

Statistical bulletin

Business enterprise research and development, UK: 2012

Annual spending and numbers employed on research and development in the UK broken down by product sector, and civil and defence businesses.



Contact:
David Matthews
RandD@ons.gsi.gov.uk
+44 (0)1633 456756

Release date:
22 November 2013

Next release:
20 November 2014

Table of contents

1. [Key points](#)
2. [Overview](#)
3. [User engagement](#)
4. [R&D expenditure](#)
5. [R&D expenditure by product group](#)
6. [Civil and Defence R&D expenditure, by broad product group](#)
7. [R&D expenditure by industry](#)
8. [Employment in R&D performed in UK businesses](#)
9. [Country and regional breakdown of R&D expenditure and employment](#)
10. [Sources of funds for R&D performed UK businesses](#)
11. [Ownership of businesses performing R&D in the UK](#)
12. [International comparison](#)
13. [Background notes](#)

1 . Key points

- In 2012, total business Research and Development (R&D) expenditure in the UK, in current prices, decreased by 2% to £17.1 billion compared with 2011. In constant prices, R&D expenditure decreased by 4% compared with 2011
- The largest decrease in expenditure in 2012 was in Pharmaceuticals which decreased by £727 million (15%), in current prices
- Defence R&D expenditure decreased by 10% in 2012 to £1.6 billion. This is partly due to government contracts awarded to UK businesses for the development of aircraft, naval ships, submarines and their systems and equipment moving from the research to production stages
- In 2012, expenditure on R&D in the UK by foreign owned businesses constituted 51% of total expenditure
- Business R&D expenditure in 2012 represented 1.1% of Gross Domestic Product (GDP), a level it has been since 2007

2 . Overview

This release provides estimates of businesses' expenditure and employment relating to R&D performed in the UK in 2012, irrespective of the residence of the ultimate owner or user of the R&D produced.

Two types of estimates are presented in this release, current and constant price terms. Estimates in current prices present the value of R&D expenditure collected from the Business Enterprise Research and Development (BERD) survey. Constant price estimates have been adjusted for inflation between years using the GDP deflator. This allows changes in the volume of R&D expenditures to be examined on a comparable basis over time.

While R&D is often thought of as synonymous with 'high-tech' firms that are on the cutting edge of new technology, many established businesses that produce consumer goods and services spend large sums of money, on a systematic basis, improving existing products.

For the purposes of this release, R&D and related concepts follow internationally agreed standards defined by the Organisation for Economic Cooperation and Development (OECD), as published in the 'Frascati' Manual. In the [Frascati Manual](#), R&D is defined as "creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society and the use of this stock of knowledge to devise new applications".

The Frascati Manual was originally written by, and for, the experts in OECD member countries that collect and issue national data on R&D. The definitions provided in this manual are internationally accepted and now serve as a common language for designing and evaluating science and technology policy.

The estimates in this release are derived from the BERD survey. The survey has been run annually since 1993. Each year approximately 5,000 UK businesses are selected for this survey from a continually updated register of known R&D performers. The main purpose of the BERD survey is to supply data for policy and monitoring purposes on science and technology, of which R&D is an important part.

The National Accounts provide the framework that is used to define and measure the UK's economic performance, such as the value of the UK's Gross Domestic Product (GDP). Changes to the European System of Accounts (ESA) mean that from 2014 onwards, expenditure on R&D will contribute to the formation of assets and therefore the value of the UK's net worth.

In March 2014 ONS will publish UK Gross Domestic Expenditure on Research and Development (GERD) for the year 2012. The UK [GERD statistical bulletin](#) includes estimates for R&D carried out by the following four sectors of the economy, as defined in the Frascati manual, namely business enterprise (BERD), higher education (HERD), government including research councils (GovERD) and Private Non-Profit (PNP) organisations. GERD uniquely provides information on total R&D expenditure in the UK, and is the preferred measure for use in international comparisons of overall R&D expenditure.

3 . User engagement

We are constantly aiming to improve this release and its associated commentary. We would welcome any feedback you might have, and would be particularly interested in knowing how you make use of these data to inform your work. Please contact us via email: RandD@ons.gsi.gov.uk or telephone David Matthews on +44 (0) 1633 456756.

4 . R&D expenditure

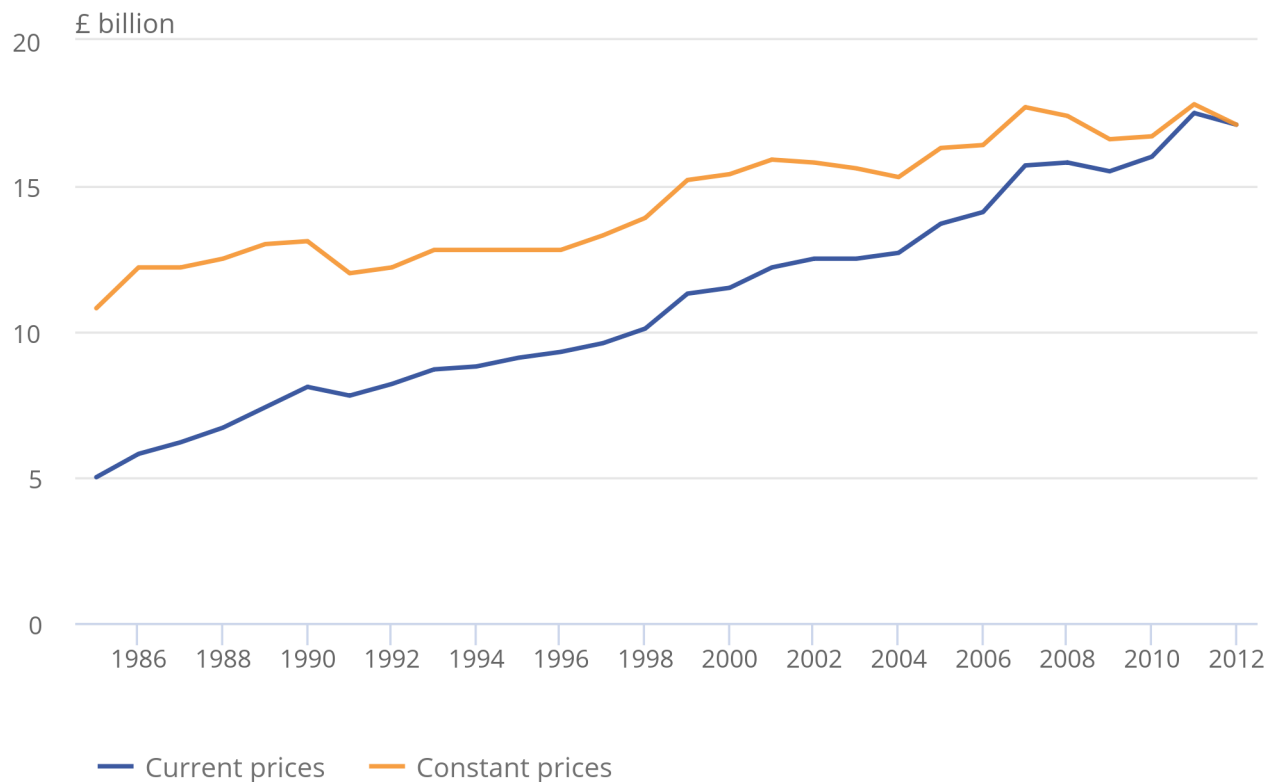
Since 1985 there has been a steady increase in R&D expenditure in current prices. In 2012, £17.1 billion was spent on R&D performed by UK businesses. This is compared with £11.5 billion in 2000 and £5.0 billion in 1985. The 2012 estimate of £17.1 billion is a decrease of 2% in current prices compared with the 2011 estimate (£17.5 billion).

In constant prices, the 2012 estimate of £17.1 billion is a 4% decrease on the 2011 estimate (£17.8 billion) of expenditure on R&D performed in UK businesses.

Despite business R&D expenditure decreasing between 2011 and 2012, there has been a trend of increasing expenditure since 1985. Over this period there has been an increase of £6.3 billion, in constant prices, on the 1985 estimate of £10.8 billion (**Figure 1**).

Figure 1: R&D expenditure by businesses in the UK

Figure 1: R&D expenditure by businesses in the UK



Source: Office for National Statistics

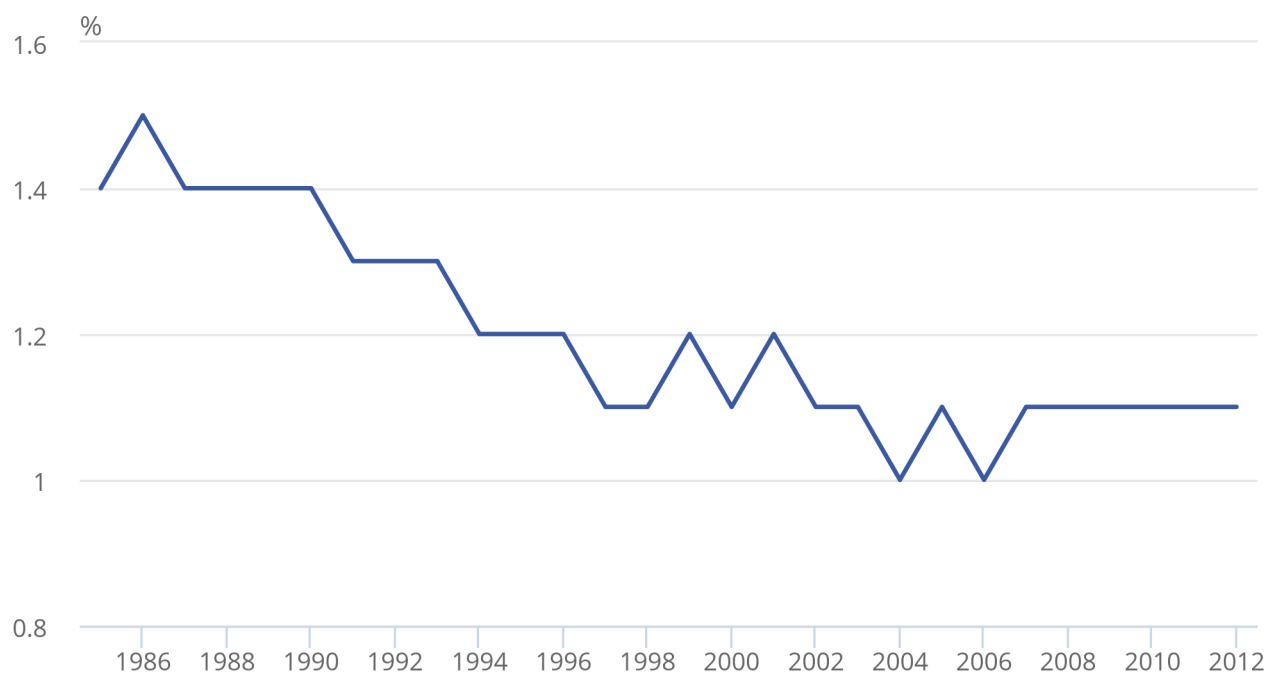
Figure 2 shows expenditure on business R&D as a percentage of GDP since 1985. Total business R&D expenditure in 2012 represented 1.1% of GDP. This estimate is in line with recent years and is a slight decrease on the 1.2% estimate for the years 1999 and 2001. Figure 2 highlights that business R&D expenditure as a percentage of GDP peaked in 1986 at 1.5%.

Figure 2: R&D Expenditure by businesses in the UK as a percentage of GDP

Current Prices

Figure 2: R&D Expenditure by businesses in the UK as a percentage of GDP

Current Prices



Source: Office for National Statistics

A target set by the UK government in the [Science and Innovation Framework 2004 - 2014](#) was to increase business investment in R&D towards a goal of 1.7% of GDP by the end of 2014.

5 . R&D expenditure by product group

On an annual basis, the 400 largest R&D spenders are asked to select the industry product groups that best describe the type of R&D activities that they undertake. For the 2012 survey, the largest 400 spenders were those businesses previously reporting more than approximately £4.6 million expenditure on R&D. The concept of 'product groups' is discussed in detail as part of the background notes to this release (Background Note 9).

The UK is home to some of the world's largest pharmaceutical companies. In 2012, Pharmaceuticals remained the largest product group with £4.2 billion expenditure, accounting for 25% of total expenditure on R&D performed in UK businesses. However, R&D expenditure in Pharmaceuticals decreased by 15% in current prices compared with the 2011 estimate of £4.9 billion (**Figure 3**).

The Telecommunications product group also showed a decrease in expenditure of 15% in current prices since 2011, from £1.1 billion to £889 million in 2012. This accounted for 5% of total expenditure in 2012. More starkly, since 2007, this product group has decreased by £843 million (49%) in constant prices.

The largest increase in expenditure since 2011 was in the Motor vehicles and parts product group, which increased by £207 million in current prices from the 2011 estimate to £1.7 billion in 2012, a 14% increase. The Motor vehicles and parts product group made up 10% of expenditure in 2012.

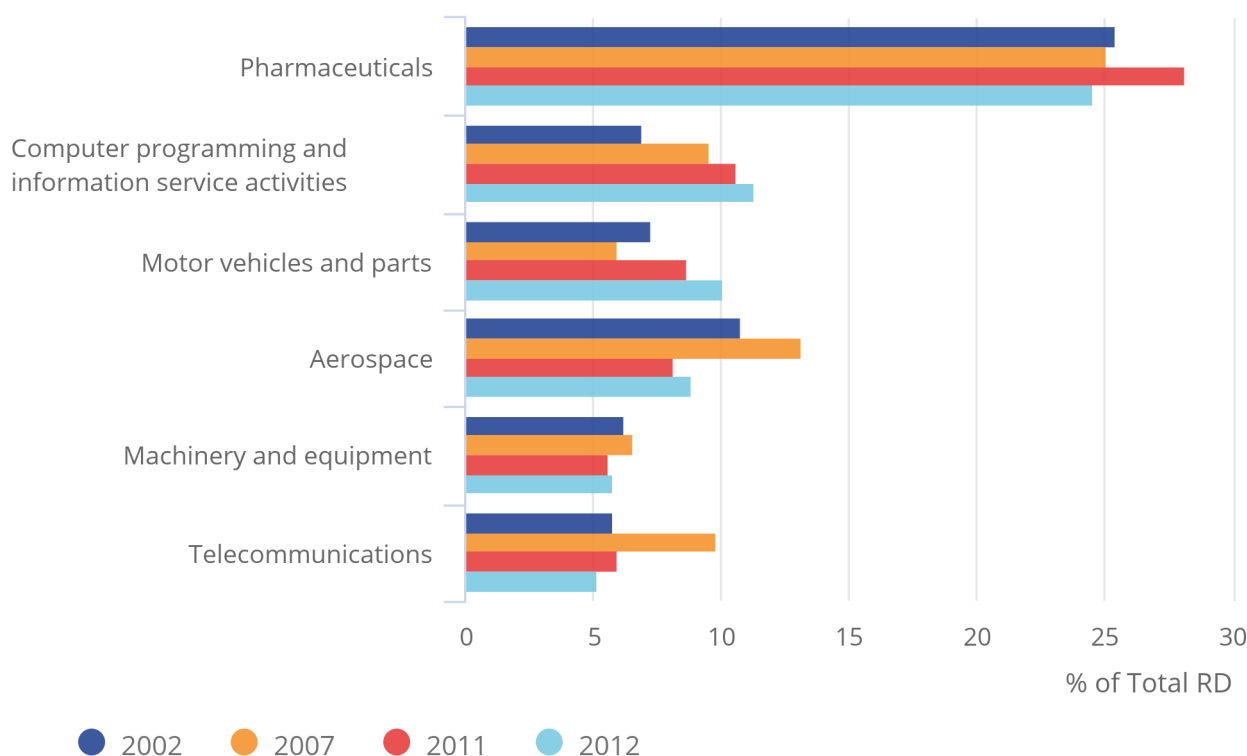
Other product groups reporting around £1 billion or more R&D expenditure in the UK in 2012 were:

- computer programming and information service activities, £1.9 billion (11% of total R&D expenditure)
- aerospace, £1.5 billion (9%)
- machinery and equipment, £998 million (6%)

These six product groups accounted for 66% of the total UK business R&D expenditure in 2012.

Figure 3a: R&D expenditure (current prices) by businesses in the UK, by largest product groups

Figure 3a: R&D expenditure (current prices) by businesses in the UK, by largest product groups



Source: Office for National Statistics

Figure 3b: R&D expenditure (current prices) by businesses in the UK, by largest product groups

	£ million			
	2002	2007	2011	2012
Pharmaceuticals	3,169	3,935	4,933	4,206
Computer programming and information service activities	866	1,498	1,847	1,930
Motor vehicles and parts	916	933	1,525	1,732
Aerospace	1,352	2,070	1,438	1,518
Machinery and equipment	780	1,033	973	998
Telecommunications	726	1,535	1,051	889

Source: Office for National Statistics

Of the 33 R&D product groups, 20 saw an increase in levels of R&D expenditure by UK businesses in current prices, since 2011, while 13 product groups decreased. In terms of percentage growth, the largest increases were in the Construction (87%); Electricity, gas and water (83%); Textiles, clothing and leather products (43%) and Consumer electronics and communication equipment (33%) product groups.

6 . Civil and Defence R&D expenditure, by broad product group

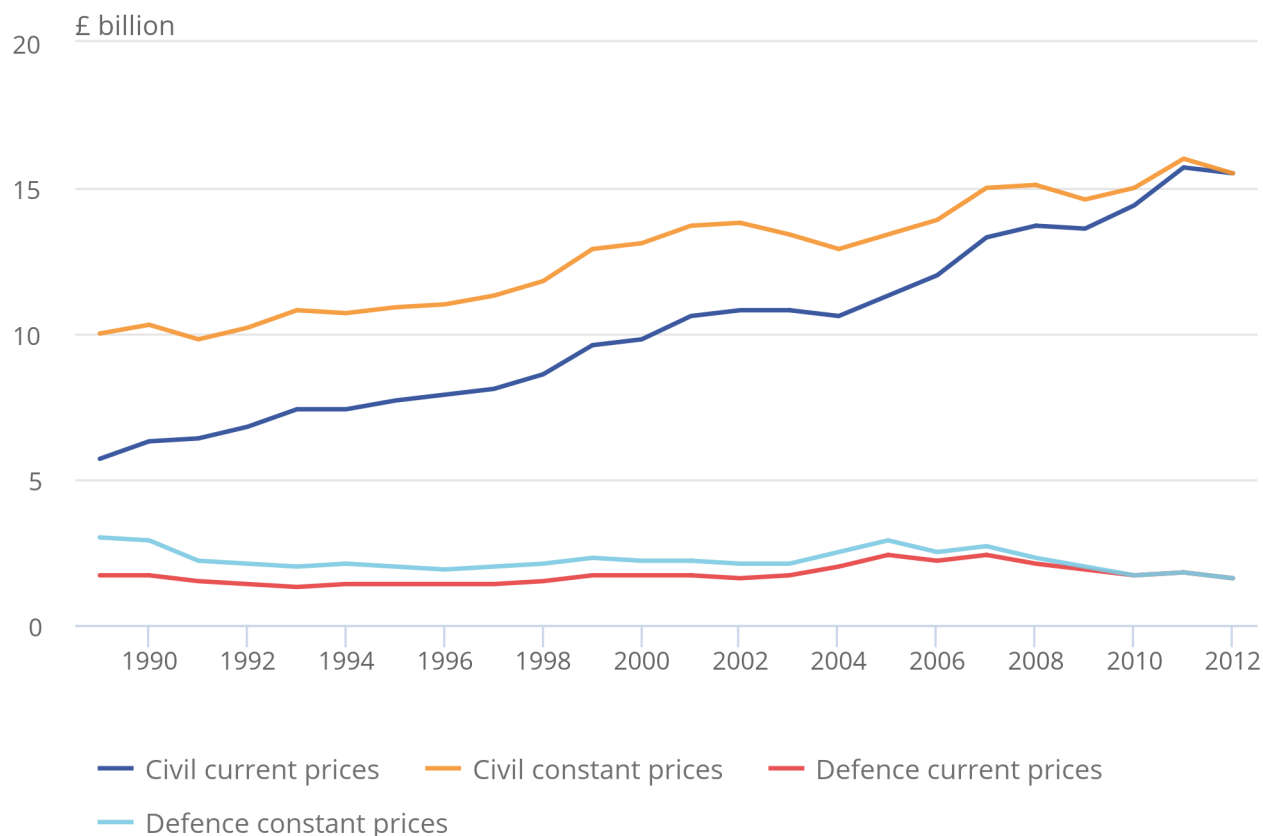
R&D expenditure and employment can be split between the civil and defence sectors. Expenditure in the civil sector in 2012 (£15.5 billion) accounted for 91% of total business R&D expenditure.

