

TABLE 41

## Domestic R&amp;D paid for by 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 <sup>a</sup>	Percent of domestic sales of R&D performers <sup>b</sup>
All industries	21-23, 31-33, 42-81	73,109	0.7	0.7
Manufacturing industries	31-33	47,634	0.8	0.8
Food	311	244	*	*
Beverage and tobacco products	312	109	0.1	0.1
Textile, apparel, and leather products	313-16	4	*	*
Wood products	321	4	*	*
Paper	322	3	*	*
Printing and related support activities	323	4	*	*
Petroleum and coal products	324	23	*	*
Chemicals	325	14,533	1.2	1.3
Basic chemicals	3251	193	0.1	0.1
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	84 - 164	D	D
Pesticide, fertilizer, and other agricultural chemicals	3253	325 - 332	D	D
Pharmaceuticals and medicines	3254	13,694	2.1	2.1
Soap, cleaning compound, and toilet preparation	3256	136 - 216	D	D
Paint, coating, adhesive, and other chemicals	3255, 3259	20 - 100	D	D
Plastics and rubber products	326	131	0.1	0.1
Nonmetallic mineral products	327	24	*	0.1
Primary metals	331	23	*	*
Fabricated metal products	332	106	0.1	0.1
Machinery	333	1,089	0.3	0.3
Agricultural implement	33311	11	*	*
Semiconductor machinery	333242	576 - 586	D	D
Engine, turbine, and power transmission equipment	3336	172 - 194	D	D
Other machinery	other 333	307 - 330	D	D
Computer and electronic products	334	10,204	1.2	1.2
Communications equipment	3342	1,349	1.6	1.6
Semiconductor and other electronic components	3344	2,424	0.8	0.8
Navigational, measuring, electromedical, and control instruments	3345	6,205	3.4	3.4
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	163	0.6	0.6
Search, detection, navigation, guidance, aeronautical, and nautical system and instrument	334511	5,783	7.3	7.3
Other measuring and controlling device	other 3345	259	0.4	0.4

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Other computer and electronic products	other 334	227		0.1	0.1
Electrical equipment, appliances, and components	335	315		0.2	0.2
Transportation equipment	336	20,366		1.6	1.6
Motor vehicles, bodies, trailers, and parts	3361-63	2,659 - 2,683		D	D
Aerospace products and parts	3364	16,586	i	4.5	4.5
Aircraft, aircraft engine, and aircraft parts	336411-13	15,677	i	4.5	4.5
Guided missile, space vehicle, and related parts	336414-15, 336419	909		5.3	5.3
Military armored vehicle, tank, and tank component	336992	6		1.4	1.4
Other transportation	other 336	1,091 - 1,115		D	D
Furniture and related products	337	5 - 6		D	D
Miscellaneous	339	442 - 447		D	D
Medical equipment and supplies	3391	291		0.1	0.1
Other miscellaneous manufacturing	3399	152 - 156		D	D
Nonmanufacturing industries	21-23, 42-81	25,475		0.5	0.6
Mining, quarrying, oil and gas extraction, and support activities	21	130		0.1	0.1
Utilities	22	62		*	*
Wholesale trade	42	29		*	*
Electronic shopping and electronic auctions	454111-12	94		0.1	0.1
Transportation and warehousing	48-49	7		*	*
Information	51	941		0.1	0.1
Publishing	511	565		0.3	0.3
Newspaper, periodical, book, and directory publishers	5111	1		*	*
Software publishers	5112	564		0.3	0.3
Telecommunications	517	67		*	*
Data processing, hosting, and related services	518	193		0.1	0.1
Other information	other 51	117		*	*
Finance and insurance	52	46		*	*
Real estate and rental and leasing	53	0		0.0	0.0
Lessors of nonfinancial intangible assets (except copyrighted works)	533	0		0.0	0.0
Other real estate and rental and leasing	other 53	0		0.0	0.0

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Professional, scientific, and technical services	54	23,955	5.6	5.7
Architectural, engineering, and related services	5413	2,000	2.0	2.0
Computer systems design and related services	5415	2,320	1.5	1.5
Scientific research and development services	5417	18,810	26.2	26.2
Research and development in biotechnology	541711	5,036 - 5,188	D	D
Research and development in the physical, engineering, and life sciences (except biotechnology)	541712	12,980	30.5	30.5
Research and development in the social sciences and humanities	541720	643 - 795	D	D
Other professional, scientific, and technical services	other 54	825	0.9	0.9
Health care services	621-23	124	0.1	0.1
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	86	*	*
All companies (number of domestic employees)	-	73,109	0.7	0.7
Small companies				
10-19 <sup>c</sup>	-	1,162	5.7	6.0
20-49	-	2,091	3.0	3.1
Medium companies				
50-99	-	2,050	1.6	1.7
100-249	-	4,582	1.5	1.5
Large companies				
250-499	-	3,672	1.3	1.3
500-999	-	2,346	0.6	0.6
1,000-4,999	-	11,547	0.8	0.8
5,000-9,999	-	9,478	0.9	1.0
10,000-24,999	-	11,700	0.5	0.5
25,000 or more	-	24,480	0.5	0.6

\* = amount < \$500,000 or less than 0.05%; 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. 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, unless indicated otherwise. 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.