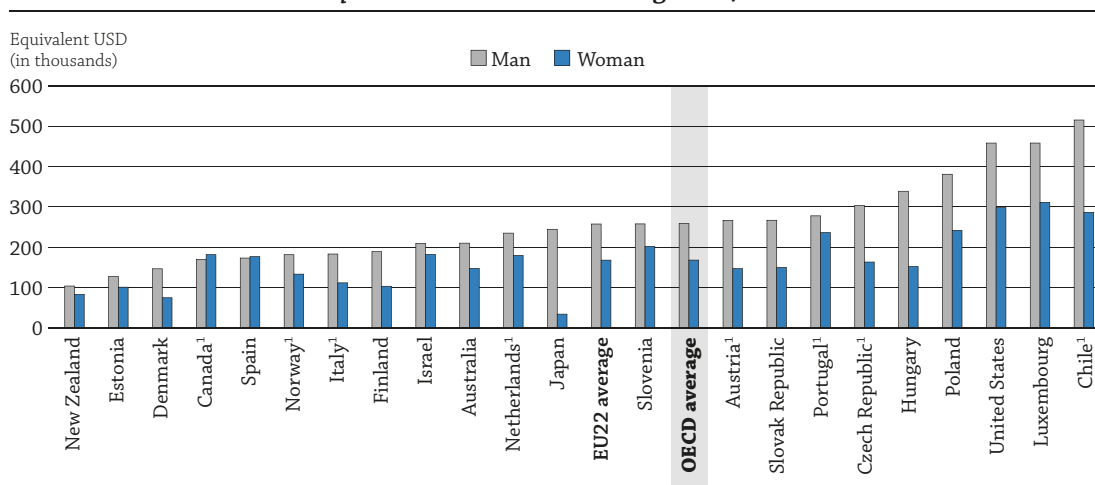# WHAT ARE THE FINANCIAL INCENTIVES TO INVEST IN EDUCATION?

- On average, across OECD countries, the private net financial returns for a woman attaining tertiary education are about two-thirds of the private net financial returns for a man with a similar level of education.

- Higher levels of educational attainment yield higher financial returns. Financial net returns are highest for tertiary education, but individuals and society also greatly benefit from upper secondary or post-secondary non-tertiary education, compared to lower levels of educational attainment.

- The public benefits of education outweigh the costs, through greater tax revenues and social contributions from a larger proportion of tertiary-educated adults.

Figure A7.1. Private net financial returns on attaining tertiary education, by gender (2012)
As compared with adults attaining upper secondary or post-secondary non-tertiary education, in equivalent USD converted using PPPs for GDP

1. Year of reference differs from 2012, please see Tables A7.3a and A7.3b for further details.
Countries are ranked in ascending order of private net financial returns for a man.
Source: OECD. Tables A7.3a and A7.3b. See Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).
StatLink ⌨ http://dx.doi.org/10.1787/888933397317

■ Context

Investing time and money in education is an investment in human capital. For adults, the labour market outcomes of higher educational attainment outweigh the initial cost of pursuing education. Better chances of employment (see Indicator A5) and higher earnings (see Indicator A6) are strong incentives for adults to invest in education and postpone labour market activities. Although women currently have higher levels of education than men (see Indicator A1), men reap more benefits from their investment, as they have better employment and earning outcomes of education.

Countries, in turn, benefit from having individuals with higher education, through reduced public expenditure on social welfare programmes and higher revenues earned through taxes paid once individuals enter the labour market. As both individuals and governments benefit from higher levels of educational attainment, it is important to consider the financial returns to education together with other indicators, such as access to higher education (see Indicator A3).

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 tertiary qualifications. When the labour market for young adults worsens, the effect of foregone earnings is reduced, making tertiary education a less costly investment.

It should be kept in mind that factors not reflected in this indicator affect the returns to education. The financial returns may be affected by the field of study and by country-specific economic situations, labour market contexts and institutional settings, as well as by social and cultural factors which are not accounted for. Furthermore, returns to education are not limited to financial returns but also include other economic outcomes, such as increased productivity that boosts economic growth, and social outcomes, such as better health and well-being and higher social participation (see Indicator A8).

■ Other findings

■ On average, across OECD countries, the private net financial returns for a man attaining tertiary education are about USD 258 400 over his career, compared to a man with upper secondary or post-secondary non-tertiary education. The equivalent for a woman is only about USD 167 600.

■ The gender gap in private net financial returns to tertiary education is the largest in Japan, where the returns for a man are seven times greater than the returns for a woman.

■ Across OECD countries, Chile, Luxembourg and the United States have the largest private net financial returns for a tertiary-educated adult (over USD 450 000 for a man and over USD 280 000 for a woman).

■ Note

This indicator provides information on the incentives to invest in further education by considering its costs and benefits, including net financial returns and internal rate of return. It examines the choice between pursuing higher levels of education and entering the labour market, focusing on two scenarios:

■ investing in tertiary education, compared to entering the labour market with an upper secondary or post-secondary non-tertiary degree

■ investing in upper secondary or post-secondary non-tertiary education, compared to entering the labour market without an upper secondary or post-secondary non-tertiary degree.

Two types of investors are considered:

■ the individual (referred to here as "private") who chooses to pursue higher levels of education, based on the additional net earnings and costs he or she can expect

■ the government (referred to here as "public") that decides to invest in education, based on the additional revenue it would receive (tax revenue) and the costs involved.

Values are presented separately for men and women to account for gender-specific differences in earnings and unemployment rates.

More details on measuring net financial returns are provided in the *Methodology* section at the end of this indicator. Please note that due to continuous improvement of this indicator's methodology, values presented in this edition of *Education at a Glance* might not be comparable with values in previous editions. For further details, please refer to the *Methodology* section of this indicator and Annex 3.

Analysis

Financial incentives for individuals to invest in education (private net financial returns on investment)

Investing in education pays off in the long run for both men and women. Even if it may seem costly for individuals at the time of making the choice to pursue further education, the gains they will make over their career exceed the costs they bear during their studies. This is true for tertiary education (Figure A7.1), and it also holds for upper secondary or post-secondary non-tertiary education (Tables A7.1a and b, A7.3a and b).

Private net financial returns generally rise with the level of education attained. Across OECD countries, an individual's returns from tertiary education are higher than from upper secondary or post-secondary non-tertiary education. For a man, the net financial returns from tertiary education (USD 258 400) are more than twice as high as the net financial returns from upper secondary or post-secondary non-tertiary education (USD 112 400). These differences are the largest in Poland, where returns for a tertiary-educated man are almost eight times higher than for a man with upper secondary or post-secondary non-tertiary education. It means that, particularly in Poland, pursuing additional levels of education largely benefits adults who complete tertiary education (Tables A7.1a and b, A7.3a and b).

Although young women tend to complete higher education more often than young men (see Indicator A1), women have lower relative net financial returns than men (Figure A7.1). This is the case in all OECD countries with available data, with the exception of Canada and Spain. For a woman, on average, net financial returns for tertiary education are USD 167 600, representing only two-thirds of a man's net financial returns for tertiary education. Men also tend to have a higher internal rate of returns to education than women with similar levels of education, 14% for a man with tertiary education (compared to 12% for a woman) and 12% for a man with upper secondary or post-secondary non-tertiary education (compared to 8% for a woman) (Tables A7.1a and b, A7.3a and b).
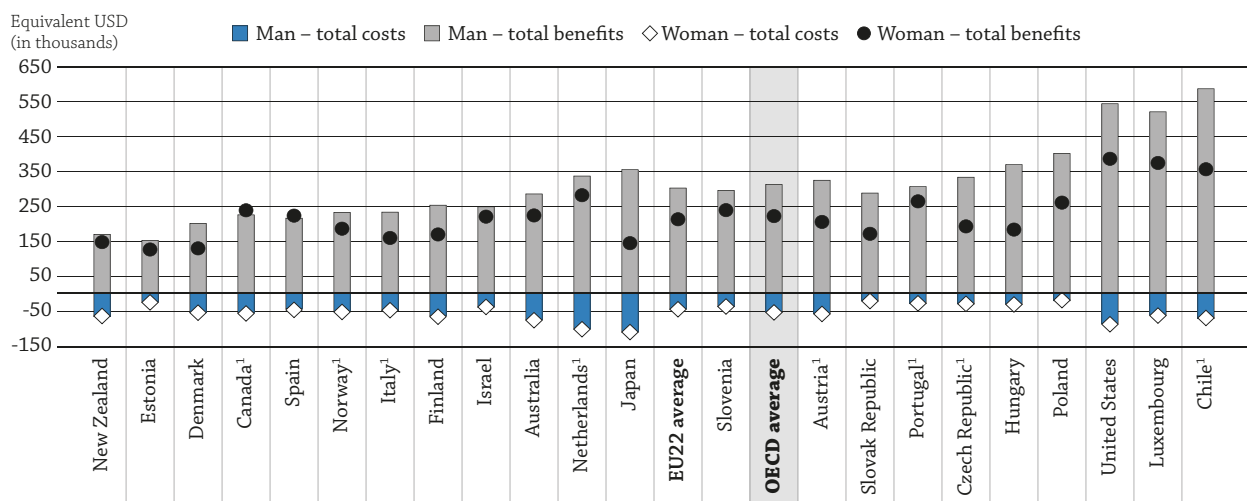
The lower returns for women can be attributed to different factors, such as lower earnings, higher unemployment rates and a higher share of part-time work among women. In Japan, where the gender difference is the largest (seven times higher net financial returns for a tertiary-educated man than for a woman with a similar level of education), the tax system and the labour market structure tend to drive down women's returns from tertiary education. For example, the tax system disincentivises married women from seeking full-time employment, and there is also a shortage of available resources for early childhood education and care. However, private net financial returns may increase for Japanese women in the future, as the current government aims to promote higher labour market participation among women by introducing a number of policy measures (Cabinet Secretariat, 2016) (Tables A7.3a and b).