In 2012, in current prices, civil R&D expenditure decreased by 1% from £15.7 billion to £15.5 billion and defence R&D decreased by 10% from £1.8 billion to £1.6 billion compared with 2011.

Figure 4 shows that while business R&D expenditure in the civil sector increased by 56% in constant prices since 1989, business expenditure on R&D in the defence sector decreased by 47% in constant prices over this period.

Figure 4: Expenditure on Civil and Defence R&D performed in UK businesses

Figure 4: Expenditure on Civil and Defence R&D performed in UK businesses



Source: Office for National Statistics

Civil R&D expenditure can be further split between the Manufacturing, Services and 'Other' sectors (see [Table SB5 in 2012 Datasets \(1.13 Mb Excel sheet\)](#)). In 2012, expenditure in Manufacturing accounted for 69% of total civil R&D expenditure, compared with 77% in 2001. Manufacturing accounted for 94% of total defence R&D expenditure in 2012, compared with 92% in 2001.

Mechanical engineering, part of the Manufacturing sector, was the largest contributor to defence R&D expenditure (33% of total defence expenditure) in 2012, with Aerospace (22%) and Electrical machinery (17%) second and third respectively.

7 . R&D expenditure by industry

Estimates of R&D expenditure on an industry basis, according to the Standard Industrial Classification (SIC), were first introduced in the 2011 BERD statistical bulletin to meet an expressed user need (See Table 27 in [2012 datasets \(1.13 Mb Excel sheet\)](#)).

The highest level of R&D expenditure in 2012 by SIC was performed by businesses that were classified to the 'Scientific research and development' industry, at £4.7 billion (27% of total expenditure) (Figure 5).

Five other industries had R&D expenditure of around £1 billion or more:

- computer programming, consultancy and related activities, £1.6 billion (9% of total R&D expenditure)
- manufacture of motor vehicles and trailers, £1.5 billion (9%)
- manufacture of other transport equipment, £1.4 billion (8%)
- architectural and engineering activities, £1.2 billion (7%)
- manufacture of computer, electronic and optical products, £977 million (6%)

These six industries accounted for 66% of the total UK business R&D expenditure in 2012.

Figure 5a: R&D expenditure (current prices) by businesses in the UK, by largest industries

Figure 5a: R&D expenditure (current prices) by businesses in the UK, by largest industries

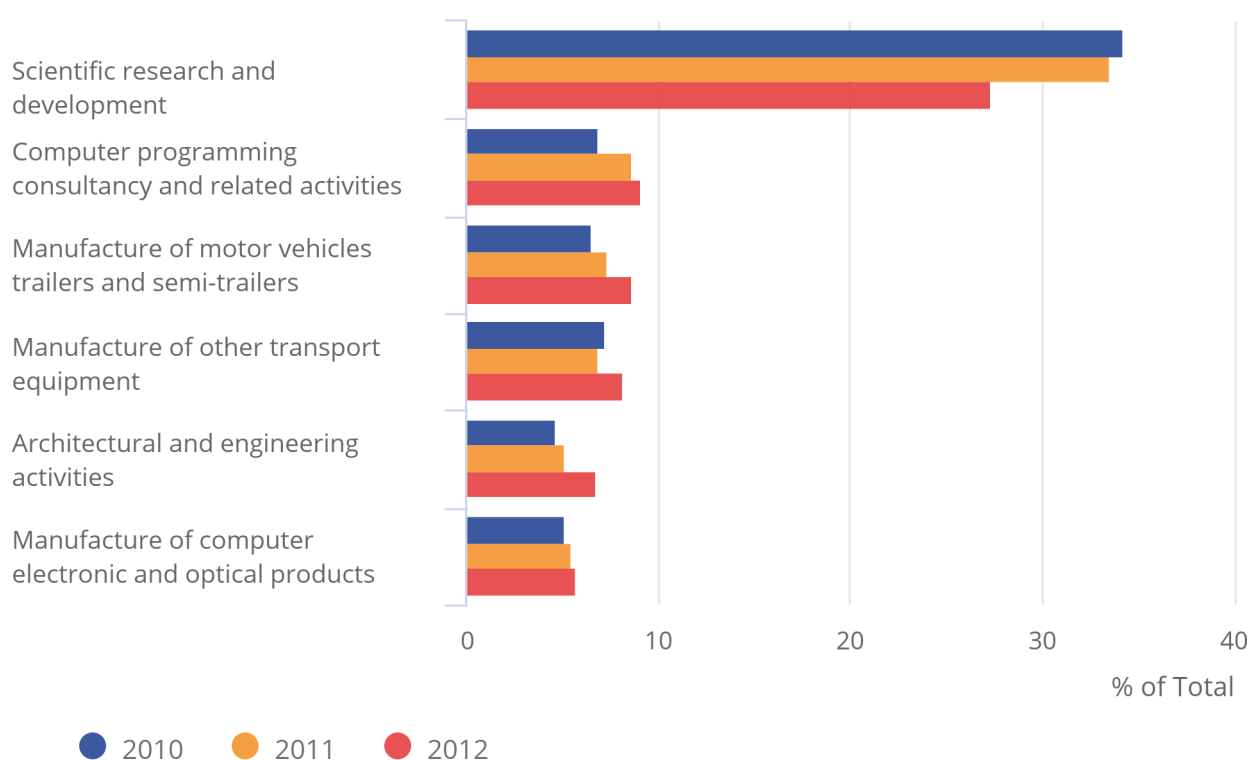


Figure 5b: R&D expenditure (current prices) by businesses in the UK, by largest industries

	£ million		
	2010	2011	2012
Scientific research and development,	5,510	5,867	4,688
Computer programming, consultancy and related activities,	1,109	1,522	1,564
Manufacture of motor vehicles, trailers and semi-trailers	1,039	1,296	1,478
Manufacture of other transport equipment,	1,158	1,198	1,408
Architectural and engineering activities,	748	883	1,155
Manufacture of computer, electronic and optical products,	835	965	977

Source: Office for National Statistics

It is important to note that estimates of R&D by industry are not directly comparable with the estimates of R&D expenditure by product groups. This is because businesses may report significant R&D in product groups which are different to the main classification of their business according to the SIC. See Background Notes 9 and 10, which explain the concepts of product groups and SIC in more detail.

8 . Employment in R&D performed in UK businesses

Estimates of employment in R&D are produced on a full-time equivalent (FTE) basis, whereby businesses convert part-time employees' hours into a full-time employees' equivalent. FTE estimates provide a better indication of total labour input than a simple headcount.

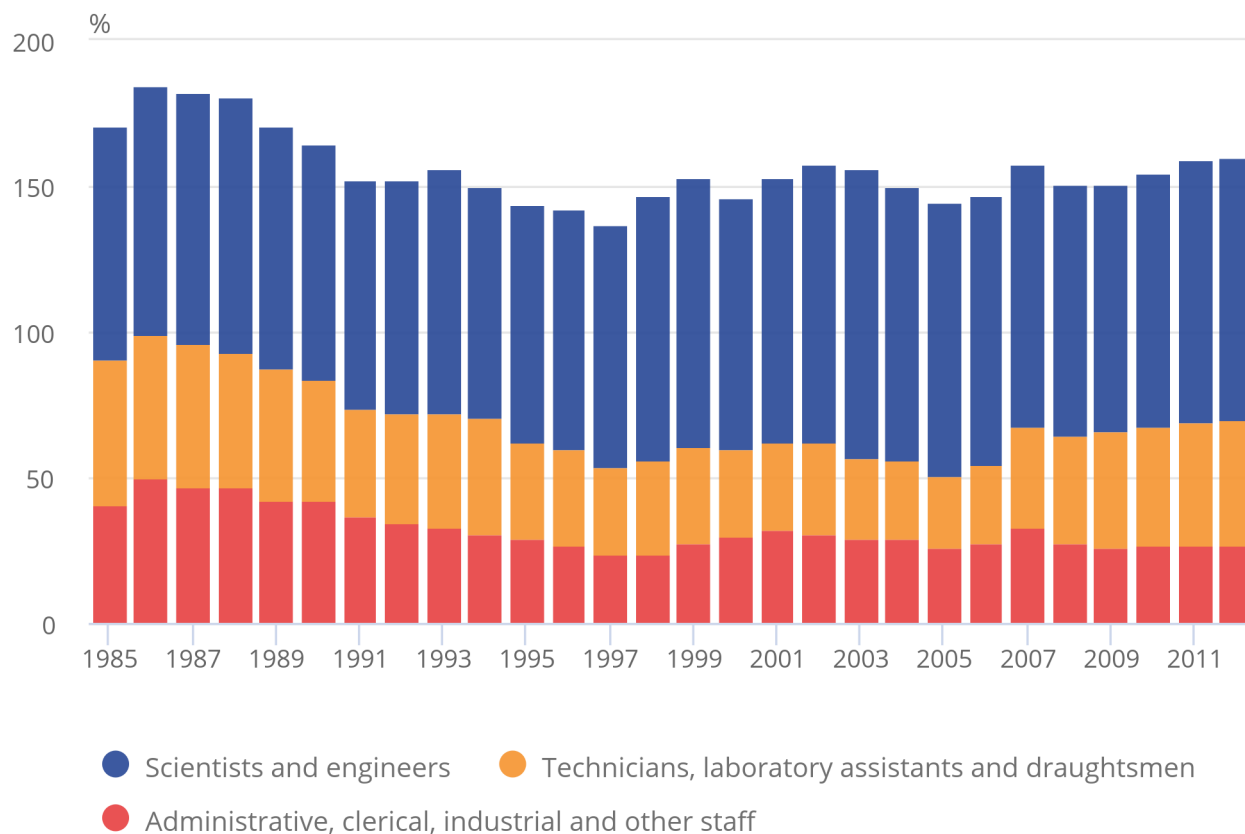
Employment in R&D has remained relatively stable in recent years. The lowest level of employment in R&D in the last decade occurred in 2005, when 146,000 FTE were employed, while the highest level (160,000) was reached in 2011 (Figure 6).

The number of FTE staff employed in R&D remained unchanged at 160,000 between 2011 and 2012. The 2012 estimate comprised of:

- 90,000 scientists and engineers (56%)
- 43,000 technicians (27%)
- 27,000 administrative staff (17%)

Figure 6: Employment in R&D performed in UK businesses

Figure 6: Employment in R&D performed in UK businesses



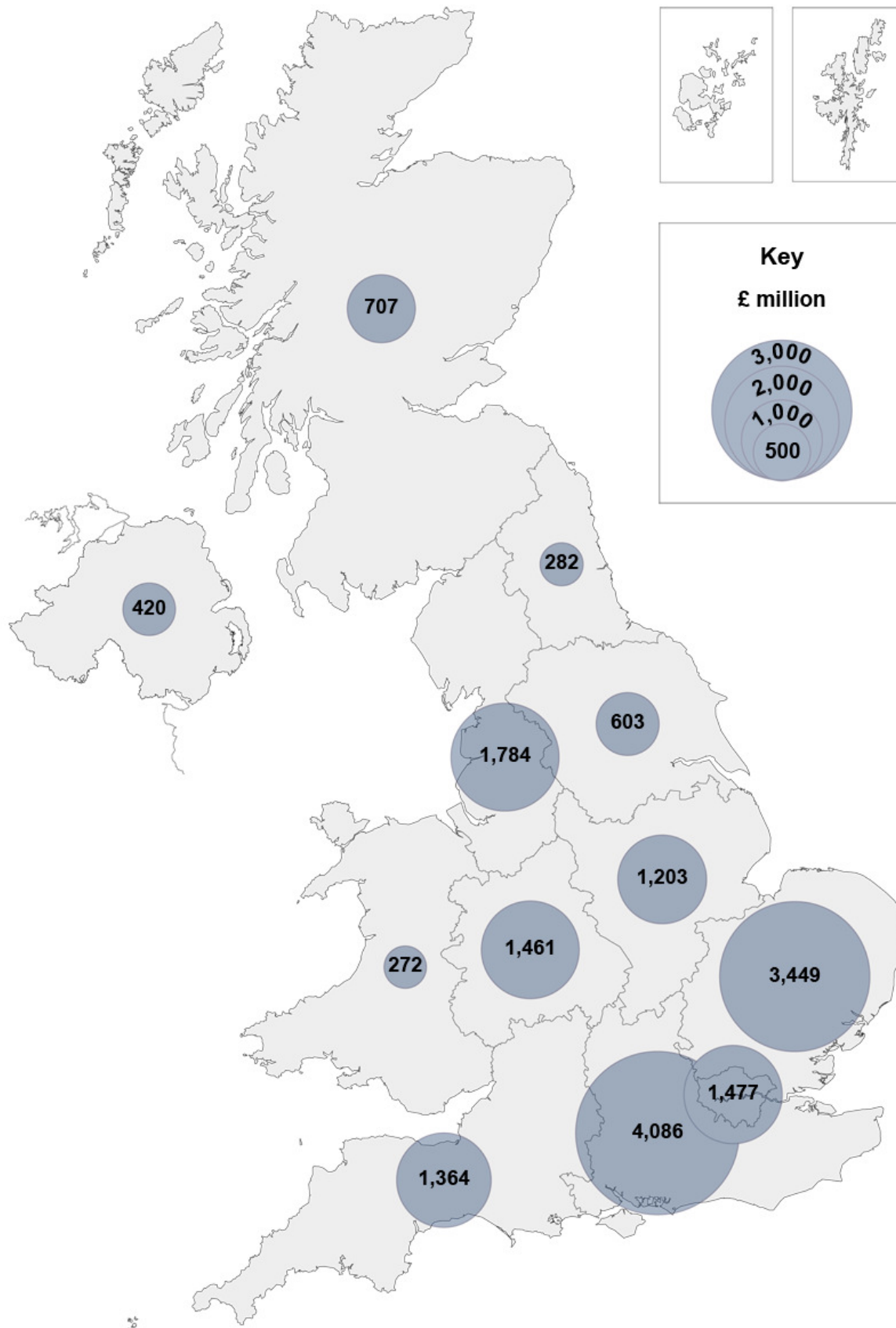
Source: Office for National Statistics

9 . Country and regional breakdown of R&D expenditure and employment

It is possible, using data from the BERD survey, to analyse R&D expenditure by country and region. In this context, 'region' refers to the location where a business performs R&D, not the location of either the business' headquarters or that of any external funders.

The South East and East of England continue to dominate where R&D expenditure takes place in the UK. These two regions combined accounted for 44% of UK business R&D expenditure in 2012 (**Map 1**). These regions combined also employed 66,000 FTE which made up 41% of total R&D employment in 2012. The regions with the lowest levels of employment in R&D were the North East and Wales, both employing 3,000 FTE R&D staff (**Map 2**).

Map 1: Expenditure on R&D performed in UK businesses, 2012



Source: Office for National Statistics

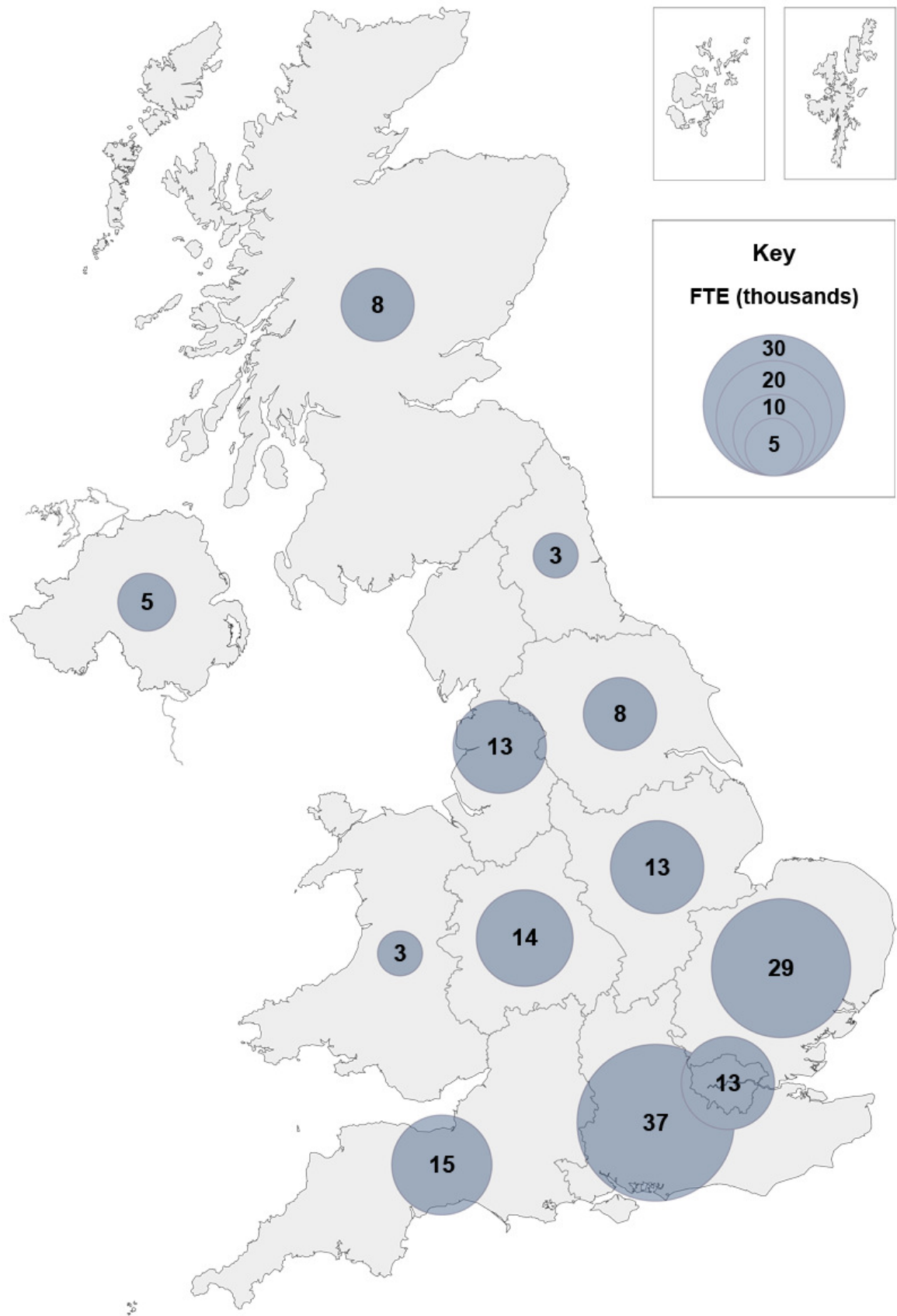
Contains National Statistics data © Crown copyright and database right 2013

Contains Ordnance Survey data © Crown copyright and database right 2013

The majority (92%) of UK R&D expenditure was carried out in England in 2012.

While Northern Ireland, Wales and Scotland showed increases in current prices (19%, 6% and 4% respectively) in R&D expenditure in 2012 compared with 2011, there was a decrease in expenditure in England of 3%.

