

TABLE 75. 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: 2009

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	337,306	282,393	54,914	1,879	1,424	454	179.6	198.3	120.9
Manufacturing industries	31–33	236,081	195,144	40,936	1,137	850	287	207.7	229.6	142.6
Food	311	5,009	4,192	817	30	24	7	164.7	177.6	120.1
Beverage and tobacco products	312	933	477	455	4	2	2	240.8	236.6	245.4
Textiles, apparel, and leather products	313–316	511	428	83	6	5	1	86.8	88.3	80.0
Wood products	321	515	512	2	4	4	*	137.8	138.4	70.2
Paper	322	1,508	1,249	259	12	8	4	126.7	153.1	69.2
Printing and related support activities	323	201	195	6	4	3	*	57.4	56.9	80.8
Petroleum and coal products	324	668	606	61	3	2	1	199.5	312.8	43.5
Chemicals	325	63,117	53,328	9,788	201	157	44	314.6	340.7	222.1
Basic chemicals	3251	2,879	2,042	838	17	12	5	173.4	172.6	175.4
Resin, synthetic rubber, fibers, and filaments	3252	1,169	909	260	8	7	2	143.8	137.8	169.7
Pesticide, fertilizer, and other agricultural chemical	3253	1,403 i	D i	D i	6	5	2	218.7	D	D
Pharmaceuticals and medicines	3254	51,999	44,936	7,063	136	110	26	382.3	409.9	267.7
Soap, cleaning compound, and toilet preparation	3256	3,251	2,341	911	16	11	6	199.1	218.7	161.9
Paint, coating, adhesive, and other chemical	3255, 3259	2,415	D	D	17	13	4	141.0	D	D
Plastics and rubber products	326	3,065	2,468	597	30	22	8	102.9	113.5	74.3
Nonmetallic mineral products	327	1,227 i	1,100 i	126 i	6	5	*	206.8	200.9	277.3
Primary metals	331	937	837	100	7	7	1	126.0	124.1	144.2
Fabricated metal products	332	2,164	2,040	124	34	33	1	63.1	61.4	116.6
Machinery	333	11,035	9,138	1,897	82	65	18	134.0	141.0	108.3
Agricultural implements	33311	1,355	1,010	345	10	7	3	135.8	144.9	114.7
Semiconductor machinery	333295	2,134	1,847	287	8	6	2	258.1	309.4	124.8
Engine, turbine, and power transmission equipment	3336	831	748	83	7	5	1	120.3	137.8	56.2
Other machinery	other 333	6,716	5,533	1,183	57	46	11	117.5	119.1	110.2
Computer and electronic products	334	69,787	56,436	13,351	371	260	111	188.0	217.2	120.0
Communications equipment	3342	16,631	13,499	3,132	94	63	31	177.6	214.7	101.8
Semiconductor and other electronic components	3344	26,041	19,983	6,058	121	76	45	214.5	261.4	134.7
Navigational, measuring, electromedical, and control instruments	3345	17,190	14,859	2,331	101	83	18	170.6	179.1	130.8
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	6,301 i	5,615 i	686 i	25	22	3 i	249.3	256.0	205.1
Search, detection, navigation, guidance, aeronautical, and nautical system and instruments	334511	7,502	6,700	802	48	41	7	155.2	163.6	108.6
Other measuring and controlling instruments	other 3345	3,386	2,543	843	27	20	7	124.6	126.6	119.0
Computer and peripheral equipment and other computer and electronic products	other 334	9,926	8,095	1,831	55	38	18	179.5	215.6	103.1
Electrical equipment, appliances, and components	335	4,535	3,334	1,201	45	25	21	99.8	134.1	58.4
Transportation equipment	336	56,315	48,337	7,978	220	167	53	256.1	289.9	150.2
Automobiles, bodies, trailers, and parts	3361–3363	D	D	6,124	87	55	32	D	D	191.2
Aerospace products and parts	3364	36,400	34,554	1,846	110	89	20	332.3	387.4	90.7
Aircraft, aircraft engine, and aircraft parts	336411–336413	28,411	26,650 i	1,761	100	81	19	283.1	329.4	90.5
Guided missile, space vehicle, and related parts	336414, 336415, 336419	7,989	7,904	85	9	8	1	871.5	955.7	95.3

