Highlights from the OECD Science, Technology and Industry Scoreboard 2017 - The Digital Transformation: Slovak Republic

Science, innovation and the digital revolution

- In 2015, 15.5% of business enterprise expenditure on R&D in the **Slovak Republic** depended on international funding, of which about 78% came from foreign business enterprises [Scoreboard fig. 3.5.1]. Between 2005 and 2015, the share of business R&D funded from abroad increased three-fold; furthermore, in 2015 foreign-controlled affiliates were responsible for 59% of business R&D expenditure [fig. 3.5.2].
- The business innovation process in the **Slovak Republic** is highly dependent on international collaboration. 33% of innovation-performing SMEs and 67% of innovation-performing large business are engaged in international collaboration for innovation. For both firm size categories, this is the third highest engagement rate in the sample [fig. 3.7.3 - see below].
- Machine-to-machine (M2M) communication is part of the underlying infrastructure for the "Internet of Things". In 2017, the **Slovak Republic** had a M2M penetration of 9 M2M SIM cards per 100 inhabitants, lower than the OECD average of 15.5 [fig. 1.3].

Growth, jobs and the digital transformation

- The **Slovak Republic** is one of the leading economies in Europe (just behind Germany and the Czech Republic) in terms of robot intensity i.e. the stock of industrial robots divided by manufacturing value added). Robot intensity in the **Slovak Republic** has increased more than four times since 2005, considerably above the average growth for OECD countries [fig. 1.28 - see below].
- In 2014, about 56% of jobs in the **Slovak Republic's** business sector were sustained by foreign final demand, slightly higher than in 2004 (53%) [fig. 1.38 - see below].
- Between 2009 and 2015, the **Slovak Republic** experienced the third highest labour productivity growth in the non-agriculture business sector in Europe (behind Ireland and Poland). The average annual growth of 3.4% was double the EU average of 1.7%. This was mainly driven by the manufacturing industry, which contributed to almost 80% of the total labour productivity growth [fig. 1.44].
- Women in the **Slovak Republic** earn, on average, 23% less than men, even after individual and job-related characteristics are taken into consideration, the fifth largest gender wage gap in OECD [fig. 1.41].

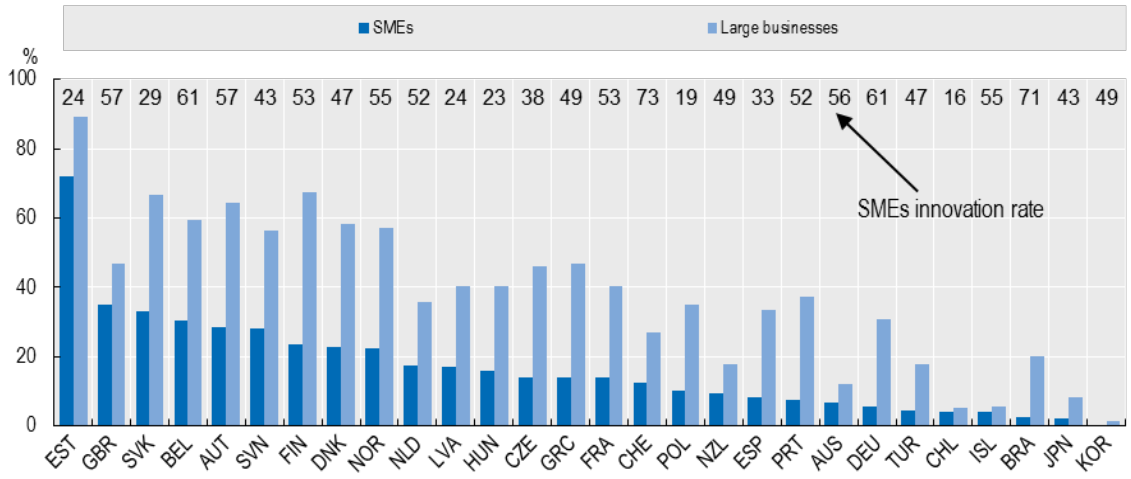
Innovation today - Taking action

- In 2015, the **Slovak Republic** was the fifth biggest recipient of EU funding for government and higher education R&D, benefitting from 470 million EUR [fig. 3.5.3].
- 80% of persons aged 16-74 in the **Slovak Republic** were internet users in 2016, up from 49% in 2006 [fig. 1.57]; 97% of 16-24 year olds used the Internet compared to 52% in the 55-74 year age group [fig. 1.58].
- Experimental indicators of international mobility of scientific authors (based on bibliometric data) reveal that during the period 2002 to 2016, the **Slovak Republic** experienced a net outflow of scientific authors, with over 500 more authors leaving affiliation in the Slovak Republic than joining [fig. 1.69 - see below].

