

2. TARGETING NEW GROWTH AREAS

2.13. Public-private cross-funding of R&D

Public and business research are complementary inputs for innovation. Research in the business sector is closely linked to the creation of new products and production techniques, but public research is important for funding and performing basic research that does not lead immediately to commercial returns. Public research also supports business sector research via knowledge spillovers.

Direct financial flows between government and the business enterprise sector for R&D are one way to track interactions between government and industry in science and innovation. On average, around 7% of research and development (R&D) performed in the business sector is financed by direct government funds. The share has tended to decrease in almost all countries in recent years. It is still high in the Russian Federation (55%) but is less than 15% in all OECD countries. This pattern is consistent with the increasing adoption of other policy instruments to stimulate innovation, such as R&D tax incentives.

Likewise, business funds an important share of the R&D performed in the higher education and government sectors, with an OECD area average of 5.3% in 2006. This share has tended to increase in around half of all OECD countries: in the EU27, companies financed 7.4% of all R&D performed in public institutions and universities, compared to only 3.2% in the United States and 2.2% in Japan. Ireland, Mexico and Portugal have the smallest shares of business-funded R&D performed in the higher education and government sectors.

Over the last decade, the share of business-funded R&D in the higher education and government sectors increased significantly in Germany, Hungary, Israel and the Russian Federation. The opposite trend is evident in Ireland, Mexico, Slovenia and South Africa. Despite increases in many countries, business still funds less than 8% of R&D performed in public institutions and universities in most large OECD economies.

High values for both indicators in the Russian Federation and Poland suggest strong ties between the private and public sectors in terms of direct cross-funding of R&D activities. In contrast, the values for both are very low for Japan and Denmark.

R&D performance in government and higher education

Measures of R&D performance in the higher education sector are often based on estimates by national authorities and evaluation methods are periodically revised. Moreover, certain national characteristics may strongly influence R&D performance by the government and higher education sectors.

US figures for these sectors are underestimated. Government-sector R&D covers only federal government activities, not those of individual state and local governments; and since 1985 figures for researchers exclude military personnel in the government sector. In the higher education sector, R&D in the humanities is not included, and since 1991 capital expenditures have been excluded.

In Korea, the higher education sector is probably greatly underestimated until 2007 owing to the exclusion of R&D in the social sciences and humanities.

Certain transfers of public agencies to private enterprise, as in the case of the privatisation of Swisscom (Switzerland) in 1998, and the partial privatisation of the Defence Evaluation and Research Agency (DERA) in the United Kingdom in 2001, have had the effect of reducing R&D performed in the government sector and increasing it in the business enterprise sector.

Conversely, for the United States, in 2005 following a survey of the federally funded research and development centres (FFRDCs), it was determined that FFRDC R&D belongs in the government sector rather than in the sector of the FFRDC administrator as previously reported. This R&D expenditure was therefore reclassified from the other three performing sectors to the government sector and data were revised historically.

Source

OECD, R&D Database, June 2009.

Going further

OECD (2002), *Frascati Manual: Proposed Standard Practice for Surveys on Research and Experimental Development*, OECD, Paris, www.oecd.org/sti/frascaticmanual.

Figure notes

Government-financed R&D in business: Austria and Estonia 1998; Switzerland, Luxembourg and China 2000; South Africa 2001.

