

TABLE 5

## Worldwide R&amp;D paid for by the company and performed by the company and others, by industry and company size: 2017

(Millions of U.S. dollars)

Industry and company size	NAICS code	Total	Performed by the company	Performed by others
All industries	21-23, 31-33, 42-81	471,321	417,724	53,597
Manufacturing industries	31-33	320,796	271,860	48,936
Food	311	5,521	5,315	206
Beverage and tobacco products	312	2,003	1,636	367
Textile, apparel, and leather products	313-16	1,106	1,079	27
Wood products	321	180	170	10
Paper	322	1,599	1,547	53
Printing and related support activities	323	229	224	6
Petroleum and coal products	324	445	355	90
Chemicals	325	116,161	77,328	38,832
Basic chemicals	3251	3,026 - 3,121	2,949	77 - 172
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	965	933	32
Pesticide, fertilizer, and other agricultural chemicals	3253	1,670	1,477	193
Pharmaceuticals and medicines	3254	104,819	66,815	38,004
Soap, cleaning compound, and toilet preparation	3256	3,645	3,266	379
Paint, coating, adhesive, and other chemicals	3255, 3259	1,941 - 2,037	1,887	55 - 150
Plastics and rubber products	326	4,729	4,519	210
Nonmetallic mineral products	327	1,507	1,485	22
Primary metals	331	934	869	64
Fabricated metal products	332	2,358	2,264	94
Machinery	333	16,147	15,505	642
Agricultural implement	33311	2,309	2,077	231
Semiconductor machinery	333242	4,002 - 4,147	4,002	0 - 145
Engine, turbine, and power transmission equipment	3336	2,431	2,238 - 2,380	51 - 192
Other machinery	other 333	7,260 - 7,407	7,045 - 7,189	215 - 360
Computer and electronic products	334	94,871	92,184	2,687
Communications equipment	3342	14,896	14,098	798
Semiconductor and other electronic components	3344	39,467	38,608	858
Navigational, measuring, electromedical, and control instruments	3345	14,259	13,686	573
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	3,741	3,623	119
Search, detection, navigation, guidance, aeronautical, and nautical system and instrument	334511	4,247	3,953	294
Other measuring and controlling device	other 3345	6,271	6,111	160
Other computer and electronic products	other 334	26,249	25,792	458
Electrical equipment, appliances, and components	335	6,281	5,974	307
Transportation equipment	336	46,763	42,779	3,984
Automobiles, bodies, trailers, and parts	3361-63	30,577	27,419	3,158
Aerospace products and parts	3364	14,403	13,628	775
Aircraft, aircraft engine, and aircraft parts	336411-13	13,862	13,198	664
Guided missile, space vehicle, and related parts	336414-15, 336419	541	431	111
Military armored vehicle, tank, and tank component	336992	5	4	1
Other transportation	other 336	1,778	1,728	49
Furniture and related products	337	479	459	21
Miscellaneous manufacturing	339	19,482	18,168	1,314
Medical equipment and supplies	3391	16,933	15,809	1,124
Other miscellaneous manufacturing	3399	2,549	2,359	190
Nonmanufacturing industries	21-23, 42-81	150,526	145,864	4,662

TABLE 5

## Worldwide R&amp;D paid for by the company and performed by the company and others, by industry and company size: 2017

(Millions of U.S. dollars)

Industry and company size	NAICS code	Total	Performed by the company	Performed by others
Mining, extraction, and support activities	21	3,509	3,147	361
Utilities	22	491	290	200
Wholesale trade	42	685	540	146
Electronic shopping and electronic auctions	454111-12	12,169	11,873 - 12,096	72 - 296
Transportation and warehousing	48-49	1,167	1,122	45
Information	51	95,800	93,518	2,282
Publishing	511	43,516	42,099	1,416
Newspaper, periodical, book, and directory publishers	5111	91	81	10
Software publishers	5112	43,424	42,018	1,406
Telecommunications	517	3,991	3,735	256
Data processing, hosting, and related services	518	18,608	18,291	316
Other information	other 51	29,686	29,392	293
Finance and insurance	52	9,018	8,530	488
Real estate and rental and leasing	53	903	899	4
Lessors of nonfinancial intangible assets (except copyrighted works)	533	314	311	2
Other real estate and rental and leasing	other 53	589	588	1
Professional, scientific, and technical services	54	23,580	22,864	717
Architectural, engineering, and related services	5413	1,752	1,611	141
Computer systems design and related services	5415	15,233	15,092	141
Scientific research and development services	5417	3,308	2,899	409
Biotechnology research and development	541711	973	801	172
Physical, engineering, and life sciences (except biotechnology) research and development	541712	2,249	2,012	237
Social sciences and humanities research and development	541720	86	86	*
Other professional, scientific, and technical services	other 54	3,287	3,261	26
Health care services	621-23	1,174	1,139	34
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	2,031	1,722 - 1,939	92 - 310
All companies (number of domestic employees)	-	471,321	417,724	53,597
Small companies				
10-19 <sup>a</sup>	-	3,068	2,530	538
20-49	-	9,663	8,162	1,501
Medium companies				
50-99	-	10,245	8,543	1,702
100-249	-	18,202	14,729	3,472
Large companies				
250-499	-	15,168	13,783	1,385
500-999	-	21,365	18,675	2,691
1,000-4,999	-	76,790	66,372	10,419
5,000-9,999	-	46,403	42,209	4,193
10,000-24,999	-	92,582	77,328	15,254
25,000 or more	-	177,836	165,394	12,442

\* = amount &lt; \$500,000; i = &gt; 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> 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&amp;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. 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, 2017.