Science and Research Today

HIGHLIGHTS OF THE OECD SCIENCE, TECHNOLOGY AND INDUSTRY SCOREBOARD 2015

- In 2013, total R&D spending in the OECD area grew by 2.7% in real terms to reach USD 1.1 trillion - almost 2.4% of GDP, continuing the recovery in R&D investment since the crisis. This increase was driven by business R&D, while government performed and funded R&D was hit by budget consolidation measures. In 2014, government R&D budgets for the OECD area remained flat after three consecutive years of reductions, standing at 0.7% of GDP.
- While in some countries, budgets and indirect forms of support held well, government R&D budgets have reverted to levels found at the turn of the century. The recent retrenchment and rising volatility of public support after years of rising support for basic science may possibly endanger the stability and long term sustainability of research systems in countries without the flexibility to accommodate these changes.
- Since the mid-1980s, OECD spending on basic research has increased faster than applied research and experimental development, reflecting many governments' emphasis on funding scientific research. Basic research remains highly concentrated in universities and government research organisations.
- The organisation and orientation of business R&D has evolved in response to market and institutional incentives. SMEs now play a more important role as R&D performers. R&D in EU-based firms appears to be less application-oriented than their counterparts elsewhere.
- Emerging economies are now major players in science and innovation – but the emphasis of their activities does not always appear to be focused on excellence and achieving long term impacts. While China has become the world's second largest spender on R&D, it dedicates relatively little to basic research; it is more focused on applied research, capital equipment and buildings than on paying for researchers. While its scientific output is increasing at a very fast rate, especially in engineering-oriented domains, it is still far below the United States in terms of the number of highly cited publications, especially when it comes to international citations.
- Evidence on the leading scientific research institutions by total numbers of high impact scientific publications reveal country-specific patterns of research concentration and excellence. Unlike leading universities, several major leading institutions within the government sector have average performance levels that are barely above the world's average and owe their status principally to their large scale.
- Collaboration and mobility are on the rise. Collaboration represents an opportunity to boost excellence by joining in with leading authors abroad and sharing costs. Scientist mobility patterns are complex and linked to student mobility flows. In today's science system, authors engaged in international mobility and collaboration tend to have higher citation impacts.
- Research careers are changing. Traditional career paths are less common and women are increasingly represented in science, though less so in engineering and in more senior positions.
- The impacts of scientific research have a long-term nature and are highly diffused through multiple forms of knowledge flows. These are not only global in scope and involve different actors but also span different science and technology domains.
- Open access to results of scientific research appears to contributes to furthering the broad use of research findings, but it has limited impact on citation in peer-reviewed journals. Open access varies by country and field, and it is strongly boosted within many OECD countries by the use of open repositories.

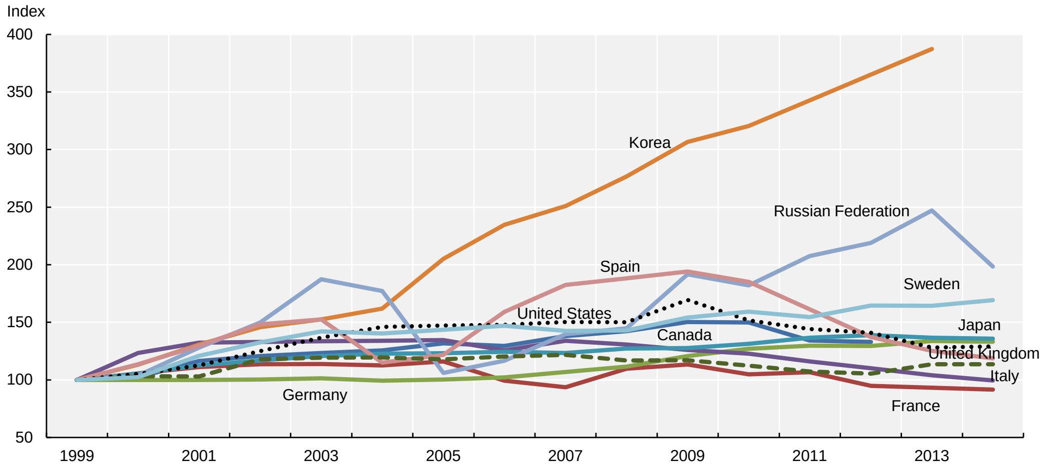
Data and indicators for better science and research policies

Faced with major economic, societal and environmental challenges at a time when budgets are under pressure, policy makers look for evidence to help them guide efforts to ensure investments in science and research help improve people's lives. This briefing note aims to provide an overview of recent OECD indicator-based evidence on the state of science and research today. These indicators raise further questions that are the subject of ongoing analytical work within OECD and the broader community engaged in the study of science policy.

R&D spending has recovered in most sectors and countries but public funding is volatile

Gross domestic expenditure on R&D (GERD) in the OECD area grew[1] by 2.7% in real terms in 2013, to reach USD 1.1 trillion (at 2010 prices), thus consolidating the recovery following the decline triggered by the global economic and financial crisis of 2008-09. The major drop in business R&D in 2008-09 was partly offset by a short-term boost in government-funded R&D. From 2010, business-funded R&D has recovered, while in turn direct government funding of R&D has declined, reflecting to a large extent the outcome of budget consolidation policies in several countries (Figure 1)[2].

