

Statistical bulletin

# Gross domestic expenditure on research and development, UK: 2013

Estimates of research and development performed and funded by business enterprise, higher education, government, research councils and private non-profit organisations.



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# 1 . Main points

- In 2013, the gross domestic expenditure on research and development performed in the UK (GERD), in current prices, increased by 7% to £28.9 billion compared with 2012. Adjusted for inflation, in constant prices, research and development (R&D) expenditure increased by 5%.
- In constant prices, R&D expenditure has increased by 54% from the 1985 estimate of £18.8 billion. Expenditure has reached an all time high of £28.9 billion in 2013.
- The business sector performed 64% of UK R&D expenditure in 2013. Expenditure by this sector increased by 8%, in current prices, to £18.4 billion in 2013, compared with 2012.
- Total R&D expenditure in the UK in 2013 represented 1.67% of Gross Domestic Product (GDP), an increase from 1.62 % in 2012.
- International comparisons show that UK R&D expenditure in 2013 was below the European Union (EU-28) provisional estimate of 2.02% of GDP, but the 12th highest of all member countries.

## 2 . Overview

This statistical bulletin provides estimates of R&D performed in and funded by the following four sectors of the economy, as defined in the ['Frascati Manual'](#):

- Business Enterprise (BERD)
- Higher Education (HERD)
- Government (GovERD), which includes Research Councils
- Private Non-Profit (PNP) organisations

All these sectors' R&D data are known collectively as GERD, which represents the gross domestic expenditure on R&D in the UK.

GERD is unique in providing this information, and is the preferred measure of R&D activity for use in international comparisons. This release reports on R&D expenditure in the UK irrespective of the country of residence of the ultimate owner or users of the R&D produced. The main purpose of collecting R&D data from all sectors of the economy is to supply data for policy and monitoring purposes on science and technology, of which R&D is an important part.

In this statistical bulletin, 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'](#). This manual defines R&D 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 publish national data on R&D. The definitions provided in this manual are internationally accepted and serve as a common language for designing and evaluating science and technology policy.

In this statistical bulletin, R&D is measured by the expenditure on R&D performed, by an organisation, or the funding received by an organisation for R&D work. These are often but not always the same. R&D performed is regarded as a more accurate measure than funding received by an organisation, as not all funds received may be used on R&D as intended. ONS surveys therefore measure expenditure on R&D performed by four sectors of the economy, and how this expenditure is funded.

The business sector estimates in this release, the largest component of GERD, are derived from the Business Enterprise Research and Development (BERD) survey, published on 20 November 2014 in the [Business Enterprise Research and Development 2013 statistical bulletin](#). Approximately 5,400 UK businesses were selected for this survey from a continually updated register of R&D performers.

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) meant that from September 2014 onwards, expenditure on R&D contributed to the formation of assets and therefore the value of the UK economy. Further information about this important change can be found at ONS [ESA 2010](#).

Two types of estimates are presented in this release, current and constant prices. Estimates in current prices present the value of R&D expenditure in cash terms. 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.

For more information about what is research and development, please visit ONS podcast.

### **3 . Your views matter**

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](mailto:RandD@ons.gsi.gov.uk) or telephone Cecil Prescott on +44 (0) 1633 456767.

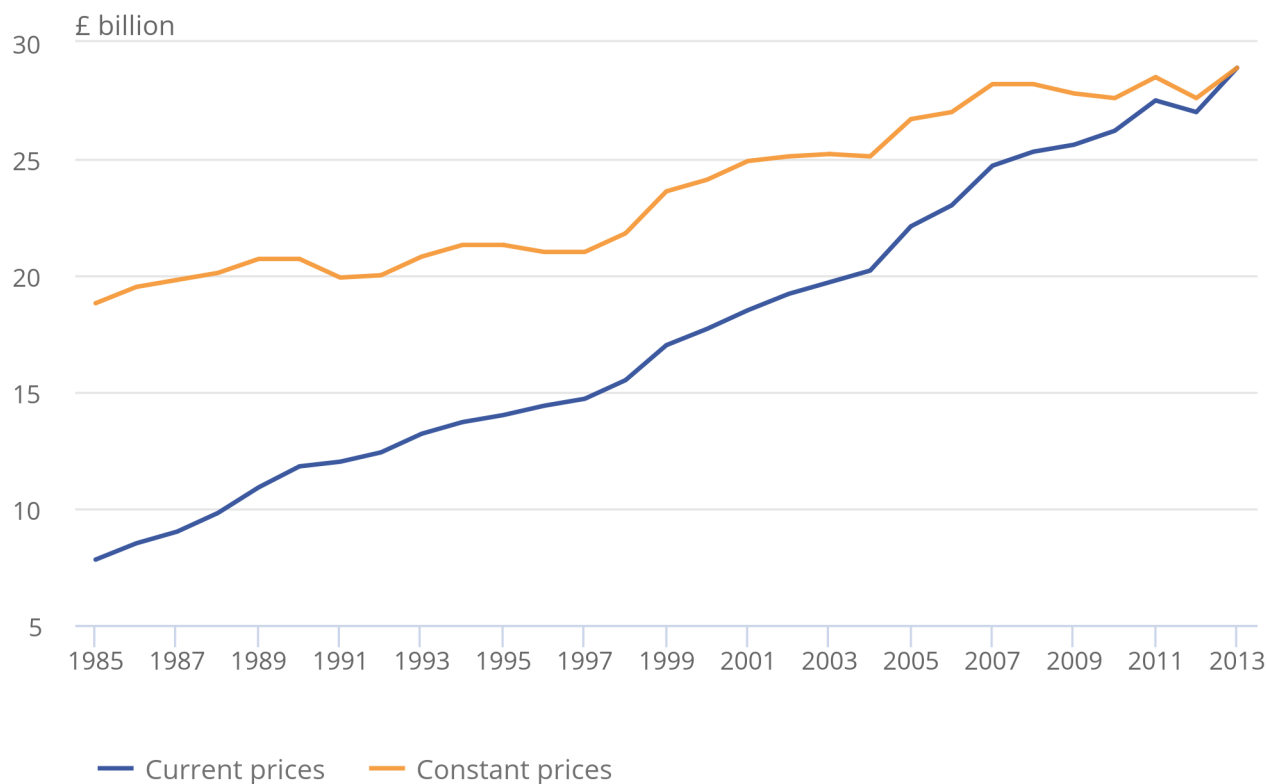
## **4 . UK Gross Domestic Expenditure on R&D performed in the UK, 2013**

In 2013, £28.9 billion was spent on R&D performed within the UK, an increase in current prices of £1.9 billion (7%) since 2012. This is mainly due to a £1.3 billion increase in R&D performed by the business sector. Adjusted for inflation, in constant prices, R&D expenditure increased by 5%.

In 1985, in constant prices, £18.8 billion was spent on R&D performed in the UK. Since then, there has been an increase of 54% in R&D expenditure in the UK. Expenditure has reached an all time high of £28.9 billion in 2013 (Figure 1).

**Figure 1: UK Gross Domestic Expenditure on R&D, 1985 to 2013**

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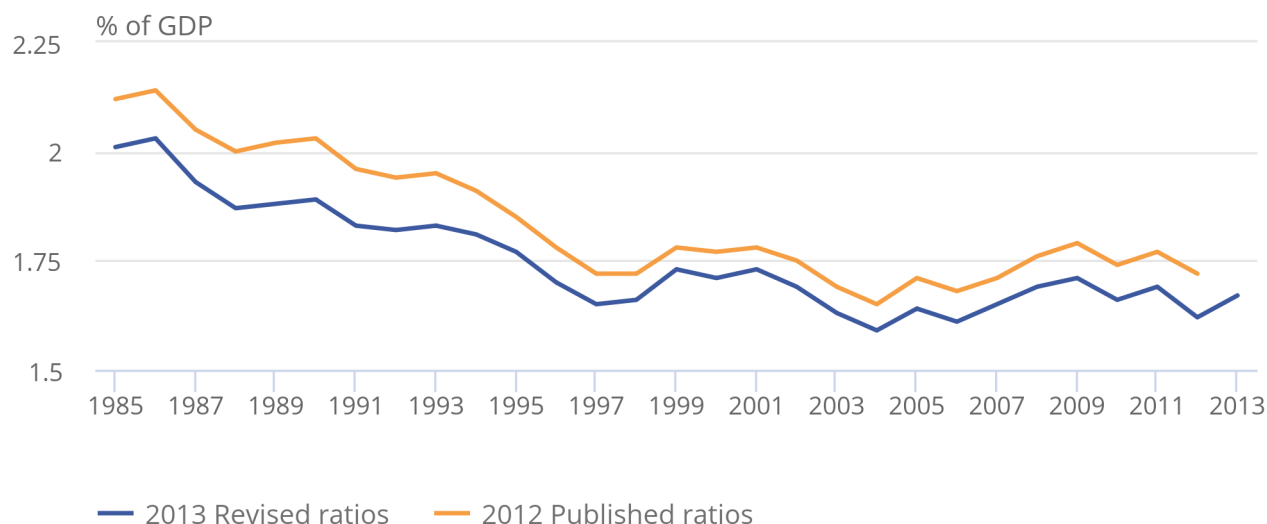
**Source: Office for National Statistics**

Figure 2 shows UK gross domestic expenditure on R&D performed in the UK, as a percentage of GDP. Total R&D expenditure in 2013 represented 1.67% of GDP, an increase on the 1.62% estimate for 2012. Following the upward [revisions to GDP](#) as a result of the implementation of the changes to the National Accounts, the ratio of GERD to GDP has been revised down slightly over the period 1985 to 2012.

UK gross domestic R&D expenditure, as a percentage of GDP, peaked in 1986 at 2.03%. Since 2001, R&D expenditure as a percentage of GDP has been within a range of 1.59% to 1.73%.

