How does the earnings advantage of tertiary-educated workers evolve across generations?

EDUCATION INDICATORS IN FOCUS

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How does the earnings advantage of tertiary-educated workers evolve across generations?

- The earnings advantage of tertiary-educated workers is highest in countries where a low share of adults have completed tertiary education, such as Brazil, Costa Rica, Colombia and Mexico.
- Tertiary-educated 55-64 year-olds have a higher earnings advantage than tertiary-educated 25-34 year-olds due to their relative scarcity and their longer experience in the labour market.
- Tertiary-educated workers with high literacy skills have considerably higher earnings than tertiary-educated workers with lower skills.

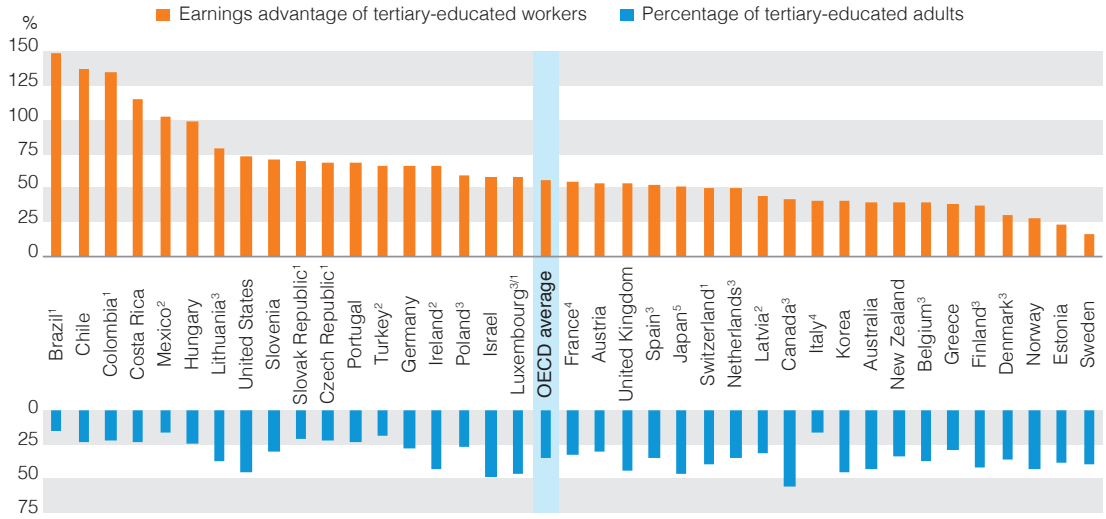
Tertiary-educated workers have an earnings advantage in all OECD and partner countries

Those with higher educational attainment levels can expect higher earnings compared to their peers with lower educational attainment. In 2015, on average across OECD countries, tertiary-educated workers aged 25-64 earned about 55% more than their upper-secondary educated peers. Tertiary-educated workers benefit from an earnings advantage in all OECD and partner countries, although the advantage varies from less than 20% in Sweden to over 100% (double the earnings) in Brazil, Chile, Colombia, Costa Rica and Mexico (Figure 1).

The latter countries also have the lowest share of adults who have completed tertiary education, while Sweden has a higher than average share of those who are tertiary-educated. This shows that the earnings advantage of tertiary education typically decreases as the share of tertiary-educated adults in the population increases. In some countries, this correlation does not seem to be prominent. For example, Italy is an outlier, because despite having a very low share of tertiary-educated people (16%), the earnings advantage is rather low (41%) and largely below the OECD average (56%).

FIGURE 1 / Earnings advantage and share of tertiary-educated adults (2015)

Earnings advantage of 25-64 year-old tertiary-educated full- and part-time workers over the earnings of their upper secondary-educated peers



1. The reference group includes post-secondary non-tertiary education.
2. Earnings net of income tax.
3. Year of reference 2014.
4. Year of reference 2013.
5. Year of reference 2012.

