How is the tertiary-educated population evolving?

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How is the tertiary-educated population evolving?

- The share of young adults (aged 25-34) with a tertiary education has been increasing in OECD-G20 countries over the past decade, and it is expected to keep growing in the next 15 years.
- This increase is expected to be greater for women, thus widening the gender gap in tertiary attainment.
- China and India combined will continue to contribute the largest share to the OECD-G20 pool of tertiary-educated young adults (currently 40%), despite projected falls in China's young adult population.
- If trends remain constant, China and India could account for a particularly high share of the OECD-G20 population with a tertiary degree in the fields of science, technology, engineering and mathematics (STEM). In 2015, more than 35% of Chinese and Indian tertiary graduates obtained a degree in STEM – compared to only 15% on average in OECD countries.

Definitions :

This brief focuses on the population aged 25-34. The sample includes data from **OECD member**, OECD accession and G20 countries, for the years 2005-16 for OECD member countries (in bold below) and 2005-15 for non-OECD countries.

- **EU23: Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, the Netherlands, Poland, Portugal, the Slovak Republic, Slovenia, Spain, Sweden, the United Kingdom**
- **North America: Canada, the United States**
- **Latin America: Argentina, Brazil, Chile, Colombia, Costa Rica, Mexico**
- **East Asia and Pacific: Australia, Indonesia, Japan, Korea, New Zealand**
- **Other OECD countries: Iceland, Israel, Norway, Switzerland and Turkey**
- China, India, the Russian Federation and *other G20 countries* (Saudi Arabia, South Africa).

Throughout this brief, the term «OECD-G20» refers to OECD member, accession and G20 countries. All averages presented in this brief are weighted according to country populations.

The share of young adults with a tertiary education is expected to keep growing, with a widening gender gap

The share of young adults (aged 25-34) with a tertiary education has grown over the past decade in OECD and G20 countries, and it is expected to continue growing in the near future. In fact, the share of tertiary-educated individuals grew from 17% in 2005 to 22% in 2015, and it could reach as much as 30% by 2030 (Figure 1).

There has also been a gradual widening of the gender gap in tertiary attainment, particularly since 2010, which is likely to persist over the next decade. In 2005, the share of young adults with a tertiary education in OECD and G20 countries combined was the same for men and women (17%) – but by 2015 it had risen to 23% for women, compared to 21% for men. Given the trends observed over the past decade, as many as 32% of women are expected to have a tertiary education by 2030, compared to 27% of men.

The projected increase in the number of tertiary-educated adults does not come as a surprise. There has been a rise in demand for skilled labour, in part driven by technological changes (OECD, 2017a), and governments have been promoting access to tertiary education through a variety of financial support policies (OECD, 2017b). One of the challenges in the near future will be to ensure that the types of skills acquired by tertiary graduates match the needs of an increasingly changing labour market.

FIGURE 1 / Share of 25-34 year-olds with tertiary education
(2005-2030)

Source: OECD (2017), Education at a Glance (database) for member countries and Wittgenstein Centre for Demography and Global Human Capital (2015), <https://witt.null2.net/shiny/wic/>, and Barro and Lee (2013), "A new data set of educational attainment in the world, 1950-2010", <https://www.barrolee.com/>, for non-OECD countries. Population estimates are based on United Nations (2017), *World Population Prospects 2017*, <https://esa.un.org/unpd/wpp/>.

Methodology :

Projections start in 2017 for OECD countries and in 2016 for non-OECD countries. The projections presented in this brief were based on the assumption that, for each gender, the share of individuals with a tertiary education in year t is a linear function of this share in years $t-1$ and $t-2$, adjusting for country-specific fixed effects. Similar results (not presented in this brief) were found by assuming that the share of tertiary-educated individuals will follow a linear growth for each country and gender (based on data for 2005-16 and adjusting for country-specific fixed effects).

The increase in the share of tertiary-educated young adults will mostly be driven by China and India...

Trends in individual countries and regions mirror the general pattern observed in the OECD and G20 countries overall, with all experiencing an increase in the share of tertiary-educated adults. Countries that were lagging behind should be the ones experiencing the fastest increases and catching up, while countries with initially larger shares of tertiary-educated adults should face slower growth. China and the Latin American countries, which had shares of 16% and 20% tertiary-educated young adults respectively in 2015, are likely to experience a particularly fast increase (more than 2.5% growth per year). In contrast, the North American countries and the Russian Federation, with 48% and 60% of their population already tertiary-educated in 2015, are expected to witness the slowest increases (less than 1.5% growth per year). These different trends could shift each region and country's weight in the OECD-G20 pool of tertiary-educated young adults.