**Figure 2: UK gross expenditure on R&D as a percentage of GDP, 1985 to 2013**

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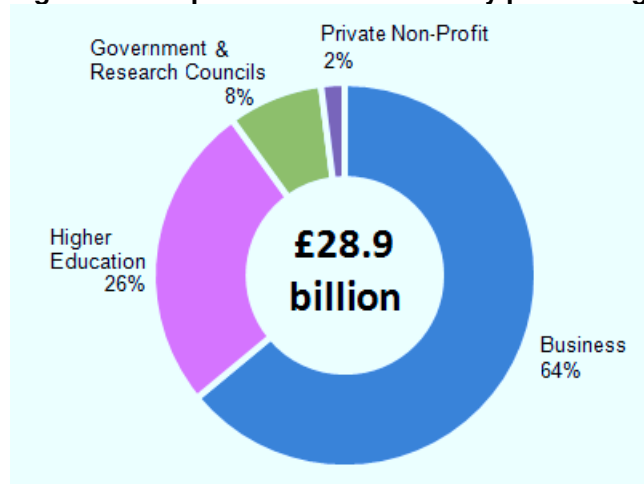


Source: Office for National Statistics

## 5 . Expenditure on R&D performed in the UK

UK estimates of R&D cover the four sectors of the economy, namely Business, Higher Education, Government (including Research Councils), and Private Non-Profit organisations. Figure 3 shows the contribution each sector made to the total UK R&D expenditure estimate in 2013.

**Figure 3: Composition of UK GERD by performing sector, 2013**



Taking each of these R&D sectors in turn:

## Business

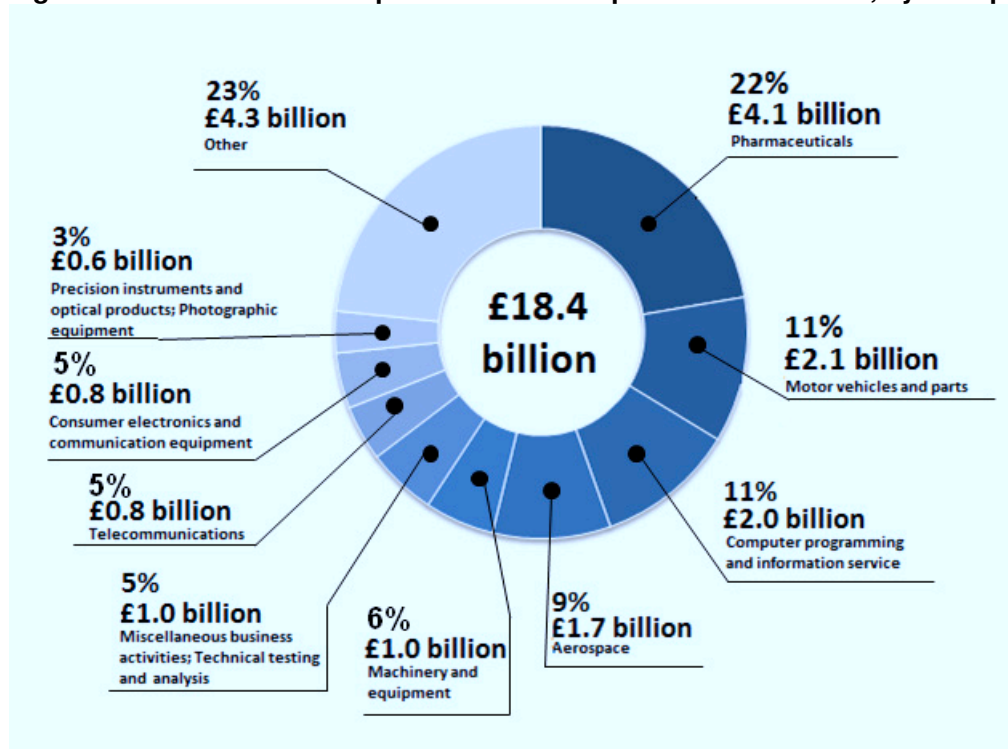
The business sector performs the most R&D of any sector in the UK. In 2013 it accounted for £18.4 billion of expenditure, representing 64% of total expenditure on R&D performed in the UK. This is an increase of 8% in current prices from £17.1 billion in 2012.

On an annual basis, the 400 largest business R&D performers are asked to select the industry product groups that best describe the type of R&D that they undertake. For the smaller R&D performers, no product group data were collected (Background Note 4). The product groups with the largest R&D expenditure in 2013 (Figure 4) were:

- Pharmaceuticals (£4.1 billion)
- Motor vehicles and parts (£2.1 billion)
- Computer programming and information service activities (£2.0 billion)
- Aerospace (£1.7 billion)
- Machinery and equipment (£1.0 billion)
- Miscellaneous business activities (£1.0 billion)

The UK Government has continued to promote growth in R&D, particularly in the business sector, through tax relief, and [Catapult centres](#). A Catapult is a “technology and innovation centre where UK businesses, scientists and engineers can work together on research and development, transforming ideas into new products and services”.

**Figure 4: Business sector expenditure on R&D performed in the UK, by R&D product group, 2013**



More detailed information on business R&D expenditure can be found in the [UK Business Enterprise Research and Development 2013 statistical bulletin](#) published on 20 November 2014.

## Higher education

The higher education sector, which includes universities and higher education institutes, represented 26% of total UK R&D expenditure in 2013 at £7.6 billion. This is an increase of 6% in current prices from £7.2 billion in 2012. The funding for this sector is mainly provided by the Higher Education Funding Councils for [England](#), [Scotland](#) and [Wales](#), the [Department for Education in Northern Ireland](#) and the seven UK research councils.

## Government and research councils

The UK Government owns many research institutes and laboratories that carry out R&D. These are managed by different government departments, including the Department for Business, Innovation and Skills, the Department for Environment, Food and Rural Affairs and the Department of Health.

In 2013, R&D expenditure in the UK performed by the government and research councils sector increased by 7% in current prices, from £2.1 billion in 2012 to £2.3 billion in 2013. This sector accounted for 8% of total expenditure on R&D performed in the UK in 2013.

[Research Councils UK \(RCUK\)](#) is the strategic partnership of the UK's seven research councils. Each year the councils perform research covering the full spectrum of academic disciplines from the medical and biological sciences to the arts and humanities.

Research councils' R&D expenditure increased by 1% in current prices, from £804 million in 2012 to £813 million in 2013.

## Private non-profit organisations

The private non-profit sector includes registered charities and trusts. Those performing R&D specialise in mainly health and medical research. Some of the largest of these are based in the UK. This sector includes, for example, a number of cancer charities that carry out extensive research into types of cancer prevention, from drug development to clinical trials.

The private non-profit sector is the smallest R&D performing sector in the UK. In 2013, it is estimated that expenditure on R&D performed by these organisations was £0.5 billion, which contributed 2% to total UK R&D expenditure.

## 6 . Civil and defence expenditure, by performing sector

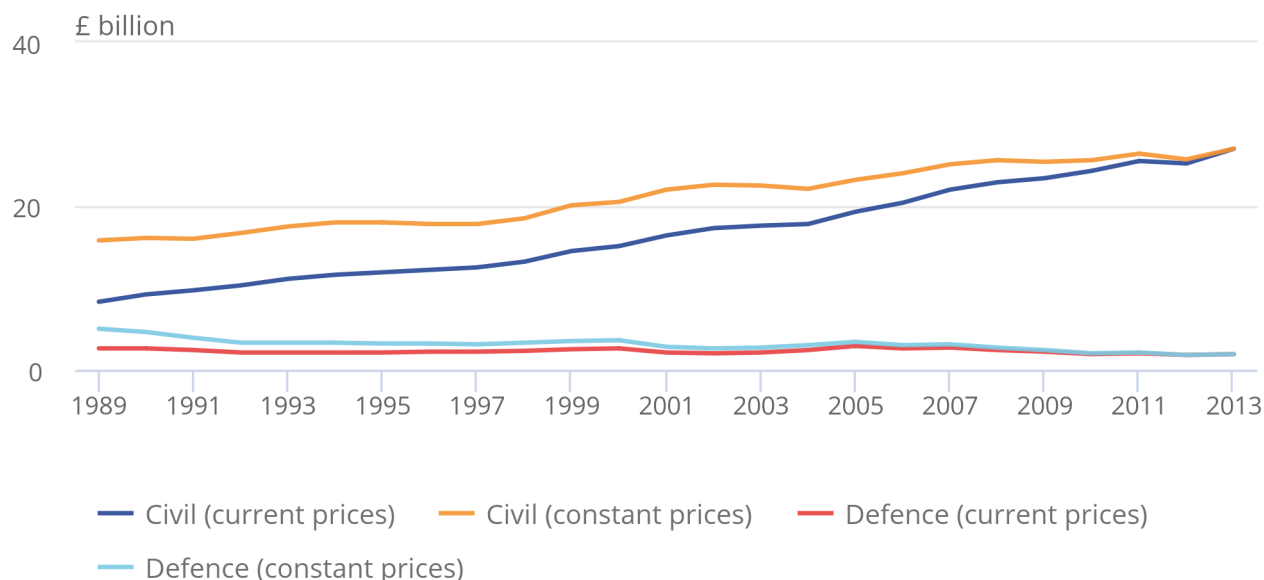
Expenditure on R&D, performed for civil purposes in 2013 (£27.0 billion) accounted for 93% of total UK R&D expenditure (Figure 5).

In current prices, civil R&D expenditure increased by 7%, from £25.2 billion in 2012 to £27.0 billion in 2013. Defence R&D expenditure also increased by 7%, from £1.8 billion in 2012 to £1.9 billion in 2013.