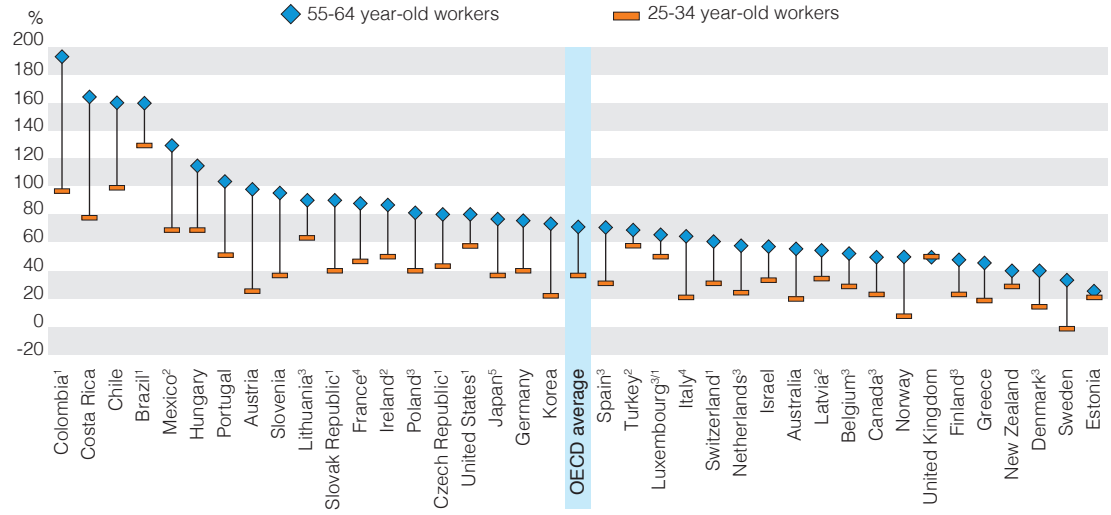
Source: OECD (2017), Education at a Glance Database, http://stats.oecd.org/.

Older tertiary-educated workers experience a greater earnings advantage

In most OECD and partner countries, older tertiary-educated workers benefit from a higher earnings advantage over those with upper-secondary education than their younger peers. Across OECD countries, the earnings advantage of tertiary-educated workers doubles from about 35% among 25-34 year-old workers to about 70% among 55-64 year-old workers. In Austria, Chile, Colombia, Costa Rica, Korea, Mexico, Portugal, the Slovak Republic and Slovenia, the advantage for older tertiary-educated workers is at least 50 percentage points higher than the advantage for younger tertiary-educated workers (Figure 2).

FIGURE 2 / Earnings advantage of tertiary-educated workers, by age (2015)

Earnings advantage of tertiary-educated full- and part-time workers over the earnings of their upper secondary-educated peers



1. The reference group includes post-secondary non-tertiary education.
2. Earnings net of income tax.
3. Year of reference 2014.
4. Year of reference 2013.
5. Year of reference 2012.

Source: OECD (2017), Education at a Glance Database, http://stats.oecd.org/.

The higher earnings advantage of older workers with tertiary education compared to their younger peers can be explained by seniority wage profiles and higher returns to experience by age. Highly skilled and highly qualified workers will move up the salary scale and be promoted throughout their career both further and faster than workers with lower skills and qualifications. The different levels in earnings advantage could also indicate that over their career today's young workers will reap lower earnings advantage from their degree as they evolve in a labour market with a much larger share of tertiary graduates than their older peers.

The earnings advantage of tertiary-educated older workers has changed significantly in the past decade

