

TABLE 48. Worldwide, domestic, and foreign R&D paid for by the company and others and performed by the company, R&D employment, and R&D cost per R&D employee, by industry and company size: 2014

Industry and company size	NAICS code	Company-performed R&D (US\$millions)			R&D employment (thousands)			Company-performed R&D per R&D employee (US\$thousands per employee)		
		Worldwide	Domestic	Foreign	Worldwide	Domestic	Foreign	Worldwide	Domestic	Foreign
All industries	21-23, 31-33, 42-81	416,038	340,728	75,310	2,167	1,514	653	192.0	225.0	115.3
Manufacturing industries	31-33	286,476	232,815	53,661	1,317	914	403	217.5	254.7	133.1
Food	311	6,532	5,292 i	1,240	36	25	11	181.6	215.0	109.3
Beverages and tobacco products	312	1,423	920	503	6	4	3	223.1	246.2	190.3
Textiles, apparel, and leather products	313-16	734	631	103	8	7	1	97.8	94.3	127.1
Wood products	321	368 i	362 i	5 i	4 i	4 i	* i	93.4	95.5	36.9
Paper	322	880	723	158	9	8	1	100.2	94.0	143.9
Printing and related support activities	323	238	234	3	4	4	*	64.1	66.5	19.0
Petroleum and coal products	324	298	234	64	2	2	1	130.4	138.9	106.4
Chemicals	325	79,468	66,301	13,167	234	172	61	340.3	385.0	214.8
Basic chemicals	3251	3,633	2,849	784	22	15	7	166.4	186.2	120.1
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	1,842	1,152	690	12	6	5	159.3	186.6	128.0
Pesticides, fertilizers, and other agricultural chemicals	3253	2,086 i	1,790 i	295 i	8 i	6 i	2 i	253.6	293.1	139.5
Pharmaceuticals and medicines	3254	66,737	56,612	10,125	158	122	36	423.7	464.3	284.4
Soaps, cleaning compounds, and toilet preparations	3256	3,499	2,547	952	17	12	5	202.5	215.8	173.7
Paints, coatings, adhesives, and other chemicals	3255, 3259	1,670 i	1,350 i	320 i	17	11	6	97.8	124.0	51.7
Plastics and rubber products	326	4,457	3,574	883	31	26	6	141.6	139.4	151.3
Nonmetallic mineral products	327	1,599	1,445 i	155 i	10	9	2	154.5	165.2	96.2
Primary metals	331	770	677	94	8	7	1	95.1	93.4	109.8
Fabricated metal products	332	2,353	2,131 i	222	34	32	3	68.5	67.5	79.0
Machinery	333	14,937	12,128	2,810	103	75	28	145.2	161.3	101.5
Agricultural implements	33311	D	1,578	D	14	10	5	D	164.1	D
Semiconductor machinery	333295	3,434	2,941	493	11	8	4	306.3	387.6	136.1
Engines, turbines, and power transmission equipment	3336	2,883	2,347	535	18	12	6	163.2	199.5	90.8
Other machinery	other 333	D	5,261	D	60	46	13	D	113.8	D
Computer and electronic products	334	94,910	73,891	21,019	445	273	172	213.3	270.6	122.2
Communications equipment	3342	22,044	18,342	3,702	94	59	35	233.3	309.3	105.2
Semiconductors and other electronic components	3344	42,722	32,142	10,581	181	107	74	236.2	301.7	142.2
Navigational, measuring, electromedical, and control instruments	3345	19,030	15,963	3,067	101	74	27	188.7	215.8	114.0
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	4,982	3,917	1,066	21	14	6	237.8	270.3	164.8
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	8,486	7,861	625	36	33	3	234.6	237.7	201.5

