

TABLE 5

Worldwide R&D paid for by the company and performed by the company and others, by industry and company size: 2016

(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	435,403	388,057	47,346
Manufacturing industries	31-33	305,593	263,081	42,512
Food	311	5,771	5,601	170
Beverages and tobacco products	312	1,880	1,531	349
Textiles, apparel, and leather products	313-16	1,252	1,237	15
Wood products	321	212	196	16
Paper	322	932	929	3
Printing and related support activities	323	225	222	2
Petroleum and coal products	324	D	411	D
Chemicals	325	110,658	76,311	34,347
Basic chemicals	3251	2,997	2,817	180
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	1,065	1,027	38
Pesticides, fertilizers, and other agricultural chemicals	3253	1,528	1,483	45
Pharmaceuticals and medicines	3254	99,287	65,751	33,535
Soaps, cleaning compounds, and toilet preparations	3256	3,954	3,447	506
Paints, coatings, adhesives, and other chemicals	3255, 3259	1,828	1,785	43
Plastics and rubber products	326	4,625	4,412	213
Nonmetallic mineral products	327	1,770	1,459	311
Primary metals	331	698	652	46
Fabricated metal products	332	2,456	2,370	86
Machinery	333	15,445	14,863	582
Agricultural implements	33311	2,426	2,175	251
Semiconductor machinery	333242	3,745	3,745	*
Engines, turbines, and power transmission equipment	3336	2,281	2,269	12
Other machinery	other 333	6,993	6,674	319
Computer and electronic products	334	90,948	89,045	1,902
Communications equipment	3342	14,524	14,249	276
Semiconductors and other electronic components	3344	40,148	39,454	694
Navigational, measuring, electromedical, and control instruments	3345	13,632	13,135	497
Electromedical, electrotherapeutic, and irradiation apparatuses	334510, 334517	3,450	3,386	64
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	D	3,757	D
Other measuring and controlling devices	other 3345	D	5,992	D
Other computer and electronic products	other 334	22,644	22,208	436
Electrical equipment, appliances, and components	335	5,898	5,738	160
Transportation equipment	336	44,294	41,157	3,136
Automobiles, bodies, trailers, and parts	3361-63	28,214	25,952	2,261
Aerospace products and parts	3364	14,590	13,761	828
Aircraft, aircraft engines, and aircraft parts	336411-13	14,125	13,418	707
Guided missiles, space vehicles, and related parts	336414-15, 336419	465	344	121
Military armored vehicles, tanks, and tank components	336992	3	3	0
Other transportation	other 336	1,487	1,440	47
Furniture and related products	337	433	406	27
Miscellaneous manufacturing	339	D	16,541	D
Medical equipment and supplies	3391	14,861	13,930	931
Other miscellaneous manufacturing	3399	D	2,611	D
Nonmanufacturing industries	21-23, 42-81	129,811	124,976	4,834
Mining, extraction, and support activities	21	3,505	3,167	338
Utilities	22	D	327	D
Wholesale trade	42	D	455	D

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Electronic shopping and electronic auctions	454111-12	D	D	D
Transportation and warehousing	48-49	508	493	16
Information	51	85,972	83,430	2,542
Publishing	511	43,576	41,860	1,716
Newspaper, periodical, book, and directory publishers	5111	87	81	6
Software publishers	5112	43,490	41,779	1,711
Telecommunications	517	3,780	3,579	200
Data processing, hosting, and related services	518	13,875	13,511	364
Other information	other 51	24,741	24,480	261
Finance and insurance	52	8,506	8,373	133
Real estate and rental and leasing	53	480	477	3
Lessors of nonfinancial intangible assets (except copyrighted works)	533	30	27	3
Other real estate and rental and leasing	other 53	450	450	*
Professional, scientific, and technical services	54	25,697	24,535	1,162
Architectural, engineering, and related services	5413	1,940	1,839	101
Computer systems design and related services	5415	16,781	16,587	194
Scientific research and development services	5417	3,722	2,875	846
Biotechnology research and development	541711	1,188	753	435
Physical, engineering, and life sciences (except biotechnology) research and development	541712	2,501	2,090	411
Social sciences and humanities research and development	541720	33	32	*
Other professional, scientific, and technical services	other 54	3,255	3,234	21
Health care services	621-23	959	936	23
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	D	D	D
All companies (number of domestic employees)	-	435,403	388,057	47,346
Micro companies ^a				
5 - 9	-	1,457	1,188	269
Small companies				
10 - 19	-	4,600	3,964	636
20 - 49	-	9,293	7,799	1,494
Medium companies				
50 - 99	-	9,790	8,081	1,708
100 - 249	-	15,396	12,998	2,397
Large companies				
250 - 499	-	14,421	13,175	1,246
500 - 999	-	17,344	15,671	1,673
1,000 - 4,999	-	76,497	67,403	9,094
5,000 - 9,999	-	48,741	44,208	4,533
10,000 - 24,999	-	78,776	65,294	13,482
25,000 or more	-	159,088	148,274	10,814

* = amount < \$500,000; 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 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.

Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2016.