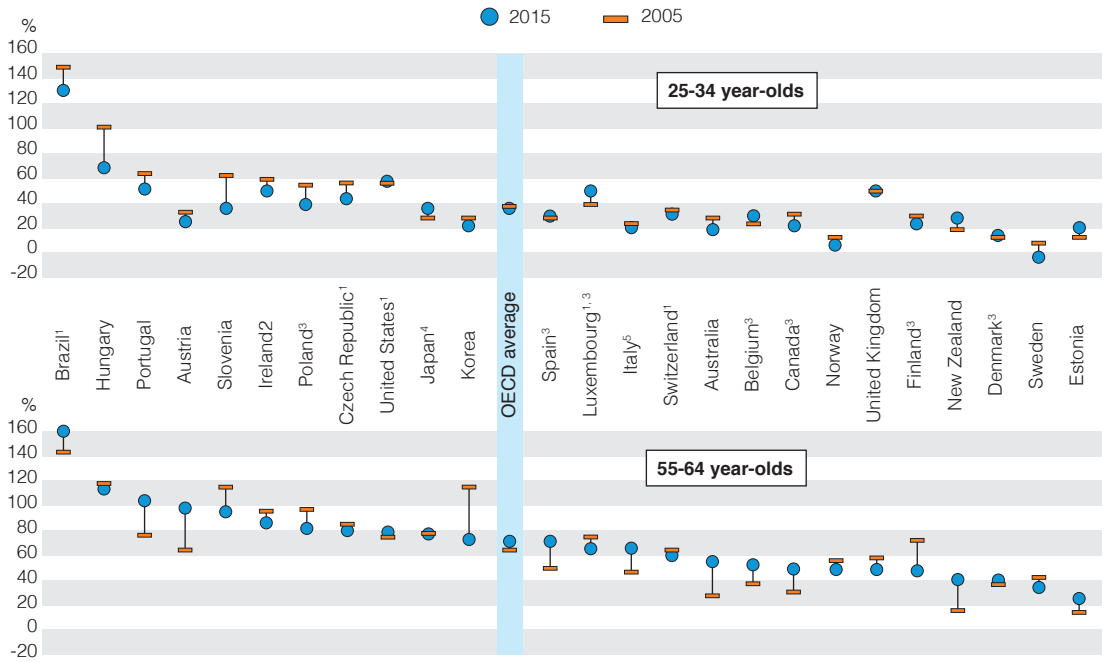
Among the 25 countries with available data for 2005 and 2015, the earnings advantage of tertiary-educated workers has evolved differently across countries and among younger or older workers. In general, relative earnings have varied more for older than for younger workers, but countries have differed as to whether or not earnings advantage have increased or decreased. Despite the massive increase in tertiary-educated workers, this has – overall – not been mirrored by a decline in their earnings advantage. In a number of countries, the changes have been very low for both age groups. For example, in Denmark, Norway and Switzerland, the variation between 2005 and 2015 was below 5 percentage points for both age groups (Figure 3).

In many countries, the earnings advantage of tertiary-educated workers has fallen for both younger and older workers. For example, in Poland and Slovenia, the earnings advantage fell by at least 15 percentage points between 2005 and 2015 across both age groups. Among younger workers, the largest decrease in earnings advantage is observed in Hungary and Slovenia, where younger tertiary graduates are reaping an earnings advantage that is at least 25 percentage points lower than in 2005.

In contrast, despite the expansion of tertiary education in all OECD and partner countries, the earnings advantage of tertiary-educated workers has increased in many countries, particularly for older workers. In Australia, Austria, New Zealand and Portugal, relative earnings for older workers were at least 25 percentage points higher in 2015 compared to 2005. In most countries, the difference in the earnings advantage over the same period is lower among younger workers. The relative earnings of tertiary-educated younger workers increased by at least 10 percentage points in only 2 out of the 25 countries with data; the highest difference is in Luxembourg with an 11 percentage point increase.

FIGURE 3 / Trends in earnings advantage of tertiary-educated workers, by age group (2005 and 2015)

Earnings advantage of tertiary-educated full- and part-time workers over the earnings of their upper secondary-educated peers



1. The reference group includes post-secondary non-tertiary education.
2. Earnings net of income tax.
3. Year of reference 2014.
4. Year of reference 2013.
5. Year of reference 2012.

Source: OECD (2017), Education at a Glance Database, http://stats.oecd.org/.

Supply and demand have shaped the earnings advantage differently across countries

Supply and demand factors help explain differences in the earnings advantage across countries and its evolution over time. On average across OECD countries, the share of tertiary-educated adults has increased from 26% in 2005 to 35% in 2015. On the demand side, technological progress and continued globalisation has led to more polarised employment patterns featuring high-skill/high-paying jobs on the one hand and low-skill/low-paying jobs on the other. When jobs are classified into different skills categories, OECD countries have seen an average increase of about 5 percentage points in jobs with high skill requirements and an increase of about 2 percentage points in jobs with low skill requirements. Employment in medium-skilled jobs decreased by 7 percentage points between 1995 and 2015 (OECD, 2017[1]).

