

Statistical bulletin

Research and development expenditure by the UK government: 2021

Research and development and related expenditure by UK government departments and devolved administrations.

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1 . Main points

- The UK government's net expenditure on research and development (R&D) (excluding EU R&D budget contributions) remained at £14.0 billion in 2021.
- Total net expenditure on R&D (including EU R&D budget contributions) decreased by £803 million (5.3%), from £15.3 billion in 2020 to £14.5 billion in 2021.
- Total net expenditure on R&D (including EU R&D budget contributions) plus knowledge transfer activities was £14.7 billion in 2021, and represented a decrease of 5.1% from the 2020 estimate of £15.5 billion.
- UK Research and Innovation (UKRI), which includes the UK's seven research councils, contributed the most to net expenditure on R&D (including EU R&D budget contributions) plus knowledge transfer activities in 2021, at £5.7 billion, 39% of the total.
- Defence R&D expenditure was £1.8 billion in 2021, an increase of £768 million (72%) since the 2020 value of £1.1 billion; total civil R&D expenditure decreased by £748 million (5.8%) in 2021, offsetting most of the defence increase.
- In constant prices (adjusted for inflation), total civil net expenditure on R&D and knowledge transfer activities increased by 26.7% over the long term, from £9.8 billion in 2010 to £12.5 billion in 2021.

2 . Research and development expenditure by the UK government data

[Research and development expenditure by the UK government: 2021](#)

Dataset | Released 30 March 2023

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

3 . Measuring the data

This release provides estimates of research and development (R&D) performed in and funded by UK government departments and the devolved administrations.

The main source of estimates for this publication is the annual Government Research and Development Survey (GovERD). This is an annual census survey of UK government departments, the devolved administrations, UK Research and Innovation (UKRI), and higher education funding bodies.

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 \(2015\) on OECD.org](#).

Estimates should not be confused with the [UK gross domestic expenditure on research and development \(GERD\) statistical bulletin](#), which was last published on 22 November 2022. GERD only includes expenditure on R&D performed "in house", that is, by organisations themselves, by all sectors of the economy. Most estimates in our [Research and development expenditure by the UK government statistical bulletins](#) 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.

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](#).

The periods referred to in this release relate to financial years, therefore references to 2021 relate to the financial year 2021 to 2022.

All figures quoted are in current prices unless otherwise stated.

Explanation for changes in defence R&D

A methodological review of the Ministry of Defence's (MoD) R&D statistics resulted in a decrease in R&D reported for 2019. Therefore, defence statistics between 2018 and 2019 are not strictly comparable.

This change 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.

The increase in defence net R&D expenditure of £768 million in 2021 results from the 2020 Spending Review, which created a £6.6 billion ringfence for R&D spending over four years (from financial years ending 2022 to 2025). More information is available in the [MoD's Annual Report and Accounts 2021-22](#).

In July 2021, the Atomic Weapons Establishment (AWE) became an executive non-departmental public body, owned by MoD. Prior to this it was owned and managed through an industry consortium, funded by MoD. Therefore, the value of £532 million for in-house R&D performed in 2021 (financial year 2021 to 2022) includes in-house R&D performed by AWE, which in previous periods was reported under the purchased or funding expenditure category as funds given to AWE.

4 . Related links

[Gross domestic expenditure on research and development, UK: 2020](#)

Bulletin | Released 22 November 2022

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: 2021](#)

Bulletin | Released 22 November 2022

Spending and numbers employed on research and development by businesses in the UK, including data on sources of funds and regional spread, broken down by product sector, and civil and defence type of research.

5 . Cite this statistical bulletin

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