

**Table 2****Annual change in U.S. R&D expenditures and gross domestic product, by performing sectors, 1990–2022**

(Percent)

Expenditures and gross domestic product	Longer term trends			Most recent years											
	1991–2001	2001–11	2011–21	2010–11	2011–12	2012–13	2013–14	2014–15	2015–16	2016–17	2017–18	2018–19	2019–20	2020–21 <sup>a</sup>	2021–22 <sup>b</sup>
Current \$															
Total R&D, all performers	5.6	4.3	6.4	4.8	1.8	4.7	4.8	3.9	5.5	6.1	9.1	10.2	7.7	10.1	12.2
Business	5.8	3.8	7.5	5.4	2.8	6.7	5.6	4.4	6.7	6.9	9.8	11.8	9.0	12.0	13.8
Federal government	3.5	5.0	2.2	5.4	-2.6	-2.0	3.1	0.3	-3.1	2.7	11.0	7.6	3.6	2.6	9.8
Federal intramural	3.9	4.6	1.7	9.3	-2.7	-1.8	4.1	-1.7	-7.1	1.5	14.2	8.4	3.4	0.6	13.3
FFRDCs	2.6	5.9	3.1	-1.4	-2.4	-2.5	1.3	4.2	4.2	4.6	6.1	6.3	4.1	6.1	4.2
Nonfederal government <sup>c</sup>	NA	NA	-0.1	0.4	-4.2	-6.8	-5.9	2.0	4.3	1.9	1.7	4.9	1.2	0.3	1.7
Higher education	6.0	6.3	3.6	3.4	1.3	1.0	1.3	3.7	4.9	4.9	5.3	4.4	3.4	6.1	6.6
Nonprofit organizations	8.9	5.0	4.3	-1.3	-0.3	4.1	6.1	5.0	9.6	4.2	4.5	4.8	5.1	0.5	0.5
Gross domestic product	5.6	4.0	4.2	3.7	4.2	3.9	4.3	3.9	2.8	4.3	5.3	4.2	-0.9	10.7	9.1
Constant 2017 \$															
Total R&D, all performers	3.6	2.2	4.4	2.7	-0.1	3.0	3.0	2.9	4.5	4.3	6.7	8.4	6.3	5.2	4.8
Business	3.8	1.7	5.6	3.3	0.9	4.9	3.8	3.5	5.7	5.0	7.3	10.0	7.6	7.1	6.3
Federal government	1.5	2.9	0.4	3.2	-4.4	-3.7	1.4	-0.6	-4.1	0.9	8.6	5.8	2.3	-1.9	2.6
Federal intramural	1.9	2.4	-0.2	7.1	-4.5	-3.4	2.3	-2.6	-8.0	-0.3	11.6	6.6	2.1	-3.8	5.8
FFRDCs	0.6	3.8	1.2	-3.3	-4.2	-4.1	-0.5	3.2	3.2	2.8	3.7	4.6	2.7	1.4	-2.7
Nonfederal government <sup>c</sup>	NA	NA	-2.0	-1.6	-5.9	-8.3	-7.5	1.0	3.3	0.1	-0.6	3.2	-0.1	-4.1	-5.0
Higher education	4.0	4.1	1.7	1.4	-0.5	-0.6	-0.4	2.7	3.9	3.1	2.9	2.6	2.1	1.5	-0.4
Nonprofit organizations	6.9	2.8	2.4	-3.3	-2.1	2.3	4.3	4.0	8.5	2.4	2.1	3.0	3.7	-3.9	-6.1
Gross domestic product	3.5	1.8	2.3	1.6	2.3	2.1	2.5	2.9	1.8	2.5	3.0	2.5	-2.2	5.8	1.9

NA = not available.

FFRDCs = federally funded research and development centers

<sup>a</sup> Some data for 2021 are preliminary and may later be revised.<sup>b</sup> The R&D data for 2022 include estimates and are likely to later be revised.<sup>c</sup> Survey data on state internal R&D performance were not available prior to 2006; data for 2008 were not collected.**Note(s):**

The longer term trend rates are calculated as compound annual growth rates.

**Source(s):**

National Center for Science and Engineering Statistics, National Patterns of R&amp;D Resources (annual series).