Changes in the balance of supply and demand for the tertiary-educated workforce change the earnings advantage over time. In Brazil, for example, the earnings advantage for tertiary-educated workers is the highest across all OECD and partner countries. However, between 2005 and 2015, the earnings advantage of tertiary-educated workers in Brazil dropped by 18 percentage points among younger workers, while it slightly increased for older workers. During this period, Brazil experienced a large expansion of tertiary-educated younger adults, from 10% in 2007 to 17% in 2015. Wang (2015[2]) argues that two factors are associated with the decline of the earnings advantage of tertiary-educated workers in Brazil: a change in the equilibrium of supply and demand; and a decline in the quality of tertiary-educated workers that might be associated with a lowering of the admission criteria to tertiary education.

Korea has had the largest expansion of tertiary education across OECD and partner countries in recent decades. In 2015, about 70% of 25-34 year-olds had a tertiary degree, compared to only 18% of 55-64 year-olds. Younger tertiary-educated workers have seen their earnings advantage fall by 7 percentage points between 2005 and 2015, and this decrease has been 42 percentage points for older tertiary-educated workers. The significant decrease in the relative earnings of older workers can be related to the rapid expansion of tertiary education in Korea, and consequently the decrease in the competitiveness of their qualification. This is associated with changing employment patterns for older workers who often retire in their early 50s and then struggle to maintain their income. Thus, they are forced to continue working after retirement and often rely on temporary contracts (OECD, 2018[3]). The change in the distribution of educational attainment was also accompanied by large increase in the earnings of adults with upper-secondary education, therefore contributing to lowering the earnings advantage of those with tertiary education.

Higher skills also imply higher earnings advantage

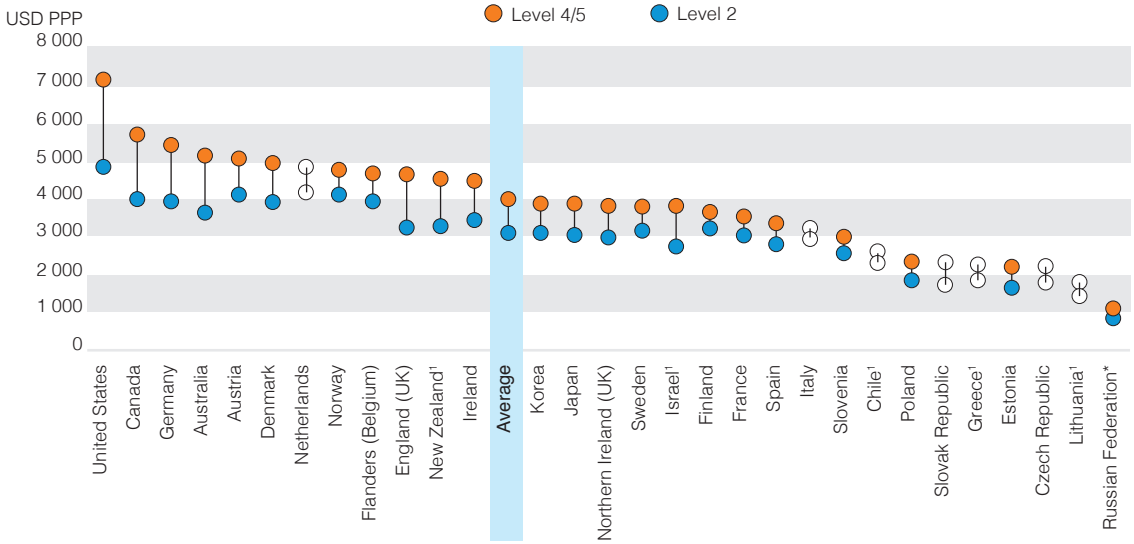
Higher wages are not just a function of the level of degree attained, but also of the skills demonstrated in the workplace. As demonstrated by the Survey of Adult Skills (PIAAC), tertiary education does not always translate equally into high skill proficiency. On average across the OECD countries and economies that participated in the survey, around one in five tertiary-educated 25-64 year-olds had high literacy or numeracy proficiency (Level 4/5), while around one in four had low skills (Level 2) (OECD, 2016[4]).

