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

Science, innovation and the digital revolution

- Business R&D is fairly concentrated in the **Czech Republic.** In 2014, the 100 largest domestic R&D performers accounted for 63.7% of total business R&D, but represented only 5.6% of all R&D performing enterprises [Scoreboard fig. 1.17].
- The **Czech Republic** ranks fourth among OECD countries in its dependency on international funding for business R&D. Between 2005 and 2015, the share of business R&D funded from abroad increased six-fold, from 5.4% to 31.9%, of which 86% came from foreign business enterprises [fig. 3.5.1]; furthermore, in 2015, foreign-controlled affiliates were responsible for about 60% of business R&D expenditure [fig. 3.5.2].
- In the period 2012-15, almost 40% of ICT-related IP5 patents involving inventors from the **Czech Republic** were the result of collaboration with inventors abroad [fig. 3.6.1 - see below].
- Machine-to-machine (M2M) communication is part of the underlying infrastructure for the "Internet of Things". In 2017, the **Czech Republic** had a M2M penetration of about 14 M2M SIM cards per 100 inhabitants, lower than the OECD average of 15.5 [fig. 1.3].

Growth, jobs and the digital transformation

- Data for 2015 on the deployment of industrial robot technologies show that the **Czech Republic** leads in Europe (just behind Germany) in terms of robot intensity, i.e. the industrial stock of robots divided by manufacturing value added. Robot intensity in the **Czech Republic** has increased more than four times since 2005, which is considerably above the average growth for OECD countries [fig. 1.28 - see below].
- In 2014, about 55% of jobs in the **Czech Republic's** business sector were sustained by foreign final demand, slightly higher than in 2004 (48%) [fig. 1.38].
- Between 2009 and 2015, average annual business sector labour productivity growth in the **Czech Republic,** at 2.4% per year, was notably higher than the EU28 average (1.7%); the manufacturing sector being a main driver, contributing to 46% of the labour productivity growth [fig. 1.44].
- In 2015, the level of labour productivity in the **Czech Republic's** information industries was twice as high as that for other industries in the non-agriculture business sector [fig. 1.45 - see below].
- Women in the **Czech Republic** earn, on average, about 17% less than men - even after individual and job-related characteristics are taken into consideration [fig. 1.41].