Map 2: Employment on R&D performed in UK businesses, 2012



Source: Office for National Statistics
Contains National Statistics data © Crown copyright and database right 2013
Contains Ordnance Survey data © Crown copyright and database right 2013

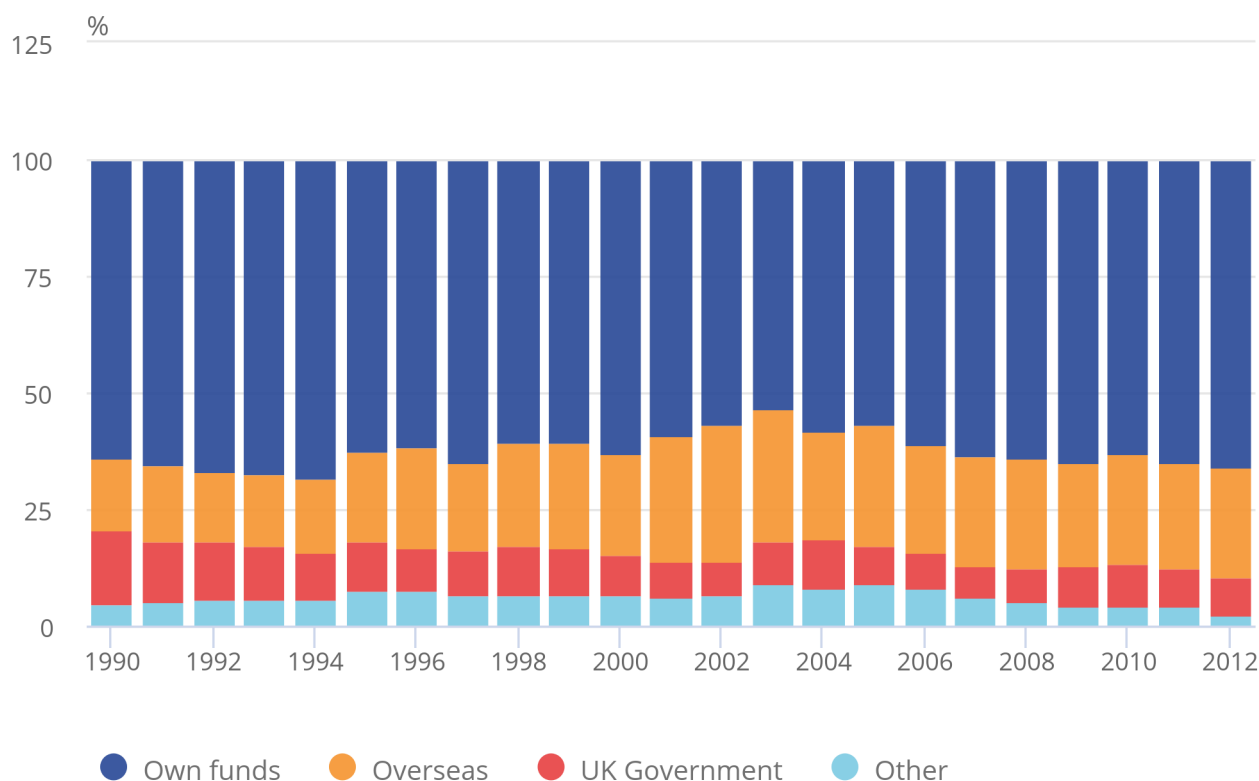
10 . Sources of funds for R&D performed UK businesses

The largest source of R&D funding in 2012 was businesses' own funds at £11.3 billion, which accounted for 66% of total R&D expenditure.

Overseas funding of UK businesses' R&D was £4.0 billion in 2012, 24% of total business UK R&D expenditure (**Figure 7**).

Figure 7: Sources of funds for R&D performed in UK businesses

Figure 7: Sources of funds for R&D performed in UK businesses



Source: Office for National Statistics

The UK Government's funding of businesses' R&D in 2012 was £1.3 billion, a decrease of £158 million (10%) in current prices. This represented 8% of total business R&D expenditure. UK government funding was predominantly in the defence sector (£1.1 billion), which made up 78% of government funding of business R&D expenditure. This includes government awarded contracts to UK businesses to develop aircraft, naval ships, submarines and their systems and equipment.

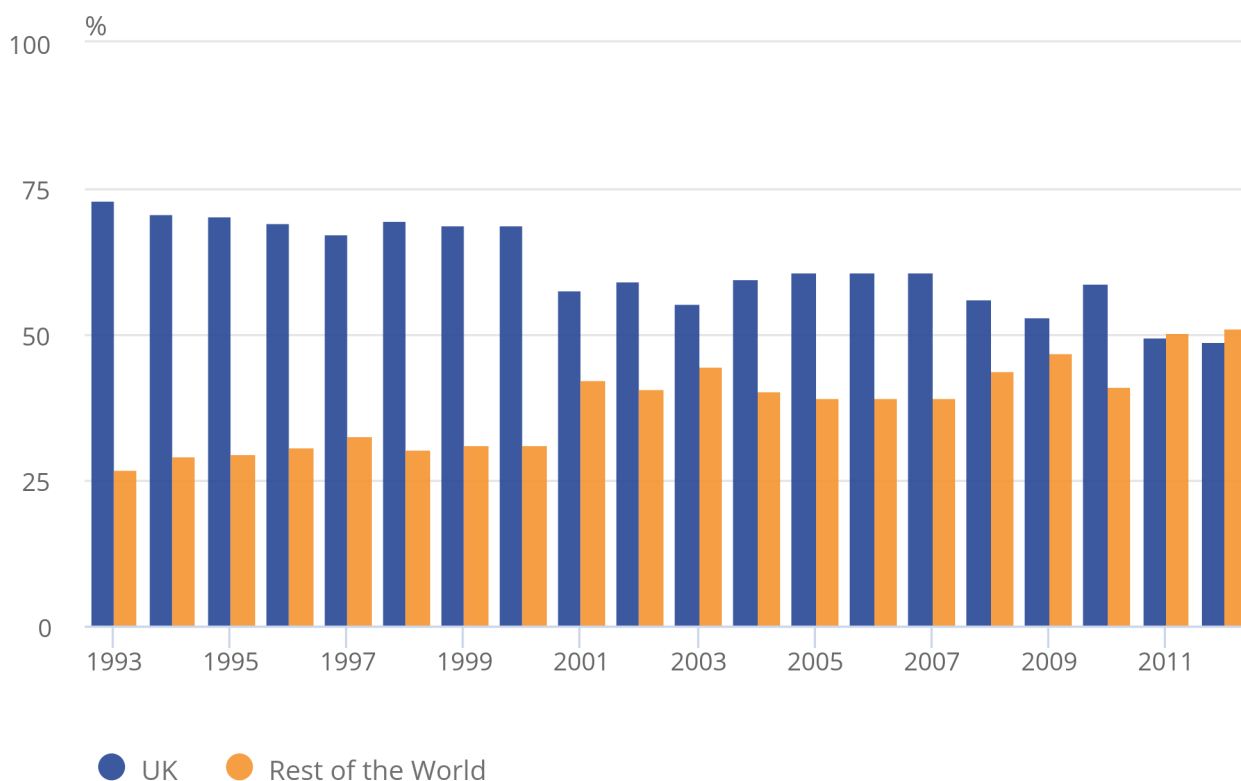
11 . Ownership of businesses performing R&D in the UK

In 1993, when the BERD survey began on an annual basis, 73% of UK business R&D expenditure was by UK owned businesses and 27% by foreign owned businesses. The majority of UK business R&D expenditure continued to be performed by UK owned businesses until 2010, when 59% of UK business R&D expenditure was performed by UK owned businesses. In 2011, for the first time, just over half (51%) of business R&D expenditure in the UK was by foreign owned businesses. This pattern of ownership continued in 2012 (**Figure 8**)

On 15 March 2013, ONS published [R&D expenditure by foreign owned businesses](#), which contained more detailed analysis of the pattern of ownership of businesses that performed R&D between 1995 and 2011. This was based on the estimates that had been included in the 2011 BERD statistical bulletin. Estimates for 2010 and 2011 have been revised in this bulletin. It should be noted that the original 2011 estimate of the proportion of R&D expenditure by foreign owned businesses has been revised upwards from 50% to 51%.

Figure 8: Ownership of businesses who perform R&D in the UK

Figure 8: Ownership of businesses who perform R&D in the UK



Source: Office for National Statistics

12 . International comparison

When comparing total business R&D intensity across countries, it is important to take into account differences in their industrial structure. OECD produces a [Science, Technology and Industry Scoreboard](#) to facilitate these comparisons.

In March 2012, as part of a publication 'The UK R&D Landscape', it was reported that "the business enterprise component of R&D expenditure in the UK is low by international standards, even after adjusting for structural difference between countries. It is also concentrated in the hands of a few very large firms and the small number of industrial sectors in which they are based".

13. Background notes

1. Key issues specific to this bulletin

This is the latest annual release about expenditure and employment in R&D by UK businesses. The results in this release are in respect of 2012. ONS began publishing annual data on business expenditure and employment in R&D in 1993. The source of the information is the Business Enterprise Research and Development (BERD) survey. [A quality report \(242.6 Kb Pdf\)](#) for the BERD survey is available on the ONS website.

The BERD survey is conducted annually by ONS. As part of the 2012 survey, approximately 5,000 questionnaires were sent to businesses known to perform R&D; this included around 400 of the largest R&D spenders, which accounted for approximately 78% of the 2012 total R&D expenditure estimate. Smaller R&D performers and others believed to be performing R&D were selected using various sampling fractions. Industry product group and business employment size were the stratification variables. Completed questionnaires were returned by 4,488 businesses representing a response rate of 91%.

This Statistical Bulletin reports business R&D performed in the UK, irrespective of the residence of the ultimate owner. Overseas activities of affiliates of UK businesses are not included. Gross expenditure of R&D in the UK performed by all sectors of the economy, commonly referred to as GERD, is reported separately in the annual [GERD statistical bulletin](#).

2. National Statistics

The UK Statistics Authority has reviewed this publication in its report: ["Assessment of compliance with the Code of Practice for Official Statistics: Statistics on Research and Development"](#) which was published on 28 June 2012. This review recommended that the UK Business Enterprise Research and Development estimates be designated as National Statistics, subject to ONS carrying out certain requirements. ONS has carried out the necessary work to meet these requirements and on 3 June 2013, the UK Statistics Authority confirmed the National Statistics designation of the BERD publication.

3. Timeliness and punctuality

An internal investigation was carried out in 2012 to identify if it is feasible to publish these R&D statistics earlier than they are at present. Unfortunately, this investigation concluded that it is not possible for ONS to bring forward the publication of these estimates in the short-term.

The main reason for this is that the Department for Finance and Personnel, Northern Ireland (DFPNI) runs a business R&D survey in Northern Ireland on an annual basis, and provides ONS with estimates for Northern Ireland to allow aggregate UK statistics to be produced. DFPNI cannot release these data to ONS earlier than mid October each year. As such, production of the BERD UK statistics cannot be brought forward from November.

As part of this investigation ONS sought the views of some of the known users of this publication. They unanimously stated that they are content with the current publication timetable.

It is important to note that improvements have been made to the processes underpinning the production of these estimates over the last few years and as a consequence timeliness has been improved. For example, 2007 data were published in January 2008, five months after the close of the survey. In contrast, this statistical bulletin has been published less than three months from the close of the survey.

4. Completeness of coverage

As part of the assessment of 'Statistics on Research and Development' by the UK Statistics Authority, a requirement was placed on the ONS to review the methodology for producing R&D statistics to identify potential gaps in coverage and meet the coverage requirements of the European System of Accounts (2010). To meet this requirement and to assist users in their understanding of this complex issue an Information Note entitled '[Coverage of the Business Enterprise Research & Development Survey \(147 Kb Pdf\)](#)' was published on 20 November 2012 to address this issue.

5. Revisions

The 2010 and 2011 estimates have been revised where necessary to take account of businesses misreporting and late returns.

One indication of the reliability of the key indicators in this release can be obtained by monitoring the size of revisions. The table below records the size and pattern of revisions that have occurred over the last five years. Please note that these indicators only report summary measures for revisions. (The revised data may itself be subject to sampling or other sources of error).

Table 1: Revisions between first publication and estimates three years later

	Value in latest period	Average revision	Average revision without regard to sign	£ million
Expenditure on R&D performed by UK businesses	17,107	-89		219

Source: Office for National Statistics

A [spreadsheet \(42 Kb Excel sheet\)](#) is available giving the revisions of estimates from 2005 and the calculations behind the averages in the table.

The revisions table covers estimates of the UK business enterprise R&D expenditure first published from November 2006 (for 2005) to November 2010 (for 2009). A statistical test has been applied to the average revision to find out if there is bias in the estimates. No statistically significant bias was identified.

6. Sampling variability

It is possible to calculate the standard error for each detailed product group, as a measure of sampling error. To illustrate this, the total expenditure for the Aerospace product group is £1,518 million. The calculated standard error, as shown in Table 25, is £39 million. A 95% confidence interval means that it is expected that in 95% of samples, this range would contain the true value.

The estimates in this publication are based on a stratified sample drawn from the population of businesses known to actually perform R&D or are likely to be R&D performers. As with any sample survey, the R&D survey is subject to two types of possible errors:

- sampling errors, due to only a sample of the population being surveyed. These errors can be quantified, as shown in Table 25
- non-sampling errors. These include factors such as population coverage, misreporting and non-response bias. These errors are generally hard to quantify, because of the difficulty in identifying the population of actual/likely R&D performers and because of the problems ensuring that businesses adhere to Frascati R&D definitions. The Information Note (147 Kb Pdf) referred to in Background Note 4 provides an overview of the survey design and looks at the methods and sources used to update the sampling frame

7. Discontinuities in data

The BERD questionnaire was redesigned after the 2007 survey to better reflect user needs and to address concerns about data quality and difficulty in completion. While these changes are viewed as being an improvement, they may have had an impact on the comparability of the data returned. Unfortunately, it is not possible to measure this impact.

8. General information

These points should be noted when examining the data tables:

- there may be discrepancies between totals and the sum of their independently rounded totals
- in some tables, entries have been aggregated to avoid disclosure of figures in which the returns of individual businesses could be identified. Where this happens, footnotes have been added to the tables
- respondents were asked to make a return for the calendar year 2012 or the nearest 12 month period for which figures were available. Data for all years published in this Statistical Bulletin were collected on the same basis
- it is sometimes necessary to suppress figures for certain items in order to avoid disclosing data from individual institutions. Tables which contain data which are disclosive will contain a relevant footnote

9. Product Groups

The 400 largest R&D spenders are asked to select the industry product groups that best describe the type of R&D activities they undertake. In 2010, these product group descriptions were updated to better reflect the new Standard Industrial Classification (SIC 2007) descriptions. For the smaller R&D performers, no product group data were collected. However, the businesses' Standard Industrial Classification (SIC) codes are known from the Inter-Departmental Business Register (IDBR) an assumption is therefore made that the R&D expenditure is for the detailed product group that corresponds to the individual businesses' dominant SIC. This approach must be regarded as an approximation since, in practice, an individual business can perform R&D for a range of product groups.

The implementation of SIC 2007, in 2010, resulted in some businesses' R&D moving to a different product group than previously published. The largest impact was with businesses with Publishing activities as these moved out of the manufacturing sector and started to be included under Miscellaneous business activities. There was also an increase in the Other manufactured goods product group due to businesses being reclassified from Textiles, clothing and leather products, Pulp and paper products, Rubber and plastic products, Fabricated metal products, Machinery and equipment and Precision instruments and optical products.

The broad product groups, which consist of aggregations of the detailed product groups, were refined and expanded in 2002 in order to more accurately categorise the data within the Manufacturing and Service sectors.

10. Standard Industrial Classification

The UK Statistics Authority placed a requirement on ONS, as part of the assessment of Research and Development statistics, to 'Review the statistical disclosure practices for BERD statistics, with a view to presenting industry statistics in BERD, and publish the results'.

The SIC was first introduced into the UK in 1948 for use in classifying business establishments and other statistical units by the type of economic activity in which they were engaged. The classification provides a framework for the collection, tabulation, presentation and analysis of data, and its use promotes uniformity.

Estimates by SIC are derived by allocating business expenditure to industry classifications using the IDBR. The IDBR is a list of UK businesses that is maintained by ONS and holds information on the business activity (based on SIC) of every business.

11. Employment

Employment estimates are provided by businesses on the basis of 'full-time equivalent' staff, averaged over the year. The categories of employment used are:

- researchers – engaged in the conception or creation of new knowledge, products, methods and systems
- technicians – perform scientific and technical tasks normally under the supervision of researchers
- others – support staff including skilled and unskilled craftsmen, secretarial and clerical staff participating in R&D projects

12. Small and Medium Enterprises (SMEs)

A table providing estimates of R&D expenditure by Small and Medium Enterprises (SMEs) is included as part of this publication (Table 26). The SME definition used is that under the European Commission Recommendation (2003/361/EC) of 1 January 2003, in which SMEs are defined as enterprises with less than 250 employees. In addition, a criterion of independence is used to exclude enterprises that are part of a larger enterprise group, so that only true SMEs are evaluated. This criterion is important in the context of R&D estimates, given that R&D activity is often carried out by smaller businesses which form part of larger, sometimes multinational, businesses. To apply the SME definition, historic information on business ownership has been obtained using that currently held on the IDBR. Caution should therefore be exercised in making comparisons over time.

13. Regional data

The following process is used to produce regional estimates of R&D. The businesses receiving the long questionnaire (the 400 largest R&D spenders) accounted for approximately 78% of total R&D expenditure in 2012. Each business was asked to provide the workplace postcodes for all the sites at which the business performed R&D, and to allocate the total expenditure figures of the business to the sites on a percentage basis. Regional data for the remaining businesses, which accounted for the remaining 22% of total expenditure, all had a value estimated by grossing up using county region codes from the business register of R&D performers. Aggregation is undertaken at broad product group and county level.

14. Users and uses of data

A primary use of the data in this Statistical Bulletin is that it is a key component in measuring the UK's gross domestic expenditure on R&D. The other components are the UK government sector, the higher education sector and the non-profit business sector. Gross expenditure of R&D in the UK performed by all sectors of the economy is reported separately, as part of a publication commonly referred to as GERD. The 2012 GERD estimates will be published in March 2014.

Changes introduced as part of the amendments to the System of National Accounts (SNA) in 2008 and European System of Accounts (ESA) in 2010 specify that R&D, from 2014 onwards, should not be considered as an ancillary activity and instead expenditure on R&D should constitute investment in R&D assets, which as a consequence need to be capitalised in the UK National Accounts. In short, from 2014, R&D expenditure will contribute to the compilation of the value of the UK's net worth and be included as part of Gross Domestic Product (GDP) estimates.

There are numerous other users within and outside government who use these data to produce various analyses and to inform policy decisions. These include:

[Eurostat \(European Union's Statistical Office\)](#) - the UK provides statistics measuring R&D activity in accordance with the European Commission Regulation No. 955/2012 of the European Parliament and the council. The business estimates in this statistical bulletin are used to provide information that is consistent with other EU member states and to enable benchmarking to be achieved. [Europe 2020 targets](#) for economic growth include 3% of the EU's GDP (both private and publicly funded) to be invested in R&D by 2020. This means that the estimates in this release are essential in monitoring progress towards this target

It should be noted that at the time of this publication, Eurostat have already published provisional estimates for EU member states gross expenditure on R&D in 2012. These [estimates](#) include business sector data. The provisional estimates for the UK were based on projections, and therefore when making comparisons with other countries, users are advised to use estimates from this release for UK business R&D expenditure, rather than Eurostat's provisional estimates for the UK.

