

TABLE 38

Domestic R&D paid for by others and performed by the company and others as a percentage of domestic net sales, by industry and company size: 2021

(Millions of U.S. dollars and percent)

Industry and company size	NAICS code	Domestic R&D (US\$millions)		Percentage of domestic sales of R&D performers or funders ^a	Percentage of domestic sales of R&D performers ^b
All industries	21-23, 31-33, 42-81	81,797		0.6	0.6
Manufacturing industries	31-33	42,967		0.7	0.7
Food	311	302		*	*
Beverage and tobacco products	312	22		*	*
Textile, apparel, and leather products	313-16	11		*	*
Wood products	321	2-10		D	D
Paper	322	*		*	*
Printing and related support activities	323	0-7		D	D
Petroleum and coal products	324	6		*	*
Chemicals	325	15,558		1.2	1.2
Basic chemicals	3251	166		0.1	0.1
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	90-127		D	D
Pesticide, fertilizer, and other agricultural chemicals	3253	211-245		D	D
Pharmaceuticals and medicines	3254	14,806		2.4	2.4
Soap, cleaning compound, and toilet preparations	3256	214		0.2	0.2
Paint, coating, adhesive, and other chemicals	3255, 3259	19-65		D	D
Plastics and rubber products	326	187		0.1	0.1
Nonmetallic mineral products	327	33		0.1	0.1
Primary metals	331	22-26	i	D	D
Fabricated metal products	332	421		0.1	0.1
Machinery	333	1,036		0.2	0.2
Agricultural implement	33311	60-82		D	D
Semiconductor machinery	333242	169		0.6	0.6
Engine, turbine, and power transmission equipment	3336	141-147		D	D
Other machinery	other 333	644-661		D	D
Computer and electronic products	334	7,017		0.9	0.9
Communications equipment	3342	1,233	i	1.2	1.2
Semiconductor and other electronic components	3344	1,937		0.8	0.8
Navigational, measuring, electromedical, and control instruments	3345	3,721		2.4	2.4
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	258		1.6	1.6
Search, detection, navigation, guidance, aeronautical, and nautical system and instruments	334511	3,269		7.1	7.1
Other measuring and controlling devices	other 3345	194		0.2	0.2
Other computer and electronic products	other 334	126		*	*
Electrical equipment, appliances, and components	335	491		0.3	0.3
Transportation equipment	336	17,521		1.7	1.7
Motor vehicles, bodies, trailers, and parts	3361-63	3,867		0.6	D
Aerospace products and parts	3364	12,503	i	4.0	4.0
Aircraft, aircraft engine, and aircraft parts	336411-13	11,483	i	3.8	3.8
Guided missile, space vehicle, and related parts	336414-15, 336419	1,021		9.1	9.1
Military armored vehicle, tank, and tank components	336992	1		0.1	D
Other transportation	other 336	1,149		1.5	1.5
Furniture and related products	337	4		*	*

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Miscellaneous	339	325 - 331		D	D
Medical equipment and supplies	3391	248		0.1	0.1
Other miscellaneous manufacturing	3399	77 - 83		D	D
Nonmanufacturing industries	21-23, 42-81	38,831	i	0.6	0.6
Mining, quarrying, oil and gas extraction, and support activities	21	189	i	0.1	0.1
Utilities	22	42		*	*
Wholesale trade	42	87		*	*
Electronic shopping and electronic auctions	454111-12	8	r	*	*
Transportation and warehousing	48-49	8 - 10		D	D
Information	51	1,514		0.1	0.1
Publishing	511	682		0.2	0.2
Newspaper, periodical, book, and directory publishers	5111	23	r	1.1	1.2
Software publishers	5112	659		0.2	0.2
Telecommunications	517	31 - 100		D	D
Data processing, hosting, and related services	518	702		0.1	0.1
Other information	other 51	29 - 100		D	D
Finance and insurance	52	47		*	*
Real estate and rental and leasing	53	0 - 1		D	D
Lessors of nonfinancial intangible assets (except copyrighted works)	533	0		0.0	0.0
Other real estate and rental and leasing	other 53	0 - 1		D	D
Professional, scientific, and technical services	54	36,729	i	7.6	7.6
Architectural, engineering, and related services	5413	2,378		3.1	3.1
Computer systems design and related services	5415	3,321		1.7	1.7
Scientific research and development services	5417	29,770	i	35.9	36.0
Research and development in nanotechnology	541713	84	i	19.8	31.7
Research and development in biotechnology (except nanobiotechnology)	541714	7,537		27.8	27.8
Research and development in the physical, engineering, and life sciences (except nanotechnology and biotechnology)	541715	21,567	i	40.0	40.0
Research and development in the social sciences and humanities	541720	581		41.7	41.7
Other professional, scientific, and technical services	other 54	1,260		1.0	1.0
Health care services	621-23	104		0.1	0.1
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	98 - 106		D	D
All companies (number of domestic employees)	-	81,797		0.6	0.6
Small companies					
10-19 ^c	-	1,365		3.8	3.9
20-49	-	2,651		2.5	2.6
Medium companies					
50-99	-	2,240		1.5	1.6
100-249	-	4,589		1.2	1.2
Large companies					
250-499	-	4,102		1.1	1.1
500-999	-	4,120		0.8	0.9

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1,000–4,999	–	11,930	0.6	0.6
5,000–9,999	–	9,649	0.6	0.6
10,000–24,999	–	22,820	1.0	1.0
25,000 or more	–	18,332	0.3	0.3

* = amount < \$500,000 or less than 0.05%; D = data withheld to avoid disclosing operations of individual companies; i = more than 50% of the estimate is a combination of imputation and reweighting to account for nonresponse; r = relative standard error is more than 50%.

NAICS = 2017 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 The Business Enterprise 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. Unless indicated otherwise, statistics are representative of companies located in the United States that performed or funded \$50,000 or more of R&D and are not comparable 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 Census Bureau, Business Enterprise Research and Development Survey, 2021.