The costs and benefits of education for individuals

Private net financial returns are the difference between the costs and benefits associated with attaining an additional level of education. Costs include direct costs for attaining education and foregone earnings. Benefits include earnings from employment and unemployment benefits. To show the impact of the tax system on the total benefits, income tax effect, social contributions effect and social transfers effect are all analysed.

Total private costs, composed of direct costs and foregone earnings, generally rise with the level of education. The direct costs for a man or a women entering upper secondary or post-secondary non-tertiary education are, on average, about USD 2 500 across OECD countries, while they amount to about USD 10 500 for tertiary education. Across all OECD countries except Chile, the main costs of tertiary education are foregone earnings. They vary substantially across countries, depending on the length of education, earnings levels and the difference in earnings across levels of educational attainment. Foregone earnings for a man attaining tertiary education vary from less than USD 18 000 in Poland and the Slovak Republic to more than USD 90 000 in the Netherlands. When direct costs and foregone earnings are combined, Japan has the highest total private costs. A man or a woman attaining tertiary education in Japan can expect total costs to be more than five times higher than those in Poland (Tables A7.1a and b, A7.3a and b).

Earning advantages for higher education bring considerable benefits for individuals, but differences in labour market outcomes lead to a wide variation between men and women in private benefits associated with investment in education. On average, the total benefit for a tertiary-educated man is USD 312 600, while the total benefit for a tertiary-educated woman is USD 221 900 (Figure A7.2). This means that, over a career of 40 years, a tertiary-educated man will get about USD 2 270 more per year in total benefits than a woman with the same level of education. This is mainly due to gender gaps in earnings (see Indicator A6), but it is also related to higher unemployment rates for women (see Indicator A5) (Tables A7.3a and b).

Figure A7.2. **Private costs and benefits of education on attaining tertiary education, by gender (2012)**

In equivalent USD converted using PPPs for GDP

1. Year of reference differs from 2012, please see Tables A7.3a and A7.3b for further details.
Countries are ranked in ascending order of private net financial returns for a man.
Source: OECD. Tables A7.3a and A7.3b. See Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).
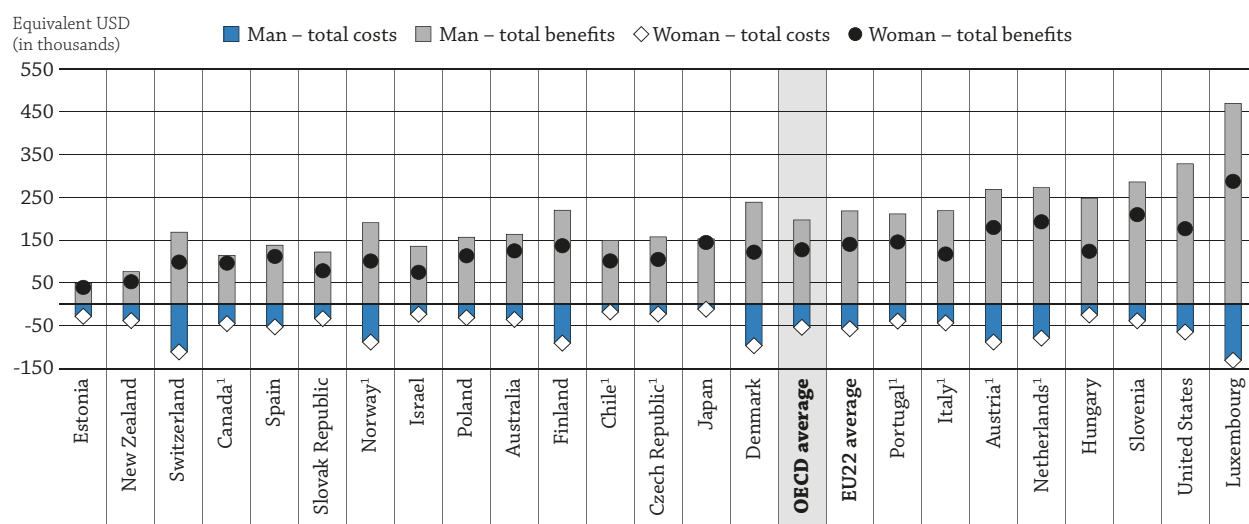StatLink ⟐ http://dx.doi.org/10.1787/888933397324

While further education yields higher earnings over the career of an individual, private benefits from investing in education also depend on countries' tax and social benefits systems. Higher income taxes and social contributions, and lower social transfers related to higher earnings can act as disincentives to investing in further education by creating a wedge between the level of gross earnings needed to recover the cost of education and the final net earnings perceived by the individual (Brys and Torres, 2013). For instance, a man who chooses to invest in tertiary education will pay, on average, about 40% of his additional income associated with tertiary education in taxes and social contributions. In Canada, Chile, the Czech Republic, Estonia, Japan, New Zealand, Poland and the Slovak Republic, income taxes and social contributions amount to less than a third of the gross earning benefits, while in Denmark, Italy and Slovenia, they add up to about half of the gross earning benefits. As women tend to have lower earnings, they often fall into lower income tax brackets. For example, in Denmark the income tax and social contributions relative to the gross earnings for a tertiary-educated woman are 10 percentage points lower than for a tertiary-educated man (Tables A7.3a and b).

Financial incentives for governments to invest in education (public net financial returns on investment)

Governments are major investors in education (see Indicator B3) and, from a budgetary point of view, they want to know if they will recover their investment, particularly in an era of fiscal constraints. Since higher levels of educational attainment tend to translate into higher income (see Indicator A6), investments in education generate higher public returns, because tertiary-educated adults pay higher income taxes and social contributions, and require fewer social transfers. Across OECD countries, on average, the public net financial returns are about USD 67 200 for a man with upper secondary or post-secondary non-tertiary education and about USD 143 700 for a man who completed tertiary education (Tables A7.2a and A7.4a).

Comparison of Figures A7.2 and A7.3 shows that net financial returns on investment for governments are generally closely related to private returns. Countries where individuals benefit the most from pursuing tertiary education are also those where governments gain the largest returns. This is the case in Luxembourg and the United States, two countries with very large net financial private and public returns. The opposite is observed in Estonia and New Zealand, where net financial private and public returns are lowest. However, countries such as the Slovak Republic and Slovenia are exceptions. Although these two countries have similar net financial private returns (about USD 260 000 for a tertiary-educated man), the net financial public returns are more than USD 150 000 higher in Slovenia than in the Slovak Republic. This difference is mostly explained by larger income tax and social contribution effects in Slovenia (Tables A7.3a and b, A7.4a and b).

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Figure A7.3. Public costs and benefits of education on attaining tertiary education, by gender (2012)

In equivalent USD converted using PPPs for GDP

Equivalent USD (in thousands)

■ Man – total costs   ■ Man – total benefits   ◇ Woman – total costs   ● Woman – total benefits

1. Year of reference differs from 2012, please see Tables A7.4a and A7.4b for further details.
Countries are ranked in ascending order of public net financial returns for a man.
Source: OECD. Tables A7.4a and A7.4b. See Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).
StatLink 🔗 http://dx.doi.org/10.1787/888933397332

The costs and benefits of education for governments

Public net financial returns are measured in a similar fashion to private net financial returns and are also based on the difference between costs and benefits associated with an individual attaining an additional level of education. Costs include direct public costs for supporting education and foregone tax revenue on earnings. Benefits are calculated using income tax, social contributions, social transfers and unemployment benefits.

Direct costs are much more important for governments than for individuals. This is particularly true in countries such as Denmark, Finland and Norway, where students pay low or no tuition fees and have access to generous public subsidies for higher education (see Indicator B5). However, to finance these subsidies, individuals in these countries pay high income tax rates in progressive tax regimes.

For governments, direct costs represent the largest share of total public costs. This explains why countries with high direct costs, such as Austria, Denmark, Finland, Luxembourg, Norway and Switzerland, are also the countries with the largest total public costs (more than USD 85 000 for tertiary education). In contrast, across OECD countries, Japan has the lowest total public costs (about USD 11 000 for tertiary education), partly because direct costs for education are largely born by individuals. On average, across OECD countries, the total public cost of attaining tertiary education is USD 53 500 (Tables A7.4a and b).

Governments offset the costs of direct investment and foregone tax revenue associated with education by receiving additional tax revenue and social contributions from higher-paid adults, who often have higher educational attainment. On average, total public benefits are USD 99 800 over the career of a man whose highest level of attainment is upper secondary or post-secondary non-tertiary education and USD 197 200 for a man with tertiary education (Tables A7.2a and A7.4a).

Total public benefits also differ between men and women, due to differences in labour market outcomes. This suggests that governments have a role to play in easing the integration and participation of women in the labour market, in order to assure higher gains from the large investment of women in their education. On average, the total public benefits of education for a man attaining tertiary education are about 50% larger than the total public benefits for a tertiary-educated woman. Across OECD countries, Luxembourg has the largest total public benefits of tertiary education for both a man (USD 469 000) and a woman (USD 287 300). Estonia has the lowest total public benefits of tertiary education, USD 49 400 for man and USD 39 700 for a woman (Tables A7.4a and b).

The internal rate of return to governments is also higher for a man (10% for tertiary and 9% for upper secondary or post-secondary non-tertiary) than for a woman with similar levels of education (8% for both tertiary and upper secondary or post-secondary non-tertiary) (Tables A7.2a and b, A7.4a and b).

On average, the total public benefits (USD 197 200) for a tertiary-educated man can be broken down into income tax effect (USD 130 100), social contribution effect (USD 44 100), transfers effect (USD 400) and unemployment benefits effect (USD 22 600) (Tables A7.4a). Since higher taxes can sometimes deter private investment in different areas, including education, a number of countries have tax policies that effectively lower the actual tax paid by adults, particularly by those in high-income brackets. For example, tax relief for interest payments on mortgage debt has been introduced in many OECD countries to encourage home ownership. These benefits favour those with higher levels of education and high marginal tax rates. The tax incentives for housing are particularly large in the Czech Republic, Denmark, Finland, Greece, the Netherlands, Norway and the United States (Andrews, Caldera Sánchez and Johansson, 2011).