Figure 1. Changes in government budgets for R&D, selected countries, 1999-2014 (1999=100)



Note: Figures exclude R&D tax relief support.
Source: OECD Research and Development Database, July 2015. www.oecd.org/sti/rds

After 2010, R&D performed in OECD government institutions has flattened while R&D carried out in higher education institutions has continued to rise albeit at a lower rate than in business. After reaching a peak in 2009, the share of GERD (and also business R&D) directly funded by government has been declining to 28% in 2013. Rapid increases in public R&D funding, potentially followed by periods of rapid cuts, may have a deleterious impact on the performance of the science system by creating adjustment problems and discouraging long-term planning. Severe adjustments can have a particularly marked impact among younger and non-tenured research personnel, especially if there is limited absorptive capacity in the private sector. Research activities subject to merit-based competitive funding can bear a disproportionate share of cuts when there are rigidities in public research systems, which can then compromise scientific excellence.

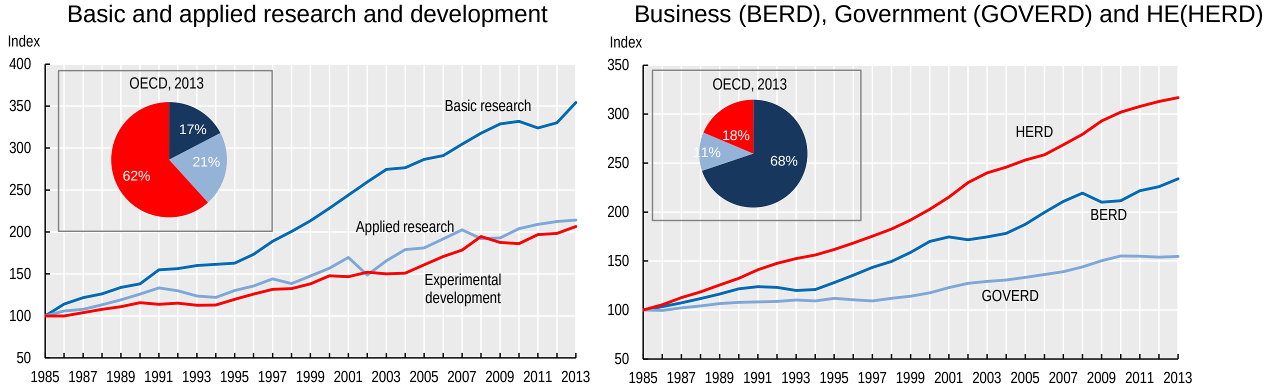
Spending on basic and applied research remains strong but is polarised across sectors

Since the mid-1980s, reported expenditure on basic research (i.e. aimed at the generation of knowledge of underlying foundations of phenomena and observable facts but not directed at specific applications) in OECD countries for which data are available has increased faster than applied research and experimental development (**Figure 2**). This reflects the emphasis placed

[1] See http://dx.doi.org/10.1787/888933273234.
[2] See also OECD Science, Technology and Industry Outlook 2014 http://dx.doi.org/10.1787/sti_outlook-2014-en

by many governments on supporting spending on fundamental knowledge that the market is less likely to fund on its own. Because there is a strong policy rationale for direct government support for basic science as a result of its long-term, uncertain and widely diffused impacts, such commitments became widespread in many OECD countries during the late 1990s and the 2000s before the onset of the global financial crisis. However, in the absence of other stabilising mechanisms, the discretionary nature of budget allocations for R&D appears to make them particularly prone to booms and busts.

Figure 2. Trends in R&D orientation and sectoral structure in the OECD area, 1985-2013 (1985=100)



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Note: The index for basic and applied research and development has been estimated by chain-linking year-on-year growth rates that are calculated on a variable pool of countries for which balanced data are available in consecutive years and no breaks in series apply.

Source: OECD (2015), calculations based on Main Science and Technology Indicators Database, www.oecd.org/sti/msti.htm and Research and Development Statistics database www.oecd.org/rds, June 2015.

Expenditures on applied research – which, like basic research, is aimed at generating new knowledge but is directed primarily towards a specific objective or application – show the highest degree of volatility. Faced with adverse conditions, many firms appear to cancel or postpone medium-term research projects without an immediate market application. Development efforts have proved initially more resilient during past crises, but this category of R&D was also hit in 2010 after applied research had already experienced a major correction. In contrast, basic research appears to have experienced a short-lived setback in more recent years, reflecting a wave of budget consolidation efforts.

With few exceptions like Korea, basic research is nowadays highly concentrated[3] in higher education and government institutions, and generally represents a very small fraction of R&D efforts within firms. Relative to their counterparts elsewhere, companies in European Union countries invest proportionally more in research than in development (**Figure 3**). This difference between firms in the EU and other countries appears to have increased over time, which may be partly explained by the adoption in the EU of state aid rules for R&D-related subsidies that favour research relative to development efforts.