In constant prices, civil R&D expenditure has increased by 71% (£11.2 billion) since the 1989 estimate of £15.8 billion. In contrast, defence R&D expenditure has decreased by 61% over the same period, from £5.0 billion in 1989.

**Figure 5: Expenditure on civil and defence R&D performed in the UK, 1989 to 2013**

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**Source: Office for National Statistics**

Civil and defence R&D expenditure can be further split between the four performing UK sectors. The business sector was by far the largest R&D performer in both civil and defence R&D in 2013, at £16.7 billion and £1.7 billion respectively.

Of particular note, business R&D expenditure in the civil sector has increased by 54% in constant prices since 1989, but business expenditure on R&D in the defence sector has decreased by 47% over this period.

## 7 . R&D expenditure by funding sector

In 2013, the largest funder of R&D performed in the UK was the business sector which funded £13.3 billion; 46% of the total UK performed R&D. This was an increase of 8%, in current prices, from £12.3 billion in 2012 (Figure 6).

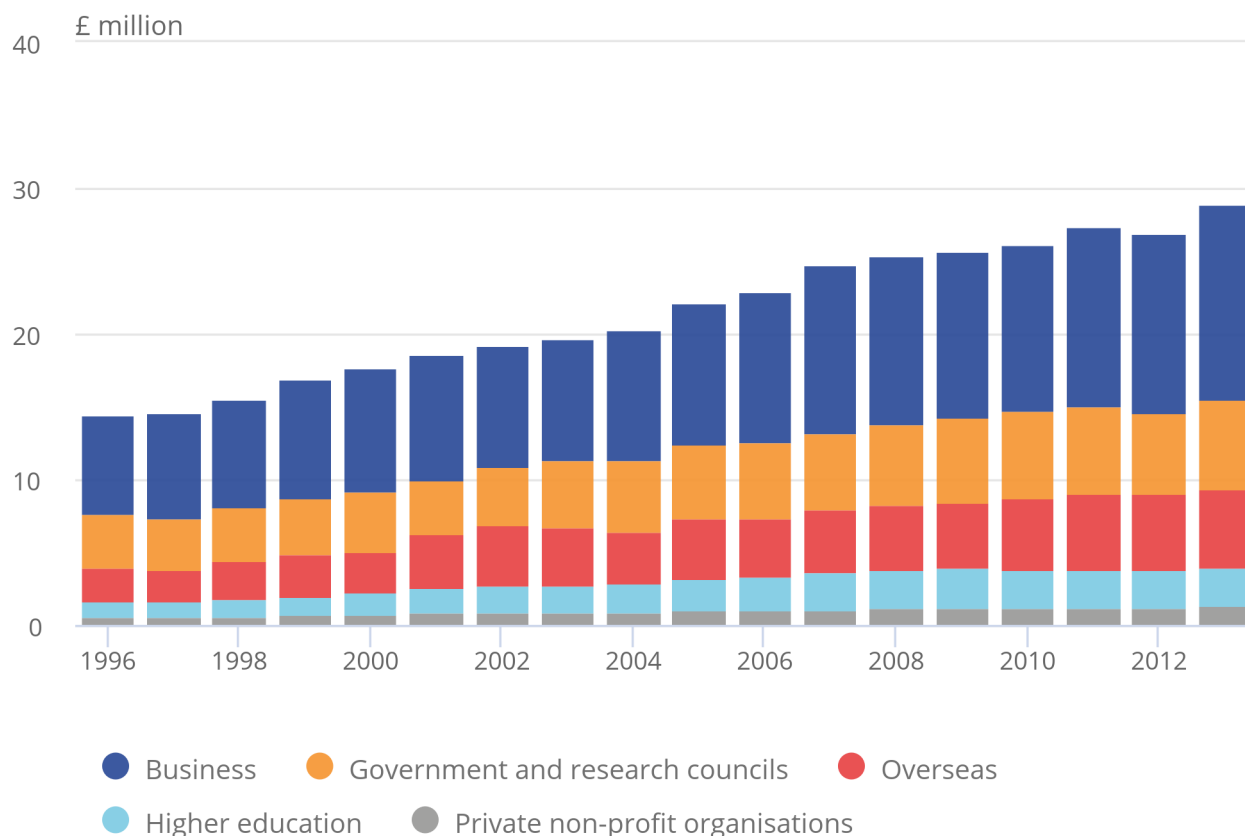
Although the government and research councils sector spent £2.3 billion performing R&D within their UK public research institutes, they actually funded £6.1 billion of UK R&D spend, 21% of total funding. This can be understood through the role of [RCUK](#) which offers individuals and businesses overseas, access to the UK's research facilities and infrastructure.

In just under three decades, there has been a change in the profile of how UK R&D expenditure has been funded. In 1985, 8% of R&D funding came from overseas. Since then, there has been a steady increase in the proportion of funding for UK R&D expenditure from overseas, from 16% in 1996 to 19% in 2013.



**Figure 6: Composition of UK GERD by funding sector, 1996 to 2013**

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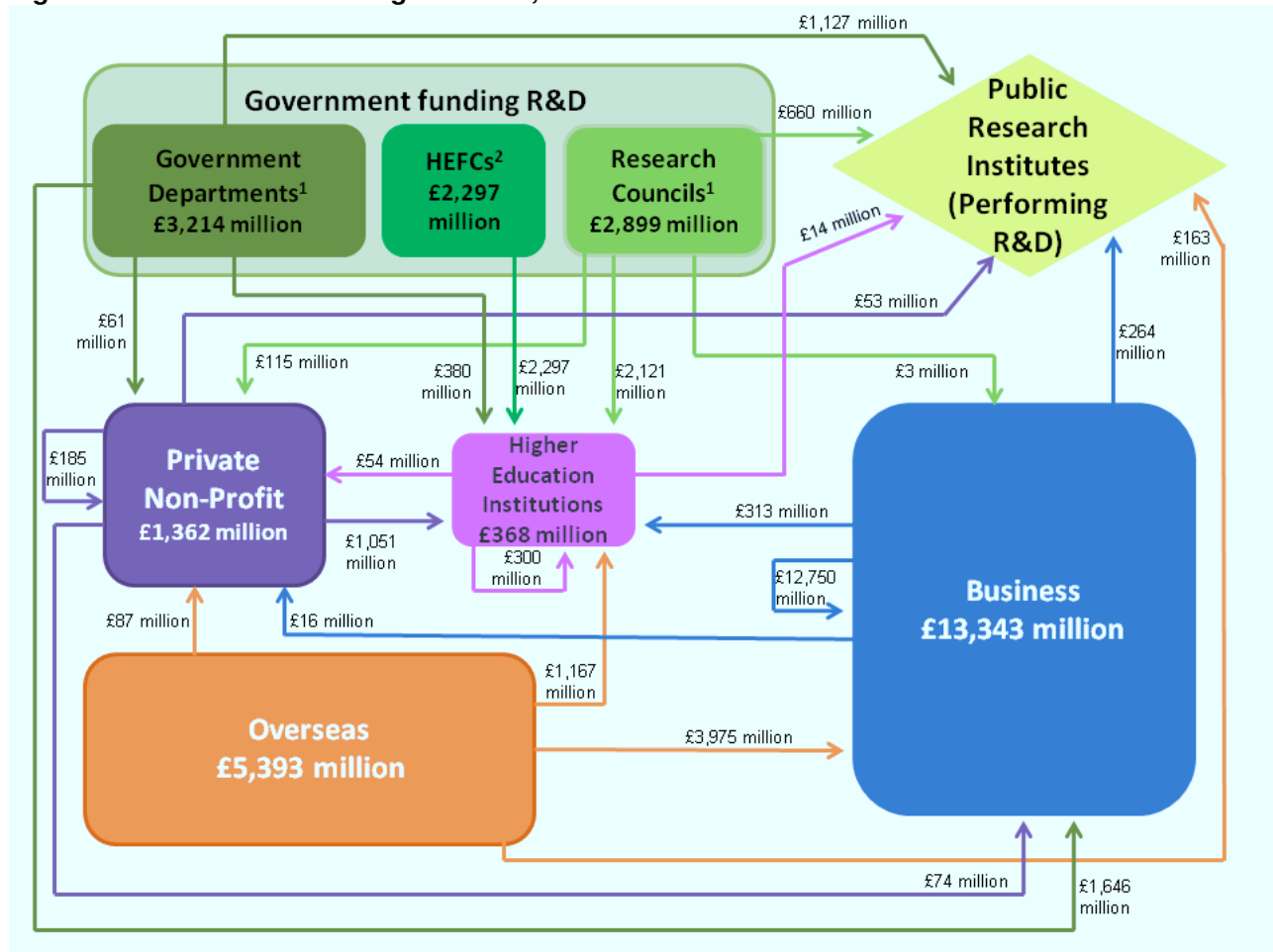


**Source: Office for National Statistics**

Figure 7 is a representation of the flows of R&D funding from the four UK sectors and overseas. The values in the boxes are the amounts of funding that each individual sector provided to the other sectors in the UK in 2013. The arrows indicate the values provided to the recipient sector.

It is important to note that sectors can fund themselves. For example, in 2013 the business sector performed £18.4 billion, of which £12.8 billion was funded by this sector. The remaining £5.7 billion of R&D expenditure performed by the business sector was funded by other sectors and overseas.

**Figure 7: Flows of R&D funding in the UK, 2013**



## 8 . Civil and defence R&D expenditure by funding sector

The largest funder of civil R&D performed in the UK was the business sector (£12.9 billion), 48% of total civil funding.

Of the £5.4 billion funding received from overseas in 2013, 97% was performed on civil R&D (£5.2 billion).

