	- 19 081	- 1 240	**- 20 321**	8 914	1 223	0	1 469	**11 606**	**- 8 715**	0.2%
	Finland	2009	- 21 711	- 4 679	**- 26 390**	12 075	3 607	16 226	6 472	**38 380**	**11 989**	6.6%
	France	2010	- 33 511	- 5 217	**- 38 728**	15 257	13 296	27 615	8 802	**64 970**	**26 243**	5.6%
	Germany	2010	- 27 953	- 14 147	**- 42 100**	30 323	33 057	48 767	11 993	**124 140**	**82 040**	13.7%
	Greece	2009	- 22 045	1 649	**- 20 396**	1 347	17 423	15 164	764	**34 699**	**14 303**	4.8%
	Hungary	2010	- 15 696	- 2 918	**- 18 614**	16 259	12 802	0	13 062	**42 123**	**23 509**	7.5%
	Iceland		m	m	**m**	m	m	m	m	**m**	**m**	m
	Ireland	2010	- 25 625	- 1 040	**- 26 665**	19 850	7 690	0	1 284	**28 824**	**2 159**	3.3%
	Israel	2010	- 14 670	- 1 350	**- 16 020**	3 668	4 543	3 505	539	**12 254**	**- 3 766**	1.8%
	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	2010	- 21 051	- 3 130	**- 24 181**	1 797	9 001	0	374	**11 172**	**- 13 009**	-1.0%
	Luxembourg		m	m	**m**	m	m	m	m	**m**	**m**	m
	Mexico		m	m	**m**	m	m	m	m	**m**	**m**	m
	Netherlands	2010	- 28 879	1 113	**- 27 766**	35 228	46 047	13 638	9 066	**m**	**76 213**	14.6%
	New Zealand	2010	- 22 264	- 3 603	**- 25 867**	14 529	1 540	7 825	2 630	**26 524**	**657**	3.1%
	Norway	2010	- 38 967	- 16 580	**- 55 547**	41 576	12 582	14 220	4 360	**72 737**	**17 190**	4.8%
	Poland	2010	- 19 278	- 5 526	**- 24 804**	5 740	13 937	0	8 910	**28 588**	**3 784**	3.6%
	Portugal	2010	- 26 371	- 2 352	**- 28 722**	10 290	11 473	0	1 424	**23 187**	**- 5 536**	2.3%
	Slovak Republic	2010	- 14 722	- 514	**- 15 236**	9 428	10 668	0	14 305	**34 401**	**19 165**	7.8%
	Slovenia	2010	- 19 303	- 7 468	**- 26 771**	30 404	26 364	0	6 407	**63 175**	**36 404**	7.4%
	Spain	2010	- 18 107	- 811	**- 18 919**	25 096	5 301	0	4 506	**34 904**	**15 985**	5.2%
	Sweden	2010	- 29 675	- 6 959	**- 36 633**	36 329	9 895	30 949	15 306	**92 478**	**55 845**	13.6%
	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	2010	- 19 434	8 961	**- 10 473**	27 379	15 059	49 494	9 985	**101 917**	**91 444**	19.3%
	United States	2010	- 34 048	- 3 727	**- 37 775**	41 313	16 564	13 250	6 233	**77 360**	**39 585**	7.5%
	OECD average		- 24 152	- 4 333	**- 28 485**	21 436	13 611	11 663	6 116	**50 859**	**24 341**	6.9%
	EU21 average		- 24 831	- 4 071	**- 28 902**	22 423	16 100	13 191	7 830	**57 075**	**30 642**	7.6%
Partners	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
	Colombia		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
	Latvia		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 women who attained an upper secondary or post-secondary non-tertiary education compared with those who have not attained that level of education.

