Release of Main Science and Technology Indicators - Latest estimates of R&D investment in OECD and major economies

R&D Intensity: China continues towards OECD average as Israel narrowly reclaims "top spot"

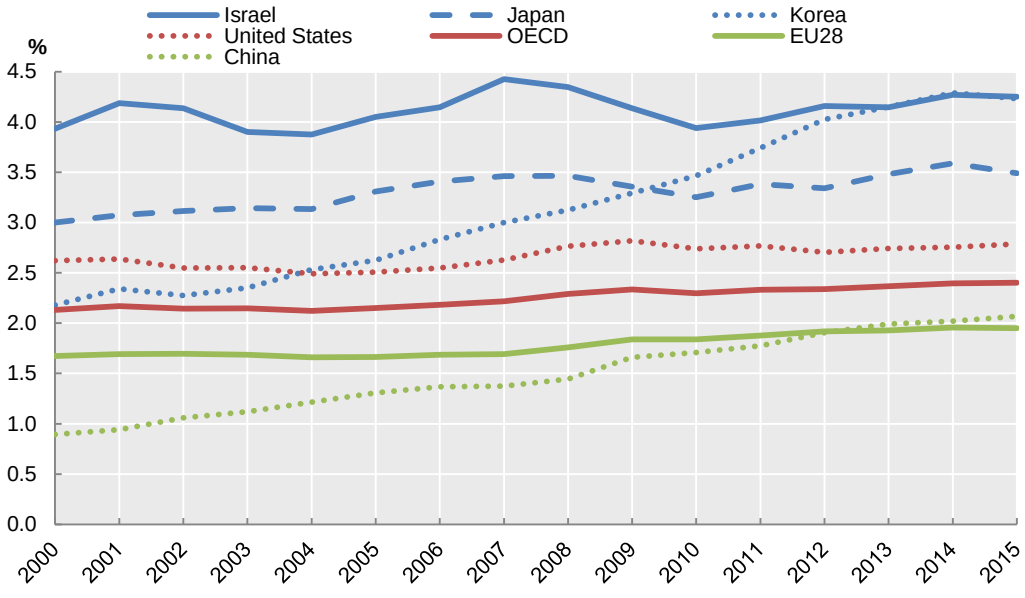
The latest available data on investment in Research and Development (R&D) for OECD countries and other major economies published in the **OECD Main Science and Technology Indicators** shows that R&D intensity across OECD countries remained stable at 2.4% in 2015. R&D intensity - expenditure on R&D as a percentage of Gross Domestic Product (GDP) - also plateaued at 1.95% in the EU area driven by the EU countries which perform the most R&D (Germany 2.9%, France 2.2%, United Kingdom 1.7%).

In 2015, Israel narrowly overtook Korea as the country with the highest Research and Development (R&D) intensity (4.25% compared to 4.23%), reclaiming the top-spot after 2 years in second place. Japan experienced a slight decline in 2015, to 3.5%.

The United States, which spends more than any other country on R&D and accounts for around 40% of total OECD R&D expenditure, saw its R&D intensity rise slightly from 2.76% in 2014 to 2.79% in 2015. Meanwhile, China continued its steady increase in R&D intensity, reaching 2.1% in 2015 – only 0.3 of a percentage point below the OECD average. In volume terms, China's R&D spending was equivalent to 81% of the United States level in 2015 and 9% higher than that of the EU. The latest patent data show the number of patents filed by Chinese inventors continued to rise in 2014, while filings under the Patent Cooperation Treaty by United States inventors declined.

