

TABLE 54. 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: 2013

Industry and company size	NAICS code	Company-performed R&D (US\$millions)			R&D employment (thousands)			Company-performed R&D per R&D employee (thousands of U.S. dollars per employee)		
		Worldwide	Domestic	Foreign	Worldwide	Domestic	Foreign	Worldwide	Domestic	Foreign
All industries	21-23, 31-33, 42-81	395,628	322,528	73,100	2,095	1,495	600	188.8	215.7	121.9
Manufacturing industries	31-33	272,580	221,476	51,104	1,267	898	368	215.2	246.6	138.7
Food	311	6,343	5,028	1,315	40	29	11	158.6	172.4	121.5
Beverage and tobacco products	312	1,358	827	531	6	4	3	218.4	226.3	207.1
Textile, apparel, and leather products	313-16	760	662	98	9	8	1	82.5	79.1	116.0
Wood products	321	222	220	2	3	3	*	80.8	81.9	36.1
Paper	322	1,022	920	103	10	9	1	107.5	108.0	103.3
Printing and related support activities	323	258 i	252 i	6	4	4	*	63.6	65.9	25.0
Petroleum and coal products	324	288	242	46	2	2	*	127.1	132.3	105.5
Chemicals	325	74,397	61,664	12,733	229	166	63	324.3	370.9	201.7
Basic chemicals	3251	3,373	2,658	715	19	13	6	175.7	200.3	120.5
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	1,570	1,065	506	12	7	5	132.5	145.6	111.4
Pesticide, fertilizer, and other agricultural chemicals	3253	1,966 i	1,691 i	275 i	8 i	6 i	2 i	233.5	276.0	119.9
Pharmaceuticals and medicines	3254	62,477	52,426	10,051	155	117	38	402.9	449.2	262.0
Soap, cleaning compound, and toilet preparation	3256	3,393	2,469	924	18	12	5	191.1	200.5	169.9
Paint, coating, adhesive, and other chemicals	3255, 3259	1,618	1,355	263	17	11	7	94.6	128.7	40.0
Plastics and rubber products	326	4,580	3,650	931	34	28	6	133.0	130.6	143.2
Nonmetallic mineral products	327	1,578	1,329 i	249 i	13	8	4	122.5	158.2	55.5
Primary metals	331	706	624	82	13	12	1	55.0	50.8	145.4
Fabricated metal products	332	2,328 i	2,212 i	116	36	33	3	64.9	67.6	36.6
Machinery	333	15,502	12,650	2,852	114	83	30	136.5	151.9	94.1
Agricultural implement	33311	2,243	1,597	646	15	10	5	150.1	157.2	135.2
Semiconductor machinery	333295	3,645	3,194	451	12	9	4	298.2	370.0	125.6
Engine, turbine, and power transmission equipment	3336	1,795	1,448	347	14	10	4	125.9	142.5	84.6
Other machinery	other 333	7,819	6,411	1,408	72	54	18	108.4	118.0	78.9
Computer and electronic products	334	85,480	67,205	18,275	395	255	140	216.3	263.1	130.8
Communications equipment	3342	20,353	15,658	4,696	86	57	30	235.9	276.7	158.2
Semiconductor and other electronic components	3344	40,609	30,800	9,809	183	109	74	221.5	282.9	131.8
Navigational, measuring, electromedical, and control instruments	3345	16,769	14,478	2,291	80	61	20	208.6	238.3	116.6
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	2,837	2,634	202	12	10	1	245.9	257.8	153.8
Search, detection, navigation, guidance, aeronautical, and nautical system and instrument	334511	8,753	8,106	647	30	27	3	296.0	300.8	246.8
Other measuring and controlling device	other 3345	5,179	3,738	1,441	39	24	16	131.8	158.5	91.8