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

Source: OECD. 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/10.1787/888933116357

Table A7.3a. Private costs and benefits for a man attaining tertiary education (2010)

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	335	**221 234**	**152 892**	9.0%
	Austria	2010	- 6 199	- 62 401	**- 68 600**	396 272	- 132 408	- 53 634	0	18 521	10 877	**239 629**	**171 029**	10.1%
	Belgium	2010	- 2 780	- 37 528	**- 40 307**	348 982	- 155 156	- 53 464	0	21 666	862	**162 891**	**122 584**	11.9%
	Canada	2010	- 20 529	- 36 423	**- 56 952**	293 058	- 96 272	- 6 355	0	27 401	1 103	**218 935**	**161 982**	10.2%
	Chile		m	m	**m**	m	m	m	m	m	m	**m**	**m**	m
	Czech Republic	2010	- 5 029	- 25 719	**- 30 748**	365 437	- 70 726	- 41 771	0	20 181	m	**273 121**	**242 373**	18.6%
	Denmark	2010	- 4 509	- 75 357	**- 79 866**	314 158	- 143 348	- 26 897	- 8 763	17 765	29 411	**182 326**	**102 460**	8.4%
	Estonia	2010	- 3 924	- 14 951	**- 18 875**	207 579	- 46 145	- 6 453	0	42 224	730	**197 934**	**179 059**	20.6%
	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	2010	- 6 963	- 47 182	**- 54 145**	380 704	- 95 841	- 51 427	- 691	19 109	3 103	**254 957**	**200 812**	11.4%
	Germany	2010	- 5 813	- 55 093	**- 60 906**	462 289	- 166 502	- 89 273	0	58 741	6 472	**271 727**	**210 821**	13.4%
	Greece	2009	- 690	- 43 715	**- 44 405**	182 193	- 35 679	- 29 437	- 8 700	6 156	m	**114 533**	**70 128**	7.5%
	Hungary	2010	- 4 664	- 13 268	**- 17 932**	459 159	- 147 118	- 75 232	0	37 773	1 135	**275 718**	**257 785**	28.5%
	Iceland		m	m	**m**	m	m	m	m	m	m	**m**	**m**	m
	Ireland	2010	- 6 478	- 42 453	**- 48 931**	684 820	- 259 751	- 58 952	0	131 625	5 412	**503 154**	**454 224**	29.9%
	Israel	2010	- 14 023	- 26 963	**- 40 987**	285 448	- 69 772	- 35 702	0	16 788	1 528	**198 291**	**157 304**	11.8%
	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	m	**246 983**	**143 018**	7.4%
	Korea	2010	- 19 211	- 34 019	**- 53 231**	379 884	- 47 160	- 25 602	0	12 407	m	**319 528**	**266 298**	12.8%