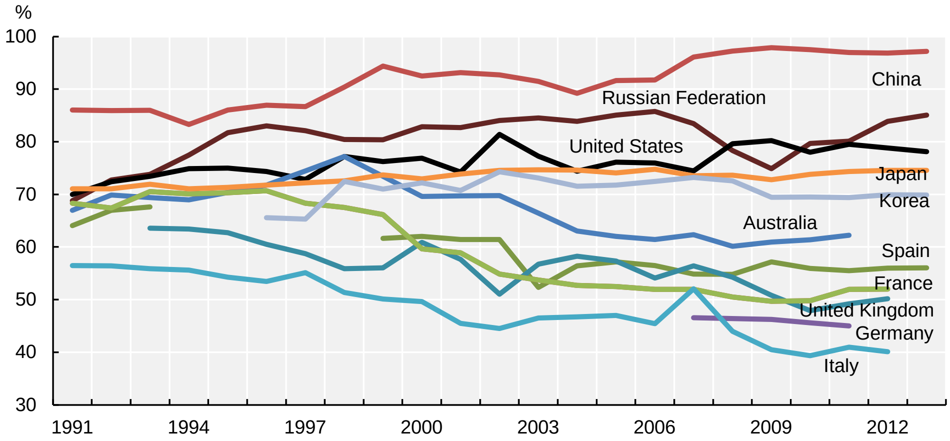
The role and organisation of scientific research in business are being re-defined

Nearly 70% of all R&D efforts in the OECD area now take place within the business sector.[4] With the traditional large corporate laboratory disappearing from most industries over the mid-20th century, industry is increasingly relying on fundamental science and ideas originating from or developed within the higher education and government sectors. The case of the United States is illustrative of the overall OECD experience of highly polarised R&D performance by institutional sector. Since the early 1990s, basic and applied research has declined significantly within overall R&D in the business sector, and currently stands at little more than 20% of all R&D. Basic research accounts for a very small fraction of business R&D but has recently increased in relative importance, potentially reflecting the rise of science-based start-ups. However, this has not been enough to offset the decline in applied research within the business sector.

[3] See http://dx.doi.org/10.1787/888933273552.
[4] See http://dx.doi.org/10.1787/888933274105

Figure 3. Divergence between EU and non-EU business orientation of R&D efforts

Percentage of total Business R&D dedicated to experimental development, 1991-2013



Source: OECD, calculations based on Research and Development Statistics database www.oecd.org/sti/rds, June 2015.

Faced with rising competitive and investor pressures to minimise resources dedicated to research efforts without a direct translation onto products or improved processes, business devise strategies for sourcing and deploying knowledge. They draw upon scientific results and resources from the publicly-funded science base through contract R&D[5] projects, collaborations and partnerships that facilitate acquisition or licensing strategies, or even by attracting highly qualified personnel. The complex and multi-dimensional nature of those flows, often subject to confidentiality agreements, does not easily lend itself to measurement through conventional means, let alone synthesis into a single "knowledge transfer" indicator.

The OECD STI Scoreboard presents evidence that business R&D and patent ownership are highly concentrated activities[6]. However, OECD data also show that, over 2007-12, the share of business R&D accounted for by small or medium sized enterprises has increased in most major OECD countries for which data are available (18% to 23% in France, 17% to 27% in the United Kingdom, 22 to 24% in Korea) although it declined in Spain (from a high level of 54% to 47%) and also in Japan (6 to 5 %). In the case of the United States, the share accounted for SMEs increased from 8% in 2000 to 16% in 2009. While this recent trend may be partly associated to public support rules that encourage a division of R&D performance roles into smaller, affiliated parts, this may reflect a genuine move to de-risk R&D activities to company spin-offs, independent start-ups and specialised SMEs.

The evidence of intense specialisation in R&D funding and performance roles raises questions about the appropriate role for government, given the importance of developing transformational general purpose technologies and bringing them to widespread practical use. The choice of policy instruments, their design and implementation can make a major difference. There is a growing body of academic evidence that governments have been central to major past and recent innovation outcomes. Many OECD countries are assessing their business R&D support mix, to balance the objective of increasing R&D across the board against the objective of encouraging R&D in priority areas. Reliance on R&D tax incentives has generally increased relative to various forms of direct support. In 2015, 28 OECD countries provided tax relief on business R&D expenditures. The combined value of this support in 2013, across the OECD and major economies (Brazil, China, the Russian Federation and South Africa), was close to USD 50 billion. Recent OECD work suggests that investment in basic research and policies that promote firm-university collaboration increase the capability of industries and firms to absorb external knowledge and technologies.[7] The STI Scoreboard 2015 also provides evidence of the association between business innovation and sources of demand, such as participation in public and international markets.[8]