- In the **Slovak Republic**, women accounted for about 36% of tertiary graduates in natural sciences, engineering and ICT fields in 2015, above the OECD average of 31%. This share was mainly driven by graduates in science and engineering (33.9%) rather than ICT (1.7%). [fig. 1.59].
- In 2015, about 42% of researchers in the **Slovak Republic** were women, of whom only 3.4% were working in the business sector [fig. 2.4.3].
- During the period 2012-15, 3% of IP5 patent applications with inventors from the **Slovak Republic** involved women inventors from the Slovak Republic, below the EU average of 7.1% [fig. 1.61].

Figure 3.7.3 Businesses engaged in international collaboration for innovation, by size, 2012-14

As a percentage of product and/or process-innovating businesses in each size category

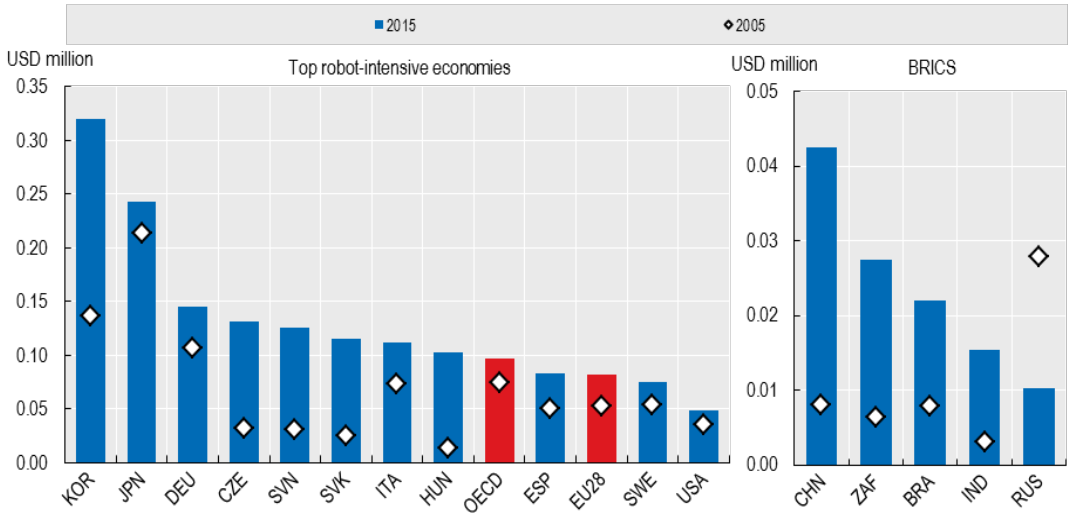


StatLink http://dx.doi.org/10.1787/888933619106

Source: OECD Science, Technology and Industry Scoreboard 2017: The Digital Transformation, OECD Publishing, Paris, http://dx.doi.org/10.1787/sti_scoreboard-2017-en.

Figure 1.28 Top robot-intensive economies and BRICS, 2005 and 2015

Industrial robot stock over manufacturing value added, millions USD, current values

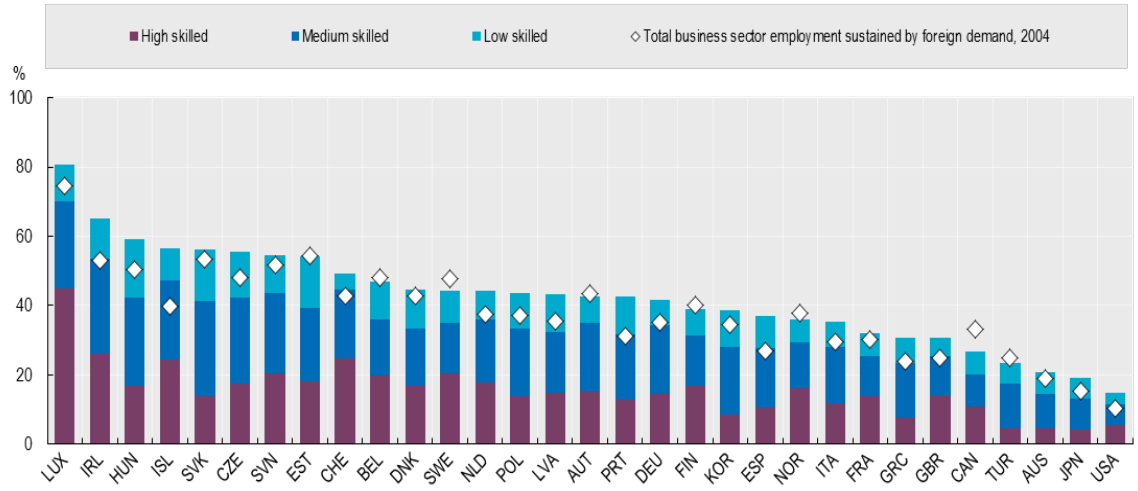


StatLink http://dx.doi.org/10.1787/888933617377

Source: OECD Science, Technology and Industry Scoreboard 2017: The Digital Transformation, OECD Publishing, Paris, http://dx.doi.org/10.1787/sti_scoreboard-2017-en.