R&D expenditure in the UK for defence purposes accounted for 7% of total R&D expenditure (£1.9 billion) in 2013. The UK Government's funding of defence R&D in 2013 was £1.3 billion (67% of total defence funding). This was an increase of 7% in current prices from £1.2 billion in 2012. This includes government contracts awarded to UK businesses for the development of aircraft, naval ships, submarines and their systems and equipment. The business sector provided £0.5 billion (24%) of funding and £0.2 billion (9%) came from overseas.

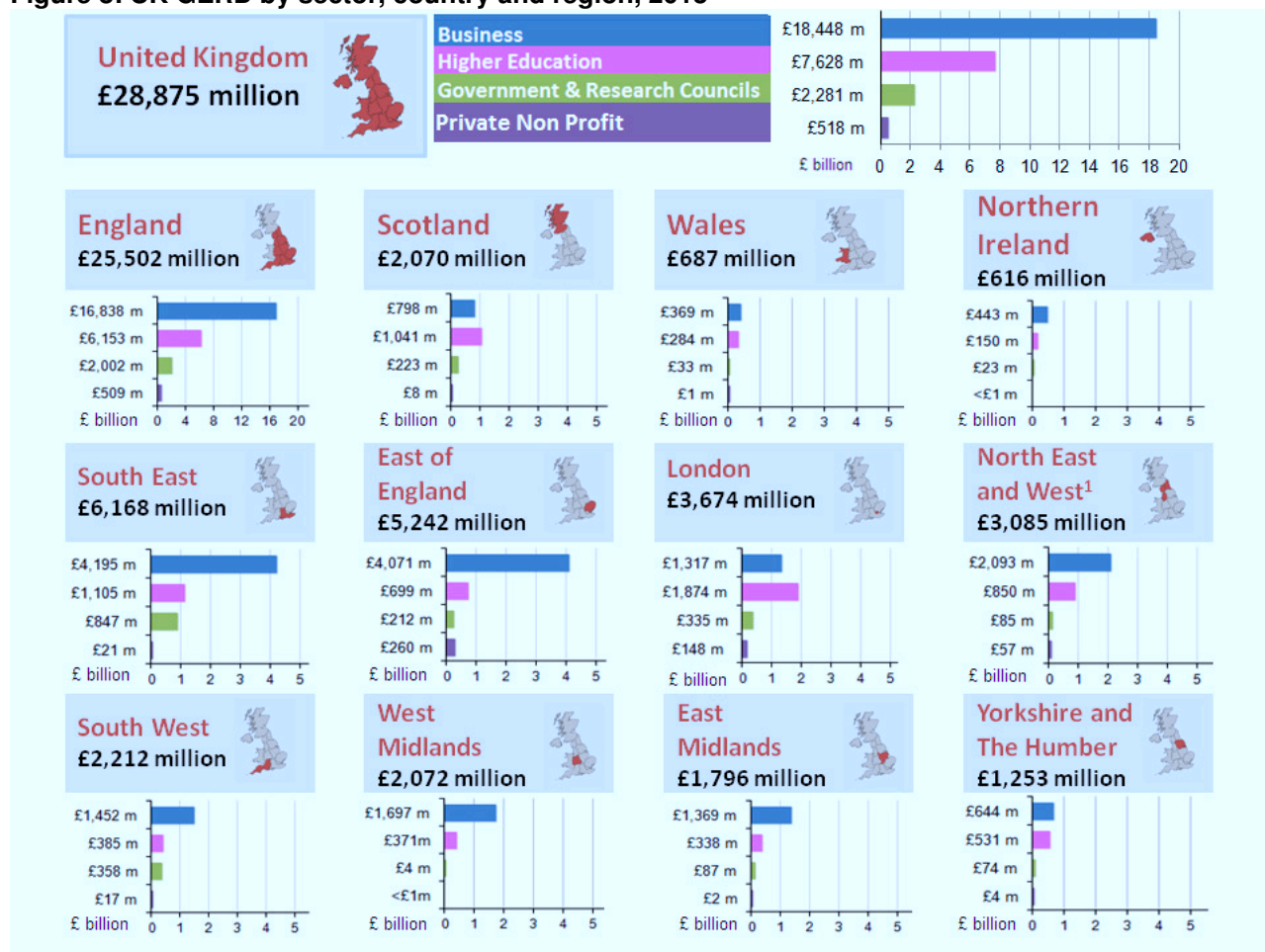
## 9 . Country and regional breakdown of UK R&D expenditure

R&D expenditure can be analysed by UK country and region (Figure 8). In this context, the country and region refers to the location where the R&D is performed, not the location of the funder.

In 2013, the South East and East of England continued to dominate R&D activity in the UK. These two regions accounted for 40% of total UK R&D expenditure (£11.4 billion).

The majority of UK R&D expenditure was carried out in England (£25.5 billion) in 2013, an increase of 7% in current prices from £23.9 billion in 2012. Wales, Scotland and Northern Ireland showed increases of 22%, 8% and 6% respectively in 2013.

**Figure 8: UK GERD by sector, country and region, 2013**

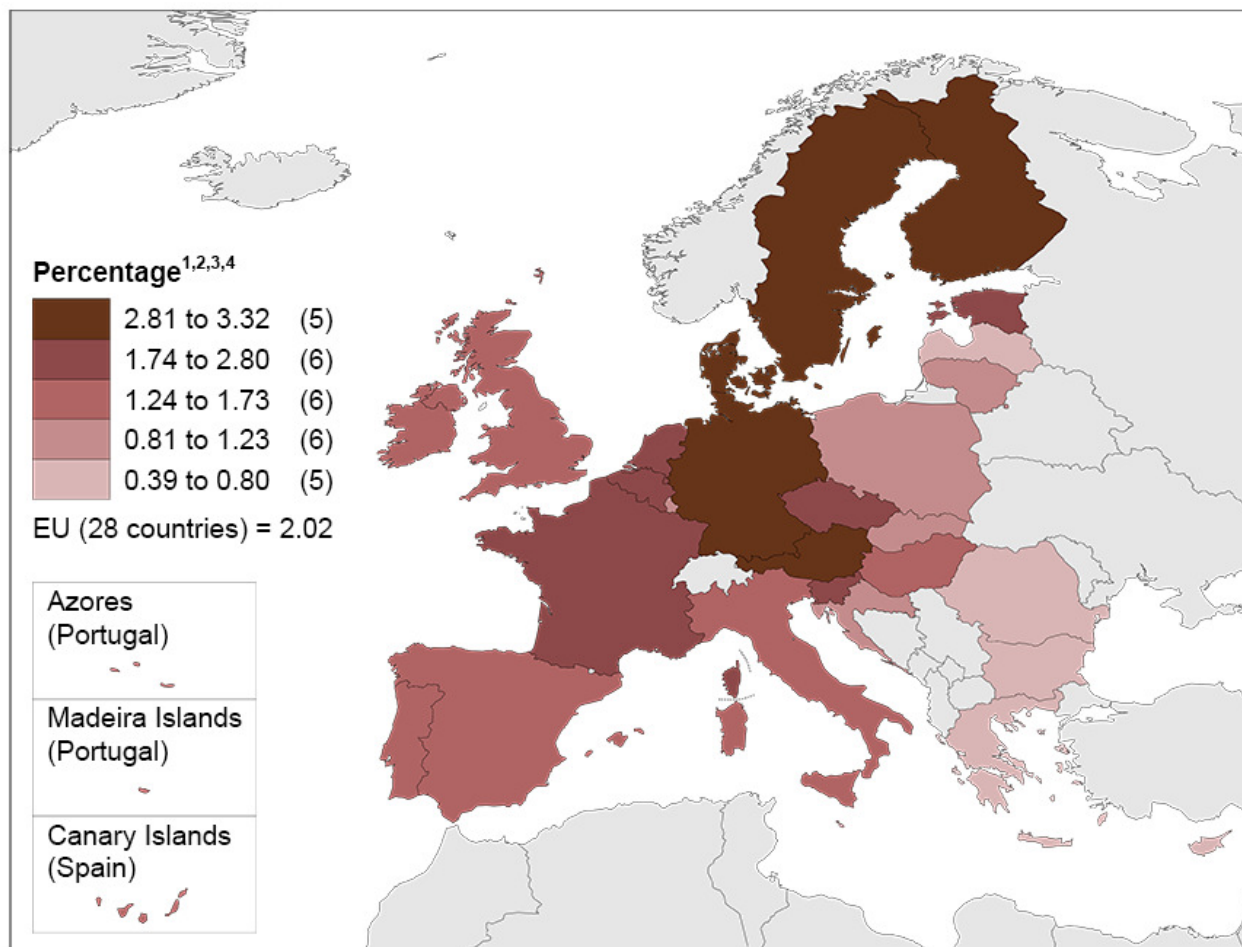


## 10 . International comparisons of GERD as a percentage of GDP (R&D Intensity)

The [Europe 2020 targets](#) specify five targets for the European Union (EU) to achieve by 2020, including a target of 3% of the EU's GDP to be invested in R&D. This means that the estimates in this release are essential in monitoring progress towards this target.

The percentage of R&D to GDP increased marginally in the EU-28 up to 2002, reaching a high of 1.81%, before declining modestly through to 2005 (1.76%), and climbing again to an estimated 2.02% in 2013. Please note that some EU-28 and OECD countries' 2013 estimates taken from the Eurostat website are provisional estimates at the time of this release.

## GERD to GDP ratio as a percentage (R&D intensity) by country, European Union (EU-28), 2013



1 Gross Domestic Expenditure on Research and Development (GERD) includes expenditure on research and development (R&D) in business, higher education, government and private non-profit organisations.

2 GERD is divided by Gross Domestic Product (GDP) and multiplied by 100 to express the ratio as a percentage. The GERD to GDP ratio is a relative measure of a country's investment in R&D.

