

SET Statistics

The following analysis has been drawn from *SET Statistics* a document produced in 2008 by the Department for Innovation, Universities and Skills in collaboration with the National Office for Statistics. It summarises key science, engineering and technology (SET) indicators. This article will focus on the period 1995-96 to 2005-06 where possible, with all figures adjusted for inflation.

Gross R&D Expenditure

- Gross expenditure on R&D (GERD) in the UK shows a fairly smooth increase of 21% in real terms from £18.0 billion in 1995 to £21.8 billion by 2005. Table 1 shows the breakdown by source of funding and performing sector.
- Source of funding:** While GERD funding from business enterprise rose from £8.7 billion to £9.2 billion and government funding rose from £5.9 billion to £7.1 billion during this period, the greatest rate of increase was shown by R&D funding from abroad, which rose from £0.7 billion in 1995 to £4.2 billion in 2005, at which point it accounted for 19% of total GERD funding.
- Performing Sector:** The main beneficiary of the increased R&D expenditure has been the Higher Education sector, which has increased its R&D performance budget by 61% from £3.5 billion in 1995 to £5.6 billion in 2005. As a percentage of overall UK GERD during this period, the Higher Education sector increased its share from 19% to 26%.

Table 1. Breakdown of GERD by source of funding and performing sector in real terms (£ millions)

	YEAR	BUSINESS ENTERPRISE	GOVERNMENT	HIGHER EDUCATION	PRIVATE NON-PROFIT	ABROAD	TOTAL
BREAKDOWN BY SOURCE OF FUNDS	1995	8,684	5,916	152	2,605	656	18,015
	2005	9,174	7,126	266	1,022	4,184	21,772
BREAKDOWN PERFORMING BY SECTOR	1995	11,702	2,623	3,461	228	-----	18,015
	2005	13,410	2,289	5,580	493	-----	21,772

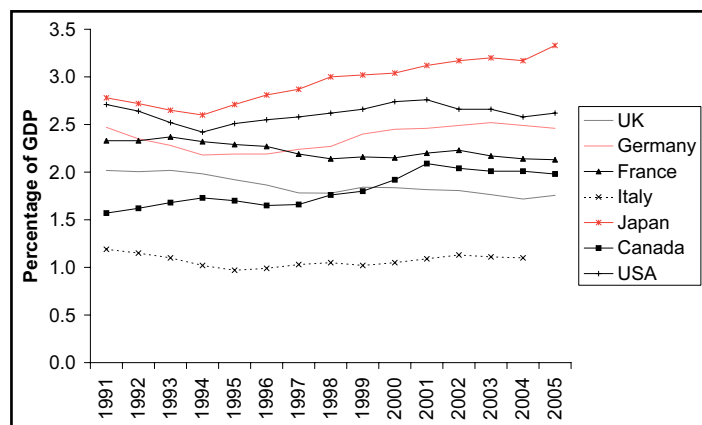
Note: Base year for breakdown by source of funds is 2004, for performing sector, 2005. Government includes departmental and research council spending.

- Despite the increase in gross expenditure on R&D in the UK over this period, it fell as a percentage of overall GDP as discussed below.

International Comparisons

- The UK's GERD fell as a percentage of GDP from 1.92% in 1995 to 1.76% in 2005. The UK performed badly when compared with other G7 countries over this period, with only Italy faring worse (see Figure 1).

Figure 1. Gross domestic expenditure on R&D in G7 countries as a percentage of GDP



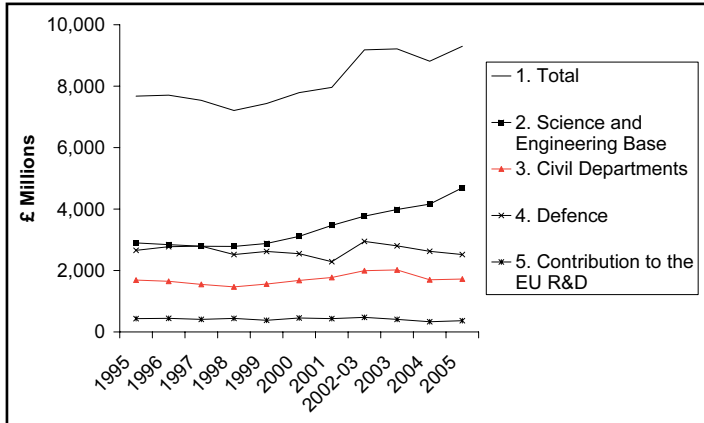
- The UK performs particularly badly with regard to non-government GERD when compared to other G7 countries, especially in the business enterprise sector. Business Enterprise R&D (BERD) in the UK accounted for 62% of total GERD in 2005 down from 65% in 1995, while, over the same period, Germany increased its share from 66% to 69% and Japan increased its share 70% to 76%.
- This situation is exacerbated by the fact that Britain is more reliant on overseas R&D funding than any other G7 country. Although the data is incomplete, R&D funding from abroad in 2005 accounted for 9% of GERD in Canada, 6% in Italy, 0.4% in Japan and 19% in the UK.