	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	2010	- 14 646	- 95 834	**- 110 480**	442 661	- 197 999	- 26 901	0	10 736	13 770	**242 267**	**131 787**	7.2%
	New Zealand	2010	- 9 384	- 43 347	**- 52 731**	193 910	- 62 325	- 3 875	- 86	358	3 039	**131 021**	**78 290**	7.3%
	Norway	2010	- 1 086	- 47 946	**- 49 032**	274 357	- 107 528	- 23 197	0	23 000	4 690	**171 321**	**122 289**	8.2%
	Poland	2010	- 7 343	- 16 928	**- 24 270**	376 155	- 30 873	- 75 986	0	38 492	2 228	**310 015**	**285 745**	24.6%
	Portugal	2010	- 4 627	- 16 181	**- 20 808**	324 887	- 89 461	- 36 243	0	17 564	m	**216 746**	**195 937**	18.3%
	Slovak Republic	2010	- 6 183	- 15 019	**- 21 202**	290 121	- 51 866	- 40 961	0	38 465	1 226	**236 985**	**215 783**	21.4%
	Slovenia	2010	- 3 564	- 26 242	**- 29 806**	447 946	- 110 866	- 96 037	0	19 992	259	**261 294**	**231 488**	17.1%
	Spain	2010	- 8 864	- 28 219	**- 37 083**	178 900	- 52 903	- 14 033	0	41 874	3 791	**157 629**	**120 546**	11.2%
	Sweden	2010	- 3 560	- 50 291	**- 53 851**	209 467	- 84 430	- 9 281	0	8 454	7 735	**131 945**	**78 094**	7.4%
	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	m	**74 640**	**64 177**	19.3%
	United Kingdom	2010	- 20 162	- 47 655	**- 67 817**	413 163	- 89 124	- 49 107	- 4 303	40 284	5 225	**316 138**	**248 322**	14.3%
	United States	2010	- 61 135	- 44 678	**- 105 813**	628 922	- 210 898	- 55 768	0	100 046	27 162	**489 463**	**383 649**	15.4%
	OECD average		- 10 563	- 40 755	**- 51 318**	347 075	- 105 528	- 38 085	- 777	29 016	6 181	**236 602**	**185 284**	13.9%
	EU21 average		- 6 258	- 41 078	**- 47 335**	361 801	- 112 936	- 45 075	- 1 123	31 620	6 135	**239 503**	**192 167**	15.1%
Partners	Argentina		m	m	**m**	m	m	m	m	m	m	**m**	**m**	m
	Brazil		m	m	**m**	m	m	m	m	m	m	**m**	**m**	m
	China		m	m	**m**	m	m	m	m	m	m	**m**	**m**	m
	Colombia		m	m	**m**	m	m	m	m	m	m	**m**	**m**	m
	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
	Latvia		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. 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/10.1787/888933116376