3 Data for Ireland are shown for 2012.

4 Data are included for all of the EU-28 countries. Croatia joined the European Union on 1 July 2013.

Source of data: Eurostat

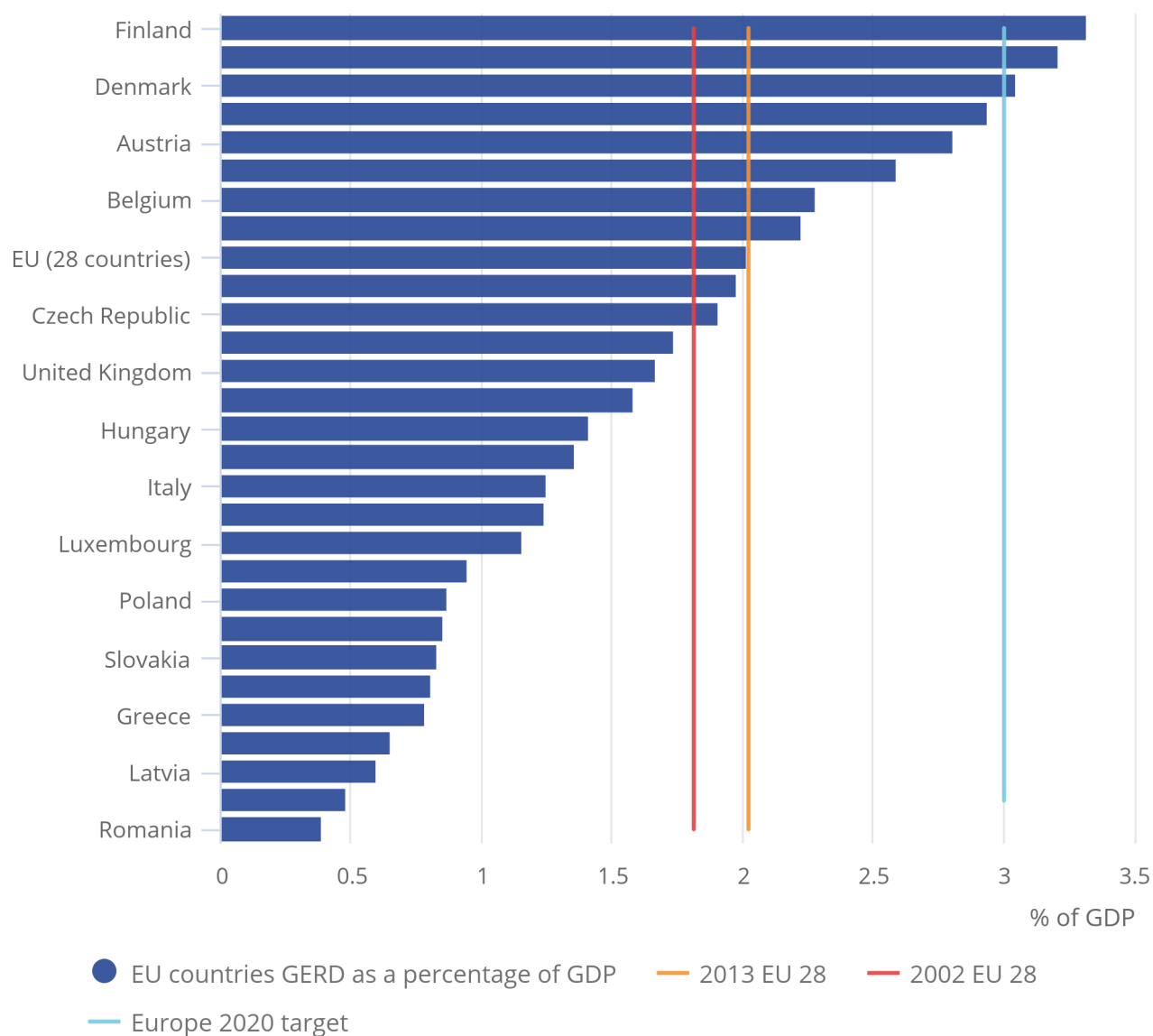
Source of boundaries: UNEP (2011): UNEP Environmental Data Explorer.

United Nations Environment Programme. <http://geodata.grid.unep.ch>.

Figure 9 presents the latest available 2013 estimates as a means of placing the UK into an international context with regards to GERD as a percentage of GDP. It shows the individual EU-28 countries' GERD as a percentage of GDP, as well as the average for the EU-28, compared with the Europe 2020 target of 3%. The UK's GERD represented 1.67% of GDP in 2013, an increase from 1.62 % in 2012, the 12th highest percentage.

**Figure 9: EU countries GERD as a percentage of GDP (R&D intensity), 2013**

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**Source: Eurostat**

**Notes:**

1. \* indicates data for Ireland is 2012.
2. Some EU countries' 2013 estimates taken from the Eurostat website are provisional.
3. Europe 2020 target = 3%.

The latest OECD estimates of GERD indicate that the modest increase in the EU GERD as a percentage of GDP that began in 2011 continued into 2013. [The OECD's own preliminary estimates](#) indicate an overall increase in GERD as a percentage of GDP from 1.97% in 2011 to 2.02% in 2013.

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

## 11. Background notes

### 1. Key issues specific to this bulletin

This is the latest annual release about gross expenditure on R&D in the UK by businesses, government departments, research councils, higher education institutes and private non-profit organisations, published by the Office for National Statistics (ONS). The results in this release are in respect of 2013. ONS began publishing annual data on R&D expenditure in 1993. The source of the information comes from the Business Enterprise Research and Development (BERD) survey, the Government Research and Development (GovERD) survey (including research councils), and the Private Non-Profit Research and Development (PNP) survey.

Higher Education R&D (HERD) data are collected from a census of higher education institutes and provided to ONS by the Higher Education Funding Councils (HEFCs).

All these sectors' (Business, Government, Higher Education and Private Non-Profit) R&D data are known collectively as GERD, which represents the gross domestic expenditure on R&D in the UK.

A [quality report \(137 Kb Pdf\)](#) for the GERD output is available on the ONS website.

### 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 Gross Domestic Expenditure on Research and Development estimates be designated as National Statistics, subject to ONS carrying out certain requirements. ONS completed the necessary work to meet these requirements and on 3 June 2013, the UK Statistics Authority confirmed that this release, and its associated data, has retained National Statistics status.

### 3. Timeliness and punctuality

An internal investigation has been carried out 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 higher education estimates are coordinated and provided by HEFC England with respect to academic years. HEFCs are not able to provide ONS with these estimates until the middle of February each year. Affording time to quality assure and check these data, the earliest that these estimates can therefore be published is March.

### 4. Completeness of coverage

GERD is the measure used by the majority of commentators on R&D for international comparisons. It covers all R&D performed in the UK, irrespective of who pays for it, including funding from overseas. However, it excludes R&D performed overseas even if it is funded from the UK.

The components of GERD relate to R&D performed in all sectors of the economy:

BERD is a survey conducted annually by ONS, and covers the business sector of the economy which in 2013 performed 64% of total UK R&D expenditure. As part of the 2013 survey, approximately 5,400 questionnaires were sent to businesses known to perform R&D. This included around 400 of the largest R&D spenders, accounting for approximately 77% of the 2013 total business R&D expenditure figure. 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.

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 used as the stratification variables. Completed questionnaires were returned by 5,112 businesses representing a response rate of 95%. Estimates from this survey were published on the ONS website on 20 November 2014 in the [UK Business Enterprise Research and Development 2013](#) statistical bulletin.

For more information about comparisons of UK BERD with the rest of the EU please visit ONS short story.

As part of the assessment of 'Statistics on Research and Development' by the UK Statistics Authority, a requirement was placed on ONS to review the methodology for producing business R&D statistics to identify potential gaps in coverage and meet the coverage requirements of European System of Accounts (ESA) 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.

GovERD is an annual census of approximately 140 government departments including seven research councils. Government departments are asked to include the expenditure on R&D they perform as part of their total estimated expenditure on R&D. This includes estimates of R&D performed by local authorities and NHS trusts.

HERD data are provided by the Higher Education Funding Councils for [England](#), [Scotland](#) and [Wales](#), the [Department for Education in Northern Ireland](#) and the seven UK research councils. These bodies also provide data on external research funding from overseas, non-profit organisations and businesses. The timeliness of these data is the main reason for the delay in the publication of GERD. Data are provided to ONS during February of a given year, approximately one month before the GERD release is published.

It is important to note that R&D funding provided to the higher education sector from government departments, research councils and HEFCs are collected as part of the GovERD survey.

PNP data are collected in a biennial survey which was introduced in 2011 with approximately 200 organisations being selected. The estimates from this survey were used in the compilation of the 2011 GERD publication, the first time since the 2003 reference year. Previously, estimates had been based on a number of different sources.

Identifying exactly who carries out R&D in this sector is a challenging task. A letter was despatched in 2010 to 344 organisations which were classified as private non-profit bodies, asking if they undertake R&D activities. The response rate was 50%, with 14% of all organisations surveyed responding positively, confirming that they perform R&D. More in depth analysis of these responses indicated that only a few industries were identified as performing R&D in this sector. Activities included library and archive activities, botanical and zoological gardens and nature reserve activities, engineering and design activities and technical testing and analysis. In 2011, all 690 organisations in these industries were sent a letter to further identify R&D performers. The response rate was 60% with 18% indicating positively. All these identified R&D performers together with known performers from earlier surveys, were sent a questionnaire to collect their totals for 2011.

The most recent survey was run in 2014 to collect 2013 data from an updated list of R&D performers in this sector. Results for the PNP organisations performing R&D in 2012 have therefore been estimated.