- [OECD](#) – use BERD data for constructing internationally comparable data tables and producing regular statistical publications such as the ‘[Main Science and Technology indicators](#)’ (MSTI) and ‘[The Annual Business Enterprise Research and Development](#)’ statistics (ANBERD). The data are also used for analytical studies, which underpin economic analyses and policy reviews
- [The Department for Business Innovation and Skills \(BIS\)](#) use BERD data to assess policy impact and inform debate. R&D data underpins their assessments of UK innovation performance as well as international work in the field. BIS produced an R&D scoreboard until 2010. The R&D scoreboard was the leading source of information and analysis on the world's top R&D active companies, both in the UK and globally. It listed the 1,000 UK and 1,000 global companies investing most in R&D, enabling companies to benchmark their own investments against sector leaders. The scoreboard was based on data extracted from companies' annual reports and accounts. The last scoreboard to be published includes commentary and analysis prepared by the Economist Intelligence Unit for the year 2010. [View the latest R&D scoreboard](#)
- The [Welsh Government](#) (WG) and the [Scottish Government](#) (SG) use BERD data as a key indicator for measuring the performance of their respective economies within the UK, as well as to monitor and develop R&D policies which seek to increase R&D investment
- [HM Revenue and Customs](#) (HMRC) use BERD data to support analysis and advice on policy development. BERD is one of the key data sources for policy evaluation
- [The Department for Finance and Personnel](#), Northern Ireland carry out their own annual survey into R&D and then provide ONS with the Northern Ireland business R&D data for inclusion in the UK published results
- The [Research and Development Society](#) is a UK-based organisation formed to promote the better understanding of R&D in all its forms. It holds regular meetings, usually at the Royal Society in London. The Research and Development Society makes use of BERD data, as a key source of information, for understanding how much UK businesses are investing in R&D on an annual basis and to inform wider debates about R&D

Requests for BERD data are made from a variety of sources including academics, government departments, and economic consultants. This means that the data are used in various publications. For example, in June 2013, the National Audit Office published [Research and Development funding for science and technology in the UK](#). This report was published in response to a request from the House of Commons Science and Technology Committee, and provides an overview of R&D spending in the UK since 1985.

Do you make use of our annual estimates of UK Business Enterprise Research and Development? If yes, we would like to hear from you (RandD@ons.gsi.gov.uk) and understand how you make use of these statistics. This will enable us, in the future, to better meet your needs as a user.

15. Coherence and international comparisons

An [Information Note \(807.8 Kb Pdf\)](#) providing an assessment of the coherence of R&D statistics with other official statistics was published in 2012 on the ONS website.

16. ONS business statistics

There is a [Business and Trade Statistics](#) community on the StatsUserNet website. [StatsUserNet](#) is the Royal Statistical Society's interactive site for users of official statistics. The community objectives are to promote dialogue and share information between users and producers of official business and trade statistics about the structure, content and performance of businesses within the UK. Anyone can join the discussions by registering via either of the links.

17. Social media

Follow ONS on [Twitter](#) and receive up to date information about our statistics.

Like ONS on [Facebook](#) to receive our updates in your newsfeed and to post comments on our page.

18. Special events

ONS has recently published commentary, analysis and policy on '[Special Events](#)' which may affect statistical outputs. For full details go to the special events page on the ONS website.

19. Release policy

Details of the policy governing the release of new data are available from the media relations office. Also available is a list of those given [pre-publication access](#) to the contents of this release.

All data in this release can be downloaded free of charge from the ONS website. Here are the instructions to obtain a full time series of data from the statistical bulletin or release pages:

- select 'Data in this release'
- select 'View datasets associated with this release'
- select the latest release
- select 'Select series from this dataset'
- select the reference table of interest
- select 'View series'
- select the series of interest (Hint: for a custom download you can use SHIFT to select a range of series or CTRL to select multiple individual series)
- select 'View selection'
- select 'Download'

20. Details of the policy governing the release of new data are available by visiting www.statisticsauthority.gov.uk/assessment/code-of-practice/index.html or from the Media Relations Office email: media.relations@ons.gov.uk

These National Statistics are produced to high professional standards and released according to the arrangements approved by the UK Statistics Authority.

Research and Development in UK Businesses, 2012 - Datasets

Please click on the links below to access the datasets:

UK Business Enterprise Research and Development 2012 - Time Series Datasets

- [SB1](#) Expenditure on R&D Performed in UK Businesses: Current and Constant Prices and as a Percentage of GDP, 2001 to 2012
- [SB2](#) Expenditure on R&D Performed in UK Businesses: Detailed Product Groups, 2001 to 2012
- [SB3](#) Sources of Funds for R&D Performed in UK Businesses: 2001 to 2012
- [SB4](#) Employment on R&D Performed in UK Businesses: 2001 to 2012
- [SB5](#) Expenditure on Civil and Defence R&D Performed in UK Businesses: Broad Product Groups, 2001 to 2012
- [SB6](#) Sources of Funds for R&D Performed in UK Businesses: Civil and Defence, 2001 to 2012
- [SB7](#) Breakdown of R&D Performed in UK Businesses by Region: Expenditure and Employment, 2001 to 2012

UK Business Enterprise Research and Development 2012 - Additional Datasets

Expenditure on Research and Development

- [1](#) Expenditure on R&D Performed in UK Businesses: Broad Product Groups, 2001 to 2012 - Current and Constant Prices (2012 Prices)
- [2](#) Expenditure on R&D Performed in UK Businesses: Detailed Product Groups, 2001 to 2012
- [3](#) Current and Capital Expenditure on R&D Performed in UK Businesses: 2001 to 2012
- [4](#) Current and Capital Expenditure on R&D Performed in UK Businesses: Detailed Product Groups, 2012
- [5](#) Current Expenditure on R&D Performed in UK Businesses: Detailed Product Groups and Type of Research, 2012
- [6](#) Extramural Expenditure on R&D by UK R&D Performing Businesses: Detailed Product Groups and Source of Funds, 2012

Sources of Funds for Research and Development

- [7](#) Sources of Funds for R&D Performed in UK Businesses: 2001 to 2012
- [8](#) Sources of Funds for R&D Performed in UK Businesses: Detailed Product Groups, 2012

Employment on Research and Development

- [9](#) Employment on R&D Performed in UK Businesses: 2001 to 2012
- [10](#) Employment on R&D Performed in UK Businesses: Detailed Product Groups, 2012
- [11](#) Employment on Civil and Defence R&D Performed in UK Businesses: 2001 to 2012

Civil and Defence Research and Development

- [12](#) Expenditure on Civil and Defence R&D Performed in UK Businesses: Detailed Products Groups, 2012
- [13](#) Current and Capital Expenditure on Civil and Defence R&D in UK Businesses: 2001 to 2012
- [14](#) Sources of Funds for Civil and Defence R&D in UK Businesses: 2001 to 2012

Region

- [15](#) Expenditure on R&D Performed in UK Businesses by Region: Broad Product Groups, 2012
- [16](#) Employment on R&D Performed in UK Businesses by Region: Broad Product Groups, 2012
- [17](#) R&D Performed in UK Businesses by Region: Expenditure and Employment, 2001 to 2012
- [Map 1](#) Expenditure on R&D Performed in UK Businesses by Region, 2012
- [Map 2](#) Employment on R&D Performed in UK Businesses by Region, 2012

Business Size and Product

- [18](#) Expenditure and Employment on R&D Performed in UK Businesses: Top 100 Enterprise Groups, 2012
- [19](#) Expenditure on R&D Performed in UK Businesses by Total Company Employment Size-Bands: Broad Product Groups, 2012
- [20](#) R&D Employment in UK Businesses by Company Employment Size-Bands: Broad Product Groups, 2012
- [21](#) Expenditure on R&D Performed in UK Businesses by Employment Size-Bands and Broad Product Groups: As an Average per R&D Employee, 2012

By Country of Ownership

- [22](#) Expenditure and Employment on R&D Performed in UK Businesses: By Country of Ownership of Business Performing R&D, 2001 to 2012
- [23](#) Expenditure on R&D Performed in UK Businesses, UK or Overseas Ownership: Detailed Product Groups, 2012

Intensity in Manufactured Products

- [24](#) R&D Intensity in Manufactured Products: Detailed Product Groups, 2001 to 2012

Standard Errors

- [25](#) R&D Business Survey Standard Errors: Detailed Product Groups, 2012

Small and Medium Size Enterprises

- [26](#) Expenditure on R&D Performed in UK Businesses: By Small and Medium Size Enterprises, 2001 to 2012

Standard Industry Classification (SIC) Division

- [27](#) Expenditure on R&D Performed in UK Businesses: Standard Industry Classification (SIC) Division, 2010 to 2012

Intensity in Services

- [28](#) R&D Intensity in Services: Detailed Product Groups, 2010 to 2012

[List of Broad Product Groups Numbers and Titles](#)

Statistical contact: David Matthews, Office for National Statistics

Telephone number: +44 (0)1633 456756

Email: RandD@ons.gsi.gov.uk

SB1 EXPENDITURE ON R&D PERFORMED IN UK BUSINESSES:
CURRENT AND CONSTANT PRICES AND AS A PERCENTAGE OF GDP, 2001 TO 2012

[Return to Main Menu](#)

												£ million	
		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Current prices	DLBX	12,239	12,484	12,505	12,662	13,734	14,144	15,676	15,814	15,532	16,045 [†]	17,468	17,107
Constant prices (2012 prices)		15,898 [†]	15,848	15,573	15,345	16,345	16,363	17,691	17,360	16,592	16,704	17,777	17,107
Current prices GDP	DLHT	1,040,339 [†]	1,098,061	1,164,429	1,229,516	1,295,438	1,369,907	1,447,844	1,442,253	1,432,213	1,502,176	1,548,040	1,570,101
As a % of GDP		1.2	1.1	1.1	1.0	1.1	1.0	1.1	1.1	1.1	1.1	1.1	1.1
2012 = 100												Source: Office for National Statistics	
		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
GDP deflator used to convert current prices to constant prices		76.984 [†]	78.775	80.301	82.518	84.025	86.439	88.612	91.096	93.611	96.056	98.262	100

1 [†] crosses denote earliest data revision.

SB2 EXPENDITURE ON R&D PERFORMED IN UK BUSINESSES:
DETAILED PRODUCT GROUPS, 2001 TO 2012
CURRENT PRICES

[Return to Main Menu](#)

													% of total	
													£ million	
													2012	
													2012	
TOTAL	DLBX	12,239	12,484	12,505	12,662	13,734	14,144	15,676	15,814	15,532	16,045 [†]	17,468	17,107	100
Agriculture, hunting and forestry; Fishing	DLBY	122	147	136	..	..	88	..	88	111	102	133	132	0.8
Extractive Industries	DLBZ	39	45	41	36	59	59	82	90	140	152	195 [†]	215	1.3
Food products and beverages; Tobacco products	DLCB	285	269	256	258	276	314	328	303	290	306 [†]	367	357	2.1
Textiles, clothing and leather products	DLCQ	22	19	20	21	18	17	19	15	10	11	14 [†]	20	0.1
Pulp, paper and paper products; Printing; Wood and straw products	DLCB	38	44	45	40	52	55	53	56	26	28	21	28	0.2
Refined petroleum products and coke oven products	DLCE	239	247	258	234	245	279	274	94	95	73	72	76	0.4
Chemicals and chemical products	DLCB	620	599	614	625	637	684	668	630	610	666	523 [†]	591	3.5
Pharmaceuticals	DLCD	3,079	3,169	3,127	3,239	3,374	3,521	3,935	4,354	4,424	4,673 [†]	4,933	4,206	24.6
Rubber and plastic products	DLCB	49	60	65	63	55	90	79	78	62	80	97	112	0.7
Other non-metallic mineral products	DLCB	45	51	56	62	44	51	48	53	57	56	60	45	0.3
Casting of iron and steel	DLCJ	28	29	29	30	34	38	..	47	43	28	44	45	0.3
Non-ferrous metals	DLCB	26	16	4	4	8	6	..	72	..	86	77	52	0.3
Fabricated metal products except machinery and equipment	DLCB	68	90	65	77	74	68	91	73	93	93	119	97	0.6
Machinery and equipment	DLCB	742	780	662	761	905	929	1,033	790	873	809 [†]	973	998	5.8
Computers and peripheral equipment	DLCB	95	87	55	53	92	67	83	123	151	157	180	187	1.1
Electrical equipment	DLCB	354	372	360	406	394	458	547	577	577	513	509	466	2.7
Consumer electronics and communication equipment	DLCB	1,069	890	871	763	788	748	667	700	547	474 [†]	511	678	4.0
Precision instruments and optical products; photographic equipment	DLCB	587	532	476	486	475	462	544	591	498	490	583 [†]	612	3.6
Motor vehicles and parts	DLCB	898	916	894	789	744	754	933	1,156	1,039	1,237	1,525	1,732	10.1
Other transport equipment	DLCB	..	..	..	23	21	25	28	30	..	46	50 [†]	48	0.3
Shipbuilding	DLCB	..	..	..	125	127	134	136	157	173	185	226 [†]	229	1.3
Aerospace	DLCB	1,311	1,352	1,643	1,965	2,169	1,832	2,070	1,732	1,466	1,437	1,438 [†]	1,518	8.9
Other manufactured goods	DLCB	40	35	35	33	26	24	27	36	98	136	146 [†]	139	0.8
Sewerage, waste management, remediation activities	DLCB	..	3	2	2	1	1	3	3	9	11	10	12	0.1
Electricity, gas and water supply	DLCB	41	46	36	21	15	21	35	40	66	60	58 [†]	106	0.6
Construction	DLCB	30	35	27	..	..	17	..	21	..	14	31 [†]	58	0.3
Wholesale and retail trade	DLCB	55	74	53	76	60	70	37	74	76	177	237 [†]	184	1.1
Transport and storage, incl. postal and courier activities	DLCB	12	..	..	12	8	16	21	12	24	17	18	..	..
Telecommunications	DLCB	751	726	637	639	1,164	1,330	1,535	1,404	1,330	1,129	1,051	889	5.2
Miscellaneous business activities; Technical testing and analysis	DLCB	303	363	308	349	438	399	510	494	555	583	568 [†]	655	3.8
Computer programming and information service activities	DLCB	709	866	1,207	1,060	1,069	1,415	1,498	1,465	1,385	1,526	1,847 [†]	1,930	11.3
Research and development services	DLCB	441	446	404	211	179	122	156	384	507	618	787 [†]	612	3.6
Public administration	DLCB	17	34	11	31	32	52	103	71	73	70	67	..	..

Source: Office for National Statistics

1 .. denotes disclosive figures.

2 [†] crosses denote earliest data revision.

[Return to Main Menu](#)

SB3 SOURCES OF FUNDS FOR R&D PERFORMED IN UK BUSINESSES:
2001 TO 2012
CURRENT PRICES

[Return to Main Menu](#)

		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
£ Million													
TOTAL	DLBX	12,239	12,484	12,505	12,662	13,734	14,144	15,676	15,814	15,532	16,045[†]	17,468	17,107
UK Government	DLDO	946	881	1,165	1,290	1,101	1,060	1,072	1,135	1,324	1,407 [†]	1,506	1,348
Overseas total of which:	DLHK	3,311	3,699	3,548	2,958	3,584	3,262	3,636	3,721	3,458	3,789 [†]	3,939	4,030
EC Programmes	DLDQ	80	134	90	42	73	41	27	47	47	62 [†]	56	42
All other funding from abroad	DLDS	3,231	3,565	3,459	2,917	3,512	3,221	3,609	3,674	3,411	3,727 [†]	3,884	3,988
Other UK Business	DLDU	749	848	1,105	1,056	1,272	1,155	994	865	698	718 [†]	594	367
Own funds	DLDW	7,228	7,053	6,685	7,351	7,775	8,665	9,959	10,086	10,047	10,129 [†]	11,306	11,299
Other	DLDY	4	4	3	6	2	2	15	7	4	3	122 [†]	62
		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012

Per cent													
TOTAL		100	100	100	100	100	100	100	100	100	100	100	100
UK Government		8	7	9	10	8	7	7	7	9	9	9	8
Overseas total of which:		27	30	28	23	26	23	23	24	22	24	23 [†]	24
EC Programmes		1	1	1	-	1	-	-	-	-	-	-	-
All other funding from abroad		26	29	28	23	26	23	23	23	22	23	22 [†]	23
Other UK Business		6	7	9	8	9	8	6	5	4	4 [†]	3	2
Own funds		59	56	53	58	57	61	64	64	65	63	65	66
Other		-	-	-	-	-	-	-	-	-	-	1	-

Source: Office for National Statistics

- 1 - denotes nil, figures unavailable or too small to display.
2 [†] crosses denote earliest data revision.
3 The sum of percentages may be more or less than 100 due to rounding.
4 'Other' includes funds from UK Private Non-Profit organisations and Higher Education establishments, and from 2011, international organisations.

[Return to Main Menu](#)

SB4 EMPLOYMENT ON R&D PERFORMED IN UK BUSINESSES: 2001 TO 2012

[Return to Main Menu](#)

		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Full time equivalent in thousands													
TOTAL	DLEI	154	158	155	150	146	147	158	151	151	154	160 [†]	160
Scientists and engineers	DLEJ	91	96	99	94	94	92	90	86	85	87	90 [†]	90
Technicians, laboratory assistants and draughtsmen	DLEK	30	31	28	27	25	27	35	37	40	41	42 [†]	43
Administrative, clerical, industrial and other staff	DLEL	32	31	29	29	26	28	33	28	26	27	27	27
		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Per cent													
TOTAL		100	100	100	100	100	100	100	100	100	100	100	100
Scientists and engineers		59	61	64	63	64	63	57	57	56	56	56	56
Technicians, laboratory assistants and draughtsmen		19	20	18	18	17	18	22	25	26	27	26 [†]	27
Administrative, clerical, industrial and other staff		21	20	19	19	18	19	21	19	17	18	17	17

Source: Office for National Statistics

1 [†] crosses denote earliest data revision.

2 The sum of percentages may be more or less than 100 due to rounding.

SB5 EXPENDITURE ON CIVIL AND DEFENCE R&D PERFORMED IN UK BUSINESSES:
BROAD PRODUCT GROUPS, 2001 TO 2012

[Return to Main Menu](#)

		Civil												Defence												£ million
		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012													
CURRENT PRICES																										
TOTAL	DLBV	10,580	10,839	10,800	10,623	11,288	11,975	13,268	13,717	13,646	14,392 [†]	15,699	15,518	DLBW	1,659	1,645	1,706	2,039	2,446	2,169	2,409	2,097	1,886	1,653 [†]	1,769	1,588
Manufacturing	DLEP	8,186	8,173	8,098	8,180	8,270	8,564	9,372	9,712	9,484	10,036 [†]	10,835	10,741	DLEX	1,534	1,519	1,538	1,878	2,290	1,991	2,239	1,960	1,746	1,549 [†]	1,631	1,495
Chemicals	DLEQ	..	..	..	..	..	..	..	..	..	..	..	..	DLEY	..	..	..	..	..	..	..	..	..	..	..	..
Mechanical engineering	DLER	512	552	402	492	458	464	634	435	450	456 [†]	520	568	DLEZ	298	319	326	346	520	533	489	429	516	446	572	527
Electrical machinery	DLES	1,225	1,044	1,029	935	978	930	934	1,018	867	751 [†]	847	1,060	DLFA	292	305	258	287	296	343	362	381	408	393 [†]	353	271
Transport equipment	DLET	..	..	..	..	..	..	..	..	..	..	..	..	DLFB	..	..	..	..	..	..	..	..	..	..	..	..
Aerospace	DLEU	642	659	871	939	902	908	902	836	905	1,018 [†]	1,036	1,167	DLFC	668	693	772	1,026	1,267	924	1,168	897	560	419 [†]	402	350
Other manufacturing	DLEV	1,167	1,207	1,140	1,123	1,146	1,266	1,321	1,226	1,136	1,168 [†]	1,399	1,380	DLFD	192	97	105	108	90	70	100	122	115	127	82 [†]	107
Services	DLEW	2,163	2,393	..	..	2,792	3,226	3,690	3,767	3,811	4,016	4,437 [†]	..	DLFE	125	125	..	..	157	178	169	137	140	104	138	..
Other: Total	LDIL	232	273	..	..	225	185	205	238	350	.. [†]	426	..	LDJJ	-	1	..	..	-	-	-	-	-	..	-	..
Agriculture, hunting & forestry; Fishing	LDIN	122	147	136	..	..	88	..	88	111	102	133	..	LDJL	-	-	-	-	-	-	-	-	-	-	-	..
Extractive industries	LDIS	39	45	41	36	59	59	82	90	140	152	195 [†]	..	LDKF	-	-	-	-	-	-	-	-	-	-	-	..
Electricity, gas & water supply; Waste management	LDJB	41	46	36	21	15	21	35	40	75	..	68 [†]	..	LDKG	-	-	-	-	-	-	-	-	-	..	-	..
Construction	LDJG	30	35	..	..	..	17	..	21	24	..	31 [†]	..	LDKS	-	1	..	..	-	-	-	-	-	-	-	..