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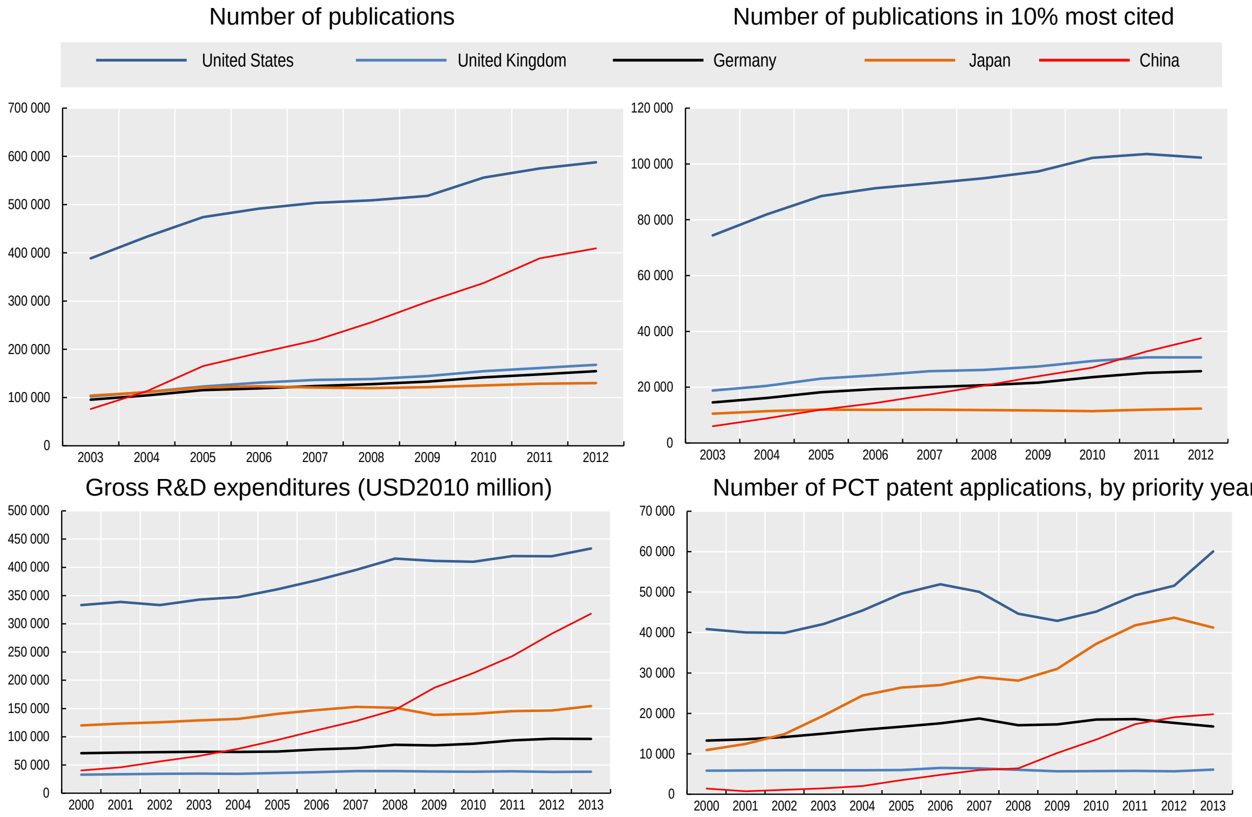
[5] See http://dx.doi.org/10.1787/888933273549
[6] See http://dx.doi.org/10.1787/888933273408 and www.oecd.org/sti/rds.
[7] See www.oecd.org/economy/the-future-of-productivity.htm.
[8] See http://dx.doi.org/10.1787/888933274354.

New major players are reshaping the global landscape of scientific research

Although the United States is still the world's largest R&D performer, with nearly USD 433 billion of domestic R&D expenditures in 2013[9], this is now just about one-third more than the amount of R&D performed in China, the second-largest performer, which is broadly on par with the combined EU28 area. Non-OECD economies account for a growing share of the world's R&D.

Figure 4. Recent trends in R&D, scientific publications and patents



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Source: OECD (2015), based on OECD and SCImago Research Group (CSIC) (2015), *Compendium of Bibliometric Science Indicators 2014*, http://oe.cd/scientometrics; and OECD Main Science and Technology Indicators, www.oecd.org/sti/msti.htm.

China appears to be on trajectory to catch up with the United States in terms of R&D expenditures (OECD, 2014) and total publications within a few years, assuming previous trends are maintained (**Figure 4**). China also has a higher average annual number of doctorate graduates[10] in the natural sciences and engineering than the United States. However, data on a quality-adjusted measure of scientific production (publications among the top 10% most cited) and data on Patent Cooperation Treaty patent filings call for some degree of caution as regards China's progress in science and innovation.

As research systems mature, proportionally less R&D resources are dedicated to capital investment compared to current costs (principally salaries of researchers and support R&D personnel).[11] The composition of China's R&D investment is moving in that direction but still has a relatively large share devoted towards capital goods such as buildings and equipment.

China invests relatively little in basic research compared to most OECD economies (4% vs 17%, respectively, in 2013). The role of China in scientific research is particularly noticeable in engineering-related fields (**Figure 5**). The United States accounts for the largest number of top-cited or high impact publications across all disciplines, but this leading role is particularly marked in the life sciences and most health-related and social science fields. US-authored publications account for a relatively lower percentage of high-impact publications in a number of basic science domains outside the life sciences and engineering. The United Kingdom is the second largest producer of top-cited publications.

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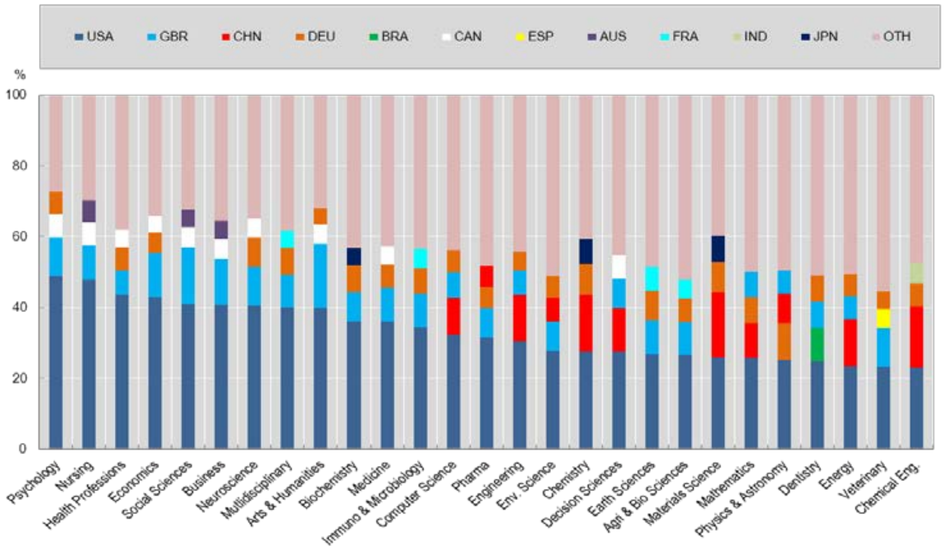
[9] See http://dx.doi.org/10.1787/888933273287.
[10] See http://dx.doi.org/10.1787/888933273584.
[11] Research and Development Statistics database www.oecd.org/rds, June 2015.

