

TABLE 49. R&D costs paid for by the company and others projected for 2012, by industry and company size: 2011  
(Millions of U.S. dollars)

Industry and company size	NAICS code	Projected worldwide R&D cost		Projected domestic R&D cost						
		Paid for by company	Paid for by others	Paid for by company			Paid for by others			Projected foreign R&D cost paid for by the company
				Total	Purchased and collaborative R&D	R&D performed by the company	Total	U.S. government	Non-U.S. government sources	
All industries	21-23, 31-33, 42-81	365,211	70,807	293,157	35,114	258,043	60,820	36,005 i	24,815	72,054
Manufacturing industries	31-33	254,830	47,129	197,783	27,026	170,757	42,383	27,971 i	14,412	57,048
Food	311	6,205	209	5,064	463	4,601	199	18	181	1,141
Beverage and tobacco products	312	1,605	D	814	D	D	D	0	D	791
Textile, apparel, and leather products	313-316	773	44	718	22 i	696	44	38 i	6	55
Wood products	321	206	8	202	15 i	187	8	0	8	4
Paper	322	2,014 i	25	1,806 i	29 i	1,777 i	25	D	D	208 i
Printing and related support activities	323	235	1	202	13	189	1	1	*	33
Petroleum and coal products	324	1,364	D	1,205	D	D	D	0	D	159
Chemicals	325	89,819	8,783	69,561	17,734	51,826	6,265	470	5,795	20,258
Basic chemicals	3251	D	D	4,121	314	3,807	D	201	D	D
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	1,302	15	935	52	883	13	8 i	6	367
Pesticide, fertilizer, and other agricultural chemical	3253	D	D	1,221	118 i	1,103 i	D	1	D	D
Pharmaceuticals and medicines	3254	75,602	8,172	58,998	16,961	42,037	5,680	241 i	5,439	16,604
Soap, cleaning compound, and toilet preparation	3256	4,051	5	2,958	134 i	2,824 i	5	1	5	1,094
Paint, coating, adhesive, and other chemicals	3255, 3259	1,513	46	1,328	156	1,172	38	18	19	185
Plastics and rubber products	326	2,652	218 i	2,284	92	2,192	203 i	15 i	188 i	367
Nonmetallic mineral products	327	1,104	35	989	283	706	34	25	10	115
Primary metals	331	945	73	793	142	651 i	67	13	54	152
Fabricated metal products	332	2,030	133	1,872	111	1,761	131	22	109	159
Machinery	333	19,344	1,438	15,376	845	14,531	1,256	475	781	3,968
Agricultural implement	33311	1,967	27	1,402	134	1,268	26	1	25	565
Semiconductor machinery	333295	2,644	167	2,299	65	2,234	162	7	155	345
Engine, turbine, and power transmission equipment	3336	D	D	4,351	439	3,912	D	D	D	D
Other machinery	other 333	D	D	7,325	208	7,117	D	D	D	D
Computer and electronic products	334	77,887	9,585	61,358	1,853 i	59,506 i	9,032	5,092	3,940	16,529
Communications equipment	3342	14,832 i	1,720 i	11,934 i	491 i	11,443 i	1,688 i	821 i	867	2,898
Semiconductor and other electronic components	3344	33,580	1,407	24,817	578	24,239	1,327	112	1,215	8,763
Navigational, measuring, electromedical, and control instruments	3345	13,853 i	5,813	11,394 i	434	10,960 i	5,455	4,132	1,323	2,459 i
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	4,440 i	142	3,853 i	177	3,675 i	141	20	121	588 i
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	3,391 i	5,545	3,002	91	2,911	5,214	4,043	1,171	389 i
Other measuring and controlling device	other 3345	6,021	127	4,539	166 i	4,373 i	99	69	31	1,482
Other computer and electronic products	other 334	15,622	645	13,214	349 i	12,864	562	27 i	535	2,408
Electrical equipment, appliances, and components	335	5,323	178	3,608	159 i	3,449	175	101	74	1,715

