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Campaign for Science and Engineering in the UK

How is UK Science and Engineering Funded?

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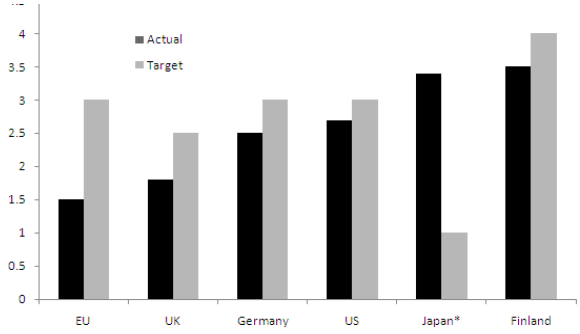
- The UK spent £25bn on R&D in 2007/8, **1.8% of GDP**
  - 47% UK private sector
  - 30% Government spending
  - 17% Foreign investment
  - 6% Non-profit sector

Table (right) shows actual and target spending on R&D by the UK and international competitors in 2007.



- Globally the UK is 15th for proportion of GDP spent on R&D (2007, UNESCO), behind nations like Israel, Sweden, Korea, Finland and Japan (all above 3%), and Iceland, the USA, Singapore, Denmark, Germany and Austria (all above 2.5%). Unlike many competitors, the UK did not invest in the research base in response to the recession, so our ranking is likely to have fallen.

- The EU has a target of 3% GDP to be spent on R&D from all sources by 2014. The previous UK government set a lower target of 2.5%. The new coalition government has not made a statement on its R&D goal.

- No other G7 country receives more R&D investment from foreign firms than the UK. But UK firms are outsourcing more R&D overseas; such outsourcing has nearly trebled from 1996 to 2005, reaching £1.75 bn.

- Charitable R&D has been rising since 2004 and reached over £1bn in 2009.

Public funding of UK R&D

As a percentage of GDP, UK government spending on R&D fluctuated from 0.52% to 0.59% over the last decade, and was 0.55% in 2007. Across the G7 in 2006, only Italy spent less than the UK, with German public spending at 0.71%, France at 0.81% and the USA at 0.77%. Public money is invested in R&D in a variety of ways:

Table 1. Funding streams in UK R&D, net spend in 2007/08 and % change since 2004

Public funding streams	Millions	%change	Policy Objectives				
			Knowledge & Skills	Policy	Societal Issues	Wealth Creation	Defence
Science Budget	£3,520	+42	***	**	**	**	**
Funding councils (e.g. HEFCE)	£2,230	+14	***	*	*	*	*
Civil Departments	£1,290	-28	*	***	**	*	-
Ministry of Defence	£2,140	-23	*	*	*	*	***
Tech. Strategy Board*	£230	-	*	-	**	***	*
Regional Dev. Agencies	£440	-	*	-	**	***	-
R&D Tax Credit (2006/07)	£670	-	*	-	*	***	*
European Union R&D	£368	-	**	**	**	**	-

** a further £100 million from RDAs & research councils not been included to avoid double counting*

Direct funding via Science Budget & Funding Councils – 'Dual Support' system

The Science Budget allocates money to seven different research councils who fund research projects, studentships, and national research facilities. While the bulk of the Science Budget is delivered to research councils, it also includes £400m capital funding, £100m knowledge transfer, £70m National Academies, £60m science and society and other programmes, and (more recently) funding for the Government Office for Science.

Universities receive general research money via the regional Higher Education Funding Councils depending on a number of factors. A large stream of this is "quality related" (QR) and is determined by prior research performance through the Research Assessment Exercise (likely to be replaced by the Research Excellence Framework). One strand of QR money also supports charity-funded research (e.g., HEFCE provided £180 million in 2007/08).

The performance of the UK research base:

- The UK is home to 29 of the world's top 200 universities, including three of the top ten (Times Higher Education World University Rankings 2010).
- The UK produces 12% of all citations and 14% of the most highly cited papers. The UK's share of world publications has been slowly falling over the last decade to 8%, reflecting the growth of other countries like China (whose share quadrupled in a decade), Brazil and South Korea.
- *Investment in UK research is very efficient:*
  - The UK is 3rd in the world in terms of citations per researcher
  - The UK is ranked first in the G8 for scientific papers as a proportion of GDP
  - About 90% of research funds (£980m out of £1095m) from HEFCE go to 3* 'internationally excellent' or 4* 'world-leading' research
  - Research council grants are extremely competitive. In 2003, the overall grant success rate across research councils was around 40% - it has now fallen to around 20% (2008).

R&D tax credits

R&D tax credits are not counted as direct spending on R&D because they are a reimbursement from the Treasury, however, they are an important part of UK Government's financial support for R&D. In 2008, 21 countries offered industry R&D tax relief. In the UK, industry needs to invest nearly 90p to achieve a £1 investment in R&D, taking into account all tax incentives and deductions. This places the UK 19th in terms of how generously the tax system treats R&D, down from 13th in 2004. The UK is more favourable than the US, but far less attractive than Brazil, India, and China.

Further Information

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http://www.sciencecampaign.org.uk/documents/2010/CaSEjunebudgetbriefing2010.pdf
http://www.sciencecampaign.org.uk/documents/2010/CaSEResearchFunding.pdf

Sources:

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