Figure 5. Top 4 countries with the largest number of 10% most-cited publications, by field, 2003-12

As a percentage of all top-cited publications by authors in OECD and BRIICS economies, whole counts



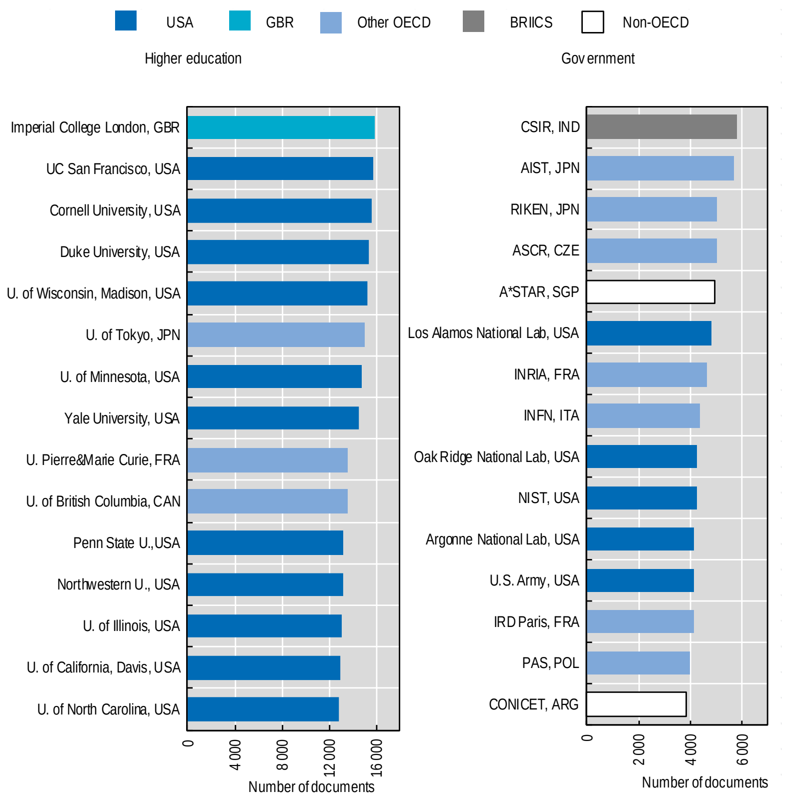
StatLink http://dx.doi.org/10.1787/888933273312

Source: OECD(2015), from OECD and SCImago Research Group (CSIC) (2015), *Compendium of Bibliometric Science Indicators 2014*, http://oe.cd/scientometrics. This publication provides more information on the advantages and limiations of these data.

The geographical distribution of the largest government research institutions by highly-cited publication counts is quite diverse, and includes institutions from several European and non OECD countries (**Figure 6**). Despite their central role in national systems, the average performance of may of these government research institutes is close to the world's average (not reported below). In comparison, top research universities tend to have high average performance levels and are highly concentrated in the United States and, to a lesser, extent, the United Kingdom. These results indicate different institutional approaches across countries towards R&D performance in the "publicly-funded" science and research base.

Figure 6. Institutions with the largest number of top-cited publications, by sector, 2003-12

Identity and location of 15 largest producers of top 10%-most-cited documents



StatLink http://dx.doi.org/10.1787/888933273306

Source: OECD (2015), based on OECD and SCImago Research Group (CSIC) (2015), *Compendium of Bibliometric Science Indicators 2014*, http://oe.cd/scientometrics.