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				Total	Purchased and collaborative R&D	R&D performed by the company	Total	U.S. government	Non-U.S. government sources	Projected foreign R&D cost paid for by the company
Transportation equipment	336	31,639	25,358 i	22,261	4,105	18,156	23,942 i	21,625 i	2,317	9,378
Motor vehicles, bodies, trailers, and parts	3361, 3362, 3363	22,776	2,057	14,316	2,805	11,512	1,575	236	1,339	8,460
Aerospace products and parts	3364	7,686	23,282 i	6,847	1,261	5,587	22,351 i	21,378 i	973	838
Aircraft, aircraft engine, and aircraft parts	336411-13	D	D	6,493	1,226	5,266	D	20,445 i	D	D
Guided missile, space vehicle, and related parts	336414-15, 336419	D	D	355	34	320	D	933	D	D
Military armored vehicle, tank, and tank component	336992	30	3	29	4	25	3	2	1	1
Other transportation equipment	other 336	1,147	15	1,068	36	1,032	13	8	4	79
Furniture and related products	337	359	2	329	14	315	2	*	2	29
Miscellaneous manufacturing	339	11,327	D	9,340	D	D	D	D	D	1,988
Medical equipment and supplies	3391	8,454	570	7,097	650	6,447	537	25	511	1,357
Other miscellaneous manufacturing	3399	2,873	D	2,243	D	D	D	D	D	631
Nonmanufacturing industries	21-23, 42-81	110,381	23,678	95,374	8,087	87,287	18,437	8,034	10,403	15,006
Mining, extraction, and support activities	21	3,508	D	3,167	470	2,698	328	24 i	304 i	341
Utilities	22	609	132	589	264	325	98	94	5	20
Wholesale trade	42	2,425 i	270	2,043 i	279 i	1,763 i	231 i	72 i	159 i	383 i
Electronic shopping and electronic auctions	454111-12	D	1	1,409 i	27	1,382 i	1	0	1	D
Transportation and warehousing	48-49	130	1	92	19	73	1	1	*	38 i
Information	51	59,845	897	50,803	2,770 i	48,033	729	124	605	9,042
Publishing	511	39,323	D	31,812	1,888	29,924	562	106	457	7,511
Newspaper, periodical, book, and directory publishers	5111	564	0	530	435	95	0	0	0	34
Software publishers	5112	38,759	D	31,282	1,453	29,828	562	106	457	7,478
Telecommunications	517	3,966 i	118	3,876 i	191 i	3,685 i	118	5 i	112 i	90
Data processing, hosting, and related services	518	4,821	18	4,491	167	4,324	18	*	18	330
Other information	other 51	11,735 i	D	10,624 i	524 i	10,101 i	31 i	13 i	19 i	1,111 i
Finance and insurance	52	3,997	14	3,470	180	3,290	14	0	14	527
Real estate and rental and leasing	53	477	0	422	39	383	0	0	0	55
Lessors of nonfinancial intangible assets (except copyrighted works)	533	377	0	334	8	326	0	0	0	43
Other real estate and rental and leasing	other 53	100	0	88	30	58	0	0	0	12
Professional, scientific, and technical services	54	34,407	21,103	30,620	3,729	26,892 i	16,179	7,152	9,027	3,786
Architectural, engineering, and related services	5413	2,180	D	1,956	314	1,642	2,393	1,227 i	1,165 i	225
Computer systems design and related services	5415	17,082 i	1,779	14,922 i	717 i	14,204 i	1,583	897	686 i	2,160
Scientific research and development services	5417	9,877	13,614	9,076	2,092	6,984	9,804	4,041	5,763	801
Biotechnology research and development	541711	6,964	D	6,532	1,616	4,916	2,175	515	1,660	432
Physical, engineering, and life sciences (except biotechnology) research and development	541712	2,881	10,227	2,513	469	2,044	7,023	2,969	4,054	369

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Social sciences and humanities research and development	541720	32	D	32	7 i	25 i	606	557	49	0
Other professional, scientific, and technical services	other 54	5,268	D	4,667	606 i	4,061 i	2,400	987	1,413	601
Health care services	621-23	506	D	503	103	400	195	10	185	4
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	D	676	2,255	207	2,048	661	557	104	D
All companies (number of employees)	-	365,211	70,807	293,157	35,114	258,043	60,820	36,005 i	24,815	72,054
Small companies <sup>a</sup>										
5-499	-	64,175	12,155	57,999	7,264	50,735	11,076	4,969	6,107	6,176
5-99	-	34,208	7,556	31,356	4,484	26,872	6,983	3,520	3,463	2,851
5-49	-	23,583	5,391	21,721	3,111	18,610 i	4,935	2,591	2,343	1,862
5-9	-	3,826	1,387	3,683	527	3,156 i	1,285	638	647	143
10-24	-	7,527	2,036	6,452	1,118	5,334	1,845	932	914	1,075
25-49	-	12,229	1,968	11,586	1,466 i	10,119 i	1,804	1,022	783	644
50-99	-	10,624	2,165	9,635	1,373	8,262	2,048	928	1,119	989
100-249	-	14,669	2,699	13,084	1,698	11,387	2,290	970	1,320	1,585
250-499	-	15,298	1,900	13,559	1,082	12,477	1,804	479	1,324	1,740
Medium and large companies										
500-999	-	11,873	1,584	10,317	835	9,482	1,451	516	935	1,556
1,000-4,999	-	64,046	10,644	50,099	5,067	45,032	8,479	2,202	6,277	13,947
5,000-9,999	-	27,402	10,282	20,051	1,813 i	18,238	6,082	736 i	5,346	7,351
10,000-24,999	-	70,477	8,004	57,429	7,994	49,435	6,907	3,425	3,481	13,048
25,000 or more	-	127,238	28,139 i	97,262	12,140	85,122	26,825 i	24,157 i	2,668	29,976

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

NAICS = 2007 North American Industry Classification System.

<sup>a</sup> 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. 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, 2011.