# WHAT ARE THE FINANCIAL INCENTIVES TO INVEST IN EDUCATION?

- Adults completing tertiary education benefit from substantial returns on investment: they are more likely to be employed and earn more than adults without tertiary education do.

- Not only does education pay off for individuals, but the public benefits of education, in greater tax revenues and social contributions from a larger proportion of tertiary-educated adults, also outweigh the cost.

- Across OECD countries, the net public return on investment for a woman with tertiary education is USD 65 500 over her lifetime – 1.2 times the public cost of investment in her education. For a man, the net public return is over USD 127 400, which is almost 2.5 times the public cost of investment in his education.

Chart A7.1. Private net financial returns for a woman attaining tertiary education (2011)

As compared with returns to upper secondary or post-secondary non-tertiary education, in equivalent USD converted using PPPs for GDP
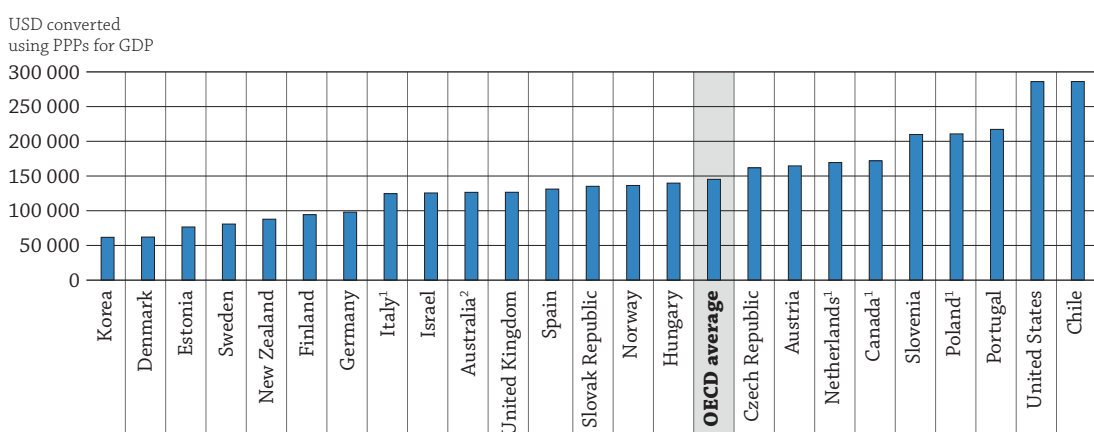
1. Canada, Italy, the Netherlands, Poland: Year of reference 2010.
2. Australia: Year of reference 2009.
Countries are ranked in ascending order of private net financial returns.
Source: OECD. Tables A7.3b and A7.4b. See Annex 3 for notes (www.oecd.org/education/education-at-a-glance- 19991487.htm).
StatLink ⟶ http://dx.doi.org/10.1787/888933283725

■ Context

Devoting time and money in education is an investment in human capital. For adults, having higher educational attainment improves chances for employment and reduces the risk of unemployment. Better opportunities in the labour market (see Indicator A5) and higher earnings (see Indicator A6) are strong incentives for adults to invest in education and to postpone consumption and earnings for future rewards. Countries, in turn, benefit 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, 2013]).

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 2011 (used in this volume), show that both private and public returns to tertiary education were higher than returns to 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 financial returns to education. These include the field of study, countries' specific economic situation, labour market context and institutional setting, as well as social and cultural factors.

■ Other findings

- On average across OECD countries, the calculated financial return to tertiary education for a single worker with no children is around twice as large as returns to such a person with upper secondary or post-secondary non-tertiary education as his or her highest level of attainment.

- Gross earnings benefits from tertiary education over the course of a lifetime are USD 477 400 for men and USD 332 600 for women across OECD countries.

- Gross earnings benefits for an adult with upper secondary or post-secondary non-tertiary degree, compared to benefits for an adult who has not attained this level of education, are particularly large in Austria, Luxembourg and the United States. In these countries, gross earnings benefits amount to more than USD 400 000 for a man and USD 250 000 for a woman over their lifetime.

- On average across the 26 OECD countries with available data, the net public return for a woman who completed upper secondary or post-secondary non-tertiary education is about USD 48 000 compared with a woman who did not complete that level of education. For a man, the net public return is USD 70 300.

- Across OECD countries, people invest around USD 55 000 to earn a tertiary degree. In the Netherlands and the United States, average investment exceeds USD 100 000 when direct and indirect costs are taken into account.

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Analysis

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. The indicator focuses on two scenarios:

- Investing in tertiary education compared to entering the labour market with an upper secondary or post-secondary non-tertiary degree; and
- 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 person (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; and
- The government (referred to here as "Public") that decides to invest in education based on the additional revenue it would receive (tax receipts) and the costs involved.

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

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

Attracted by higher earnings and employment prospects, more people than ever before are attaining upper secondary or post-secondary education and tertiary education (see Indicators A1, A5 and A6). Different financial components, such as level of household out-of-pocket spending on education, the additional earnings over the lifecourse, and the tax and benefits systems can influence someone's decision to pursue further formal education.

Net private financial returns on investment

In almost all countries with available data for upper secondary and post-secondary non-tertiary and tertiary education, financial private returns to education are higher for tertiary education than for upper secondary education. A woman can expect a net financial return on investment in upper secondary or post-secondary non-tertiary education of USD 62 000; her expected financial return on investment in tertiary education is USD 145 200 (Tables A7.1b and A7.3b).

Men can expect a higher return to investment in education than women at both the upper secondary or post-secondary non-tertiary (USD 107 100) and tertiary (USD 229 000) levels of education (Tables A7.1a and A7.3a). These results are consistent with the higher earnings and lower uemployment rates enjoyed by men (see Indicators A5 and A6).

The total private cost of education

Direct costs and foregone earnings are the two components of the total cost of education considered in the computations of this Indicator. Accounting for both the direct cost and forgone earnings, a woman invests USD 31 200 in upper secondary or post-secondary non tertiary and USD 57 200 in tertiary education (Tables A7.1b and A7.3b).

Most adults consider the direct private costs (household expenditure) of education as they decide whether or not to invest in further education. The direct cost for a person is, on average, lower for upper secondary education (USD 2 800) than for tertiary education (USD 13 200). In addition, direct private costs for tertiary education vary more across countries than costs for upper secondary non-tertiary education, ranging from less than USD 2 500 in Austria, Norway and Sweden, to more than USD 25 000 in Australia, Chile, the United Kingdom and the United States. In fact, the direct costs for tertiary education in the United States – USD 55 000 – are the highest among all OECD countries (Tables A7.1b and A7.3b).

While they are the most visible part of the total cost of education, direct costs of education represent only a small share of this cost (10% of the total cost, on average, for upper secondary non-tertiary education and 20% for tertiary education). The main costs are the foregone earnings – what a student could potentially earn if not in school. Foregone earnings vary substantially across countries, depending on the length of education, earnings levels and the difference in earnings across levels of educational attainment. In Estonia and Spain, foregone earnings from investing in upper secondary or post-secondary non-tertiary education are estimated at less than USD 15 000 for both women and men, while in Austria, Luxembourg, the Netherlands and Norway, they exceed USD 45 000 (Tables A7.1a and b).

Chart A7.2. **Private costs and benefits of education for a woman,**
by educational attainment (2011)

