Indicator A5. What are the financial incentives to invest in education?

Highlights

- Despite the rising share of tertiary-educated adults over recent decades, investing in upper secondary attainment continues to pay off in the long run for both individuals and society, compared to not completing upper secondary.
- On average across OECD countries, for each USD invested in upper secondary education, men can expect to receive USD 9 over the course of their working-age life, while women can expect to receive USD 11.6. The gender difference is related to the fact that women's foregone earnings while they continue their education are much lower than men's, even though women receive a smaller net financial return from upper secondary attainment than men.
- Individuals' net financial returns from tertiary education are generally higher than from upper secondary education. On average across OECD countries, the net financial return for tertiary-educated men or women is around 1.5 times as much as for those with upper secondary education as their highest attainment.

Context

Investing time and money in education is an investment in human capital. Better chances of employment (see Indicator A3) and higher earnings (see Indicator A4) are strong incentives for adults to invest in education and postpone employment. Although women currently have higher levels of education than men on average (see Indicator A1), men enjoy better employment and earning outcomes from education, on average.

Countries benefit from having more highly educated individuals through higher revenues from the taxes and social contributions paid by those individuals once they 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 alongside other indicators, such as access to and completion of higher education (see Indicator B5).

Other factors not reflected in this indicator also affect the returns to education. Financial returns may be affected by the field of study and by the specific economic, labour-market and institutional context in each country, as well as by social and cultural factors. Furthermore, returns to education are not limited to financial returns, but also include other economic outcomes, such as increased productivity, and social outcomes, such as greater participation in cultural or sporting activities (see Indicator A6).

Other findings

- For nearly all countries with available data, the private and public net financial returns from obtaining a bachelor's, master's or doctoral or equivalent degree are greater than from obtaining a short-cycle tertiary degree.
- The public benefits of education outweigh the costs, through greater tax revenues and social contribution from higher-paid workers. For instance, on average across OECD countries, the internal rate of return to governments from upper secondary education is 6% for a man and 3% for a woman.
- In most OECD countries, the main cost of education for individuals are not direct payments, such as tuition fees and living expenses, but the earnings that individuals forego while they are in education. These vary substantially by gender and across countries, depending on the length of education, overall earning levels, differences in earnings across levels of educational attainment and students' earnings.
- For governments, direct costs (such as public expenditure on educational institutions and student grants) represent the largest share of the total public costs of education (composed of these direct costs and foregone taxes on earnings). Since the direct costs are the same for men as for women, total public costs are also quite similar for men and women.

Figure A5.1. Private net financial returns to education for a man or a woman, by educational attainment (2017)

In equivalent USD converted using PPPs for GDP; future costs and benefits are discounted at a rate of 2%
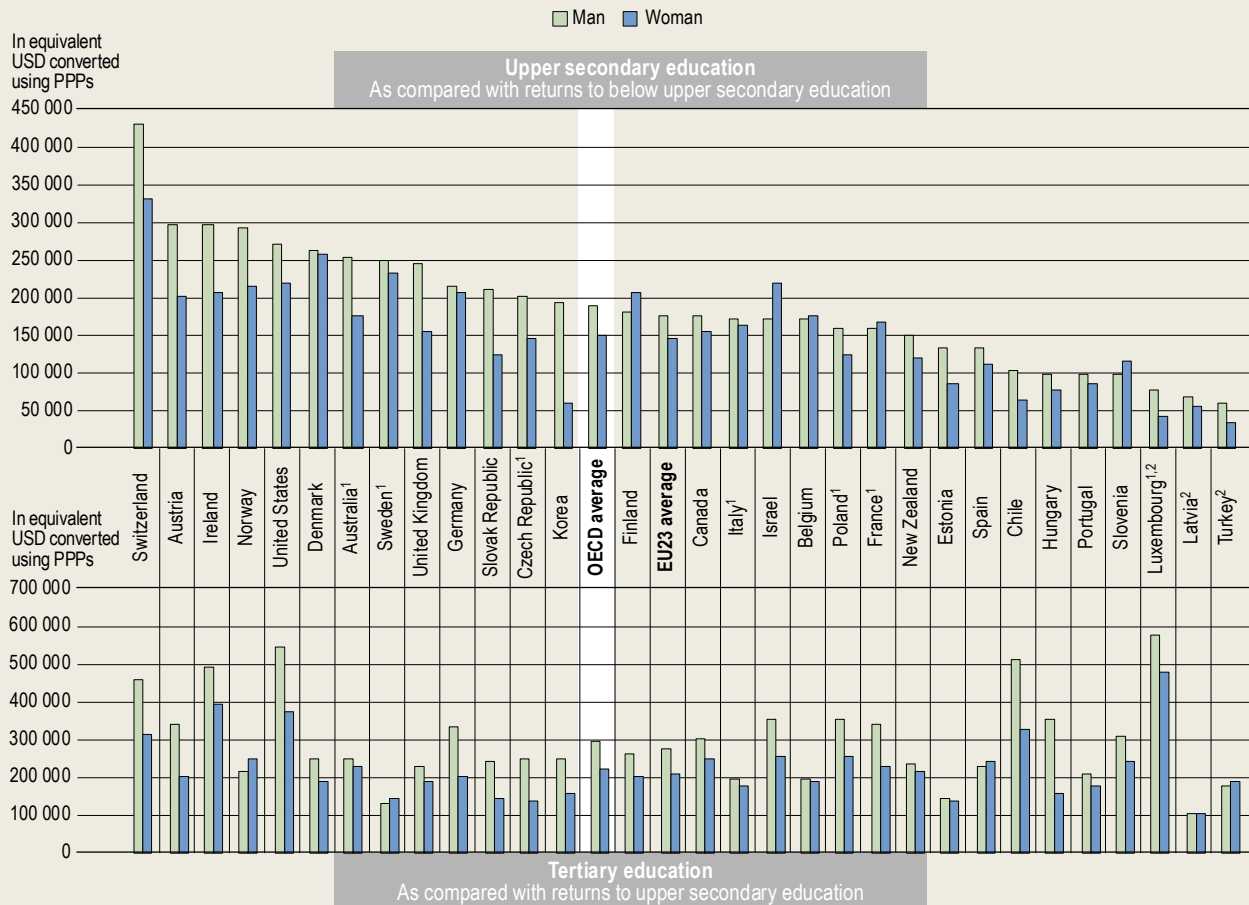
1. Year of reference differs from 2017. Refer to the source tables for details.
2. Only net earnings are available and the calculations are using these values as if they were gross earnings.
Countries are ranked in descending order of the private net financial returns of upper secondary education for a man.
Source: OECD (2020), Tables A5.1 and A5.2, and Tables A5.5 and A5.6, available on line. See *Source* section for more information and Annex 3 for notes (https://doi.org/10.1787/69096873-en).

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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 rates of return. It examines the choice between pursuing higher levels of education and entering the labour market, focusing on two scenarios: 1) investing in upper secondary education versus entering the labour market without an upper secondary qualification; 2) investing in tertiary education versus entering the labour market with an upper secondary qualification.

It considers two types of investors: 1) individuals (referred to here as "private") who choose to pursue higher levels of education and the additional net earnings and costs they can expect; and 2) governments (referred to here as "public") that decide to invest in education and the additional revenue they receive (e.g. as tax revenues) and the costs involved.

This indicator estimates the financial returns on investment in education only up to a theoretical retirement age of 64 and therefore does not take pensions into account. The direct costs of education presented in this indicator do not take into account student loans. The results presented in the tables and figures of this indicator are calculated using a discount rate of 2%, based on the average real interest on government bonds across OECD countries.

Analysis

Financial incentives to invest in upper secondary education

Financial incentives for individuals

Private net financial returns are the difference between the costs and benefits associated with attaining an additional level of education. In this analysis, the costs include the direct costs of attaining education and foregone earnings, while the benefits correspond to earnings from employment after paying income taxes and social contributions (see *Definitions* section). Another way to analyse returns to education is through the internal rate of return, which is the real interest rate that would equalise the costs and benefits, leading an investment to break even. It can be interpreted as the interest rate on the investment made on a higher level of education that an individual can expect to receive every year during their working-age life. The financial incentives to invest in education can also be expressed as total benefits relative to total costs (benefit-cost ratio). This is expressed as the financial benefit of attaining an additional level of education for each USD invested in it. Depending on which measure is used, the relative incentives to invest in additional educational attainment differ between men and women.

In all OECD countries, investing in upper secondary education pays off in the long run for both men and women. The gains associated with this level of education that individuals can expect to receive over their career exceed the costs they bear during their studies. On average across OECD countries, the private net financial return for each individual attaining upper secondary education, compared to an individual with below upper secondary education, is USD 186 100 for a man and USD 150 400 for a woman (Figure A5.1).

The private financial returns from upper secondary education are higher for men than for women in most OECD countries with available data. In Korea, the private financial return from upper secondary education is more than three times higher for men than for women. The only countries where women have higher private financial returns than men are Belgium, Finland, France, Israel and Slovenia (Figure A5.1).