		Civil												Defence												£ million
		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012													
CONSTANT PRICES																										
TOTAL		13,743 [†]	13,759	13,449	12,874	13,434	13,854	14,973	15,058	14,577	14,983	15,977	15,518		2,155 [†]	2,088	2,125	2,471	2,911	2,509	2,719	2,302	2,015	1,721	1,800	1,588
Manufacturing		10,633 [†]	10,375	10,085	9,913	9,842	9,908	10,576	10,661	10,131	10,448	11,027	10,741		1,993 [†]	1,928	1,915	2,276	2,725	2,303	2,527	2,152	1,865	1,613	1,660	1,495
Chemicals		..	..	..	..	..	..	..	..	..	..	..	..		..	..	..	..	..	..	..	..	..	..	..
Mechanical engineering		665 [†]	701	501	596	545	537	715	478	481	475	529	568		387 [†]	405	406	419	619	617	552	471	551	464	582	527
Electrical machinery		1,591 [†]	1,325	1,281	1,133	1,164	1,076	1,054	1,118	926	782	862	1,060		379 [†]	387	321	348	352	397	409	418	436	409	359	271
Transport equipment		..	..	..	..	..	..	..	..	..	..	..	..		..	..	..	..	..	..	..	..	..	..	..
Aerospace		834 [†]	837	1,085	1,138	1,073	1,050	1,018	918	967	1,060	1,054	1,167		868 [†]	880	961	1,243	1,508	1,069	1,318	985	598	436	409	350
Other manufacturing		1,516 [†]	1,532	1,420	1,361	1,364	1,465	1,491	1,346	1,214	1,216	1,424	1,380		249 [†]	123	131	131	107	81	113	134	123	132	83	107
Services		2,810 [†]	3,038	..	..	3,323	3,732	4,164	4,135	4,071	4,181	4,515	..		162 [†]	159	..	..	187	206	191	150	150	108	140	..
Other: Total		301 [†]	347	..	..	268	214	231	261	374	..	434	..		..	1	..	..	-	-	-	-	-	-	-	..
Agriculture, hunting & forestry; Fishing		158 [†]	187	169	..	..	102	..	97	119	106	135	..		..	-	..	-	-	-	-	-	-	-	-	..
Extractive industries		51 [†]	57	51	44	70	68	93	99	150	158	198	..		..	-	-	-	-	-	-	-	-	-	-	..
Electricity, gas & water supply; Waste management		53 [†]	58	45	25	18	24	39	44	80	..	69	..		..	-	-	-	-	-	-	-	-	-	-	..
Construction		39 [†]	44	..	..	..	20	..	23	26	..	32	..		..	1	..	..	-	-	-	-	-	-	-	..

Civil														Defence												£ million	
2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012														2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012													
CONSTANT PRICES																											
TOTAL	13,743 †	13,759	13,449	12,874	13,434	13,854	14,973	15,058	14,577	14,983	15,977	15,518		2,155 †	2,088	2,125	2,471	2,911	2,509	2,719	2,302	2,015	1,721	1,800	1,588		
Manufacturing	10,633 †	10,375	10,085	9,913	9,842	9,908	10,576	10,661	10,131	10,448	11,027	10,741		1,993 †	1,928	1,915	2,276	2,725	2,303	2,527	2,152	1,865	1,613	1,660	1,495		
Chemicals	..	..	..	..	..	..	..	..	..	..	..	..		..	..	..	..	..	..	..	..	..	..	..	..
Mechanical engineering	665 †	701	501	596	545	537	715	478	481	475	529	568		387 †	405	406	419	619	617	552	471	551	464	582	527		
Electrical machinery	1,591 †	1,325	1,281	1,133	1,164	1,076	1,054	1,118	926	782	862	1,060		379 †	387	321	348	352	397	409	418	436	409	359	271		
Transport equipment	.. †	..	..	..	..	..	..	..	..	..	..	..		.. †	..	..	..	..	..	..	..	..	..	..	..
Aerospace	834 †	837	1,085	1,138	1,073	1,050	1,018	918	967	1,060	1,054	1,167		868 †	880	961	1,243	1,508	1,069	1,318	985	598	436	409	350		
Other manufacturing	1,516 †	1,532	1,420	1,361	1,364	1,465	1,491	1,346	1,214	1,216	1,424	1,380		249 †	123	131	131	107	81	113	134	123	132	83	107		
Services	2,810 †	3,038	..	..	3,323	3,732	4,164	4,135	4,071	4,181	4,515	..		162 †	159	..	..	187	206	191	150	150	108	140	..	
Other: Total	301 †	347	..	..	268	214	231	261	374	..	434	..		-	1	..	..	-	-	-	-	-	..	-	..
Agriculture, hunting & forestry; Fishing	158 †	187	169	..	..	102	..	97	119	106	135	..		-	-	-	-	-	-	-	-	-	-	-	..	
Extractive industries	51 †	57	51	44	70	68	93	99	150	158	198	..		-	-	-	-	-	-	-	-	-	-	-	..		
Electricity, gas & water supply; Waste management	53 †	58	45	25	18	24	39	44	80	..	69	..		-	-	-	-	-	-	-	-	-	-	-	..		
Construction	39 †	44	..	..	..	20	..	23	26	..	32	..		-	1	..	..	-	-	-	-	-	..	-	..

Source: Office for National Statistics

1 - denotes nil, figures unavailable or too small to display.

2 .. denotes disclosive figures.

3 [†] crosses denote earliest data revision.

[Return to Main Menu](#)

SB6 SOURCES OF FUNDS FOR R&D PERFORMED IN UK BUSINESSES:
CIVIL AND DEFENCE, 2001 TO 2012
CURRENT PRICES

[Return to Main Menu](#)

EXPENDITURE, 2001 TO 2012																									£ million	
		Civil													Defence											
		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
UK Government	DLFG	154	188	386	162	156	150	183	258	350	410 [†]	394	294	DLFN	791	693	778	1,128	945	910	889	877	974	996 [†]	1,112	1,055
Overseas total of which:	DLHS	2,870	3,148	2,980	2,440	2,656	2,686	2,985	3,189	3,206	3,584 [†]	3,791	3,867	DLIF	441	551	568	518	928	576	652	532	251	205	148 [†]	163
EC Programmes	DLFH	80	134	90	42	73	41	27	47	45	60 [†]	53	40	DLFO	-	-	-	-	-	-	1	-	2	2	3	2
All other funding from abroad	DLFI	2,790	3,014	2,890	2,398	2,583	2,645	2,958	3,143	3,161	3,524 [†]	3,738	3,828	DLFP	441	551	568	518	928	576	651	531	250	203	146 [†]	160
Other UK Business	DLFJ	653	..	1,024	988	1,147	1,044	..	729	..	607 [†]	485	295	DLFQ	97	..	81	68	125	111	..	136	..	111	109 [†]	72
Own	DLFK	6,899	6,747	6,407	7,027	7,326	8,093	9,196	9,534	9,503	9,787	10,951 [†]	11,000	DLFR	329	306	278	325	449	572	763	552	545	341 [†]	355	299
Other	DLFL	4	..	3	6	2	2	..	7	..	3	78 [†]	62	DLFS	-	..	-	-	-	-	..	-	..	1	44	1
TOTAL	DLBV	10,580	10,839	10,800	10,623	11,288	11,975	13,268	13,717	13,646	14,392 [†]	15,699	15,518	DLBW	1,659	1,645	1,706	2,039	2,446	2,169	2,409	2,097	1,886	1,653 [†]	1,769	1,588

Source: Office for National Statistics

- 1 - denotes nil, figures unavailable or too small to display.
2 - denotes disclosive figures.
3 [†] crosses denote earliest data revision.
4 'Other' includes funds from UK Private Non-Profit organisations and Higher Education establishments, and from 2011, international organisations.

SB7 BREAKDOWN OF R&D PERFORMED IN UK BUSINESSES BY REGION:
EXPENDITURE AND EMPLOYMENT, 2001 TO 2012
CURRENT PRICES

[Return to Main Menu](#)

		Expenditure £ million														Employment FTE in thousands											
		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	% of total 2012		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
United Kingdom	DLBX	12,239	12,484	12,505	12,662	13,734	14,144	15,676	15,814	15,532	16,045 [†]	17,468	17,107	100.0	DLEI	154	158	155	150	146	147	158	151	151	154	160 [†]	160
England	DLKI	11,412	11,642	11,748	11,885	12,847	13,312	14,649	14,847	14,360	14,868 [†]	16,179	15,708	91.8	DLKJ	141	145	142	137	133	135	145	139	137	140	144 [†]	144
North East	DLJO	125	124	149	257	289	292	331	318	315	308	259	282	1.6	DLJZ	2	2	3	3	3	3	4	4	4	4	4	3
North West	DLJT	1,582	1,604	1,538	1,739	1,892	1,623	2,021	2,130	1,926	2,074	2,220 [†]	1,784	10.4	DLKE	17	18	17	16	15	16	17	16	14	14	13	13
Yorkshire and the Humber	DLJP	319	337	335	343	344	384	436	433	454	488	551 [†]	603	3.5	DLKA	6	6	6	6	6	6	7	7	7	7	8	8
East Midlands	DLJQ	909	974	862	936	1,006	985	1,062	976	992	1,137	1,145 [†]	1,203	7.0	DLKB	13	14	13	11	11	11	13	12	10	11	12	13
West Midlands	DLJN	760	774	794	758	721	915	995	886	847	886	1,282 [†]	1,461	8.5	DLJY	14	15	14	13	12	13	14	12	12	11	12	14
East of England	DLJR	2,798	2,650	2,915	2,672	3,718	3,650	3,992	4,182	3,812	3,846 [†]	3,665	3,449	20.2	DLKC	31	30	32	28	29	26	28	29	30	32	32 [†]	29
London	DLKL	700	865	669	759	552	882	1,067	1,109	907	877	1,118 [†]	1,477	8.6	DLKM	9	10	8	9	8	10	11	11	10	10	11	13
South East	DLJS	3,212	3,156	3,266	3,125	3,125	3,347	3,515	3,466	3,758	3,798	4,580 [†]	4,086	23.9	DLKD	37	37	37	37	36	37	37	35	36	36	37	37
South West	DLJM	1,006	1,158	1,221	1,296	1,201	1,232	1,229	1,345	1,349	1,454	1,359 [†]	1,364	8.0	DLJX	12	14	13	13	13	13	14	15	15	16	15	15
Wales	DLJU	161	187	200	226	232	216	308	243	243	234	256 [†]	272	1.6	DLKF	3	3	4	3	3	3	3	3	3	3	4 [†]	3
Scotland	DLJV	517	507	441	430	506	460	543	554	631	619 [†]	680	707	4.1	DLKG	7	7	6	6	7	6	7	7	7	7	8	8
Northern Ireland	DLJW	150	149	116	120	148	157	177	171	297	324	352	420	2.5	DLKH	2	3	3	3	3	3	3	2	3	4	4	5

Source: Office for National Statistics

1 [†] crosses denote earliest data revision.

2 FTE - Full Time Equivalents.

2 The sum of percentages may be more or less than 100 due to rounding.

1

**EXPENDITURE ON R&D PERFORMED IN UK BUSINESSES:
BROAD PRODUCT GROUPS, 2001 TO 2012**
CURRENT PRICES

[Return to Main Menu](#)

£ million

		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
TOTAL	DLBX	12,239	12,484	12,505	12,662	13,734	14,144	15,676	15,814	15,532	16,045 [†]	17,468	17,107
Manufacturing: Total	DLDF	9,720	9,692	9,636	10,058	10,560	10,555	11,612	11,672	11,230	11,585 [†]	12,466	12,235
Chemicals	DLDG	3,699	3,768	3,741	3,864	4,011	4,205	4,602	4,985	5,034	5,339 [†]	5,456	4,796
Mechanical engineering	DLDH	810	871	728	838	978	997	1,124	864	..	902 [†]	1,091	1,095
Electrical machinery	DLDI	1,518	1,349	1,286	1,222	1,274	1,273	1,297	1,400	1,275	1,144 [†]	1,200	1,331
Transport equipment	DLDJ	1,023	1,049	994	937	892	913	1,097	1,344	..	1,468	1,800 [†]	2,009
Aerospace	DLDK	1,311	1,352	1,643	1,965	2,169	1,832	2,070	1,732	1,466	1,437	1,438 [†]	1,518
Other manufacturing	DLDL	1,360	1,304	1,245	1,231	1,236	1,336	1,422	1,348	1,251	1,295 [†]	1,480	1,486
Services	DLDM	2,287	2,519	2,629	2,378	2,949	3,404	3,860	3,904	3,952	4,120	4,575 [†]	4,348
Other: Total	LABA	232	273	240	226	225	185	205	238	350	340	426 [†]	524
Agriculture, hunting & forestry; Fishing	LADE	122	147	136	..	..	88	..	88	..	102	133	132
Extractive industries	LADM	39	45	41	36	59	59	82	90	140	152	195 [†]	215
Electricity, gas & water supply; Waste management	LAEB	41	46	36	21	15	21	35	40	75	72	68 [†]	118
Construction	LAEM	30	35	27	..	..	17	..	21	..	14	31 [†]	58

1 .. denotes disclosive figures.

2 [†] crosses denote earliest data revision.

1A

**EXPENDITURE ON R&D PERFORMED IN UK BUSINESSES:
BROAD PRODUCT GROUPS, 2001 TO 2012**
CONSTANT PRICES

[Return to Main Menu](#)

£ million

		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
TOTAL		15,898 [†]	15,848	15,573	15,345	16,345	16,363	17,691	17,360	16,592	16,704	17,777	17,107
Manufacturing: Total		12,626 [†]	12,303	12,000	12,189	12,568	12,211	13,104	12,813	11,996	12,061	12,686	12,235
Chemicals		4,805 [†]	4,783	4,659	4,683	4,774	4,865	5,193	5,472	5,378	5,558	5,553	4,796
Mechanical engineering		1,052 [†]	1,106	907	1,016	1,164	1,153	1,268	948	..	939	1,110	1,095
Electrical machinery		1,972 [†]	1,712	1,601	1,481	1,516	1,473	1,464	1,537	1,362	1,191	1,221	1,331
Transport equipment		1,329 [†]	1,332	1,238	1,136	1,062	1,056	1,238	1,475	..	1,528	1,832	2,009
Aerospace		1,703 [†]	1,716	2,046	2,381	2,581	2,119	2,336	1,901	1,566	1,496	1,463	1,518
Other manufacturing		1,767 [†]	1,655	1,550	1,492	1,471	1,546	1,605	1,480	1,336	1,348	1,506	1,486
Services		2,971 [†]	3,198	3,274	2,882	3,510	3,938	4,356	4,286	4,222	4,289	4,656	4,348
Other: Total		301 [†]	347	299	274	268	214	231	261	374	354	434	524
Agriculture, hunting & forestry; Fishing		158 [†]	187	169	..	..	102	..	97	..	106	135	132
Extractive industries		51 [†]	57	51	44	70	68	93	99	150	158	198	215
Electricity, gas & water supply; Waste management		53 [†]	58	45	25	18	24	39	44	80	75	69	118
Construction		39 [†]	44	34	..	..	20	..	23	..	15	32	58

Source: Office for National Statistics

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
GDP deflator used to convert current prices to constant prices	76.984 [†]	78.775	80.301	82.518	84.025	86.439	88.612	91.096	93.611	96.056	98.262	100

1 .. denotes disclosive figures.

2 [†] crosses denote earliest data revision.
[Return to Main Menu](#)

**EXPENDITURE ON R&D PERFORMED IN UK BUSINESSES:
DETAILED PRODUCT GROUPS, 2001 TO 2012**

[Return to Main Menu](#)

CURRENT PRICES

£ million

		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
TOTAL	DLBX	12,239	12,484	12,505	12,662	13,734	14,144	15,676	15,814	15,532	16,045[†]	17,468	17,107
Agriculture, hunting and forestry; Fishing	DLBY	122	147	136	..	..	88	..	88	111	102	133	132
Extractive Industries	DLBZ	39	45	41	36	59	59	82	90	140	152	195 [†]	215
Food products and beverages; Tobacco products	DLCF	285	269	256	258	276	314	328	303	290	306 [†]	367	357
Textiles, clothing and leather products	DLCQ	22	19	20	21	18	17	19	15	10	11	14 [†]	20
Pulp, paper and paper products; Printing; Wood and straw products	DLCT	38	44	45	40	52	55	53	56	26	28	21	28
Refined petroleum products and coke oven products	DLCE	239	247	258	234	245	279	274	94	95	73	72	76
Chemicals and chemical products	DLCC	620	599	614	625	637	684	668	630	610	666	523 [†]	591
Pharmaceuticals	DLCD	3,079	3,169	3,127	3,239	3,374	3,521	3,935	4,354	4,424	4,673 [†]	4,933	4,206
Rubber and plastic products	DLCR	49	60	65	63	55	90	79	78	62	80	97	112
Other non-metallic mineral products	DLCS	45	51	56	62	44	51	48	53	57	56	60	45
Casting of iron and steel	DLCJ	28	29	29	30	34	38	..	47	43	28	44	45
Non-ferrous metals	DLCK	26	16	4	4	8	6	..	72	..	86	77	52
Fabricated metal products except machinery and equipment	DLCL	68	90	65	77	74	68	91	73	93	93	119	97
Machinery and equipment	DLCO	742	780	662	761	905	929	1,033	790	873	809 [†]	973	998
Computers and peripheral equipment	DLCN	95	87	55	53	92	67	83	123	151	157	180	187
Electrical equipment	DLCA	354	372	360	406	394	458	547	577	577	513	509	466
Consumer electronics and communication equipment	DLCB	1,069	890	871	763	788	748	667	700	547	474 [†]	511	678
Precision instruments and optical products; photographic equipment	DLCM	587	532	476	486	475	462	544	591	498	490	583 [†]	612
Motor vehicles and parts	DLCG	898	916	894	789	744	754	933	1,156	1,039	1,237	1,525	1,732
Other transport equipment	DLCI	..	..	..	23	21	25	28	30	..	46	50 [†]	48
Shipbuilding	DLCH	..	..	..	125	127	134	136	157	173	185	226 [†]	229
Aerospace	DLCF	1,311	1,352	1,643	1,965	2,169	1,832	2,070	1,732	1,466	1,437	1,438 [†]	1,518
Other manufactured goods	DLCU	40	35	35	33	26	24	27	36	98	136	146 [†]	139
Sewerage, waste management, remediation activities	DLCV	..	3	2	2	1	1	3	3	9	11	10	12
Electricity, gas and water supply	DLCW	41	46	36	21	15	21	35	40	66	60	58 [†]	106
Construction	DLCX	30	35	27	..	..	17	..	21	..	14	31 [†]	58
Wholesale and retail trade	DLDE	55	74	53	76	60	70	37	74	76	177	237 [†]	184
Transport and storage, incl. postal and courier activities	DLCY	12	..	..	12	8	16	21	12	24	17	18	..
Telecommunications	DLCZ	751	726	637	639	1,164	1,330	1,535	1,404	1,330	1,129	1,051	889
Miscellaneous business activities; Technical testing and analysis	DLDC	303	363	308	349	438	399	510	494	555	583	568 [†]	655
Computer programming and information service activities	DLDB	709	866	1,207	1,060	1,069	1,415	1,498	1,465	1,385	1,526	1,847 [†]	1,930
Research and development services	DLDA	441	446	404	211	179	122	156	384	507	618	787 [†]	612
Public administration	DLDD	17	34	11	31	32	52	103	71	73	70	67	..

Source: Office for National Statistics

1 .. denotes disclosive figures.

2 [†] crosses denote earliest data revision.