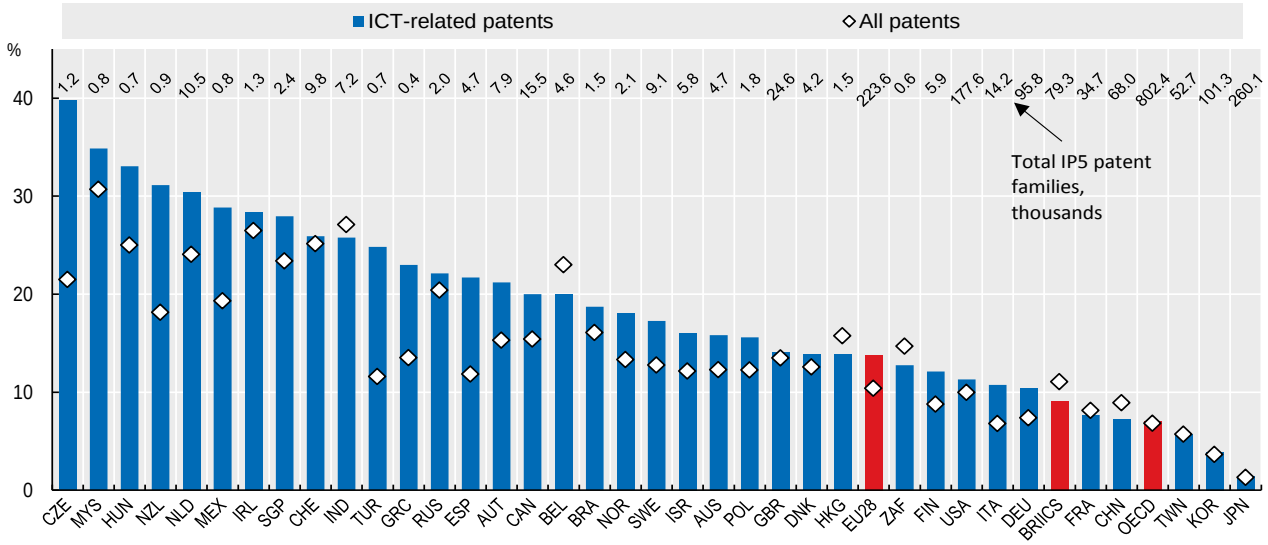
Innovation today - Taking action

- In 2015, the **Czech Republic** was the third biggest recipient of EU funding for government and higher education R&D, benefitting from 600 million EUR [fig. 3.5.3].
- In 2015, the **Czech Republic** had the highest share of ICT investment relative to GDP (3.8%) among OECD countries, just ahead of Switzerland, Sweden and the Netherlands. More than half of the investment was accounted for by computer software and databases [fig. 2.1.3 - see below].

- 82% of persons aged 16-74 in the **Czech Republic** were internet users in 2016, up from 44% in 2006 [fig. 1.57]; 96 % of 16-24 year olds are Internet users, compared to 57% in the 55-74 year age group [fig. 1.58].
- In the **Czech Republic**, women accounted for about 35% 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 (32.2%) rather than ICT (2.3%) [fig. 1.59].
- In 2015, only 23% of researchers in the **Czech Republic** were women [fig. 2.4.3].
- During the period 2012-15, 5.5% of patent applications with inventors from the **Czech Republic** involved women from the Czech Republic, below the EU average of 7.1% [fig. 1.61].