## 5. Revisions

As part of this release, business, government, higher education and private non-profit estimates of R&D performance and funding for 2011 and 2012 have been revised to take account of late returns and misreporting.

One indication of the reliability of the key indicators in this release can be obtained by monitoring the size of revisions. The following table 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**

			£ million
	Value in latest period	Average revision	Average revision without regard to sign
Gross expenditure on R&D performed in the UK	28,875	-253	253

Source: Office for National Statistics

A spreadsheet is available providing the [revisions of estimates \(34 Kb Excel sheet\)](#) from 2006 and the calculations behind the averages in the revisions table. The table covers estimates of the UK's gross domestic expenditure on R&D first published from March 2008 (for 2006) to March 2012 (for 2010).

A statistical test has been applied to the average revision to find out if there is bias in the estimates. This identified some significant downward revisions to the estimates first published, for 2006 to 2010. However, the scale of the revisions is small.

## 6. Sampling variability

Estimates from the BERD survey 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 BERD survey is subject to two types of possible error:

- Sampling errors - due to only a sample of the population being surveyed. These estimates can be quantified and were published as part of the [BERD publication](#).
- 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. An [Information Note \(147 Kb Pdf\)](#) has been published which 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, GovERD and PNP questionnaires were redesigned after the 2010 survey to better reflect user needs, including new National Accounts and European Union (EU) requirements. These followed large revisions to both the BERD and GovERD surveys for the 2007 data collections.

A new methodology and a new survey were introduced for compiling estimates of R&D expenditure for the PNP sector as a performer from 2011. The estimates from this survey have been used as the basis for the compilation of the 2012 PNP performer data in this publication.

While all these changes are viewed as being an improvement, they may have an impact on the comparability of data over time. 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 components



- In addition to being analysed by sector of performance, GERD may be analysed by sector of funding. The R&D performed by any one sector of the economy can be funded by any of the other sectors, or by the performing sector itself
- For the purposes of estimation, the recommended practice of the OECD is to use information from those performing R&D, where this is available. These estimates are considered more reliable than those from surveys of R&D funders

## 9. Regional data

Regional estimates were first introduced as part of the 2011 GERD statistical bulletin, published in March 2013. Regional estimates are produced for the four sectors as follows:

- Business – businesses receiving the long questionnaire (the 400 largest R&D spenders) account for approximately 77% of total business R&D expenditure in 2013. Each business is 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 23% of total expenditure were estimated by using county region codes from the business register of R&D performers. Aggregation is undertaken at broad product group and county level
- Higher Education – these estimates are coordinated and provided by [HEFC England](#) and are based on the geographic region of all their Higher Education Institutes (HEIs)
- Government – the annual census of the government sector collects regional full time equivalent (FTE) data. Ratio estimation is then applied to the corresponding in-house expenditure data to provide estimates per FTE per region. These are then aggregated to provide regional expenditure values for this sector
- Private Non-Profit – each organisation is asked to provide the workplace postcodes for all the sites at which the organisation performed R&D, and to allocate the total expenditure figures of the organisation to the sites on a percentage basis. As this survey is a census, any non responder's expenditure estimates are allocated regionally using the county region codes from the business register

## 10. Users and uses of data

GERD is the UK's most reliable estimate of national research and development spending that draws together information on R&D spending in the public and private sectors for both civil and defence applications.

Changes introduced as part of the amendments to the System of National Accounts (SNA) in 2008, and in ESA 2010, specify that R&D from September 2014 onwards, should be considered as an ancillary activity. Expenditure on R&D should constitute investment in R&D assets, which as a consequence needs to be capitalised in the UK National Accounts. In short, R&D expenditure will now contribute to the compilation of the value of the UK economy and be included as part of GDP estimates. Please see the [ONS ESA 2010](#) page for more information.

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

- [European Union's Statistical Office](#) (Eurostat) - the UK provides statistics measuring R&D activity in accordance with European Commission Regulation No. 995/2012 of the European Parliament and the Council. The 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 a target of 3% of the EUs' 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
- [OECD](#) – uses GERD data for constructing internationally comparable databases 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 [European Commission's Research and Innovation Directorate](#) has recently published the [Innovation Union Competitiveness report, 2011](#). One of the key findings is that the EU is slowly moving towards its target of 3% of GDP but there is a widening gap between the EU and its world competitors notably due to weaker business R&D investment
- The [Department for Business, Innovation and Skills](#) (BIS) use GERD data to assess policy impact and inform debate. R&D data underpin their assessments of UK innovation performance as well as international work in the field
- The [Welsh Government](#) (WG), [Scottish Government](#) (SG) and the [Northern Ireland Department of Finance and Personnel](#) (DFPNI) use GERD 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. Regional GERD information is also published in the [Scottish GERD tables](#)
- The Research and Development Society is a UK-based organisation formed to promote the better understanding of R&D in all its forms. Its members include representatives from industry, government departments and agencies, universities and consultants. The Research and Development Society make use of GERD data, as a key source of information, for understanding how much is being invested in R&D in the UK on an annual basis and to inform wider debates about R&D

Requests for GERD 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:

- Dr Ian Viney, Head of Strategic Evaluation at the [Medical Research Council](#) (MRC) , produced analysis in the [UK Health Research Analysis 2009/10](#) published in November 2012, which included funding flows in the UK of health related R&D expenditure
- [Defence Analytical Services and Advice Agency](#) (DASA) provides professional analytical, economic and statistical services and advice to the Ministry of Defence (MOD), and defence-related statistics to Parliament, other government departments and the public

Do you make use of our annual estimates of UK GERD? If yes, we would like to hear from you ( [RandD@ons.gsi.gov.uk](mailto: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.

## Science, Engineering and Technology (SET) Statistics

Until the publication of the 2011 estimates in 2013, the Department for Business, Innovation and Skills (BIS) published annual estimates of government departmental spending on [Science, Engineering and Technology](#), known as "SET Statistics". These are a summary of key science, engineering and technology indicators and are collated by the Office for National Statistics (ONS) using data collected as part of the GoVERD survey. SET Statistics are broader than just R&D, as they comprise Government R&D expenditure (including overseas), technology transfer activities, and scientific and technical postgraduate education and training. The first publication of these estimates by ONS was the [UK Government Expenditure on Science, Engineering and Technology, 2012](#) on 11 July 2014.

SET statistics are broader than just research and development (R&D), as they comprise government R&D expenditure (performed in the UK and overseas), knowledge transfer activities, the indicative UK contributions to the European Union's (EU) R&D expenditure, and personnel associated with scientific and technical postgraduate education and training. Therefore, the estimates from the GovERD survey of expenditure on R&D performed in the UK by government and research councils, that are included in this GERD release, will form part of the broader estimates of SET that will be published later this year.

ONS has provisionally scheduled the publication of the UK's SET Statistics for 2013 for July 2015.

## 11. 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.

## 12. ONS business statistics

There is a [Business and Trade Statistics community](#) on the [StatsUserNet](#) website. StatsUserNet is the Royal Statistical Society's new 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 above.

## 13. 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.

## 14. Special events

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

## 15. 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 the organisations given [pre-publication access](#) to the contents of this bulletin.

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'

Additional standard extracts containing more detail are available on request. Bespoke analyses are also available but there will be a charge for these, please see the [R&D charging policy](#). For more information about either of these services please email [RandD@ons.gsi.gov.uk](mailto:RandD@ons.gsi.gov.uk), or telephone +44 (0)1633 456767.

Any bespoke analysis carried out for R&D customers will be available free of charge on the [Published ad hoc data and analysis: Business and Energy](#) web pages.

## 16. Details of the policy governing the release of new data are available by visiting [www.statisticsauthority.gov.uk/assessment/code-of-practice/index.html](http://www.statisticsauthority.gov.uk/assessment/code-of-practice/index.html) or from the Media Relations Office email: [media.relations@ons.gsi.gov.uk](mailto:media.relations@ons.gsi.gov.uk)

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



## UK Gross Domestic Expenditure on Research and Development (R&D), 2013

Published on 20 March 2015

Please click on the links below to access the datasets:

[Table 1](#) Expenditure on R&D in the UK by performing and funding sectors, 2013

[Table 2](#) Expenditure on R&D in the UK by sector of performance: 2002 to 2013

[Table 3](#) Expenditure on Civil and Defence R&D in the UK by sector of performance: 2002 to 2013

[Table 4](#) Expenditure on R&D in the UK by sector of funding: 2002 to 2013

[Table 5](#) Expenditure on Civil and Defence R&D in the UK by sector of funding: 2002 to 2013

[Table 6](#) Country and Regional breakdown of expenditure on R&D in the UK by sector of performance, 2013

[Table R1](#) Expenditure on R&D in the UK: Revisions to series previously published

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Next publication: March 2016

## 1

## EXPENDITURE ON R&amp;D IN THE UK BY PERFORMING AND FUNDING SECTORS, 2013

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Current prices		Sector performing the R&D					£ million	
	Government	Research Councils	Higher Education	Business Enterprise	Private Non-Profit <sup>1</sup>	Total	Overseas	
<b>Sector providing the funds</b>								
Government	1,050	77	380	1,646	61	<b>3,214</b>	547	
Research Councils	60	600	2,121	3	115	<b>2,899</b>	200	
Higher Education Funding Councils	-	-	2,297	-	-	<b>2,297</b>	-	
Higher Education	1	13	300	-	54	<b>368</b>	-	
Business Enterprise	239	25	313	12,750	16	<b>13,343</b>	3,305	
Private Non-Profit	5	48	1,051	74	185	<b>1,362</b>	-	
Overseas	112	51	1,167	3,975	87	<b>5,393</b>	-	
<b>TOTAL</b>	<b>1,467</b>	<b>813</b>	<b>7,628</b>	<b>18,448</b>	<b>518</b>	<b>28,875</b>	-	
of which:								
Civil	1,303	813	7,592	16,734	516	<b>26,959</b>	-	
Defence <sup>1</sup>	164	-	37	1,713	2	<b>1,916</b>	-	