Box A7.1. **Financial returns to tertiary education, differing returns by tertiary level**

Financial returns differ for adults with short-cycle tertiary, bachelor's, master's and doctoral degrees. This difference is mostly attributable to the divergence in lifetime earnings of adults at each of these levels. Also, the costs of the qualifications differ at each level, as higher qualifications require more time to complete and students forego earnings for a longer period of time.

The composition of the population with qualifications at each tertiary level differs between countries (see Indicator A1), and the mix of qualifications can have a large effect in the financial returns to education for the aggregate tertiary level. For example, financial returns to tertiary education will under-represent the value of investing in bachelor's, master's and doctoral degrees in countries with a larger share of tertiary-educated adults with short-cycle tertiary than in countries with a smaller share of adults with short-cycle tertiary. Depending on their mix of qualifications, countries may have exactly the same returns at each level, but quite different returns at the aggregated tertiary level.

Figure A7.a explores the impact of this for a sample of seven OECD countries with available data and illustrates the difference in financial returns by tertiary level. For both men and women, the returns increase by level of tertiary attainment. The net private returns for men with short-cycle tertiary education are USD 53 370, USD 142 290 for bachelor's or equivalent degrees, and USD 249 536 for master's, doctoral and equivalent degrees. Similar patterns are observed for women and for net public returns.

Disaggregating financial returns by ISCED level would give readers a better indication of the expected returns in a given country by tertiary level. This is being explored for future editions of *Education at a Glance*.

Figure A7.a. **Public and private financial returns on attaining tertiary education, by gender and educational level (2012)**
In equivalent USD converted using PPPs for GDP, selected OECD countries
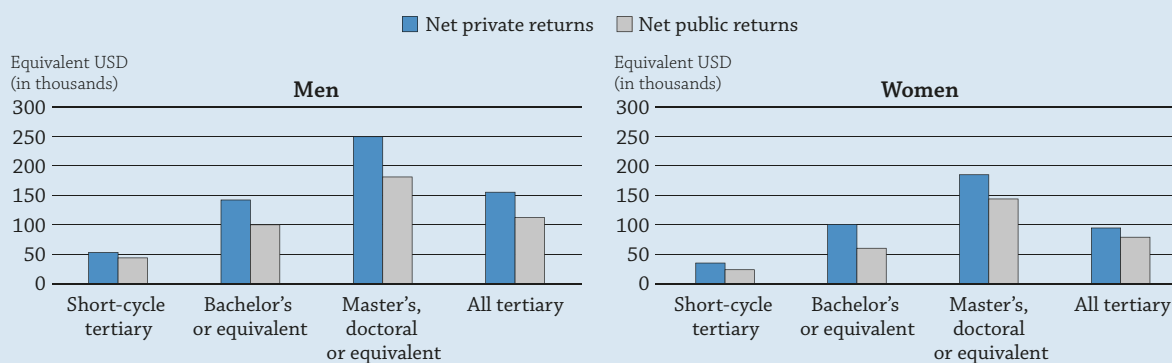
Note: Figures are based on data from Australia, Canada, Finland, Italy, New Zealand and Norway.
Source: OECD. See Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).
StatLink http://dx.doi.org/10.1787/888933397349

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Definitions

Adults refers to 15-64 year-olds.

Direct costs are the direct expenditure on education per student during the time spent in school.

- **Private direct costs** are the total expenditure by households on education. They include net payments to educational institutions as well as payments for educational goods and services outside of educational institutions (school supplies, tutoring, etc.).

- **Public direct costs** are the spending by government on a student's education. They include direct public expenditure on educational institutions, government scholarships and other grants to students and households, and transfers and payments to other private entities for educational purposes.

Foregone earnings are the net earnings an individual would have had if he or she had entered the labour market and successfully found a job instead of choosing to pursue further studies.

Foregone taxes on earnings are the tax revenues the government would have received if the individual had chosen to enter the labour force and successfully found a job instead of choosing to pursue further studies.

Gross earnings benefits are the discounted sum of earnings premiums over the course of a working-age life associated with a higher level of education, provided that the individual successfully enters the labour market.

The **income tax effect** is the discounted sum of additional levels of income tax paid by the private individual or earned by the government over the course of a working-age life associated with a higher level of education.

The **internal rate of return** is the (hypothetical) real interest rate equalising the costs and benefits related to the educational investment. It can be interpreted as the interest rate an individual can expect to receive every year during a working-age life on the investment made on a higher level of education.

Levels of education:

- **Below upper secondary** corresponds to ISCED 2011 levels 0, 1 and 2.
- **Upper secondary or post-secondary non-tertiary** corresponds to ISCED 2011 levels 3 and 4.
- **Tertiary** corresponds to ISCED2011 levels 5, 6, 7 and 8.

Net financial returns are the net present value of the financial investment in education, the difference between the discounted financial benefits and the discounted financial cost of education, representing the additional value that education produces over and above the 2% real interest that is charged on these cash flows.

The **social contribution effect** is the discounted sum of additional employee social contributions paid by the private individual or received by the government over the course of a working-age life and associated with a higher level of education.

The **transfers effect** is the discounted sum of additional social transfers from the government to the private individual associated with a higher education level over the course of a working-age life. Social transfers include two types of benefits: housing benefits and social assistance.

The **unemployment benefit effect** is the discounted sum of additional unemployment benefits associated with a higher education level over the course of a working-age life and received during periods of unemployment.

Methodology

The general approach

This indicator estimates the financial returns on investment in education from the age of entry into further education to a theoretical age of retirement (64 years old). Returns to education are studied purely from the perspective of financial investment that weighs the costs and benefits of the investment.

Two periods are considered (Diagram 1):

- time spent in school during which the private individual and the government pay the cost of education
- time spent in the labour market during which the individual and the government receive the added payments associated with further education.

Diagram 1. Financial returns on investment in education over a life-time for a representative individual
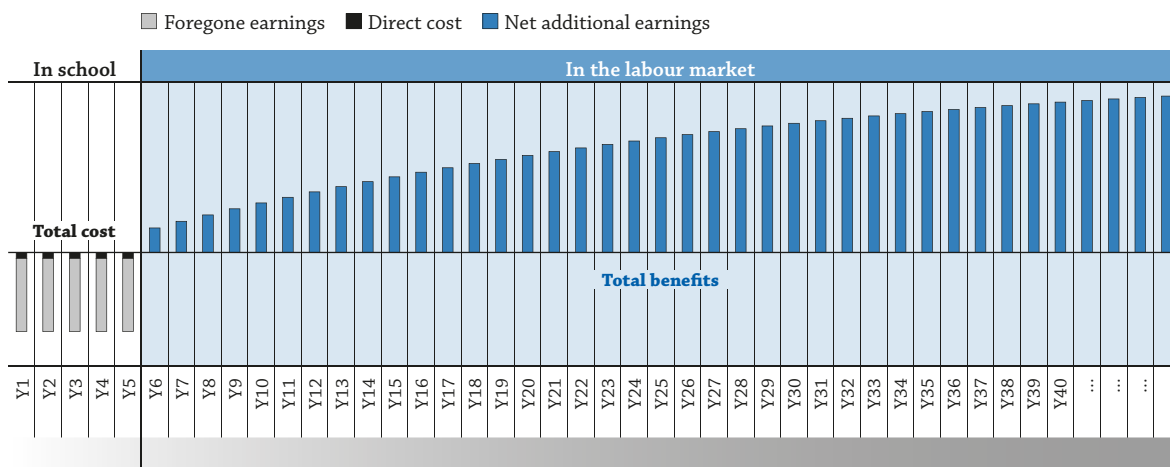
In calculating the returns to education, the approach taken here is the net present value of the investment. The net present value expresses in present value cash transfers happening at different times, to allow direct comparisons of costs and benefits. In this framework, costs and benefits during a working-age life are transferred back to the start of the investment. This is done by discounting all cash flows back to the beginning of the investment (Y1 in Figure 1) with a fixed interest rate (discount rate).

To set a value for the discount rate, long-term government bonds have been used as a benchmark. Across OECD countries, the average long-term interest rate was approximately 4.12% in 2012, which leads to an average real interest on government bonds of approximately 2%. The 2% real discount rate used in this indicator reflects the fact that calculations are made in constant prices (OECD, 2016a; OECD, 2016b).

The choice of discount rate is difficult, as it should reflect not only the overall time horizon of the investment, but also the cost of borrowing or the perceived risk of the investment. To allow for comparability and to facilitate interpretation of results, the same discount rate (2%) is applied across all OECD countries. All values presented in the tables in this indicator are in net present value equivalent, USD using purchasing power parities (PPP).

Net financial returns

The net financial return to education is the difference between the costs and benefits of an added level of education, calculated as:

> Net financial returns = total benefits – absolute value of total costs

The costs

Total costs

Investing in a higher level of education has direct costs and indirect costs. Direct costs are the upfront expenditure paid during the years of additional studies. Indirect costs for a private individual are the foregone earnings that the individual would have received if he or she had decided to work instead of pursuing an additional degree of education. Similarly, indirect costs for the public sector are the foregone tax revenues not received because the individual chose to pursue further education instead of entering the labour market.

> Private costs = direct costs + foregone earnings
> Public costs = direct costs + foregone tax revenues

Direct costs of education

The source of direct costs of education is the UOE data collection on finance (year of reference 2012 unless otherwise specified in the tables). Direct costs include all expenditures on education for all levels of government combined (public direct costs) and all education-related household expenditure (private direct costs). The direct costs of education are differentiated by fields of education.

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Private direct costs are net of loans and grants, and public loans are not included in public direct costs. The exclusion of loans from public costs may lead to an underestimation of public costs for some countries, particularly at the tertiary level. In cases where loans and grants cover more than the private direct costs, the private direct costs are set to null. Further details on student loans can be found in Indicator B5.

Please note that, because of significant changes in methodology, direct costs are not comparable between this edition of *Education at a Glance* and previous editions. For further details, please refer to Annex 3.