In equivalent USD converted using PPPs for GDP

■ Total private benefits
■ Total private costs
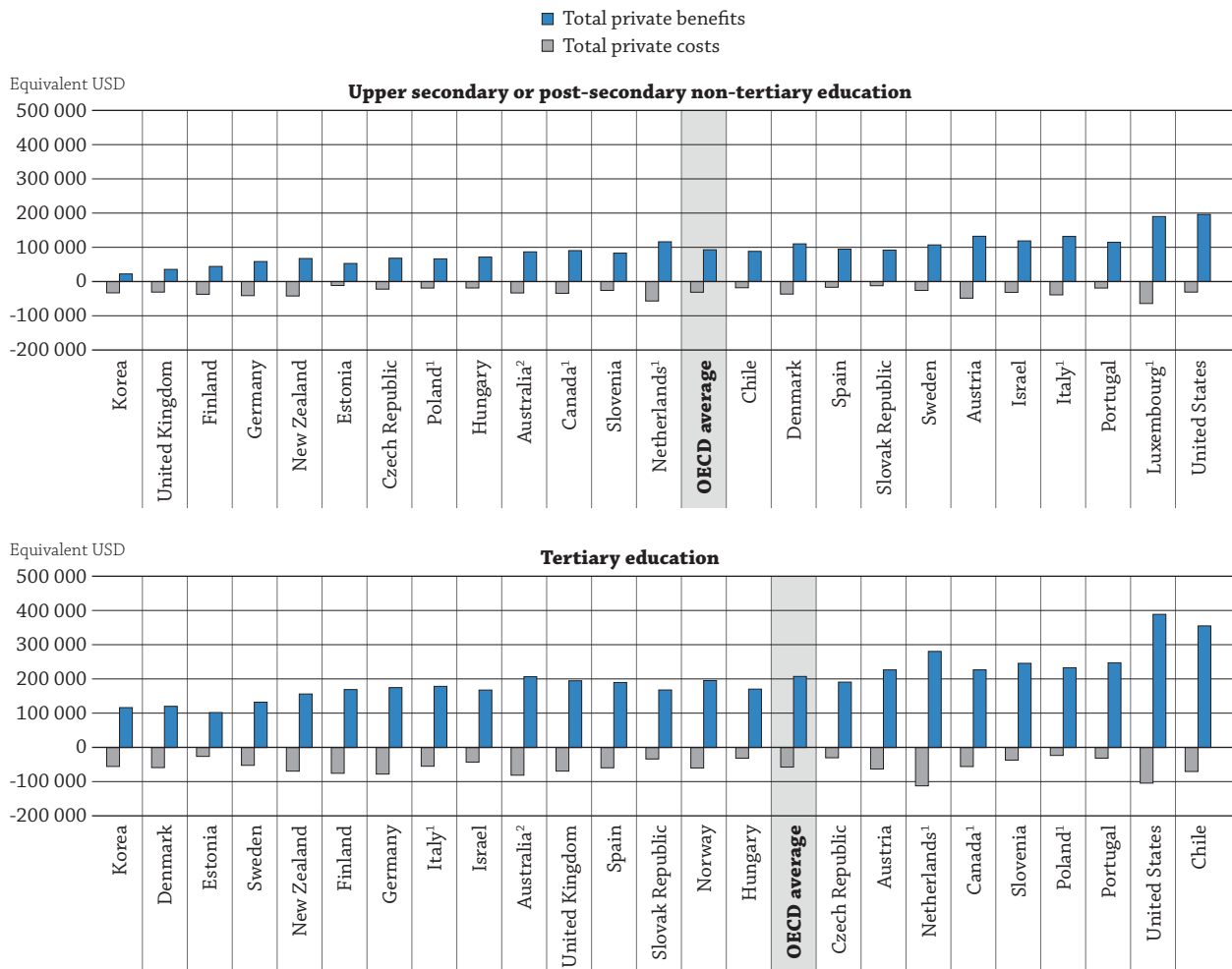
1. Canada, Italy, Luxembourg, the Netherlands, Poland: Year of reference 2010.
2. Australia: Year of reference 2009.
Countries are ranked in ascending order of net financial private returns (benefits-costs).
Source: OECD. Tables A7.1b and A7.3b. See Annex 3 for notes (www.oecd.org/education/education-at-a-glance- 19991487.htm).
StatLink ⊟ᘚ☆ http://dx.doi.org/10.1787/888933283733

The total private benefits of education

Chart A7.2 shows that while total costs of investing in tertiary education (USD 57 200 for a woman) are higher, on average, than investing in upper secondary or post-secondary non-tertiary education (USD 31 200 for a woman), even greater total benefits (USD 208 300 for a woman) accrue to tertiary-educated adults than to adults with upper secondary or post-secondary non-tertiary education as their highest level of attainment (USD 92 800 for a woman) (Tables A7.1b and A7.3b).

In general, further education yields higher earnings over a lifetime. A woman with upper secondary or post-secondary non-tertiary education as her highest level of attainment can expect to earn USD 151 800 more in gross earnings than a woman with a lower level of attainment over the course of her life (Table A7.1b). A tertiary-educated woman can expect to earn USD 332 600 more in gross earnings than a woman with upper secondary or post-secondary non-tertiary education. On average, the gross earning benefits from tertiary education are double the gross earning benefits from upper secondary or post-secondary non-tertiary education for both men and women. While gross earnings benefits from tertiary education for a woman are only about USD 130 000 in Estonia and Korea, they are more than USD 460 000 in Chile, Luxembourg, Slovenia, the Netherlands and the United States (Table A7.3b).

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As shown in Indicator A6, earnings premiums from higher educational attainment are greater for men than for women. Gross earnings benefits for men are 40% higher than for women from both upper secondary or post-secondary non-tertiary and tertiary education (Tables A7.1a and b, and Tables A7.3a and b).

Countries' tax and social benefits systems also have an impact on people's decisions to pursue – or not – further education. Higher income taxes and social contributions and lower social transfers related to higher earnings can act as disincentives to invest 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 chose to invest in tertiary education will pay, on average, 40% of his additional income associated with tertiary education in taxes and social contributions. In Canada, Chile, the Czech Republic, Estonia, Greece, Korea, New Zealand, Poland, the Slovak Republic and Spain, income taxes and social contributions amount to less than a third of the gross earning benefits, while in Denmark, Germany, Italy and Slovenia they add up to about half of the gross earning benefits (Table A7.3a).

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

In an era of budget constraints, government investment in education attracts even greater scrutiny. Governments are major investors in education and, from a budget point of view, are interested to know if they will recover their investment.

Higher levels of educational attainment tends to translate into higher income, on average (see Indicator A6). In this sense, investments in education generate public returns as tertiary-educated adults pay higher income taxes and social insurance payments and require fewer social transfers.

The discussion of the public returns to education in this chapter is limited to budget considerations and does not take into account other sources of returns to education enjoyed by society as a whole, such as higher productivity, better health and life expectancy, and other social outcomes.

Net financial returns on investment for governments

On average across OECD countries, the net public return for a woman attaining tertiary education is USD 65 500 and USD 48 000 for a woman attaining upper secondary or post-secondary non-tertiary education (Tables A7.2b and A7.4b).

In Estonia, New Zealand, Spain, Sweden, Switzerland and the United Kingdom, public net financial returns on education are higher for a man with upper secondary or post-secondary non-tertiary education than for a tertiary-educated man. This could be either because of the relatively higher public direct cost of education at the tertiary level in some of these countries or because of relatively less progressive tax systems in others (Table A7.1a and Table A7.3a).
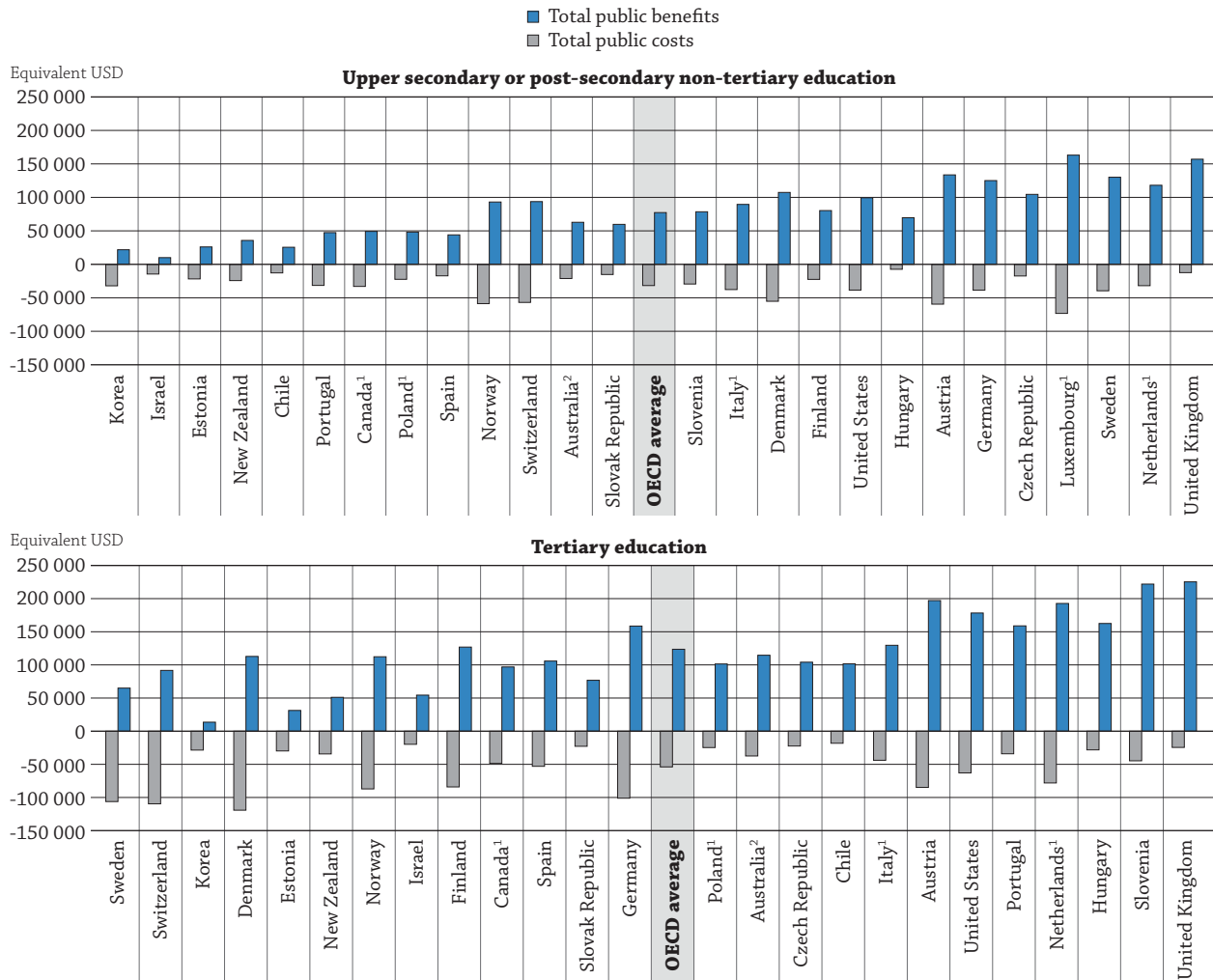
The total public cost of education

