

TABLE 1

U.S. gross domestic product, R&D, and ratio of R&D to gross domestic product (and components): 1953–2021

(Billions of current and of constant 2012 dollars and R&D as a percentage of GDP)

Year	GDP			Total R&D		R&D/GDP (%)							
	Current \$billions	Constant 2012 \$billions	Deflator ^a (2012 = 1.00000)	Current \$billions	Constant 2012 \$billions	Total	R&D, by performer				R&D, by source of funding		
							Business	Federal ^b	Higher education	Other ^c	Business	Federal	Other ^d
1953	389.2	2,695.6	0.14438	5.2	35.7	1.33	0.93	0.29	0.07	0.03	0.58	0.71	0.03
1954	390.5	2,680.0	0.14571	5.6	38.6	1.44	1.04	0.29	0.08	0.03	0.61	0.79	0.04
1955	425.5	2,871.2	0.14820	6.2	41.7	1.45	1.04	0.30	0.08	0.03	0.59	0.82	0.04
1956	449.4	2,932.4	0.15325	8.5	55.5	1.89	1.40	0.38	0.09	0.03	0.74	1.11	0.04
1957	474.0	2,994.1	0.15831	9.9	62.6	2.09	1.55	0.42	0.09	0.04	0.73	1.31	0.04
1958	481.2	2,972.0	0.16191	10.9	67.4	2.27	1.68	0.45	0.10	0.04	0.77	1.45	0.05
1959	521.7	3,178.2	0.16415	12.5	76.1	2.39	1.76	0.47	0.11	0.04	0.78	1.57	0.05
1960	542.4	3,260.0	0.16638	13.7	82.4	2.53	1.85	0.50	0.13	0.05	0.83	1.64	0.05
1961	562.2	3,343.5	0.16815	14.6	86.6	2.59	1.84	0.55	0.15	0.05	0.85	1.69	0.06
1962	603.9	3,548.4	0.17019	15.6	91.9	2.59	1.83	0.54	0.16	0.06	0.85	1.68	0.06
1963	637.5	3,702.9	0.17216	17.5	101.8	2.75	1.92	0.58	0.18	0.06	0.86	1.83	0.07
1964	684.5	3,916.3	0.17478	19.1	109.3	2.79	1.91	0.62	0.20	0.06	0.86	1.86	0.07
1965	742.3	4,170.8	0.17798	20.3	113.8	2.73	1.86	0.59	0.21	0.06	0.88	1.78	0.07
1966	813.4	4,445.9	0.18296	22.1	120.6	2.71	1.87	0.56	0.22	0.07	0.90	1.74	0.07
1967	860.0	4,567.8	0.18827	23.3	124.0	2.71	1.86	0.56	0.24	0.07	0.95	1.69	0.07
1968	940.7	4,792.3	0.19629	24.7	125.7	2.62	1.81	0.52	0.23	0.06	0.96	1.59	0.07
1969	1,017.6	4,942.1	0.20590	26.0	126.3	2.55	1.75	0.51	0.22	0.06	0.98	1.50	0.07
1970	1,073.3	4,951.3	0.21677	26.3	121.2	2.45	1.64	0.52	0.23	0.06	0.97	1.40	0.08
1971	1,164.9	5,114.3	0.22777	27.0	118.3	2.31	1.53	0.50	0.22	0.06	0.93	1.31	0.08
1972	1,279.1	5,383.3	0.23761	28.7	121.0	2.25	1.49	0.49	0.22	0.06	0.92	1.25	0.08
1973	1,425.4	5,687.2	0.25063	31.0	123.5	2.17	1.45	0.45	0.21	0.06	0.93	1.16	0.07
1974	1,545.2	5,656.5	0.27317	33.4	122.1	2.16	1.44	0.45	0.21	0.06	0.96	1.12	0.08
1975	1,684.9	5,644.8	0.29849	35.7	119.5	2.12	1.39	0.45	0.21	0.06	0.94	1.10	0.08
1976	1,873.4	5,949.0	0.31491	39.4	125.2	2.10	1.39	0.44	0.21	0.06	0.94	1.08	0.08
1977	2,081.8	6,224.1	0.33447	43.3	129.6	2.08	1.39	0.43	0.21	0.06	0.94	1.06	0.08
1978	2,351.6	6,568.6	0.35801	48.7	136.1	2.07	1.37	0.43	0.21	0.06	0.95	1.04	0.08
1979	2,627.3	6,776.6	0.38770	55.4	142.8	2.11	1.41	0.42	0.22	0.06	0.99	1.04	0.08
1980	2,857.3	6,759.2	0.42273	63.2	149.6	2.21	1.51	0.42	0.23	0.06	1.08	1.05	0.08
1981	3,207.0	6,930.7	0.46272	72.3	156.2	2.25	1.57	0.41	0.22	0.06	1.12	1.05	0.08
1982	3,343.8	6,805.8	0.49132	80.7	164.4	2.41	1.71	0.42	0.23	0.06	1.22	1.11	0.09
1983	3,634.0	7,117.7	0.51056	89.9	176.2	2.48	1.75	0.44	0.23	0.06	1.25	1.14	0.09
1984	4,037.6	7,632.8	0.52898	102.2	193.3	2.53	1.81	0.43	0.23	0.06	1.29	1.15	0.09
1985	4,339.0	7,951.1	0.54571	114.7	210.1	2.64	1.90	0.44	0.24	0.06	1.34	1.21	0.09
1986	4,579.6	8,226.4	0.55670	120.2	216.0	2.63	1.88	0.43	0.25	0.06	1.33	1.19	0.10

