

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: 2017**

(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 only <sup>b</sup>
All industries	21-23, 31-33, 42-81	452,593	4.7	4.9
Manufacturing industries	31-33	304,030	5.6	5.7
Food	311	4,854	0.7	0.8
Beverage and tobacco products	312	1,294	0.9	0.9
Textile, apparel, and leather products	313-16	943	1.2	1.2
Wood products	321	184	0.7	0.7
Paper	322	1,364	0.8	0.8
Printing and related support activities	323	233	0.6	0.6
Petroleum and coal products	324	381	0.2	0.2
Chemicals	325	111,030	12.3	12.4
Basic chemicals	3251	2,650 - 2,700	D	1.7
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	645	1.5	1.5
Pesticide, fertilizer, and other agricultural chemicals	3253	1,492 - 1,626	D	D
Pharmaceuticals and medicines	3254	101,680	21.8	21.9
Soap, cleaning compound, and toilet preparation	3256	2,869 - 3,001	D	D
Paint, coating, adhesive, and other chemicals	3255, 3259	1,549 - 1,599	D	D
Plastics and rubber products	326	3,927	2.1	2.1
Nonmetallic mineral products	327	1,353	3.0	3.3
Primary metals	331	805	0.9	0.9
Fabricated metal products	332	2,302	2.1	2.1
Machinery	333	13,713	4.2	4.3
Agricultural implement	33311	1,746 - 1,766	D	3.8
Semiconductor machinery	333242	3,715	18.5	18.5
Engine, turbine, and power transmission equipment	3336	2,140 - 2,160	D	D
Other machinery	other 333	6,071 - 6,112	D	D
Computer and electronic products	334	80,626	11.6	11.6
Communications equipment	3342	13,453	15.2	15.2
Semiconductor and other electronic components	3344	30,562	17.8	17.8
Navigational, measuring, electromedical, and control instruments	3345	14,980	8.9	8.9
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	2,794 - 2,805	D	D
Search, detection, navigation, guidance, aeronautical, and nautical system and instrument	334511	7,535 - 7,568	D	D

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Other measuring and controlling device	other 3345	4,616 - 4,640	D	D
Other computer and electronic products	other 334	21,631	8.1	8.1
Electrical equipment, appliances, and components	335	4,508	4.0	4.0
Transportation equipment	336	59,306	5.1	5.2
Automobiles, bodies, trailers, and parts	3361-63	26,720	3.5	3.7
Aerospace products and parts	3364	29,513	i 8.4	8.4
Aircraft, aircraft engine, and aircraft parts	336411-13	27,594	i 8.3	8.3
Guided missile, space vehicle, and related parts	336414-15, 336419	1,919	10.2	10.2
Military armored vehicle, tank, and tank component	336992	10	3.1	3.0
Other transportation	other 336	3,064	4.6	4.7
Furniture and related products	337	442	1.0	1.0
Miscellaneous manufacturing	339	16,763	4.3	4.3
Medical equipment and supplies	3391	14,531	4.7	4.7
Other miscellaneous manufacturing	3399	2,232	2.8	2.9
Nonmanufacturing industries	21-23, 42-81	148,563	3.5	3.8
Mining, extraction, and support activities	21	3,449 - 3,456	D	D
Utilities	22	562	0.1	0.2
Wholesale trade	42	653	0.4	0.3
Electronic shopping and electronic auctions	454111-12	9,320	6.8	6.8
Transportation and warehousing	48-49	1,192	0.6	D
Information	51	82,149	6.9	7.0
Publishing	511	35,505	15.3	15.3
Newspaper, periodical, book, and directory publishers	5111	85	3.9	4.5
Software publishers	5112	35,421	15.4	15.4
Telecommunications	517	3,922 - 4,045	D	D
Data processing, hosting, and related services	518	16,395	5.4	5.4
Other information	other 51	26,204 - 26,327	D	D
Finance and insurance	52	7,979	1.1	1.1
Real estate and rental and leasing	53	723	6.7	7.5
Lessors of nonfinancial intangible assets (except copyrighted works)	533	141	i 6.8	7.4
Other real estate and rental and leasing	other 53	582	6.6	7.5

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Professional, scientific, and technical services	54	39,472	9.9	9.9
Architectural, engineering, and related services	5413	3,108	3.4	3.4
Computer systems design and related services	5415	13,484	8.9	8.9
Scientific research and development services	5417	19,184	27.7	27.8
Biotechnology research and development	541711	4,611	17.2	17.2
Physical, engineering, and life sciences (except biotechnology) research and development	541712	13,457	32.8	32.8
Social sciences and humanities research and development	541720	1,116	89.7	89.7
Other professional, scientific, and technical services	other 54	3,696	4.3	4.3
Health care services	621-23	1,134 - 1,141	D	1.0
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	1,927	0.3	0.4
All companies (number of domestic employees)	-	452,593	4.7	4.9
Small companies				
10-19 <sup>c</sup>	-	3,888	16.1	17.9
20-49	-	10,993	12.8	13.5
Medium companies				
50-99	-	12,031	10.3	10.6
100-249	-	21,242	8.2	8.5
Large companies				
250-499	-	15,609	5.6	5.8
500-999	-	20,354	5.5	5.7
1,000-4,999	-	75,403	6.0	6.2
5,000-9,999	-	44,552	4.7	4.9
10,000-24,999	-	86,984	4.7	4.9
25,000 or more	-	161,537	3.6	3.8

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.

<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> 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. Statistics are representative of companies located in the United States that performed or funded R&D, unless indicated otherwise. 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, 2017.