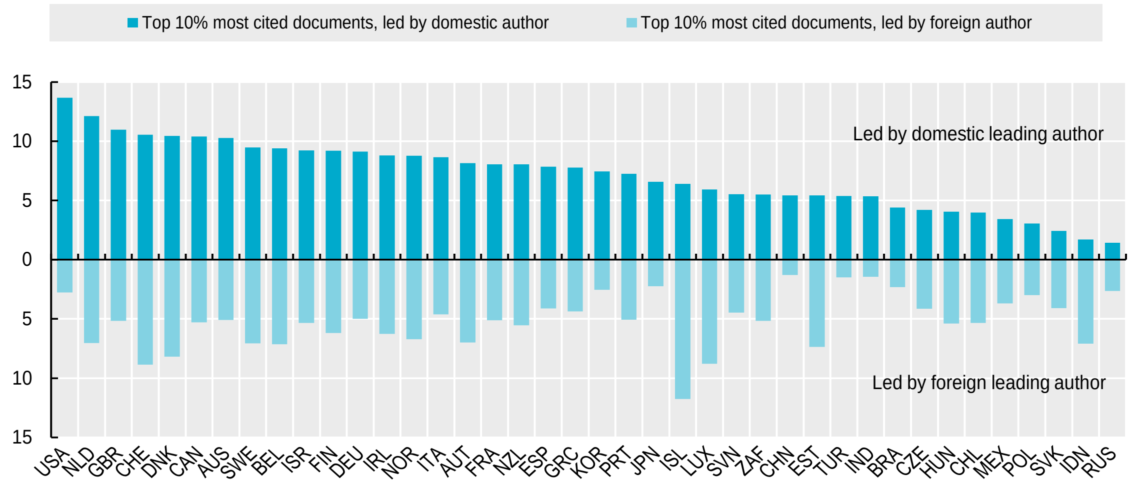
Flows of scientific knowledge are partly reflected in the citations contained within scientific publications. The United States is firmly placed at the centre of the international citation network, with a larger number of works in any country citing publications with US-based corresponding authors than vice versa.[12] Citation networks are more asymmetric than collaboration or mobility networks to which they are closely related. For example, many China or Germany-based authors cite US-based authors whereas few US-based authors cite authors based in China or Germany. China has a much smaller weight in terms of citations received from abroad than would be implied by its overall publication volume. Over the 1996-2013 period, China-based authors received approximately as many foreign citations as those based in Sweden, although this figure has increased rapidly. Further work is needed to ascertain whether there are for example language-related biases and barriers that limit the recognition of the significant opus of work produced by China-based authors, or whether this body of work is still of limited relevance outside China.

Science is increasingly global but not all countries are equally well connected

Global researcher mobility and collaboration among institutions are increasing. Less than 15% of scientific publications are currently accounted for by single authors affiliated to a single institution. The proportion of documents involving some form of international collaboration has nearly doubled[13] since 1996, and reached nearly 20% in 2013. There is a positive relationship between measures of scientific research collaboration and citation impact, particularly among countries with lower levels of scientific production, highlighting the importance of scale, which smaller economies attempt to overcome by participating more intensively in global networks (**Figure 7**).

Figure 7. Top 10% most cited documents and scientific leading authorship, 2003-12

As a percentage of all documents, whole counts



Source: OECD(2015), from OECD and SCImago Research Group (CSIC) (2015), Compendium of Bibliometric Science Indicators 2014, http://oe.cd/scientometrics.

International collaboration allows authors in different countries to partner with leading experts elsewhere, sharing knowledge, costs and rewards. Joint analysis of excellence and the affiliation of the author identified as leading (for correspondence purposes) shows, for example, that among the 20% share of publications by Netherlands-based authors that feature among the world's top 10%-most cited, nearly half of those have a leading author based abroad. The United States has the largest domestic excellence rate at nearly 14%, with only 3% associated to collaborations in which an author based abroad features as leading.

A core aspect of collaboration and knowledge circulation in science and research is the extent of personal mobility. Mobility allows face to face contact that can help build the required level of trust to facilitate future collaboration and the exchange of information. This includes

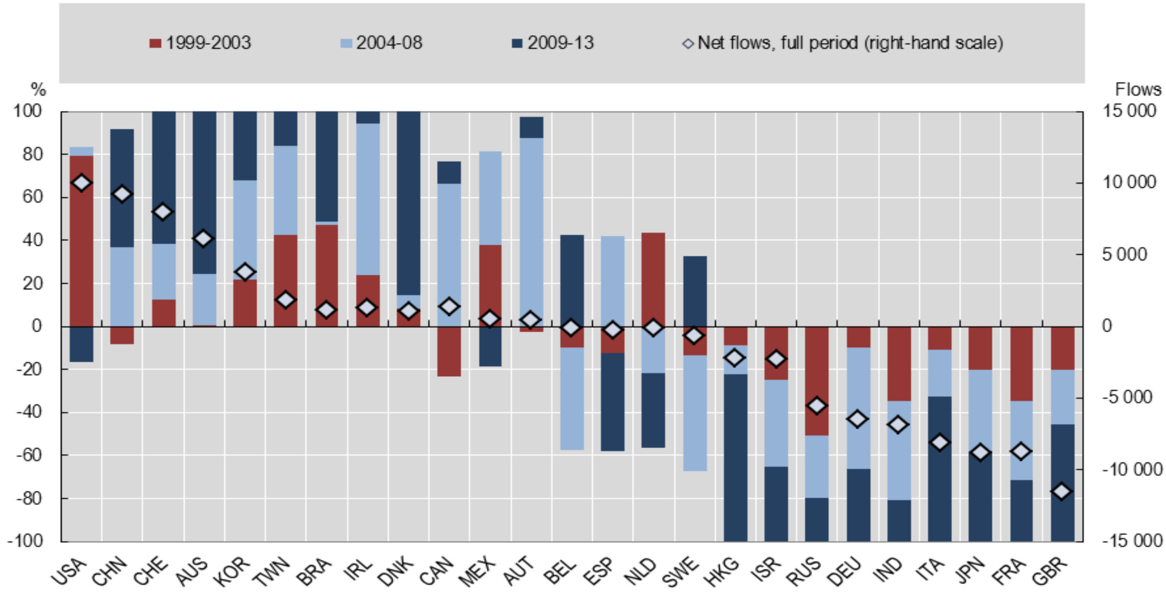
[12] See http://dx.doi.org/10.1787/888933273353

