

TABLE 2

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

(Millions of U.S. dollars)

Industry and company size	NAICS code	Worldwide R&D performance			Domestic R&D performance			Foreign R&D performance		
		Total	Paid for by the company	Paid for by others	Total	Paid for by the company	Paid for by others	Total	Paid for by the company	Paid for by others
All industries	21-23, 31-33, 42-81	451,831	388,057	63,774	374,685	317,731	56,954	77,146	70,326	6,820
Manufacturing industries	31-33	303,241	263,081	40,161	250,553	211,660	38,893	52,689	51,421	1,268
Food	311	5,821	5,601	220	4,828	4,611	217	994	991	3
Beverages and tobacco products	312	D	1,531	D	D	987	D	543	543	0
Textiles, apparel, and leather products	313-16	1,246	1,237	9	1,166	1,156	9	81	81	*
Wood products	321	203	196	7	188	181	7	15	15	0
Paper	322	929	929	*	851	851	*	78	78	0
Printing and related support activities	323	223	222	1	219	219	*	4	4	*
Petroleum and coal products	324	425	411	14	381	367	14	44	44	0
Chemicals	325	85,888	76,311	9,577	73,575	64,165	9,410	12,313	12,146	167
Basic chemicals	3251	3,082	2,817	265	2,545	2,284	261	537	533	4
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	1,044	1,027	18	711	693	18	333	333	*
Pesticides, fertilizers, and other agricultural chemicals	3253	D	1,483	D	D	1,061	D	432	422	10
Pharmaceuticals and medicines	3254	74,542	65,751	8,791	64,628	55,983	8,644	9,914	9,768	146
Soaps, cleaning compounds, and toilet preparations	3256	3,590	3,447	142	2,800	2,660	141	789	788	1
Paints, coatings, adhesives, and other chemicals	3255, 3259	D	1,785	D	D	1,484	D	307	302	5
Plastics and rubber products	326	4,583	4,412	171	3,752	3,584	169	831	829	2
Nonmetallic mineral products	327	1,474	1,459	15	1,289	1,274	14	185	185	*
Primary metals	331	662	652	10	592	583	10	69	69	*
Fabricated metal products	332	2,484	2,370	114	2,239	2,127	112	245	243	1
Machinery	333	15,764	14,863	901	12,585	11,699	886	3,179	3,164	15
Agricultural implements	33311	2,189	2,175	14	1,565	1,552	12	625	623	1
Semiconductor machinery	333242	4,138	3,745	393	3,411	3,028	383	727	717	10
Engines, turbines, and power transmission equipment	3336	2,327	2,269	59	1,959	1,901	58	368	368	*
Other machinery	other 333	7,109	6,674	435	5,650	5,218	432	1,459	1,456	3
Computer and electronic products	334	98,175	89,045	9,130	77,385	68,515	8,869	20,791	20,530	261
Communications equipment	3342	16,075	14,249	1,826	13,112	11,293	1,818	2,963	2,955	8

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Semiconductors and other electronic components	3344	41,695	39,454	2,241	31,391	29,176	2,215	10,304	10,278	26
Navigational, measuring, electromedical, and control instruments	3345	18,111	13,135	4,976	14,885	10,131	4,753	3,227	3,004	223
Electromedical, electrotherapeutic, and irradiation apparatuses	334510, 334517	3,553	3,386	167	2,632	2,466	165	922	919	2
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	8,373	3,757	4,616	7,533	3,121	4,412	840	636	204
Other measuring and controlling devices	other 3345	6,185	5,992	193	4,720	4,544	176	1,465	1,448	17
Other computer and electronic products	other 334	22,294	22,208	86	17,997	17,914	82	4,297	4,293	4
Electrical equipment, appliances, and components	335	6,207	5,738	469	4,771	4,302	469	1,436	1,436	1
Transportation equipment	336	60,326	41,157	19,168	51,275	32,905	18,371	9,050	8,253	798
Automobiles, bodies, trailers, and parts	3361-63	29,171	25,952	3,219	22,042	19,293	2,749	7,130	6,659	470
Aerospace products and parts	3364	28,462	13,761	14,701	26,645	12,272	14,373	1,817	1,490	327
Aircraft, aircraft engines, and aircraft parts	336411-13	27,034	13,418	13,616	25,221	11,930	13,291	1,813	1,488	326
Guided missiles, space vehicles, and related parts	336414-15, 336419	1,428	344	1,084	1,424	342	1,083	4	2	2
Military armored vehicles, tanks, and tank components	336992	D	3	D	D	3	D	0	0	0
Other transportation	other 336	D	1,440	D	D	1,337	D	104	103	*
Furniture and related products	337	406	406	*	366	366	*	40	40	0
Miscellaneous	339	D	16,541	D	D	13,768	D	2,792	2,773	20
Medical equipment and supplies	3391	14,143	13,930	213	11,668	11,474	194	2,475	2,455	20
Other miscellaneous manufacturing	3399	D	2,611	D	D	2,294	D	317	317	0
Nonmanufacturing industries	21-23, 42-81	148,589	124,976	23,613	124,132	106,071	18,061	24,457	18,905	5,552
Mining, extraction, and support activities	21	3,604	3,167	437	3,296	2,897	400	308	270	38
Utilities	22	353	327	26	351	325	26	1	1	*
Wholesale trade	42	465	455	10	452	442	10	12	12	0
Electronic shopping and electronic auctions	454111-12	D	D	0	1,569	1,569	0	D	D	0