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Table A7.3b. Private costs and benefits for a woman attaining tertiary education (2010)

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	335	**175 023**	**105 374**	8.9%
	Austria	2010	- 6 199	- 63 316	**- 69 515**	331 700	- 93 938	- 61 225	0	8 104	10 877	**195 518**	**126 003**	9.0%
	Belgium	2010	- 2 780	- 35 428	**- 38 207**	310 555	- 127 305	- 72 908	0	40 296	862	**151 500**	**113 293**	13.7%
	Canada	2010	- 20 529	- 37 837	**- 58 366**	261 335	- 69 368	- 20 695	0	16 627	1 103	**189 002**	**130 636**	11.4%
	Chile		m	m	**m**	m	m	m	m	m	m	**m**	**m**	m
	Czech Republic	2010	- 4 882	- 24 979	**- 29 862**	208 439	- 45 919	- 26 193	- 688	29 891	m	**165 530**	**135 668**	15.3%
	Denmark	2010	- 4 509	- 78 578	**- 83 087**	175 082	- 61 404	- 15 158	- 9 772	10 710	29 411	**128 869**	**45 782**	6.5%
	Estonia	2010	- 3 924	- 15 754	**- 19 678**	153 829	- 40 802	- 5 839	0	54 649	730	**162 567**	**142 889**	29.7%
	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	2010	- 6 963	- 44 369	**- 51 332**	263 248	- 52 801	- 39 383	- 11 640	24 882	3 103	**187 409**	**136 077**	10.9%
	Germany	2010	- 5 813	- 55 984	**- 61 797**	247 459	- 67 041	- 55 248	- 17	22 124	6 472	**153 749**	**91 952**	8.5%
	Greece	2009	- 690	- 36 674	**- 37 363**	186 037	- 21 786	- 33 976	- 29 066	26 865	m	**128 074**	**90 710**	9.6%
	Hungary	2010	- 4 664	- 13 164	**- 17 828**	257 527	- 83 602	- 49 345	0	32 818	1 135	**158 533**	**140 705**	24.6%
	Iceland		m	m	**m**	m	m	m	m	m	m	**m**	**m**	m
	Ireland	2010	- 6 478	- 48 135	**- 54 612**	456 714	- 129 055	- 63 508	0	39 212	5 412	**308 775**	**254 163**	21.0%
	Israel	2010	- 14 023	- 27 428	**- 41 451**	151 423	- 22 840	- 18 663	0	12 245	1 528	**123 692**	**82 240**	8.6%
	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	m	**191 293**	**104 812**	7.8%
	Korea	2010	- 19 211	- 35 087	**- 54 298**	268 211	- 10 077	- 20 463	0	- 5 570	m	**232 101**	**177 802**	11.0%
	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	2010	- 14 646	- 90 283	**- 104 929**	353 759	- 137 587	- 30 982	0	11 955	13 770	**210 915**	**105 985**	7.0%
	New Zealand	2010	- 9 384	- 42 595	**- 51 980**	167 699	- 40 316	- 3 622	- 2 329	13 769	3 039	**138 239**	**86 260**	10.3%
	Norway	2010	- 1 086	- 50 062	**- 51 148**	227 688	- 63 403	- 17 791	0	785	4 690	**151 970**	**100 822**	9.6%
	Poland	2010	- 7 343	- 16 014	**- 23 356**	243 941	- 24 419	- 60 782	0	39 454	2 228	**200 423**	**177 066**	21.6%
	Portugal	2010	- 4 627	- 15 481	**- 20 108**	262 280	- 59 602	- 31 363	0	22 688	m	**194 001**	**173 893**	22.0%
	Slovak Republic	2010	- 6 183	- 15 551	**- 21 734**	181 063	- 33 609	- 29 678	0	40 616	1 226	**159 618**	**137 884**	18.5%
	Slovenia	2010	- 3 564	- 26 170	**- 29 734**	343 115	- 84 277	- 79 783	0	24 076	259	**203 390**	**173 657**	15.3%
	Spain	2010	- 8 864	- 27 626	**- 36 490**	237 736	- 69 735	- 18 075	0	46 399	3 791	**200 115**	**163 625**	14.5%
	Sweden	2010	- 3 560	- 51 796	**- 55 356**	140 237	- 42 057	- 10 883	0	15 631	7 735	**110 663**	**55 306**	7.1%
	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	m	**89 711**	**80 466**	19.2%
	United Kingdom	2010	- 20 162	- 47 080	**- 67 241**	351 526	- 79 076	- 43 645	- 12 831	55 550	5 225	**276 748**	**209 506**	12.3%
	United States	2010	- 61 135	- 47 732	**- 108 867**	416 147	- 107 923	- 35 416	0	47 389	27 162	**347 358**	**238 491**	12.9%
	OECD average		- 10 558	- 40 176	**- 50 734**	249 434	- 63 945	- 32 082	- 2 428	24 052	6 181	**179 932**	**129 198**	13.2%
	EU21 average		- 6 250	- 40 740	**- 46 990**	256 997	- 70 336	- 38 250	- 3 405	28 761	6 135	**178 982**	**131 992**	14.1%
Partners	Argentina		m	m	**m**	m	m	m	m	m	m	**m**	**m**	m
	Brazil		m	m	**m**	m	m	m	m	m	m	**m**	**m**	m
	China		m	m	**m**	m	m	m	m	m	m	**m**	**m**	m
	Colombia		m	m	**m**	m	m	m	m	m	m	**m**	**m**	m
	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
	Latvia		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. 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.