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		Worldwide	Domestic	Foreign	Worldwide	Domestic	Foreign	Worldwide	Domestic	Foreign
Other measuring and controlling devices	other 3345	5,561	4,186	1,375	44	26	17	127.2	158.5	79.4
Other computer and electronic products	other 334	11,114	7,444	3,670	69	33	36	161.5	223.9	103.2
Electrical equipment, appliances, and components	335	5,750	4,365	1,385	54	33	21	107.1	134.0	65.6
Transportation equipment	336	56,359	46,746	9,613	239	167	72	235.7	279.1	134.2
Automobiles, bodies, trailers, and parts	3361-63	D	18,404	D	142	94	47	D	195.2	D
Aerospace products and parts	3364	D	26,181 i	D	84	61	23	D	429.2	D
Aircraft, aircraft engines, and aircraft parts	336411-13	D	24,892 i	D	79	56	23	D	443.5	D
Guided missiles, space vehicles, and related parts	336414-15, 336419	D	1,290 i	D	5 i	5 i	*	D	264.0	D
Military armored vehicles, tanks, and tank components	336992	D	18	D	* i	*	* i	D	191.0	D
Other transportation	other 336	D	2,142 i	D	13 i	12 i	1	D	176.9	D
Furniture and related products	337	418	373	45	6	5	*	73.3	71.5	92.4
Miscellaneous manufacturing	339	14,983	12,789	2,194	84	64	21	177.4	201.1	105.2
Medical equipment and supplies	3391	12,091	10,309	1,782	58	43	14	209.9	239.0	123.1
Other miscellaneous manufacturing	3399	2,892	2,481	412	27	20	6	107.7	121.2	64.5
Nonmanufacturing industries	21-23, 42-81	129,562	107,913	21,649	850	600	250	152.5	179.9	86.6
Mining, extraction, and support activities	21	D	4,703	D	19	16	3	D	290.1	D
Utilities	22	311	310	1	2	2	*	147.9	154.7	10.1
Wholesale trade	42	D	339 i	D	8	7	*	D	47.6	D
Electronic shopping and electronic auctions	454111-12	D	1,388	D	D	7	D	D	186.7	D
Transportation and warehousing	48-49	692	679	13	3 i	3 i	*	250.2	251.5	197.9
Information	51	77,341	63,773	13,569	438	296	142	176.6	215.7	95.4
Publishing	511	46,157	36,140	10,017	276	164	113	167.0	220.9	88.9
Newspaper, periodical, book, and directory publishers	5111	92 i	88 i	4 i	1	1	* i	94.0	95.2	75.3
Software publishers	5112	46,065	36,052	10,013	275	163	113	167.3	221.6	88.9
Telecommunications	517	3,816	3,755	61	31	30	1	124.0	126.3	58.4
Data processing, hosting, and related services	518	10,322	9,029	1,294	74	57	17	139.5	159.5	74.5
Other information	other 51	17,046	14,849	2,196	57	46	11	299.9	324.6	198.1
Finance and insurance	52	4,748	4,122	625	28	24	4	169.5	174.1	144.1
Real estate and rental and leasing	53	268	262	6	2	2	*	144.7	146.0	102.3
Lessors of nonfinancial intangible assets (except copyrighted works)	533	58	55	3	*	*	*	200.8	212.3	95.8
Other real estate and rental and leasing	other 53	210	207	3	2	2	*	134.4	134.8	109.0
Professional, scientific, and technical services	54	37,476 i	30,975 i	6,501	318	223	95	117.9	139.2	68.1
Architectural, engineering, and related services	5413	3,440	3,375	65	51	45	7	66.9	75.8	9.5

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Computer systems design and related services	5415	12,536 i	11,019 i	1,517 i	113	77	36	111.0	143.5	42.0
Scientific R&D services	5417	17,329	12,807	4,522	112	71	40	155.4	180.2	111.7
Biotechnology R&D	541711	4,898	3,459	1,438	25	15	9	198.7	225.0	155.0
Physical, engineering, and life sciences (except biotechnology) R&D	541712	11,749	8,670	3,079	81	50	31	144.6	173.0	98.8
Social sciences and humanities R&D	541720	682	678	4 i	6	6	*	121.5	121.5	112.3
Other professional, scientific, and technical services	other 54	4,172 i	3,775	398 i	42	30	12 i	99.0	125.0	33.3
Health care services	621-23	501 i	501 i	*	6	5	*	90.9	92.5	4.0
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	D	861 i	D	D	15	D	D	56.8	D
All companies (number of domestic employees)	-	416,038	340,728	75,310	2,167	1,514	653	192.0	225.0	115.3
Small companies ^a										
5-499	-	58,967	54,773	4,194	486	419	67	121.4	130.7	62.7
5-99	-	30,333 i	29,078 i	1,255	274	242	32	110.7	120.0	39.6
5-49	-	19,607 i	18,900 i	707 i	182	161	21	107.5	117.4	33.1
5-9	-	3,390 i	3,295 i	95 i	33	27	6	103.7	123.6	15.8
10-24	-	7,450 i	7,177 i	273 i	73	66	7	102.7	109.2	40.1
25-49	-	8,767 i	8,428 i	339	77	69	9	113.5	122.7	39.7
50-99	-	10,726	10,178 i	547	92	81	10	117.0	125.2	53.1
100-249	-	14,984	13,492	1,492	119	100	19	125.5	134.6	77.7
250-499	-	13,650	12,203	1,447	92	76	16	147.7	159.6	90.7
Medium and large companies										
500-999	-	15,526	13,262	2,264	97	70	27	160.2	188.6	85.2
1,000-4,999	-	71,736	57,551	14,185	386	254	133	185.7	227.0	106.8
5,000-9,999	-	51,020	38,202	12,818	259	150	110	197.0	255.5	117.0
10,000-24,999	-	63,639	54,445	9,194	301	219	82	211.4	249.1	111.5
25,000 or more	-	155,150	122,495	32,655	638	403	235	243.2	303.9	139.0

* = amount < \$500,000 or 500 employees; 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 Upper bound is based on the U.S. Small Business Administration's definition of a small business; the Business R&D and Innovation Survey does not include companies with fewer than five domestic employees.

NOTES: Detail may not add to total because of rounding. Ratios were calculated using unrounded data. 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: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.