

TABLE 26. Worldwide, domestic, and foreign R&amp;D paid for by the company and others and performed by the company, R&amp;D employment, and R&amp;D cost per R&amp;D employee, by industry and company size: 2008

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)		
		Worldwide	Domestic	Foreign	Worldwide	Domestic	Foreign	Worldwide	Domestic	Foreign
		All industries	21-23, 31-33, 42-81	352,155	290,680	61,475	1,867	1,425	442	188.6
Manufacturing industries	31-33	250,326	203,755	46,572	1,143	850	293	219.0	239.7	158.9
Food	311	2,696	2,100	596	18	14	4	149.8	150.0	149.0
Beverage and tobacco products	312	903	780	123	4	3	1	225.8	260.0	123.0
Textiles, apparel, and leather products	313-316	1,182	815	367	10	6	4 i	118.2	135.8	91.8
Wood products	321	278	273	4	3	3	*	92.7	91.0	NA
Paper	322	1,440	1,167	274	12	8	4	120.0	145.9	68.5
Printing and related support activities	323	358	349	9	3	3	*	119.3	116.3	NA
Petroleum and coal products	324	D	1,358	D	7	6	1	D	226.3	D
Chemicals	325	72,240	58,250	13,990	229	175	55	315.5	332.9	254.4
Basic chemicals	3251	5,272	4,074	1,198	27	19	7	195.3	214.4	171.1
Resin, synthetic rubber, fibers, and filaments	3252	985	761	224	5	4	1	197.0	190.3	224.0
Pesticide, fertilizer, and other agricultural chemical	3253	D	D	371	6	5	1	D	D	371.0
Pharmaceuticals and medicines	3254	58,993	48,131	10,862	159	123	36	371.0	391.3	301.7
Soap, cleaning compound, and toilet preparation	3256	3,073	2,108	965	17	11	6	180.8	191.6	160.8
Paint, coating, adhesive, and other chemical	3255, 3259	D	D	370	15	12	3	D	D	123.3
Plastics and rubber products	326	2,158	1,817	341	23	17	6	93.8	106.9	56.8
Nonmetallic mineral products	327	1,661	1,556	106	12	9	3 i	138.4	172.9	35.3
Primary metals	331	809	695	114	7	7	1	115.6	99.3	114.0
Fabricated metal products	332	2,607	2,419	188	32	29	3 i	81.5	83.4	62.7
Machinery	333	12,034	10,104	1,929	78	60	18	154.3	168.4	107.2
Agricultural implement	33311	1,583	1,184	399	10	7	3	158.3	169.1	133.0
Semiconductor machinery	333295	2,539	2,172	366	9	7	2	282.1	310.3	183.0
Engine, turbine, and power transmission equipment	3336	1,435	1,343	92	9	7	1	159.4	191.9	92.0
Other machinery	other 333	6,477	5,405	1,072	50	38	11	129.5	142.2	97.5
Computer and electronic products	334	76,237	60,464	15,774	387	276	111	197.0	219.1	142.1
Communications equipment	3342	15,854	12,903	2,951	80	54	26	198.2	238.9	113.5
Semiconductor and other electronic components	3344	29,399	22,324	7,075	147	99	48	200.0	225.5	147.4
Navigational, measuring, electromedical, and control instruments	3345	17,768	15,460	2,308	95	76	18	187.0	203.4	128.2
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	6,853	6,015	838	27	20	7	253.8	300.8	119.7
Search, detection, navigation, guidance, aeronautical, and nautical system and instruments	334511	D	6,541	D	40	37	3	D	176.8	D
Other measuring and controlling instruments	other 3345	D	2,903	D	28	19	8	D	152.8	D
Computer and peripheral equipment and other computer and electronic products	3341, 3343, 3346	13,216	9,776	3,440	65	47	18	203.3	208.0	191.1
Electrical equipment, appliances, and components	335	4,305	3,143	1,162	31	20	11	138.9	157.2	105.6
Transportation equipment	336	60,819	50,552	10,267	228	165	63	266.8	306.4	163.0
Automobiles, bodies, trailers, and parts	3361-3363	21,587	13,140	8,448	101	57	44	213.7	230.5	192.0
Aerospace products and parts	3364	38,757	36,941	1,816	123	103	19	315.1	358.7	95.6
Aircraft, aircraft engine, and aircraft parts	336411-336413	32,603	30,861	1,742	115	96	18	283.5	321.5	96.8
Guided missile, space vehicle, and related parts	336414, 336415, 336419	6,154	6,080	74	8 i	7	1 i	769.3	868.6	74.0
Military armored vehicle, tank, and tank components	336992	32	32	0	*	*	0	NA	NA	NA
Other transportation	other 336	443	440	3	4	4	*	110.8	110.0	NA