Direct costs refer to the total expenditure on education, which are the same for men and women. On average across OECD countries, the direct costs for both men and women of attaining upper secondary education are USD 2 700. While direct costs are the most obvious element, in most countries the main costs are foregone earnings, i.e. the earnings individuals could expect to receive if they decide not to pursue further education. Foregone earnings depend on the length of education, earnings levels, employment rates and the difference in earnings and employment between levels of educational attainment. The current model also takes into account the fact that, in many countries, it is common for students to work while studying, thus reducing their foregone earnings and the total cost of education (OECD, 2017[1]). On average across OECD countries, the foregone earnings of attaining upper secondary education are about USD 20 500 for a man and USD 11 500 for a woman (Table A5.1 and Table A5.2). When direct costs and foregone earnings are combined, the average total costs of attaining upper secondary education, compared to not continuing in education, are USD 14 200 for women, representing about 60% of the total costs for men (USD 23 200). In Sweden, men can expect their total costs to be nearly four times those of women. Luxembourg is the only country where women face higher total costs than men (Figure A5.2).

Differences in labour-market outcomes lead to a wide variation in the private total benefits associated with investment in upper secondary education for men and women. On average across OECD countries, the total benefits of attaining upper secondary education are USD 209 300 for men and USD 164 600 for women. This is mainly due to gender gaps in earnings, but is also related to lower employment levels for women with an upper secondary education than for men (see Indicators A3 and A4 and Figure A5.2).

While further education yields higher earnings over the course of a working life, the private benefits from investing in education also depend on countries' tax and social contribution systems (Brys and Torres, 2013[2]). For instance, in Chile, Estonia, Korea and Switzerland, income taxes and social contributions amount to less than one-fifth of the gross earnings benefits for a man attaining upper secondary education, while in Belgium they add up to more than 40% of the gross earnings benefits. As women tend to have lower earnings, they often fall into lower income tax brackets. For example, in Ireland and Korea, the income tax and social contributions for a woman who attained upper secondary education are less than one-third those of a man with the same level of attainment (Table A5.1 and Table A5.2). Note that taxes and social contributions also relate to pensions and retirement programmes, which are not considered in this indicator.

Figure A5.2. Private costs and benefits for a man or a woman attaining upper secondary education (2017)

As compared with returns to below upper secondary education, in equivalent USD converted using PPPs for GDP; future costs and benefits are discounted at a rate of 2%
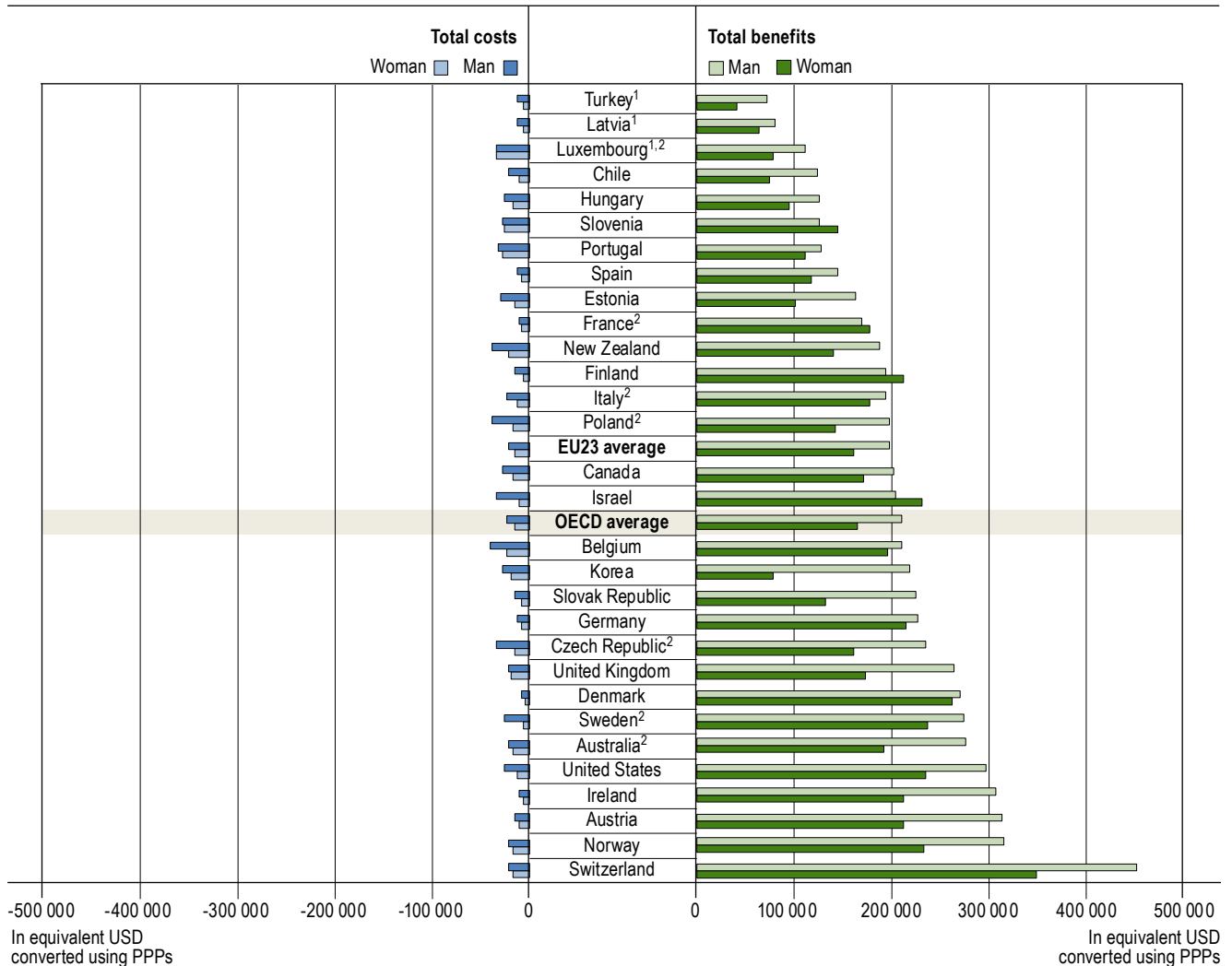
1. Only net earnings are available and the calculations are using these values as if they were gross earnings.
2. Year of reference differs from 2017. Refer to the source tables for details.
Countries are ranked in ascending order of the total private benefits for a man.
Source: OECD (2020), Tables A5.1 and A5.2. See *Source* section for more information and Annex 3 for notes (https://doi.org/10.1787/69096873-en).

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Across OECD countries, the average internal rate of return to upper secondary education is 25% for men and 32% for women. However, there are wide variations across countries, particularly for women. The internal rate of return to upper secondary education for women ranges from 7% in Luxembourg to more than 70% in Denmark and Ireland (Table A5.1 and Table A5.2).

Looking at the benefit-cost ratio, on average across OECD countries, for each USD invested in upper secondary education, men can expect to receive USD 9 over the course of their working-age life, while women can expect to receive USD 11.6 The private benefits for each USD invested in upper secondary education is the lowest in Luxembourg (USD 3.3 for a man and USD 2.2 for a woman) and the highest in Denmark (USD 31.2 for a man and USD 63.9 for a woman). In Luxembourg, women face the highest total costs of pursuing upper secondary education among OECD countries, and the fifth lowest total benefits.

In contrast, women in Denmark pay the lowest costs for upper secondary education and can expect to receive the second highest total benefits from it (Figure A5.3).

In most OECD countries with available data, women enjoy higher financial benefits than men for each USD invested in upper secondary education, even though their private net financial returns from upper secondary education are lower. This is due to the fact that, compared to the difference in total benefits, total costs are disproportionally lower for women than for men. For instance in Sweden, although women's total benefits from upper secondary education are about 85% of the total benefits for men, their total costs are just one-quarter of the total for men. However, in Australia, Korea, Luxembourg, Norway and the United Kingdom, men receive greater financial benefits for each USD they invest in upper secondary education than women do (Figure A5.2 and Figure A5.3).

