



Universities UK

Higher education  
in  
facts  
and  
figures

**Research  
and  
Innovation**

SUMMER 2005

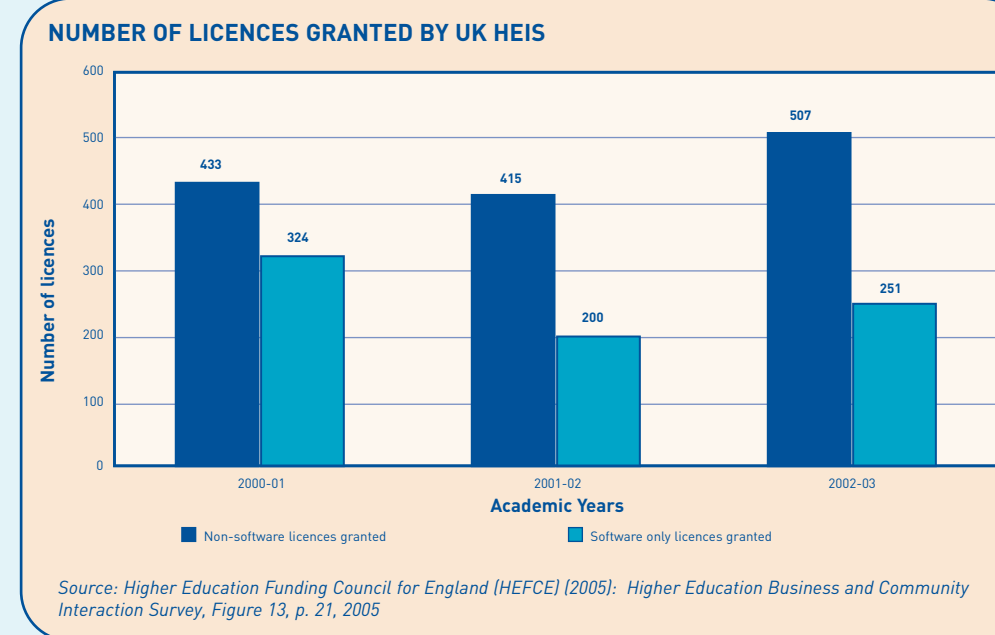
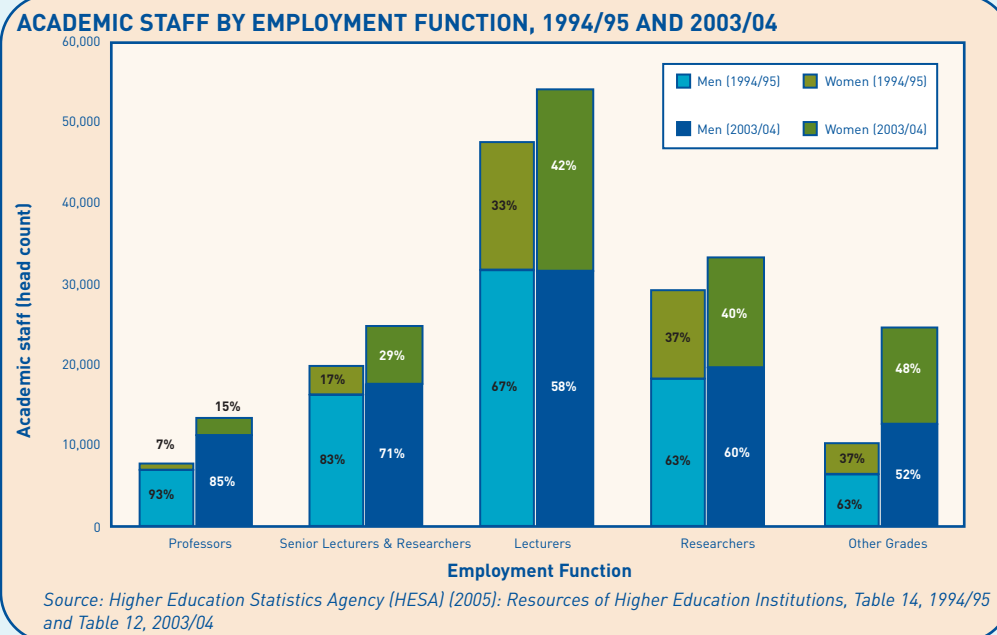