Foregone earnings and tax receipts

Investing in further education also has opportunity costs: income the private individual does not earn and tax payments that the government does not receive while the student is in school.

To simplify calculations, the indicator assumes that students do not have earnings or pay taxes while they are studying. To compute foregone earnings and foregone tax revenues, the indicator assumes that the foregone earnings are equal to the minimum wage. This simplification is used to allow better comparability of data across countries. The price for this assumption is an upward bias in the calculated net present value, as the potential earnings of many young people are likely to be higher than the minimum wage.

The benefits

Total benefits

The benefits of investing in education are the additional income associated with a higher level of education, given the probability of successfully finding a job. For the private individual, this additional income is the additional net earnings expected from an additional level of education, given that the individual successfully enters the labour market. Public benefits are constructed to mirror private benefits. Public benefits are the sum of added tax revenues that accrue to the government from an individual with a higher level of education, provided that the individual successfully enters the labour market.

For *j*, the highest level of educational attainment, and *j-1*, a lower level of attainment, total public and private benefits can be written as:

$Total\ private\ benefits_j = \{Expected\ net\ earnings\ at\ level\ _j\} - \{Expected\ net\ earnings\ at\ level\ _{j-1}\}$

$\quad = \{(1\text{-}Unemployment\ rate)_j\ ^*(Net\ earnings)_j + (Unemployment\ rate)_j\ ^*(Net\ unemployment\ benefits)_j\}$

$\quad - \{(1\text{-}Unemployment\ rate)_{j-1}\ ^*(Net\ earnings)_{j-1} + (Unemployment\ rate)_{j-1}\ ^*(Net\ unemployment\ benefits)_{j-1}\}$

$Total\ public\ benefits_j = \{Expected\ tax\ receipts\ at\ level\ _j\} - \{Expected\ tax\ receipts\ at\ level\ _{j-1}\}$

$\quad = \{(1\text{-}Unemployment\ rate)_j\ ^*(tax\ receipt)_j - (Unemployment\ rate)_j\ ^*(Net\ unemployment\ benefits)\}$

$\quad - \{(1 - unemployment\ rate)_{j-1}\ ^*(tax\ receipt)_{j-1} - (Unemployment\ rate)_{j-1}\ ^*(Net\ unemployment\ benefits)_{j-1}\}$

Decomposition of net earnings and tax receipt effects

This indicator also presents the decomposition of net earnings and tax revenue effects, based on additional income associated with a higher level of attainment. These elements help to explain the differences in total benefits between countries, as tax levels and benefits levels can create a wedge between additional gross earnings associated with a higher level of education and net earnings.

- Gross earnings effect is the discounted sum of the additional gross earnings level associated with a higher level of educational attainment. The data are from the OECD Network on Labour Market and Social Outcomes earnings data collection. Earnings are age-, gender- and attainment level-specific.

- The income tax effect is the discounted sum of the additional amount of income tax paid by the individual and received by the government for a higher level of education. Income tax data are computed using the OECD *Taxing Wages* model, which determines the level of taxes based on a given level of income. This model computes the level of the tax wedge on income for several household composition scenarios. For this indicator, a single worker with no children is used. For country-specific details on income tax in this model, see *Taxing Wages 2016* (OECD, 2016c).

- The social contribution effect is the discounted sum of the additional amount of employee social contributions paid by the individual and received by the government for a higher level of attainment. Employee social contributions are computed using the OECD *Taxing Wages* model's scenario of a single worker with no children, aged 40. For country-specific details on employee social contributions in this model, again see *Taxing Wages 2016* (OECD, 2016c).

- The social transfers effect is the discounted sum of the additional amount of social transfers paid to individuals by the government for a higher level of attainment. Social transfers correspond to the sum of social assistance and housing benefits paid by the government to individuals. Social transfers are computed using the OECD Tax-Benefit model, under the assumption of a single worker with no children, aged 40. For country-specific details on social transfers in the Tax-Benefit model, see OECD Benefits and Wages country-specific information, available on line at www.oecd.org/els/soc/benefits-and-wages-country-specific-information.htm.

- The unemployment benefit effect is the discounted sum of additional unemployment benefits associated with a higher education level over the course of a working-age life and received during periods of unemployment. Unemployment benefit effect looks at the difference between the unemployment benefits of an individual with a higher level of education and the net earnings of an individual with a lower level of education. Unemployment benefits are computed using the OECD Tax-Benefit model, under the assumption of a single worker with no children, aged 40. Individuals are considered eligible for full unemployment benefits during unemployment. For country-specific details on unemployment benefits in the Tax-Benefit model, again see OECD Benefits and Wages country-specific information, available on line at www.oecd.org/els/soc/benefits-and-wages-country-specific-information.htm.

Please note that, because of significant changes in methodology, earnings benefit decomposition is not comparable between this edition of *Education at a Glance* and previous editions. For further details, please refer to Annex 3.

Methodological caveats

To allow for better comparability across countries, the model relies on some assumptions and simplifications. A list of the main assumptions and model limitations is available on line in Annex 3.

In addition, the data reported are accounting-based values only. The results probably 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 stream of earnings derived from average earnings during a working-age life.

The approach used here estimates future earnings for adults 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.

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 adults typically have better labour market outcomes, the value of education generally increases in times of slow economic growth.

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

For further information on methodology, see Annex 3.

Note regarding data from Israel

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

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Indicator A7 Tables

StatLink ⎙ http://dx.doi.org/10.1787/888933397224

Table A7.1a	**Private costs and benefits for a man attaining upper secondary or post-secondary non-tertiary education (2012)**
Table A7.1b	**Private costs and benefits for a woman attaining upper secondary or post-secondary non-tertiary education (2012)**
Table A7.2a	**Public costs and benefits for a man attaining upper secondary or post-secondary non-tertiary education (2012)**
Table A7.2b	**Public costs and benefits for a woman attaining upper secondary or post-secondary non-tertiary education (2012)**
Table A7.3a	**Private costs and benefits for a man attaining tertiary education (2012)**
Table A7.3b	**Private costs and benefits for a woman attaining tertiary education (2012)**
Table A7.4a	**Public costs and benefits for a man attaining tertiary education (2012)**
Table A7.4b	**Public costs and benefits for a woman attaining tertiary education (2012)**

Cut-off date for the data: 20 July 2016. Any updates on data can be found on line at: http://dx.doi.org/10.1787/eag-data-en

Table A7.1a. **Private costs and benefits for a man attaining upper secondary or post-secondary non-tertiary education (2012)**

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

	Direct costs	Foregone earnings	Total costs	Earnings benefits decomposition (taking into account the unemployment effect)				Unemployment benefits effect	Total benefits	Net financial returns	Internal rate of return
				Gross earnings benefits	Income tax effect	Social contribution effect	Transfers effect				
	(1)	(2)	(3)=(1)+(2)	(4)	(5)	(6)	(7)	(8)	(9)=(4)+(5) +(6)+(7)+(8)	(10)=(9)+(3)	(11)
Australia	- 3 000	- 29 100	**- 32 100**	180 000	- 62 000	0	- 900	31 600	**148 700**	**116 600**	16%
Austria[1]	0	- 47 200	**- 47 200**	269 600	- 68 200	- 51 300	- 2 400	34 900	**182 600**	**135 400**	10%
Belgium	m	m	**m**	m	m	m	m	m	**m**	**m**	m
Canada[2]	- 1 300	- 32 900	**- 34 200**	181 800	- 47 200	- 12 800	0	36 600	**158 400**	**124 200**	13%
Chile[3]	- 3 700	- 19 000	**- 22 700**	163 800	- 5 300	- 27 800	- 1 500	12 300	**141 500**	**118 800**	13%
Czech Republic[3]	- 1 900	- 17 900	**- 19 800**	91 100	- 18 300	- 10 000	- 6 500	41 700	**98 000**	**78 200**	13%
Denmark	0	- 36 200	**- 36 200**	237 700	- 97 400	0	- 15 600	25 800	**150 500**	**114 300**	13%
Estonia	0	- 11 400	**- 11 400**	44 100	- 9 000	- 1 200	0	40 800	**74 700**	**63 300**	16%
Finland	0	- 34 000	**- 34 000**	87 900	- 28 700	- 7 000	- 4 000	19 200	**67 400**	**33 400**	6%
France	m	m	**m**	m	m	m	m	m	**m**	**m**	m
Germany	m	m	**m**	m	m	m	m	m	**m**	**m**	m
Greece	m	m	**m**	m	m	m	m	m	**m**	**m**	m
Hungary	- 1 200	- 15 300	**- 16 500**	69 000	- 11 000	- 12 800	0	29 600	**74 800**	**58 300**	12%
Iceland	m	m	**m**	m	m	m	m	m	**m**	**m**	m
Ireland	m	m	**m**	m	m	m	m	m	**m**	**m**	m
Israel	- 3 700	- 25 200	**- 28 900**	205 400	- 32 100	- 23 900	0	35 500	**184 900**	**156 000**	12%
Italy[3]	- 7 500	- 35 100	**- 42 600**	206 300	- 65 200	- 19 600	0	24 800	**146 300**	**103 700**	7%
Japan	- 12 000	- 51 700	**- 63 700**	237 400	- 25 300	- 32 500	- 4 400	11 200	**186 400**	**122 700**	7%
Korea	m	m	**m**	m	m	m	m	m	**m**	**m**	m
Latvia	m	m	**m**	m	m	m	m	m	**m**	**m**	m
Luxembourg	- 2 000	- 65 000	**- 67 000**	360 000	- 103 900	- 44 800	- 10 200	24 700	**225 800**	**158 800**	9%
Mexico	m	m	**m**	m	m	m	m	m	**m**	**m**	m
Netherlands[1]	- 1 100	- 51 800	**- 52 900**	185 300	- 64 900	- 10 900	0	15 800	**125 300**	**72 400**	6%
New Zealand	- 5 100	- 36 000	**- 41 100**	168 500	- 47 000	0	- 600	26 200	**147 100**	**106 000**	10%
Norway[1]	0	- 40 700	**- 40 700**	271 700	- 76 700	- 21 200	- 100	31 500	**205 200**	**164 500**	15%
Poland	- 4 600	- 17 100	**- 21 700**	58 100	- 5 100	- 10 400	0	28 900	**71 500**	**49 800**	9%
Portugal[1]	0	- 21 200	**- 21 200**	204 500	- 46 400	- 22 500	0	31 100	**166 700**	**145 500**	12%
Slovak Republic	- 2 500	- 9 000	**- 11 500**	55 700	- 9 200	- 7 500	0	97 400	**136 400**	**124 900**	26%
Slovenia	- 700	- 35 800	**- 36 500**	103 800	- 19 500	- 22 900	- 200	18 600	**79 800**	**43 300**	6%
Spain	- 2 100	- 9 900	**- 12 000**	89 700	- 23 800	- 5 700	0	64 100	**124 300**	**112 300**	16%
Sweden	m	m	**m**	m	m	m	m	m	**m**	**m**	m
Switzerland	m	m	**m**	m	m	m	m	m	**m**	**m**	m
Turkey	m	m	**m**	m	m	m	m	m	**m**	**m**	m
United Kingdom	m	m	**m**	m	m	m	m	m	**m**	**m**	m
United States	- 3 500	- 27 800	**- 31 300**	330 100	- 75 400	- 18 600	- 2 700	65 600	**299 000**	**267 700**	17%
OECD average	- 2 500	- 30 400	**- 32 900**	172 800	- 42 800	- 16 500	- 2 200	34 000	**145 300**	**112 400**	12%
EU22 average	- 1 700	- 29 100	**- 30 800**	147 300	- 40 800	- 16 200	- 2 800	35 500	**123 000**	**92 200**	11%