Figure A5.3. Financial benefits for each equivalent USD invested in upper secondary education, by gender (2017)

As compared with returns to below upper secondary education, in equivalent USD converted using PPPs for GDP; future costs and benefits are discounted at a rate of 2%
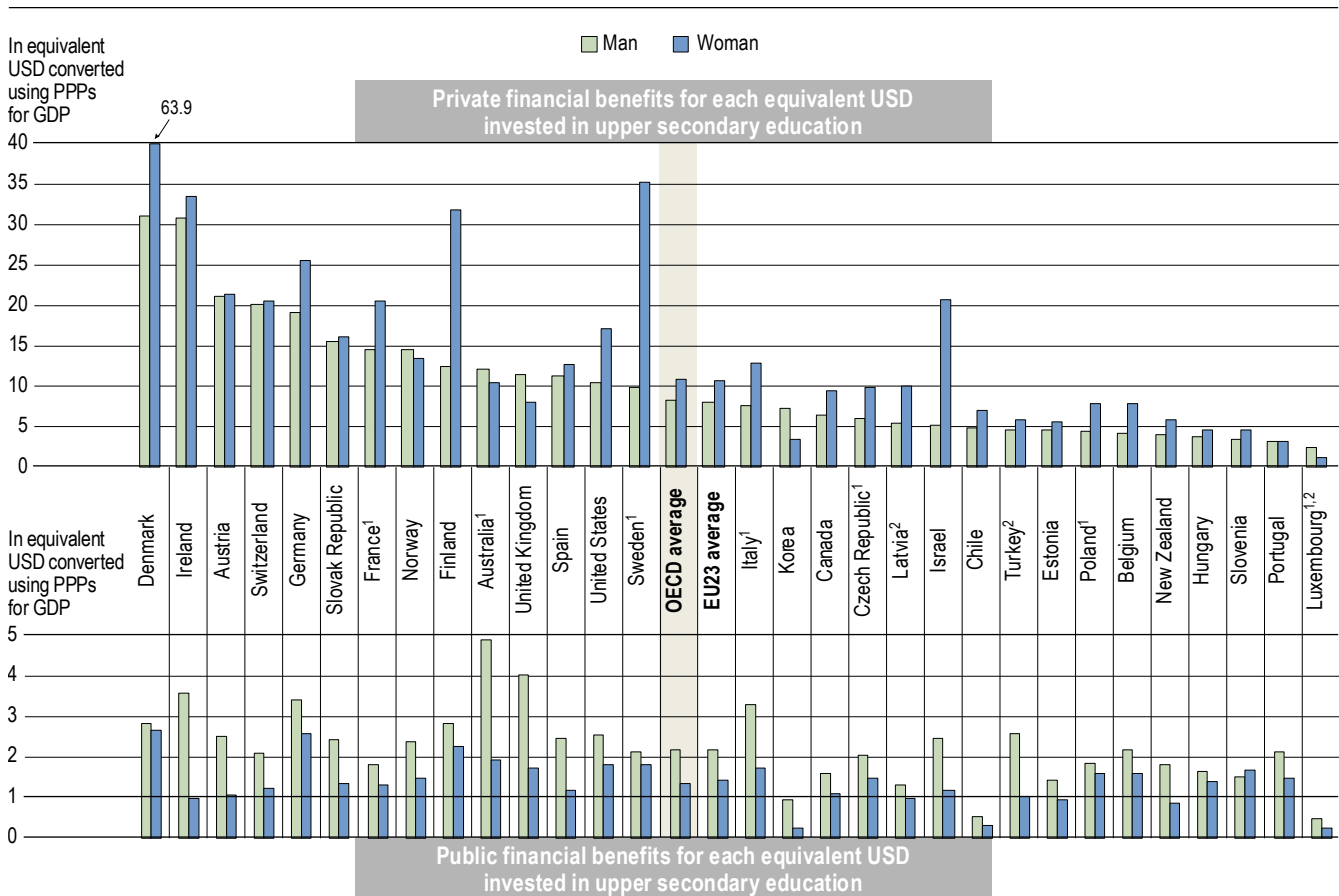
Note: Private financial benefits are net of income taxes and social contributions. The financial benefits for each equivalent USD invested in education are sensitive to the total costs of education. Readers would need to combine Figure A5.2 and Figure A5.3 to interpret the results. For example, in Denmark, the private total benefits from upper secondary education are similar for men and for women (USD 268 400 and USD 262 000), but the private total costs of upper secondary education are twice as high for men as for women (USD 8 600 compared with USD 4 100) (see Figure A5.2, and Tables A5.1 and A5.2).
1. Year of reference differs from 2017. Refer to the source tables for details.
2. Only net earnings are available and the calculations are using these values as if they were gross earnings.
Countries are ranked in descending order of the private financial benefits for each dollar invested in upper secondary education for a man.
Source: OECD (2020), Tables A5.1, A5.2, A5.3 and A5.4. See *Source* section for more information and Annex 3 for notes (https://doi.org/10.1787/69096873-en).

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Box A5.1. The effect of the discount rate on the net financial returns to education

The calculation of the financial returns, or the net present value (NPV), of education corresponds to a cost-benefit analysis that converts future expected flows into a present value by using a discount rate. The discount rate takes into account the fact that money tomorrow is worth less than money today, and must therefore be "discounted" at a specific rate to find its current worth. The choice of the discount rate is challenging, and it will make a considerable difference when analysing the returns to long-term investments, as is the case with investment in education.

Table A5.a. Net financial returns for a man attaining upper secondary education, by discount rate (2017)

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

	Discount rate		
	2%	3.75%	8%
Countries			
Australia[1]	252 900	174 300	82 300
Austria	297 400	195 900	83 200
Belgium[2]	169 000	101 600	28 700
Canada	173 400	109 700	38 400
Chile	102 100	59 500	15 300
Czech Republic[2,3]	200 100	128 400	47 200
Denmark	259 800	177 800	82 000
Estonia	132 300	87 800	36 500
Finland[2]	177 700	126 300	63 100
France[1,2]	157 300	106 300	47 000
Germany	214 100	145 700	67 000
Hungary[2]	98 500	59 000	16 000
Ireland[2]	296 200	208 200	102 800
Israel[2]	169 600	103 600	33 800
Italy[1]	170 100	97 900	26 900
Korea	190 600	117 200	38 700
Latvia[4]	66 100	44 400	19 200
Luxembourg[1,2,4]	77 700	45 900	9 800
New Zealand	147 900	88 800	25 700
Norway	293 700	198 200	87 100
Poland[1,2]	158 600	100 600	34 100
Portugal[2]	96 500	50 500	5 200
Slovak Republic[2]	209 700	140 700	60 900
Slovenia[2]	96 400	64 600	25 600
Spain	131 700	76 800	21 300
Sweden[1]	247 900	168 900	75 600
Switzerland	428 000	295 500	145 300
Turkey[2,4]	59 000	31 900	4 600
United Kingdom	242 100	154 100	57 500
United States	268 900	175 500	72 500
OECD average	186 100	121 200	48 400
EU23 average	174 900	114 100	45 500

Note: Values are based on the difference between men who attained an upper secondary education compared with those who have attained a below upper secondary education. Values have been rounded up to the nearest hundred. Direct costs to education do not include student loans.
1. Year of reference 2016.
2. The probability of students having earnings refers to the employment rate from the LSO TRANS questionnaire instead of the share of earners from the LSO Earnings questionnaire.
3. Year of reference 2015.
4. Only net earnings are available and the calculations are using these values as if they were gross earnings.
Source: OECD (2020). See *Source* section for more information and Annex 3 for notes (https://doi.org/10.1787/69096873-en).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

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The results presented in the tables and figures of this indicator are calculated using a discount rate of 2%, based on the average real interest on government bonds across OECD countries. However, it can be argued that education is not a risk-free investment, and that the discount rate should therefore be higher. The OECD countries that perform similar cost-benefit analysis use higher discount rates than 2%, but the rate used varies across countries (OECD, 2018[3]).

In order to assess the size of the impact of the discount rate it is helpful to perform a sensitivity analysis. Table A5.1 shows how the private financial returns for a man attaining upper secondary education changes when three different discount rates are used. Changing from a discount rate of 2% to a rate of 3.75% reduces the NPV by at least 29% in all countries with available data. If a discount rate of 8% is used, the NPV falls by over 50% in all countries. These comparisons highlight the sensitivity of the NPV results to changes in the discount rate.

Financial incentives for governments

Governments are major investors in education, especially at non-tertiary levels of education (see Indicator C3). From a budgetary point of view, it is important to analyse whether these investments will be recovered, particularly in an era of substantial fiscal constraints. Higher levels of educational attainment tend to translate into higher earnings (see Indicator A4), which in turn generate higher income taxes and social contributions for governments. On average across OECD countries, the public net financial returns from upper secondary education are about USD 44 600 for a man and USD 13 700 for a woman. The internal rate of return from upper secondary education to governments is 6% for a man and 3% for a woman (Table A5.4, and Table A5.5 available on line).

Public net financial returns are based on the difference between the costs and the benefits associated with an individual attaining an additional level of education. In this analysis, the costs include the direct public costs of supporting education and foregone taxes on earnings, while the benefits are calculated using income tax and social contributions (see *Definitions* section).

On average across OECD countries, the total public costs for an individual to attain upper secondary education are USD 38 400 for a man and USD 35 900 for a woman. For governments, direct costs (including student grants) represent the largest share of total public costs for upper secondary education, even though student loans are not taken into account in this indicator. On average across the OECD, direct costs account for roughly 90% of total government costs of upper secondary education for men and women. Since the direct costs are the same for men as for women, the total public costs are quite similar for men and women. The countries with high direct costs are also the countries with the largest total public costs. Luxembourg has the highest direct costs (USD 80 200) and total public costs for men (USD 86 700) and for women (USD 85 900). In contrast, Turkey has the lowest direct costs (USD 11 900) and total public cost for men (USD 13 700) and women (USD 12 400) of all OECD countries with available data (Table A5.3 and Table A5.4).

Governments offset the costs associated with education through the additional tax revenues and social contributions from higher-paid workers, who often have greater educational attainment. On average, the total public benefits amount to USD 83 000 for a man with upper secondary education as his highest attainment. The total can be broken down into income tax effects (USD 54 600) and social contribution effects (USD 28 400). For a women with upper secondary attainment, the total public benefits are USD 49 600 on average, composed of income tax effects of USD 29 100 and social contribution effects of USD 20 500. Across OECD countries, Austria and Denmark gain the largest total public benefits of upper secondary education for men (over USD 150 000) and Denmark and Germany gain the largest benefits for women (over USD 100 000) (Table A5.3 and Table A5.4).