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Year	GDP			Total R&D		R&D/GDP (%)							
	Current \$billions	Constant 2012 \$billions	Deflator ^a (2012 = 1.00000)	Current \$billions	Constant 2012 \$billions	Total	R&D, by performer				R&D, by source of funding		
							Business	Federal ^b	Higher education	Other ^c	Business	Federal	Other ^d
1987	4,855.2	8,511.0	0.57046	126.4	221.5	2.60	1.86	0.42	0.26	0.06	1.29	1.21	0.11
1988	5,236.4	8,866.5	0.59058	133.9	226.7	2.56	1.81	0.41	0.27	0.06	1.30	1.15	0.11
1989	5,641.6	9,192.1	0.61374	141.9	231.2	2.52	1.77	0.40	0.28	0.07	1.33	1.07	0.11
1990	5,963.1	9,365.5	0.63671	152.0	238.7	2.55	1.80	0.39	0.28	0.07	1.40	1.03	0.12
1991	6,158.1	9,355.4	0.65824	160.9	244.4	2.61	1.86	0.38	0.30	0.08	1.50	0.99	0.13
1992	6,520.3	9,684.9	0.67324	165.4	245.6	2.54	1.79	0.37	0.30	0.08	1.48	0.93	0.13
1993	6,858.6	9,951.5	0.68920	165.7	240.5	2.42	1.68	0.36	0.30	0.08	1.41	0.88	0.13
1994	7,287.2	10,352.4	0.70391	169.2	240.4	2.32	1.61	0.34	0.30	0.08	1.36	0.83	0.13
1995	7,639.7	10,630.3	0.71867	183.6	255.5	2.40	1.70	0.33	0.30	0.08	1.45	0.82	0.13
1996	8,073.1	11,031.4	0.73183	197.3	269.7	2.44	1.76	0.31	0.29	0.08	1.53	0.79	0.13
1997	8,577.6	11,521.9	0.74446	211.9	284.6	2.47	1.81	0.29	0.29	0.08	1.59	0.75	0.13
1998	9,062.8	12,038.3	0.75283	225.8	299.9	2.49	1.84	0.29	0.28	0.08	1.63	0.73	0.13
1999	9,630.7	12,610.5	0.76370	244.5	320.1	2.54	1.89	0.28	0.29	0.08	1.71	0.69	0.14
2000	10,251.0	13,138.0	0.78026	267.9	343.4	2.61	1.95	0.28	0.29	0.09	1.81	0.66	0.14
2001	10,581.9	13,263.4	0.79783	278.5	349.1	2.63	1.91	0.31	0.31	0.10	1.78	0.70	0.15
2002	10,929.1	13,488.4	0.81026	277.9	343.0	2.54	1.77	0.32	0.34	0.11	1.65	0.72	0.17
2003	11,456.5	13,865.5	0.82626	291.4	352.6	2.54	1.75	0.33	0.35	0.11	1.63	0.74	0.18
2004	12,217.2	14,399.7	0.84843	302.7	356.8	2.48	1.70	0.31	0.35	0.11	1.57	0.74	0.17
2005	13,039.2	14,901.3	0.87504	325.3	371.7	2.49	1.73	0.30	0.35	0.11	1.59	0.73	0.17
2006	13,815.6	15,315.9	0.90204	350.9	389.0	2.54	1.79	0.30	0.34	0.10	1.64	0.72	0.17
2007	14,474.2	15,623.9	0.92641	377.9	407.9	2.61	1.86	0.30	0.34	0.10	1.71	0.73	0.18
2008	14,769.9	15,643.0	0.94419	404.8	428.7	2.74	1.97	0.31	0.35	0.11	1.75	0.80	0.20
