

TABLE 18
Domestic R&D paid for by the company and others and performed by the company and others as a percentage of domestic net sales, by industry and company size: 2018

(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 ^a	Percent of domestic sales of R&D performers only ^b
All industries	21-23, 31-33, 42-81	493,583	4.6	4.9
Manufacturing industries	31-33	321,395	5.4	5.5
Food	311	4,888	0.9	0.9
Beverage and tobacco products	312	1,347	0.9	0.9
Textile, apparel, and leather products	313-16	1,008	1.4	1.4
Wood products	321	216	0.7	0.8
Paper	322	949	1.1	1.1
Printing and related support activities	323	244	0.8	0.8
Petroleum and coal products	324	1,499	0.4	0.4
Chemicals	325	119,689	10.3	10.3
Basic chemicals	3251	2,515	1.4	1.4
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	1,659 - 1,750	D	D
Pesticide, fertilizer, and other agricultural chemicals	3253	1,560 - 1,567	D	1.6
Pharmaceuticals and medicines	3254	109,573	16.8	17.0
Soap, cleaning compound, and toilet preparation	3256	2,980 - 3,060	D	D
Paint, coating, adhesive, and other chemicals	3255, 3259	1,311 - 1,402	D	D
Plastics and rubber products	326	2,866	1.7	1.7
Nonmetallic mineral products	327	1,400	2.5	3.4
Primary metals	331	877	0.7	0.7
Fabricated metal products	332	2,413	1.8	1.8
Machinery	333	15,282	4.1	4.1
Agricultural implement	33311	2,060	4.6	4.6
Semiconductor machinery	333242	4,209	19.3	19.3
Engine, turbine, and power transmission equipment	3336	2,532 - 2,554	D	D
Other machinery	other 333	6,460 - 6,482	D	D
Computer and electronic products	334	85,911	10.5	10.5
Communications equipment	3342	13,951	16.5	16.5
Semiconductor and other electronic components	3344	31,450	10.4	10.4
Navigational, measuring, electromedical, and control instruments	3345	17,428	9.7	9.7
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	3,288	11.8	11.8
Search, detection, navigation, guidance, aeronautical, and nautical system and instrument	334511	9,347 - 9,358	D	D

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Other measuring and controlling device	other 3345	4,782 - 4,792	D	D
Other computer and electronic products	other 334	23,082	9.1	9.1
Electrical equipment, appliances, and components	335	4,645	3.5	3.5
Transportation equipment	336	59,478	4.5	4.7
Motor vehicles, bodies, trailers, and parts	3361-63	28,347 - 28,372	D	D
Aerospace products and parts	3364	28,300	7.7	7.7
Aircraft, aircraft engine, and aircraft parts	336411-13	26,845	7.6	7.6
Guided missile, space vehicle, and related parts	336414-15, 336419	1,455	8.5	8.5
Military armored vehicle, tank, and tank component	336992	11	2.8	2.8
Other transportation	other 336	2,795 - 2,820	D	D
Furniture and related products	337	428 - 430	D	1.0
Miscellaneous	339	18,252 - 18,257	D	6.1
Medical equipment and supplies	3391	15,397	7.5	7.5
Other miscellaneous manufacturing	3399	2,855 - 2,859	D	3.0
Nonmanufacturing industries	21-23, 42-81	172,187	3.6	4.0
Mining, quarrying, oil and gas extraction, and support activities	21	2,046	1.0	1.1
Utilities	22	498	0.1	0.2
Wholesale trade	42	945	i 0.6	0.6
Electronic shopping and electronic auctions	454111-12	11,651 - 11,783	i D	D
Transportation and warehousing	48-49	973	0.4	0.4
Information	51	96,490	7.4	7.4
Publishing	511	33,954	15.1	15.2
Newspaper, periodical, book, and directory publishers	5111	137	3.6	3.6
Software publishers	5112	33,817	15.3	15.4
Telecommunications	517	4,049	0.8	0.8
Data processing, hosting, and related services	518	23,515	6.6	6.6
Other information	other 51	34,972	13.9	14.5
Finance and insurance	52	7,819	0.8	0.8
Real estate and rental and leasing	53	1,022	16.6	16.6
Lessors of nonfinancial intangible assets (except copyrighted works)	533	6	2.5	2.5
Other real estate and rental and leasing	other 53	1,016	17.2	17.2

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Professional, scientific, and technical services	54	46,881	11.0	11.1
Architectural, engineering, and related services	5413	4,380	4.3	4.3
Computer systems design and related services	5415	16,063	10.3	10.3
Scientific research and development services	5417	21,472	29.9	29.9
Research and development in biotechnology	541711	5,927 - 6,078	D	D
Research and development in the physical, engineering, and life sciences (except biotechnology)	541712	14,724	34.5	34.5
Research and development in the social sciences and humanities	541720	670 - 822	D	D
Other professional, scientific, and technical services	other 54	4,966	5.2	5.3
Health care services	621-23	1,605	1.6	1.6
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	2,129 - 2,261	D	D
All companies (number of domestic employees)	-	493,583	4.6	4.9
Small companies				
10-19 ^c	-	4,918	24.2	25.1
20-49	-	13,210	18.9	19.1
Medium companies				
50-99	-	14,332	11.3	11.5
100-249	-	21,271	7.1	7.1
Large companies				
250-499	-	22,629	8.1	8.2
500-999	-	19,134	4.7	4.8
1,000-4,999	-	75,752	5.2	5.3
5,000-9,999	-	51,991	5.2	5.4
10,000-24,999	-	100,924	4.5	4.5
25,000 or more	-	169,423	3.5	3.9

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

NAICS = 2012 North American Industry Classification System.

^a 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.

^b 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.

^c Business 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. Beginning in survey year 2018, statistics are representative of companies located in the United States that performed or funded \$50,000 or more of R&D. This change has affected the comparability of these estimates 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 U.S. Census Bureau, Business Research and Development Survey, 2018.