In relative terms, the public benefits for each USD invested in upper secondary education are generally much lower than private ones, as the total costs are greater for governments than for individuals. On average across OECD countries, each USD that governments invest in upper secondary education generates a public benefit of USD 2.2 for a man, and USD 1.4 for a woman. In Chile, Korea and Luxembourg, the public benefits from investment in upper secondary education do not cover the total public costs for both men and women. In Estonia, Ireland and New Zealand, the public benefit-cost ratio is below one for women, but not for men (Figure A5.3). The gender difference is mainly due to the fact that, while the public costs are similar for men and women, the public benefits for men are greater than for women (Table A5.3 and Table A5.4). This suggests that governments have a role to play in improving the integration and participation of women in the labour market.
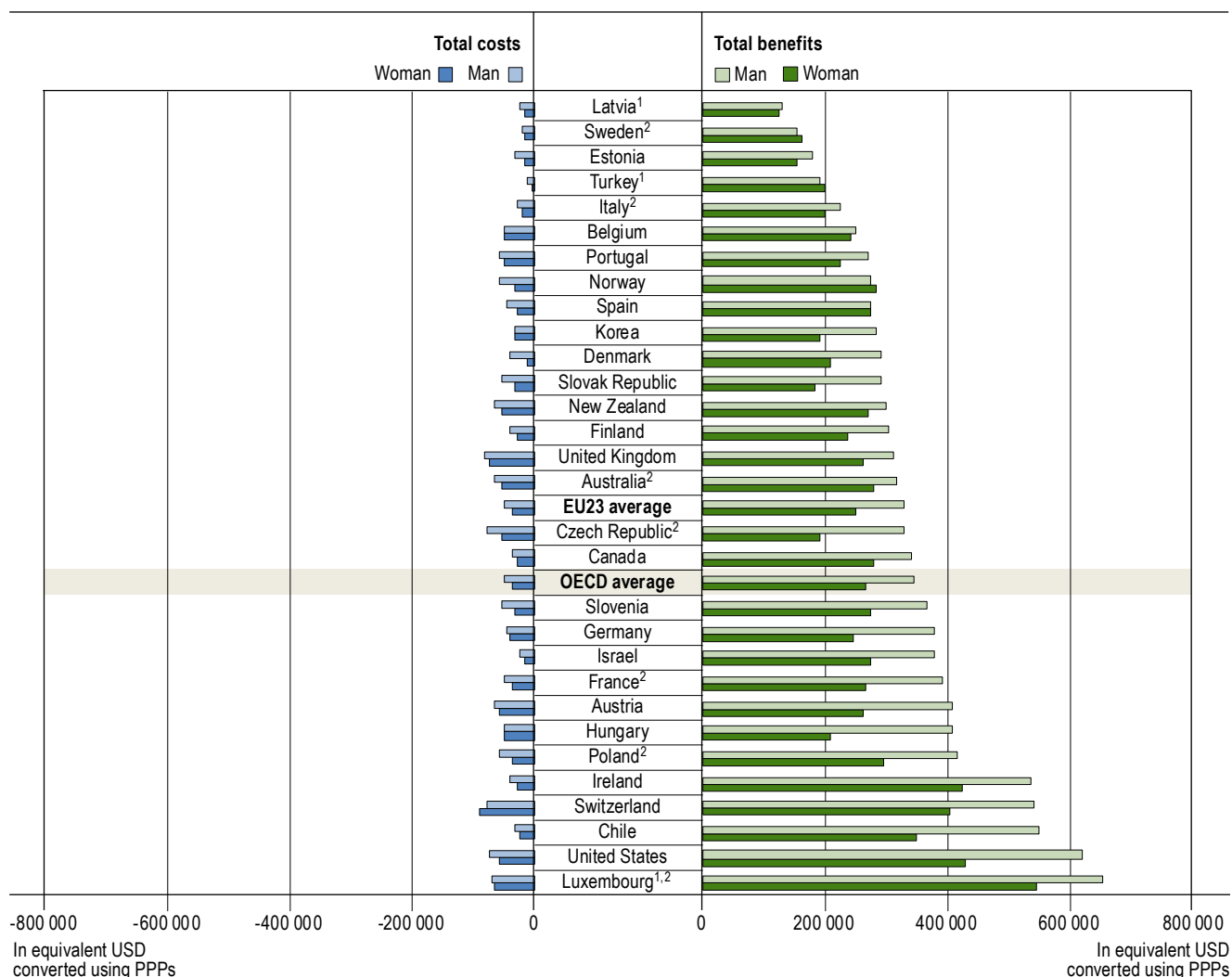
Financial incentives to invest in tertiary education

Financial incentives for individuals

As with upper secondary education, adults completing tertiary education benefit from positive financial returns over their working-age life. On average across OECD countries, the financial returns from tertiary education are about 1.5 times higher than the returns from upper secondary education for both men and women. In Chile and Luxembourg, the financial returns from tertiary education are at least five times higher than those from upper secondary education for both men and women. However, the returns from upper secondary education is higher than from tertiary education in Australia (for men), the Czech Republic (for women), Denmark (for men and women), Finland (for women), Germany (for women), Norway (for men), Sweden (for men and women), Switzerland (for women) and the United Kingdom (for men) (Figure A5.1).

Figure A5.4. Private costs and benefits for a man or a woman attaining tertiary education (2017)

As compared with returns to upper secondary education, in equivalent USD converted using PPPs for GDP; future costs and benefits are discounted at a rate of 2%

1. Only net earnings are available and the calculations are using these values as if they were gross earnings.
2. Year of reference differs from 2017. Refer to the source tables for details.
Countries are ranked in ascending order of the total private benefits for a man.
Source: OECD (2020), Tables A5.5 and A5.6, available on line. See *Source* section for more information and Annex 3 for notes (https://doi.org/10.1787/69096873-en).

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Although young women are more likely to complete tertiary education than young men (see Indicator A1), women generally receive lower returns than men from tertiary education. Across OECD countries, the average private financial return from tertiary education is USD 295 400 for a man and USD 225 400 for a woman. In the Czech Republic and Hungary, the financial returns for women are only about half of the returns for men. The only countries where women have higher private financial returns than men are Latvia, Norway, Spain, Sweden and Turkey. Moreover, the gender difference in net financial returns to education tends to increase with the level of educational attainment (Figure A5.1).

Across OECD countries, the average internal rate of return to tertiary education is 16% for men and 19% for women. The lower internal rate of return from tertiary education compared to upper secondary education is due to the higher total costs of attaining tertiary education (Table A5.1, Table A5.2, and Tables A5.5 and A5.6, available on line).

On average across OECD countries, the direct costs of tertiary education amount to USD 9 100 for both men and women, which is more than three times the direct costs of upper secondary education. The direct costs are particularly high in the United Kingdom and the United States: tuition fees and living expenses during tertiary education amount to more than USD 30 000 and exceed foregone earnings, although even in these countries the earnings advantage associated with tertiary education compensates for the costs. In most OECD countries, however, the main costs of tertiary education are still foregone earnings. The average foregone earnings for attaining tertiary education are about USD 38 900 for a man and USD 28 500 for a woman (Table A5.1, Table A5.2, and Tables A5.5 and A5.6, available on line). When direct costs and foregone earnings are combined, Turkey has the lowest total costs for both men and women (USD 12 400 for men and USD 5 800 for women), while Switzerland has the highest total costs for women (USD 87 100) and the United Kingdom the highest for men (USD 79 300) across all OECD countries with available data (Figure A5.4).

Further education yields higher gross earnings benefits over an individual's career. Across OECD countries, the average gross earnings benefits are USD 543 300 for a tertiary-educated man and USD 388 200 for a tertiary-educated woman compared with their peers with upper secondary attainment. Countries' tax and social benefit systems also have an impact on the benefits of attaining tertiary education. Income taxes and social contributions account for the lowest share of the benefits in Chile and Korea (less than one-fifth of the gross earnings benefits), while in Belgium and Italy (for men only) they account for more than half (Tables A5.5 and A5.6, available on line). On average across OECD countries, the total benefits net of income taxes and social contributions are about USD 343 400 for a tertiary-educated man and USD 263 000 for a tertiary-educated woman. Norway, Sweden and Turkey are the only OECD countries where women enjoy higher total benefits from tertiary education than men (Figure A5.4).

In two-thirds of OECD countries, the gender difference in the private financial benefits for each USD invested in tertiary education is less than USD 2. On average across OECD countries, the private financial benefits for each USD invested in tertiary education are very close for men and women (around USD 7), although women receive lower private net financial returns than men from tertiary education. This is due to the fact that, on average, women's total costs and total benefits represent a similar proportion of men's total costs and total benefits, around 77%. (Figure A5.1, Figure A5.4 and Figure A5.5).