Government funded R&D

- Government expenditure on SET in 2005-06 was £9.6 billion in real terms, up from £7.9 billion in 1995-96. Of this, 96% is spent on R&D, with the other 4% focused on technology transfer and taught courses.
- Total government expenditure on R&D in real terms rose from £7.7 billion in 1995-96 to £9.3 billion in 2005-06; an increase of 21% over ten years. Grouped by socio-economic objectives, the biggest rise was seen in the field of 'advancement of knowledge', from 30% of net R&D expenditure in 1995-96 to 40% ten years later.
- Civil department R&D spending (including the NHS) rose slightly from £1.69 billion in 1995-96 to £1.72 billion in 2005-06, by which time it accounted for 19% of total

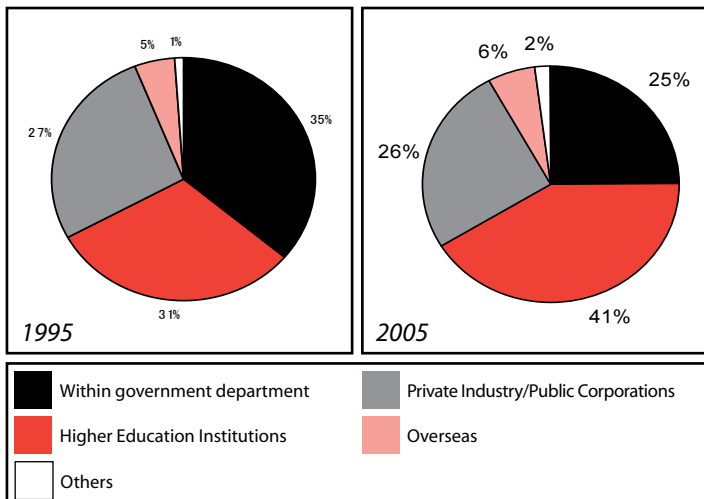
government R&D spending. Departments which increased their R&D spending notably over this period include the Department for International Development (£151 million to £265 million) and the Home Office (£22 million to £73 million). See Figure 2 for a breakdown.

Figure 2. Trends in government funded R&D expenditure in real terms (2005 baseline).



- The greatest beneficiary of government R&D expenditure has been the Science Budget which increased from £1.6 billion in 1995-96 to £2.8 billion in 2005-6, a rise of 74% in real terms (see Figure 3).
- By 2005-06 the Science and Engineering Base, consisting of the Science Budget (31%) and the Higher Education Funding Councils (22%), accounted for over half of total government R&D expenditure.
- The destination of total government R&D expenditure over this period saw the Higher Education Institutions increase their share from 31% to 41%, while government R&D spending within its own departments fell from 35% to 25%, and spending on private industry remained relatively constant.

Figure 3. Destination of Government R&D Expenditure in 1995 and 2005

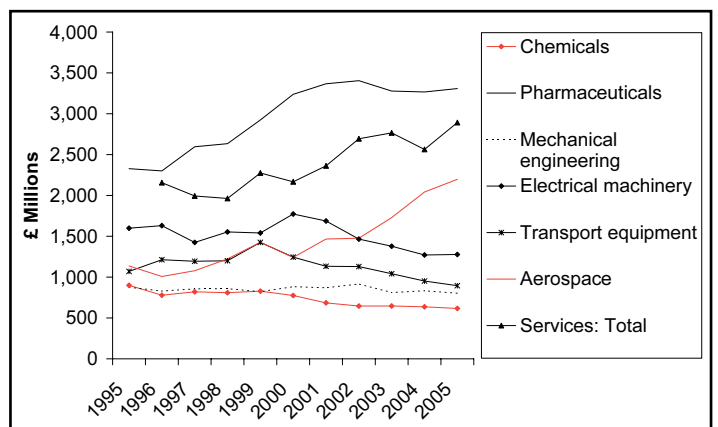


- The Science and Engineering Base, which performs most of the basic and strategic research undertaken in the UK, received R&D funding totalling £5.9 billion in 2005: an increase from £3.6 billion in 1995. Of this 2005 figure, 71% came from government as shown above (in the science budget and HEFCE), while 15% came from charities, 8% from overseas (including 4% from the EU) and 5% from UK industry.

Business Enterprise R&D

- Total BERD expenditure in 2005 was £13.4 billion in real terms, up from £11.7 billion in 1995: an increase of 15% over ten years (See Figure 4). However, as a percentage of total GDP, BERD fell from 1.25% in 1995 to 1.08% by 2005, in the same period, overall GERD fell from 1.92% to 1.76%.
- **Source of funds:** Between 1995 and 2005, the share of BERD provided by business itself fell from 70% (£8.2 billion) to 64% (£8.6 billion), while the share from government fell from 10% (£1.2 billion) to 9% (£1.2 billion), and the share from overseas rose from 19% (£2.2 billion) to 27% (£3.6 billion).
- **Breakdown by sector:** More traditional industries within the manufacturing sector have seen a gradual but consistent decrease in BERD in real terms between 1995 and 2005, such as chemicals falling from £900 million in 1995 to £616 million in 2005, mechanical engineering falling from £877 million to £802 million, electrical machinery falling £1.6 billion to £1.3 billion and transport equipment falling from £1.1 billion to £895 million. However, the pharmaceuticals (£2.3 billion in 1995 to £3.3 billion in 2005) and aerospace industries (£1.1 to £2.2 billion) have seen increased growth. The service industry has also increased its BERD over this period, from £2.2 billion in 1996 to £2.9 billion in 2005. See Figure 4 to see these trends.

Figure 4. Expenditure on R&D performed in UK businesses in real terms, by broad product groups (2005 base line).



The full document can be found at <http://www.berr.gov.uk/dius/science/science-funding/set-stats/>

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