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		Worldwide	Domestic	Foreign	Worldwide	Domestic	Foreign	Worldwide	Domestic	Foreign
Furniture and related products	337	504	477	27	5	5	*	100.8	95.4	NA
Miscellaneous manufacturing	339	D	7,437	D	53	45	8	D	165.3	D
Medical equipment and supplies	3391	6,066	5,300	766	31	26	5	195.7	203.8	153.2
Other miscellaneous manufacturing	3399	D	2,137	D	22	18	4	D	118.7	D
Nonmanufacturing industries	21–23, 42–81	101,829	86,926	14,903	725	575	149	3278.0	151.2	100.0
Mining, extraction, and support activities	21	D	1,502	D	7	6	1	D	250.3	D
Utilities	22	232	226	6	1	1	*	*	226.0	NA
Construction	23	D	D	0	5	5	* i	D	D	NA
Wholesale trade	42	2,593	2,084	509	18	15	3	144.1	138.9	169.7
Retail trade	44, 45	D	1,031	D	6	4	2	D	257.8	D
Electronic shopping and mail-order houses	4541	D	676	D	4	3	2	D	225.3	D
Other retail trade	other 44, 45	355	355	0	1	1	0	355.0	355.0	NA
Transportation and warehousing	48, 49	136	135	2	3	2	1 i	45.3	67.5	2.0
Information	51	45,352	37,695	7,657	304	224	79	149.2	168.3	96.9
Publishing	511	34,729	28,427	6,301	218	153	65	46.0	185.8	27.0
Newspaper, periodical, book, and directory publishers	5111	233	205	27	2	1	1	0.0	205.0	27.0
Software publishers	5112	34,496	28,222	6,274	216	151	64	46.0	186.9	98.0
Telecommunications	517	1,859	1,684	175	31	29	2	0.0	58.1	87.5
Internet service providers, Web search portals, and data processing services	518	7,656	6,567	1,089 i	48	36	12 i	9.0	182.4	90.8
Other information	other 51	1,108	1,016	93	7	6	1	0.0	169.3	93.0
Finance and insurance	52	1,165	1,091	74	8	7	1	1.0	155.9	74.0
Real estate and rental and leasing	53	318	253	65	3	3	1	0.0	84.3	65.0
Professional, scientific, and technical services	54	44,104	37,954	6,150	328	267	60	3196.0	142.1	102.5
Architectural, engineering, and related services	5413	3,621	3,422	200	39	38	1	83.0	90.1	200.0
Computer systems design and related services	5415	14,310	12,146	2,164	136	100	36	88.0	121.5	60.1
Scientific R&D services	5417	21,458	17,913	3,544	115	94	21	2980.0	190.6	168.8
Other professional, scientific, and technical services	other 54	4,715	4,474	241	37	35	2	45.0	127.8	120.5
Health care services	621–623	1,315	1,313	1	12	12	*	0.0	109.4	NA
Other nonmanufacturing	55, 56, 61, 624, 71, 72, 81	2,331	D	D	30	29	1	8.0	D	D
All companies	21–23, 31–33, 42–81	352,155	290,680	61,475	1,867	1,425	442	188.6	204.0	139.1
Small companies (number of employees) <sup>a</sup>										
5–499	–	63,053	58,137	4,915	457	411	46	138.0	141.5	106.8
5–99	–	35,259	33,257	2,002	261	243	18	135.1	136.9	111.2
5–49	–	24,932	23,906	1,027	184	173	11	135.5	138.2	93.4
5–24	–	14,648	14,280	368	113	109	3	129.6	131.0	122.7
25–49	–	10,284	9,626	658	71	64	7	144.8	150.4	94.0
50–99	–	10,327	9,351	976	77	70	7	134.1	133.6	139.4
100–249	–	16,397	14,662	1,735	124	106	18	132.2	138.3	96.4
250–499	–	11,396	10,219	1,178	72	61	11	158.3	167.5	107.1
Medium and large companies (number of employees)										
500–999	–	13,639	11,886	1,753	78	63	14	174.9	188.7	125.2

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		Worldwide	Domestic	Foreign	Worldwide	Domestic	Foreign	Worldwide	Domestic	Foreign
1,000–4,999	–	57,686	46,336	11,350	312	224	87	184.9	206.9	130.5
5,000–9,999	–	31,765	24,764	7,000	191	125	66	166.3	198.1	106.1
10,000–24,999	–	60,522	48,737	11,785	283	191	92	213.9	255.2	128.1
25,000 or more	–	125,491	100,820	24,671	547	411	137	229.4	245.3	180.1

\* = amount < \$500,000 or 500 employees; D = data withheld to avoid disclosing operations of individual companies; i = value > 50% of estimate is a combination of imputation and reweighting to account for nonresponse;

NA = not available.

NAICS = 2002 North American Industry Classification System.

<sup>a</sup> Upper bound based on U.S. Small Business Administration's definition of small business: Business R&D and Innovation Survey (BRDIS) does not include companies with fewer than five domestic employees. After 2008 BRDIS sample was selected and surveyed, an error was identified that resulted in excluding 226,884 single-establishment companies with five paid employees from sample frame. Most excluded establishments were classified in industries with low R&D intensities, such as construction, retail trade, and service sectors. Based on available information for these small single-establishment companies, their contribution to 2008 R&D estimates is estimated to be negligible.

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 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, 2008.