Notes: Values are based on the difference between men who attained upper secondary or post-secondary non-tertiary education compared with those who have not attained that level of education. Values have been rounded up to the nearest hundred.
1. Year of reference 2010.
2. Year of reference for direct costs is 2011.
3. Year of reference 2011.
Source: OECD. See Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.
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Table A7.1b. **Private costs and benefits for a woman attaining upper secondary or post-secondary non-tertiary education (2012)**

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

| | Direct costs | Foregone earnings | Total costs | Earnings benefits decomposition (taking into account the unemployment effect) | | | | Unemploy-ment benefits effect | Total benefits | Net financial returns | Internal rate of return |
| | | | | Gross earnings benefits | Income tax effect | Social contribution effect | Transfers effect | | | | |
	(1)	(2)	(3)=(1)+(2)	(4)	(5)	(6)	(7)	(8)	(9)=(4)+(5) +(6)+(7)+(8)	(10)=(9)+(3)	(11)
Australia	- 3 000	- 28 300	**- 31 300**	102 500	- 25 400	0	- 14 900	21 000	**83 200**	51 900	9%
Austria[1]	0	- 45 500	**- 45 500**	187 000	- 30 200	- 38 200	- 20 500	11 300	**109 400**	63 900	6%
Belgium	m	m	**m**	m	m	m	m	m	**m**	m	m
Canada[2]	- 1 300	- 33 500	**- 34 800**	130 500	- 26 600	- 11 500	0	28 200	**120 600**	85 800	10%
Chile[3]	- 3 700	- 14 400	**- 18 100**	92 500	- 1 600	- 18 100	- 1 100	16 600	**88 300**	70 200	10%
Czech Republic[3]	- 1 900	- 19 700	**- 21 600**	78 300	- 15 700	- 8 600	- 15 700	30 200	**68 500**	46 900	9%
Denmark	0	- 36 700	**- 36 700**	174 200	- 70 100	0	0	16 900	**121 000**	84 300	10%
Estonia	0	- 10 900	**- 10 900**	21 900	- 4 500	- 600	0	18 100	**34 900**	24 000	14%
Finland	0	- 34 700	**- 34 700**	64 000	- 14 800	- 5 100	- 15 500	16 800	**45 400**	10 700	3%
France	m	m	**m**	m	m	m	m	m	**m**	m	m
Germany	m	m	**m**	m	m	m	m	m	**m**	m	m
Greece	m	m	**m**	m	m	m	m	m	**m**	m	m
Hungary	- 1 200	- 14 600	**- 15 800**	59 000	- 9 400	- 10 900	0	28 900	**67 600**	51 800	10%
Iceland	m	m	**m**	m	m	m	m	m	**m**	m	m
Ireland	m	m	**m**	m	m	m	m	m	**m**	m	m
Israel	- 3 700	- 25 800	**- 29 500**	103 500	- 4 200	- 5 400	0	24 400	**118 300**	88 800	9%
Italy[3]	- 7 500	- 30 600	**- 38 100**	144 400	- 42 900	- 13 700	0	21 300	**109 100**	71 000	6%
Japan	- 12 000	- 51 400	**- 63 400**	126 200	- 11 000	- 17 300	- 88 500	500	**9 900**	- 53 500	-5%
Korea	m	m	**m**	m	m	m	m	m	**m**	m	m
Latvia	m	m	**m**	m	m	m	m	m	**m**	m	m
Luxembourg	- 2 000	- 64 600	**- 66 600**	312 500	- 58 900	- 38 900	- 42 000	16 200	**188 900**	122 300	6%
Mexico	m	m	**m**	m	m	m	m	m	**m**	m	m
Netherlands[1]	- 1 100	- 51 600	**- 52 700**	193 400	- 44 700	- 37 000	- 6 600	11 200	**116 300**	63 600	6%
New Zealand	- 5 100	- 34 700	**- 39 800**	85 500	- 14 500	0	- 5 700	13 800	**79 100**	39 300	5%
Norway[1]	0	- 41 500	**- 41 500**	185 900	- 48 400	- 14 500	- 9 100	10 700	**124 600**	83 100	8%
Poland	- 4 600	- 15 100	**- 19 700**	56 300	- 5 000	- 10 000	0	20 800	**62 100**	42 400	7%
Portugal[1]	0	- 20 500	**- 20 500**	135 900	- 23 600	- 15 000	0	26 000	**123 300**	102 800	10%
Slovak Republic	- 2 500	- 8 000	**- 10 500**	38 700	- 6 400	- 5 200	0	67 700	**94 800**	84 300	21%
Slovenia	- 700	- 35 600	**- 36 300**	100 400	- 20 800	- 22 200	- 9 600	24 100	**71 900**	35 600	5%
Spain	- 2 100	- 9 000	**- 11 100**	67 500	- 12 900	- 4 300	0	55 100	**105 400**	94 300	12%
Sweden	m	m	**m**	m	m	m	m	m	**m**	m	m
Switzerland	m	m	**m**	m	m	m	m	m	**m**	m	m
Turkey	m	m	**m**	m	m	m	m	m	**m**	m	m
United Kingdom	m	m	**m**	m	m	m	m	m	**m**	m	m
United States	- 3 500	- 28 000	**- 31 500**	205 700	- 43 400	- 11 600	- 10 300	47 200	**187 600**	156 100	13%
OECD average	- 2 500	- 29 800	**- 32 300**	121 200	- 24 300	- 13 100	- 10 900	24 000	**96 900**	64 600	8%
EU22 average	- 1 700	- 28 400	**- 30 100**	116 700	- 25 700	- 15 000	- 7 900	26 000	**94 100**	64 000	9%

Notes: Values are based on the difference between women who attained upper secondary or post-secondary non-tertiary education compared with those who have not attained that level of education. Values have been rounded up to the nearest hundred.
1. Year of reference 2010.
2. Year of reference for direct costs is 2011.
3. Year of reference 2011.
Source: OECD. See Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.
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**Table A7.2a. Public costs and benefits for a man attaining upper secondary
or post-secondary non-tertiary education (2012)**