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Table A7.4a. Public costs and benefits for a man attaining tertiary education (2010)

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	- 335	**- 20 575**	123 233	0	0	1 208	**124 441**	**103 866**	12.9%
	Austria	2010	- 44 819	- 11 977	- 10 877	**- 67 673**	128 843	50 561	0	6 637	**186 041**	**118 368**	8.0%
	Belgium	2010	- 24 413	- 9 051	- 862	**- 34 326**	149 431	50 456	0	8 733	**208 619**	**174 293**	15.1%
	Canada	2010	- 26 735	- 3 589	- 1 103	**- 31 427**	91 254	4 772	0	6 602	**102 627**	**71 201**	8.9%
	Chile		m	m	m	**m**	m	m	m	m	**m**	**m**	m
	Czech Republic	2010	- 18 717	4 105	m	**- 14 612**	67 727	39 580	0	5 191	**112 497**	**97 885**	17.6%
	Denmark	2010	- 85 578	- 35 496	- 29 411	**- 150 485**	137 397	25 140	8 763	7 708	**179 007**	**28 522**	3.8%
	Estonia	2010	- 12 037	- 2 264	- 730	**- 15 032**	38 729	5 313	0	8 557	**52 599**	**37 567**	10.5%
	Finland	2009	- 42 400	- 8 324	- 8 730	**- 59 454**	128 733	22 053	0	12 738	**163 525**	**104 071**	8.3%
	France	2010	- 31 533	- 9 599	- 3 103	**- 44 236**	92 737	48 871	691	5 660	**147 960**	**103 724**	8.7%
	Germany	2010	- 31 421	- 20 896	- 6 472	**- 58 789**	153 573	78 113	0	24 090	**255 776**	**196 987**	11.9%
	Greece	2009	- 20 179	2 956	m	**- 17 223**	34 885	28 464	8 700	1 766	**73 816**	**56 593**	11.6%
	Hungary	2010	- 16 393	- 2 960	- 1 135	**- 20 489**	138 343	69 279	0	14 727	**222 349**	**201 861**	23.0%
	Iceland		m	m	m	**m**	m	m	m	m	**m**	**m**	m
	Ireland	2010	- 28 066	- 1 409	- 5 412	**- 34 887**	231 031	49 600	0	38 072	**318 703**	**283 816**	26.9%
	Israel	2010	- 16 613	- 1 526	- 1 528	**- 19 666**	67 496	34 209	0	3 768	**105 474**	**85 807**	11.4%
	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	m	**- 33 151**	62 285	33 612	0	4 665	**100 562**	**67 411**	8.4%
	Korea	2010	- 7 198	- 3 449	m	**- 10 648**	46 494	24 687	0	1 581	**72 762**	**62 115**	12.3%
	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	2010	- 37 254	- 41 204	- 13 770	**- 92 227**	195 349	25 117	0	4 433	**224 900**	**132 673**	7.2%
	New Zealand	2010	- 18 444	- 5 180	- 3 039	**- 26 663**	61 879	3 868	86	453	**66 286**	**39 623**	7.0%
	Norway	2010	- 26 059	- 15 194	- 4 690	**- 45 942**	102 100	21 412	0	7 213	**130 725**	**84 783**	7.1%
	Poland	2010	- 17 653	- 6 097	- 2 228	**- 25 978**	28 162	68 381	0	10 316	**106 860**	**80 882**	12.4%
	Portugal	2010	- 10 295	- 2 245	m	**- 12 540**	85 300	34 368	0	6 036	**125 705**	**113 164**	16.1%
	Slovak Republic	2010	- 14 559	- 1 492	- 1 226	**- 17 276**	47 313	36 008	0	9 505	**92 826**	**75 550**	13.8%
	Slovenia	2010	- 19 698	- 8 151	- 259	**- 28 108**	107 113	91 799	0	7 991	**206 903**	**178 795**	15.4%
	Spain	2010	- 31 833	- 2 577	- 3 791	**- 38 201**	46 168	11 387	0	9 381	**66 936**	**28 735**	5.6%
	Sweden	2010	- 34 448	- 12 852	- 7 735	**- 55 035**	82 130	8 756	0	2 826	**93 711**	**38 676**	5.2%
	Switzerland		m	m	m	**m**	m	m	m	m	**m**	**m**	m
	Turkey	2005	- 9 567	- 3 814	m	**- 13 381**	18 209	16 010	0	886	**35 106**	**21 724**	9.3%
	United Kingdom	2010	- 6 798	- 2 591	- 5 225	**- 14 615**	82 483	45 366	4 303	10 381	**142 534**	**127 919**	26.1%
	United States	2010	- 34 787	- 5 989	- 27 162	**- 67 937**	189 603	48 143	0	28 922	**266 667**	**198 730**	10.8%
	OECD average		- 24 742	- 8 400	- 6 181	**- 38 044**	99 852	35 062	777	8 699	**144 390**	**106 346**	11.9%
	EU21 average		- 27 282	- 9 198	- 6 135	**- 41 694**	106 657	41 505	1 123	9 848	**159 133**	**117 439**	12.9%
Partners	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
	Colombia		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
	Latvia		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. 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.

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Table A7.4b. Public costs and benefits for a woman attaining tertiary education (2010)