[Return to Main Menu](#)

3

CURRENT AND CAPITAL EXPENDITURE ON R&D PERFORMED IN UK BUSINESSES:

2001 TO 2012

CURRENT PRICES

[Return to Main Menu](#)

£ million

		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
TOTAL	DLBX	12,239	12,484	12,505	12,662	13,734	14,144	15,676	15,814	15,532	16,045 [†]	17,468	17,107
Capital total	DLEA	1,263	1,115	1,172	1,184	1,168	956	1,070	865	928	927	1,051 [†]	1,135
of which:													
Land and buildings	DLHO	436	299	338	251	204	154	201	185	221	143	126 [†]	106
Plant and machinery	DLHQ	827	816	834	933	964	802	869	680	706	784	924 [†]	1,029
Current total	DLEC	10,976	11,369	11,334	11,477	12,566	13,188	14,606	14,950	14,604	15,118 [†]	16,417	15,972
of which:													
Salaries and wages	DLEE	5,092	5,567	5,602	5,977	6,354	6,782	7,697	7,539	7,723	7,937 [†]	8,120	8,331
Other	DLEG	5,884	5,802	5,732	5,501	6,212	6,407	6,908	7,410	6,881	7,181 [†]	8,297	7,641

Source: Office for National Statistics

1 [†] crosses denote earliest data revision.

4

CURRENT AND CAPITAL EXPENDITURE ON R&D PERFORMED IN UK BUSINESSES:
DETAILED PRODUCT GROUPS, 2012[Return to Main Menu](#)

£ million

	Total	Capital Total	Current Total	Salaries and wages	Other current
TOTAL	17,107	1,135	15,972	8,331	7,641
Agriculture, hunting and forestry; Fishing	132	8	124	41	83
Extractive Industries	215	7	207	114	93
Food products and beverages; Tobacco products	357	24	333	177	156
Textiles, clothing and leather products	20	3	17	12	5
Pulp, paper and paper products; Printing; Wood and straw products	28	2	26	16	10
Refined petroleum products and coke oven products	76	..	..	..	31
Chemicals and chemical products	591	57	534	255	279
Pharmaceuticals	4,206	137	4,069	1,652	2,418
Rubber and plastic products	112	12	100	51	48
Other non-metallic mineral products	45	3	43	26	17
Casting of iron and steel	45	1	44	14	30
Non-ferrous metals	52	3	49	29	20
Fabricated metal products except machinery and equipment	97	3	93	50	43
Machinery and equipment	998	43	955	563	393
Computers and peripheral equipment	187	8	179	73	106
Electrical equipment	466	24	441	217	225
Consumer electronics and communication equipment	678	27	652	415	236
Precision instruments and optical products; photographic equipment	612	24	589	271	318
Motor vehicles and parts	1,732	79	1,653	733	920
Other transport equipment	48	2	46	26	19
Shipbuilding	229	-	229	81	148
Aerospace	1,518	172	1,345	743	602
Other manufactured goods	139	1	137	85	53
Sewerage, waste management, remediation activities	12	-	12	10	2
Electricity, gas and water supply	106	8	99	31	68
Construction	58	2	57	47	10
Wholesale and retail trade	184	7	176	115	61
Transport and storage, incl. postal and courier activities	..	..	..	..	..
Telecommunications	889	14	875	557	318
Miscellaneous business activities; Technical testing and analysis	655	97	559	397	161
Computer programming and information service activities	1,930	321	1,609	1,089	519
Research and development services	612	42	570	349	221
Public administration	..	1	..	42	..

Source: Office for National Statistics

1 - denotes nil, figures unavailable or too small to display.

2 .. denotes disclosive figures.

[Return to Main Menu](#)

**CURRENT EXPENDITURE ON R&D PERFORMED IN UK BUSINESSES:
DETAILED PRODUCT GROUPS AND TYPE OF RESEARCH, 2012**
[Return to Main Menu](#)

£ million

	Total current	Basic	Applied	Experimental Development
TOTAL	15,972	819	7,142	8,011
Agriculture, hunting and forestry; Fishing	124	..	90	..
Extractive Industries	207	2	168	37
Food products and beverages; Tobacco products	333	59	126	148
Textiles, clothing and leather products	17	1	6	10
Pulp, paper and paper products; Printing; Wood and straw products	26	-	6	20
Refined petroleum products and coke oven products	..	..	..	..
Chemicals and chemical products	534	7	299	228
Pharmaceuticals	4,069	241	1,945	1,883
Rubber and plastic products	100	14	65	21
Other non-metallic mineral products	43	3	12	27
Casting of iron and steel	44	-	-	44
Non-ferrous metals	49	-	20	29
Fabricated metal products except machinery and equipment	93	2	84	8
Machinery and equipment	955	25	417	513
Computers and peripheral equipment	179	1	44	133
Electrical equipment	441	11	134	297
Consumer electronics and communication equipment	652	27	394	231
Precision instruments and optical products; photographic equipment	589	25	288	276
Motor vehicles and parts	1,653	18	238	1,397
Other transport equipment	46	-	24	22
Shipbuilding	229	..	52	..
Aerospace	1,345	134	799	413
Other manufactured goods	137	5	46	86
Sewerage, waste management, remediation activities	12	1	1	9
Electricity, gas and water supply	99	-	33	65
Construction	57	1	4	53
Wholesale and retail trade	176	6	130	41
Transport and storage, incl. postal and courier activities	..	-	..	..
Telecommunications	875	60	201	614
Miscellaneous business activities; Technical testing and analysis	559	9	239	311
Computer programming and information service activities	1,609	91	760	758
Research and development services	570	20	505	45
Public administration	..	..	3	55

Source: Office for National Statistics

1 - denotes nil, figures unavailable or too small to display.

2 .. denotes disclosive figures.

[Return to Main Menu](#)

	£ million			
	Total	United Kingdom	Overseas Government Funded	Overseas Other funds
TOTAL	3,702	1,459	11	2,232
Agriculture, hunting and forestry; Fishing	..	..	-	..
Extractive Industries	3	3	-	-
Food products and beverages; Tobacco products	40	21	-	19
Textiles, clothing and leather products	3	2	-	1
Pulp, paper and paper products; Printing; Wood and straw products	2	2	-	-
Refined petroleum products and coke oven products	42	..	..	32
Chemicals and chemical products	87	54	-	33
Pharmaceuticals	2,077	697	1	1,379
Rubber and plastic products	9	8	-	2
Other non-metallic mineral products	1	1	-	-
Casting of iron and steel	..	..	-	..
Non-ferrous metals	6	1	-	5
Fabricated metal products except machinery and equipment	7	6	-	1
Machinery and equipment	52	19	-	33
Computers and peripheral equipment	5	1	-	4
Electrical equipment	38	18	1	19
Consumer electronics and communication equipment	92	10	-	81
Precision instruments and optical products; photographic equipment	45	28	-	17
Motor vehicles and parts	506	..	..	309
Other transport equipment	1	1	-	-
Shipbuilding	7	6	-	1
Aerospace	211	169	4	37
Other manufactured goods	3	2	-	1
Sewerage, waste management, remediation activities	4	-	..	..
Electricity, gas and water supply	37	36	-	1
Construction	1	1	-	-
Wholesale and retail trade	32	32	-	-
Transport and storage, incl. postal and courier activities	..	..	-	-
Telecommunications	11	8	-	4
Miscellaneous business activities; Technical testing and analysis	63	53	-	10
Computer programming and information service activities	102	17	1	84
Research and development services	164	32	-	131
Public administration	5	3	-	3

Source: Office for National Statistics

1 - denotes nil, figures unavailable or too small to display.

2 .. denotes disclosive figures.

3 Extramural R&D is R&D conducted outside the business, in the UK and overseas, funded by the business. The survey covers only those businesses which perform intramural R&D. Businesses whose R&D expenditure is only extramural are excluded from the survey and therefore from these figures. Some businesses extramural expenditure may also be included as part of the intramural expenditure of other companies.

[Return to Main Menu](#)

SOURCES OF FUNDS FOR R&D PERFORMED IN UK BUSINESSES:

2001 TO 2012

CURRENT PRICES

[Return to Main Menu](#)

		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
£ Million													
TOTAL	DLBX	12,239	12,484	12,505	12,662	13,734	14,144	15,676	15,814	15,532	16,045 [†]	17,468	17,107
UK Government	DLDO	946	881	1,165	1,290	1,101	1,060	1,072	1,135	1,324	1,407 [†]	1,506	1,348
Overseas total of which:	DLHK	3,311	3,699	3,548	2,958	3,584	3,262	3,636	3,721	3,458	3,789 [†]	3,939	4,030
European Commission grants	DLDQ	80	134	90	42	73	41	27	47	47	62 [†]	56	42
Other Overseas	DLDS	3,231	3,565	3,459	2,917	3,512	3,221	3,609	3,674	3,411	3,727 [†]	3,884	3,988
Other UK Business	DLDU	749	848	1,105	1,056	1,272	1,155	994	865	698	718 [†]	594	367
Own funds	DLDW	7,228	7,053	6,685	7,351	7,775	8,665	9,959	10,086	10,047	10,129 [†]	11,306	11,299
Other	DLDY	4	4	3	6	2	2	15	7	4	3	122 [†]	62
		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Per cent													
TOTAL		100	100	100	100	100	100	100	100	100	100	100	100
UK Government		8	7	9	10	8	7	7	7	9	9	9	8
Overseas total of which:		27	30	28	23	26	23	23	24	22	24	23 [†]	24
European Commission grants		1	1	1	-	1	-	-	-	-	-	-	-
Other Overseas		26	29	28	23	26	23	23	23	22	23	22 [†]	23
Other UK Business		6	7	9	8	9	8	6	5	4	4 [†]	3	2
Own funds		59	56	53	58	57	61	64	64	65	63	65	66
Other		-	-	-	-	-	-	-	-	-	-	1	-

Source: Office for National Statistics

1 - denotes nil, figures unavailable or too small to display.

2 [†] crosses denote earliest data revision.

3 The sum of percentages may be more or less than 100 due to rounding.

4 'Other' includes funds from UK Private Non-Profit organisations and Higher Education establishments, and from 2011, international organisations.

[Return to Main Menu](#)

£ million

	Total Expenditure	UK Government	Overseas	Own Funds	Other
TOTAL	17,107	1,348	4,030	11,299	429
Agriculture, hunting and forestry; Fishing	132	..	..	86	..
Extractive Industries	215	..	86	128	..
Food products and beverages; Tobacco products	357	1	92	262	3
Textiles, clothing and leather products	20	1	-	19	-
Pulp, paper and paper products; Printing; Wood and straw products	28	-	-	27	-
Refined petroleum products and coke oven products	76	-	..	..	-
Chemicals and chemical products	591	7	32	551	-
Pharmaceuticals	4,206	15	1,436	2,679	76
Rubber and plastic products	112	1	-	110	-
Other non-metallic mineral products	45	1	-	44	-
Casting of iron and steel	45	-	1	43	1
Non-ferrous metals	52	6	-	14	32
Fabricated metal products except machinery and equipment	97	1	52	44	-
Machinery and equipment	998	467	115	395	22
Computers and peripheral equipment	187	2	10	175	-
Electrical equipment	466	162	53	233	17
Consumer electronics and communication equipment	678	27	259	386	7
Precision instruments and optical products; photographic equipment	612	62	49	500	1
Motor vehicles and parts	1,732	23	314	1,393	2
Other transport equipment	48	5	-	35	8
Shipbuilding	229	203	-	26	-
Aerospace	1,518	127	204	1,068	117
Other manufactured goods	139	..	14	123	..
Sewerage, waste management, remediation activities	12	1	5	2	4
Electricity, gas and water supply	106	1	47	51	7
Construction	58	7	1	37	13
Wholesale and retail trade	184	19	89	76	-
Transport and storage, incl. postal and courier activities	..	-	..	..	-
Telecommunications	889	..	221	660	..
Miscellaneous business activities; Technical testing and analysis	655	94	39	498	24
Computer programming and information service activities	1,930	29	474	1,388	37
Research and development services	612	67	383	113	49
Public administration	..	..	..	53	-

Source: Office for National Statistics

1 - denotes nil, figures unavailable or too small to display.

2 .. denotes disclosive figures.

3 'Other' includes funds from other UK sources and international organisations.

[Return to Main Menu](#)

		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Full time equivalent in thousands													
TOTAL	DLEI	154	158	155	150	146	147	158	151	151	154	160 [†]	160
Scientists and engineers	DLEJ	91	96	99	94	94	92	90	86	85	87	90 [†]	90
Technicians, laboratory assistants and draughtsmen	DLEK	30	31	28	27	25	27	35	37	40	41	42 [†]	43
Administrative, clerical industrial and other staff	DLEL	32	31	29	29	26	28	33	28	26	27	27	27
		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Per cent													
TOTAL		100	100	100	100	100	100	100	100	100	100	100	100
Scientists and engineers		59	61	64	63	64	63	57	57	56	56	56	56
Technicians, laboratory assistants and draughtsmen		19	20	18	18	17	18	22	25	26	27	26 [†]	27
Administrative, clerical industrial and other staff		21	20	19	19	18	19	21	19	17	18	17	17

Source: Office for National Statistics

1 [†] crosses denote earliest data revision.

2 The sum of percentages may be more or less than 100 due to rounding.

	Full time equivalent in thousands			
	R&D Employment	Scientists and Engineers	Technicians laboratory assistants and draughtsmen	Administrative clerical and others
TOTAL	160	90	43	27
Agriculture, hunting and forestry; Fishing	1	-	-	-
Extractive Industries	2	1	1	-
Food products and beverages; Tobacco products	4	2	1	1
Textiles, clothing and leather products	1	-	-	-
Pulp, paper and paper products; Printing; Wood and straw products	-	-	-	-
Refined petroleum products and coke oven products	-	-	-	-
Chemicals and chemical products	7	3	2	1
Pharmaceuticals	23	10	5	8
Rubber and plastic products	2	1	1	-
Other non-metallic mineral products	1	-	-	-
Casting of iron and steel	-	-	-	-
Non-ferrous metals	-	-	-	-
Fabricated metal products except machinery and equipment	2	1	-	-
Machinery and equipment	12	6	4	3
Computers and peripheral equipment	2	1	-	-
Electrical equipment	5	3	1	1
Consumer electronics and communication equipment	7	5	1	-
Precision instruments and optical products; photographic equipment	6	4	2	1
Motor vehicles and parts	14	7	4	3
Other transport equipment	1	-	-	-
Shipbuilding	2	..	..	-
Aerospace	13	8	3	1
Other manufactured goods	2	1	1	-
Sewerage, waste management, remediation activities	-	-	-	-
Electricity, gas and water supply	-	-	-	-
Construction	1	1	-	-
Wholesale and retail trade	3	2	-	1
Transport and storage, incl. postal and courier activities	-	..	..	-
Telecommunications	8	6	1	1
Miscellaneous business activities; Technical testing and analysis	10	8	2	1
Computer programming and information service activities	24	13	9	2
Research and development services	8	5	1	2
Public administration	1	1	-	-

Source: Office for National Statistics

1 - denotes nil, figures unavailable or too small to display.

2 .. denotes disclosive figures.

[Return to Main Menu](#)

11 EMPLOYMENT ON CIVIL AND DEFENCE R&D PERFORMED IN UK BUSINESSES: 2001 TO 2012

[Return to Main Menu](#)

															Full time equivalent in thousands														
			Civil												Defence														
			2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012				2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Scientist and engineers	DLHD		76	79	83	78	77	76	76	74	74	77	81 [†]	81	DLHH		16	17	16	17	17	16	14	12	11	10	9	9	
Technicians laboratory assistants & draughtmen	DLHE		26	26	24	24	23	25	31	33	36	37	38	38	DLHI		5	5	3	2	2	2	3	4	4	4	4	5	
Admin. clerical industrial & other staff	DLHF		27	26	25	25	23	24	29	25	24	25	25	25	DLHJ		6	5	4	4	4	4	4	3	2	2	2	2	
TOTAL	DLHC		128	131	132	126	123	125	136	132	134	138	145 [†]	144	DLHG		26	27	24	23	23	22	22	19	18	16	15 [†]	16	

[†] crosses denote earliest data revision.

Source: Office for National Statistics

[Return to Main Menu](#)

	£ million		
	Total	Civil	Defence
TOTAL	17,107	15,518	1,588
Agriculture, hunting and forestry; Fishing	132	..	..
Extractive Industries	215	..	..
Food products and beverages; Tobacco products	357	357	-
Textiles, clothing and leather products	20	20	-
Pulp, paper and paper products; Printing; Wood and straw products	28	28	-
Refined petroleum products and coke oven products	76	76	-
Chemicals and chemical products	591	..	..
Pharmaceuticals	4,206	..	..
Rubber and plastic products	112	111	1
Other non-metallic mineral products	45	45	-
Casting of iron and steel	45	45	-
Non-ferrous metals	52	52	-
Fabricated metal products except machinery and equipment	97	95	1
Machinery and equipment	998	472	526
Computers and peripheral equipment	187	184	2
Electrical equipment	466	258	207
Consumer electronics and communication equipment	678	618	61
Precision instruments and optical products; photographic equipment	612	507	105
Motor vehicles and parts	1,732	..	..
Other transport equipment	48	..	..
Shipbuilding	229	..	..
Aerospace	1,518	1,167	350
Other manufactured goods	139	..	..
Sewerage, waste management, remediation activities	12	..	..
Electricity, gas and water supply	106	..	..
Construction	58	..	..
Wholesale and retail trade	184	..	..
Transport and storage, incl. postal and courier activities	..	..	..
Telecommunications	889	..	..
Miscellaneous business activities; Technical testing and analysis	655	597	58
Computer programming and information service activities	1,930	1,919	11
Research and development services	612	596	16
Public administration	..	..	-

Source: Office for National Statistics

1 - denotes nil, figures unavailable or too small to display.

2 .. denotes disclosive figures.

[Return to Main Menu](#)

CURRENT AND CAPITAL EXPENDITURE ON CIVIL AND DEFENCE R&D IN UK BUSINESSES:
2001 TO 2012
CURRENT PRICES

[Return to Main Menu](#)

		Civil												Defence												£ million
		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
Capital total	DLGJ	1,198	1,077	1,112	1,127	932	731	834	824	891	907 [†]	1,024	1,103	DLGT	65	38	60	57	236	225	236	41	36	20 [†]	27	32
of which:																										
Land & buildings	DLIH	409	285	305	237	184	..	..	185	220	142	124	104	DLIL	28	13	33	13	20	..	..	-	1	2	2	2
Plant & machinery	DLIJ	790	791	807	890	747	..	..	639	671	766	900	999	DLIN	37	25	27	43	217	..	..	41	35	18	25	30
Current total	DLGP	9,382	9,762	9,688	9,496	10,356	11,244	12,434	12,894	12,755	13,485 [†]	14,675	14,415	DLGZ	1,594	1,607	1,646	1,982	2,210	1,944	2,172	2,056	1,850	1,633 [†]	1,742	1,556
of which:																										
Salaries & Wages	DLGL	4,408	4,806	4,906	5,080	5,451	5,767	6,508	6,488	6,783	7,095	7,239	7,479	DLGV	683	760	696	897	903	1,015	1,190	1,052	941	842	881	851
Other	DLGN	4,974	4,956	4,782	4,416	4,905	5,477	5,926	6,406	5,972	6,390	7,436	6,936	DLGX	910	847	950	1,085	1,307	929	982	1,004	909	791	861	705
TOTAL	DLBV	10,580	10,839	10,800	10,623	11,288	11,975	13,268	13,717	13,646	14,392 [†]	15,699	15,518	DLBW	1,659	1,645	1,706	2,039	2,446	2,169	2,409	2,097	1,886	1,653 [†]	1,769	1,588

Source: Office for National Statistics

1 - denotes nil, figures unavailable or too small to display.

2 .. denotes disclosive figures.