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

| | Direct costs | Foregone taxes on earnings | Total costs | Earnings benefits decomposition (taking into account the unemployment effect) | | | Unemploy-ment benefits effect | Total benefits | Net financial returns | Internal rate of return |
| | | | | Income tax effect | Social contribution effect | Transfers effect | | | | |
	(1)	(2)	(3)=(1)+(2)	(4)	(5)	(6)	(7)	(8)=(4)+(5) +(6)+(7)	(9)=(8)+(3)	(10)
Australia	- 16 200	- 3 100	**- 19 300**	62 000	0	900	25 600	**88 500**	**69 200**	15%
Austria[1]	- 45 800	- 9 100	**- 54 900**	68 200	51 300	2 400	46 600	**168 500**	**113 600**	8%
Belgium	m	m	**m**	m	m	m	m	**m**	**m**	m
Canada[2]	- 30 000	- 3 300	**- 33 300**	47 200	12 800	0	31 800	**91 800**	**58 500**	8%
Chile[3]	- 12 800	200	**- 12 600**	5 300	27 800	1 500	3 200	**37 800**	**25 200**	8%
Czech Republic[3]	- 21 300	3 500	**- 17 800**	18 300	10 000	6 500	88 100	**122 900**	**105 100**	20%
Denmark	- 36 700	- 14 400	**- 51 100**	97 400	0	15 600	49 900	**162 900**	**111 800**	9%
Estonia	- 21 800	- 1 800	**- 23 600**	9 000	1 200	0	44 000	**54 200**	**30 600**	7%
Finland	- 26 900	- 100	**- 27 000**	28 700	7 000	4 000	39 000	**78 700**	**51 700**	12%
France	m	m	**m**	m	m	m	m	**m**	**m**	m
Germany	m	m	**m**	m	m	m	m	**m**	**m**	m
Greece	m	m	**m**	m	m	m	m	**m**	**m**	m
Hungary	- 16 400	- 3 400	**- 19 800**	11 000	12 800	0	49 000	**72 800**	**53 000**	11%
Iceland	m	m	**m**	m	m	m	m	**m**	**m**	m
Ireland	m	m	**m**	m	m	m	m	**m**	**m**	m
Israel	- 14 700	- 1 900	**- 16 600**	32 100	23 900	0	21 100	**77 100**	**60 500**	11%
Italy[3]	- 33 400	- 5 600	**- 39 000**	65 200	19 600	0	29 600	**114 400**	**75 400**	6%
Japan	- 25 700	11 200	**- 14 500**	25 300	32 500	4 400	1 700	**63 900**	**49 400**	11%
Korea	m	m	**m**	m	m	m	m	**m**	**m**	m
Latvia	m	m	**m**	m	m	m	m	**m**	**m**	m
Luxembourg	- 73 500	- 6 000	**- 79 500**	103 900	44 800	10 200	35 700	**194 600**	**115 100**	7%
Mexico	m	m	**m**	m	m	m	m	**m**	**m**	m
Netherlands[1]	- 29 100	- 3 100	**- 32 200**	64 900	10 900	0	30 800	**106 600**	**74 400**	10%
New Zealand	- 22 100	- 3 800	**- 25 900**	47 000	0	600	18 500	**66 100**	**40 200**	8%
Norway[1]	- 48 500	- 10 100	**- 58 600**	76 700	21 200	100	41 200	**139 200**	**80 600**	7%
Poland	- 19 300	- 8 800	**- 28 100**	5 100	10 400	0	36 000	**51 500**	**23 400**	5%
Portugal[1]	- 31 100	- 2 700	**- 33 800**	46 400	22 500	0	10 200	**79 100**	**45 300**	5%
Slovak Republic	- 19 000	- 1 300	**- 20 300**	9 200	7 500	0	88 800	**105 500**	**85 200**	13%
Slovenia	- 27 500	- 4 200	**- 31 700**	19 500	22 900	200	51 400	**94 000**	**62 300**	9%
Spain	- 16 000	- 600	**- 16 600**	23 800	5 700	0	46 700	**76 200**	**59 600**	8%
Sweden	m	m	**m**	m	m	m	m	**m**	**m**	m
Switzerland	- 40 600	- 15 100	**- 55 700**	47 800	18 100	0	57 000	**122 900**	**67 200**	7%
Turkey	m	m	**m**	m	m	m	m	**m**	**m**	m
United Kingdom	m	m	**m**	m	m	m	m	**m**	**m**	m
United States	- 34 100	- 3 500	**- 37 600**	75 400	18 600	2 700	30 900	**127 600**	**90 000**	8%
OECD average	- 28 800	- 3 800	**- 32 600**	43 000	16 600	2 100	38 100	**99 800**	**67 200**	9%
EU22 average	- 29 800	- 4 100	**- 33 900**	40 800	16 200	2 800	46 100	**105 900**	**72 000**	9%

Notes: Values are based on the difference between men who attained upper secondary or post-secondary non-tertiary education compared with those who have not attained that level of education. Values have been rounded up to the nearest hundred.
1. Year of reference 2010.
2. Year of reference for direct costs is 2011.
3. Year of reference 2011.
Source: OECD. See Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.
StatLink http://dx.doi.org/10.1787/888933397258

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Table A7.2b. Public costs and benefits for a woman attaining upper secondary or post-secondary non-tertiary education (2012)

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

	Direct costs	Foregone taxes on earnings	Total costs	Earnings benefits decomposition (taking into account the unemployment effect)			Unemploy-ment benefits effect	Total benefits	Net financial returns	Internal rate of return
				Income tax effect	Social contribution effect	Transfers effect				
	(1)	(2)	(3)=(1)+(2)	(4)	(5)	(6)	(7)	(8)=(4)+(5)+(6)+(7)	(9)=(8)+(3)	(10)
OECD										
Australia	- 16 200	- 3 000	**- 19 200**	25 400	0	14 900	24 600	**64 900**	**45 700**	19%
Austria[1]	- 45 800	- 8 700	**- 54 500**	30 200	38 200	20 500	25 600	**114 500**	**60 000**	7%
Belgium	m	m	**m**	m	m	m	m	**m**	**m**	m
Canada[2]	- 30 000	- 3 300	**- 33 300**	26 600	11 500	0	19 200	**57 300**	**24 000**	5%
Chile[3]	- 12 800	200	**- 12 600**	1 600	18 100	1 100	4 700	**25 500**	**12 900**	5%
Czech Republic[3]	- 21 300	3 800	**- 17 500**	15 700	8 600	15 700	65 000	**105 000**	**87 500**	17%
Denmark	- 36 700	- 14 600	**- 51 300**	70 100	0	0	35 300	**105 400**	**54 100**	6%
Estonia	- 21 800	- 1 700	**- 23 500**	4 500	600	0	15 700	**20 800**	**- 2 700**	1%
Finland	- 26 900	- 100	**- 27 000**	14 800	5 100	15 500	54 800	**90 200**	**63 200**	14%
France	m	m	**m**	m	m	m	m	**m**	**m**	m
Germany	m	m	**m**	m	m	m	m	**m**	**m**	m
Greece	m	m	**m**	m	m	m	m	**m**	**m**	m
Hungary	- 16 400	- 3 300	**- 19 700**	9 400	10 900	0	46 600	**66 900**	**47 200**	10%
Iceland	m	m	**m**	m	m	m	m	**m**	**m**	m
Ireland	m	m	**m**	m	m	m	m	**m**	**m**	m
Israel	- 14 700	- 2 000	**- 16 700**	4 200	5 400	0	7 200	**16 800**	**100**	2%
Italy[3]	- 33 400	- 4 900	**- 38 300**	42 900	13 700	0	28 400	**85 000**	**46 700**	5%
Japan	- 25 700	11 100	**- 14 600**	11 000	17 300	88 500	6 200	**123 000**	**108 400**	23%
Korea	m	m	**m**	m	m	m	m	**m**	**m**	m
Latvia	m	m	**m**	m	m	m	m	**m**	**m**	m
Luxembourg	- 73 500	- 6 000	**- 79 500**	58 900	38 900	42 000	39 500	**179 300**	**99 800**	8%
Mexico	m	m	**m**	m	m	m	m	**m**	**m**	m
Netherlands[1]	- 29 100	- 3 100	**- 32 200**	44 700	37 000	6 600	29 900	**118 200**	**86 000**	12%
New Zealand	- 22 100	- 3 600	**- 25 700**	14 500	0	5 700	13 100	**33 300**	**7 600**	4%
Norway[1]	- 48 500	- 10 300	**- 58 800**	48 400	14 500	9 100	23 900	**95 900**	**37 100**	5%
Poland	- 19 300	- 7 800	**- 27 100**	5 000	10 000	0	35 600	**50 600**	**23 500**	5%
Portugal[1]	- 31 100	- 2 600	**- 33 700**	23 600	15 000	0	7 500	**46 100**	**12 400**	3%
Slovak Republic	- 19 000	- 1 100	**- 20 100**	6 400	5 200	0	54 500	**66 100**	**46 000**	10%
Slovenia	- 27 500	- 4 200	**- 31 700**	20 800	22 200	9 600	67 100	**119 700**	**88 000**	11%
Spain	- 16 000	- 500	**- 16 500**	12 900	4 300	0	23 800	**41 000**	**24 500**	7%
Sweden	m	m	**m**	m	m	m	m	**m**	**m**	m
Switzerland	- 40 600	- 17 400	**- 58 000**	21 500	12 300	0	37 400	**71 200**	**13 200**	3%
Turkey	m	m	**m**	m	m	m	m	**m**	**m**	m
United Kingdom	m	m	**m**	m	m	m	m	**m**	**m**	m
United States	- 34 100	- 3 600	**- 37 700**	43 400	11 600	10 300	35 300	**100 600**	**62 900**	9%
OECD average	- 28 800	- 3 800	**- 32 600**	24 200	13 100	10 400	30 500	**78 200**	**45 600**	8%
EU22 average	- 29 800	- 3 900	**- 33 700**	25 700	15 000	7 900	37 800	**86 400**	**52 700**	8%

Notes: Values are based on the difference between women who attained upper secondary or post-secondary non-tertiary education compared with those who have not attained that level of education. Values have been rounded up to the nearest hundred.
1. Year of reference 2010.
2. Year of reference for direct costs is 2011
3. Year of reference 2011.
Source: OECD. See Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.
StatLink ⟶ http://dx.doi.org/10.1787/888933397265

Table A7.3a.   **Private costs and benefits for a man attaining tertiary education (2012)**