Financial incentives for governments

Higher levels of educational attainment also lead to higher returns for the public sector. On average across OECD countries, the net public return for an individual attaining tertiary education is about USD 137 700 for a man and USD 67 900 for a woman. The internal rate of return from tertiary education to governments is 8% for a man and 6% for a woman (Tables A5.7 and A5.8, available on line).

Across OECD countries, the average total costs of tertiary education for governments amount to USD 62 200 for a man and USD 57 300 for a woman. As with upper secondary education, direct costs (including student grants) represent the largest share of the total public cost of tertiary education, even though student loans are not taken into account in this indicator. This is particularly true in countries such as Denmark, Finland and Norway, where students pay no tuition fees and have access to generous public subsidies for higher education (see Indicator C5). Countries with high direct public costs (more than USD 80 000 and up to USD 175 600 for both men and women), such as Denmark, Luxembourg, Norway, Sweden and Switzerland, also tend to have large total public costs. In contrast, Chile has the lowest total public costs (around USD 16 000) across all OECD countries with available data (Tables A5.7 and A5.8, available on line).

On average, the total public benefits are USD 199 900 for a tertiary-educated man, broken down into income tax effects (USD 144 300) and social contribution effects (USD 55 600). For a tertiary-educated women, the total public benefits are USD 125 200, composed of income tax effects (USD 83 900) and social contribution effects (USD 41 300). Among OECD countries, Ireland and Luxembourg have the largest total public benefits for tertiary-educated men (over USD 400 000) and

Belgium and Luxembourg have the largest public benefits for tertiary-educated women (over USD 240 000) (Tables A5.7 and A5.8, available on line).

Figure A5.5. Financial benefits for each equivalent USD invested in tertiary education, by gender (2017)

As compared with returns to upper secondary education, in equivalent USD converted using PPPs for GDP; future costs and benefits are discounted at a rate of 2%
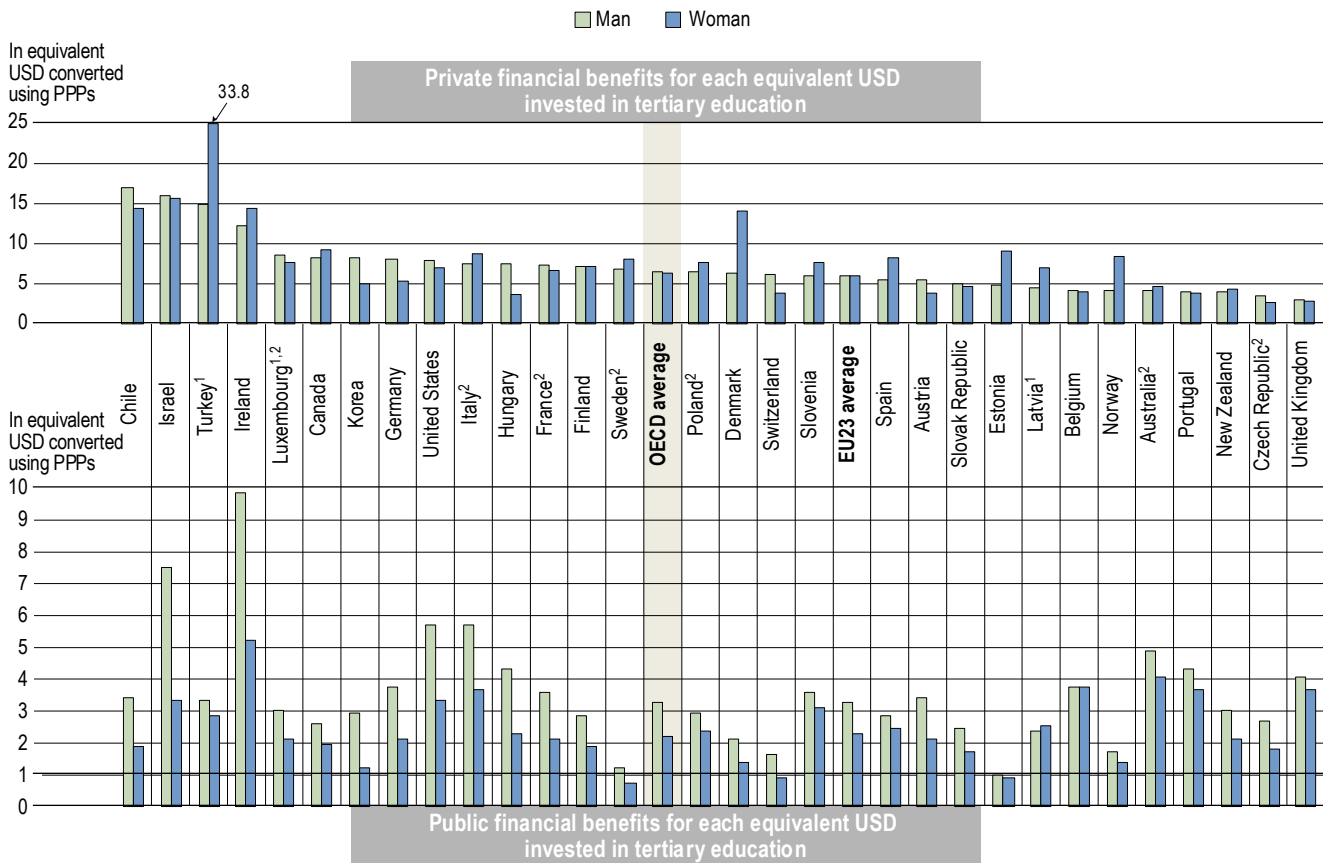
Note: Private financial benefits are net of income taxes and social contributions. The financial benefits for each equivalent USD invested in tertiary education are sensitive to the total costs of education. Readers would need to combine Figure A5.4 and Figure A5.5 to interpret the results. For example, in Spain, the private total benefits from tertiary education are similar for men and for women (USD 273 400 and USD 271 900), but the private total costs of tertiary education are roughly 1.5 times higher for men than for women (USD 43 500 compared with USD 30 400) (see Figure A5.4 and Tables A5.5 and A5.6, available on line).
1. Only net earnings are available and the calculations are using these values as if they were gross earnings.
2. Year of reference differs from 2017. Refer to the source tables for details.
Countries are ranked in descending order of the private financial benefits for each equivalent USD invested in tertiary education for a man.
 Source: OECD (2020), Tables A5.5, A5.6, A5.7 and A5.8, available on line. See *Source* section for more information and Annex 3 for notes (https://doi.org/10.1787/69096873-en).

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In relative terms, the public benefit from each USD invested in tertiary education are generally much lower than the private benefit, as the total costs are higher for governments than for individuals. On average across OECD countries, each USD that governments invest in tertiary education generates a public benefit of USD 3.2 for a man, and USD 2.2 for a woman. In Estonia, Sweden (only for women) and Switzerland (only for women), the total public benefits do not cover the total public costs of tertiary education. In all countries except Belgium and Latvia, governments receive more benefit from each USD invested in tertiary education for a man than for a woman (Figure A5.5). The difference by gender is mainly due to the fact that the public benefits for men are greater than the public benefits for women (Tables A5.7 and A5.8, available on line). As

with upper secondary education, this suggests that governments have a role to play in improving women's integration into the labour market.

Financial incentives by level of tertiary education

The returns for tertiary education are divided into two categories for analysis: short-cycle tertiary attainment and attainment of a bachelor's, master's and doctoral or equivalent degree. The share of the population with qualifications at each tertiary level differs across countries (see Indicator A1), and the mix of qualifications can impact the financial returns to education for tertiary education overall.

For all countries with available data, the private and public net financial returns from obtaining a bachelor's, master's or doctoral degree are greater than from obtaining a short-cycle tertiary degree. Although the total costs of a bachelor's, master's or doctoral degree tend to be higher, the total benefits accrued during individuals' working lives compensate for the higher initial costs (Tables A5.9 and A5.10, available online). Private financial returns for tertiary education overall would therefore underestimate the value of investing in bachelor's, master's and doctoral degrees, especially in countries with a relatively large share of adults whose highest level of attainment is short-cycle tertiary (see Indicator A1).

Definitions

Adults refer to 15-64 year-olds.

The **benefit-cost ratio** is total benefits relative to total costs, representing the financial benefits of attaining an additional level of education for each USD invested in it.

Direct costs are the direct expenditure on education per student during the time spent in school. Direct costs of education do not include student loans.

- **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. They do not include student loans.

Foregone earnings are the net earnings an individual not in education (a non-student) can expect, minus the net earnings an individual can expect to receive while studying.

Foregone taxes are the additional tax revenues the government would have received if the individual had chosen to enter the labour force as a non-student instead of pursuing 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.

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: See the *Reader's Guide* at the beginning of this publication for a presentation of all ISCED 2011 levels.

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.

Methodology

This indicator estimates the financial returns on investment in education from the age of 15 to a theoretical retirement age of 64. The effective retirement age could be slightly above the theoretical retirement age of 64 in some OECD countries (OECD, 2019[4]). Returns to education are studied from the perspective of financial investment.

Two periods are considered (Diagram 1):

time spent in education during which the private individual and the government pay the cost of education

time spent after leaving formal education (or "not studying") during which the individual and the government receive the added payments associated with further education.