2009	14,478.1	15,236.3	0.95024	402.9	424.0	2.78	1.95	0.33	0.38	0.12	1.70	0.87	0.21
2010	15,049.0	15,649.0	0.96166	406.6	422.8	2.70	1.85	0.34	0.39	0.12	1.65	0.84	0.21
2011	15,599.7	15,891.5	0.98164	426.2	434.2	2.73	1.89	0.34	0.39	0.12	1.71	0.81	0.21
2012	16,254.0	16,254.0	1.00000	433.7	433.7	2.67	1.86	0.32	0.37	0.11	1.70	0.76	0.21
2013	16,843.2	16,553.3	1.01751	454.3	446.5	2.70	1.91	0.30	0.37	0.11	1.76	0.71	0.22
2014	17,550.7	16,932.1	1.03653	476.0	459.2	2.71	1.94	0.30	0.36	0.12	1.81	0.67	0.22
2015	18,206.0	17,390.3	1.04691	494.5	472.3	2.72	1.95	0.29	0.36	0.12	1.83	0.66	0.23
2016	18,695.1	17,680.3	1.05740	521.7	493.4	2.79	2.03	0.27	0.36	0.12	1.93	0.63	0.23
2017	19,477.3	18,076.7	1.07748	553.8	513.9	2.84	2.08	0.27	0.37	0.12	1.98	0.63	0.23
2018	20,533.1	18,609.1	1.10339	604.4	547.7	2.94	2.17	0.28	0.36	0.12	2.08	0.64	0.23
2019	21,381.0	19,036.1	1.12318	666.2	593.1	3.12	2.33	0.29	0.37	0.13	2.26	0.64	0.22
2020 ^e	21,060.5	18,509.1	1.13785	717.0	630.1	3.40	2.58	0.31	0.38	0.14	2.47	0.70	0.23

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							Business	Federal ^b	Higher education	Other ^c	Business	Federal	Other ^d
2021 ^f	23,315.1	19,609.8	1.18895	791.9	666.0	3.40	2.63	0.28	0.36	0.13	2.52	0.66	0.22

GDP = gross domestic product.

^a Implicit price deflator for GDP.^b Includes federal intramural R&D and R&D by federally funded R&D centers.^c Includes R&D in the United States performed by nonfederal government and nonprofit organizations.^d Includes funding for U.S. R&D by nonfederal government, higher education, and nonprofit organizations.^e Some data for 2020 are preliminary and may be revised later.^f Data for 2021 include estimates and are likely to be revised later.

Note(s):
Detail may not add to total because of rounding. For trend comparisons, use only the historical data reported in this table because some back-year data may have been revised.

Source(s):
GDP data from Bureau of Economic Analysis, National Economic Accounts, Gross Domestic Product, <https://www.bea.gov/national/>, accessed 28 October 2021; R&D data from National Center for Science and Engineering Statistics, National Patterns of R&D Resources (annual series).