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Summer 2005



HIGHER EDUCATION IN FACTS AND FIGURES - RESEARCH AND INNOVATION

Higher education in facts and figures - research and innovation covers national and international issues related to different areas of research and innovation. The data is derived from a variety of sources, each of which is fully referenced. Please see the source information to each table.

Further information can be obtained from:

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Universities UK represents all UK universities and some higher education colleges. Its Members are the executive heads of these institutions. Universities UK works to advance the interests of universities and to spread good practice throughout the higher education sector. Its mission is to be the essential voice of UK universities by promoting and supporting their work.

Universities UK works to achieve a vision of UK universities that are autonomous, properly funded from a diversity of sources, accessible to all, delivering high quality teaching and learning, and at the leading edge of research of regional, national and international significance.

### ACADEMIC STAFF GRADE A RANKED\* (HEAD COUNT), 2002 (with percentage changes since 1999)

Country	Male staff	% change since 1999	Female staff	% change since 1999	Total number of grade A ranked staff
Austria	1,872	n.a.	123	n.a.	1,995
Belgium	2,052	n.a.	187	n.a.	2,239
Cyprus	27	35%	2	100%	29
Czech Republic	1,653	14%	158	45%	1,811
Denmark	1,004	13%	105	33%	1,109
Estonia	484	2%	101	7%	585
Finland	1,902	6%	474	18%	2,376
France	19,390	-3%	3,732	-3%	23,122
Germany	11,539	-2%	1,010	28%	12,549
Greece	1,699	7%	216	19%	1,915
Hungary	2,453	11%	387	28%	2,840
Italy	14,423	26%	2,468	65%	16,891
Latvia	296	-13%	88	16%	384
Malta	50	6%	1	-50%	51
Netherlands	2,173	-5%	192	33%	2,365
Poland	7,414	19%	1,645	24%	9,059
Portugal	1,015	4%	255	12%	1,270
Slovenia	632	9%	87	13%	719
Spain	8,393	7%	1,690	24%	10,083
Sweden	3,269	39%	534	67%	3,803
United Kingdom	12,201	10%	2,023	40%	14,224