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		Worldwide	Domestic	Foreign	Worldwide	Domestic	Foreign	Worldwide	Domestic	Foreign
Military armored vehicle, tank, and tank components	336992	33	D	D	*	*	*	192.5	D	D
Other transportation equipment	other 336	D i	2,386 i	D	23 i	22 i	1 i	D	106.1	D
Furniture and related products	337	434	396	38	5	5	*	79.1	73.9	302.0
Miscellaneous manufacturing	339	14,121	10,070	4,051	72	57	15	196.5	177.4	268.6
Medical equipment and supplies	3391	11,524	7,698	3,826	50	38	12	232.2	204.4	319.5
Other miscellaneous manufacturing	3399	2,596	2,371	225	22	19	3	116.9	124.1	72.4
Nonmanufacturing industries	21-23, 42-81	101,226	87,248	13,977	742	574	167	136.5	151.9	83.5
Mining, extraction, and support activities	21	2,998	D	D	11	9	2	273.2	D	D
Utilities	22	259	246	13	2	2	*	118.0	115.6	195.9
Construction	23	118	115	4	5	4	1	25.0	28.9	4.7
Wholesale trade	42	1,082 i	D i	D i	8 i	7 i	1 i	132.9	D	D
Retail trade	44, 45	1,015	D	D	5	3 i	1 i	216.8	D	D
Electronic shopping and mail-order houses	4541	967	D	D	4	3 i	1 i	223.6	D	D
Other retail trade	other 44, 45	49	45	3 i	*	*	*	135.5	134.4	153.3
Transportation and warehousing	48, 49	179	178	1	2	2	*	77.9	77.7	108.7
Information	51	40,717	33,806	6,911	295	206	89	138.3	164.4	77.8
Publishing	511	33,499	27,077	6,422	221	140	80	151.7	192.9	79.9
Newspaper, periodical, book, and directory publishers	5111	730	683	47	4	4	*	182.5	185.5	147.4
Software publishers	5112	32,769	26,394	6,374	217	137	80	151.1	193.0	79.6
Telecommunications	517	1,582	1,496	86	28 i	27 i	1	55.9	54.8	84.6
Data processing, hosting, and related services	518	3,017	2,735	282	27	23	4	110.7	119.1	65.5
Other information	other 51	2,619	2,497	122	18	15	3	144.6	166.1	39.5
Finance and insurance	52	2,434	1,911	523	27	22	4	91.0	85.7	118.1
Real estate and rental and leasing	53	264	264	*	1	1	*	274.5	279.2	7.1
Professional, scientific, and technical services	54	50,901	44,946	5,955	374	307	67	136.2	146.5	89.0
Architectural, engineering, and related services	5413	3,411	3,281	130	40	39	1	84.5	84.4	88.2
Computer systems design and related services	5415	14,585	12,560	2,025	154	117	37	94.4	107.3	54.1
Scientific R&D services	5417	20,243	17,270	2,974	107	85	21	190.0	202.2	141.0
Biotechnology R&D	541711	8,972	8,259	713	43	36	7	209.0	230.8	99.8
Physical, engineering, and life sciences (except biotechnology) R&D	541712	10,548	8,297	2,251	59	45	14	180.1	184.7	164.9
Social sciences and humanities R&D	541720	724	714	9	5	5 i	*	143.8	150.9	31.3
Other professional, scientific, and technical services	other 54	12,661	11,836	826	72	65	7	175.3	181.0	120.3
Health care services	621-623	547	537	10	6	6	*	91.3	91.0	111.9
Other nonmanufacturing	55, 56, 61, 624, 71, 72, 81	710	645	66	7	6	1	102.4	111.0	58.2

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		Worldwide	Domestic	Foreign	Worldwide	Domestic	Foreign	Worldwide	Domestic	Foreign
All companies	-	337,306	282,393	54,914	1,879	1,424	454	179.6	198.3	120.9
Small companies (number of domestic employees) ^a										
5-499	-	62,965	58,719	4,246	504	459	45	125.0	127.9	94.9
5-99	-	36,425	34,769	1,656	314	295	19	116.0	117.7	89.2
5-49	-	22,637	21,486	1,151	208	197	12	108.6	109.2	98.7
5-24	-	12,490	11,794	696	122	116	6	102.3	101.7	113.3
25-49	-	10,147	9,692	455	86	81	6	117.7	120.1	82.5
50-99	-	13,787	13,282	505	106	99	7	130.6	134.6	73.0
100-249	-	14,332	12,747	1,586	105	91	14	136.0	139.3	114.1
250-499	-	12,209	11,204	1,005	84	72	12	144.5	155.2	81.8
Medium and large companies (number of domestic employees)										
500-999	-	12,104	10,119	1,985	83	64	20	145.0	158.6	101.0
1,000-4,999	-	54,617	44,008	10,610	297	204	94	183.6	215.8	113.4
5,000-9,999	-	27,642	21,864	5,778	168	112	56	164.1	195.0	102.6
10,000-24,999	-	61,815	51,037	10,777	292	212	81	211.6	241.2	133.8
25,000 or more	-	118,162	96,645	21,517	533	374	160	221.6	258.6	134.9

* = 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.

NAICS = 2007 North American Industry Classification System.

^a 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.

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, 2009.