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

	Direct costs	Foregone earnings	Total costs	Earnings benefits decomposition (taking into account the unemployment effect)				Unemployment benefits effect	Total benefits	Net financial returns	Internal rate of return
				Gross earnings benefits	Income tax effect	Social contribution effect	Transfers effect				
	(1)	(2)	(3)=(1)+(2)	(4)	(5)	(6)	(7)	(8)	(9)=(4)+(5) +(6)+(7)+(8)	(10)=(9)+(3)	(11)
Australia	- 21 200	- 54 600	**- 75 800**	423 000	- 153 200	0	0	15 600	**285 400**	**209 600**	9%
Austria[1]	0	- 58 400	**- 58 400**	558 900	- 182 100	- 70 000	0	17 800	**324 600**	**266 200**	11%
Belgium	m	m	**m**	m	m	m	m	m	**m**	**m**	m
Canada[2]	- 17 300	- 38 800	**- 56 100**	300 300	- 91 900	- 4 600	0	21 700	**225 500**	**169 400**	9%
Chile[3]	- 38 100	- 33 900	**- 72 000**	701 400	- 64 600	- 76 400	- 1 200	27 800	**587 000**	**515 000**	15%
Czech Republic[3]	- 2 900	- 27 200	**- 30 100**	454 700	- 91 400	- 50 000	0	20 000	**333 300**	**303 200**	22%
Denmark	0	- 54 600	**- 54 600**	394 000	- 201 300	0	- 9 000	17 000	**200 700**	**146 100**	9%
Estonia	- 3 200	- 22 100	**- 25 300**	165 700	- 33 800	- 4 600	0	24 900	**152 200**	**126 900**	16%
Finland	0	- 64 600	**- 64 600**	411 500	- 156 000	- 32 000	0	29 600	**253 100**	**188 500**	10%
France	m	m	**m**	m	m	m	m	m	**m**	**m**	m
Germany	m	m	**m**	m	m	m	m	m	**m**	**m**	m
Greece	m	m	**m**	m	m	m	m	m	**m**	**m**	m
Hungary	- 12 400	- 19 000	**- 31 400**	528 600	- 106 500	- 97 800	0	45 400	**369 700**	**338 300**	24%
Iceland	m	m	**m**	m	m	m	m	m	**m**	**m**	m
Ireland	m	m	**m**	m	m	m	m	m	**m**	**m**	m
Israel	- 8 400	- 31 200	**- 39 600**	342 900	- 75 500	- 41 200	0	22 400	**248 600**	**209 000**	14%
Italy[3]	- 8 500	- 42 000	**- 50 500**	426 000	- 163 700	- 42 300	0	13 200	**233 200**	**182 700**	9%
Japan	- 35 300	- 75 700	**- 111 000**	459 500	- 72 800	- 60 900	0	29 200	**355 000**	**244 000**	8%
Korea	m	m	**m**	m	m	m	m	m	**m**	**m**	m
Latvia	m	m	**m**	m	m	m	m	m	**m**	**m**	m
Luxembourg	0	- 63 000	**- 63 000**	952 200	- 340 200	- 115 600	0	24 500	**520 900**	**457 900**	16%
Mexico	m	m	**m**	m	m	m	m	m	**m**	**m**	m
Netherlands[1]	- 7 700	- 94 500	**- 102 200**	579 300	- 257 200	- 1 200	0	15 800	**336 700**	**234 500**	8%
New Zealand	- 12 200	- 54 000	**- 66 200**	226 300	- 69 600	0	0	12 800	**169 500**	**103 300**	7%
Norway[1]	0	- 51 200	**- 51 200**	395 000	- 142 500	- 30 800	0	10 500	**232 200**	**181 000**	9%
Poland	- 3 200	- 17 700	**- 20 900**	488 100	- 43 200	- 87 000	0	43 500	**401 400**	**380 500**	30%
Portugal[1]	- 4 200	- 25 100	**- 29 300**	460 800	- 140 700	- 50 700	0	37 300	**306 700**	**277 400**	19%
Slovak Republic	- 4 400	- 17 100	**- 21 500**	339 300	- 56 300	- 43 200	0	48 100	**287 900**	**266 400**	23%
Slovenia	0	- 37 900	**- 37 900**	517 100	- 135 300	- 114 300	0	27 800	**295 300**	**257 400**	15%
Spain	- 13 400	- 29 800	**- 43 200**	236 600	- 67 000	- 14 300	0	60 600	**215 900**	**172 700**	10%
Sweden	m	m	**m**	m	m	m	m	m	**m**	**m**	m
Switzerland	m	m	**m**	m	m	m	m	m	**m**	**m**	m
Turkey	m	m	**m**	m	m	m	m	m	**m**	**m**	m
United Kingdom	m	m	**m**	m	m	m	m	m	**m**	**m**	m
United States	- 38 200	- 48 100	**- 86 300**	734 900	- 224 100	- 41 500	0	74 800	**544 100**	**457 800**	15%
OECD average	- 10 500	- 43 700	**- 54 200**	458 900	- 130 400	- 44 500	- 500	29 100	**312 600**	**258 400**	14%
EU22 average	- 4 300	- 40 900	**- 45 200**	465 200	- 141 100	- 51 600	- 600	30 400	**302 300**	**257 100**	16%

Notes: Values are based on the difference between men who attained tertiary education compared with those who have attained upper secondary or post-secondary non-tertiary education. Values have been rounded up to the nearest hundred.
1. Year of reference 2010.
2. Year of reference for direct costs is 2011.
3. Year of reference 2011.
Source: OECD. See Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.
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Table A7.3b. **Private costs and benefits for a woman attaining tertiary education (2012)**

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

| | Direct costs | Foregone earnings | Total costs | Earnings benefits decomposition (taking into account the unemployment effect) | | | | Unemploy-ment benefits effect | Total benefits | Net financial returns | Internal rate of return |
| | | | | Gross earnings benefits | Income tax effect | Social contribution effect | Transfers effect | | | | |
	(1)	(2)	(3)=(1)+(2)	(4)	(5)	(6)	(7)	(8)	(9)=(4)+(5) +(6)+(7)+(8)	(10)=(9)-(3)	(11)
Australia	- 21 200	- 55 500	**- 76 700**	321 600	- 113 600	0	0	15 800	**223 800**	147 100	9%
Austria[1]	0	- 58 700	**- 58 700**	362 500	- 100 100	- 68 300	0	11 100	**205 200**	146 500	8%
Belgium	m	m	**m**	m	m	m	m	m	**m**	m	m
Canada[2]	- 17 300	- 40 000	**- 57 300**	299 600	- 63 800	- 23 800	0	26 500	**238 500**	181 200	12%
Chile[3]	- 38 100	- 32 100	**- 70 200**	411 100	- 23 100	- 67 200	- 1 200	36 600	**356 200**	286 000	12%
Czech Republic[3]	- 2 900	- 26 700	**- 29 600**	255 100	- 51 300	- 28 100	- 3 200	19 900	**192 400**	162 800	15%
Denmark	0	- 55 100	**- 55 100**	222 300	- 91 100	0	- 13 600	11 800	**129 400**	74 300	7%
Estonia	- 3 200	- 22 400	**- 25 600**	135 600	- 27 700	- 3 800	0	22 000	**126 100**	100 500	14%
Finland	0	- 66 600	**- 66 600**	266 800	- 88 200	- 21 500	- 4 700	16 900	**169 300**	102 700	7%
France	m	m	**m**	m	m	m	m	m	**m**	m	m
Germany	m	m	**m**	m	m	m	m	m	**m**	m	m
Greece	m	m	**m**	m	m	m	m	m	**m**	m	m
Hungary	- 12 400	- 19 100	**- 31 500**	256 700	- 48 800	- 47 500	0	22 800	**183 200**	151 700	14%
Iceland	m	m	**m**	m	m	m	m	m	**m**	m	m
Ireland	m	m	**m**	m	m	m	m	m	**m**	m	m
Israel	- 8 400	- 30 200	**- 38 600**	263 300	- 39 500	- 30 100	0	26 600	**220 300**	181 700	13%
Italy[3]	- 8 500	- 39 500	**- 48 000**	252 900	- 83 600	- 24 000	0	13 900	**159 200**	111 200	8%
Japan	- 35 300	- 75 400	**- 110 700**	267 300	- 22 600	- 36 600	- 72 700	8 900	**144 300**	33 600	3%
Korea	m	m	**m**	m	m	m	m	m	**m**	m	m
Latvia	m	m	**m**	m	m	m	m	m	**m**	m	m
Luxembourg	0	- 63 400	**- 63 400**	609 900	- 197 900	- 75 900	0	38 100	**374 200**	310 800	17%
Mexico	m	m	**m**	m	m	m	m	m	**m**	m	m
Netherlands[1]	- 7 700	- 94 800	**- 102 500**	455 700	- 179 900	- 6 400	0	12 400	**281 800**	179 300	7%
New Zealand	- 12 200	- 52 400	**- 64 600**	172 100	- 40 100	0	- 2 000	17 300	**147 300**	82 700	7%
Norway[1]	0	- 53 000	**- 53 000**	282 100	- 79 000	- 22 000	0	4 700	**185 800**	132 800	9%
Poland	- 3 200	- 15 900	**- 19 100**	301 400	- 26 700	- 53 700	0	39 500	**260 500**	241 400	24%
Portugal[1]	- 4 200	- 24 000	**- 28 200**	347 500	- 90 000	- 38 200	0	44 900	**264 200**	236 000	19%
Slovak Republic	- 4 400	- 17 400	**- 21 800**	191 400	- 31 500	- 25 600	0	36 800	**171 100**	149 300	16%
Slovenia	0	- 37 400	**- 37 400**	393 200	- 93 200	- 86 900	0	25 900	**239 000**	201 600	13%
Spain	- 13 400	- 33 600	**- 47 000**	221 900	- 57 500	- 14 100	0	72 900	**223 200**	176 200	11%
Sweden	m	m	**m**	m	m	m	m	m	**m**	m	m
Switzerland	m	m	**m**	m	m	m	m	m	**m**	m	m
Turkey	m	m	**m**	m	m	m	m	m	**m**	m	m
United Kingdom	m	m	**m**	m	m	m	m	m	**m**	m	m
United States	- 38 200	- 50 100	**- 88 300**	485 000	- 118 400	- 27 400	0	47 000	**386 200**	297 900	12%
OECD average	- 10 500	- 43 800	**- 54 300**	308 000	- 75 800	- 31 900	- 4 400	26 000	**221 900**	167 600	12%
EU22 average	- 4 300	- 41 000	**- 45 300**	305 200	- 83 400	- 35 300	- 1 500	27 800	**212 800**	167 500	13%

Notes: Values are based on the difference between women who attained tertiary education compared with those who have attained upper secondary or post-secondary non-tertiary education. Values have been rounded up to the nearest hundred.
1. Year of reference 2010.
2. Year of reference for direct costs is 2011
3. Year of reference 2011.
Source: OECD. See Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.
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Table A7.4a. Public costs and benefits for a man attaining tertiary education (2012)
*As compared with a man attaining upper secondary or post-secondary non-tertiary education,
in equivalent USD converted using PPPs for GDP*