R&D intensity: Gross Domestic Expenditure on R&D as a percentage of GDP, 2000-15

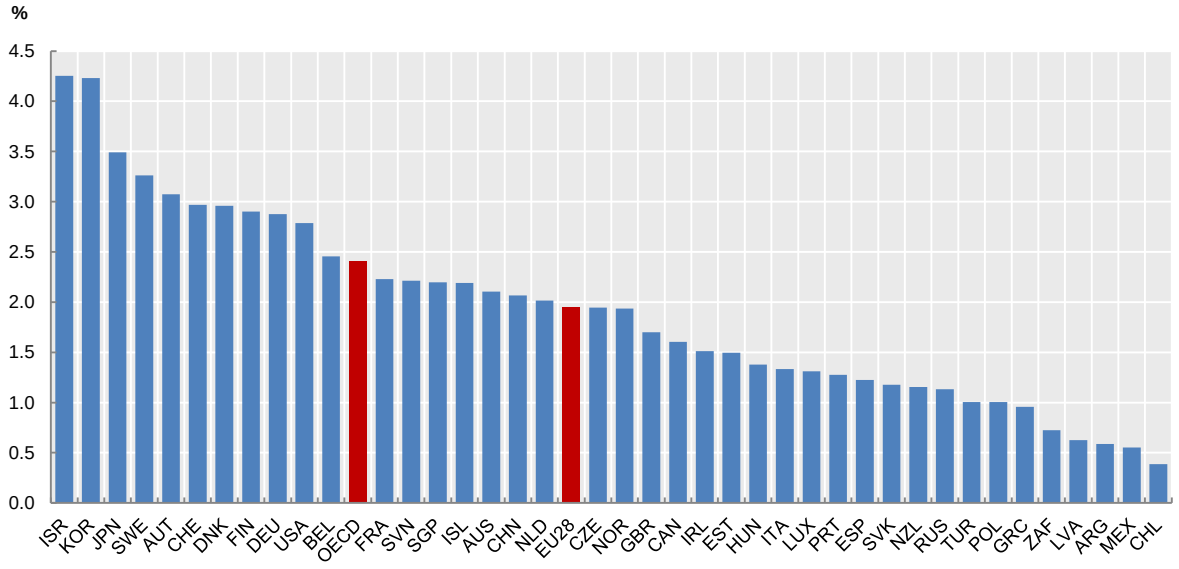
Selected countries from OECD MSTI database



Source: OECD Main Science and Technology Indicators Database, February 2017. http://oe.cd/msti

R&D intensity, 2015

OECD countries and select non-member economies



Note: Argentina, Canada, Ireland, Turkey, and Singapore figures refer to 2014. Australia, New Zealand, and South Africa figures refer to 2013. Switzerland figure refers to 2012.

Source: OECD Main Science and Technology Indicators Database, February 2017. http://oe.cd/msti

Business Enterprises led growth in OECD R&D expenditure

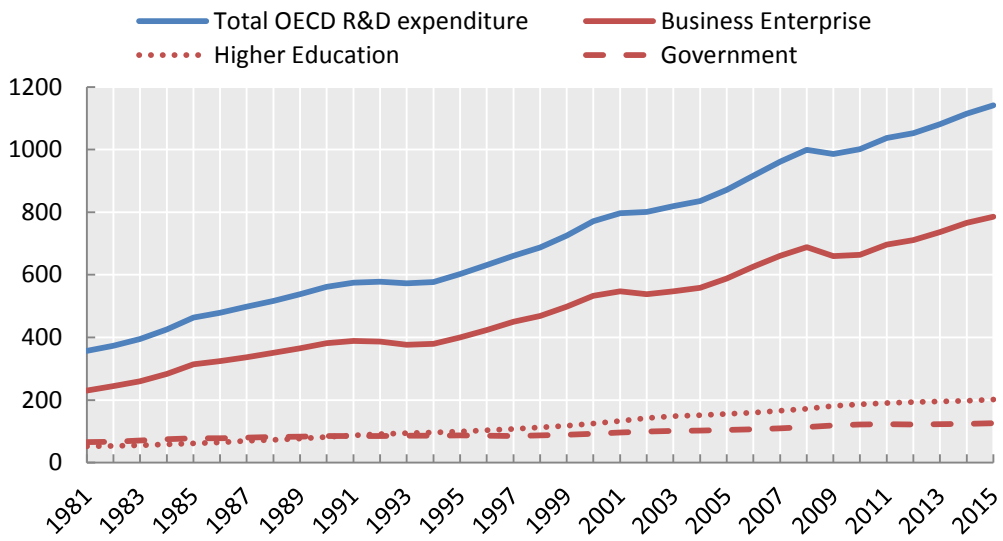
Across OECD countries, real Expenditure on R&D grew 2.3% in 2015. Overall, this was in-line with increases in GDP so R&D intensity remained stable at 2.4%.

Business Enterprises powered the rise, growing their R&D expenditure by 2.5%. Businesses conducted 68.8% of the R&D performed in the OECD in 2015.

Meanwhile, real R&D expenditure in the Higher Education sector grew by 2.1% in 2015, continuing the persistent upward trend seen ever since records began in 1981. Government R&D expenditure on performing R&D (which does not include money paid out to other sectors for R&D) also grew by 1.8%, the third consecutive increase since a brief contraction of -0.8% in 2012. Higher Education institutions performed 17.7% of the R&D conducted in OECD countries in 2015, while Government accounted for 11.1%.

R&D Expenditure in OECD countries, 1981-2015

Billions of USD in 2010 prices and Purchasing Power Parity (PPP)



Source: OECD Main Science and Technology Indicators Database, February 2017. http://oe.cd/msti

Government-financed R&D continued to decline in 2014 but the outlook is mixed

Government-financed R&D includes all R&D performed using government funds in all sectors of the economy, such as R&D performed by businesses or universities under government contracts or grants, and within government itself. Government-financed R&D has declined (in real, PPP terms) by 2.4% since 2010 when it accounted for 31% of total OECD R&D expenditures, falling to 27% in 2014. "Government-Financed GERD as a percentage of GDP" has likewise declined - from a peak of 0.73% in 2009 to 0.66% in 2014.