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		Worldwide	Domestic	Foreign	Worldwide	Domestic	Foreign	Worldwide	Domestic	Foreign
Other computer and electronic products	other 334	7,748	6,269	1,480	45	29	16	171.4	214.4	92.6
Electrical equipment, appliances, and components	335	5,741	4,136	1,605	54	30	24	105.6	136.2	66.8
Transportation equipment	336	55,191	45,972	9,219	215	157	58	256.3	292.8	158.2
Automobiles, bodies, trailers, and parts	3361, 3362, 3363	23,605	16,729	6,877	119	83	36	198.3	201.7	190.2
Aerospace products and parts	3364	29,331	27,114	2,218	85	64	22	344.8	426.8	103.0
Aircraft, aircraft engine, and aircraft parts	336411-13	D	D	D	81	59	22	D	D	D
Guided missile, space vehicle, and related parts	336414-15, 336419	D	D	D	5	5	*	D	D	D
Military armored vehicle, tank, and tank components	336992	9 i	9 i	0	* i	* i	0	119.7	119.7	0.0
Other transportation	other 336	2,246	2,121	125	11	11	1	202.2	201.9	206.3
Furniture and related products	337	402	374	28	4	4	*	91.2	88.2	168.7
Miscellaneous manufacturing	339	16,422	13,509	2,913	84	62	22	194.8	217.2	131.7
Medical equipment and supplies	3391	13,456	10,954	2,502	65	47	18	208.5	234.8	139.9
Other miscellaneous manufacturing	3399	2,966	2,555	411	20	16	4 i	150.0	164.4	97.1
Nonmanufacturing industries	21-23, 42-81	123,048	101,052	21,996	828	597	231	148.5	169.2	95.2
Mining, extraction, and support activities	21	4,449	3,997	452	19	16	*	239.6	255.7	153.9
Utilities	22	317	294	23	2	2	D i	179.0	191.8	97.2
Wholesale trade	42	554 i	529 i	25 i	14	12	3	39.0	45.6	9.7
Electronic shopping and electronic auctions	454111-12	1,846	1,357 i	490	11	8	3	173.0	175.1	167.6
Transportation and warehousing	48-49	D	D	7	3	3	*	D	D	183.8
Information	51	70,857	57,207	13,650	406	277	129	174.7	206.6	106.1
Publishing	511	47,012	35,675	11,337	298	184	113	158.0	193.5	100.2
Newspaper, periodical, book, and directory publishers	5111	348 i	342 i	6 i	8 i	4	4 i	42.0	89.5	1.3
Software publishers	5112	46,664	35,333	11,331	289	181	109	161.3	195.7	104.2
Telecommunications	517	3,104	3,041	63	20	19	1	158.0	162.0	72.6
Data processing, hosting, and related services	518	7,077	6,446	631	50	42	9	140.7	154.3	74.0
Other information	other 51	13,665	12,046	1,619	38	32	6	358.9	376.4	266.9
Finance and insurance	52	5,011	4,308	703	30	25	4	168.7	169.3	165.0
Real estate and rental and leasing	53	161	150	11	1	1	*	157.5	163.4	106.3
Lessors of nonfinancial intangible assets (except copyrighted works)	533	D	58 i	D	*	*	*	D	193.1	D
Other real estate and rental and leasing	other 53	D	92	D	1	1	*	D	149.0	D
Professional, scientific, and technical services	54	37,560	31,017	6,543	310	223	87	121.1	138.9	75.4
Architectural, engineering, and related services	5413	3,174	3,133	41	47	44	2 i	68.1	70.5	19.2
Computer systems design and related services	5415	10,563 i	9,268 i	1,294	113	75	38	93.7	123.8	34.2

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		Worldwide	Domestic	Foreign	Worldwide	Domestic	Foreign	Worldwide	Domestic	Foreign
Scientific research and development services	5417	18,464	14,201	4,263	106	72	34	173.9	196.7	125.5
Biotechnology research and development	541711	5,899	4,499	1,400	28	19	9	213.9	242.9	154.6
Physical, engineering, and life sciences (except biotechnology) research and development	541712	11,771	8,910	2,861	74	49	25	159.3	181.8	114.9
Social sciences and humanities research and development	541720	795	792	3	5	5	*	169.4	169.3	185.6
Other professional, scientific, and technical services	other 54	5,359	4,415	944	45	32	13 i	119.9	138.6	73.5
Health care services	621-23	533 i	526 i	7	3	3	* i	161.9	166.1	56.5
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	D	D	85	30	27	2	D	D	34.1
All companies (number of domestic employees)	-	395,628	322,528	73,100	2,095	1,495	600	188.8	215.7	121.9
Small companies ^a										
5-499	-	57,172	53,002	4,170	506	442	64	113.1	119.9	65.5
5-99	-	28,670 i	27,148 i	1,522	281	251	30	101.9	108.1	50.4
5-49	-	19,415 i	18,238 i	1,177	192	170	22	100.9	107.2	52.7
5-9	-	3,454 i	3,402 i	52 i	37	36	2	92.2	95.7	27.3
10-24	-	7,580 i	6,895 i	685	75	62	12	101.5	110.7	55.1
25-49	-	8,381 i	7,941 i	440	80	72	8	104.4	109.9	55.1
50-99	-	9,254	8,910	344	89	81	8	104.0	109.8	43.7
100-249	-	14,941	13,666	1,275	128	112	16	116.7	121.8	80.4
250-499	-	13,562	12,189	1,373	96	79	18	141.1	155.1	78.1
Medium and large companies										
500-999	-	13,658	12,002	1,656	85	68	17	160.5	176.2	97.6
1,000-4,999	-	69,097	55,517	13,580	363	240	124	190.3	231.7	109.9
5,000-9,999	-	42,350	31,514	10,836	254	141	113	167.0	223.5	96.3
10,000-24,999	-	60,999	51,218	9,782	270	201	68	226.3	254.4	143.5
25,000 or more	-	152,351	119,275	33,076	618	403	215	246.4	295.6	154.0

* = < \$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 = 2007 North American Industry Classification System.

^a Upper bound based on U.S. Small Business Administration's definition of a small business; 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 based on dominant business code for domestic R&D performance where available. For companies that did not report business codes, 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, 2013.