Source: Office for National Statistics

1 Private Non-Profit defence has been estimated using the 2012 data, as no survey data available for 2013.

## 2

EXPENDITURE ON R&D IN THE UK BY SECTOR OF PERFORMANCE:  
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												£ million

### 3 EXPENDITURE ON CIVIL AND DEFENCE R&D IN THE UK BY SECTOR OF PERFORMANCE: 2002 to 2013

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£ million

													£ million
		Civil											
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Sector performing the R&D													
Current prices													
TOTAL	GLBB	17,272	17,603	17,802	19,255	20,416	21,963	22,945	23,424	24,255	25,471 <sup>†</sup>	25,197	26,959
Government	GLBO	771	869	889	882	895	1,042	1,087	1,119	1,146	1,164	1,182 <sup>†</sup>	1,303
Research Councils	DMSC	708	819	923	1,046	1,057	1,034	1,041	1,097	1,141	1,035 <sup>†</sup>	804	813
Business Enterprise	GLBP	10,839	10,800	10,623	11,288	11,975	13,269	13,718	13,648	14,392	15,667 <sup>†</sup>	15,539	16,734
Higher Education	GLBQ	4,581	4,746	4,960	5,538	5,976	6,080	6,505	6,894	6,925	7,082 <sup>†</sup>	7,129	7,592
Private Non-Profit	GLBR	374	369	406	502	513	539	595	666	651	524 <sup>†</sup>	543	516
As % of GDP		1.52 <sup>†</sup>	1.46	1.40	1.43	1.43	1.47	1.53	1.56	1.54	1.56	1.51	1.56

		Civil											
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Sector performing the R&D													
Constant prices (2013) <sup>1</sup>													
TOTAL		22,552 <sup>†</sup>	22,525	22,084	23,237	23,987	25,072	25,551	25,427	25,620	26,432	25,732	26,959
Government		1,007 <sup>†</sup>	1,112	1,103	1,064	1,052	1,189	1,210	1,215	1,211	1,208	1,207	1,303
Research Councils		924 <sup>†</sup>	1,048	1,145	1,262	1,242	1,180	1,159	1,191	1,205	1,074	821	813
Business Enterprise		14,152 <sup>†</sup>	13,820	13,178	13,622	14,070	15,147	15,276	14,815	15,202	16,258	15,869	16,734
Higher Education		5,981 <sup>†</sup>	6,073	6,153	6,683	7,021	6,941	7,244	7,484	7,315	7,349	7,280	7,592
Private Non-Profit		488 <sup>†</sup>	472	504	606	603	615	663	723	688	544	555	516

		Defence											
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013 <sup>2</sup>
Sector performing the R&D													
Current prices													
TOTAL	GLBC	1,971	2,124	2,440	2,851	2,577	2,732	2,399	2,208	1,918	1,980 <sup>†</sup>	1,790	1,916
Government	GLBS	283	374	351	357	357	279	262	288	226	158	150	164
Research Councils	DMSM	6	6	7	4	4	-	-	-	-	-	-	-
Business Enterprise	GLBT	1,645	1,706	2,039	2,446	2,169	2,407	2,097	1,884	1,653	1,785 <sup>†</sup>	1,604	1,713
Higher Education	GLBU	37	38	44	43	46	39	40	36	38	35	34	37
Private Non-Profit <sup>2</sup>	GLBV	-	-	-	-	-	8	1	-	1	2	2	2
As % of GDP		0.17 <sup>†</sup>	0.18	0.19	0.21	0.18	0.18	0.16	0.15	0.12	0.12	0.11	0.11

	Defence												
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013 <sup>2</sup>	
Sector performing the R&D													
Constant prices (2013) <sup>1</sup>													
TOTAL	2,573 <sup>†</sup>	2,718	3,027	3,441	3,028	3,119	2,671	2,397	2,026	2,055	1,828	1,916	
Government	370 <sup>†</sup>	479	435	431	419	318	292	313	239	164	153	164	
Research Councils	8 <sup>†</sup>	8	9	5	5	-	-	-	-	-	-	-	
Business Enterprise	2,148 <sup>†</sup>	2,183	2,529	2,952	2,548	2,748	2,335	2,045	1,746	1,852	1,638	1,713	
Higher Education	48 <sup>†</sup>	49	55	52	54	45	45	39	40	36	35	37	
Private Non-Profit <sup>2</sup>	-	-	-	-	-	9	1	-	1	2	2	2	

Source: Office for National Statistics

<sup>1</sup> Please note that the latest deflators have been applied to the business research and development estimates in this bulletin which has resulted in small differences being observed between the BERD and GERD publications.

<sup>2</sup> Private Non-Profit defence has been estimated using the 2012 data, as no survey data available for 2013.

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

<sup>†</sup> crosses denote earliest data revision.

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## 4 EXPENDITURE ON R&D IN THE UK BY SECTOR OF FUNDING: 2002 to 2013

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		£ million											
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
<b>Sector funding R&amp;D in the UK</b>													
Current prices													
<b>TOTAL</b>	<b>GLBA</b>	<b>19,243</b>	<b>19,727</b>	<b>20,242</b>	<b>22,106</b>	<b>22,993</b>	<b>24,696</b>	<b>25,345</b>	<b>25,632</b>	<b>26,173</b>	<b>27,452 <sup>†</sup></b>	<b>26,988</b>	<b>28,875</b>
Government	<b>GLCA</b>	2,215	2,650	2,778	2,584	2,531	2,581	2,703	2,939	3,044	3,022 <sup>†</sup>	2,842	3,214
Research Councils	<b>DMSR</b>	1,713	1,947	2,084	2,574	2,709	2,543	2,765	2,908	2,958	2,942	2,665 <sup>†</sup>	2,899
Higher Education Funding Councils	<b>DMSS</b>	1,626	1,665	1,804	1,928	2,085	2,234	2,227	2,395	2,303	2,257	2,185	2,297
Business Enterprise	<b>GLCB</b>	8,384	8,287	8,914	9,580	10,377	11,519	11,511	11,362	11,443	12,413 <sup>†</sup>	12,330	13,343
Higher Education	<b>GLCC</b>	208	218	229	266	288	284	303	314	315	353 <sup>†</sup>	342	368
Private Non-Profit	<b>GLCD</b>	962	931	961	1,022	1,076	1,153	1,247	1,279	1,267	1,293 <sup>†</sup>	1,296	1,362
Overseas	<b>GLCE</b>	4,135	4,029	3,472	4,152	3,927	4,382	4,589	4,436	4,842	5,172 <sup>†</sup>	5,327	5,393
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013

### Sector funding R&D in the UK

Constant prices (2013)<sup>1</sup>

<b>TOTAL</b>	<b>25,125 <sup>†</sup></b>	<b>25,243</b>	<b>25,110</b>	<b>26,677</b>	<b>27,015</b>	<b>28,191</b>	<b>28,224</b>	<b>27,824</b>	<b>27,646</b>	<b>28,487</b>	<b>27,561</b>	<b>28,875</b>
Government	2,892 <sup>†</sup>	3,391	3,446	3,118	2,974	2,946	3,010	3,190	3,215	3,136	2,902	3,214
Research Councils	2,237 <sup>†</sup>	2,491	2,585	3,106	3,183	2,903	3,079	3,157	3,125	3,053	2,722	2,899
Higher Education Funding Councils	2,123 <sup>†</sup>	2,131	2,238	2,327	2,450	2,550	2,480	2,600	2,433	2,342	2,231	2,297
Business Enterprise	10,947 <sup>†</sup>	10,604	11,058	11,561	12,192	13,149	12,818	12,334	12,087	12,881	12,592	13,343
Higher Education	272 <sup>†</sup>	279	284	321	338	324	337	341	333	366	349	368
Private Non-Profit	1,256 <sup>†</sup>	1,191	1,192	1,233	1,264	1,316	1,389	1,388	1,338	1,342	1,324	1,362
Overseas	5,399 <sup>†</sup>	5,156	4,307	5,011	4,614	5,002	5,110	4,815	5,115	5,367	5,440	5,393

Source: Office for National Statistics

<sup>1</sup> Please note that the latest deflators have been applied to the business research and development estimates in this bulletin which has resulted in small differences being observed between the BERD and GERD publications.

<sup>†</sup> crosses denote earliest data revision.