Figure 1.38 Business sector jobs sustained by foreign final demand, by skill intensity, 2014

As a percentage of total business sector employment

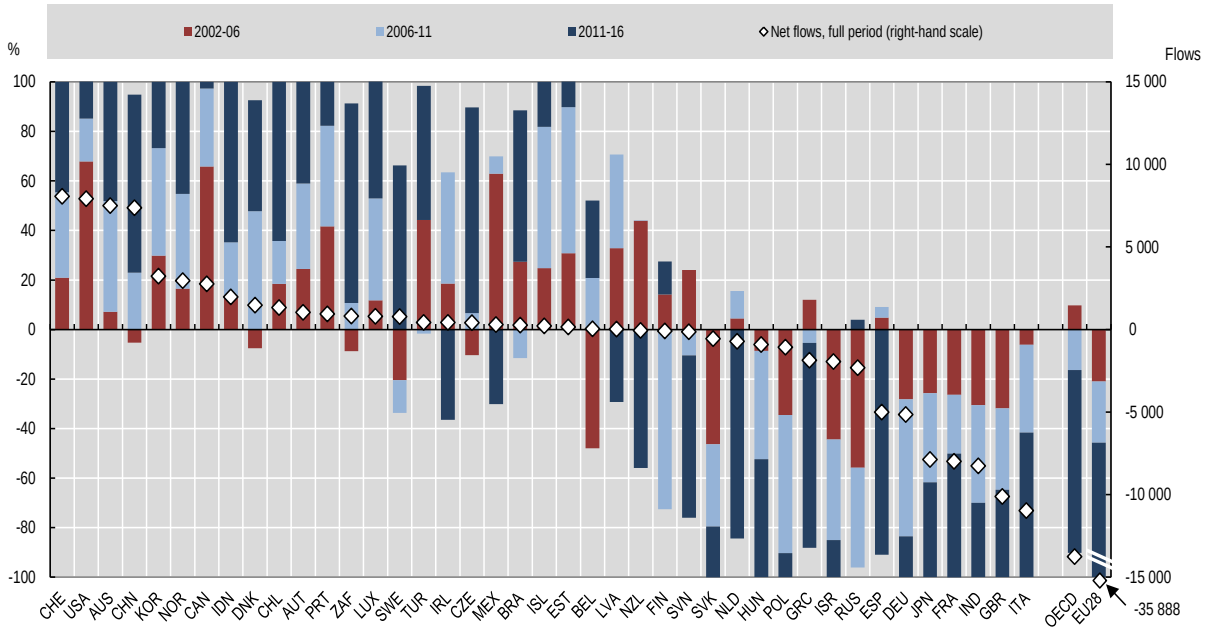


StatLink http://dx.doi.org/10.1787/888933617567

Source: OECD Science, Technology and Industry Scoreboard 2017: The Digital Transformation, OECD Publishing, Paris, http://dx.doi.org/10.1787/sti_scoreboard-2017-en.

Figure 1.69 International net flows of scientific authors, selected economies, 2002-16

Difference between annual fractional inflows and outflows, as a percentage of total flows



StatLink http://dx.doi.org/10.1787/888933618156

Source: OECD Science, Technology and Industry Scoreboard 2017: The Digital Transformation, OECD Publishing, Paris, http://dx.doi.org/10.1787/sti_scoreboard-2017-en.

The OECD Science, Technology and Industry Scoreboard 2017: The Digital Transformation

The 2017 edition of the Scoreboard contains over 200 indicators showing how the digital transformation affects science, innovation, the economy, and the way people work and live.

The aim of the STI Scoreboard is not to "rank" countries or develop composite indicators. Instead, its objective is to provide policy makers and analysts with the means to compare economies with others of a similar size or with a similar structure, and monitor progress towards desired national or supranational policy goals.

It draws on OECD efforts to build data infrastructure to link actors, outcomes and impacts, and highlights the potential and limits of certain metrics, as well as indicating directions for further work.

The charts and underlying data in the STI Scoreboard 2017 are available for download and selected indicators contain additional data expanding the time and country coverage of the print edition. For more resources, including online tools to visualise indicators, see the OECD STI Scoreboard webpage (http://www.oecd.org/sti/scoreboard.htm).

The OECD Directorate for Science, Technology and Innovation

It is part of the DNA of the Directorate for Science, Technology and Innovation (DSTI) to constantly look for ways of better understanding where our economies and societies are today, and where they are going tomorrow. We pride ourselves on tackling topics at the boundaries of our scientific and technological understanding, such as using biotechnology and nanotechnology to alter modes of production, and how digital shifts like "big data," earth observation and digital platforms are changing our world.

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Further reading

OECD (2017), *OECD Digital Economy Outlook 2017*, OECD Publishing, Paris. http://dx.doi.org/10.1787/9789264276284-en

OECD (2016), *OECD Science, Technology and Innovation Outlook 2016*, OECD Publishing, Paris. http://dx.doi.org/10.1787/sti_in_outlook-2016-en