

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

Science, innovation and the digital revolution

- Machine-to-machine (M2M) communication is part of the underlying infrastructure for “the Internet of Things”. Among G20 economies, the **United Kingdom** had the third-highest M2M penetration (the number of M2M SIM cards per inhabitant) in June 2017, just behind the United States and France and ahead of China and Germany [[Scoreboard fig. 1.3 - see below](#)].
- The **United Kingdom** accounted for 6% of the world's top 10% of most-cited scientific publications in 2016, behind the United States and China, and down from 7.7% in 2005 [[fig. 1.11](#)].
- The **United Kingdom** produces the 4th greatest share of scientific documents on machine learning after the United States, China, and India - and is 3rd on a quality-adjusted basis [[fig. 1.27](#)].
- The **United Kingdom** accounted for 1.9% of AI-related patent applications during 2010-15, down from 3.3% in 2000-05 [[fig. 1.7](#)].
- The development of AI technologies is geographically concentrated: R&D-performing corporations based in Japan, Korea, Chinese Taipei, and China account for about 70% of all AI-related inventions belonging to the world's 2 000 top corporate R&D investors and their affiliates, and US-based companies for 18%. Firms headquartered in the **United Kingdom** accounted for 0.5% of all AI-related inventions from 2012 to 2014 [[fig. 1.25](#)].

Growth, jobs and the digital transformation

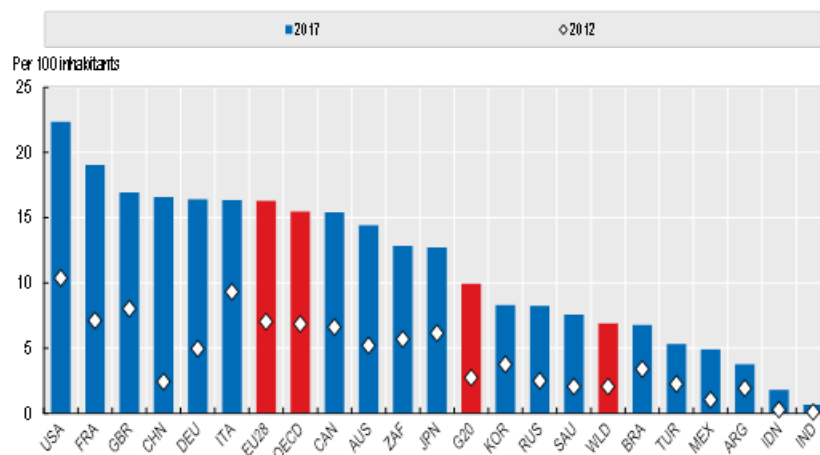
- From 2010 to 2016, the **United Kingdom** had the fourth-largest net employment gains in the OECD, of over 2.5 million jobs, behind the United States, Turkey and Germany. Large net gains were recorded in wholesale, retail, accommodation and transport, and business services and public services [[fig. 1.34](#)].
- In 2014, 31% of jobs in the business sector in the **United Kingdom** were sustained by foreign demand, up from 25% in 2004 [[fig. 1.38](#)].
- Women in the **United Kingdom** (England and Northern Ireland) earn about 16% less than men, even after individual and job-related characteristics are taken into consideration, and 11.5% less when skill differences are also taken into account [[fig. 1.41](#)].
- In the **United Kingdom** women represented 38% of all tertiary graduates in natural sciences, engineering and ICT fields in 2015, the fourth-highest share in the OECD. This was mainly driven by graduates in science and engineering (35.3%), rather than ICT (2.7%) [[fig. 1.59](#)].
- The **United Kingdom** was the 4th most important hub for IT manufacturing in 1995, but had fallen to the 9th position by 2011 [[fig. 1.56](#)]. However, it was also the 4th most important hub in ICT services in 1995, and had moved up to 3rd place by 2011.
- Almost 95% of persons in the **United Kingdom** aged 16-74 used the Internet in 2016, up from 67% in 2006 [[fig. 1.57](#)]; practically all 16-24 year olds used the Internet in 2016, as did 84.7% aged 55-74 [[fig. 1.58](#)].

Innovation today - Taking action

- 13.6% of scientific documents by authors affiliated to **United Kingdom** institutions were in the world's top-10% most cited, ahead of the European Union overall at 11.9%, and only behind the United States at 13.9% [fig. 1.12 - see below].
- Scientific research on dementia and neurodegenerative diseases has grown significantly since 1996, with the **United Kingdom** accounting for the third-largest number of publications in 2016, behind the United States and China [fig. 1.64 - see below].
- Experimental indicators on the international mobility of scientific authors, based on bibliometric data 2002 to 2016 show that the **United Kingdom** has lost more authors than it has attracted [fig. 1.69 - see below]: over the 15 years to 2016, over 10 000 more scientific authors left the **United Kingdom** than entered. Nevertheless, the **United Kingdom** attracted scientists over the 2014-16 sub-period.