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## 5 EXPENDITURE ON CIVIL AND DEFENCE R&D IN THE UK BY SECTOR OF FUNDING: 2002 to 2013

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		£ million											
		Civil											
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
<b>Sector funding R&amp;D in the UK</b>													
Current prices													
<b>TOTAL</b>	<b>GLBB</b>	<b>17,272</b>	<b>17,603</b>	<b>17,802</b>	<b>19,255</b>	<b>20,416</b>	<b>21,963</b>	<b>22,945</b>	<b>23,424</b>	<b>24,255</b>	<b>25,471<sup>†</sup></b>	<b>25,197</b>	<b>26,959</b>
Government	<b>GLCF</b>	1,258	1,507	1,301	1,299	1,281	1,421	1,577	1,690	1,838	1,758 <sup>†</sup>	1,644	1,933
Research Councils	<b>DMSX</b>	1,713	1,947	2,084	2,574	2,709	2,543	2,765	2,908	2,958	2,941 <sup>†</sup>	2,665	2,899
Higher Education Funding Councils	<b>DMSY</b>	1,626	1,665	1,804	1,928	2,085	2,234	2,227	2,395	2,303	2,257	2,185	2,297
Business Enterprise	<b>GLCG</b>	7,926	7,879	8,476	8,963	9,646	10,603	10,775	10,659	10,945	11,900 <sup>†</sup>	11,908	12,879
Higher Education	<b>GLCH</b>	208	218	229	266	288	284	303	314	315	353 <sup>†</sup>	342	368
Private Non-Profit	<b>GLCI</b>	962	931	961	1,022	1076	1,153	1,247	1,279	1,267	1,267 <sup>†</sup>	1,291	1,356
Overseas	<b>GLCJ</b>	3,578	3,456	2,948	3,203	3,331	3,726	4,054	4,180	4,628	4,995 <sup>†</sup>	5,163	5,228
<b>Sector funding R&amp;D in the UK</b>													
Constant prices (2013) <sup>1</sup>													
<b>TOTAL</b>		<b>22,552<sup>†</sup></b>	<b>22,525</b>	<b>22,084</b>	<b>23,237</b>	<b>23,987</b>	<b>25,072</b>	<b>25,551</b>	<b>25,427</b>	<b>25,620</b>	<b>26,432</b>	<b>25,732</b>	<b>26,959</b>
Government		1,643 <sup>†</sup>	1,928	1,614	1,568	1,505	1,622	1,756	1,835	1,941	1,824	1,679	1,933
Research Councils		2,237 <sup>†</sup>	2,491	2,585	3,106	3,183	2,903	3,079	3,157	3,125	3,052	2,722	2,899
Higher Education Funding Councils		2,123 <sup>†</sup>	2,131	2,238	2,327	2,450	2,550	2,480	2,600	2,433	2,342	2,231	2,297
Business Enterprise		10,349 <sup>†</sup>	10,082	10,515	10,817	11,333	12,104	11,999	11,571	11,561	12,349	12,161	12,879
Higher Education		272 <sup>†</sup>	279	284	321	338	324	337	341	333	366	349	368
Private Non-Profit		1,256 <sup>†</sup>	1,191	1,192	1,233	1,264	1,316	1,389	1,388	1,338	1,315	1,318	1,356
Overseas		4,672 <sup>†</sup>	4,422	3,657	3,865	3,914	4,253	4,514	4,537	4,889	5,183	5,273	5,228
<b>Sector funding R&amp;D in the UK</b>													
Current prices													
<b>TOTAL</b>	<b>GLBC</b>	<b>1,971</b>	<b>2,124</b>	<b>2,440</b>	<b>2,851</b>	<b>2,577</b>	<b>2,732</b>	<b>2,399</b>	<b>2,208</b>	<b>1,918</b>	<b>1,980<sup>†</sup></b>	<b>1,790</b>	<b>1,916</b>
Government	<b>GLCK</b>	956	1,143	1,477	1,285	1,250	1,160	1,126	1,249	1,206	1,263 <sup>†</sup>	1,199	1,281
Research Councils	<b>GLCM</b>	-	-	-	-	-	-	-	-	-	-	-	-
Higher Education Funding Councils	<b>DMSZ</b>	-	-	-	-	-	-	-	-	-	-	-	-
Business Enterprise	<b>GLCL</b>	458	407	439	616	730	916	737	703	498	513 <sup>†</sup>	422	464
Higher Education	<b>GLCN</b>	-	-	-	-	-	-	-	-	-	-	-	-
Private Non-Profit <sup>2</sup>	<b>GLCN</b>	-	-	-	-	-	-	-	-	-	26	5 <sup>†</sup>	6
Overseas	<b>GLCO</b>	556	574	524	949	597	657	536	256	214	177 <sup>†</sup>	163	165
<b>Sector funding R&amp;D in the UK</b>													
Constant prices (2013) <sup>1</sup>													
<b>TOTAL</b>		<b>2,573<sup>†</sup></b>	<b>2,718</b>	<b>3,027</b>	<b>3,441</b>	<b>3,028</b>	<b>3,119</b>	<b>2,671</b>	<b>2,397</b>	<b>2,026</b>	<b>2,055</b>	<b>1,828</b>	<b>1,916</b>
Government		1,248 <sup>†</sup>	1,463	1,832	1,551	1,469	1,324	1,254	1,356	1,274	1,311	1,224	1,281
Research Councils		-	-	-	-	-	-	-	-	-	-	-	-
Higher Education Funding Councils		-	-	-	-	-	-	-	-	-	-	-	-
Business Enterprise		598 <sup>†</sup>	521	545	743	858	1,046	821	763	526	532	431	464
Higher Education		-	-	-	-	-	-	-	-	-	-	-	-
Private Non-Profit <sup>2</sup>		-	-	-	-	-	-	-	-	-	27 <sup>†</sup>	5	6
Overseas		726 <sup>†</sup>	735	650	1,145	701	750	597	278	226	184	166	165

Source: Office for National Statistics

- 1 Please note that the latest deflators have been applied to the business research and development estimates in this bulletin which has resulted in small differences being observed between the BERD and GERD publications.

- 2 Private Non-Profit defence has been estimated using the 2012 data, as no survey data available for 2013.

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

<sup>†</sup> crosses denote earliest data revision.

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## 6

## COUNTRY AND REGIONAL BREAKDOWN OF EXPENDITURE ON R&amp;D IN THE UK BY SECTOR OF PERFORMANCE, 2013

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Current prices	Sector performing the R&D				£ million
	Government <sup>1, 5</sup>	Higher Education <sup>2</sup>	Business <sup>3</sup>	Private Non-Profit <sup>4, 5</sup>	Total
<b>United Kingdom</b>	<b>2,281</b>	<b>7,628</b>	<b>18,448</b>	<b>518</b>	<b>28,875</b>
North East <sup>5</sup>	..	250	309	..	576
North West <sup>5</sup>	..	600	1,784	..	2,509
<b>North East and North West<sup>5</sup></b>	<b>85</b>	<b>850</b>	<b>2,093</b>	<b>57</b>	<b>3,085</b>
Yorkshire and the Humber	74	531	644	4	1,253
East Midlands	87	338	1,369	2	1,796
West Midlands	4	371	1,697	-	2,072
East of England	212	699	4,071	260	5,242
London	335	1,874	1,317	148	3,674
South East	847	1,105	4,195	21	6,168
South West	358	385	1,452	17	2,212
<b>England</b>	<b>2,002</b>	<b>6,153</b>	<b>16,838</b>	<b>509</b>	<b>25,502</b>
Wales	33	284	369	1	687
Scotland	223	1,041	798	8	2,070
Northern Ireland	23	150	443	-	616

Source: Office for National Statistics

- 1 Government figures include Research Councils and estimates for those areas of Central Government not available from the Government Survey or from local authorities.
- 2 Higher Education regional data estimates provided by HEFCE.
- 3 Business regional estimates first published in the BERD publication on 20 November 2014.
- 4 Private Non-Profit estimates have been published using the 2013 survey data from the biennial survey.
- 5 North East and North West regions data have been combined due to confidentiality.

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

.. denotes disclosive figures.

**Please note:** Regional expenditure data by funding sector are unavailable.

EXPENDITURE ON R&D IN THE UK:  
REVISIONS TO SERIES PREVIOUSLY PUBLISHED

Current prices £ million

		2011	2012
<b>TOTAL</b>	<b>GLBA</b>	<b>-7</b>	<b>-18</b>
<b>Sector performing the R&amp;D</b>			
Government	<b>GLBK</b>	-	-28
Research Councils	<b>DMRS</b>	-5	-9
Business Enterprise	<b>GLBL</b>	-16	37
Higher Education	<b>GLBM</b>	-16	-48
Private Non-Profit	<b>GLBN</b>	30	30
<b>Sector funding R&amp;D in the UK</b>			
Government	<b>GLCA</b>	-6	-29
Research Councils	<b>DMSR</b>	-	-23
Higher Education Funding Councils	<b>DMSS</b>	-	-
Business Enterprise	<b>GLCB</b>	-85	13
Higher Education	<b>GLCC</b>	36	32
Overseas	<b>GLCE</b>	36	-31
Private Non-Profit	<b>GLCD</b>	14	19
		2011	2012
<b>CIVIL</b>	<b>GLBB</b>	<b>-24</b>	<b>-35</b>
<b>Sector performing the R&amp;D</b>			
Government	<b>GLBO</b>	-	-28
Research Councils	<b>DMSC</b>	-5	-9
Business Enterprise	<b>GLBP</b>	-32	21
Higher Education	<b>GLBQ</b>	-16	-49
Private Non-Profit	<b>GLBR</b>	30	30
<b>Sector funding R&amp;D in the UK</b>			
Government	<b>GLCF</b>	-14	-39
Research Councils	<b>DMSX</b>	-1	-23
Higher Education Funding Councils	<b>DMSY</b>	-	-
Business Enterprise	<b>GLCG</b>	-92	8
Higher Education	<b>GLCH</b>	36	33
Overseas	<b>GLCJ</b>	33	-27
Private Non-Profit	<b>GLCI</b>	14	14
		2011	2012
<b>DEFENCE</b>	<b>GLBC</b>	<b>16</b>	<b>16</b>
<b>Sector performing the R&amp;D</b>			
Government	<b>GLBS</b>	-	-
Research Councils	<b>DMSM</b>	-	-
Business Enterprise	<b>GLBT</b>	16	16
Higher Education	<b>GLBU</b>	-	-
Private Non-Profit	<b>GLBV</b>	-	-
<b>Sector funding R&amp;D in the UK</b>			
Government	<b>GLCK</b>	6	11
Research Councils	<b>GLCM</b>	-	-
Higher Education Funding Councils	<b>DMSZ</b>	-	-
Business Enterprise	<b>GLCL</b>	7	5
Higher Education	<b>GLCM</b>	-	-
Overseas	<b>GLCO</b>	3	-6
Private Non-Profit	<b>GLCN</b>	-	5

Source: Office for National Statistics

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