

Statistical bulletin

Research and development expenditure by the UK government: 2020

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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Correction

19 May 2022 17:00

An error was discovered in the calculation of the Welsh Government net expenditure totals. The values have now been corrected and the release and all related data have been updated. We apologise for any inconvenience caused.

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1 . Main points

- The UK government's net expenditure on research and development (R&D) reached a new high of £15.3 billion in 2020, an increase since 2019 of £1.7 billion (in current prices), representing the largest percentage increase in current or constant prices since 2013.
- Total net expenditure on R&D and knowledge transfer activities reached £15.5 billion in 2020 and represented 0.7% of gross domestic product (GDP), which was in-line with the long-term trend of 0.6% to 0.7% since 2009.
- 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 2020, at £6.1 billion, 40% 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 29.1% over the long term, from £10.2 billion in 2009 to £13.2 billion in 2020.
- Defence R&D expenditure was £1.1 billion in 2020 compared with £1.0 billion (in current prices) in 2019; a 4.8% increase.
- UK contributions to EU R&D expenditure decreased to £1.3 billion in 2020, down from the peak of £1.4 billion (in current prices) in 2019.

2 . Research and development expenditure by the UK government data

[Research and development expenditure by the UK government: 2020](#)

Dataset | Released 08 April 2022

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

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).

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).

In this release, R&D-related concepts follow internationally agreed standards defined by the Organisation for Economic Co-operation and Development (OECD), as published in the [Frascati Manual](#) (2015).

Estimates should not be confused with the [UK gross domestic expenditure on research and development, \(GERD\) statistical bulletin](#), which was last published on 4 August 2021. GERD 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 [UK Research and Development Roadmap](#) 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.

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](#).

Explanation for defence decrease

A methodological review of defence R&D statistics has resulted in a decrease in R&D reported for 2019. 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 estimate the impact on 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 from 2019, where defence is not a component, are comparable with previous periods.

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 coronavirus and the production of statistics](#). You can direct specific queries to the Media Relations Office at media.relations@ons.gov.uk.

4 . Related links

[Gross domestic expenditure on research and development, UK: 2019](#)

Bulletin | Released 4 August 2021

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: 2020](#)

Bulletin | Released 19 November 2021

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