The total public cost of investment in an individual's education include direct government expenditure on education per student (direct public cost), as well as the foregone tax receipts the government would have received if the individual had entered the labour market instead of pursuing further education. Chart A7.3 shows that on average, upper secondary or post-secondary non-tertiary education for a woman costs about USD 31 700 for OECD countries and ranges from below USD 13 000 in Chile, Hungary and the United Kingdom to over USD 55 000 in Austria, Denmark, Luxembourg, Norway and Switzerland. Tertiary education for a woman in OECD countries costs an average of USD 53 900 (Tables A7.2b and A7.4b).

In Denmark, Finland, Germany, Sweden and Switzerland, the direct cost to governments per tertiary student is higher than USD 85 000, while this direct public cost in Chile, Israel, Korea and Poland is below USD 20 000. Since these calculations do not take into account public loans, direct public costs in countries that widely offer public loans, such as Australia, the United Kingdom and the United States, might be underestimated (see Indicator B5).

The total public benefits of education

Governments offset the costs of direct investment and foregone tax receipts by receiving additional tax receipts and social contributions from higher-educated adults. Overall, taking into account unemployment rate differences and benefits, total public benefits accruing over the lifetime of a woman whose highest level of attainment is upper secondary or post-secondary non-tertiary education are USD 77 300, and USD 123 600 for a tertiary-educated woman (Tables A7.2b and A7.4b).

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Chart A7.3. Public costs and benefits of education for a woman, by educational attainment (2011)

In equivalent USD converted using PPPs for GDP

■ Total public benefits
■ Total public costs

Equivalent USD

Upper secondary or post-secondary non-tertiary education

Countries (in order): Korea, Israel, Estonia, New Zealand, Chile, Portugal, Canada[1], Poland[1], Spain, Norway, Switzerland, Australia[2], Slovak Republic, OECD average, Slovenia, Italy[1], Denmark, Finland, United States, Hungary, Austria, Germany, Czech Republic, Luxembourg[1], Sweden, Netherlands[1], United Kingdom

Equivalent USD

Tertiary education

Countries (in order): Sweden, Switzerland, Korea, Denmark, Estonia, New Zealand, Norway, Israel, Finland, Canada[1], Spain, Slovak Republic, Germany, OECD average, Poland[1], Australia[2], Czech Republic, Chile, Italy[1], Austria, United States, Portugal, Netherlands[1], Hungary, Slovenia, United Kingdom

1. Canada, Italy, Luxembourg, the Netherlands, Poland: Year of reference 2010.
2. Australia: Year of reference 2009.
Countries are ranked in ascending order of net financial public returns (benefits-costs).
Source: OECD. Tables A7.2b and A7.4b. See Annex 3 for notes (www.oecd.org/education/education-at-a-glance- 19991487.htm).
StatLink http://dx.doi.org/10.1787/888933283748

Given that gross earnings benefits vary substantially among OECD countries, tax payments and benefits to the public sector also vary in ways that are somewhat counterintuitive. 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 Luxembourg, the Netherlands, Slovenia and the United Kingdom, tertiary-educated adults pay more in taxes and social contributions, resulting in more than USD 200 000 in total public benefits from tertiary-educated women. Conversely, because gross earnings benefits from tertiary education are relatively low in Estonia, Israel, Korea, and New Zealand, the public benefits from education are relatively low (Table A7.4b).

Since higher taxes can sometimes deter private investment in education, a number of countries have tax policies that effectively lower the actual tax paid by adults, 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).

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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 cost is households' total expenditure on education and includes net payments to educational institutions as well as payments for educational goods and services outside of educational institutions (school supply, tutoring, etc.).

Public direct cost is the government's spending on a student's education. It includes the 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 (unobserved) net earnings an individual would have had if he or she entered the labour force and successfully found a job instead of choosing to do further studies.

Foregone taxes on earnings are the (unobserved) tax receipts the government would have received if the individual chose 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 lifetime 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 level of income tax paid by the private individual or earned by the government over the course of a lifetime and associated with a higher level of education.

The **internal rate of return** is the (hypothetical) real interest rate equalising the costs and the benefits related to the educational investment.

Levels of education: Below upper secondary corresponds to ISCED-97 Levels 0, 1, 2 and 3C short programmes; **upper secondary or post-secondary non-tertiary** corresponds to ISCED-97 Levels 3A, 3B, 3C long programmes, and Level 4; and **tertiary** corresponds to ISCED-97 Levels 5A, 5B and 6.

The **net financial returns** are the net present value of the financial investment in education. The net financial returns are the difference between the discounted financial benefits and the discounted financial cost of education, and represent 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 contribution paid by the private individual or received by the government over the course of a lifetime 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 lifetime. Social transfers include two types of benefits: housing benefits and social assistance.

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 cost and benefits of the investment.

Two periods are considered (Figure 1):

- Time spent in school during which the private person and the government pay the cost of education.

- Time spent in the labour market during which the private person and the government receive the added payments associated with further education.

In calculating the financial returns to education, the approach taken here is the net present value (NPV) of the investment. The NPV expresses cash transfers happening at different time in present value which allow for direct comparability of the cost and benefit. 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 (Y1 in Figure 1) with a set rate of interest (discount rate).

Figure 1. **Financial returns on investment in education over a life-time for a representative individual**
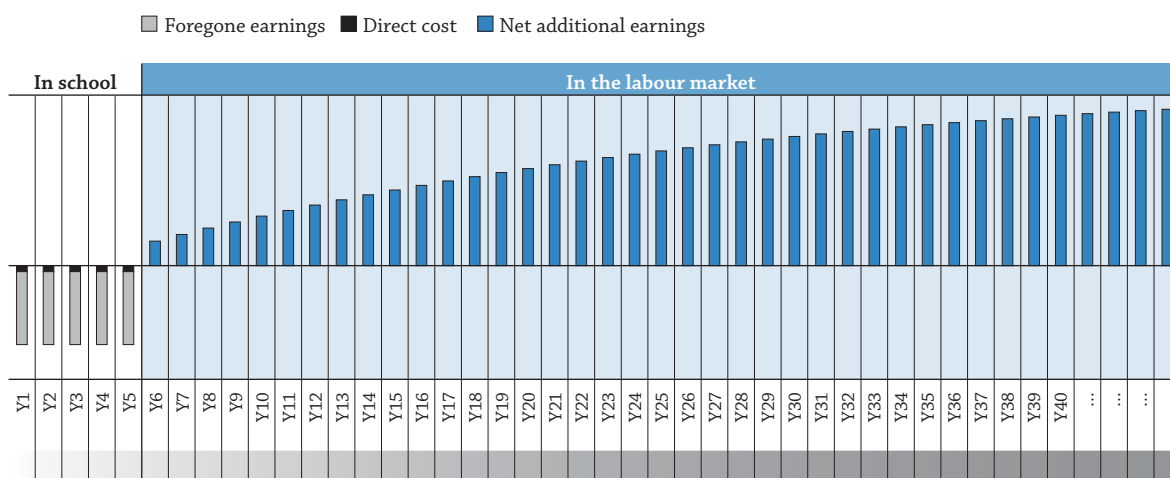
To set a value for the discount rate, long-term government bonds have been used as a benchmark. The average long-term interest rate across OECD countries was approximately 4.9% in 2011 which leads to an average real interest on government bonds across OECD countries of approximately 2%. The 2% real discount rate used in this indicator reflects the fact that calculations are made in constant prices (OECD, 2015a; 2015b).

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 make the interpretation of results easier, the same discount rate (2%) is applied across all OECD countries. All values presented in the tables of this indicator are in net present value equivalent USD using purchasing power parities (PPP).

The costs

Total cost

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

Private cost= Direct cost + Foregone earnings

Public cost= Direct cost + Foregone tax receipts

Direct cost of education

The source of direct costs of education is the UOE data collection on finance (year of reference 2011 unless otherwise specified in the tables). The direct cost includes all expenditures on education for all levels of government combined (public direct cost) and all education-related household expenditure (private direct cost).

Private direct cost is net of loans and grants; public loans are not included in public direct costs. The exclusion of loans from the public cost may lead to an underestimation of public costs for some countries, particularly at the tertiary level. Further details on student loans can be found in Indicator B5.