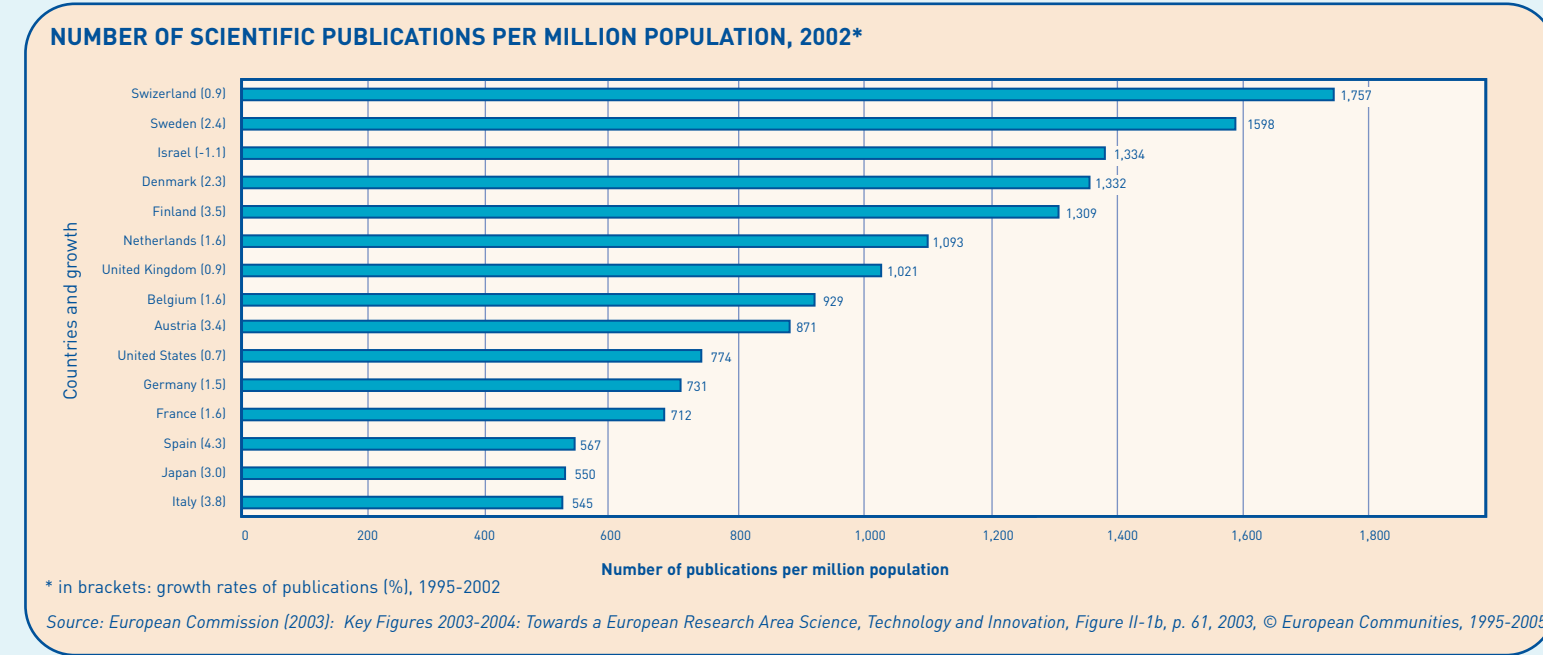
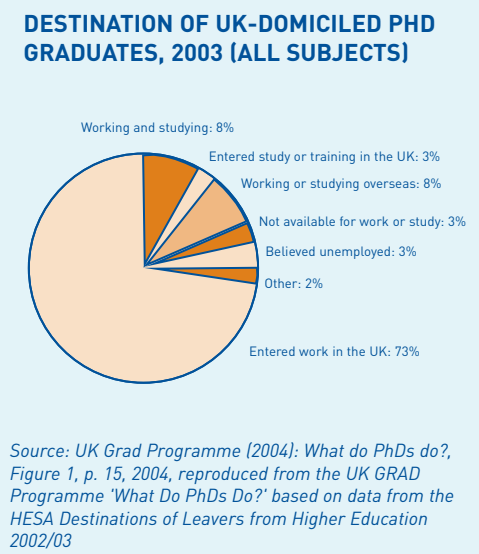
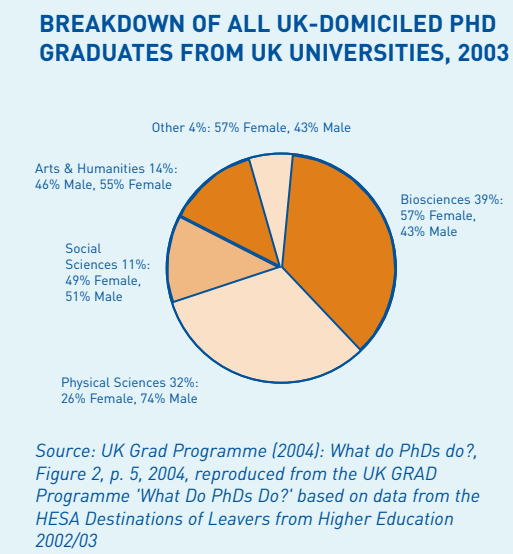
\* Definition of grade A ranked staff: The single highest grade/post at which research is normally conducted within the institutional or corporate system. Figures for Israel and Luxembourg not available.  
Source: European Commission (2005): Women and Science: Excellence and Innovation - Gender Equality in Science, Commission Staff Working Paper, SEC (2005) 370, Annex 1.4, p.18 © European Communities, 1995-2005