In calculating the returns to education, the approach taken here is the net present value of the investment. To allow direct comparisons of costs and benefits, the NPV expresses present value for cash transfers happening at different times. 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 with a fixed interest rate (discount rate).

Diagram A5.1. Financial returns on investment in education over a lifetime for a representative individual

To set a value for the discount rate, long-term government bonds have been used as a benchmark. The choice of discount rate is challenging, 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 (Box A5.1). To allow for comparability and to facilitate the 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 NPV equivalent USD using purchasing power parities (PPPs).

Source

The source for the direct costs of education is the UOE data collection on finance (year of reference 2017 unless otherwise specified in the tables).

The data on gross earnings are based on the OECD Network on Labour Market and Social Outcomes earnings data collection, which compiles data from national Labour Force Surveys, EU Statistics on Incomes and Living Conditions, Structure of Earnings Surveys, and other national registers and surveys. Earnings are age-, gender- and attainment-level specific. For the calculation of this indicator, data on earnings have been pooled from three different years (2015-17).

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 2018* (OECD, 2018[5]).

Employee social contributions are computed using the OECD Taxing Wages model's scenario of a single worker aged 40 with no children. For country-specific details on employee social contributions in this model, see *Taxing Wages 2018* (OECD, 2018[5]).

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Indicator A5 Tables

Cut-off date for the data: 19 July 2020. Any updates on data can be found on line at http://dx.doi.org/10.1787/eag-data-en. More breakdowns can also be found at http://stats.oecd.org/, Education at a Glance Database.

StatLink: https://doi.org/10.1787/888934162546

Table A5.1. Private costs and benefits for a man attaining upper secondary education (2017)

As compared with a man attaining below upper secondary education, in equivalent USD converted using PPPs for GDP; future costs and benefits are discounted at a rate of 2%

	Direct costs	Foregone earnings	Total costs	Earnings benefits decomposition (taking into account the employment effect)			Total benefits	Net financial returns	Internal rate of return	Benefit-cost ratio
				Gross earnings benefits	Income tax effect	Social contribution effect				
	(1)	(2)	(3) = (1) + (2)	(4)	(5)	(6)	(7) = (4) + (5) + (6)	(8) = (7) + (3)	(9)	(10) = (7)/(3)
Countries										
Australia[1]	- 4 300	- 17 400	**- 21 700**	365 500	- 90 900	0	**274 600**	**252 900**	38%	12.7
Austria	0	- 14 500	**- 14 500**	478 800	- 78 800	- 88 100	**311 900**	**297 400**	36%	21.5
Belgium[2]	- 1 400	- 40 100	**- 41 500**	359 700	- 93 800	- 55 400	**210 500**	**169 000**	13%	5.1
Canada	- 1 400	- 26 900	**- 28 300**	271 000	- 49 000	- 20 300	**201 700**	**173 400**	17%	7.1
Chile	- 2 700	- 18 900	**- 21 600**	133 000	0	- 9 300	**123 700**	**102 100**	13%	5.7
Colombia	m	m	**m**	m	m	m	**m**	**m**	m	m
Costa Rica	m	m	**m**	m	m	m	**m**	**m**	m	m
Czech Republic[2,3]	- 2 500	- 32 000	**- 34 500**	313 500	- 44 400	- 34 500	**234 600**	**200 100**	18%	6.8
Denmark	0	- 8 600	**- 8 600**	431 800	- 163 400	0	**268 400**	**259 800**	51%	31.2
Estonia	0	- 29 600	**- 29 600**	200 400	- 35 300	- 3 200	**161 900**	**132 300**	20%	5.5
Finland[2]	0	- 14 700	**- 14 700**	269 600	- 52 000	- 25 200	**192 400**	**177 700**	41%	13.1
France[1,2]	- 2 900	- 8 200	**- 11 100**	242 300	- 39 300	- 34 600	**168 400**	**157 300**	32%	15.2
Germany	- 6 600	- 4 900	**- 11 500**	369 400	- 67 100	- 76 700	**225 600**	**214 100**	42%	19.6
Greece[2]	m	m	**m**	m	m	m	**m**	**m**	m	m
Hungary[2]	- 5 500	- 20 900	**- 26 400**	187 900	- 28 200	- 34 800	**124 900**	**98 500**	13%	4.7
Iceland	m	m	**m**	m	m	m	**m**	**m**	m	m
Ireland[2]	0	- 9 900	**- 9 900**	413 600	- 90 800	- 16 700	**306 100**	**296 200**	68%	30.9
Israel[2]	- 4 500	- 28 700	**- 33 200**	259 600	- 32 300	- 24 500	**202 800**	**169 600**	16%	6.1
Italy[1]	- 6 400	- 16 300	**- 22 700**	315 000	- 92 300	- 29 900	**192 800**	**170 100**	15%	8.5
Japan	m	m	**m**	m	m	m	**m**	**m**	m	m
Korea	- 8 100	- 18 900	**- 27 000**	250 500	- 11 800	- 21 100	**217 600**	**190 600**	17%	8.1
Latvia[4]	- 1 700	- 11 100	**- 12 800**	111 500	- 20 900	- 11 700	**78 900**	**66 100**	23%	6.2
Lithuania	m	m	**m**	m	m	m	**m**	**m**	m	m
Luxembourg[1,2,4]	- 1 600	- 31 500	**- 33 100**	156 000	- 25 200	- 20 000	**110 800**	**77 700**	11%	3.3
Mexico	m	m	**m**	m	m	m	**m**	**m**	m	m
Netherlands	m	m	**m**	m	m	m	**m**	**m**	m	m
New Zealand	- 6 300	- 32 300	**- 38 600**	245 900	- 59 400	0	**186 500**	**147 900**	14%	4.8
Norway	0	- 20 800	**- 20 800**	450 100	- 98 700	- 36 900	**314 500**	**293 700**	32%	15.1
Poland[1,2]	- 3 600	- 34 500	**- 38 100**	263 600	- 19 900	- 47 000	**196 700**	**158 600**	15%	5.2
Portugal[2]	- 4 500	- 26 700	**- 31 200**	197 500	- 48 100	- 21 700	**127 700**	**96 500**	9%	4.1
Slovak Republic[2]	- 2 200	- 11 800	**- 14 000**	297 900	- 33 700	- 40 500	**223 700**	**209 700**	31%	16.0
Slovenia[2]	0	- 28 600	**- 28 600**	193 300	- 25 600	- 42 700	**125 000**	**96 400**	17%	4.4
Spain	- 2 400	- 9 700	**- 12 100**	193 100	- 37 000	- 12 300	**143 800**	**131 700**	15%	11.9
Sweden[1]	0	- 26 000	**- 26 000**	368 100	- 68 400	- 25 800	**273 900**	**247 900**	29%	10.5
Switzerland	- 500	- 21 400	**- 21 900**	553 100	- 68 800	- 34 400	**449 900**	**428 000**	54%	20.5
Turkey[2,4]	- 3 400	- 9 600	**- 13 000**	107 300	- 19 200	- 16 100	**72 000**	**59 000**	10%	5.5
United Kingdom	- 4 200	- 17 400	**- 21 600**	359 200	- 58 300	- 37 200	**263 700**	**242 100**	21%	12.2
United States	- 4 200	- 22 200	**- 26 400**	411 100	- 84 300	- 31 500	**295 300**	**268 900**	27%	11.2
OECD average	- 2 700	- 20 500	**- 23 200**	292 300	- 54 600	- 28 400	**209 300**	**186 100**	25%	9.0
EU23 average	- 2 300	- 19 900	**- 22 200**	286 100	- 56 100	- 32 900	**197 100**	**174 900**	26%	8.9

Note: Values are based on the difference between men who attained an upper secondary education compared with those who have attained a below upper secondary education. Values have been rounded up to the nearest hundred. Direct costs to education do not include student loans.

Due to changes in the methodology, values in this edition of *Education at a Glance* cannot be compared to results from previous editions. See *Definitions* and *Methodology* sections for more information.

1. Year of reference 2016.

2. The probability of students having earnings refers to the employment rate from the LSO TRANS questionnaire instead of the share of earners from the LSO Earnings questionnaire.

3. Year of reference 2015.

4. Only net earnings are available and the calculations are using these values as if they were gross earnings.

Source: OECD (2020). See *Source* section for more information and Annex 3 for notes (https://doi.org/10.1787/69096873-en).