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	- 335	**- 20 720**	89 111	0	0	2 530	**91 641**	**70 921**	13.5%
	Austria	2010	- 44 819	- 12 152	- 10 877	**- 67 849**	92 488	59 772	0	2 903	**155 164**	**87 315**	7.0%
	Belgium	2010	- 24 413	- 8 544	- 862	**- 33 820**	117 399	67 323	0	15 490	**200 212**	**166 393**	19.0%
	Canada	2010	- 26 735	- 3 728	- 1 103	**- 31 566**	67 254	19 517	0	3 293	**90 064**	**58 498**	9.5%
	Chile		m	m	m	**m**	m	m	m	m	**m**	**m**	m
	Czech Republic	2010	- 18 172	3 987	m	**- 14 185**	41 879	22 919	688	7 315	**72 800**	**58 615**	14.6%
	Denmark	2010	- 85 578	- 37 013	- 29 411	**- 152 002**	58 528	13 964	9 772	4 069	**86 334**	**- 65 668**	0.4%
	Estonia	2010	- 12 037	- 2 386	- 730	**- 15 153**	31 454	4 315	0	10 872	**46 641**	**31 487**	12.9%
	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	2010	- 31 533	- 9 027	- 3 103	**- 43 664**	49 775	35 999	11 640	6 409	**103 824**	**60 160**	8.4%
	Germany	2010	- 31 421	- 21 234	- 6 472	**- 59 127**	63 819	50 751	17	7 718	**122 306**	**63 179**	6.9%
	Greece	2009	- 20 179	2 480	m	**- 17 699**	20 386	29 703	29 066	5 673	**84 828**	**67 129**	11.7%
	Hungary	2010	- 16 393	- 2 937	- 1 135	**- 20 465**	77 014	43 784	0	12 149	**132 947**	**112 482**	17.3%
	Iceland		m	m	m	**m**	m	m	m	m	**m**	**m**	m
	Ireland	2010	- 28 066	- 1 598	- 5 412	**- 35 076**	123 230	60 647	0	8 686	**192 563**	**157 487**	17.5%
	Israel	2010	- 16 613	- 1 552	- 1 528	**- 19 692**	22 108	17 839	0	1 557	**41 503**	**21 811**	6.4%
	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	m	**- 28 551**	20 218	27 924	0	1 822	**49 965**	**21 414**	6.2%
	Korea	2010	- 7 198	- 3 557	m	**- 10 756**	10 123	20 892	0	- 474	**30 540**	**19 784**	8.0%
	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	2010	- 37 254	- 35 318	- 13 770	**- 86 341**	135 724	28 393	0	4 453	**168 569**	**82 228**	6.5%
	New Zealand	2010	- 18 444	- 5 090	- 3 039	**- 26 573**	38 104	3 348	2 329	2 486	**46 267**	**19 694**	6.5%
	Norway	2010	- 26 059	- 15 864	- 4 690	**- 46 613**	63 264	17 730	0	199	**81 193**	**34 581**	5.8%
	Poland	2010	- 17 653	- 5 768	- 2 228	**- 25 648**	21 556	52 341	0	11 304	**85 200**	**59 552**	10.5%
	Portugal	2010	- 10 295	- 2 148	m	**- 12 443**	56 914	28 879	0	5 172	**90 966**	**78 523**	14.9%
	Slovak Republic	2010	- 14 559	- 1 544	- 1 226	**- 17 329**	29 789	24 260	0	9 238	**63 287**	**45 958**	11.1%
	Slovenia	2010	- 19 698	- 8 128	- 259	**- 28 085**	80 209	74 531	0	9 320	**164 060**	**135 974**	13.1%
	Spain	2010	- 31 833	- 2 523	- 3 791	**- 38 147**	63 118	15 146	0	9 546	**87 811**	**49 664**	7.5%
	Sweden	2010	- 34 448	- 13 236	- 7 735	**- 55 420**	38 592	9 798	0	4 551	**52 940**	**- 2 479**	2.8%
	Switzerland		m	m	m	**m**	m	m	m	m	**m**	**m**	m
	Turkey	2005	- 9 567	- 3 320	m	**- 12 887**	19 194	17 528	0	4 171	**40 894**	**28 006**	9.1%
	United Kingdom	2010	- 6 798	1 128	- 5 225	**- 10 895**	70 396	38 718	12 831	13 607	**135 553**	**124 658**	36.4%
	United States	2010	- 34 787	- 6 398	- 27 162	**- 68 347**	99 860	31 811	0	11 668	**143 339**	**74 993**	7.4%
	OECD average		- 24 723	- 7 999	- 6 181	**- 37 624**	60 264	29 405	2 428	6 358	**98 456**	**60 832**	10.5%
	EU21 average		- 27 254	- 8 800	- 6 135	**- 41 270**	65 920	34 809	3 405	7 857	**111 991**	**70 721**	11.6%
Partners	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
	Colombia		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
	Latvia		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. 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.

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