

TABLE 17

**Domestic R&D paid for by the company and others and performed by the company as a percentage of domestic net sales, by industry and company size: 2022**

(Millions of U.S. dollars and percent)

Industry and company size	NAICS code	Domestic R&D (US\$millions)	Percentage of domestic sales of R&D performers or funders <sup>a</sup>	Percentage of domestic sales of R&D performers <sup>b</sup>
All industries	21-23, 31-33, 42-81	691,547	4.9	4.9
Manufacturing industries	31-33	372,459	5.1	5.1
Food	311	7,143	0.7	0.7
Beverage and tobacco products	312	767	0.6	0.6
Textile, apparel, and leather products	313-16	635	0.9	0.9
Wood products	321	259	0.4	0.4
Paper	322	1,005	1.0	1.0
Printing and related support activities	323	165	0.6	0.6
Petroleum and coal products	324	860	0.2	0.2
Chemicals	325	125,728	8.4	8.5
Basic chemicals	3251	2,860	0.7	0.7
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	1,493	1.6	1.6
Pesticide, fertilizer, and other agricultural chemicals	3253	1,193	1.2	1.2
Pharmaceuticals and medicines	3254	116,073	16.9	17.0
Soap, cleaning compound, and toilet preparations	3256	2,886	2.2	2.2
Paint, coating, adhesive, and other chemicals	3255, 3259	1,223	1.8	1.8
Plastics and rubber products	326	3,470	1.4	1.4
Nonmetallic mineral products	327	1,464	2.2	2.6
Primary metals	331	1,120	0.7	0.7
Fabricated metal products	332	3,526	1.9	1.9
Machinery	333	19,464	3.7	3.7
Agricultural implement	33311	2,287	2.2	2.2
Semiconductor machinery	333242	5,438	16.5	16.5
Engine, turbine, and power transmission equipment	3336	3,026	4.2	4.2
Other machinery	other 333	8,713	2.8	2.8
Computer and electronic products	334	104,718	14.3	14.3
Communications equipment	3342	11,665	12.4	12.4
Semiconductor and other electronic components	3344	49,330	23.5	23.6
Navigational, measuring, electromedical, and control instruments	3345	12,777	10.5	10.5
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	4,578	13.2	13.2
Search, detection, navigation, guidance, aeronautical, and nautical system and instruments	334511	4,146	16.4	16.4
Other measuring and controlling devices	other 3345	4,053	6.6	6.6
Other computer and electronic products	other 334	30,946	10.0	10.0
Electrical equipment, appliances, and components	335	7,086	3.7	3.7
Transportation equipment	336	71,259	5.2	5.2
Motor vehicles, bodies, trailers, and parts	3361-63	32,881	3.5	3.5
Aerospace products and parts	3364	35,356	9.9	9.9
Aircraft, aircraft engine, and aircraft parts	336411-13	24,571	9.7	9.7
Guided missile, space vehicle, and related parts	336414-15, 336419	10,785	10.5	10.5
Military armored vehicle, tank, and tank components	336992	30	2.3	2.3
Other transportation	other 336	2,992	3.5	3.5
Furniture and related products	337	410	1.1	1.2
Miscellaneous	339	23,382	4.3	4.3
Medical equipment and supplies	3391	20,394	4.6	4.6

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Other miscellaneous manufacturing	3399	2,989		3.0	3.0
Nonmanufacturing industries	21–23, 42–81	319,088		4.7	4.7
Mining, quarrying, oil and gas extraction, and support activities	21	D		D	D
Utilities	22	D		D	D
Wholesale trade	42	D		D	D
Electronic shopping and electronic auctions	454111–12	D		D	D
Transportation and warehousing	48–49	9,395		3.1	3.1
Information	51	182,340		9.8	9.8
Publishing	511	50,367		13.6	D
Newspaper, periodical, book, and directory publishers	5111	72		2.6	D
Software publishers	5112	50,295		13.7	13.7
Telecommunications	517	3,690		0.8	0.8
Data processing, hosting, and related services	518	49,407		7.7	7.7
Other information	other 51	78,876		21.0	D
Finance and insurance	52	17,222		1.4	1.4
Real estate and rental and leasing	53	2,398	i	3.2	3.2
Lessors of nonfinancial intangible assets (except copyrighted works)	533	5	i	1.0	1.0
Other real estate and rental and leasing	other 53	2,393	i	3.3	3.3
Professional, scientific, and technical services	54	74,773		13.3	13.5
Architectural, engineering, and related services	5413	3,883		3.7	3.7
Computer systems design and related services	5415	22,534		12.1	12.4
Scientific research and development services	5417	39,625	i	29.0	29.1
Research and development in nanotechnology	541713	282		30.2	37.0
Research and development in biotechnology (except nanobiotechnology)	541714	10,226		37.1	37.2
Research and development in the physical, engineering, and life sciences (except nanotechnology and biotechnology)	541715	28,420	i	26.7	26.7
Research and development in the social sciences and humanities	541720	698		44.9	49.2
Other professional, scientific, and technical services	other 54	8,730		6.6	6.6
Health care services	621–23	2,855		3.0	3.0
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	3,394		0.4	0.4
All companies (number of domestic employees)	–	691,547		4.9	4.9
Small companies					
10–19 <sup>c</sup>	–	5,277		12.7	13.3
20–49	–	14,695		13.0	13.2
Medium companies					
50–99	–	15,265		8.5	8.8
100–249	–	27,847		7.2	7.5
Large companies					
250–499	–	29,549		8.1	8.2
500–999	–	31,802		5.5	5.6
1,000–4,999	–	104,505		5.1	5.1
5,000–9,999	–	58,709		3.7	3.7
10,000–24,999	–	121,142		4.2	4.3

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25,000 or more	-	282,756	4.7	4.7

D = data withheld to avoid disclosing operations of individual companies; i = more than 50% of the estimate is a combination of imputation and reweighting to account for nonresponse.

NAICS = 2017 North American Industry Classification System.

<sup>a</sup> Statistics used for both the numerator and denominator in the calculation of these percentages are representative of companies located in the United States that performed or funded R&D.

<sup>b</sup> Statistics used for both the numerator and denominator in the calculation of these percentages are representative of companies located in the United States that performed R&D. The calculation of percentages in this column excludes R&D and sales of companies that fund R&D but do not perform R&D.

<sup>c</sup> The Business Enterprise Research and Development Survey does not include companies with fewer than 10 domestic employees.

**Note(s):**

Detail may not add to total because of rounding. Industry classification is based on the dominant business code for domestic R&D performance, where available. For companies that did not report business codes, the classification used for sampling was assigned. Statistics are representative of companies located in the United States that performed or funded \$50,000 or more of R&D and are not comparable with estimates published for years prior to 2018.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, Business Enterprise Research and Development Survey, 2022.