

Statistical bulletin

Research and development expenditure by the UK government: 2019

Research and development and related expenditure by UK government departments, UK Research and Innovation (UKRI) and higher education funding bodies. Formerly released as UK government expenditure on science, engineering and technology (SET).

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1 . Main points

- The UK government's net expenditure on research and development (R&D) reached a new high of £13.1 billion in 2019.
- Total net expenditure on R&D and knowledge transfer activities reached £13.4 billion in 2019 and represented 0.6% of gross domestic product (GDP), unchanged since 2010.
- UK Research and Innovation (UKRI), which includes the UK's seven research councils, contributed the most to net expenditure on R&D and knowledge transfer activities in 2019, at £5.3 billion, 39% of the total.
- In constant prices (adjusted for inflation), civil net expenditure on R&D and knowledge transfer activities (excluding EU R&D budget contributions) increased by 25.1% over the long term, from £9.1 billion in 2008 to £11.4 billion in 2019.
- In current prices, defence R&D expenditure was £1.0 billion in 2019 compared with £1.6 billion in 2018; while £348 million of the decrease is due to lower R&D spending, the remainder relates to a methodological review that has affected the comparability of the data between 2018 and 2019.
- UK contributions to EU R&D expenditure increased to £935 million in 2019, up from £841 million in 2018 but still below the peak in 2017 of £961 million.

2 . Research and development expenditure by the UK government data

[Research and development expenditure by the UK government: 2019](#)

Dataset | Released 15 April 2021

Annual net expenditure by UK government departments, UK Research and Innovation (UKRI) and higher education funding bodies for research and development (R&D) and knowledge transfer activities; by current and constant prices (formerly referred to as science, engineering and technology (SET)).

3 . Measuring the data

The main source of estimates for this publication is the annual Government Research and Development Survey (GovERD). The data are collected by an annual census survey which covers UK government departments, UK Research and Innovation (UKRI) and higher education funding bodies that perform or fund research and development (R&D).

Estimates should not be confused with the [Gross domestic expenditure on research and development \(GERD\), UK](#) bulletin, which was last published on 2 April 2020. This only includes expenditure on R&D performed "in-house", that is, by organisations themselves, by all sectors of the economy. Most estimates in the Research and development expenditure by the UK government release are on a net expenditure basis, that is, "in-house" R&D performed, plus purchased or funding provided for R&D, less funding received for R&D. The datasets also include estimates of expenditure on knowledge transfer activities and the UK's contribution to the EU's R&D budget.

The [UK government's Industrial Strategy](#) includes a target to "raise investment on R&D to 2.4% of gross domestic product (GDP) by 2027". UK R&D statistics are needed to assess how sectors of the economy are contributing towards reaching this policy goal. Progress to this target can be seen in the GERD statistical bulletin.

Explanation for defence decrease

A methodological review of defence R&D statistics has resulted in a decrease in R&D reported for 2019. An estimated £282 million of spending in 2019 that had been regarded as previously complying with the [Frascati definition of R&D](#), has been reassessed as not meeting it and has therefore been excluded from the estimate for 2019. Unfortunately, it has not been possible to revise the data for previous periods to account for this change. Therefore, defence statistics between 2018 and 2019 are not strictly comparable.

The change has also affected results for periods prior to 2018, but it is not possible to provide estimates of the size of the impact for previous years. The defence results up to 2018 should therefore be regarded as the end of the previous time series, while data from 2019 should be regarded as the beginning of a new defence time series. Overall government expenditure totals for 2019 that include defence are also not strictly comparable with previous periods. Other values in this release for 2019, where defence is not a component, are comparable with previous periods. We will investigate the feasibility of revising back data where possible in the next release, to account for the changes resulting from the review of defence statistics.

This bulletin was formerly called UK government expenditure on science, engineering and technology (SET). It covers estimates of expenditure by government departments, UK Research and Innovation (UKRI) and higher education funding bodies, that perform or fund research and development (R&D). More quality and methodology information on strengths, limitations, appropriate uses, and how the data were created is available in the [Research and development expenditure by the UK government QMI](#).

Coronavirus (COVID-19)

The collection of the data contained in this statistical bulletin has not been affected by the coronavirus (COVID-19) pandemic.

The Office for National Statistics (ONS) has released a public statement on [COVID-19 and the production of statistics](#). Specific queries must be directed to the [Media Relations Office](#).

4 . Related links

[Gross domestic expenditure on research and development, UK: 2018](#)

Bulletin | Released 2 April 2020

Annual estimates of research and development performed and funded by business enterprise, higher education, government, UK Research and Innovation (UKRI), and private non-profit organisations.

[Business enterprise research and development, UK: 2019](#)

Bulletin | Released 20 November 2020

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