### RANK ORDER OF NATIONS BASED ON PERCENTAGE SHARE OF PUBLICATIONS AND CITATIONS

Selected countries	Publications		Citations	
	1997/2001	1993/1997	1997/2001	1993/1997
<b>United States</b>	Total: 1,265,808 Per cent: 34%	Total: 1,248,733 Per cent: 37%	Total: 10,850,549 Per cent: 41%	Total: 21,664,121 Per cent: 45%
<b>United Kingdom</b>	Total: 342,535 Per cent: 9%	Total: 309,683 Per cent: 9%	Total: 2,500,035 Per cent: 9%	Total: 4,502,052 Per cent: 9%
<b>Japan</b>	Total: 336,858 Per cent: 9%	Total: 289,751 Per cent: 9%	Total: 1,852,271 Per cent: 7%	Total: 3,123,966 Per cent: 6%
<b>Germany</b>	Total: 318,286 Per cent: 9%	Total: 268,393 Per cent: 8%	Total: 2,199,617 Per cent: 8%	Total: 3,575,143 Per cent: 7%
<b>France</b>	Total: 232,058 Per cent: 6%	Total: 203,814 Per cent: 6%	Total: 1,513,090 Per cent: 6%	Total: 2,638,563 Per cent: 5%
<b>Canada</b>	Total: 166,216 Per cent: 4%	Total: 168,331 Per cent: 5%	Total: 1,164,450 Per cent: 4%	Total: 2,315,140 Per cent: 5%
<b>Italy</b>	Total: 147,023 Per cent: 4%	Total: 122,398 Per cent: 4%	Total: 964,164 Per cent: 4%	Total: 1,535,208 Per cent: 3%
<b>Russia</b>	Total: 123,629 Per cent: 3%	Total: 121,505 Per cent: 4%	Total: 315,016 Per cent: 1%	Total: 509,105 Per cent: 1%
<b>China</b>	Total: 115,339 Per cent: 3%	Total: 68,661 Per cent: 2%	Total: 341,519 Per cent: 1%	Total: 392,055 Per cent: 1%
<b>Spain</b>	Total: 103,454 Per cent: 3%	Total: 79,121 Per cent: 2%	Total: 559,875 Per cent: 2%	Total: 813,722 Per cent: 2%
<b>Australia</b>	Total: 103,300 Per cent: 3%	Total: 89,557 Per cent: 3%	Total: 623,636 Per cent: 2%	Total: 1,078,746 Per cent: 2%
<b>Netherlands</b>	Total: 92,526 Per cent: 2%	Total: 83,600 Per cent: 2%	Total: 759,027 Per cent: 3%	Total: 1,335,748 Per cent: 3%
<b>Sweden</b>	Total: 72,927 Per cent: 2%	Total: 63,757 Per cent: 2%	Total: 548,112 Per cent: 2%	Total: 1,007,418 Per cent: 2%
<b>Switzerland</b>	Total: 66,761 Per cent: 2%	Total: 57,664 Per cent: 2%	Total: 647,013 Per cent: 2%	Total: 1,113,886 Per cent: 2%
<b>South Korea</b>	Total: 55,739 Per cent: 1%	Total: 26,838 Per cent: 1%	Total: 192,346 Per cent: 1%	Total: 183,122 Per cent: 0%
<b>Belgium</b>	Total: 48,010 Per cent: 1%	Total: 40,147 Per cent: 1%	Total: 339,895 Per cent: 1%	Total: 574,095 Per cent: 1%
<b>Israel</b>	Total: 45,944 Per cent: 1%	Total: 41,804 Per cent: 1%	Total: 293,039 Per cent: 1%	Total: 517,027 Per cent: 1%
<b>Denmark</b>	Total: 37,198 Per cent: 1%	Total: 31,808 Per cent: 1%	Total: 295,004 Per cent: 1%	Total: 508,183 Per cent: 1%
<b>Finland</b>	Total: 34,690 Per cent: 1%	Total: 28,727 Per cent: 1%	Total: 250,456 Per cent: 1%	Total: 427,873 Per cent: 1%
<b>Austria</b>	Total: 33,598 Per cent: 1%	Total: 26,100 Per cent: 1%	Total: 218,493 Per cent: 1%	Total: 332,145 Per cent: 1%

