

TABLE 12

Domestic R&D paid for by the company and others and performed by the company, by type of R&D, industry, and company size: 2019

(Millions of U.S. dollars)

Industry and company size	NAICS code	Total	Basic research	Applied research	Development
All industries	21-23, 31-33, 42-81	492,956	32,239	74,031	386,686
Manufacturing industries	31-33	285,674	22,701	45,769	217,203
Food	311	4,180	226	801	3,152
Beverage and tobacco products	312	1,082	96	228	757
Textile, apparel, and leather products	313-16	904	74	128	703
Wood products	321	186	26	22	138
Paper	322	1,064	131 - 133	271 - 273	659
Printing and related support activities	323	420	24	70	325
Petroleum and coal products	324	1,306	237	425	644
Chemicals	325	97,063	13,869	19,120	64,075
Basic chemicals	3251	2,360	261	736	1,362
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	1,172	191	293	688
Pesticide, fertilizer, and other agricultural chemicals	3253	1,822 - 1,846	469	656	696 - 722
Pharmaceuticals and medicines	3254	87,619	12,766	16,713	58,139
Soap, cleaning compound, and toilet preparation	3256	2,760	104	460	2,196
Paint, coating, adhesive, and other chemicals	3255, 3259	1,305 - 1,333	77	261	966 - 995
Plastics and rubber products	326	2,856	156	445	2,254
Nonmetallic mineral products	327	1,508	172	250	1,086
Primary metals	331	665	51	117	497
Fabricated metal products	332	2,885	179	608	2,099
Machinery	333	15,184	704	1,696	12,784
Agricultural implement	33311	1,921	124	243	1,554
Semiconductor machinery	333242	4,459	106	395	3,958
Engine, turbine, and power transmission equipment	3336	1,301	47	142	1,112
Other machinery	other 333	7,503	426	916	6,160
Computer and electronic products	334	86,729	2,175	11,587	72,967
Communications equipment	3342	12,595	355	1,410	10,830
Semiconductor and other electronic components	3344	35,183	776	3,876	30,531
Navigational, measuring, electromedical, and control instruments	3345	17,562	660	2,950	13,952
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	3,342	124	975	2,242
Search, detection, navigation, guidance, aeronautical, and nautical system and instrument	334511	9,662	187	1,340	8,136
Other measuring and controlling device	other 3345	4,558	350	634	3,574
Other computer and electronic products	other 334	21,388	383	3,352	17,654
Electrical equipment, appliances, and components	335	5,263	370	713	4,179
Transportation equipment	336	45,375	3,486	7,332	34,557
Motor vehicles, bodies, trailers, and parts	3361-63	24,117	1,324 - 1,388	4,498 - 4,563	18,230
Aerospace products and parts	3364	18,358	2,041	2,543	13,774
Aircraft, aircraft engine, and aircraft parts	336411-13	16,891	2,034	2,517	12,339
Guided missile, space vehicle, and related parts	336414-15, 336419	1,467	7	25	1,435
Military armored vehicle, tank, and tank component	336992	35	*	0 - 11	24 - 36
Other transportation	other 336	2,865	58 - 122	215 - 291	2,516 - 2,529
Furniture and related products	337	409	40	73	296

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Miscellaneous	339	18,596	675 - 693	1,873 - 1,891	16,031
Medical equipment and supplies	3391	16,014	480	1,560	13,973
Other miscellaneous manufacturing	3399	2,582	195 - 212	313 - 330	2,058
Nonmanufacturing industries	21-23, 42-81	207,283	9,538	28,262	169,483
Mining, quarrying, oil and gas extraction, and support activities	21	2,717	248	633	1,837
Utilities	22	275	38	79	158
Wholesale trade	42	1,191	99	140	952
Electronic shopping and electronic auctions	454111-12	3,131 - 15,818	i 23	2,777 - 3,677	i 42 - 13,018
Transportation and warehousing	48-49	9,890	i 218	i 899	i 8,774
Information	51	110,227	3,816	8,690	97,721
Publishing	511	33,019	1,112	1,821	30,087
Newspaper, periodical, book, and directory publishers	5111	61	1	2	58
Software publishers	5112	32,958	1,111	1,818	30,029
Telecommunications	517	3,733	266	1,567	i 1,899
Data processing, hosting, and related services	518	30,558	1,727	2,806	26,024
Other information	other 51	42,917	711	2,495	39,710
Finance and insurance	52	8,917	289	1,223	7,405
Real estate and rental and leasing	53	1,371	270	415	686
Lessors of nonfinancial intangible assets (except copyrighted works)	533	45	3	39	3
Other real estate and rental and leasing	other 53	1,326	267	377	683
Professional, scientific, and technical services	54	53,233	4,161	11,731	37,341
Architectural, engineering, and related services	5413	4,207	303	1,373	2,531
Computer systems design and related services	5415	21,046	1,498	3,521	16,028
Scientific research and development services	5417	21,669	1,847	5,536	14,286
Research and development in biotechnology	541711	6,457	845	495	5,117
Research and development in the physical, engineering, and life sciences (except biotechnology)	541712	14,446	i 581	4,809	9,056
Research and development in the social sciences and humanities	541720	766	421	232	i 113
Other professional, scientific, and technical services	other 54	6,312	513	i 1,302	i 4,497
Health care services	621-23	2,265	184	770	1,311
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	1,380 - 14,067	191	6 - 907	281 - 13,261
All companies (number of domestic employees)	-	492,956	32,239	74,031	386,686
Small companies					
10-19 ^a	-	5,501	377	1,116	4,008
20-49	-	12,418	931	2,888	8,600
Medium companies					
50-99	-	14,021	1,230	3,013	9,777
100-249	-	19,793	1,833	3,517	14,444
Large companies					
250-499	-	18,883	1,261	3,483	14,138
500-999	-	23,969	1,788	4,040	18,141
1,000-4,999	-	75,671	7,044	13,479	55,147
5,000-9,999	-	50,811	2,900	7,845	40,066
10,000-24,999	-	88,263	5,072	12,407	70,785

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25,000 or more	–	183,626	9,804	22,242	151,579

* = amount < \$500,000; i = > 50% of the estimate is a combination of imputation and reweighting to account for nonresponse.

NAICS = 2012 North American Industry Classification System.

^a 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. 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. 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 Census Bureau, Business Enterprise Research and Development Survey, 2019.