Please note that, because of significant differences 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 (www.oecd.org/education/education-at-a-glance-19991487.htm).

Shadow cost of education (foregone earnings and tax receipts)

Investing in further education also has a shadow cost, or opportunity cost, which is the income the private individual or the government does not receive while the student is in school.

The shadow cost for a person is the foregone earnings an adult would have made if he or she had entered the labour force instead of pursuing a higher level of education. From the government's perspective, the shadow cost is the foregone taxes the government is not collecting while the person is studying instead of working. To simplify, the indicator assumes that students do not have earnings or pay taxes while they are studying. To compute foregone earnings and foregone tax receipts, the indicator assumes that the earnings lost are equal to the minimum wage. This simplification is used to allow for better comparability of the 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 is likely to be higher than the minimum wage.

The benefits

Total benefits

The benefits of investing in education are the added 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 added net earnings expected from an additional level of education, given that the person successfully enters the labour market. Public benefits are constructed to mirror private benefits. Public benefits are the sum of added tax receipts that accrue to the government from an adult with a higher level of education, provided that the person successfully enters the labour market.

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

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

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

*$(Net\ unemployment\ benefits)_j$}

− {$(1\text{-}Unemployment\ rate)_{j-1}$ * $(Net\ earnings)_{j-1}$ + $(Unemployment\ rate)_{j-1}$

*$(Net\ unemployment\ benefits)_{j-1}$}

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

= {$(1\text{-}Unemployment\ rate)_j$ * $(tax\ receipt)_j$ + $(Unemployment\ rate)_j$

*$(-\ Net\ unemployment\ benefits)_j$}

− {$(1-unemployment\ rate)_{j-1}$ * $(tax\ receipt)_{j-1}$ + $(Unemployment\ rate)_{j-1}$

*$(-\ Net\ unemployment\ benefits)_{j-1}$}

Please note that, because of significant differences 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 (www.oecd.org/education/education-at-a-glance-19991487.htm).

Decomposition of net earning and tax receipt effects

The indicator also presents the decomposition of net earnings and tax receipts effects, defined as the difference in income associated with a higher level of attainment. These elements help explain the differences between countries in total benefits, as tax and benefits levels can create a wedge between the added gross earnings associated with a higher level of education and the equivalent net earnings.

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

The income tax effect is the discounted sum of added level of income tax paid by the individual and received by the government for an additional level of education. Income tax data are computed using the OECD Taxing Wages model. The Taxing Wages model determines the level of taxes due on a given level of income. It is assumed that annual income from employment is equal to a given ratio of the average full-time gross wage earnings for an adult for each OECD economy. The Taxing Wages model computes the level of the tax wedge on income for several household composition scenarios. The scenario used for this indicator is of a single worker with no children. For country-specific details on the income tax in the Taxing Wages model, see OECD Taxing Wages 2014 (OECD, 2014).

The social contribution effect is the discounted sum of added level of employee social contributions associated with a higher level of attainment, paid by the individual and received by the state. Employee social contributions are computed using the OECD Taxing Wages model's scenario of a single worker with no children. For country-specific details on employee social contributions in the Taxing Wages model, see OECD Taxing Wages 2015 (OECD, 2015c).

The social transfers effect is the discounted sum of added level of social transfers associated with 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 and Benefits model under the assumption of a single worker with no children aged 40. For country-specific details on social transfers in the Tax and Benefits model, see OECD Benefits and Wages country-specific information, available on line (see www.oecd.org/els/soc/benefits-and-wages-country-specific-information.htm).

Net financial returns

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

Net financial returns = total benefit+total cost

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 limitation is available on line in Annex 3 (see www.oecd.org/education/education-at-a-glance-19991487.htm).

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 lifetime stream of earnings derived from average earnings.

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 a stronger attachment to the labour market, 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 OECD, 2011, and Annex 3 at www.oecd.org/education/education-at-a-glance-19991487.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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Table A7.1a. **Private costs and benefits for a man attaining upper secondary or post-secondary non-tertiary education (2011)**

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				Total benefits[1]	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) = (8) + (3)	(10)
Australia[2]	- 4 600	- 27 700	**- 32 300**	213 400	- 70 300	0	- 2 600	**155 100**	**122 800**	21.4%
Austria	- 1 600	- 48 800	**- 50 500**	430 400	- 113 500	- 81 100	- 1 900	**238 300**	**187 800**	12.5%
Belgium[3]	a	a	**a**	a	a	a	a	**a**	**a**	a
Canada[4]	- 1 300	- 31 100	**- 32 400**	220 000	- 57 600	- 14 500	0	**152 000**	**119 600**	14.7%
Chile	- 3 700	- 19 000	**- 22 700**	188 000	- 6 400	- 31 600	- 1 800	**141 500**	**118 800**	15.6%
Czech Republic	- 2 600	- 17 800	**- 20 400**	132 900	- 26 700	- 14 600	- 10 400	**97 500**	**77 100**	16.7%
Denmark	- 200	- 35 400	**- 35 500**	286 800	- 119 100	0	- 16 900	**143 200**	**107 700**	16.3%
Estonia	- 200	- 10 800	**- 10 900**	96 800	- 19 800	- 2 700	0	**94 300**	**83 300**	22.6%
Finland	- 300	- 35 800	**- 36 100**	110 600	- 35 300	- 8 200	- 5 500	**69 600**	**33 400**	8.3%
France	q	q	**q**	q	q	q	q	**q**	**q**	q
Germany	- 1 300	- 39 700	**- 41 000**	152 500	- 38 500	- 31 800	- 10 800	**90 000**	**49 000**	8.8%
Greece	m	- 18 300	**m**	112 200	- 8 900	- 18 200	0	**75 400**	**m**	m
Hungary	- 400	- 17 600	**- 18 100**	107 500	- 22 100	- 18 800	0	**72 400**	**54 300**	15.1%
Iceland	m	m	**m**	m	m	m	m	**m**	**m**	m
Ireland	m	m	**m**	m	m	m	m	**m**	**m**	m
Israel	- 2 700	- 29 600	**- 32 300**	204 900	- 28 900	- 23 200	0	**154 700**	**122 400**	12.4%
Italy[4]	- 7 700	- 34 000	**- 41 700**	217 500	- 69 100	- 20 600	0	**129 800**	**88 100**	7.1%
Japan	m	m	**m**	m	m	m	m	**m**	**m**	m
Korea	- 9 100	- 24 400	**- 33 500**	91 400	- 800	- 7 400	- 2 800	**76 600**	**43 100**	6.7%
Luxembourg[4]	- 2 100	- 53 100	**- 55 200**	414 200	- 117 100	- 51 200	- 2 800	**240 800**	**185 500**	13.5%
Mexico	m	m	**m**	m	m	m		**m**	**m**	m
Netherlands[4]	- 4 900	- 52 100	**- 57 000**	205 900	- 71 400	- 13 000	0	**125 200**	**68 200**	5.7%
New Zealand	- 5 900	- 37 100	**- 43 000**	200 000	- 55 500	0	- 1 600	**155 400**	**112 400**	11.4%
Norway	m	- 46 700	**m**	337 000	- 96 800	- 26 300	- 300	**218 000**	**m**	m
Poland[4]	- 2 700	- 17 700	**- 20 400**	70 200	- 6 200	- 12 500	0	**59 700**	**39 300**	10.1%
Portugal	- 900	- 19 200	**- 20 100**	248 700	- 64 000	- 27 400	0	**156 600**	**136 600**	14.5%
Slovak Republic	- 3 800	- 15 600	**- 19 400**	149 000	- 24 500	- 20 000	0	**133 700**	**114 300**	27.6%
Slovenia	- 2 600	- 24 200	**- 26 700**	154 200	- 29 000	- 34 100	0	**91 800**	**65 100**	11.4%
Spain	- 1 600	- 14 500	**- 16 100**	136 500	- 34 000	- 8 700	0	**96 500**	**80 300**	14.5%
Sweden	0	- 24 200	**- 24 200**	242 700	- 54 400	- 17 000	- 13 300	**156 400**	**132 200**	24.3%
Switzerland	m	m	**m**	m	m	m	m	**m**	**m**	m
Turkey	m	m	**m**	m	m	m	m	**m**	**m**	m
United Kingdom	- 3 700	- 24 000	**- 27 700**	342 400	- 70 400	- 41 100	- 23 100	**216 700**	**189 000**	18.2%
United States	- 3 700	- 26 300	**- 30 000**	402 700	- 92 700	- 22 800	- 6 200	**270 600**	**240 600**	23.5%
OECD average	- 2 800	- 28 600	**- 31 100**	210 300	- 51 300	- 21 000	- 3 800	**138 900**	**107 100**	14.7%
EU21 average	- 2 200	- 27 900	**- 30 600**	200 600	- 51 300	- 23 400	- 4 700	**127 100**	**99 500**	14.5%

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

1. Total benefit is a weighted sum of gross earnings benefits (4), income tax effect (5), social contribution effect (6) and transfer effects (7), taking into account the probability of employment and the unemployment benefits in case of unemployment. For further details, please refer to the *Methodology* section.