Higher proficiency translates into higher earnings and higher employment (Lane and Conlon, 2016[5]). According to the Survey of Adult Skills (PIAAC), the earnings of tertiary-educated workers with high literacy skills are higher in all participating countries and economies, and this difference is statistically significant in all but seven countries. On average, tertiary-educated workers with a high literacy level (Level 4/5) earn about USD 4 000 per month, while those with tertiary education but low literacy skills (Level 2) earn about USD 3 000 per month. The difference is the highest in the United States, where there is a gap of about USD 2 000 per month between those with high and those with low levels of literacy, and it is at least USD 1 500 in Australia, Canada and Germany (Figure 4). This shows that although getting a tertiary qualification boosts earnings, if it is not accompanied by good basic skills then the earnings advantage will be smaller.

In contrast, earnings can still be high for those who did not complete tertiary education but have high literacy skills. For example, adults with upper secondary or post-secondary non-tertiary education and with high literacy skills (Level 4/5) have higher monthly earnings, on average, than those with tertiary education and lower literacy skills (Level 2) (OECD, 2016[4]).

FIGURE 4 / Mean monthly earnings of tertiary-educated workers, by literacy proficiency level (2012 or 2015)

25-64 year-olds workers with income from employment working full time (i.e. 30 or more hours per week), in equivalent 2012 USD converted



Note: The difference between the two categories is not statistically significant at 5% for countries with empty markers.
* See note on data for the Russian Federation at the end of this EDIF.
1. Reference year is 2015; for all other countries and economies the reference year is 2012.

Source: OECD (2016), Education at a Glance 2016: OECD Indicators, http://dx.doi.org/10.1787/eag-2016-en.

The bottom line

The demand and supply of tertiary workers contribute to shaping their earnings advantage. The expansion of tertiary education has been accompanied by a decrease in the earnings advantage of tertiary-educated younger and older workers in many OECD and partner countries. Tertiary-educated workers reap the largest advantage in countries where few adults have completed tertiary education. Older tertiary-educated workers benefit from both their relative scarcity among their generation and their longer professional experience, resulting in a higher earning advantage than their younger counterparts. It is difficult to say whether younger tertiary educated workers will achieve the same earnings advantage over time that the older generation currently enjoys. However, a formal qualification is not the sole assurance of higher earnings: higher skills lead to positive financial outcomes across all educational attainment levels.

FOR MORE INFORMATION:

[5] **Lane, M.** and **G. Conlon** (2016), "The Impact of Literacy, Numeracy and Computer Skills on Earnings and Employment Outcomes", *OECD Education Working Papers*, No. 129, OECD Publishing, Paris, http://dx.doi.org/10.1787/5jm2cv4t4gzs-en.

[3] **OECD** (2015), *OECD Skills Strategy Diagnostic Report: Korea 2015*, OECD Skills Studies, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264300286-en.

[1] **OECD** (2017), *OECD Employment Outlook 2017*, OECD Publishing, Paris, http://dx.doi.org/10.1787/empl_outlook-2017-en.

[4] **OECD** (2016), *Education at a Glance 2016: OECD Indicators*, OECD Publishing, Paris, http://dx.doi.org/10.1787/eag-2016-en.

[6] **OECD** (2016), *Technical Report of the Survey of Adult Skills (PIAAC)*, 2nd Edition, OECD, Paris, http://www.oecd.org/skills/piaac/PIAAC_Technical_Report_2nd_Edition_Full_Report.pdf.

[2] **Wang, Y.** et al. (2015), "Education Expansion and Decline in Tertiary Premium in Brazil: 1995–2013 Education Expansion and Decline in Tertiary Premium in Brazil: 1995-2013", http://repec.tulane.edu/RePEc/pdf/tul1525.pdf (accessed on 04 June 2018).

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Note regarding data from the Russian Federation in the Survey of Adult Skills (PIAAC): The sample for the Russian Federation does not include the population of the Moscow municipal area. The data published, therefore, do not represent the entire resident population aged 16-65 in the Russian Federation but rather the population of the Russian Federation excluding the population residing in the Moscow municipal area. More detailed information regarding the data from the Russian Federation as well as that of other countries can be found in the Technical Report of the Survey of Adult Skills, Second Edition (OECD, 2016[6]).