

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: 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 ^a	Percent of domestic sales of R&D performers only ^b
All industries	21-23, 31-33, 42-81	421,539		4.6	4.7
Manufacturing industries	31-33	291,684		5.4	5.5
Food	311	4,968		0.9	0.9
Beverages and tobacco products	312	D		D	D
Textiles, apparel, and leather products	313-16	1,178	i	1.2	1.2
Wood products	321	D		D	D
Paper	322	855		1.3	1.3
Printing and related support activities	323	D		D	D
Petroleum and coal products	324	D		D	D
Chemicals	325	104,949		10.1	D
Basic chemicals	3251	2,656		1.3	D
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	728		1.6	1.6
Pesticides, fertilizers, and other agricultural chemicals	3253	1,416	i	3.0	3.0
Pharmaceuticals and medicines	3254	95,404		16.5	D
Soaps, cleaning compounds, and toilet preparations	3256	3,199		3.4	3.4
Paints, coatings, adhesives, and other chemicals	3255, 3259	1,546		2.3	2.3
Plastics and rubber products	326	3,907		2.1	2.1
Nonmetallic mineral products	327	1,587		2.8	2.8
Primary metals	331	D		D	D
Fabricated metal products	332	2,351		2.1	2.1
Machinery	333	13,053		4.4	4.4
Agricultural implements	33311	1,747		4.3	4.3
Semiconductor machinery	333242	3,433		20.3	20.3
Engines, turbines, and power transmission equipment	3336	1,968		6.2	6.2
Other machinery	other 333	5,906		2.8	2.8
Computer and electronic products	334	78,952		10.0	10.0
Communications equipment	3342	13,395		12.8	12.8
Semiconductors and other electronic components	3344	31,823		11.6	11.6
Navigational, measuring, electromedical, and control instruments	3345	15,335		8.9	8.9
Electromedical, electrotherapeutic, and irradiation apparatuses	334510, 334517	2,684		12.0	12.0
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	7,815		10.6	10.6
Other measuring and controlling devices	other 3345	4,836		6.3	6.3
Other computer and electronic products	other 334	18,399		7.8	7.8
Electrical equipment, appliances, and components	335	4,930		3.3	3.3
Transportation equipment	336	56,867		4.4	4.6
Automobiles, bodies, trailers, and parts	3361-63	24,178		2.7	2.9
Aerospace products and parts	3364	30,056		8.9	8.9
Aircraft, aircraft engines, and aircraft parts	336411-13	28,510		8.9	8.9
Guided missiles, space vehicles, and related parts	336414-15, 336419	1,546	i	9.0	9.0
Military armored vehicles, tanks, and tank components	336992	D		D	D
Other transportation	other 336	D		D	D
Furniture and related products	337	391		1.1	1.1
Miscellaneous manufacturing	339	14,936		5.9	D
Medical equipment and supplies	3391	12,508		7.0	7.0
Other miscellaneous manufacturing	3399	2,428	i	3.2	D

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Nonmanufacturing industries	21-23, 42-81	129,854		3.4	3.6
Mining, extraction, and support activities	21	3,569		1.7	1.8
Utilities	22	555		0.2	0.2
Wholesale trade	42	532	i	0.3	0.3
Electronic shopping and electronic auctions	454111-12	1,581	i	1.4	1.4
Transportation and warehousing	48-49	504		0.3	0.3
Information	51	72,820		6.8	6.9
Publishing	511	34,975		8.7	8.8
Newspaper, periodical, book, and directory publishers	5111	86	i	2.4	2.4
Software publishers	5112	34,889		8.8	8.8
Telecommunications	517	D		D	0.8
Data processing, hosting, and related services	518	12,188		11.6	11.6
Other information	other 51	D		D	23.1
Finance and insurance	52	7,426		1.0	1.0
Real estate and rental and leasing	53	478		9.0	9.0
Lessors of nonfinancial intangible assets (except copyrighted works)	533	30		4.3	4.3
Other real estate and rental and leasing	other 53	449		9.7	9.7
Professional, scientific, and technical services	54	40,438		9.6	9.6
Architectural, engineering, and related services	5413	3,875		3.9	3.9
Computer systems design and related services	5415	15,950		9.1	9.1
Scientific research and development services	5417	16,896		25.4	25.2
Biotechnology research and development	541711	4,947		18.1	18.0
Physical, engineering, and life sciences (except biotechnology) research and development	541712	11,113		30.3	30.1
Social sciences and humanities research and development	541720	837		32.5	32.5
Other professional, scientific, and technical services	other 54	3,718		4.7	4.7
Health care services	621-23	873		1.1	1.1
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	1,077	i	0.2	0.3
All companies (number of domestic employees)	-	421,539		4.6	4.7
Micro companies ^c					
5 - 9	-	1,926	i	28.4	28.5
Small companies					
10 - 19	-	5,689	i	22.1	22.1
20 - 49	-	11,321		11.3	11.3
Medium companies					
50 - 99	-	11,214		9.9	9.9
100 - 249	-	17,576		6.5	6.5
Large companies					
250 - 499	-	14,529		5.3	5.3
500 - 999	-	16,219		5.0	5.1
1,000 - 4,999	-	73,223		5.9	6.0
5,000 - 9,999	-	44,095		4.4	4.5
10,000 - 24,999	-	77,971		4.6	4.8
25,000 or more	-	147,776		3.6	3.7

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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.

^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 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.