	Direct costs	Foregone taxes on earnings	Total costs	Income tax effect	Social contribution effect	Transfers effect	Unemployment benefits effect	Total benefits	Net financial returns	Internal rate of return
	(1)	(2)	(3)=(1)+(2)	(4)	(5)	(6)	(7)	(8)=(4)+(5)+(6)+(7)	(9)=(8)+(3)	(10)
Australia	- 29 300	- 5 700	**- 35 000**	153 200	0	0	10 500	**163 700**	**128 700**	10%
Austria[1]	- 76 600	- 11 200	**- 87 800**	182 100	70 000	0	16 100	**268 200**	**180 400**	7%
Belgium	m	m	**m**	m	m	m	m	**m**	**m**	m
Canada[2]	- 40 900	- 3 900	**- 44 800**	91 900	4 600	0	18 000	**114 500**	**69 700**	6%
Chile[3]	- 18 100	400	**- 17 700**	64 600	76 400	1 200	7 100	**149 300**	**131 600**	16%
Czech Republic[3]	- 27 700	5 300	**- 22 400**	91 400	50 000	0	16 300	**157 700**	**135 300**	16%
Denmark	- 74 500	- 21 800	**- 96 300**	201 300	0	9 000	28 300	**238 600**	**142 300**	6%
Estonia	- 24 300	- 3 400	**- 27 700**	33 800	4 600	0	11 000	**49 400**	**21 700**	5%
Finland	- 90 200	- 200	**- 90 400**	156 000	32 000	0	31 800	**219 800**	**129 400**	7%
France	m	m	**m**	m	m	m	m	**m**	**m**	m
Germany	m	m	**m**	m	m	m	m	**m**	**m**	m
Greece	m	m	**m**	m	m	m	m	**m**	**m**	m
Hungary	- 20 500	- 4 300	**- 24 800**	106 500	97 800	0	43 800	**248 100**	**223 300**	22%
Iceland	m	m	**m**	m	m	m	m	**m**	**m**	m
Ireland	m	m	**m**	m	m	m	m	**m**	**m**	m
Israel	- 20 600	- 2 400	**- 23 000**	75 500	41 200	0	19 100	**135 800**	**112 800**	12%
Italy[3]	- 36 900	- 6 700	**- 43 600**	163 700	42 300	0	12 800	**218 800**	**175 200**	9%
Japan	- 27 500	16 400	**- 11 100**	72 800	60 900	0	19 200	**152 900**	**141 800**	21%
Korea	m	m	**m**	m	m	m	m	**m**	**m**	m
Latvia	m	m	**m**	m	m	m	m	**m**	**m**	m
Luxembourg	- 124 700	- 5 800	**- 130 500**	340 200	115 600	0	13 200	**469 000**	**338 500**	8%
Mexico	m	m	**m**	m	m	m	m	**m**	**m**	m
Netherlands[1]	- 73 000	- 5 700	**- 78 700**	257 200	1 200	0	14 300	**272 700**	**194 000**	8%
New Zealand	- 32 300	- 5 700	**- 38 000**	69 600	0	0	7 000	**76 600**	**38 600**	5%
Norway[1]	- 74 700	- 12 700	**- 87 400**	142 500	30 800	0	17 500	**190 800**	**103 400**	5%
Poland	- 22 800	- 9 100	**- 31 900**	43 200	87 000	0	26 600	**156 800**	**124 900**	12%
Portugal[1]	- 35 900	- 3 200	**- 39 100**	140 700	50 700	0	19 900	**211 300**	**172 200**	9%
Slovak Republic	- 30 800	- 2 400	**- 33 200**	56 300	43 200	0	22 800	**122 300**	**89 100**	9%
Slovenia	- 33 900	- 4 500	**- 38 400**	135 300	114 300	0	36 300	**285 900**	**247 500**	13%
Spain	- 50 500	- 1 700	**- 52 200**	67 000	14 300	0	56 900	**138 200**	**86 000**	6%
Sweden	m	m	**m**	m	m	m	m	**m**	**m**	m
Switzerland	- 90 900	- 20 000	**- 110 900**	124 200	36 600	0	7 800	**168 600**	**57 700**	4%
Turkey	m	m	**m**	m	m	m	m	**m**	**m**	m
United Kingdom	m	m	**m**	m	m	m	m	**m**	**m**	m
United States	- 58 100	- 6 100	**- 64 200**	224 100	41 500	0	62 700	**328 300**	**264 100**	12%
OECD average	- 48 500	- 5 000	**- 53 500**	130 100	44 100	400	22 600	**197 200**	**143 700**	10%
EU22 average	- 51 600	- 5 300	**- 56 900**	141 100	51 600	600	25 000	**218 300**	**161 400**	10%

Notes: Values are based on the difference between men who attained tertiary education compared with those who have attained upper secondary or post-secondary non-tertiary education. Values have been rounded up to the nearest hundred.
1. Year of reference 2010.
2. Year of reference for direct costs is 2011.
3. Year of reference 2011.
Source: OECD. See Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.
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Table A7.4b. **Public costs and benefits for a woman attaining tertiary education (2012)**
As compared with a woman attaining upper secondary or post-secondary non-tertiary education,
in equivalent USD converted using PPPs for GDP

	Direct costs	Foregone taxes on earnings	Total costs	Earnings benefits decomposition (taking into account the unemployment effect)			Unemploy-ment benefits effect	Total benefits	Net financial returns	Internal rate of return
				Income tax effect	Social contribution effect	Transfers effect				
	(1)	(2)	(3)=(1)+(2)	(4)	(5)	(6)	(7)	(8)=(4)+(5) +(6)+(7)	(9)=(8)+(3)	(10)
Australia	- 29 300	- 5 800	**- 35 100**	113 600	0	0	11 400	**125 000**	**89 900**	10%
Austria[1]	- 76 600	- 11 300	**- 87 900**	100 100	68 300	0	11 200	**179 600**	**91 700**	5%
Belgium	m	m	**m**	m	m	m	m	**m**	**m**	m
Canada[2]	- 40 900	- 4 000	**- 44 900**	63 800	23 800	0	8 800	**96 400**	**51 500**	6%
Chile[3]	- 18 100	400	**- 17 700**	23 100	67 200	1 200	10 000	**101 500**	**83 800**	13%
Czech Republic[3]	- 27 700	5 200	**- 22 500**	51 300	28 100	3 200	22 400	**105 000**	**82 500**	12%
Denmark	- 74 500	- 21 900	**- 96 400**	91 100	0	13 600	17 300	**122 000**	**25 600**	3%
Estonia	- 24 300	- 3 500	**- 27 800**	27 700	3 800	0	8 200	**39 700**	**11 900**	4%
Finland	- 90 200	- 200	**- 90 400**	88 200	21 500	4 700	22 600	**137 000**	**46 600**	4%
France	m	m	**m**	m	m	m	m	**m**	**m**	m
Germany	m	m	**m**	m	m	m	m	**m**	**m**	m
Greece	m	m	**m**	m	m	m	m	**m**	**m**	m
Hungary	- 20 500	- 4 300	**- 24 800**	48 800	47 500	0	27 800	**124 100**	**99 300**	13%
Iceland	m	m	**m**	m	m	m	m	**m**	**m**	m
Ireland	m	m	**m**	m	m	m	m	**m**	**m**	m
Israel	- 20 600	- 2 300	**- 22 900**	39 500	30 100	0	5 400	**75 000**	**52 100**	7%
Italy[3]	- 36 900	- 6 300	**- 43 200**	83 600	24 000	0	10 000	**117 600**	**74 400**	6%
Japan	- 27 500	16 300	**- 11 200**	22 600	36 600	72 700	12 700	**144 600**	**133 400**	28%
Korea	m	m	**m**	m	m	m	m	**m**	**m**	m
Latvia	m	m	**m**	m	m	m	m	**m**	**m**	m
Luxembourg	- 124 700	- 5 900	**- 130 600**	197 900	75 900	0	13 500	**287 300**	**156 700**	6%
Mexico	m	m	**m**	m	m	m	m	**m**	**m**	m
Netherlands[1]	- 73 000	- 5 700	**- 78 700**	179 900	6 400	0	6 500	**192 800**	**114 100**	7%
New Zealand	- 32 300	- 5 500	**- 37 800**	40 100	0	2 000	10 800	**52 900**	**15 100**	4%
Norway[1]	- 74 700	- 13 200	**- 87 900**	79 000	22 000	0	300	**101 300**	**13 400**	3%
Poland	- 22 800	- 8 200	**- 31 000**	26 700	53 700	0	33 100	**113 500**	**82 500**	10%
Portugal[1]	- 35 900	- 3 100	**- 39 000**	90 000	38 200	0	17 600	**145 800**	**106 800**	8%
Slovak Republic	- 30 800	- 2 400	**- 33 200**	31 500	25 600	0	21 400	**78 500**	**45 300**	6%
Slovenia	- 33 900	- 4 400	**- 38 300**	93 200	86 900	0	29 500	**209 600**	**171 300**	10%
Spain	- 50 500	- 2 000	**- 52 500**	57 500	14 100	0	40 400	**112 000**	**59 500**	5%
Sweden	m	m	**m**	m	m	m	m	**m**	**m**	m
Switzerland	- 90 900	- 20 000	**- 110 900**	70 600	29 100	0	- 900	**98 800**	**- 12 100**	1%
Turkey	m	m	**m**	m	m	m	m	**m**	**m**	m
United Kingdom	m	m	**m**	m	m	m	m	**m**	**m**	m
United States	- 58 100	- 6 400	**- 64 500**	118 400	27 400	0	31 000	**176 800**	**112 300**	8%
OECD average	- 48 500	- 5 000	**- 53 500**	75 600	31 700	4 200	16 100	**127 600**	**74 100**	8%
EU22 average	- 51 600	- 5 300	**- 56 900**	83 400	35 300	1 500	20 100	**140 300**	**83 400**	7%

Notes: Values are based on the difference between women who attained tertiary education compared with those who have attained upper secondary or post-secondary non-tertiary education. Values have been rounded up to the nearest hundred.
1. Year of reference 2010.
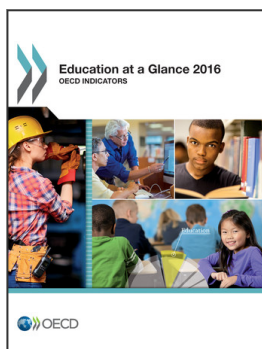2. Year of reference for direct costs is 2011
3. Year of reference 2011.
Source: OECD. See Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).
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