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Transportation and warehousing	48-49	495	493	3 i	488	486	3	7	7	0
Information	51	84,133	83,430	703	70,748	70,075	674	13,384	13,355	29
Publishing	511	42,272	41,860	412	33,574	33,174	400	8,698	8,686	12
Newspaper, periodical, book, and directory publishers	5111	84 i	81 i	3 i	79 i	77 i	3 i	4	4	0
Software publishers	5112	42,188	41,779	409	33,495	33,098	397	8,693	8,682	12
Telecommunications	517	D	3,579	D	D	3,530 i	D	49	49	0
Data processing, hosting, and related services	518	13,666	13,511	155	11,914	11,776	138	1,752	1,735	17
Other information	other 51	D	24,480	D	D	21,594	D	2,886	2,886	0
Finance and insurance	52	8,468	8,373	94	7,331	7,237	94	1,136	1,136	0
Real estate and rental and leasing	53	477	477	0	475	475	0	2	2	0
Lessors of nonfinancial intangible assets (except copyrighted works)	533	27	27	0	27	27	0	*	*	0
Other real estate and rental and leasing	other 53	450	450	0	449	449	0	2	2	0
Professional, scientific, and technical services	54	46,771	24,535	22,236	37,595	20,845	16,750	9,176	3,690	5,486
Architectural, engineering, and related services	5413	3,475	1,839	1,636	3,412	1,816	1,596	64	23	41
Computer systems design and related services	5415	19,168	16,587	2,581 i	15,747	13,255	2,492 i	3,421	3,332	89
Scientific research and development services	5417	20,254	2,875	17,379	14,842	2,811	12,031	5,412	64	5,348
Biotechnology research and development	541711	6,079	753 i	5,326	4,464	750 i	3,714	1,615	3 i	1,612
Physical, engineering, and life sciences (except biotechnology) research and development	541712	13,452	2,090	11,362	9,659	2,029	7,630	3,793	61	3,732
Social sciences and humanities research and development	541720	723	32	691	719	32	687	4	0	4
Other professional, scientific, and technical services	other 54	3,874	3,234	640	3,595	2,962	632	279	272	7
Health care services	621-23	1,002	936	66	848	782	66	154	154	0
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	D	D	38	977 i	939 i	38	D	D	0

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		Total	Paid for by the company	Paid for by others	Total	Paid for by the company	Paid for by others	Total	Paid for by the company	Paid for by others
All companies (number of domestic employees)	-	451,831	388,057	63,774	374,685	317,731	56,954	77,146	70,326	6,820
Micro companies ^a										
5 – 9	-	1,726 i	1,188 i	537 i	1,581 i	1,044 i	536 i	145	144	1 i
Small companies										
10 – 19	-	5,059 i	3,964 i	1,095 i	4,958 i	3,887 i	1,071 i	101	77	24
20 – 49	-	10,000 i	7,799 i	2,201	9,662 i	7,473 i	2,189	338	326	12
Medium companies										
50 – 99	-	9,662	8,081	1,581	9,298	7,728	1,570	364	354	11
100 – 249	-	16,194	12,998	3,196	14,875	11,722	3,153	1,319	1,277	43 i
Large companies										
250 – 499	-	14,866	13,175	1,691	13,092	11,438	1,654	1,774	1,738	37
500 – 999	-	16,609	15,671	938	14,450	13,525	924	2,159	2,146	13
1,000 – 4,999	-	79,597	67,403	12,194	63,971	53,305	10,666	15,626	14,099	1,527
5,000 – 9,999	-	49,620	44,208	5,412	40,633	35,887	4,746	8,986	8,321	665 i
10,000 – 24,999	-	80,255	65,294	14,961	65,594	53,384	12,210	14,661	11,910	2,751
25,000 or more	-	168,243	148,274	19,968	136,571	118,339	18,232	31,672	29,935	1,736

* = 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.