3 [†] crosses denote earliest data revision.
[Return to Main Menu](#)

CURRENT PRICES																										£ million
		Civil												Defence												
		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
UK Government	DLFG	154	188	386	162	156	150	183	258	350	410 [†]	394	294	DLFN	791	693	778	1,128	945	910	889	877	974	996 [†]	1,112	1,055
Overseas total of which:	DLHS	2,870	3,148	2,980	2,440	2,656	2,686	2,985	3,189	3,206	3,584 [†]	3,791	3,867	DLIF	441	551	568	518	928	576	652	532	251	205	148 [†]	163
European Commission grants	DLFH	80	134	90	42	73	41	27	47	45	60 [†]	53	40	DLFO	-	-	-	-	-	-	1	-	2	2	3	2
Other Overseas	DLFI	2,790	3,014	2,890	2,398	2,583	2,645	2,958	3,143	3,161	3,524 [†]	3,738	3,828	DLFP	441	551	568	518	928	576	651	531	250	203	146 [†]	160
Other UK Business	DLFJ	653	..	1,024	988	1,147	1,044	..	729	..	607 [†]	485	295	DLFQ	97	..	81	68	125	111	..	136	..	111	109 [†]	72
Own funds	DLFK	6,899	6,747	6,407	7,027	7,326	8,093	9,196	9,534	9,503	9,787	10,951 [†]	11,000	DLFR	329	306	278	325	449	572	763	552	545	341 [†]	355	299
Other	DLFL	4	..	3	6	2	2	..	7	..	3	78 [†]	62	DLFS	-	..	-	-	-	-	..	-	..	1	44	1
TOTAL	DLBV	10,580	10,839	10,800	10,623	11,288	11,975	13,268	13,717	13,646	14,392 [†]	15,699	15,518	DLBW	1,659	1,645	1,706	2,039	2,446	2,169	2,409	2,097	1,886	1,653 [†]	1,769	1,588

Source: Office for National Statistics

1 - denotes nil, figures unavailable or too small to display.

2 .. denotes disclosive figures.

3 [†] crosses denote earliest data revision.

4 'Other' includes funds from UK Private Non-Profit organisations and Higher Education establishments, and from 2011, international organisations.

[Return to Main Menu](#)

£ million

	TOTAL UK	North East	North West	Yorkshire and the Humber	East Midlands	West Midlands	East of England	London	South East	South West	Wales	Scotland	Northern Ireland
TOTAL	17,107	282	1,784	603	1,203	1,461	3,449	1,477	4,086	1,364	272	707	420
Manufacturing: Total	12,235	199	1,584	473	1,008	1,241	2,355	531	2,878	976	209	462	320
Chemicals	4,796	87	958	212	99	7	1,183	447	1,551	52	43	128	29
Mechanical engineering	1,095	36	56	40	41	125	340	15	220	145	26	25	25
Electrical machinery	1,331	..	43	52	..	67	248	36	419	197	44	124	52
Transport equipment	2,009	13	195	..	293	851	386	..	126	49	..	7	..
Aerospace	1,518	..	103	..	..	91	22	..	224	413	..	3	..
Other manufacturing	1,486	45	229	112	90	99	176	25	338	119	38	175	41
Services	4,348	70	190	119	164	209	1,056	896	966	344	57	180	96
Other: Total	524	13	10	10	31	12	38	51	242	44	5	65	4
Agriculture, hunting & forestry; Fishing	132	..	..	..	..	..	..	..	..	..	1	11	..
Extractive industries	215	..	..	..	..	..	..	..	..	..	-	43	..
Electricity, gas & water supply; Waste management	118	..	6	1	..	6	..	..	10	10	3	8	1
Construction	58	1	2	7	2	4	5	11	15	3	1	4	2

Source: Office for National Statistics

1 - denotes nil, figures unavailable or too small to display.

2 .. denotes disclosive figures.

16

EMPLOYMENT ON R&D PERFORMED IN UK BUSINESSES BY REGION: BROAD PRODUCT GROUPS, 2012

[Return to Main Menu](#)

Full time equivalent in thousands

	TOTAL UK	North East	North West	Yorkshire and the Humber	East Midlands	West Midlands	East of England	London	South East	South West	Wales	Scotland	Northern Ireland
TOTAL	160	3	13	8	13	14	29	13	37	15	3	8	5
Manufacturing: Total	101	2	10	5	10	10	18	4	21	10	2	5	3
Chemicals	29	..	4	2	1	-	7	..	8	1	-	1	-
Mechanical engineering	14	1	1	1	1	2	3	-	3	2	-	-	-
Electrical machinery	14	-	1	1	1	1	2	-	4	3	-	1	-
Transport equipment	16	-	1	1	2	5	4	-	1	-	-	-	-
Aerospace	13	..	1	-	..	1	-	..	2	3	-	-	..
Other manufacturing	16	-	2	1	..	1	2	-	3	2	-	1	..
Services	54	1	3	2	2	3	11	8	13	4	1	3	2
Other: Total	4	-	-	-	-	-	-	-	2	-	-	1	-
Agriculture, hunting & forestry; Fishing	1	..	-	-	..	..	..	-	..	-	-	-	-
Extractive industries	2	..	-	-	-	..	..	-	..	-	-	-	-
Electricity, gas & water supply; Waste management	1	..	-	-	..	-	-	-	-	-	-	-	-
Construction	1	-	-	-	-	-	-	-	-	-	-	-	-

Source: Office for National Statistics

1 - denotes nil, figures unavailable or too small to display.

2 .. denotes disclosive figures.

[Return to Main Menu](#)

		Expenditure (£ million)												% of total		Employment (FTE in thousands)											
		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012			2012	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
United Kingdom	DLBX	12,239	12,484	12,505	12,662	13,734	14,144	15,676	15,814	15,532	16,045 [†]	17,468	17,107	100	DLEI	154	158	155	150	146	147	158	151	151	154	160 [†]	160
England	DLKI	11,412	11,642	11,748	11,885	12,847	13,312	14,649	14,847	14,360	14,868 [†]	16,179	15,708	91.8	DLKJ	141	145	142	137	133	135	145	139	137	140	144 [†]	144
North East	DLJO	125	124	149	257	289	292	331	318	315	308	259	282	1.6	DLJZ	2	2	3	3	3	3	4	4	4	4	4	3
North West	DLJT	1,582	1,604	1,538	1,739	1,892	1,623	2,021	2,130	1,926	2,074	2,220 [†]	1,784	10.4	DLKE	17	18	17	16	15	16	17	16	14	14	13	13
Yorkshire and the Humber	DLJP	319	337	335	343	344	384	436	433	454	488	551 [†]	603	3.5	DLKA	6	6	6	6	6	6	7	7	7	8	8	
East Midlands	DLJQ	909	974	862	936	1,006	985	1,062	976	992	1,137	1,145 [†]	1,203	7.0	DLKB	13	14	13	11	11	13	12	10	11	11	12	13
West Midlands	DLJN	760	774	794	758	721	915	995	886	847	886	1,282 [†]	1,461	8.5	DLJY	14	15	14	13	12	13	14	12	12	11	12	14
East of England	DLJR	2,798	2,650	2,915	2,672	3,718	3,650	3,992	4,182	3,812	3,846 [†]	3,665	3,449	20.2	DLKC	31	30	32	28	29	26	28	29	30	32	32 [†]	29
London	DLKL	700	865	669	759	552	882	1,067	1,109	907	877	1,118 [†]	1,477	8.6	DLKM	9	10	8	9	8	10	11	10	10	11	10	13
South East	DLJS	3,212	3,156	3,266	3,125	3,125	3,347	3,515	3,466	3,758	3,798	4,580 [†]	4,086	23.9	DLKD	37	37	37	37	36	37	37	35	36	36	37	37
South West	DLJM	1,006	1,158	1,221	1,296	1,201	1,232	1,229	1,345	1,349	1,454	1,359 [†]	1,364	8.0	DLJX	12	14	13	13	13	13	14	15	15	16	15	15
Wales	DLJU	161	187	200	226	232	216	308	243	243	234	256 [†]	272	1.6	DLKF	3	3	4	3	3	3	3	3	3	3	4 [†]	3
Scotland	DLJV	517	507	441	430	506	460	543	554	631	619 [†]	680	707	4.1	DLKG	7	7	6	6	7	6	7	7	7	7	8	8
Northern Ireland	DLJW	150	149	116	120	148	157	177	171	297	324	352	420	2.5	DLKH	2	3	3	3	3	3	3	2	3	4	4	5

Source: Office for National Statistics

1 ¹ crosses denote earliest data revision.

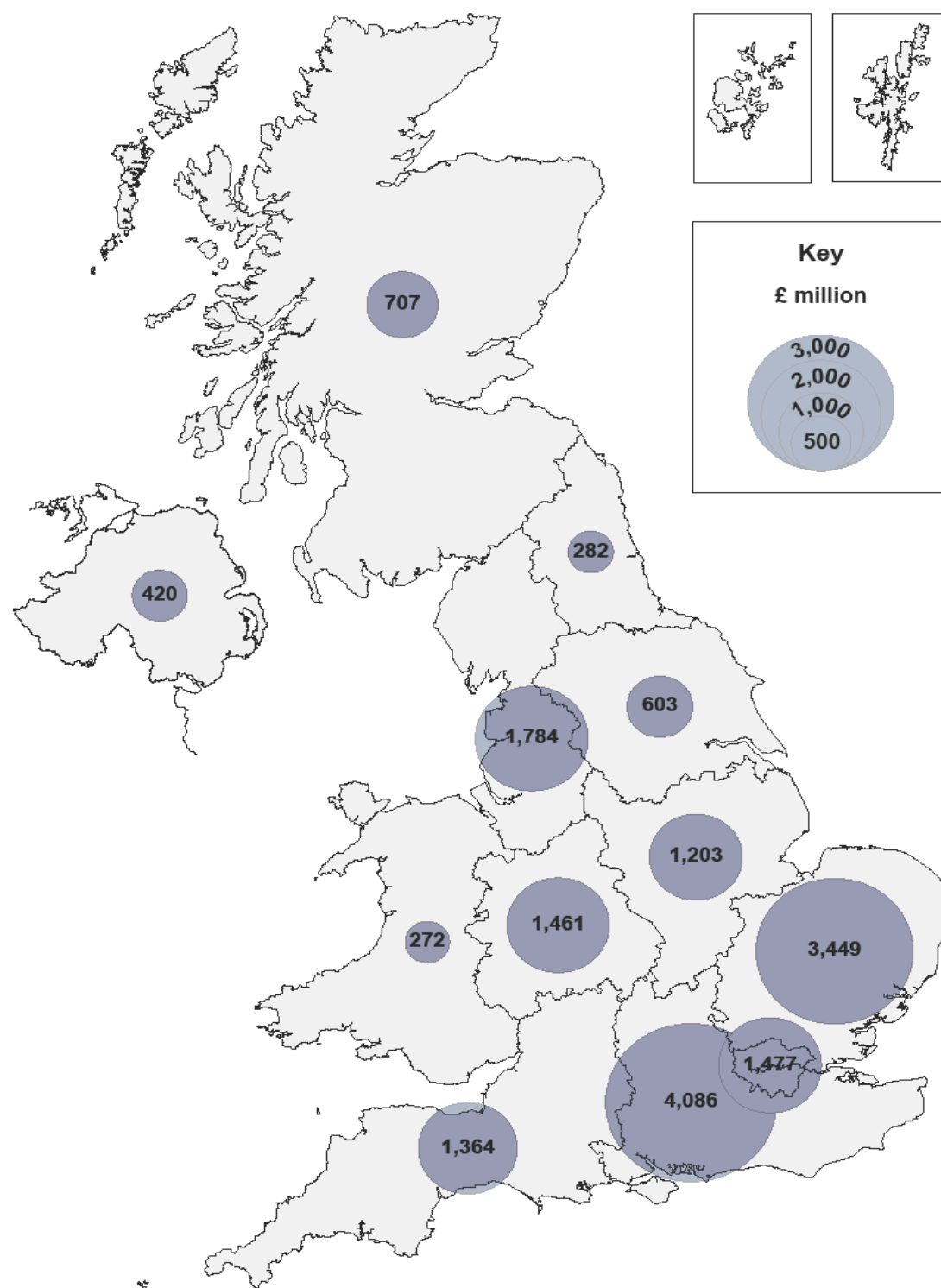
2 FTE - Full Time Equivalents.

3 The sum of percentages may be more or less than 100 due to rounding.

[Return to Main Menu](#)

Map 1

Expenditure on R & D performed in UK businesses by Region, 2012



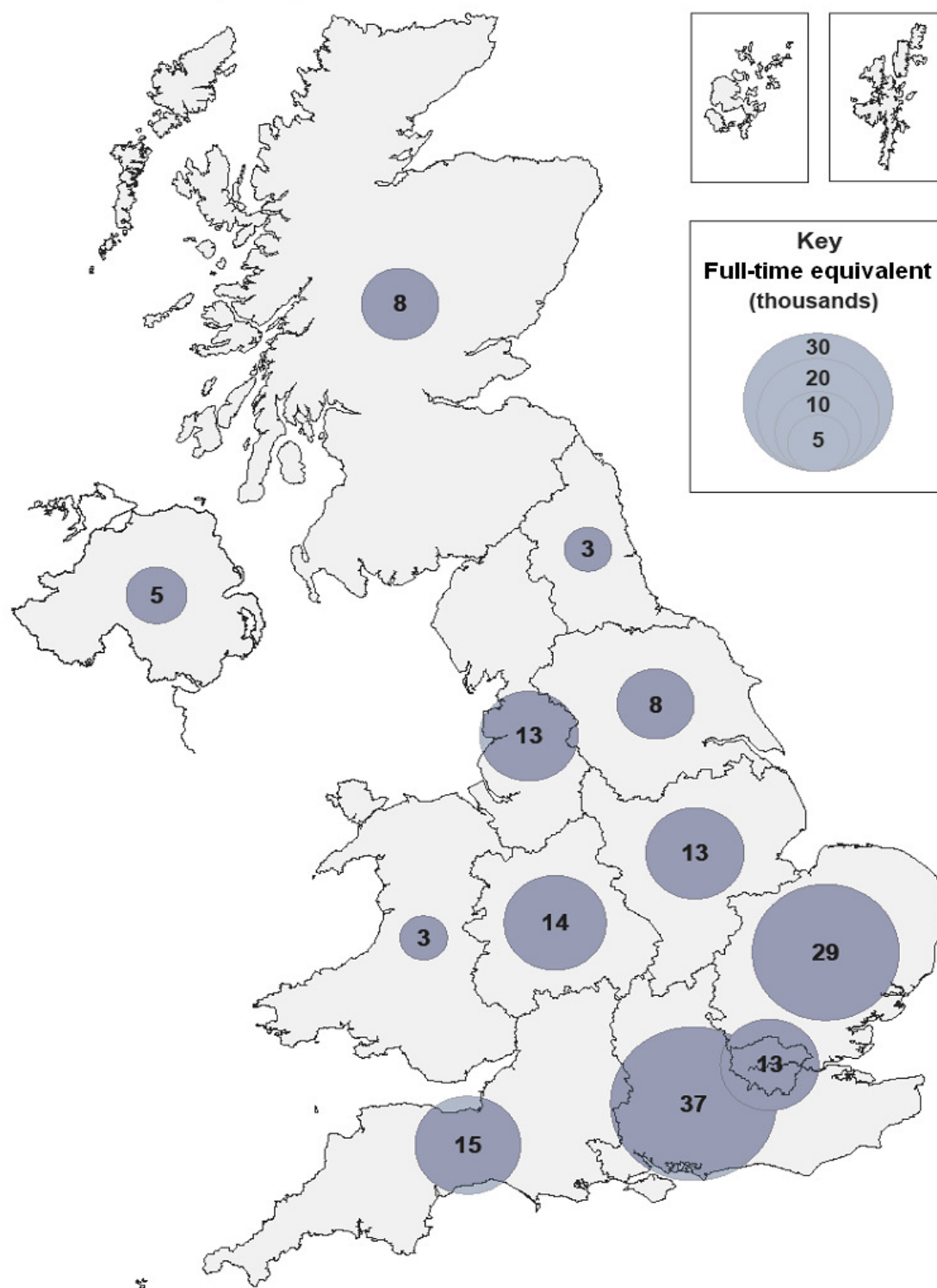
Source: Office for National Statistics

Contains National Statistics data © Crown copyright and database right 2013

Contains Ordnance Survey data © Crown copyright and database right 2013

Map 2

Employment on R & D performed in UK businesses by Region, 2012



Source: Office for National Statistics

Contains National Statistics data © Crown copyright and database right 2013

Contains Ordnance Survey data © Crown copyright and database right 2013

	R&D Employment (Full time equivalents in thousands)	Total Expenditure (£ million)	Funded by UK Government (£ million)
TOTAL OF ALL ENTERPRISES	160	17,107	1,348
Enterprise groups with the largest expenditure on R&D			
Top 5	21	3,642	199
Top 10	32	5,045	774
Top 15	39	5,970	809
Top 20	45	6,698	844
Top 50	61	9,223	987
Top 100	75	11,014	1,071

1 An Enterprise Group consists of all the enterprises under the control of the same owner.

Source: Office for National Statistics

19 EXPENDITURE ON R&D PERFORMED IN UK BUSINESSES BY TOTAL COMPANY EMPLOYMENT SIZE-BANDS: BROAD PRODUCT GROUPS, 2012

[Return to Main Menu](#)

		£ million						
	TOTAL ALL EMPLOYEES	0 to 99 employees	100 to 399 employees	400 to 999 employees	1,000 to 4,999 employees	5,000 to 9,999 employees	10,000 to 19,999 employees	20,000 employees and over
TOTAL	17,107	2,691	2,915	3,204	5,321	1,633	777	565
Manufacturing: Total	12,235	1,456	2,057	2,470	4,028	1,467	..	..
Chemicals	4,796	847	769	975	2,139	..	-	..
Mechanical engineering	1,095	128	177	192	545	..	-	..
Electrical machinery	1,331	136	452	499	191	..	-	..
Transport equipment	2,009	59	167	250	438	..	..	-
Aerospace	1,518	6	138	149	274	392	..	..
Other manufacturing	1,486	281	354	403	442	..	-	..
Services	4,348	1,215	786	575	1,075	144	..	..
Other: Total	524	20	73	159	218	22	..	..
Agriculture, hunting & forestry; Fishing	132	3	..	..	-	-	-	..
Extractive industries	215	2	30	28	154	-	-	-
Electricity, gas & water supply; Waste management	118	1	29	..	44	13	..	-
Construction	58	13	..	13	20	10	-	..

Source: Office for National Statistics

1 - denotes nil, figures unavailable or too small to display.

2 .. denotes disclosive figures.

[Return to Main Menu](#)

	TOTAL ALL EMPLOYEES	Full time equivalent in thousands						
		0 to 99 employees	100 to 399 employees	400 to 999 employees	1,000 to 4,999 employees	5,000 to 9,999 employees	10,000 to 19,999 employees	20,000 employees and over
TOTAL	160	34	32	28	40	12	..	..
Manufacturing: Total	101	13	21	20	29	9	..	..
Chemicals	29	3	5	7	13	..	-	..
Mechanical engineering	14	3	3	2	5	-	-	-
Electrical machinery	14	2	5	4	1	..	..	-
Transport equipment	16	1	2	3	3	..	..	-
Aerospace	13	-	1	1	..	..	..	-
Other manufacturing	16	4	5	4	..	..	-	-
Services	54	21	10	7	..	2	..	..
Other: Total	4	1	1	1	..	-	..	-
Agriculture, hunting & forestry; Fishing	1	-	-	-	-	-	-	-
Extractive industries	2	-	-	-	1	-	-	-
Electricity, gas & water supply; Waste management	1	-	-	-	-	-	-	-
Construction	1	-	-	-	-	-	-	-

Source: Office for National Statistics

1 - denotes nil, figures unavailable or too small to display.

2 .. denotes disclosive figures.