2. Australia: Year of reference 2009.

3. Belgium: Data are not included in the table because upper secondary education is compulsory.

4. Canada, Italy, Luxembourg, the Netherlands, Poland: Year of reference 2010.

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 (2011)

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				Total benefits[1]	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) = (8) + (3)	(10)
OECD Australia[2]	- 4 600	- 28 800	**- 33 300**	141 000	- 31 600	0	- 25 000	**86 700**	**53 400**	10.5%
Austria	- 1 600	- 47 000	**- 48 600**	254 800	- 42 500	- 51 000	- 26 500	**132 300**	**83 600**	8.2%
Belgium[3]	a	a	**a**	a	a	a	a	**a**	**a**	a
Canada[4]	- 1 300	- 33 100	**- 34 400**	117 000	- 22 700	- 9 400	0	**90 400**	**55 900**	7.6%
Chile	- 3 700	- 14 400	**- 18 100**	115 000	- 2 000	- 23 200	- 1 400	**88 200**	**70 200**	m
Czech Republic	- 2 600	- 19 600	**- 22 200**	115 400	- 23 200	- 12 700	- 23 200	**68 100**	**45 800**	11.7%
Denmark	- 200	- 36 400	**- 36 600**	200 500	- 81 800	0	0	**110 100**	**73 500**	12.4%
Estonia	- 200	- 11 400	**- 11 600**	59 200	- 12 100	- 1 700	0	**52 800**	**41 200**	21.1%
Finland	- 300	- 36 900	**- 37 200**	83 800	- 18 600	- 6 300	- 21 600	**44 100**	**6 900**	3.9%
France	q	q	**q**	q	q	q	q	**q**	**q**	q
Germany	- 1 300	- 39 800	**- 41 100**	150 600	- 33 000	- 31 600	- 35 100	**58 400**	**17 300**	4.6%
Greece	m	- 12 900	**m**	82 500	0	- 13 400	0	**49 100**		m
Hungary	- 400	- 18 300	**- 18 800**	102 700	- 20 900	- 18 000	0	**71 400**	**52 600**	13.2%
Iceland	m	m	**m**	m	m	m	m	**m**	**m**	m
Ireland	m	m	**m**	m	m	m	m	**m**	**m**	m
Israel	- 2 700	- 28 900	**- 31 700**	131 600	- 5 600	- 7 100	0	**118 700**	**87 100**	9.7%
Italy[4]	- 7 700	- 31 200	**- 38 900**	212 200	- 62 300	- 20 100	0	**131 800**	**93 000**	9.0%
Japan	m	m	**m**	m	m	m	m	**m**	**m**	m
Korea	- 9 100	- 23 900	**- 33 000**	45 300	0	- 3 600	- 17 800	**22 200**	**- 10 800**	0.6%
Luxembourg[4]	- 2 100	- 62 000	**- 64 100**	358 300	- 60 100	- 44 300	- 59 200	**190 000**	**125 800**	6.9%
Mexico	m	m	**m**	m	m	m	m	**m**	**m**	m
Netherlands[4]	- 4 900	- 51 900	**- 56 800**	213 000	- 48 400	- 41 600	- 8 000	**116 200**	**59 400**	5.2%
New Zealand	- 5 900	- 36 300	**- 42 200**	80 000	- 13 400	0	- 7 200	**67 300**	**25 100**	5.2%
Norway	m	- 46 500	**m**	206 500	- 53 700	- 16 100	- 12 300	**125 000**	**m**	m
Poland[4]	- 2 700	- 16 300	**- 19 000**	90 400	- 8 000	- 16 100	0	**66 300**	**47 300**	10.2%
Portugal	- 900	- 18 100	**- 19 000**	166 500	- 30 200	- 18 300	0	**114 700**	**95 700**	12.7%
Slovak Republic	- 3 800	- 8 500	**- 12 200**	101 100	- 16 000	- 13 500	0	**91 700**	**79 500**	31.4%
Slovenia	- 2 600	- 23 400	**- 25 900**	148 500	- 35 200	- 32 800	0	**83 000**	**57 100**	9.1%
Spain	- 1 600	- 15 100	**- 16 700**	129 800	- 33 700	- 8 200	0	**94 700**	**78 000**	11.3%
Sweden	0	- 26 000	**- 26 000**	198 200	- 41 200	- 13 800	- 35 500	**107 000**	**81 000**	12.3%
Switzerland	m	m	**m**	m	m	m	m	**m**	**m**	m
Turkey	m	m	**m**	m	m	m	m	**m**	**m**	m
United Kingdom	- 3 700	- 27 100	**- 30 800**	147 500	- 79 900	- 17 700	- 32 300	**35 500**	**4 700**	3.8%
United States	- 3 700	- 27 100	**- 30 800**	296 200	- 61 900	- 16 700	- 17 900	**196 200**	**165 300**	17.4%
OECD average	**- 2 800**	**- 28 500**	**- 31 200**	**151 800**	**- 32 200**	**- 16 800**	**- 12 400**	**92 800**	**62 000**	**10.3%**
EU21 average	**- 2 200**	**- 27 900**	**- 30 900**	**156 400**	**- 36 000**	**- 20 100**	**- 13 400**	**89 800**	**61 300**	**11.0%**

Notes: Values are based on the difference between women who attained an upper secondary or post-secondary non-tertiary education compared with those who have not attained that level of education. Values have been rounded up to the nearest hundred.
1. Total benefit is a weighted sum of gross earnings benefits (4), income tax effect (5), social contribution effect (6) and transfer effects (7), taking into account the probability of employment and the unemployment benefits in case of unemployment. For further details, please refer to the *Methodology* section.
2. Australia: Year of reference 2009.
3. Belgium: Data are not included in the table because upper secondary education is compulsory.
4. Canada, Italy, Luxembourg, the Netherlands, Poland: Year of reference 2010.
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 ᵃ⁴ˢ⁴ http://dx.doi.org/10.1787/888933285119

Table A7.2a. **Public costs and benefits for a man attaining upper secondary or post-secondary non-tertiary education (2011)**

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			Total benefits[1]	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) = (7) + (3)	(9)
Australia[2]	- 18 000	- 3 100	**- 21 100**	70 300	0	2 600	**91 900**	**70 800**	20.0%
Austria	- 51 200	- 8 600	**- 59 800**	113 500	81 100	1 900	**211 900**	**152 100**	9.6%
Belgium[3]	a	a	**a**	a	a	a	**a**	**a**	a
Canada[4]	- 29 800	- 3 000	**- 32 800**	57 600	14 500	0	**92 400**	**59 600**	9.0%
Chile	- 12 800	- 100	**- 12 800**	6 400	31 600	1 800	**37 800**	**25 000**	8.8%
Czech Republic	- 21 200	3 400	**- 17 800**	26 700	14 600	10 400	**122 300**	**104 500**	24.6%
Denmark	- 41 300	- 13 500	**- 54 800**	119 100	0	16 900	**151 400**	**96 600**	9.6%
Estonia	- 20 100	- 1 600	**- 21 700**	19 800	2 700	0	**56 000**	**34 300**	8.7%
Finland	- 26 200	3 600	**- 22 600**	35 300	8 200	5 500	**80 700**	**58 100**	18.4%
France	q	q	**q**	q	q	q	**q**	**q**	q
Germany	- 31 200	- 7 400	**- 38 600**	38 500	31 800	10 800	**136 600**	**98 000**	15.0%
Greece	m	- 4 400	**m**	8 900	18 200	0	**30 800**	**m**	m
Hungary	- 8 600	1 100	**- 7 400**	22 100	18 800	0	**72 600**	**65 200**	27.9%
Iceland	m	m	**m**	m	m	m	**m**	**m**	m
Ireland	m	m	**m**	m	m	m	**m**	**m**	m
Israel	- 14 600	100	**- 14 500**	28 900	23 200	0	**54 100**	**39 500**	9.2%
Italy[4]	- 31 300	- 7 000	**- 38 300**	69 100	20 600	0	**106 200**	**67 800**	6.5%
Japan	m	m	**m**	m	m	m	**m**	**m**	m
Korea	- 21 500	- 10 800	**- 32 300**	800	7 400	2 800	**11 900**	**- 20 500**	-1.9%
Luxembourg[4]	- 68 000	- 4 500	**- 72 500**	117 100	51 200	2 800	**185 500**	**112 900**	8.7%
Mexico	m	m	**m**	m	m	m	**m**	**m**	m
Netherlands[4]	- 29 100	- 2 800	**- 31 900**	71 400	13 000	0	**106 500**	**74 600**	9.6%
New Zealand	- 23 200	- 1 100	**- 24 300**	55 500	0	1 600	**73 300**	**49 000**	9.7%
Norway	- 49 200	- 9 600	**- 58 700**	96 800	26 300	300	**142 600**	**83 900**	8.4%
Poland[4]	- 17 000	- 5 900	**- 22 900**	6 200	12 500	0	**41 900**	**19 000**	6.3%
Portugal	- 29 300	- 2 300	**- 31 600**	64 000	27 400	0	**81 300**	**49 600**	6.9%
Slovak Republic	- 17 100	3 400	**- 13 700**	24 500	20 000	0	**98 900**	**85 100**	21.8%
Slovenia	- 22 500	- 7 200	**- 29 600**	29 000	34 100	0	**88 200**	**58 600**	10.5%
Spain	- 19 200	1 900	**- 17 300**	34 000	8 700	0	**67 700**	**50 400**	11.4%
Sweden	- 35 000	- 4 200	**- 39 200**	54 400	17 000	13 300	**116 900**	**77 700**	19.5%
Switzerland	- 41 600	- 14 000	**- 55 600**	52 000	18 900	0	**114 200**	**58 600**	7.6%
Turkey	m	m	**m**	m	m	m	**m**	**m**	m
United Kingdom	- 14 500	1 800	**- 12 700**	70 400	41 100	23 100	**184 900**	**172 200**	53.4%
United States	- 34 500	- 3 800	**- 38 300**	92 700	22 800	6 200	**123 800**	**85 500**	11.8%
OECD average	- 28 000	- 3 700	**- 31 600**	51 300	21 000	3 700	**99 300**	**70 300**	13.5%
EU21 average	- 28 400	- 3 000	**- 31 300**	51 300	23 400	4 700	**107 800**	**81 000**	15.8%