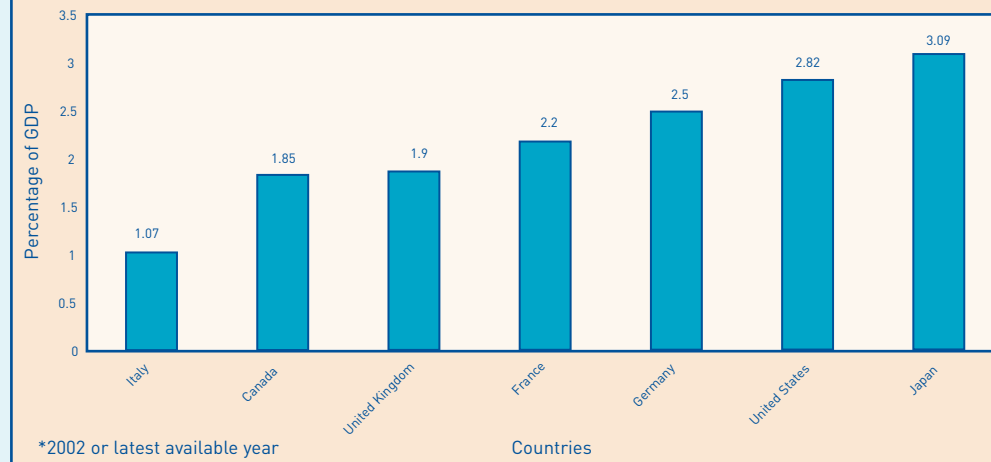
Source: D A King (2004): The Scientific Impact of Nations, Table 1, Nature 430 (2004) 311-316 (15 July 2004); Universities UK analysis (percentage figures based on selected countries only.)

## PHD STUDENTS



# R&D EXPENDITURE

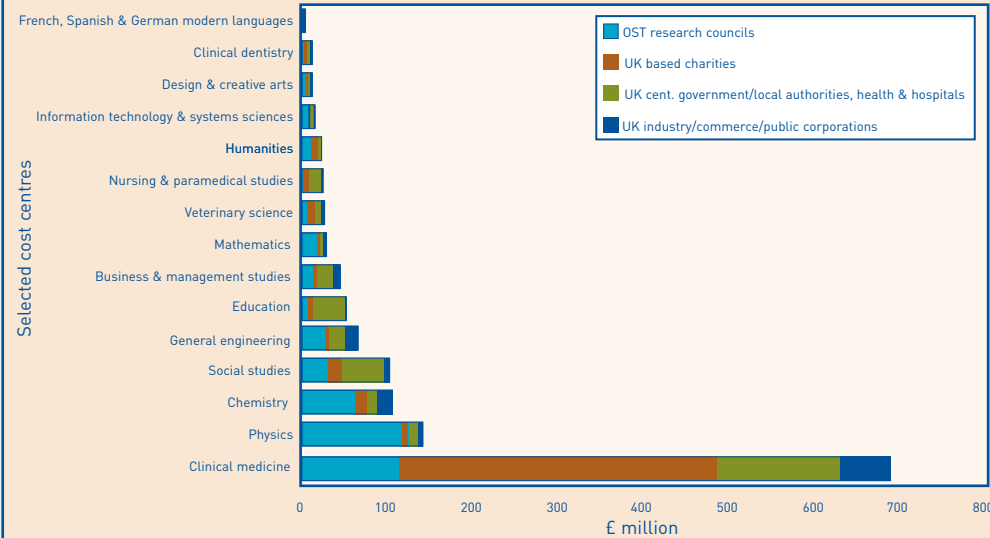
## GROSS DOMESTIC EXPENDITURE ON R&D FOR G7 COUNTRIES (expressed as a percentage of GDP)\*