Figure 1.3 M2M SIM card penetration, OECD, World and G20 countries, June 2017

Per 100 inhabitants

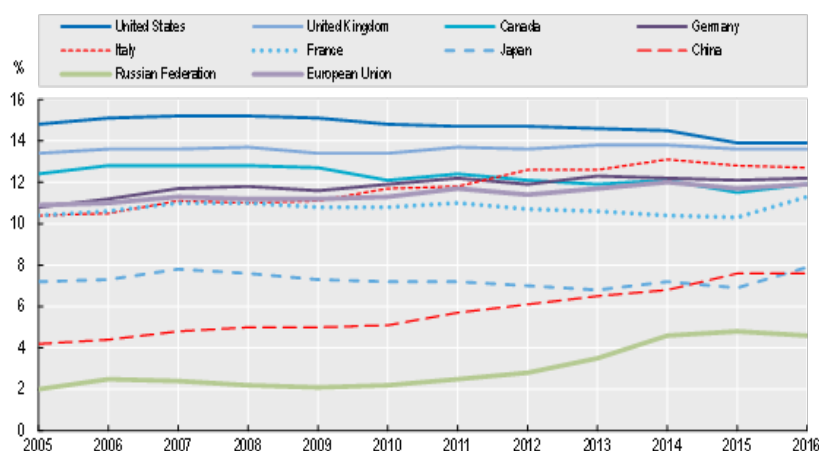


StatLink : <http://dx.doi.org/10.1787/888933616902>

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 1.12 Recent trends in scientific excellence, selected countries, 2005-16

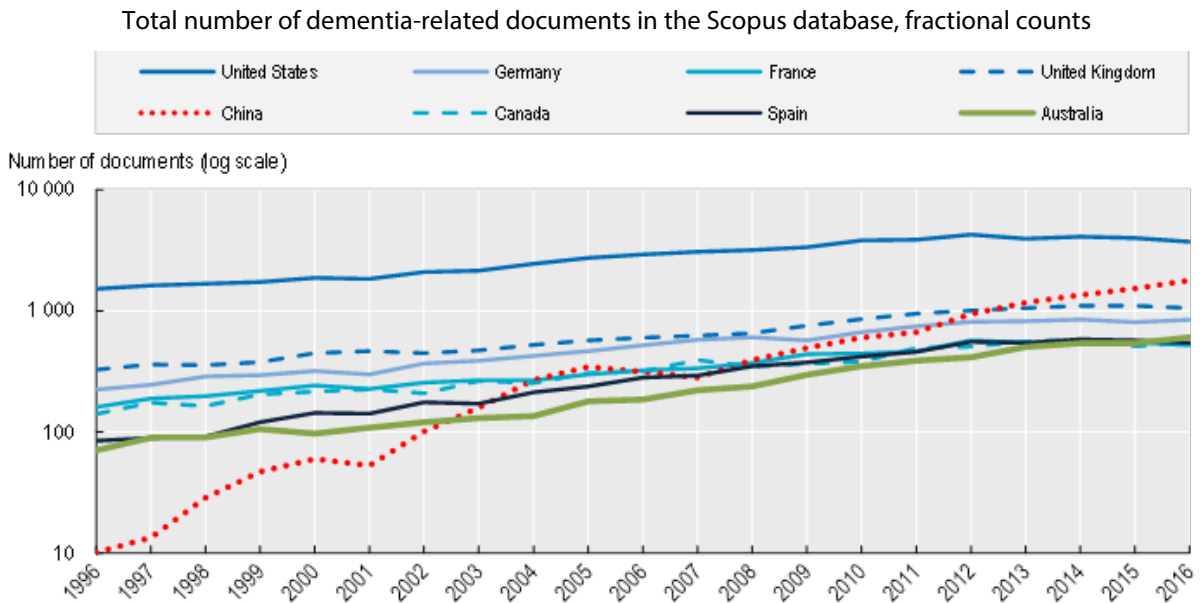
As a percentage of domestic documents in the world's top 10% most cited



StatLink : <http://dx.doi.org/10.1787/888933617073>

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 1.64 Scientific research on dementia and neurodegenerative diseases, selected countries, 1996-2016

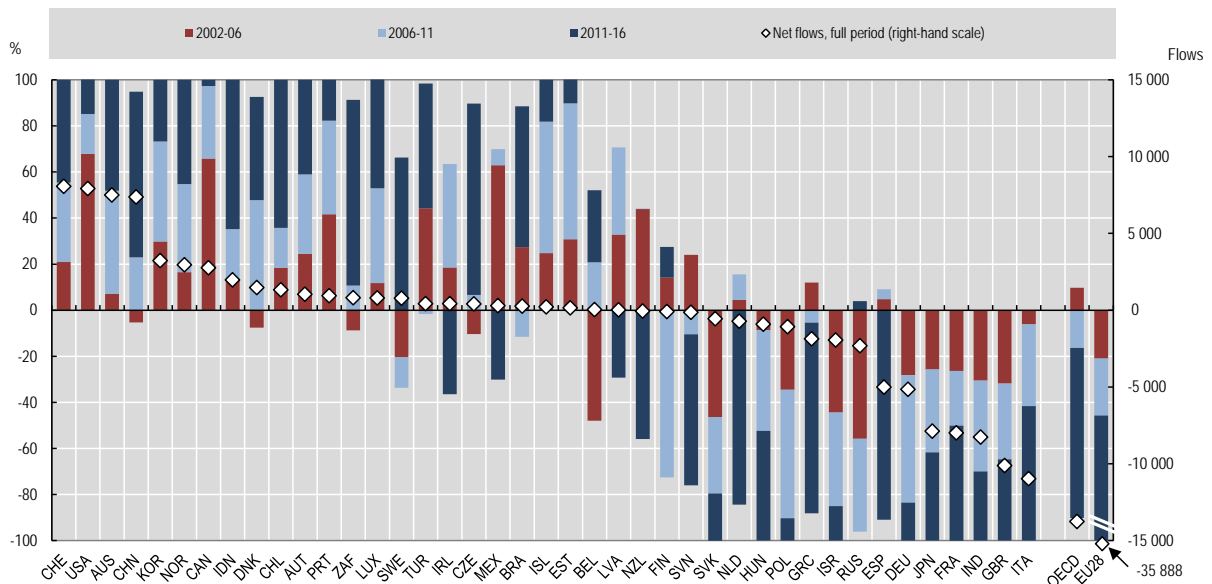


StatLink : <http://dx.doi.org/10.1787/888933618061>

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

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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

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