

TABLE 3

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

(Millions of U.S. dollars)

Industry and company size	NAICS code	R&D program size						
		All companies	Less than \$1 million	\$1 million – \$9.999 million	\$10 million – \$49.999 million	\$50 million – \$99.999 million	\$100 million or more	
All industries	21–23, 31–33, 42–81	451,831	6,529	25,829	34,443	21,677	363,353	
Manufacturing industries	31–33	303,241	3,864	13,416	20,120	15,418	250,423	
Food	311	5,821	202	535	549	531	4,004	
Beverages and tobacco products	312	D	D	66	87	254	1,214	
Textiles, apparel, and leather products	313–16	1,246	78	400	344	424	0	
Wood products	321	203	28	77	98	0	0	
Paper	322	929	52	82	128	63	605	
Printing and related support activities	323	223	63	79	81	0	0	
Petroleum and coal products	324	425	21	152	58	194	0	
Chemicals	325	85,888	565	2,879	6,139	4,478	71,826	
Basic chemicals	3251	3,082	82	343	618	572	1,466	
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	1,044	53	151	158	161	522	
Pesticides, fertilizers, and other agricultural chemicals	3253	D	D	60	0	D	1,685	
Pharmaceuticals and medicines	3254	74,542	143	1,851	5,040	3,151	64,357	
Soaps, cleaning compounds, and toilet preparations	3256	3,590	84	198	224	167	2,917	
Paints, coatings, adhesives, and other chemicals	3255, 3259	D	D	278	99	D	878	
Plastics and rubber products	326	4,583	305	605	587	700	2,386	
Nonmetallic mineral products	327	1,474	61	145	266	0	1,001	
Primary metals	331	662	79	191	255	0	136	
Fabricated metal products	332	2,484	496	833	549	388	218	
Machinery	333	15,764	594	1,584	1,942	1,098	10,545	
Agricultural implements	33311	2,189	24	D	126	D	1,755	
Semiconductor machinery	333242	4,138	10	43	88	286	3,712	
Engines, turbines, and power transmission equipment	3336	2,327	D	D	205	0	D	
Other machinery	other 333	7,109	D	1,346	1,523	D	D	
Computer and electronic products	334	98,175	672	2,183	3,604	3,474	88,242	
Communications equipment	3342	16,075	160	258	679	726	14,252	
Semiconductors and other electronic components	3344	41,695	135	729	1,330	1,337	38,165	
Navigational, measuring, electromedical, and control instruments	3345	18,111	295	1,033	1,103	1,118	14,561	
Electromedical, electrotherapeutic, and irradiation apparatuses	334510, 334517	3,553	49	300	327	676	2,202	
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	8,373	27	156	237	0	7,953	
Other measuring and controlling devices	other 3345	6,185	220	578	539	442	4,406	
Other computer and electronic products	other 334	22,294	82	163	492	293	21,264	
Electrical equipment, appliances, and components	335	6,207	122	619	1,070	723	3,672	
Transportation equipment	336	60,326	109	1,432	1,866	2,308	54,609	
Automobiles, bodies, trailers, and parts	3361–63	29,171	58	1,099	1,142	1,561	25,312	
Aerospace products and parts	3364	28,462	19	213	472	575	27,184	
Aircraft, aircraft engines, and aircraft parts	336411–13	27,034	17	197	415	468	25,937	
Guided missiles, space vehicles, and related parts	336414–15, 336419	1,428	2	16	56	107	1,247	

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Military armored vehicles, tanks, and tank components	336992	D	D	D	0	0	0
Other transportation	other 336	D	D	D	253	173	2,114 i
Furniture and related products	337	406	64 i	95	180	66	0
Miscellaneous manufacturing	339	D	D	1,458	2,316	715	11,963
Medical equipment and supplies	3391	14,143	169 i	1,082	1,792	715	10,385
Other miscellaneous manufacturing	3399	D	D	376	524	0	1,578 i
Nonmanufacturing industries	21–23, 42–81	148,589	2,665 i	12,413	14,323	6,259	112,930
Mining, extraction, and support activities	21	3,604	13 i	98	83	102	3,308
Utilities	22	353	6 i	D	76	D	D
Wholesale trade	42	465 i	341 i	123 i	0	0	0
Electronic shopping and electronic auctions	454111–12	D	30 i	D	D	0	D
Transportation and warehousing	48–49	495	9 i	54	24	86	323
Information	51	84,133	484 i	4,006	5,976	3,920	69,746
Publishing	511	42,272	355 i	1,768 i	1,912	1,566	36,670
Newspaper, periodical, book, and directory publishers	5111	84 i	25 i	24	34	0	0
Software publishers	5112	42,188	330 i	1,744 i	1,878	1,566	36,670
Telecommunications	517	D	D	277	188	342	2,803
Data processing, hosting, and related services	518	13,666	107 i	1,794	3,625	1,787	6,353
Other information	other 51	D	D	167	251	225	23,921
Finance and insurance	52	8,468	14 i	73	524	82	7,775
Real estate and rental and leasing	53	477	13 i	5 i	45	105	309
Lessors of nonfinancial intangible assets (except copyrighted works)	533	27	D	0	D	0	0
Other real estate and rental and leasing	other 53	450	D	5 i	D	105	309
Professional, scientific, and technical services	54	46,771	1,636 i	7,356	6,864	1,561	29,354
Architectural, engineering, and related services	5413	3,475	331 i	1,146	1,041	255	702
Computer systems design and related services	5415	19,168	558 i	2,077 i	2,214	837	13,482
Scientific research and development services	5417	20,254	488 i	3,012	D	272	D
Biotechnology research and development	541711	6,079	135 i	678	450	86	4,731
Physical, engineering, and life sciences (except biotechnology) research and development	541712	13,452	344 i	2,282	2,144	186	8,495
Social sciences and humanities research and development	541720	723	9 i	53	D	0	D
Other professional, scientific, and technical services	other 54	3,874	260 i	1,121 i	D	197	D
Health care services	621–23	1,002	45 i	201	412	167 i	177
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	D	73 i	427	D	D	220
All companies (number of domestic employees)	–	451,831	6,529 i	25,829	34,443	21,677	363,353
Micro companies ^a							
5 – 9	–	1,726 i	891 i	720	115 i	0	0
Small companies							
10 – 19	–	5,059 i	1,455 i	D	677	D	0
20 – 49	–	10,000 i	1,650 i	D	1,460	D	0
Medium companies							

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50 – 99	–	9,662	1,082	i 4,453	3,585	542	0	
100 – 249	–	16,194	931	i 4,742	6,886	2,040	1,595	
Large companies								
250 – 499	–	14,866	309	i 2,606	5,959	2,824	3,169	
500 – 999	–	16,609	133	i 1,650	5,044	4,539	5,243	
1,000 – 4,999	–	79,597	66	i 1,443	7,875	7,696	62,517	
5,000 – 9,999	–	49,620	6	i 343	1,507	2,568	45,196	
10,000 – 24,999	–	80,255	5	i 118	840	756	78,538	
25,000 or more	–	168,243	2	i D	497	D	167,097	

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. R&D program size classifications are based on R&D performance.

Source(s)

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