\*2002 or latest available year

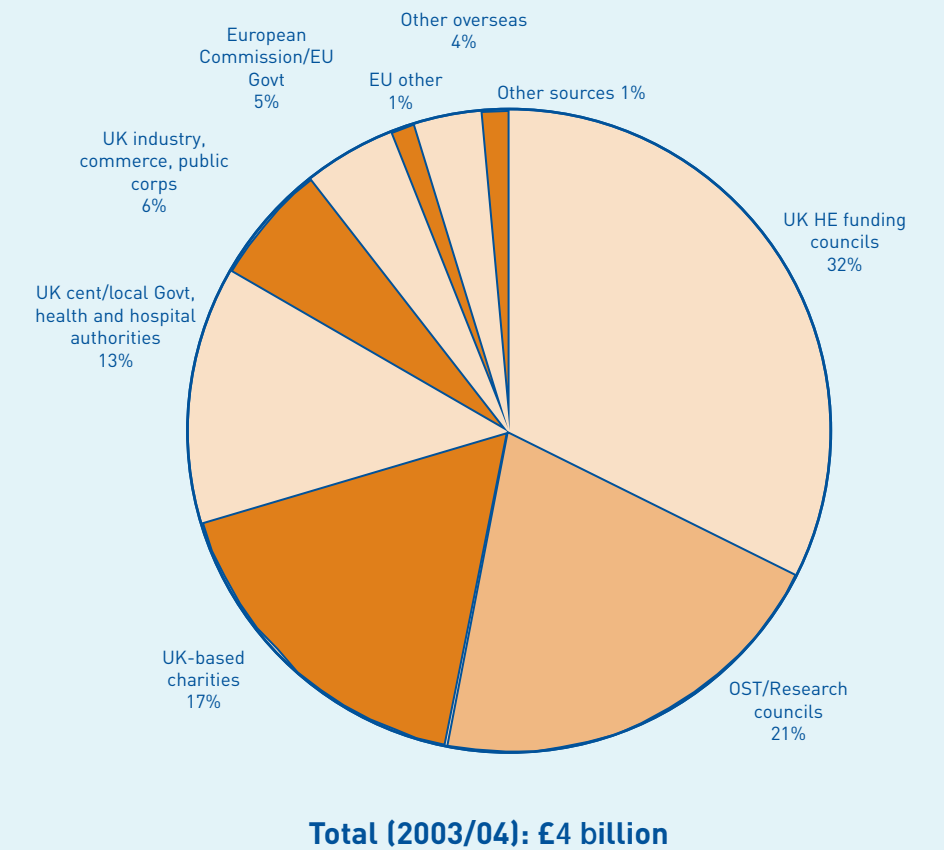
Source: Organisation for Economic Co-operation and Development (OECD) (2005): *Gross domestic expenditure on R&D, as a percentage of GDP, 2002 or latest available year*, OECD Factbook 2005: Economic, Environmental and Social Statistics, © OECD, 2005

## MAJOR SOURCES OF RESEARCH INCOME BY SOURCE, 2003/2004 (for selected cost centres)



Source: Higher Education Statistics Agency (HESA) (2005): *Finance Plus, Table 4, Research grants and contracts income by institution, cost centre and source, 2003/04*

## RESEARCH GRANTS AND CONTRACTS INCOME UK HEIS, 2003/04 (including funding council grants)



Total (2003/04): £4 billion

Source: Higher Education Statistics Agency (HESA) (2005): *Finance Plus, Table 5b, Income by institution and source, 2003/04*