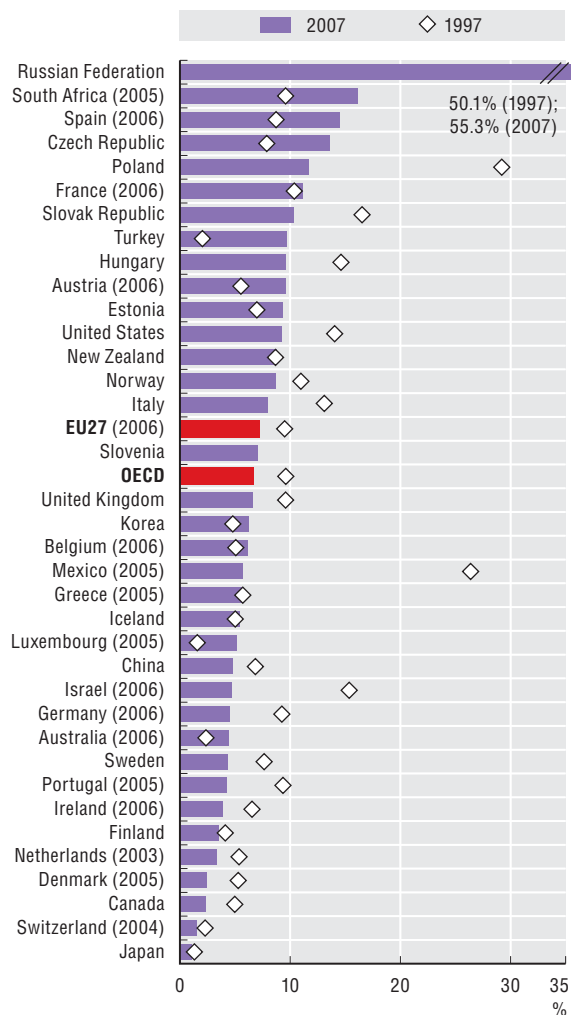
Business-funded R&D in the higher education and government sectors: Australia, Austria and Switzerland 1998; Luxembourg and China 2000; and South Africa 2001. For Luxembourg: government sector only. For Switzerland: higher education sector only.

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Government-financed R&D in business, 2007

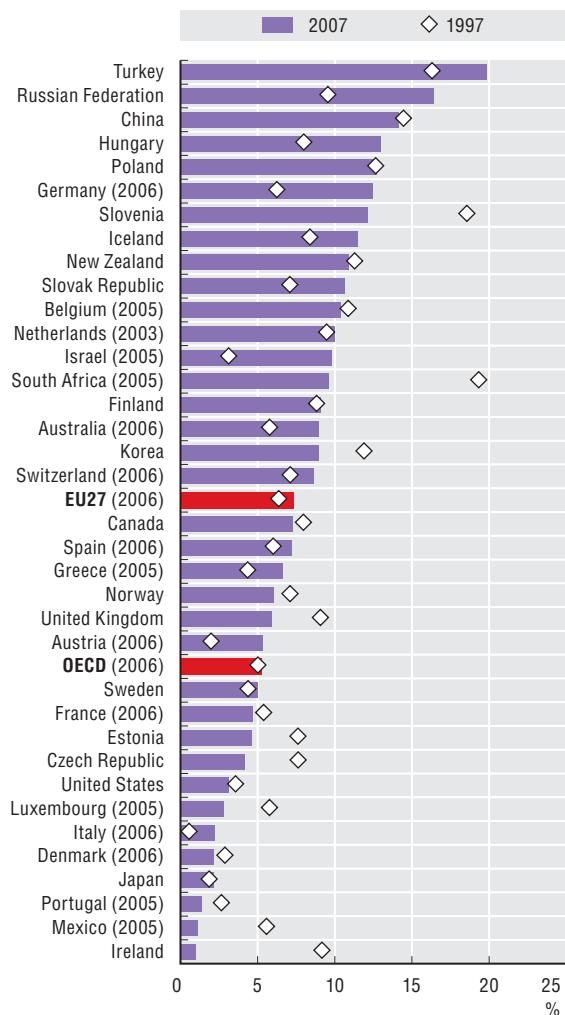
As a percentage of R&D performed in the business sector



StatLink <http://dx.doi.org/10.1787/744175470435>

Business-funded R&D in the higher education and government sectors, 2007

As a percentage of R&D performed in these sectors (combined)



StatLink <http://dx.doi.org/10.1787/744214163561>



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