[13] See http://dx.doi.org/10.1787/888933273347

participation in international symposia and conferences, but can also involve extended interactions with individuals and institutions in other countries, from short term stays through to long term mobility. Changes in the affiliations of scientists who publish in scholarly journals indicate a complex pattern of brain circulation, with the United States playing a central role as a destination and source of researchers. While the United States is preeminent in attracting large numbers of researchers from across the world, other countries are receiving as high or even higher shares of researchers previously affiliated abroad.[14] While total US inflows exceed outflows, more scientists who start by publishing in the United States move to affiliations in China and Korea than vice versa. Return mobility is equally important, with high shares of academic staff studying or working abroad before returning to their home countries. In fact, during 2000-12, the number of foreign tertiary students enrolled worldwide more than doubled, with an average annual growth rate of almost 7%. Mobility patterns also vary by field. There is new OECD evidence that geographic, cultural, economic and scientific "distance" measures are good predictors of scientist mobility, but factors such as funding and policies that restrict mobility also play a significant role.[15]

Figure 8. International net flows of scientific authors, selected economies, 1998-2013

Difference between annual inflows and outflows, as percentage of cumulative net flows



StatLink http://dx.doi.org/10.1787/888933273360

Source: OECD (2015), calculations based on Scopus Custom Data, Elsevier, version 4.2015, http://oe.cd/scientometrics, June 2015.

Patterns of net scientist mobility by country have shifted over the past decade. Australia, Brazil and China among others have experienced significant net gains in 2009-2013, while other countries have witnessed a shift from a net inflow to a net outflow, as is the case for the Netherlands, Spain and, to a lesser extent, the United States (**Figure 8**). With few exceptions, individuals not changing affiliations ("stayers") are more likely to publish in journals of lower "prestige". For countries exhibiting lower median citation impact values (ca 20%), outflows tend to be associated with higher rated publications than their staying or returning counterparts. Assuming one could raise the performance of "stayers" to the level of their internationally mobile researchers (those who leave, move in for the first time and those who return), this would help countries catch up with leading research nations. Data from the OECD/UNESCO/Eurostat study on the careers of doctorate holders show that, on average, 14% of national citizens with a doctorate degree have had at least one experience of international mobility of three months or longer over the previous ten years. Individuals with doctorates who have already experienced an episode of international mobility are more likely to report an intention to move abroad and knowledge acquisition is their most often reported motivation.

[14] See http://dx.doi.org/10.1787/888933273839.

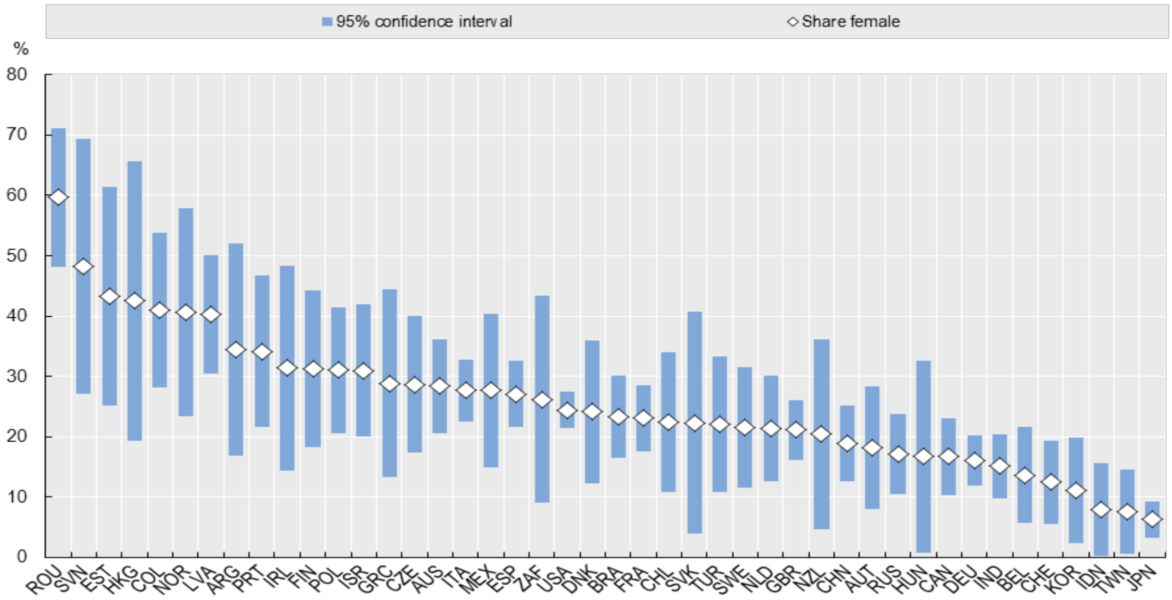
[15] See http://dx.doi.org/10.1787/18151965.

Research careers are changing and women are still under- represented

International mobility is only one dimension along which research careers are changing. One key dimension of the transformation of research systems is the specialisation and professionalisation in research and research training. The growth in the number of doctorates reflects the expansion of higher education at postgraduate levels and the increasing role of universities as poles of research.[16] This has led to a debate over the appropriate model for training and for the career development of the next generation of researchers. Policy makers are interested in how to continue to build a cadre of highly motivated individuals to deliver scientific excellence within academic institutions while ensuring the skills are relevant for commercial research and broader innovation careers outside science or academia. Not all countries appear to be equally successful at providing relevant employment opportunities to individuals with doctorate degrees outside the public sector and teaching-related activities. Employment rates among doctorate holders are systematically higher than among other tertiary level graduates, but employment conditions for recent graduates appears to have significantly deteriorated. On average, 35% of doctorates are employed in education, with a much higher figure in some countries.[17] Differences in employment rates between men and women are less marked for doctorate holders than for other tertiary level graduates.

