

TABLE 32

**Domestic R&D paid for by the company and performed by the company and others as a percentage of domestic net sales, by industry and company size: 2020**

(Millions of U.S. dollars and percent)

Industry and company size	NAICS code	Domestic R&D (US\$millions)	Percent of domestic sales of R&D performers or funders <sup>a</sup>	Percent of domestic sales of R&D performers <sup>b</sup>
All industries	21-23, 31-33, 42-81	504,793	4.5	4.6
Manufacturing industries	31-33	299,199	5.3	5.3
Food	311	5,241	0.9	0.9
Beverage and tobacco products	312	1,225	0.8	0.8
Textile, apparel, and leather products	313-16	823	1.3	1.3
Wood products	321	193	0.4	0.4
Paper	322	934	1.1	D
Printing and related support activities	323	286	0.9	0.9
Petroleum and coal products	324	1,416	0.6	0.6
Chemicals	325	114,951	10.3	10.3
Basic chemicals	3251	2,588	1.1	1.1
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	1,188	i 2.3	2.3
Pesticide, fertilizer, and other agricultural chemicals	3253	842 - 860	D	D
Pharmaceuticals and medicines	3254	105,944	19.2	19.5
Soap, cleaning compound, and toilet preparation	3256	2,729	2.4	2.4
Paint, coating, adhesive, and other chemicals	3255, 3259	1,644 - 1,659	D	D
Plastics and rubber products	326	2,628	1.4	1.4
Nonmetallic mineral products	327	1,711	2.9	D
Primary metals	331	815	1.2	1.2
Fabricated metal products	332	3,422	2.5	2.5
Machinery	333	15,451	4.3	4.4
Agricultural implement	33311	1,936	4.7	D
Semiconductor machinery	333242	4,127	15.4	15.4
Engine, turbine, and power transmission equipment	3336	1,535	3.5	D
Other machinery	other 333	7,852	3.2	3.2
Computer and electronic products	334	91,680	12.1	12.1
Communications equipment	3342	12,142	11.9	D
Semiconductor and other electronic components	3344	41,022	19.9	20.0
Navigational, measuring, electromedical, and control instruments	3345	11,301	6.1	6.1
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	2,708	12.9	12.9
Search, detection, navigation, guidance, aeronautical, and nautical system and instrument	334511	3,591 - 3,751	D	D
Other measuring and controlling device	other 3345	4,843 - 5,002	D	D
Other computer and electronic products	other 334	27,215	10.4	D
Electrical equipment, appliances, and components	335	4,589	3.0	3.0
Transportation equipment	336	33,805	3.7	3.7
Motor vehicles, bodies, trailers, and parts	3361-63	22,634	3.9	D
Aerospace products and parts	3364	9,499	3.5	3.5
Aircraft, aircraft engine, and aircraft parts	336411-13	8,540	3.3	3.3
Guided missile, space vehicle, and related parts	336414-15, 336419	959	9.4	9.4
Military armored vehicle, tank, and tank component	336992	4	0.9	0.9
Other transportation	other 336	1,667	2.4	D
Furniture and related products	337	513	1.1	1.1
Miscellaneous	339	19,517	2.8	D

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Medical equipment and supplies	3391	16,815		2.9	2.9
Other miscellaneous manufacturing	3399	2,702		2.3	D
Nonmanufacturing industries	21–23, 42–81	205,595		3.7	4.0
Mining, quarrying, oil and gas extraction, and support activities	21	1,199		1.2	1.2
Utilities	22	414		0.1	0.2
Wholesale trade	42	1,155		0.4	0.4
Electronic shopping and electronic auctions	454111–12	3,837 - 19,445	i	D	D
Transportation and warehousing	48–49	5,156	i	2.4	2.4
Information	51	130,486		7.9	7.9
Publishing	511	35,762		14.1	14.2
Newspaper, periodical, book, and directory publishers	5111	64		4.1	4.6
Software publishers	5112	35,698		14.2	14.2
Telecommunications	517	3,825		0.8	D
Data processing, hosting, and related services	518	41,390		8.1	8.1
Other information	other 51	49,510		12.4	D
Finance and insurance	52	12,494		0.9	1.0
Real estate and rental and leasing	53	3,249		24.0	24.0
Lessors of nonfinancial intangible assets (except copyrighted works)	533	7		0.4	0.4
Other real estate and rental and leasing	other 53	3,242		27.0	27.1
Professional, scientific, and technical services	54	29,166		7.0	7.1
Architectural, engineering, and related services	5413	2,278		3.2	3.3
Computer systems design and related services	5415	14,531		8.7	8.8
Scientific research and development services	5417	6,739		9.6	9.6
Research and development in nanotechnology	541713	125 - 129	i	D	D
Research and development in biotechnology (except nanobiotechnology)	541714	1,358		6.7	6.7
Research and development in the physical, engineering, and life sciences (except nanotechnology and biotechnology)	541715	5,213 - 5,219	i	D	D
Research and development in the social sciences and humanities	541720	38		3.8	3.8
Other professional, scientific, and technical services	other 54	5,617		5.2	5.2
Health care services	621–23	1,405 - 1,408		D	D
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	1,429 - 17,036		D	D
All companies (number of domestic employees)	–	504,793		4.5	4.6
Small companies					
10–19 <sup>c</sup>	–	4,579		19.4	20.1
20–49	–	12,703		12.5	12.9
Medium companies					
50–99	–	12,667		9.9	10.0
100–249	–	25,069		6.2	6.2
Large companies					
250–499	–	19,693		6.6	6.9
500–999	–	20,622		5.0	5.0

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1,000–4,999	–	80,110	5.3	5.3
5,000–9,999	–	48,050	4.1	4.2
10,000–24,999	–	81,357	3.9	4.0
25,000 or more	–	199,943	3.9	4.2

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. Unless indicated otherwise, 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. An estimate range may be displayed in place of a single estimate to avoid disclosing operations of individual companies.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, Business Enterprise Research and Development Survey, 2020.