

Government Investments in R&D

In the United States, federal and state government agencies play an important role in the nation's research and experimental development (R&D) enterprise. The National Center for Science and Engineering Statistics (NCSES), a principal federal statistical agency within the U.S. National Science Foundation, provides data and analysis to help decision-makers understand the government sector's R&D portfolio. NCSES sponsors several data collections and conducts analysis to provide details on the funding and performance of R&D by federal and state government agencies.

Government Funding for R&D

The federal government designates funds for R&D to foster U.S. knowledge and innovation, encouraging both technological progress and economic growth.

Most government funding for R&D is directed toward extramural performers (e.g., private businesses, universities, and nonprofits), usually through grants and contracts distributed by federal agencies. This is measured as budget authority and obligations.

Federal funding is measured using either budget authority or obligations. **Budget authority** refers to the amount of money that Congress permits a federal agency to commit to spending. **Obligations** are legally binding commitments to spend funds on goods and services.

Federal R&D funding is distributed by 14 federal departments and 16 independent agencies, each with distinct missions serving national priorities.

Data on federal R&D funding come from three main sources.

- The annual report on **Federal R&D Funding, by Budget Function** (Budget Function)
- The **Survey of Federal Funds for R&D** (Federal Funds for R&D)
- The **Survey of Federal Science and Engineering Support to Universities, Colleges, and Nonprofit Institutions** (Federal S&E Support Survey)

Data on state government R&D funding come from one survey.

- The **Survey of State Government R&D** (SGRD)

Government Performance of R&D

NCSES also provides data on intramural performance, the government's own performance of R&D by government employees and on-site contractors at government-owned and -operated facilities.

Government performance of R&D is measured by outlays. **Outlays** are the actual disbursement of cash, checks, and electronic transfers to execute previous obligations.

Data on federal performance of R&D—including type of R&D, source of funds, federal agency, and more—come from two surveys.

- The **Federal Facilities R&D Survey** (FFRD Survey)
- The **Federally Funded Research and Development Centers R&D Survey** (FFRDC R&D Survey)

Data on state government performance of R&D come from one survey.

- The **Survey of State Government R&D** (SGRD)

See the reverse side for more information about the surveys.



Budget Function Report



The annual Budget Function report offers insight into federal priorities for R&D across broad national needs.

The report compiles information from the president's budget request, congressional budget justifications, and other federal source materials. It tracks federal budget authority by broad functional areas that reflect major national purposes, such as national defense, health, and energy.

The national defense function includes not only the Department of Defense (DOD) but also components of the Department of Energy (DOE), the Department of Homeland Security, and the Department of Justice. In FY 2024, total budget authority for national defense R&D was \$105.7 billion, and the health function was \$47.2 billion.

First data year available: 1971.

Federal S&E Support Survey



The Federal S&E Support Survey provides a detailed look at federal R&D funding by the individual recipient universities and nonprofit organizations.

It is the only source of comprehensive data on federal science and engineering (S&E) funding to these institutions, including fellowship training and traineeship grants, facilities for instruction in S&E, and other support for S&E.

In FY 2023, federal obligations for S&E support to higher education totaled \$49.0 billion. The Department of Health and Human Services was the largest funder, accounting for 58% of all federal S&E support to higher education and 61% of all R&D obligations to nonprofit organizations.

First data year available: 1965.

Federal Facilities R&D Survey



The FFRD Survey is the first survey to provide complete data on federal agency performance of R&D.

It measures R&D conducted within federal agencies' own laboratories and facilities by federal employees and on-site contractors.

In FY 2024, expenditures for federal R&D performance totaled \$49.1 billion. On-site contractor costs accounted for 31% of federal agencies' intramural R&D expenditures.

DOD is the largest federal performer of R&D, accounting for 71% of federal R&D performance in FY 2024.

First data year available: 2022.

Federal Funds for R&D Survey



The Federal Funds for R&D Survey offers a deeper dive into federal R&D funding by agency. It provides data on agency obligations for R&D and R&D plant (major equipment, land, and construction or rehabilitation of facilities) across various categories, including type of R&D, field of R&D, type of performer, and place of performance.

FY 2024 federal obligations for R&D totaled \$194.2 billion. Funding to the business sector accounted for 36% of all federal R&D funds, followed by the higher education sector with 23% and the nonprofit sector with 5%.

Agency obligations to federal performers totaled \$51.1 billion in FY 2024.

First data year available: 1951.

Survey of State Government R&D



The SGRD is the only national source of information on R&D funding and performance by state agencies.

Data include performer type, source of funds, and government function.

In FY 2024, state government agencies reported \$3.3 billion in total R&D expenditures, with approximately 76% directed to external performers.

State agencies spent \$812 million on intramural R&D performance in FY 2024, with New York State agencies accounting for 37% of the total. Applied research made up 76% of total intramural R&D spending by state agencies in FY 2024.

First data year available: 2006.

FFRDC R&D Survey



The FFRDC R&D Survey provides the only source of data on R&D expenditures at more than 40 federally funded research and development centers (FFRDCs), such as Los Alamos National Laboratory and the Jet Propulsion Laboratory.

FFRDCs are government-owned facilities operated by universities, nonprofits, or businesses that conduct R&D on behalf of federal agencies.

In 2024, total FFRDC R&D expenditures reached \$31.7 billion. Expenditures from DOE's FFRDCs accounted for 57%. Experimental development represented 41% of total FFRDC expenditures, followed by applied research at 39% and basic research at 20%.

First data year available: 2001.



National Center for Science and Engineering Statistics (NCSES)

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