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

1. Total benefit is a weighted sum of gross earnings benefits (4), income tax effect (5), social contribution effect (6) and transfer effects (7), taking into account the probability of employment and the unemployment benefits in case of unemployment. For further details, please refer to the *Methodology* section.

2. Australia: Year of reference 2009.

3. Belgium: Data are not included in the table because upper secondary education is compulsory.

4. Canada, Italy, Luxembourg, the Netherlands, Poland: Year of reference 2010.

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 A7.2b. Public costs and benefits for a woman attaining upper secondary or post-secondary non-tertiary education (2011)

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			Total benefits[1]	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) = (7) + (3)	(9)
Australia[2]	- 18 000	- 3 200	**- 21 200**	31 600	0	25 000	**62 800**	**41 600**	22.4%
Austria	- 51 200	- 8 200	**- 59 500**	42 500	51 000	26 500	**133 600**	**74 200**	8.0%
Belgium[3]	a	a	**a**	a	a	a	**a**	**a**	a
Canada[4]	- 29 800	- 3 200	**- 33 000**	22 700	9 400	0	**49 200**	**16 200**	4.7%
Chile	- 12 800	- 100	**- 12 800**	2 000	23 200	1 400	**25 500**	**12 700**	7.2%
Czech Republic	- 21 200	3 800	**- 17 400**	23 200	12 700	23 200	**104 500**	**87 100**	20.6%
Denmark	- 41 300	- 13 900	**- 55 200**	81 800	0	0	**107 400**	**52 100**	7.7%
Estonia	- 20 100	- 1 700	**- 21 800**	12 100	1 700	0	**26 000**	**4 200**	4.6%
Finland	- 26 200	3 700	**- 22 500**	18 600	6 300	21 600	**80 300**	**57 800**	22.8%
France	q	q	**q**	q	q	q	**q**	**q**	q
Germany	- 31 200	- 7 500	**- 38 600**	33 000	31 600	35 100	**125 100**	**86 500**	16.4%
Greece	m	- 3 100	**m**	0	13 400	0	**13 000**	**m**	m
Hungary	- 8 600	1 200	**- 7 400**	20 900	18 000	0	**69 600**	**62 300**	25.2%
Iceland	m	m	**m**	m	m	m	**m**	**m**	m
Ireland	m	m	**m**	m	m	m	**m**	**m**	m
Israel	- 14 600	100	**- 14 500**	5 600	7 100	0	**10 000**	**- 4 600**	1.1%
Italy[4]	- 31 300	- 6 500	**- 37 700**	62 300	20 100	0	**89 500**	**51 800**	6.6%
Japan	m	m	**m**	m	m	m	**m**	**m**	m
Korea	- 21 500	- 10 600	**- 32 100**	0	3 600	17 800	**21 800**	**- 10 300**	0.5%
Luxembourg[4]	- 68 000	- 5 300	**- 73 300**	60 100	44 300	59 200	**163 100**	**89 800**	11.5%
Mexico	m	m	**m**	m	m	m	**m**	**m**	m
Netherlands[4]	- 29 100	- 2 800	**- 31 900**	48 400	41 600	8 000	**118 100**	**86 200**	12.0%
New Zealand	- 23 200	- 1 100	**- 24 300**	13 400	0	7 200	**35 700**	**11 400**	5.6%
Norway	- 49 200	- 9 500	**- 58 700**	53 700	16 100	12 300	**93 100**	**34 400**	5.8%
Poland[4]	- 17 000	- 5 400	**- 22 400**	8 000	16 100	0	**48 200**	**25 700**	7.4%
Portugal	- 29 300	- 2 200	**- 31 500**	30 200	18 300	0	**47 400**	**15 900**	4.5%
Slovak Republic	- 17 100	1 800	**- 15 200**	16 000	13 500	0	**59 700**	**44 500**	16.0%
Slovenia	- 22 500	- 6 900	**- 29 400**	35 200	32 800	0	**78 500**	**49 100**	9.6%
Spain	- 19 200	1 900	**- 17 200**	33 700	8 200	0	**44 000**	**26 700**	7.8%
Sweden	- 35 000	- 4 500	**- 39 500**	41 200	13 800	35 500	**130 100**	**90 500**	22.4%
Switzerland	- 41 600	- 15 300	**- 56 900**	26 700	14 600	10 700	**93 700**	**36 800**	7.5%
Turkey	m	m	**m**	m	m	m	**m**	**m**	m
United Kingdom	- 14 500	2 000	**- 12 400**	79 900	17 700	32 300	**157 000**	**144 600**	37.8%
United States	- 34 500	- 3 900	**- 38 500**	61 900	16 700	17 900	**99 400**	**60 900**	12.0%
OECD average	- 28 000	- 3 700	**- 31 700**	32 000	16 700	12 400	**77 300**	**48 000**	11.8%
EU21 average	- 28 400	- 3 000	**- 31 300**	36 000	20 100	13 400	**88 600**	**61 700**	14.2%

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

1. Total benefit is a weighted sum of gross earnings benefits (4), income tax effect (5), social contribution effect (6) and transfer effects (7), taking into account the probability of employment and the unemployment benefits in case of unemployment. For further details, please refer to the *Methodology* section.

2. Australia: Year of reference 2009.

3. Belgium: Data are not included in the table because upper secondary education is compulsory.

4. Canada, Italy, Luxembourg, the Netherlands, Poland: Year of reference 2010.

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 A7.3a. **Private costs and benefits for a man attaining tertiary education (2011)**