## TRENDS IN HIGHER EDUCATION EXPENDITURE ON R&D IN G7 COUNTRIES AS A PERCENTAGE OF GDP

Year	UK	Germany	France	Italy	Japan	Canada	USA
1990	0.33	0.39	0.35	0.27	0.34	0.45	0.38
1991	0.34	0.41	0.36	0.26	0.33	0.49	0.39
1992	0.35	0.41	0.36	0.26	0.35	0.51	0.39
1993	0.35	0.41	0.38	0.28	0.37	0.51	0.39
1994	0.38	0.41	0.38	0.27	0.36	0.48	0.38
1995	0.37	0.41	0.39	0.25	0.39	0.46	0.38
1996	0.36	0.42	0.39	0.27	n.a.	0.45	0.38
1997	0.35	0.41	0.39	0.32	n.a.	0.45	0.37
1998	0.35	0.40	0.38	0.34	n.a.	0.49	0.36
1999	0.36	0.40	0.37	0.33	n.a.	0.53	0.37
2000	0.38	0.40	0.41	0.33	n.a.	0.55	0.37
2001	0.40	0.41	0.42	0.36	n.a.	0.59	0.40
2002	0.42	0.43	0.43	n.a.	n.a.	0.63	0.42

Source: Office of Science and Technology (OST) (2005): *SET statistics, Figure 7.7, 2005*

## ESTIMATED REGIONAL BREAKDOWN OF INTRAMURAL R&D EXPENDITURE IN BUSINESS, GOVERNMENT AND HE SECTORS, 2002

(£ million)

	R&D performed within business (BERD)	R&D performed within Govt (GOVERD)	R&D performed within HEIS (HERD)
United Kingdom	13,110	1,752	4,413
England	12,138	1,459	3,568
North East	128	6	159
North West & Merseyside	1,661	67	354
Yorkshire & Humber	357	62	340
East Midlands	1,063	65	234
West Midlands	695	50	221
Eastern	2,741	286	402
London	950	235	1,059
South East	3,268	459	608
South West	1,274	228	191
Wales	182	41	180
Scotland	640	238	581
Northern Ireland	149	15	84

Source: The Office for National Statistics (ONS) (2004): *Research and experimental development (R&D) statistics, 2002, Table 14, Economic Trends 610, September 2004, taken from the National Statistics website, www.statistics.gov.uk, Crown copyright material is reproduced with the permission of the Controller of HMSO*

## TRENDS IN GOVERNMENT EXPENDITURE ON R&D, 1993/94 - 2002/03

(£ million, in cash terms)

	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03
Science Budget R&D	1,135	1,174	1,240	1,261	1,279	1,280	1,339	1,459	1,649	1,870
HE Funding Councils R&D	968	1,017	1,018	1,028	1,033	1,085	1,157	1,276	1,474	1,626
Science & Engineering Base R&D	2,103	2,191	2,257	2,289	2,312	2,365	2,496	2,735	3,122	3,496
Civil Departments R&D	1,021	978	1,315	1,327	1,282	1,246	1,351	1,474	1,595	1,849
Total Civil R&D	3,124	3,169	3,572	3,616	3,594	3,611	3,847	4,209	4,717	5,345
Total Defence R&D	2,279	2,032	2,070	2,234	2,314	2,140	2,272	2,240	2,057	2,734
Indicative UK contribution to the EU R&D budget	281	286	339	358	340	375	328	399	393	458
<b>Total</b>	<b>5,683</b>	<b>5,487</b>	<b>5,981</b>	<b>6,207</b>	<b>6,248</b>	<b>6,126</b>	<b>6,447</b>	<b>6,848</b>	<b>7,167</b>	<b>8,538</b>

Source: Office of Science and Technology (OST) (2005): *SET statistics, Table 3.1, 2005*

## NOTES

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