

TABLE 45

## Domestic R&amp;D paid for by sources located outside the United States and performed by the company, by source of funds, industry, and company size: 2016

(Millions of U.S. dollars)

Industry and company size	NAICS code	Total	Foreign companies			All other	
			Subsidiaries	Company's parent	Unaffiliated companies		
All industries	21-23, 31-33, 42-81	28,912	11,120	14,766	2,926	100	
Manufacturing industries	31-33	23,990	9,708	12,264	1,930	87	
Food	311	320	114	205	*	i 0	
Beverages and tobacco products	312	D	37	D	D	0	
Textiles, apparel, and leather products	313-16	2	1	D	D	0	
Wood products	321	D	0	7	i D	0	
Paper	322	*	*	0	*	i 0	
Printing and related support activities	323	D	0	*	i D	* i	
Petroleum and coal products	324	11	0	10	1	0	
Chemicals	325	9,898	2,247	6,184	1,421	45	
Basic chemicals	3251	D	4	145	D	0	
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	D	12	D	*	i 0	
Pesticides, fertilizers, and other agricultural chemicals	3253	D	0	D	D	0	
Pharmaceuticals and medicines	3254	9,240	2,218	5,613	1,363	45	
Soaps, cleaning compounds, and toilet preparations	3256	141	11	131	0	0	
Paints, coatings, adhesives, and other chemicals	3255, 3259	D	1	D	0	0	
Plastics and rubber products	326	25	i *	25	i *	0	
Nonmetallic mineral products	327	D	12	D	0	0	
Primary metals	331	1	1	0	0	0	
Fabricated metal products	332	28	17	9	i *	i 1 i	
Machinery	333	559	15	529	16	i *	i
Agricultural implements	33311	9	1	8	1	0	
Semiconductor machinery	333242	372	*	371	1	0	
Engines, turbines, and power transmission equipment	3336	11	0	11	*	0	
Other machinery	other 333	166	14	139	14	i *	i
Computer and electronic products	334	D	6,820	2,791	268	D	
Communications equipment	3342	782	7	766	9	0	
Semiconductors and other electronic components	3344	2,737	1,085	1,519	133	*	
Navigational, measuring, electromedical, and control instruments	3345	D	104	475	111	D	
Electromedical, electrotherapeutic, and irradiation apparatuses	334510, 334517	D	5	135	D	0	
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	D	15	D	D	D	
Other measuring and controlling devices	other 3345	D	83	D	D	*	
Other computer and electronic products	other 334	5,671	5,625	31	15	0	
Electrical equipment, appliances, and components	335	D	120	348	i 45	i D	
Transportation equipment	336	2,203	78	1,959	145	20	
Automobiles, bodies, trailers, and parts	3361-63	D	58	1,937	94	i D	
Aerospace products and parts	3364	D	20	D	D	D	
Aircraft, aircraft engines, and aircraft parts	336411-13	D	20	D	D	D	
Guided missiles, space vehicles, and related parts	336414-15, 336419	D	0	D	*	i *	i
Military armored vehicles, tanks, and tank components	336992	*	0	0	*	0	
Other transportation	other 336	D	0	D	D	0	
Furniture and related products	337	0	0	0	0	0	
Miscellaneous	339	367	245	91	31	0	
Medical equipment and supplies	3391	345	245	88	12	0	
Other miscellaneous manufacturing	3399	23	*	3	19	i 0	

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			Subsidiaries	Company's parent	Unaffiliated companies	
Nonmanufacturing industries	21-23, 42-81	4,922	1,411	2,502	996	13
Mining, extraction, and support activities	21	720	377	*	337	5
Utilities	22	D	0	2	0	D
Wholesale trade	42	6	0	5	1	0
Electronic shopping and electronic auctions	454111-12	0	0	0	0	0
Transportation and warehousing	48-49	0	0	0	0	0
Information	51	1,379	876	375	128	0
Publishing	511	906	563	216	127	0
Newspaper, periodical, book, and directory publishers	5111	3	i 0	0	3	i 0
Software publishers	5112	903	563	216	125	0
Telecommunications	517	D	3	D	*	i 0
Data processing, hosting, and related services	518	D	D	D	1	0
Other information	other 51	D	D	D	0	0
Finance and insurance	52	25	17	8	i 0	0
Real estate and rental and leasing	53	0	0	0	0	0
Lessors of nonfinancial intangible assets (except copyrighted works)	533	0	0	0	0	0
Other real estate and rental and leasing	other 53	0	0	0	0	0
Professional, scientific, and technical services	54	D	131	2,093	526	D
Architectural, engineering, and related services	5413	167	i 26	137	i 4	*
Computer systems design and related services	5415	1,480	47	1,433	1	0
Scientific research and development services	5417	926	58	362	501	5
Biotechnology research and development	541711	347	4	43	297	3
Physical, engineering, and life sciences (except biotechnology) research and development	541712	576	i 53	316	204	i 2
Social sciences and humanities research and development	541720	3	i 0	3	i *	i *
Other professional, scientific, and technical services	other 54	D	1	161	i 20	D
Health care services	621-23	21	9	8	i 4	0
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	11	*	10	0	0
All companies (number of domestic employees)	-	28,912	11,120	14,766	2,926	100
Micro companies <sup>a</sup>						
5-9	-	D	2	44	D	D
Small companies						
10-19	-	250	i 9	203	i 32	i 6
20-49	-	573	i 74	417	i 73	i 9
Medium companies						
50-99	-	799	132	580	87	2
100-249	-	1,751	270	1,378	103	1
Large companies						
250-499	-	1,038	272	476	290	*
500-999	-	1,110	545	383	181	1
1,000-4,999	-	D	2,127	5,414	933	D
5,000-9,999	-	D	1,094	2,186	D	4
10,000-24,999	-	4,871	538	3,434	881	18
25,000 or more	-	D	6,056	252	73	i D

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\* = amount < \$500,000; 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.

<sup>a</sup> Business R&D and Innovation Survey does not include companies with fewer than five domestic employees.

**Note(s)**

Detail may not add to total because of rounding. 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. In all other tables, R&D costs of foreign-company subsidiaries of U.S. companies are included in company-funded U.S. domestic R&D totals. Only in this table are such R&D costs classified as being part of R&D paid for by sources located outside of the United States.

**Source(s)**

National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2016.