*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				Total benefits[1]	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) = (8) + (3)	(10)
Australia[2]	- 27 400	- 52 200	**- 79 600**	483 700	- 172 400	0	0	**302 800**	**223 200**	10.4%
Austria	- 1 900	- 61 000	**- 62 900**	559 500	- 181 100	- 73 200	0	**306 500**	**243 600**	11.0%
Belgium	m	m	**m**	m	m	m	m	**m**	**m**	m
Canada[3]	- 17 400	- 36 800	**- 54 200**	395 000	- 121 300	- 6 400	0	**260 600**	**206 400**	12.2%
Chile	- 38 100	- 33 900	**- 71 900**	766 000	- 70 400	- 83 600	- 1 300	**587 100**	**515 100**	15.9%
Czech Republic	- 3 300	- 27 100	**- 30 400**	488 800	- 98 300	- 53 800	0	**331 900**	**301 500**	23.5%
Denmark	- 4 300	- 52 400	**- 56 700**	421 500	- 214 700	0	- 10 800	**189 900**	**133 200**	8.9%
Estonia	- 4 900	- 20 100	**- 25 000**	220 400	- 45 000	- 6 200	0	**172 200**	**147 200**	20.3%
Finland	- 3 400	- 69 200	**- 72 600**	466 100	- 177 700	- 34 000	0	**252 800**	**180 200**	9.6%
France	q	q	**q**	q	q	q	q	**q**	**q**	q
Germany	- 5 200	- 71 300	**- 76 500**	576 000	- 189 800	- 97 700	0	**295 600**	**219 100**	10.6%
Greece	m	- 26 800	**m**	234 100	- 35 900	- 37 900	0	**151 400**	**m**	m
Hungary	- 9 100	- 22 200	**- 31 300**	620 900	- 156 300	- 108 700	0	**346 900**	**315 600**	25.4%
Iceland	m	m	**m**	m	m	m	m	**m**	**m**	m
Ireland	m	m	**m**	m	m	m	m	**m**	**m**	m
Israel	- 11 300	- 31 800	**- 43 100**	371 300	- 82 900	- 44 600	0	**239 300**	**196 300**	13.2%
Italy[3]	- 15 800	- 40 200	**- 56 000**	487 500	- 184 400	- 48 600	0	**248 800**	**192 800**	9.5%
Japan	m	m	**m**	m	m	m	m	**m**	**m**	m
Korea	- 20 300	- 33 700	**- 54 000**	154 200	- 2 800	- 12 400	0	**137 200**	**83 200**	6.2%
Luxembourg[3]	m	- 61 900	**m**	946 300	- 327 000	- 110 800	0	**496 700**	**m**	m
Mexico	m	m	**m**	m	m	m	m	**m**	**m**	m
Netherlands[3]	- 16 900	- 95 000	**- 111 900**	615 300	- 273 200	- 1 300	0	**336 400**	**224 500**	9.5%
New Zealand	- 14 000	- 54 400	**- 68 400**	240 500	- 73 500	0	0	**165 500**	**97 100**	7.1%
Norway	- 2 300	- 55 900	**- 58 200**	419 100	- 152 700	- 32 700	0	**234 700**	**176 500**	8.4%
Poland[3]	- 6 100	- 18 000	**- 24 100**	495 800	- 43 900	- 88 400	0	**362 200**	**338 200**	29.2%
Portugal	- 8 600	- 24 500	**- 33 100**	522 100	- 177 300	- 57 400	0	**279 500**	**246 400**	18.7%
Slovak Republic	- 9 100	- 24 500	**- 33 600**	390 700	- 64 700	- 49 900	0	**280 900**	**247 300**	20.6%
Slovenia	- 4 100	- 33 600	**- 37 700**	593 000	- 155 900	- 131 100	0	**291 900**	**254 200**	17.4%
Spain	- 12 900	- 45 900	**- 58 800**	242 500	- 61 700	- 15 400	0	**161 500**	**102 700**	9.1%
Sweden	- 200	- 51 900	**- 51 900**	303 600	- 117 000	- 12 400	0	**169 600**	**117 700**	8.3%
Switzerland	m	m	**m**	m	m	m	m	**m**	**m**	m
Turkey	m	m	**m**	m	m	m	m	**m**	**m**	m
United Kingdom	- 25 900	- 40 700	**- 66 600**	538 400	- 121 000	- 58 100	- 1 800	**353 600**	**287 000**	15.7%
United States	- 55 000	- 46 200	**- 101 300**	861 000	- 261 800	- 48 600	0	**547 600**	**446 300**	15.7%
OECD average	- 13 200	- 43 500	**- 56 700**	477 400	- 137 000	- 46 700	- 500	**288 600**	**229 000**	14.0%
EU21 average	- 8 200	- 43 700	**- 51 800**	484 600	- 145 800	- 54 700	- 700	**279 400**	**222 000**	15.5%

Notes: 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. Values have been rounded up to the nearest hundred.

1. Total benefit is a weighted sum of gross earnings benefits (4), income tax effect (5), social contribution effect (6) and transfer effects (7), taking into account the probability of employment and the unemployment benefits in case of unemployment. For further details, please refer to the *Methodology* section.

2. Australia: Year of reference 2009.

3. Canada, Italy, Luxembourg, the Netherlands, Poland: Year of reference 2010.

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 (2011)
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				Total benefits[1]	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) = (8) + (3)	(10)
Australia[2]	- 27 400	- 53 500	**- 81 000**	321 200	- 112 300	0	0	**207 500**	**126 500**	8.5%
Austria	- 1 900	- 61 000	**- 62 900**	432 400	- 120 400	- 81 600	0	**227 500**	**164 600**	8.8%
Belgium	m	m	**m**	m	m	m	m	**m**	**m**	m
Canada[3]	- 17 400	- 38 200	**- 55 600**	328 800	- 73 600	- 25 100	0	**227 600**	**171 900**	13.5%
Chile	- 38 100	- 32 100	**- 70 200**	463 000	- 25 900	- 75 800	- 1 300	**356 300**	**286 100**	13.7%
Czech Republic	- 3 300	- 26 600	**- 29 900**	282 400	- 56 800	- 31 100	- 3 700	**191 700**	**161 800**	16.3%
Denmark	- 4 300	- 54 400	**- 58 700**	236 600	- 98 300	0	- 13 000	**120 800**	**62 100**	6.9%
Estonia	- 4 900	- 21 000	**- 25 900**	133 200	- 27 200	- 3 700	0	**102 500**	**76 600**	13.8%
Finland	- 3 400	- 72 100	**- 75 400**	290 100	- 95 500	- 21 700	- 2 600	**169 800**	**94 300**	7.1%
France	q	q	**q**	q	q	q	q	**q**	**q**	q
Germany	- 5 200	- 72 500	**- 77 700**	326 000	- 83 300	- 68 000	0	**175 600**	**98 000**	6.4%
Greece	m	- 21 900	**m**	235 300	- 16 700	- 38 100	0	**152 900**	**m**	m
Hungary	- 9 100	- 22 200	**- 31 300**	323 200	- 93 800	- 56 600	0	**171 200**	**139 800**	16.2%
Iceland	m	m	**m**	m	m	m	m	**m**	**m**	m
Ireland	m	m	**m**	m	m	m	m	**m**	**m**	m
Israel	- 11 300	- 31 600	**- 42 900**	225 300	- 31 700	- 25 800	0	**168 400**	**125 600**	11.0%
Italy[3]	- 15 800	- 38 900	**- 54 700**	316 800	- 102 900	- 30 100	0	**179 300**	**124 600**	9.5%
Japan	m	m	**m**	m	m	m	m	**m**	**m**	m
Korea	- 20 300	- 35 000	**- 55 400**	131 600	- 900	- 10 600	0	**117 000**	**61 700**	5.5%
Luxembourg[3]	m	- 65 200	**m**	721 500	- 223 400	- 89 100	0	**407 200**	**m**	m
Mexico	m	m	**m**	m	m	m	m	**m**	**m**	m
Netherlands[3]	- 16 900	- 95 300	**- 112 200**	479 300	- 189 100	- 6 900	0	**281 600**	**169 400**	8.6%
New Zealand	- 14 000	- 55 100	**- 69 100**	206 300	- 44 100	0	- 3 300	**156 900**	**87 800**	8.1%
Norway	- 2 300	- 57 600	**- 59 900**	304 100	- 85 100	- 23 700	0	**196 300**	**136 400**	8.9%
Poland[3]	- 6 100	- 17 000	**- 23 100**	316 400	- 28 000	- 56 400	0	**233 800**	**210 700**	24.0%
Portugal	- 8 600	- 22 500	**- 31 100**	413 600	- 119 700	- 45 500	0	**248 300**	**217 200**	20.5%
Slovak Republic	- 9 100	- 24 400	**- 33 500**	233 600	- 38 400	- 31 300	0	**168 700**	**135 200**	14.8%
Slovenia	- 4 100	- 32 800	**- 36 900**	463 800	- 110 500	- 102 500	0	**246 700**	**209 800**	16.1%
Spain	- 12 900	- 46 400	**- 59 300**	284 200	- 73 100	- 18 000	0	**190 600**	**131 200**	10.5%
Sweden	- 200	- 52 100	**- 52 100**	190 400	- 43 300	- 13 300	0	**132 900**	**80 800**	7.3%
Switzerland	m	m	**m**	m	m	m	m	**m**	**m**	m
Turkey	m	m	**m**	m	m	m	m	**m**	**m**	m
United Kingdom	- 25 900	- 43 100	**- 69 000**	422 200	- 93 000	- 50 700	- 80 300	**195 600**	**126 600**	8.7%
United States	- 55 000	- 49 200	**- 104 200**	566 600	- 139 100	- 32 000	0	**390 200**	**286 000**	12.2%
OECD average	- 13 200	- 43 900	**- 57 200**	332 600	- 81 800	- 36 100	- 4 000	**208 300**	**145 200**	11.5%
EU21 average	- 8 200	- 43 900	**- 52 100**	338 900	- 89 600	- 41 400	- 5 500	**199 800**	**137 700**	12.2%

Notes: 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. Values have been rounded up to the nearest hundred.

1. Total benefit is a weighted sum of gross earnings benefits (4), income tax effect (5), social contribution effect (6) and transfer effects (7), taking into account the probability of employment and the unemployment benefits in case of unemployment. For further details, please refer to the *Methodology* section.