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

StatLink ⟶ https://doi.org/10.1787/888934162565

Table A5.2. Private costs and benefits for a woman attaining upper secondary education (2017)

As compared with a woman attaining below upper secondary education, in equivalent USD converted using PPPs for GDP; future costs and benefits are discounted at a rate of 2%

	Direct costs	Foregone earnings	Total costs	Earnings benefits decomposition (taking into account the employment effect)			Total benefits	Net financial returns	Internal rate of return	Benefit-cost ratio
				Gross earnings benefits	Income tax effect	Social contribution effect				
	(1)	(2)	(3) = (1) + (2)	(4)	(5)	(6)	(7) = (4) + (5) + (6)	(8) = (7) + (3)	(9)	(10) = (7)/(3)
OECD Countries										
Australia[1]	- 4 300	- 12 800	- 17 100	225 100	- 34 100	0	191 000	173 900	43%	11.2
Austria	0	- 9 700	- 9 700	284 500	- 21 100	- 51 900	211 500	201 800	40%	21.8
Belgium[2]	- 1 400	- 21 200	- 22 600	290 200	- 54 300	- 40 200	195 700	173 100	18%	8.7
Canada	- 1 400	- 15 300	- 16 700	214 200	- 28 200	- 15 200	170 800	154 100	22%	10.2
Chile	- 2 700	- 6 800	- 9 500	79 600	0	- 5 600	74 000	64 500	17%	7.8
Colombia	m	m	m	m	m	m	m	m	m	m
Costa Rica	m	m	m	m	m	m	m	m	m	m
Czech Republic[2,3]	- 2 500	- 12 700	- 15 200	208 200	- 25 700	- 22 900	159 600	144 400	24%	10.5
Denmark	0	- 4 100	- 4 100	405 100	- 143 100	0	262 000	257 900	71%	63.9
Estonia	0	- 15 600	- 15 600	122 400	- 19 900	- 2 000	100 500	84 900	23%	6.4
Finland[2]	0	- 6 600	- 6 600	269 000	- 33 000	- 25 100	210 900	204 300	63%	32.0
France[1,2]	- 2 900	- 5 500	- 8 400	228 400	- 20 000	- 32 700	175 700	167 300	34%	20.9
Germany	- 6 600	- 1 700	- 8 300	319 600	- 38 800	- 66 600	214 200	205 900	49%	25.8
Greece[2]	m	m	m	m	m	m	m	m	m	m
Hungary[2]	- 5 500	- 11 900	- 17 400	143 000	- 21 500	- 26 500	95 000	77 600	14%	5.5
Iceland	m	m	m	m	m	m	m	m	m	m
Ireland[2]	0	- 6 300	- 6 300	240 500	- 20 200	- 9 200	211 100	204 800	80%	33.5
Israel[2]	- 4 500	- 6 400	- 10 900	256 700	- 12 100	- 14 200	230 400	219 500	38%	21.1
Italy[1]	- 6 400	- 6 600	- 13 000	237 800	- 39 700	- 22 600	175 500	162 500	19%	13.5
Japan	m	m	m	m	m	m	m	m	m	m
Korea	- 8 100	- 10 200	- 18 300	84 800	- 1 100	- 7 100	76 600	58 300	17%	4.2
Latvia[4]	- 1 700	- 4 100	- 5 800	84 700	- 13 500	- 8 900	62 300	56 500	36%	10.7
Lithuania	m	m	m	m	m	m	m	m	m	m
Luxembourg[1,2,4]	- 1 600	- 33 500	- 35 100	98 500	- 9 200	- 12 500	76 800	41 700	7%	2.2
Mexico	m	m	m	m	m	m	m	m	m	m
Netherlands	m	m	m	m	m	m	m	m	m	m
New Zealand	- 6 300	- 14 900	- 21 200	164 900	- 25 300	0	139 600	118 400	21%	6.6
Norway	0	- 16 400	- 16 400	315 400	- 57 500	- 25 900	232 000	215 600	29%	14.1
Poland[1,2]	- 3 600	- 12 900	- 16 500	187 000	- 13 100	- 33 300	140 600	124 100	21%	8.5
Portugal[2]	- 4 500	- 22 200	- 26 700	152 900	- 26 100	- 16 800	110 000	83 300	10%	4.1
Slovak Republic[2]	- 2 200	- 5 700	- 7 900	170 800	- 14 900	- 24 400	131 500	123 600	29%	16.6
Slovenia[2]	0	- 26 400	- 26 400	216 100	- 25 400	- 47 800	142 900	116 500	16%	5.4
Spain	- 2 400	- 6 400	- 8 800	141 000	- 14 700	- 9 000	117 300	108 500	16%	13.3
Sweden[1]	0	- 6 700	- 6 700	307 100	- 49 700	- 21 500	235 900	229 200	67%	35.2
Switzerland	- 500	- 16 100	- 16 600	406 800	- 33 000	- 25 300	348 500	331 900	56%	21.0
Turkey[2,4]	- 3 400	- 2 600	- 6 000	52 200	- 4 800	- 7 800	39 600	33 600	17%	6.6
United Kingdom	- 4 200	- 15 500	- 19 700	212 700	- 23 400	- 16 400	172 900	153 200	19%	8.8
United States	- 4 200	- 9 100	- 13 300	308 000	- 50 900	- 23 600	233 500	220 200	36%	17.6
OECD average	- 2 700	- 11 500	- 14 200	214 200	- 29 100	- 20 500	164 600	150 400	32%	11.6
EU23 average	- 2 300	- 11 800	- 14 100	216 000	- 31 400	- 24 500	160 100	146 000	33%	11.4

Note: Values are based on the difference between men who attained an upper secondary education compared with those who have attained a below upper secondary education. Values have been rounded up to the nearest hundred. Direct costs to education do not include student loans.

Due to changes in the methodology, values in this edition of *Education at a Glance* cannot be compared to results from previous editions. See *Definitions* and *Methodology* sections for more information.

1. Year of reference 2016.
2. The probability of students having earnings refers to the employment rate from the LSO TRANS questionnaire instead of the share of earners from the LSO Earnings questionnaire.
3. Year of reference 2015.
4. Only net earnings are available and the calculations are using these values as if they were gross earnings.
Source: OECD (2020). See *Source* section for more information and Annex 3 for notes (https://doi.org/10.1787/69096873-en).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

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Table A5.3. Public costs and benefits for a man attaining upper secondary education (2017)

As compared with a man attaining below upper secondary education, in equivalent USD converted using PPPs for GDP; future costs and benefits are discounted at a rate of 2%

	Direct costs	Foregone taxes on earnings	Total costs	Earnings benefits decomposition (taking into account the employment effect)		Total benefits	Net financial returns	Internal rate of return	Benefit-cost ratio
				Income tax effect	Social contribution effect				
	(1)	(2)	(3) = (1) + (2)	(4)	(5)	(6) = (4) + (5)	(7) = (6) + (3)	(8)	(9) = (6)/(3)
Countries									
Australia[1]	- 16 100	- 2 600	**- 18 700**	90 900	0	**90 900**	**72 200**	13%	4.9
Austria	- 63 700	- 2 500	**- 66 200**	78 800	88 100	**166 900**	**100 700**	7%	2.5
Belgium[2]	- 56 400	- 12 000	**- 68 400**	93 800	55 400	**149 200**	**80 800**	6%	2.2
Canada	- 36 400	- 7 000	**- 43 400**	49 000	20 300	**69 300**	**25 900**	4%	1.6
Chile	- 16 100	- 1 400	**- 17 500**	0	9 300	**9 300**	**- 8 200**	0%	0.5
Colombia	m	m	**m**	m	m	**m**	**m**	m	m
Costa Rica	m	m	**m**	m	m	**m**	**m**	m	m
Czech Republic[2,3]	- 29 200	- 9 300	**- 38 500**	44 400	34 500	**78 900**	**40 400**	6%	2.0
Denmark	- 51 800	- 6 100	**- 57 900**	163 400	0	**163 400**	**105 500**	8%	2.8
Estonia	- 20 600	- 6 200	**- 26 800**	35 300	3 200	**38 500**	**11 700**	4%	1.4
Finland[2]	- 25 000	- 2 100	**- 27 100**	52 000	25 200	**77 200**	**50 100**	9%	2.8
France[1,2]	- 38 300	- 2 300	**- 40 600**	39 300	34 600	**73 900**	**33 300**	5%	1.8
Germany	- 39 700	- 2 400	**- 42 100**	67 100	76 700	**143 800**	**101 700**	9%	3.4
Greece[2]	m	m	**m**	m	m	**m**	**m**	m	m
Hungary[2]	- 27 800	- 10 500	**- 38 300**	28 200	34 800	**63 000**	**24 700**	5%	1.6
Iceland	m	m	**m**	m	m	**m**	**m**	m	m
Ireland[2]	- 30 000	0	**- 30 000**	90 800	16 700	**107 500**	**77 500**	9%	3.6
Israel[2]	- 21 800	- 1 200	**- 23 000**	32 300	24 500	**56 800**	**33 800**	6%	2.5
Italy[1]	- 35 300	- 1 700	**- 37 000**	92 300	29 900	**122 200**	**85 200**	7%	3.3
Japan	m	m	**m**	m	m	**m**	**m**	m	m
Korea	- 32 600	- 1 700	**- 34 300**	11 800	21 100	**32 900**	**- 1 400**	2%	1.0
Latvia[4]	- 21 100	- 3 800	**- 24 900**	20 900	11 700	**32 600**	**7 700**	4%	1.3
Lithuania	m	m	**m**	m	m	**m**	**m**	m	m
Luxembourg[1,2,4]	- 80 200	- 6 500	**- 86 700**	25 200	20 000	**45 200**	**- 41 500**	-1%	0.5
Mexico	m	m	**m**	m	m	**m**	**m**	m	m
Netherlands	m	m	**m**	m	m	**m**	**m**	m	m
New Zealand	- 27 600	- 5 100	**- 32 700**	59 400	0	**59 400**	**26 700**	5%	1.8
Norway	- 52 100	- 5 000	**- 57 100**	98 700	36 900	**135 600**	**78 500**	7%	2.4
Poland[1,2]	- 25 100	- 11 300	**- 36 400**	19 900	47 000	**66 900**	**30 500**	6%	1.8
Portugal[2]	- 26 300	- 6 400	**- 32 700**	48 100	21 700	**69 800**	**37 100**	5%	2.1
Slovak Republic[2]	- 28 100	- 2 500	**- 30 600**	33 700	40 500	**74 200**	**43 600**	7%	2.4
Slovenia[2]	- 31 600	- 13 200	**- 44 800**	25 600	42 700	**68 300**	**23 500**	5%	1.5
Spain	- 19 300	- 700	**- 20 000**	37 000	12 300	**49 300**	**29 300**	6%	2.5
Sweden[1]	- 38 700	- 5 400	**- 44 100**	68 400	25 800	**94 200**	**50 100**	6%	2.1
Switzerland	- 45 200	- 3 600	**- 48 800**	68 800	34 400	**103 200**	**54 400**	6%	2.1
Turkey[2,4]	- 11 900	- 1 800	**- 13 700**	19 200	16 100	**35 300**	**21 600**	6%	2.6
United Kingdom	- 22 800	- 1 000	**- 23 800**	58 300	37 200	**95 500**	**71 700**	9%	4.0
United States	- 39 700	- 5 400	**- 45 100**	84 300	31 500	**115 800**	**70 700**	7%	2.6
OECD average	- 33 700	- 4 700	**- 38 400**	54 600	28 400	**83 000**	**44 600**	6%	2.2
EU23 average	- 35 600	- 5 300	**- 40 900**	56 100	32 900	**89 000**	**48 100**	6%	2.2