**EXPENDITURE ON R&D PERFORMED IN UK BUSINESSES BY EMPLOYMENT SIZE-BANDS AND BROAD PRODUCT GROUPS:
AS AN AVERAGE PER R&D EMPLOYEE, 2012**

[Return to Main Menu](#)

		£ thousands						
	Average per Employee	0 to 99 employees	100 to 399 employees	400 to 999 employees	1,000 to 4,999 employees	5,000 to 9,999 employees	10,000 to 19,999 employees	20,000 employees and over
AVERAGE	107	78	91	113	132	138	..	..
Manufacturing:	121	113	95	121	139	156	..	..
Chemicals	164	260	140	141	163	137	-	..
Mechanical engineering	80	46	66	88	110	..	-	-
Electrical machinery	98	62	85	138	136	..	-	-
Transport equipment	127	100	88	89	148	..	..	-
Aerospace	120	46	103	119	106	209	..	-
Other manufacturing	90	71	72	109	113	60	..	..
Services	80	58	78	85	114	65	..	..
Other:	..	..	138	134	120	..	..	..
Agriculture, hunting & forestry; Fishing	..	..	..	..	..	-	-	-
Extractive industries	..	13	..	..	..	-	-	-
Electricity, gas & water supply; Waste management	..	34	..	..	..	..	..	..
Construction	..	..	..	..	..	-	-	-

Source: Office for National Statistics

1 - denotes nil, figures unavailable or too small to display.

2 .. denotes disclosive figures.

[Return to Main Menu](#)

		CURRENT PRICES																								
		Expenditure (£ million)												Employment (FTE in thousands)												
		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012													
TOTAL	DLBX	12,239	12,484	12,505	12,662	13,734	14,144	15,676	15,814	15,532	16,045 [†]	17,468	17,107	DLEI	154	158	155	150	146	147	158	151	151	154	160 [†]	160
United Kingdom	GFWP	7,053	7,394	6,934	7,538	8,360	8,583	9,512	8,874	8,231	9,458 [†]	8,629	8,354	GFWO	98	100	96	95	91	89	94	83	82	94	89 [†]	88
United States	GFWR	2,792	2,864	3,102	2,719	2,570	2,781	3,122	3,366	3,402	3,103	4,017 [†]	3,682	GFWQ	28	30	33	29	27	31	33	34	32	29	33	33
Germany	GFWT	231	197	217	235	243	218	353	394	363	359	444 [†]	450	GFWs	3	3	3	3	3	2	4	4	4	4	3	4
France	GFWV	603	718	792	643	870	1,025	692	688	784	747	1,006 [†]	948	GFWU	8	10	7	6	8	9	6	6	6	6	7	7
Other EU	GFWX	727	618	728	762	877	878	1,159	1,142	1,242	1,190	1,221 [†]	1,435	GFWW	8	7	8	8	8	9	11	11	13	12	12	12
Japan	GFWZ	188	191	229	263	284	225	303	378	409	363	468	491	GFWY	2	2	3	3	3	3	3	4	4	3	3	4
Rest of the world	GFXB	646	502	503	503	529	435	536	972	1,100	826	1,683 [†]	1,747	GFXA	7	6	6	6	5	5	6	10	10	7	12	13

1 [†] crosses denote earliest data revision.

2 FTE - Full Time Equivalents.

Source: Office for National Statistics

	£ million		
	United Kingdom	Overseas	Total
TOTAL	8,354	8,753	17,107
Agriculture, hunting and forestry; Fishing	..	..	132
Extractive Industries	105	109	215
Food products and beverages; Tobacco products	145	212	357
Textiles, clothing and leather products	13	7	20
Pulp, paper and paper products; Printing; Wood and straw products	24	4	28
Refined petroleum products and coke oven products	..	..	76
Chemicals and chemical products	314	276	591
Pharmaceuticals	2,210	1,996	4,206
Rubber and plastic products	78	34	112
Other non-metallic mineral products	13	32	45
Casting of iron and steel	8	36	45
Non-ferrous metals	..	..	52
Fabricated metal products except machinery and equipment	48	48	97
Machinery and equipment	376	622	998
Computers and peripheral equipment	45	142	187
Electrical equipment	271	195	466
Consumer electronics and communication equipment	333	346	678
Precision instruments and optical products; photographic equipment	257	356	612
Motor vehicles and parts	157	1,575	1,732
Other transport equipment	33	15	48
Shipbuilding	228	1	229
Aerospace	792	725	1,518
Other manufactured goods	80	59	139
Sewerage, waste management, remediation activities	7	5	12
Electricity, gas and water supply	48	58	106
Construction	34	24	58
Wholesale and retail trade	110	74	184
Transport and storage, incl. postal and courier activities	..	..	..
Telecommunications	643	246	889
Miscellaneous business activities; Technical testing and analysis	455	200	655
Computer programming and information service activities	960	970	1,930
Research and development services	383	229	612
Public administration	..	..	..

Source: Office for National Statistics

1 .. denotes disclosive figures.

[Return to Main Menu](#)

CURRENT PRICES		R&D expenditure (£ million)												R&D as a percentage of sales												
		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Manufacturing: TOTAL	DLDF	9,720	9,692	9,636	10,058	10,560	10,555	11,612	11,672	11,230	11,585 †	12,466	12,235	DLIQ	3.2	3.1	3.1	3.2	3.4	3.3	3.5	3.3	3.7	3.3 †	3.6	3.4
Food products and beverages; Tobacco products	DLCF	285	269	256	258	276	314	328	303	290	306 †	367	357	DLJF	0.5	0.5	0.4	0.4	0.5	0.5	0.5	0.4	0.4	0.5	0.5	
Textiles, clothing and leather products	DLCQ	22	19	20	21	18	17	19	15	10	11	14 †	20	DLJG	0.2	0.2	0.2	0.3	0.2	0.2	0.3	0.1	0.1	0.1	0.1	
Pulp, paper and paper products; Printing; Wood and straw products	DLCI	38	44	45	40	52	55	53	56	26	28	21	28	DLJJ	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
Refined petroleum products and coke oven products	DLOE	239	247	258	234	245	279	274	94	95	73	72	76	LDOP	-	-	-	-	-	-	-	8.5	6.0 †	5.7	7.6	
Chemicals and chemical products	DLOC	620	599	614	625	637	684	668	630	610	666	523 †	591	DLIT	2.4	2.5	2.6	2.6	2.7	2.7	2.7	2.7	3.0	3.0	2.2 †	2.6
Pharmaceuticals	DLCD	3,079	3,169	3,127	3,239	3,374	3,521	3,935	4,354	4,424	4,673 †	4,933	4,206	DLIU	34.9	34.5	31.4	34.1	32.2	32.6	33.9	42.7	36.2	31.7 †	35.5	33.8
Rubber and plastics	DLCR	49	60	65	63	55	90	79	78	62	80	97	112	DLJH	0.3	0.4	0.4	0.4	0.3	0.5	0.5	0.6	0.6	0.6	0.7	0.8
Other non-metallic mineral products	D LCS	45	51	56	62	44	51	48	53	57	56	60	45	DLJI	0.4	0.5	0.6	0.6	0.4	0.5	0.4	0.5	0.6	0.6	0.6	0.4
Casting of iron and steel	DLCJ	28	29	29	30	34	38	..	47	43	28	44	45	DLJZ	1.1	1.2	1.3	1.1	1.1	1.2	..	1.7	2.0	1.3	1.6	
Non-ferrous metals	D LCK	26	16	4	4	8	6	..	72	..	86	77	52	DLJA	0.4	0.4	0.1	0.1	0.2	0.1	..	1.3	..	1.8	1.4	
Fabricated metal products except machinery and equipment	D LCL	68	90	65	77	74	68	91	73	93	93	119	97	DLJB	0.3	0.5	0.4	0.4	0.4	0.3	0.4	0.3	0.5	0.4	0.5 †	0.5
Machinery and equipment	D LCO	742	780	662	761	905	929	1,033	790	873	809 †	973	998	DLJE	2.7	3.0	2.8	2.8	3.6	3.6	3.7	2.5	3.6	2.9	3.2 †	3.3
Computers and peripheral equipment	D LCN	95	87	55	53	92	67	83	123	151	157	180	187	DLJD	1.1	1.4	1.2	1.2	2.2	2.6	4.3	7.0	8.5	9.2	9.9	10.1
Electrical equipment	D LCA	354	372	360	406	394	458	547	577	577	513	509	466	DLJR	3.2	3.9	4.0	4.2	4.1	4.5	5.3	4.5	5.3	4.2	3.9 †	3.7
Consumer electronics and communication equipment	D LCB	1,069	890	871	763	788	748	667	700	547	474 †	511	678	DLIS	7.3	8.7	11.5	9.4	10.7	9.7	11.0	20.9	14.3	11.6	17.3 †	27.6
Precision instruments and optical products; photographic equipment	D LCM	587	532	476	486	475	462	544	591	498	490	583 †	612	DLJC	6.4	6.0	5.6	5.6	5.1	4.8	5.6	5.9	5.1	4.7 †	5.4	5.6
Motor vehicles and parts	D LCG	898	916	894	789	744	754	933	1,156	1,039	1,237	1,525	1,732	DLJW	8.4	2.9	2.6	2.3	2.1	2.2	2.6	3.2	3.9	3.4	4.0	4.4
Other transport equipment	D LCI	..	..	..	23	21	25	28	30	..	46	50 †	48	DLJY	..	..	..	0.9	1.1	1.4	0.7	0.6	..	1.1	1.1 †	1.1
Shipbuilding	D LCH	..	..	..	125	127	134	136	157	173	185	226 †	229	DLJX	..	..	..	5.7	10.3	10.3	9.1	4.5	4.8	4.6	5.6 †	4.7
Aerospace	D LCF	1,311	1,352	1,643	1,965	2,169	1,832	2,070	1,732	1,466	1,437	1,438 †	1,518	DLJY	11.2	12.1	14.1	16.4	22.7	18.9	18.6	10.3	7.8	8.0	7.7 †	7.5
Other manufactured goods	D LCU	40	35	35	33	26	24	27	36	98	136	146 †	139	DLJK	0.3	0.3	0.7	0.3	0.3	0.3	0.2	0.2	0.6	0.9	0.9	0.9

Source: Office for National Statistics

¹ - denotes nil, figures unavailable or too small to display.² - denotes disclosive figures.³ [†] crosses denote earliest data revision.⁴ R&D intensity in each product group is estimated by dividing the R&D expenditure of the product group by the sales of the associated manufactured products derived from the Products of the European Community (PRODCOM) Survey.[Return to Main Menu](#)

	R&D Expenditure (£ million)	Expenditure standard errors (£ million)
Agriculture, hunting and forestry; Fishing	132	14
Extractive Industries	215	11
Food products and beverages; Tobacco products	357	4
Textiles, clothing and leather products	20	-
Pulp, paper and paper products; Printing; Wood and straw products	28	-
Refined petroleum products and coke oven products	76	10
Chemicals and chemical products	591	7
Pharmaceuticals	4,206	90
Rubber and plastic products	112	1
Other non-metallic mineral products	45	1
Casting of iron and steel	45	4
Non-ferrous metals	52	4
Fabricated metal products except machinery and equipment	97	1
Machinery and equipment	998	7
Computers and peripheral equipment	187	7
Electrical equipment	466	4
Consumer electronics and communication equipment	678	6
Precision instruments and optical products; photographic equipment	612	3
Motor vehicles and parts	1,732	29
Other transport equipment	48	3
Shipbuilding	229	22
Aerospace	1,518	39
Other manufactured goods	139	1
Sewerage, waste management, remediation activities	12	1
Electricity, gas and water supply	106	6
Construction	58	1
Wholesale and retail trade	184	-
Transport and storage, incl. postal and courier activities	..	..
Telecommunications	889	40
Miscellaneous business activities; Technical testing and analysis	655	1
Computer programming and information service activities	1,930	5
Research and development services	612	1
Public administration	..	..

Source: Office for National Statistics

1 - denotes nil, figures unavailable or too small to display.

2 .. denotes disclosive figures.

[Return to Main Menu](#)

**EXPENDITURE ON R&D PERFORMED IN UK BUSINESSES:
BY SMALL AND MEDIUM SIZE ENTERPRISES, 2001 TO 2012**

[Return to Main Menu](#)

CURRENT PRICES

£ million

	Total Expenditure	250 employees and over	0 to 249 employees	of which, SME
	DLBX	SFAA	SEZU	SEZY
2001	12,239	9,875	2,102	333
2002	12,484	10,005	2,464	332
2003	12,505	9,412	3,094	407
2004	12,662	10,578	2,083	373
2005	13,734	11,515	2,220	456
2006	14,144	12,126	2,019	336
2007	15,676	12,626	3,050	405
2008	15,814	12,991	2,823	342
2009	15,532	12,569	2,962	543
2010	16,045 [†]	12,761 [†]	3,284 [†]	556
2011	17,468	13,650	3,818	621
2012	17,107	12,408	4,698	761

1 The definition of SME used is that under the European Commission Recommendation (2003/361/EC) of 1 January 2005, in which SMEs are defined as being enterprises with less than 250 employees, and also a criterion of independence is used to exclude enterprises that are part of a larger enterprise group. To apply this definition, historic information on company ownership has been obtained using that currently held on the ONS IDBR. Caution should therefore be used in making comparisons over time.

2 [†] crosses denote earliest data revision.

**EXPENDITURE ON R&D PERFORMED IN UK BUSINESSES:
STANDARD INDUSTRY CLASSIFICATION (SIC) DIVISION, 2010 to 2012**

[Return to Main Menu](#)

CURRENT PRICES

£ million

SIC	Industry description	2010	2011	2012
01-03	Agriculture, forestry and fishing	14	12	14
05-09	Mining and quarrying	137	174 [†]	171
10	Manufacture of food products	136	213 [†]	191
11-12	Manufacture of beverages and tobacco products	95	80	84
13	Manufacture of textiles	9	24 [†]	27
14	Manufacture of wearing apparel	1	1	3
15	Manufacture of leather and related products	1	1	2
16	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	3	1	4
17	Manufacture of paper and paper products	9	9	7
18	Printing and reproduction of recorded media	5	5	11
19	Manufacture of coke and refined petroleum products	..	..	..
20	Manufacture of chemicals and chemical products	319	284	263
21	Manufacture of basic pharmaceutical products and pharmaceutical preparations	474	528 [†]	504
22	Manufacture of rubber and plastic products	68	81	99
23	Manufacture of other non-metallic mineral products	41	41	31
24	Manufacture of basic metals	49	88 [†]	63
25	Manufacture of fabricated metal products, except machinery and equipment	594	551	495
26	Manufacture of computer, electronic and optical products	835	965 [†]	977
27	Manufacture of electrical equipment	165	152	170
28	Manufacture of machinery and equipment n.e.c.	607	634	776
29	Manufacture of motor vehicles, trailers and semi-trailers	1,039	1,296	1,478
30	Manufacture of other transport equipment	1,158	1,198 [†]	1,408
31	Manufacture of furniture	33	50	36
32	Other manufacturing	143	117	104
33	Repair and installation of machinery and equipment	156	77 [†]	83
35	Electricity, gas, steam and air conditioning supply	13	21 [†]	62
36	Water collection, treatment and supply	9	6	10
37-39	Sewerage, waste management, remediation activities	7	7	11
41-43	Construction	45	46 [†]	60
45-47	Wholesale and retail trade; repair of motor vehicles and motorcycles	760	766	699
49	Land transport and transport via pipelines	2	6	..
50	Water transport	-	- [†]	-
51	Air transport	-	- [†]	-
52-53	Warehousing and support activities for transportation; postal and courier activities	27	24	..
55-56	Accommodation and food service activities	19	26 [†]	29
58	Publishing activities	44	61	52
59	Motion picture, video and television programme production, sound recording and music publishing activities	18	17	10
60	Programming and broadcasting activities	3	6	7
61	Telecommunications	826	719	701
62	Computer programming, consultancy and related activities	1,109	1,522 [†]	1,564
63	Information service activities	45	44	87
64-66	Financial and insurance activities	308	302 [†]	267
68	Real estate activities	10	10	11
69	Legal and accounting activities	19	12	13
70	Activities of head offices; management consultancy activities	54	51 [†]	66
71	Architectural and engineering activities	748	883 [†]	1,155
72	Scientific research and development	5,510	5,867 [†]	4,688
73	Advertising and market research	15	14	15
74	Other professional, scientific and technical activities	7	25	29
75	Veterinary activities	1	..	1
77	Rental and leasing activities	21	55	73
78	Employment activities	12	11 [†]	15
79	Travel agency, tour operator and other reservation service and related activities	7	6	8
80	Security and investigation activities	3	3	5
81	Services to buildings and landscape activities	7	11	11
82	Office administrative, office support and other business support activities	80	102	179
84-85	Public administration and defence; compulsory social security and education	..	..	19
86-88	Human health and social work activities	25	18	17
90-93	Arts, entertainment and recreation	152	192	186
94-99	Other service activities; Activities of households as employers and of extraterritorial organisations and bodies	27	25	25
TOTAL		16,045	17,468	17,107

Source: Office for National Statistics

1 - denotes nil, figures unavailable or too small to display.

2 .. denotes disclosive figures.

3 [†] crosses denote earliest data revision.
[Return to Main Menu](#)

	R&D expenditure (£ million)			R&D as a percentage of turnover		
	2010	2011	2012	2010	2011	2012
Services: TOTAL	4,120	4,575 [†]	4,348	0.2	0.2	0.1
Wholesale and retail trade	177	237 [†]	184	-	-	-
Transport and storage, incl. postal and courier activities	17	18	..	-	-	-
Telecommunications	1,129	1,051	889	1.7	1.6	1.4
Miscellaneous business activities; Technical testing and analysis	583	568 [†]	655	0.1	0.1	0.1
Computer programming and information service activities	1,526	1,847 [†]	1,930	2.2	2.4	2.4
Research and development services	618	787 [†]	612	3.8	4.8	3.7
Public administration	70	67	..	-	-	-

Source: Office for National Statistics

1 - denotes nil, figures unavailable or too small to display.

2 .. denotes disclosive figures.

3 [†] crosses denote earliest data revision.

4 R&D intensity in each product group is estimated by dividing the R&D expenditure of the product group by the turnover of the associated industries, derived from the Annual Business Survey (ABS).

[Return to Main Menu](#)

CONSTRUCTION OF BROAD PRODUCT GROUPS

Broad Product Group	Product Group Number and Title
Manufactured products: Total	C. Food products and beverages; Tobacco products D. Textiles, clothing and leather products E. Pulp, paper and paper products; Printing; Wood and straw products F. Refined petroleum products and coke oven products G. Chemicals and chemical products H. Pharmaceuticals I. Rubber and plastic products J. Other non-metallic mineral products K. Casting of iron and steel L. Non-ferrous metals M. Fabricated metal products, except machinery and equipment N. Machinery and equipment O. Office machinery and computers P. Electrical equipment Q. Radio, television and communication equipment R. Computer, electronic and optical products; photographic equipment S. Motor vehicles and parts T. Other transport equipment U. Shipbuilding V. Aerospace W. Other manufactured goods
Chemicals	G. Chemicals and chemical products H. Pharmaceuticals
Mechanical engineering	M. Fabricated metal products, except machinery and equipment N. Machinery and equipment
Electrical machinery	O. Office machinery and computers P. Electrical equipment Q. Radio, television and communication equipment
Transport	S. Motor vehicles and parts T. Other transport equipment U. Shipbuilding
Aerospace	V. Aerospace
Other manufactured products	C. Food products and beverages; Tobacco products D. Textiles, clothing and leather products E. Pulp, paper and paper products; Printing; Wood and straw products F. Refined petroleum products and coke oven products I. Rubber and plastic products J. Other non-metallic mineral products K. Casting of iron and steel L. Non-ferrous metals R. Computer, electronic and optical products; photographic equipment W. Other manufactured goods
Other: Total	A. Agriculture, hunting and forestry; Fishing B. Extractive Industries X. Sewerage, waste management, remediation activities Y. Electricity, gas and water supply Z. Construction
Agriculture, hunting and forestry;	A. Agriculture, hunting and forestry; Fishing
Extractive Industries	B. Extractive Industries
Electricity, gas and water supply; Waste management	X. Sewerage, waste management, remediation activities Y. Electricity, gas and water supply
Construction	Z. Construction
Services	AA. Wholesale and retail trade AB. Transport and storage, incl. postal and courier activities AC. Telecommunications AD. Miscellaneous business activities; Technical testing and analysis AE. Computer and related activities AF. Research and development services AG. Public administration