Figure 9. Female scientific authors in selected fields, by country, 2011

As a percentage of corresponding authors, estimated shares



StatLink http://dx.doi.org/10.1787/888933273335

Note: This is an experimental indicator, based on a stratified random sample online survey of scientific authors.
Source: OECD (2015), based on preliminary analysis of the OECD Pilot Survey of Scientific Authors, July 2015.

Since 2005, there has been considerable convergence in OECD countries towards gender parity[18] in doctorate graduation across most domains. In engineering, the gender gap remains very large as men account for nearly 80% of all doctoral degrees. Women hold 40% of doctoral degrees in science, while they are at par with men in social sciences and humanities. In health-related disciplines, the share of women in new doctorates has increased from 50% in 2005 to 60% in 2012. The gap varies across countries and appears to be larger in senior and decision-making positions, for example, among scientists who are identified as corresponding authors, a proxy for leadership in research teams (**Figure 9**). Women representation among corresponding authors ranges from slightly above 30% in the arts and social sciences to 15% or less in physics, materials science and chemical engineering.

[16] See http://dx.doi.org/10.1787/888933273598 and www.oecd.org/sti/cdh
[17] See http://dx.doi.org/10.1787/888933273616
[18] See http://dx.doi.org/10.1787/888933273320 and http://dx.doi.org/10.1787/888933273567.

The impacts of scientific research have a long-term nature and are highly diffused.

Opinion surveys reflect the widespread recognition of the benefits of science.[19] However, while the impacts of scientific research are easy to recognise in most facets of our daily lives, making the case for prospective private or collective decisions on the intensity and direction of research is particularly difficult as a result of the uncertain, distributed and long-term nature of research and the necessary presence of other activities to realise its benefits. The link between funding and scientific excellence has been well documented in the literature and academics are making progress identifying natural experiments that help test empirically the link between public funding and innovation. Differences in the way in which input and output data on scientific research are collected and compiled make it difficult to align and compare. Separate analysis of OECD data shows that expenditure on higher education R&D by field is positively related to high-impact publication levels within those fields, controlling for country and field fixed effects. This correlation appears to be completely explained by the correlation of expenditures with the absolute total number of publications. This suggests that funding alone is not a sufficient explanation for observed “excellence” indicators as derived from scientific publication output.

Inventive activity continues to rely significantly on scientific research

In addition to the analysis of selected inventions and innovative products, patent data[20] show that on average, 14% of patents in all technologies cite non-patent literature, which includes scientific literature and other sources such as invention disclosures. The link is particularly strong for health and ICT-related technologies (27% and 20%, respectively, on average).

While citations do not always reflect knowledge flows and not all this literature can be considered as scientific, using matched patent citation and scientific publication data, it is possible to note that publications in physics and chemistry are frequently cited by most enabling technologies, as well as those in biology and biochemistry. ICT inventions draw significantly on biochemistry and clinical medicine research, and in turn facilitate new scientific research. The fundamental science fields of chemistry and physics also play a significant role as contributors to inventions.[21]

Increased access to outputs of research can make strengthen the wider use of science

The results from a pilot OECD survey of scientists[22] carried out in early 2015 who published in peer-reviewed journals in 2011 indicate that scientific results are primarily cited by subsequent scientific research. Open access to the content of scientific documents is uneven across countries, and that access is significantly boosted in OECD countries by the use of open repositories.[23] Analysis from this survey’s results suggests that open access appears to have an impact on the extent to which such results are used, but there is no direct impact on the likelihood of citation by other peer-reviewed papers in major indices, a very good predictor of researcher income. This suggests that scientists often have limited incentives to make their results openly available and replicable. Furthermore, when asked, many scientists report on several channels through which their work is used and has a real impact. These are not captured by conventional indicators and are difficult for incentive schemes and institutional arrangements to reward appropriately.

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[19] See http://dx.doi.org/10.1787/888933274965 and http://dx.doi.org/10.1787/888933274982

[20] See http://dx.doi.org/10.1787/888933273957.

[21] See http://dx.doi.org/10.1787/888933273965.

[22] See www.oecd.org/science/survey-of-scientific-authors.htm.

[23] See http://dx.doi.org/10.1787/888933273916.

The OECD Science, Technology and Industry Scoreboard 2015

Over 200 indicators show how OECD and major non-OECD economies are starting to move beyond the crisis, increasingly investing in the future.

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.

Featuring in the 2015 edition: Knowledge economies: trends and features; Investing in knowledge, talent and skills; Connecting to knowledge; Unlocking innovation in firms; Competing in the global economy; Empowering society with science and technology.

The figures and underlying data in the STI Scoreboard 2015 are available for download. Selected indicators contain additional data expanding the time and country coverage of the print edition. Thematic briefs and country notes, as well as online tools to visualise indicators are available at the OECD STI Scoreboard webpage (www.oecd.org/sti/scoreboard.htm).

Notes:

The information included in this note is based on the October 2015 release of the OECD Science, Technology and Industry Scoreboard. The data can be accessed from www.oecd.org/sti/scoreboard.htm.

This document and any map included herein are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities or third party. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

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