Note: Values are based on the difference between men who attained an upper secondary education compared with those who have attained a below upper secondary education. Values have been rounded up to the nearest hundred. Direct costs to education do not include student loans.

Due to changes in the methodology, values in this edition of *Education at a Glance* cannot be compared to results from previous editions. See *Definitions* and *Methodology* sections for more information.

1. Year of reference 2016.

2. The probability of students having earnings refers to the employment rate from the LSO TRANS questionnaire instead of the share of earners from the LSO Earnings questionnaire.

3. Year of reference 2015.

4. Only net earnings are available and the calculations are using these values as if they were gross earnings.

Source: OECD (2020). See *Source* section for more information and Annex 3 for notes (https://doi.org/10.1787/69096873-en).

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

StatLink ⧉ https://doi.org/10.1787/888934162603

Table A5.4. Public costs and benefits for a woman attaining upper secondary education (2017)

As compared with a woman attaining below upper secondary education, in equivalent USD converted using PPPs for GDP; future costs and benefits are discounted at a rate of 2%

	Direct costs	Foregone taxes on earnings	Total costs	Earnings benefits decomposition (taking into account the employment effect)		Total benefits	Net financial returns	Internal rate of return	Benefit-cost ratio
				Income tax effect	Social contribution effect				
	(1)	(2)	(3) = (1) + (2)	(4)	(5)	(6) = (4) + (5)	(7) = (6) + (3)	(8)	(9) = (6)/(3)
Countries									
Australia[1]	- 16 100	- 1 400	**- 17 500**	34 100	0	**34 100**	**16 600**	6%	1.9
Austria	- 63 700	- 3 100	**- 66 800**	21 100	51 900	**73 000**	**6 200**	2%	1.1
Belgium[2]	- 56 400	- 2 900	**- 59 300**	54 300	40 200	**94 500**	**35 200**	4%	1.6
Canada	- 36 400	- 2 000	**- 38 400**	28 200	15 200	**43 400**	**5 000**	3%	1.1
Chile	- 16 100	- 500	**- 16 600**	0	5 600	**5 600**	**- 11 000**	-2%	0.3
Colombia	m	m	**m**	m	m	**m**	**m**	m	m
Costa Rica	m	m	**m**	m	m	**m**	**m**	m	m
Czech Republic[2,3]	- 29 200	- 3 200	**- 32 400**	25 700	22 900	**48 600**	**16 200**	4%	1.5
Denmark	- 51 800	- 2 000	**- 53 800**	143 100	0	**143 100**	**89 300**	7%	2.7
Estonia	- 20 600	- 2 900	**- 23 500**	19 900	2 000	**21 900**	**- 1 600**	2%	0.9
Finland[2]	- 25 000	- 800	**- 25 800**	33 000	25 100	**58 100**	**32 300**	7%	2.3
France[1,2]	- 38 300	- 1 600	**- 39 900**	20 000	32 700	**52 700**	**12 800**	3%	1.3
Germany	- 39 700	- 1 200	**- 40 900**	38 800	66 600	**105 400**	**64 500**	7%	2.6
Greece[2]	m	m	**m**	m	m	**m**	**m**	m	m
Hungary[2]	- 27 800	- 6 000	**- 33 800**	21 500	26 500	**48 000**	**14 200**	4%	1.4
Iceland	m	m	**m**	m	m	**m**	**m**	m	m
Ireland[2]	- 30 000	- 100	**- 30 100**	20 200	9 200	**29 400**	**- 700**	2%	1.0
Israel[2]	- 21 800	- 200	**- 22 000**	12 100	14 200	**26 300**	**4 300**	3%	1.2
Italy[1]	- 35 300	- 700	**- 36 000**	39 700	22 600	**62 300**	**26 300**	4%	1.7
Japan	m	m	**m**	m	m	**m**	**m**	m	m
Korea	- 32 600	- 900	**- 33 500**	1 100	7 100	**8 200**	**- 25 300**	-4%	0.2
Latvia[4]	- 21 100	- 1 200	**- 22 300**	13 500	8 900	**22 400**	**100**	2%	1.0
Lithuania	m	m	**m**	m	m	**m**	**m**	m	m
Luxembourg[1,2,4]	- 80 200	- 5 700	**- 85 900**	9 200	12 500	**21 700**	**- 64 200**	-3%	0.3
Mexico	m	m	**m**	m	m	**m**	**m**	m	m
Netherlands	m	m	**m**	m	m	**m**	**m**	m	m
New Zealand	- 27 600	- 2 000	**- 29 600**	25 300	0	**25 300**	**- 4 300**	1%	0.9
Norway	- 52 100	- 3 600	**- 55 700**	57 500	25 900	**83 400**	**27 700**	4%	1.5
Poland[1,2]	- 25 100	- 4 100	**- 29 200**	13 100	33 300	**46 400**	**17 200**	4%	1.6
Portugal[2]	- 26 300	- 2 700	**- 29 000**	26 100	16 800	**42 900**	**13 900**	3%	1.5
Slovak Republic[2]	- 28 100	- 1 100	**- 29 200**	14 900	24 400	**39 300**	**10 100**	3%	1.3
Slovenia[2]	- 31 600	- 11 900	**- 43 500**	25 400	47 800	**73 200**	**29 700**	5%	1.7
Spain	- 19 300	- 400	**- 19 700**	14 700	9 000	**23 700**	**4 000**	3%	1.2
Sweden[1]	- 38 700	- 600	**- 39 300**	49 700	21 500	**71 200**	**31 900**	5%	1.8
Switzerland	- 45 200	- 1 900	**- 47 100**	33 000	25 300	**58 300**	**11 200**	3%	1.2
Turkey[2,4]	- 11 900	- 500	**- 12 400**	4 800	7 800	**12 600**	**200**	2%	1.0
United Kingdom	- 22 800	- 300	**- 23 100**	23 400	16 400	**39 800**	**16 700**	4%	1.7
United States	- 39 700	- 1 600	**- 41 300**	50 900	23 600	**74 500**	**33 200**	5%	1.8
OECD average	- 33 700	- 2 200	**- 35 900**	29 100	20 500	**49 600**	**13 700**	3%	1.4
EU23 average	- 35 600	- 2 600	**- 38 200**	31 400	24 500	**55 900**	**17 700**	4%	1.5

Note: Values are based on the difference between men who attained an upper secondary education compared with those who have attained a below upper secondary education. Values have been rounded up to the nearest hundred. Direct costs to education do not include student loans.

Due to changes in the methodology, values in this edition of *Education at a Glance* cannot be compared to results from previous editions. See *Definitions* and *Methodology* sections for more information.

1. Year of reference 2016.

2. The probability of students having earnings refers to the employment rate from the LSO TRANS questionnaire instead of the share of earners from the LSO Earnings questionnaire.
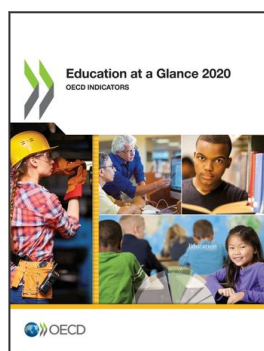
3. Year of reference 2015.

4. Only net earnings are available and the calculations are using these values as if they were gross earnings.

Source: OECD (2020). See *Source* section for more information and Annex 3 for notes (https://doi.org/10.1787/69096873-en).

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

StatLink ᵃ https://doi.org/10.1787/888934162622