2. Australia: Year of reference 2009.

3. Canada, Italy, Luxembourg, the Netherlands, Poland: Year of reference 2010.

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 (2011)

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	Earnings benefits decomposition			Total benefits[1]	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) = (7) + (3)	(9)
Australia[2]	- 31 400	- 5 800	**- 37 200**	172 400	0	0	**168 800**	**131 500**	11.6%
Austria	- 74 100	- 10 700	**- 84 800**	181 100	73 200	0	**260 100**	**175 300**	8.0%
Belgium	m	m	**m**	m	m	m	**m**	**m**	m
Canada[3]	- 44 900	- 3 600	**- 48 400**	121 300	6 400	0	**136 100**	**87 700**	8.0%
Chile	- 18 100	- 100	**- 18 200**	70 400	83 600	1 300	**149 200**	**131 000**	16.4%
Czech Republic	- 27 600	5 200	**- 22 300**	98 300	53 800	0	**156 600**	**134 200**	17.0%
Denmark	- 98 400	- 20 000	**- 118 400**	214 700	0	10 800	**226 200**	**107 800**	5.5%
Estonia	- 26 600	- 3 000	**- 29 600**	45 000	6 200	0	**56 100**	**26 500**	7.5%
Finland	- 91 300	6 900	**- 84 400**	177 700	34 000	0	**217 300**	**133 000**	7.5%
France	q	q	**q**	q	q	q	**q**	**q**	q
Germany	- 87 500	- 13 400	**- 100 900**	189 800	97 700	0	**306 500**	**205 600**	8.7%
Greece	m	- 6 400	**m**	35 900	37 900	0	**76 300**	**m**	m
Hungary	- 29 600	1 400	**- 28 200**	156 300	108 700	0	**271 200**	**243 000**	24.1%
Iceland	m	m	**m**	m	m		**m**	**m**	m
Ireland	m	m	**m**	m	m	m	**m**	**m**	m
Israel	- 19 900	100	**- 19 800**	82 900	44 600	0	**121 300**	**101 500**	11.6%
Italy[3]	- 35 900	- 8 300	**- 44 200**	184 400	48 600	0	**226 900**	**182 700**	9.4%
Japan	m	m	**m**	m	m	m	**m**	**m**	m
Korea	- 13 100	- 14 900	**- 27 900**	2 800	12 400	0	**17 200**	**- 10 800**	0.5%
Luxembourg[3]	m	- 5 200	**m**	327 000	110 800	0	**408 000**	**m**	m
Mexico	m	m	**m**	m			**m**	**m**	m
Netherlands[3]	- 73 000	- 5 100	**- 78 100**	273 200	1 300	0	**272 600**	**194 600**	m
New Zealand	- 32 600	- 1 700	**- 34 300**	73 500	0	0	**74 300**	**40 000**	6.3%
Norway	- 75 300	- 11 400	**- 86 800**	152 700	32 700	0	**192 600**	**105 800**	5.5%
Poland[3]	- 19 100	- 6 000	**- 25 000**	43 900	88 400	0	**143 100**	**118 100**	15.1%
Portugal	- 31 400	- 3 000	**- 34 300**	177 300	57 400	0	**211 800**	**177 500**	11.5%
Slovak Republic	- 28 100	5 300	**- 22 800**	64 700	49 900	0	**123 100**	**100 400**	14.6%
Slovenia	- 34 900	- 9 900	**- 44 900**	155 900	131 100	0	**284 300**	**239 400**	14.0%
Spain	- 59 000	5 900	**- 53 100**	61 700	15 400	0	**100 700**	**47 600**	6.2%
Sweden	- 97 200	- 9 000	**- 106 100**	117 000	12 400	0	**128 800**	**22 700**	3.1%
Switzerland	- 91 300	- 18 500	**- 109 700**	125 200	36 200	0	**161 900**	**52 200**	4.0%
Turkey	m	m	**m**	m	m	m	**m**	**m**	m
United Kingdom	- 27 700	3 100	**- 24 700**	121 000	58 100	1 800	**191 800**	**167 100**	23.4%
United States	- 55 900	- 6 700	**- 62 600**	261 800	48 600	0	**334 200**	**271 700**	14.5%
OECD average	- 49 000	- 5 000	**- 53 900**	136 600	46 300	500	**185 800**	**127 400**	10.6%
EU21 average	- 52 600	- 4 000	**- 56 400**	145 800	54 700	700	**203 400**	**142 200**	11.7%

Notes: 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. Values have been rounded up to the nearest hundred.

1. Total benefit is a weighted sum of gross earnings benefits (4), income tax effect (5), social contribution effect (6) and transfer effects (7), taking into account the probability of employment and the unemployment benefits in case of unemployment. For further details, please refer to the *Methodology* section.

2. Australia: Year of reference 2009.

3. Canada, Italy, Luxembourg, the Netherlands, Poland: Year of reference 2010.

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 (2011)

*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			Total benefits[1]	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) = (7) + (3)	(9)
Australia[2]	- 31 400	- 6 000	- 37 400	112 300	0	0	114 600	77 200	9.7%
Austria	- 74 100	- 10 700	- 84 800	120 400	81 600	0	197 100	112 400	6.2%
Belgium	m	m	m	m	m	m	m	m	m
Canada[3]	- 44 900	- 3 700	- 48 600	73 600	25 100	0	96 900	48 300	6.7%
Chile	- 18 100	- 100	- 18 200	25 900	75 800	1 300	101 600	83 400	14.6%
Czech Republic	- 27 600	5 100	- 22 400	56 800	31 100	3 700	104 100	81 700	13.5%
Denmark	- 98 400	- 20 800	- 119 200	98 300	0	13 000	112 800	- 6 400	2.2%
Estonia	- 26 600	- 3 200	- 29 800	27 200	3 700	0	31 300	1 600	3.6%
Finland	- 91 300	7 200	- 84 100	95 500	21 700	2 600	126 900	42 800	4.6%
France	q	q	q	q	q	q	q	q	q
Germany	- 87 500	- 13 600	- 101 100	83 300	68 000	0	158 600	57 500	4.5%
Greece	m	- 5 200	m	16 700	38 100	0	65 900	m	m
Hungary	- 29 600	1 400	- 28 200	93 800	56 600	0	162 500	134 300	16.9%
Iceland	m	m	m	m	m	m	m	m	m
Ireland	m	m	m	m	m	m	m	m	m
Israel	- 19 900	100	- 19 800	31 700	25 800	0	54 400	34 600	7.3%
Italy[3]	- 35 900	- 8 000	- 43 900	102 900	30 100	0	129 600	85 700	7.8%
Japan	m	m	m	m	m	m	m	m	m
Korea	- 13 100	- 15 500	- 28 500	900	10 600	0	13 600	- 14 900	-0.6%
Luxembourg[3]	m	- 5 500	m	223 400	89 100	0	287 300	m	m
Mexico	m	m	m	m	m	m	m	m	m
Netherlands[3]	- 73 000	- 5 100	- 78 100	189 100	6 900	0	192 700	114 600	m
New Zealand	- 32 600	- 1 700	- 34 300	44 100	0	3 300	51 100	16 800	5.1%
Norway	- 75 300	- 11 800	- 87 100	85 100	23 700	0	112 300	25 200	3.4%
Poland[3]	- 19 100	- 5 600	- 24 700	28 000	56 400	0	101 400	76 600	12.6%
Portugal	- 31 400	- 2 700	- 34 100	119 700	45 500	0	158 900	124 800	11.0%
Slovak Republic	- 28 100	5 300	- 22 800	38 400	31 300	0	76 800	54 000	10.5%
Slovenia	- 34 900	- 9 700	- 44 700	110 500	102 500	0	221 900	177 200	11.3%
Spain	- 59 000	6 000	- 53 000	73 100	18 000	0	105 800	52 800	6.8%
Sweden	- 97 200	- 9 000	- 106 200	43 300	13 300	0	65 000	- 41 200	0.3%
Switzerland	- 91 300	- 18 300	- 109 600	73 300	28 900	0	91 700	- 17 900	1.5%
Turkey	m	m	m	m	m	m	m	m	m
United Kingdom	- 27 700	3 200	- 24 500	93 000	50 700	80 300	225 300	200 800	37.2%
United States	- 55 900	- 7 100	- 63 000	139 100	32 000	0	178 300	115 300	9.2%
OECD average	- 49 000	- 5 000	- 53 900	81 500	35 800	3 900	123 600	65 500	8.6%
EU21 average	- 52 600	- 3 900	- 56 400	89 600	41 400	5 500	140 200	79 300	9.9%

Notes: 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. Values have been rounded up to the nearest hundred.

1. Total benefit is a weighted sum of gross earnings benefits (4), income tax effect (5), social contribution effect (6) and transfer effects (7), taking into account the probability of employment and the unemployment benefits in case of unemployment. For further details, please refer to the *Methodology* section.
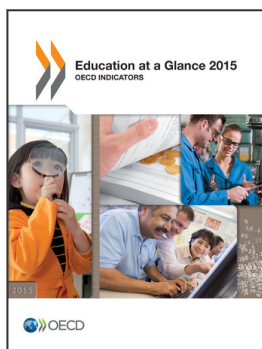2. Australia: Year of reference 2009.
3. Canada, Italy, Luxembourg, the Netherlands, Poland: Year of reference 2010.
Source: OECD. See Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.
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