The 2015 data available, which cover 19 OECD countries, are mixed: most countries show, mild growth in government-financed R&D in 2015 but declines in the United States and Japan – key countries comprising 54% of OECD R&D expenditures in 2015 and 47% of government financed R&D in 2014 – make the overall outlook less clear.

Government budgets for R&D fell in real terms in 2015

Meanwhile, **the latest government budget data**, which present information on amounts allocated for R&D rather than actual expenditure on R&D, showed that government budgets for R&D in OECD countries increased by 0.7% in 2015. However, once inflation is taken into account this was a real-terms fall of -0.2%. The outlook for 2016 is mixed, with the United States showing fairly strong growth, Japan showing a decline, and the aggregate movement for the other OECD countries being broadly flat - although government budgets for R&D decline in 9 of the 16 countries for which 2016 data are available.

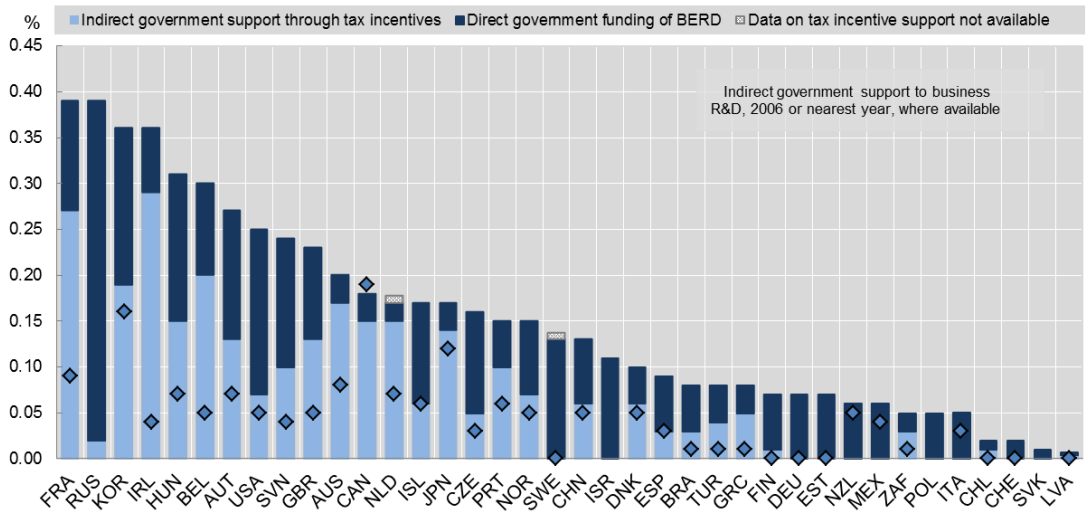
Tax incentives for R&D increasingly important

These figures do not include the (off R&D-budget) cost of tax incentives for business R&D, where they exist, which have been increasing in many countries - but not always enough to offset budget cuts. The latest OECD data on the cost and design of R&D tax incentives (http://oe.cd/rdtax) have been launched alongside the MSTI release and provide an up-to-date and comprehensive overview of government efforts to incentivise business R&D across OECD and other major economies.

The relative importance of tax incentives has generally increased in recent years. In 2016, 29 of the 35 OECD members and a number of non-OECD economies gave preferential tax treatment to business R&D expenditures. This figure has been steadily rising over time, and the share of tax relief in total government support increased on average from 37% in 2006 to 45% in 2014 in the OECD area. In 2014, approximately 6.4% of business R&D was directly funded by governments. R&D tax incentives account for the equivalent of an additional 5.3% of public funding of business R&D.

Direct government funding of business R&D and tax incentives for R&D, 2014

As a percentage of GDP



Source: OECD, R&D Tax Incentive Indicators, http://oe.cd/rdtax and Main Science and Technology Indicators, http://oe.cd/msti, February 2017.

France, the Russian Federation and Korea provided the most combined support for business R&D as a percentage of GDP in 2014, while the United States, France and China provided the largest volumes of tax support. The combined value of this support in 2014, across the OECD and major economies (Brazil, China, the Russian Federation, and South Africa), reached USD 53 billion, and amounted to approximately USD 42 billion in the OECD area alone. Across countries, business R&D intensity has a positive correlation (0.35) with the level of government funding of business R&D.

An embeddable data visualisation is available at: www.compareyourcountry.org/science-and-technology.

More detailed R&D data will be available in March 2017 through the OECD R&D statistics database. http://oe.cd/rds