

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: 2016**

(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	374,685		4.1	4.2
Manufacturing industries	31-33	250,553		4.6	4.7
Food	311	4,828		0.9	0.9
Beverages and tobacco products	312	D		D	D
Textiles, apparel, and leather products	313-16	1,166	i	1.2	1.2
Wood products	321	188		0.5	0.5
Paper	322	851		1.3	1.3
Printing and related support activities	323	219	i	0.9	0.9
Petroleum and coal products	324	381		0.2	0.2
Chemicals	325	73,575		7.1	7.1
Basic chemicals	3251	2,545		1.2	D
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	711		1.6	1.6
Pesticides, fertilizer, and other agricultural chemicals	3253	D		D	D
Pharmaceuticals and medicines	3254	64,628		11.2	D
Soaps, cleaning compounds, and toilet preparations	3256	2,800		3.0	3.0
Paints, coatings, adhesives, and other chemicals	3255, 3259	D		D	D
Plastics and rubber products	326	3,752		2.0	2.0
Nonmetallic mineral products	327	1,289		2.3	2.5
Primary metals	331	592		0.6	0.6
Fabricated metal products	332	2,239		2.0	2.0
Machinery	333	12,585		4.2	4.2
Agricultural implements	33311	1,565		3.8	3.8
Semiconductor machinery	333242	3,411		20.1	20.1
Engines, turbines, and power transmission equipment	3336	1,959		6.2	6.2
Other machinery	other 333	5,650		2.7	2.7
Computer and electronic products	334	77,385		9.8	9.8
Communications equipment	3342	13,112		12.6	12.6
Semiconductors and other electronic components	3344	31,391		11.5	11.5
Navigational, measuring, electromedical, and control instruments	3345	14,885		8.6	8.6
Electromedical, electrotherapeutic, and irradiation apparatuses	334510, 334517	2,632		11.8	11.8
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	7,533		10.3	10.3
Other measuring and controlling devices	other 3345	4,720		6.2	6.2
Other computer and electronic products	other 334	17,997		7.6	7.6
Electrical equipment, appliances, and components	335	4,771		3.2	3.2
Transportation equipment	336	51,275		4.0	4.2
Automobiles, bodies, trailers, and parts	3361-63	22,042		2.5	2.7
Aerospace products and parts	3364	26,645		7.9	7.9
Aircraft, aircraft engines, and aircraft parts	336411-13	25,221		7.9	7.9
Guided missiles, space vehicles, and related parts	336414-15, 336419	1,424	i	8.3	8.3
Military armored vehicles, tanks, and tank components	336992	D		D	D
Other transportation	other 336	D		D	D
Furniture and related products	337	366		1.0	1.0
Miscellaneous manufacturing	339	D		D	D
Medical equipment and supplies	3391	11,668		6.5	6.5
Other miscellaneous manufacturing	3399	D		D	D

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Nonmanufacturing industries	21-23, 42-81	124,132		3.3	3.5
Mining, extraction, and support activities	21	3,296		1.6	1.7
Utilities	22	351		0.1	0.2
Wholesale trade	42	452	i	0.3	0.3
Electronic shopping and electronic auctions	454111-12	1,569	i	1.4	1.4
Transportation and warehousing	48-49	488		0.2	0.2
Information	51	70,748		6.6	6.7
Publishing	511	33,574		8.4	8.4
Newspaper, periodical, book, and directory publishers	5111	79	i	2.2	2.2
Software publishers	5112	33,495		8.5	8.5
Telecommunications	517	D		D	D
Data processing, hosting, and related services	518	11,914		11.3	11.4
Other information	other 51	D		D	D
Finance and insurance	52	7,331		1.0	1.0
Real estate and rental and leasing	53	475		9.0	9.0
Lessors of nonfinancial intangible assets (except copyrighted works)	533	27		3.8	3.8
Other real estate and rental and leasing	other 53	449		9.7	9.7
Professional, scientific, and technical services	54	37,595		8.9	8.9
Architectural, engineering, and related services	5413	3,412		3.4	3.4
Computer systems design and related services	5415	15,747		9.0	9.0
Scientific research and development services	5417	14,842		22.3	22.3
Biotechnology research and development	541711	4,464		16.3	16.3
Physical, engineering, and life sciences (except biotechnology) research and development	541712	9,659		26.3	26.4
Social sciences and humanities research and development	541720	719		27.9	27.9
Other professional, scientific, and technical services	other 54	3,595		4.6	4.6
Health care services	621-23	848		1.1	1.1
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	977	i	0.2	0.2
All companies (number of domestic employees)	-	374,685		4.1	4.2
Micro companies <sup>c</sup>					
5 - 9	-	1,581	i	23.3	23.4
Small companies					
10 - 19	-	4,958	i	19.2	19.3
20 - 49	-	9,662	i	9.7	9.7
Medium companies					
50 - 99	-	9,298		8.2	8.2
100 - 249	-	14,875		5.5	5.5
Large companies					
250 - 499	-	13,092		4.7	4.7
500 - 999	-	14,450		4.4	4.6
1,000 - 4,999	-	63,971		5.2	5.3
5,000 - 9,999	-	40,633		4.1	4.2
10,000 - 24,999	-	65,594		3.9	4.1
25,000 or more	-	136,571		3.3	3.4

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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 R&D and Innovation Survey does not include companies with fewer than five 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.

**Source(s)**

National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2016.