The expected weight – or the contribution of each country/region to this pool – is determined both by the expected share of tertiary-educated 25-34 year-olds within the country/region and predicted population changes. As Figure 2, Panel B, illustrates, a significant projected decrease in the number of 25-34 year-olds in the Russian Federation (-4% per year) explains why its contribution to the OECD-G20 pool could fall by over 4 percentage points between 2015 and 2030. The contributions of Canada, the United States and the EU23 countries are expected to remain roughly constant.

FIGURE 2 / Variation in regions' contributions to the OECD-G20 tertiary-educated population of 25-34 year-olds (2015-30)

Panel A. Contribution to the OECD-G20 pool of tertiary-educated young adults

China and India, which together account for 60% of the 25-34 year-olds – and 40% of those with a tertiary education – in the OECD-G20 in 2015, should keep their overall rank. While China's contribution is likely to decrease by 4 percentage points between 2015 and 2030, mainly due to its decreasing population, India's will significantly increase. India alone is expected to account for over one-fifth of the OECD-G20 tertiary-educated population in 2030.

Panel B. Average annual change in countries' and regions' young adult population and the share who are tertiary educated

In the near future, the challenge will be to provide students with transferable skills, both across borders and across fields, in order to balance the labour supply and demand across countries and enhance students' and workers' mobility (World Bank, 2018).

How to read figure 2: China's contribution to the OECD-G20 pool of tertiary-educated young adults will fall from 22% in 2015 to 18% in 2030 (Panel A), even though the share of tertiary-educated 25-34 year-olds in the country will on average grow by 2.6% per year between 2015 and 2030. China's decreasing contribution is due to the projected decrease in its young adult population of 2.6% per year (Panel B).

Countries and regions are ranked in descending order of their projected contributions to the OECD-G20 population of tertiary-educated 25-34 year-olds in 2030.

Source of figure 2: OECD (2017), Education at a Glance (database) for member countries and Wittgenstein Centre for Demography and Global Human Capital (2015), <http://wittgenstein2.net/shiny/wic/>, and Barro and Lee (2013), "A new data set of educational attainment in the world, 1950-2010", <http://www.barrolee.com/>, for non-OECD countries. Population estimates are based on United Nations (2017), *World Population Prospects 2017*, <https://esa.un.org/unpd/wpp/>.

... who are also championing the most relevant fields for today's labour market

China and India are not only expected to make up around 40% of the OECD-G20 tertiary-educated population, they are also particularly likely to lead in the fields of science, technology, engineering and mathematics (STEM). In 2015, more than 30% of tertiary graduates obtained a STEM degree in China and India – compared to only 21% in OECD countries (Figure 3).

If trends remain constant, this implies promising prospects for Chinese and Indian graduates, especially as the labour market becomes more globalised and flexible (OECD, 2017b). STEM skills are increasingly crucial in the labour market, and they are demanded in more occupations than before (OECD, 2017a). Across OECD countries, a STEM graduate is more likely to find a job, and to be paid more when employed, than a graduate in other fields (Education at a Glance Database).

In terms of gender parity, although an increasing share of women are obtaining a tertiary education, they remain a minority in STEM fields (Figure 3). In 2015, they made up only 31% of tertiary graduates on average in OECD countries and 38% in non-OECD countries.¹ In fact, Argentina is the only country where more than half of STEM graduates were women (59%). In most countries with available data, this proportion does not exceed one third.

Policies aiming at decreasing the gender gap in STEM could be beneficial for several reasons. First, from an equity perspective, it is important to ensure that individuals can choose the studies or career paths that appeal to them, without being discouraged by the social perception of what constitutes a female or male occupation (OECD, 2015). Second, it could lead to economic gains. STEM fields are associated with higher employment rates and earnings, and play an increasingly important role in improving a country's productivity. Attracting more women to these fields could therefore contribute to the expansion of this sector, and consequently to increased productivity and output. Moreover, gender diversity has been found to improve performance in the workplace (Hoogendoorn et al., 2011).

FIGURE 3 / Share of tertiary graduates in STEM and gender distribution (2015)

Countries are ranked in descending order of the share of graduates in STEM.

Source: OECD (2017), Education at a Glance (database). For India : University Grants Commission Annual Reports <http://www.ugc.ac.in/page/Annual-Report.aspx>. For China : China Statistical Yearbook 2017 <http://www.stats.gov.cn/tjsj/ndsj/2017/indexeh.htm>. For Argentina, Colombia, Costa Rica, Saudi Arabia, South Africa: UNESCO Institute for Statistics.

¹ The average for non-OECD countries excludes China due to missing data by gender.

The bottom line

Over the next decade, a growing proportion of young adults are expected to attain tertiary education, with China and India leading the way – in particular in the fast-growing and highly relevant fields of STEM. Nonetheless, while women in OECD and G20 countries are expected to experience a greater increase in tertiary attainment than men, they may continue to lag behind in STEM, where they have been consistently under-represented. The challenge for the near future will be to ensure that educational systems are able to provide tertiary degrees that are both of high quality and relevance, in an equitable and inclusive manner.

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