Figure 3.6.1 International co-inventions in ICT, 2012-15

As a percentage of economies' IP5 patent families

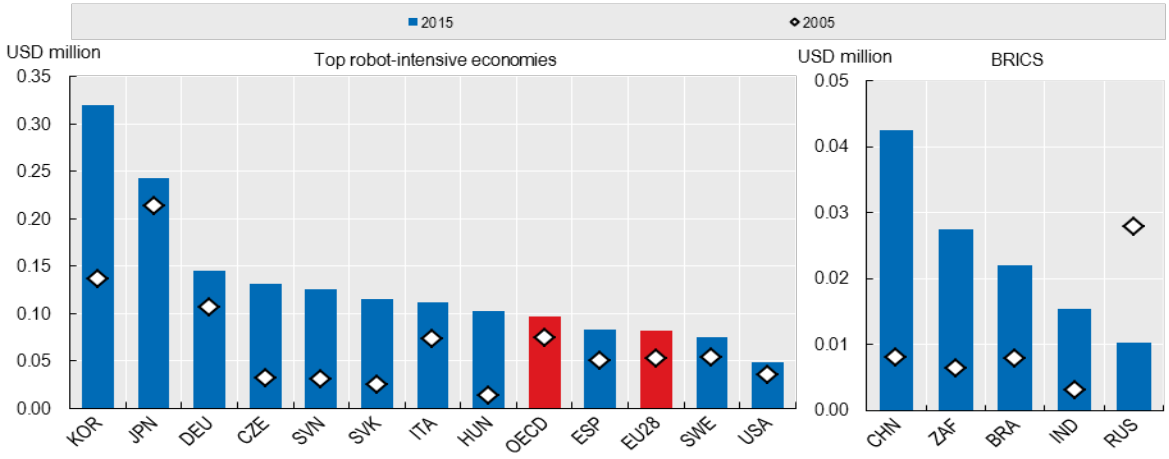


StatLink http://dx.doi.org/10.1787/888933619011

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



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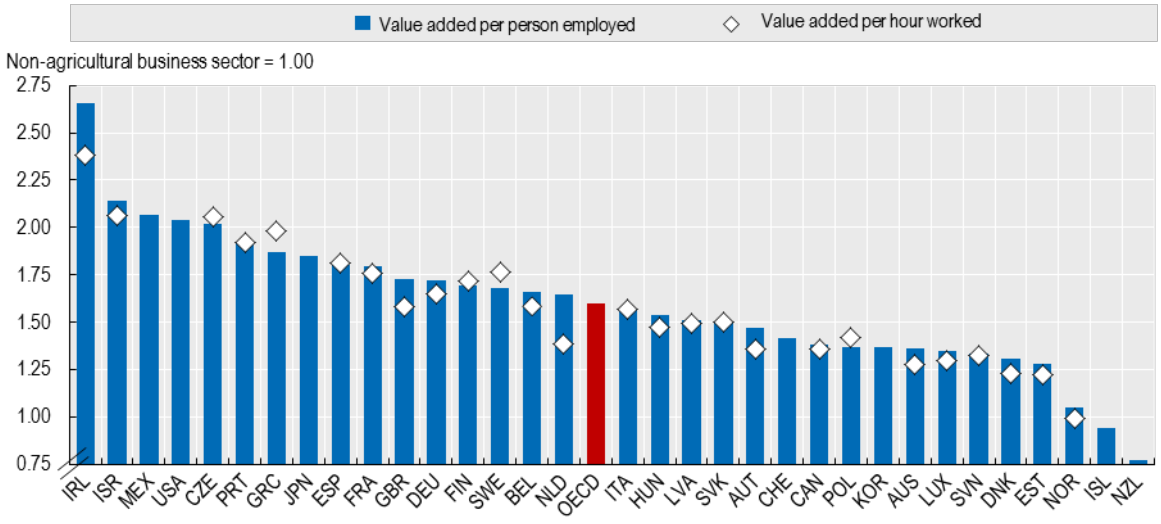
Source: OECD Science, Technology and Industry Scoreboard 2017: The Digital Transformation, OECD Publishing, Paris, http://dx.doi.org/10.1787/sti_scoreboard-2017-en.

Figure 1.45 Labour productivity levels in the information industries, 2015

Relative to aggregate labour productivity of other industries in the non-agriculture business sector



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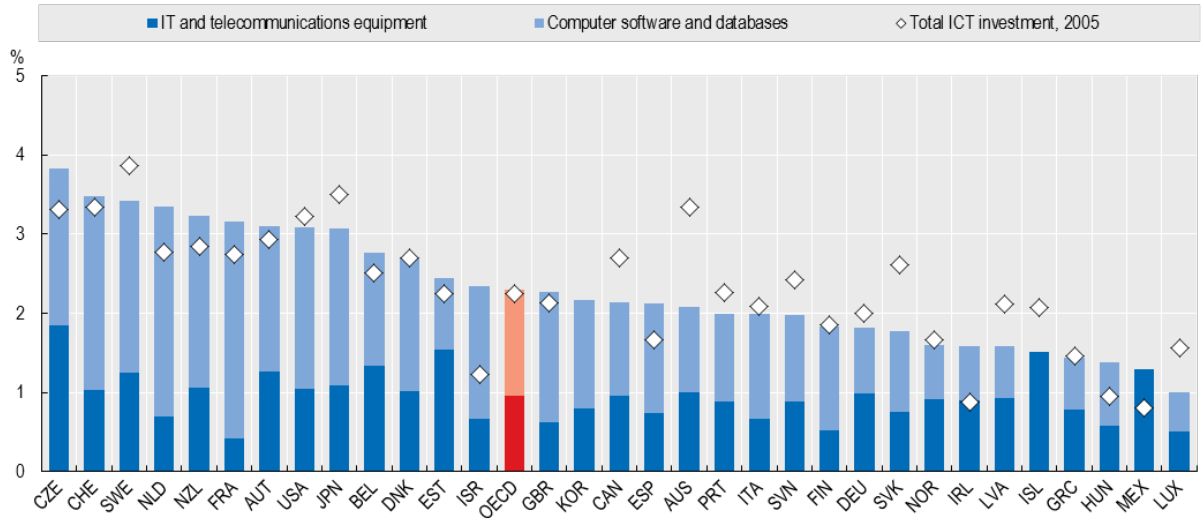
Source: OECD Science, Technology and Industry Scoreboard 2017: The Digital Transformation, OECD Publishing, Paris, http://dx.doi.org/10.1787/sti_scoreboard-2017-en.

Figure 2.1.3 ICT investment by asset, 2015

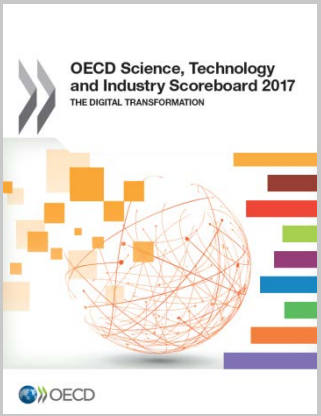
As a percentage of GDP



StatLink http://dx.doi.org/10.1787/888933618384

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.

Discover DSTI at www.oecd.org/sti and the OECD's Going Digital project at www.oecd.org/going-digital.

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