

TABLE 11

## Domestic R&amp;D paid for by the company and others and performed by the company, by industry and company size: 2016

(Millions of U.S. dollars)

Industry	NAICS code	Company size (domestic employees)											
		All companies	5 – 9 <sup>a</sup>	10 – 19	20 – 49	50 – 99	100 – 249	250 – 499	500 – 999	1,000 – 4,999	5,000 – 9,999	10,000 – 24,999	25,000 or more
All industries	21–23, 31–33, 42–81	374,685	1,581 i	4,958 i	9,662 i	9,298	14,875	13,092	14,450	63,971	40,633	65,594	136,571
Manufacturing industries	31–33	250,553	477 i	2,224 i	4,460	5,386	9,238	7,788	9,685	44,885	24,102	54,423	87,884
Food	311	4,828	5 i	6 i	D	58 i	281 i	153	95	664	249	2,456	D
Beverages and tobacco products	312	D	0	0	18 i	3 i	17 i	D	22	24	198	24	676
Textiles, apparel, and leather products	313–16	1,166 i	2 i	1 i	20 i	26 i	337 i	28	14 i	254	274	104	106
Wood products	321	188	0	9 i	4 i	5 i	11 i	7 i	27	56	46	24	0
Paper	322	851	0	4 i	6 i	14 i	30 i	23	21	151	163	418	22
Printing and related support activities	323	219 i	2 i	1 i	22 i	20 i	49	12 i	23	57 i	17	7	8
Petroleum and coal products	324	381	D	3	20 i	14	117	23	45	D	0	135	0
Chemicals	325	73,575	D	1,165	1,855	2,570	3,820	3,065	2,038	14,598	7,220	22,624	D
Basic chemicals	3251	2,545	0	D	52	D	163	156	100	D	501	405	0
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	711	D	D	20 i	D	D	D	62	D	0	D	0
Pesticides, fertilizers, and other agricultural chemicals	3253	D	0	D	D	31	D	D	0	D	*	D	0
Pharmaceuticals and medicines	3254	64,628	222	D	1,623	2,266	3,413	2,722	1,741	11,971	6,072	D	D
Soaps, cleaning compounds, and toilet preparations	3256	2,800	3 i	17 i	D	55 i	D	19	103	D	397 i	D	150 i
Paints, coatings, adhesives, and other chemicals	3255, 3259	D	3 i	D	D	D	D	D	33	593	250	D	65
Plastics and rubber products	326	3,752	3 i	32 i	96 i	111 i	206 i	173	174	912	468	1,422	155
Nonmetallic mineral products	327	1,289	1 i	3 i	18 i	29	48	12	72	119	116	870	0
Primary metals	331	592	4 i	17 i	16 i	68	44 i	35	35	187	44	141 i	0
Fabricated metal products	332	2,239	24 i	92 i	252 i	218 i	401	198	291	308	238	218	0
Machinery	333	12,585	17 i	149 i	485 i	450 i	729	447	605	3,848	1,849	975	3,030
Agricultural implements	33311	1,565	2 i	6	18	13	43	13	62	319	9	0	1,079
Semiconductor machinery	333242	3,411	3 i	5 i	D	D	D	D	175	D	D	0	0
Engines, turbines, and power transmission equipment	3336	1,959	D	D	D	37 i	32	82	D	39	D	0	D
Other machinery	other 333	5,650	D	D	D	D	D	D	D	D	D	975	D
Computer and electronic products	334	77,385	89 i	411 i	941	808	1,622	2,086	3,616	15,157	7,575	13,482	31,599
Communications equipment	3342	13,112	6 i	77 i	D	120	367	D	1,093	3,117	D	D	D
Semiconductors and other electronic components	3344	31,391	13 i	75 i	479	296	566	1,206	1,104	6,612 i	3,140 i	7,877	10,024
Navigational, measuring, electromedical, and control instruments	3345	14,885	63 i	244 i	308 i	317	545	D	669	3,643	D	D	4,514
Electromedical, electrotherapeutic, and irradiation apparatuses	334510, 334517	2,632	20 i	162 i	50 i	55	254	124	283	1,011	174	499	0
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	7,533	1	D	53 i	36	D	D	D	D	D	D	D
Other measuring and controlling devices	other 3345	4,720	41 i	D	205 i	226	D	D	D	D	D	D	D
Other computer and electronic products	other 334	17,997	7 i	16	D	75	144	151 i	751	1,784	2,449	D	D
Electrical equipment, appliances, and components	335	4,771	8 i	38 i	160	155	307	208	631	1,085	582	1,218	378
Transportation equipment	336	51,275	1 i	103	146 i	216	503	783	1,239	4,192	3,141	7,041	33,910

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Automobiles, bodies, trailers, and parts	3361–63	22,042	0	75	D	140	D	D	D	3,108	1,352	2,679	D										
Aerospace products and parts	3364	26,645	0	D	17	D	88	40	D	725	D	4,192	19,704										
Aircraft, aircraft engines, and aircraft parts	336411–13	25,221	0	13	13	D	88	40	D	618	913	3,590	19,704										
Guided missiles, space vehicles, and related parts	336414–15, 336419	1,424	i	0	D	4	6	i	0	0	23	107	D	602	0								
Military armored vehicles, tanks, and tanks components	336992	D	*	i	*	D	D	D	D	0	0	0	0	0	0								
Other transportation	other 336	D	1	i	D	D	12	i	D	D	D	360	D	171	D								
Furniture and related products	337	366	0	3	i	18	i	12	i	40	i	38	i	7	i	58	176	14	0				
Miscellaneous manufacturing	339	D	D	187	i	D	610	678	D	728	D	1,745	i	3,250	D								
Medical equipment and supplies	3391	11,668	D	174	i	323	524	489	290	533	2,356	1,129	3,250	D									
Other miscellaneous manufacturing	3399	D	D	12	i	D	86	i	189	i	D	195	D	615	i	0	208	i					
Nonmanufacturing industries	21–23, 42–81	124,132	1,104	i	2,733	i	5,202	i	3,912	5,637	5,304	4,765	19,086	16,531	i	11,171	48,687						
Mining, extraction, and support activities	21	3,296	1	i	2	D	25	D	14	10	65	258	i	D	1,390								
Utilities	22	351	0	0	D	0	*	i	0	3	38	12	D	D									
Wholesale trade	42	452	i	D	75	i	107	i	70	i	92	i	D	17	i	11	i	2	i	2	i	1	i
Electronic shopping and electronic auctions	454111–12	1,569	i	5	i	3	i	31	i	5	i	11	i	D	0	3	D	0	D				
Transportation and warehousing	48–49	488	0	0	4	i	*	i	4	2	i	18	28	0	0	433							
Information	51	70,748	D	597	i	1,410	i	D	D	3,109	2,639	11,575	13,128	i	2,427	32,657							
Publishing	511	33,574	D	D	566	i	561	781	818	1,165	D	5,190	D	D									
Newspaper, periodical, book, and directory publishers	5111	79	i	0	*	i	11	i	3	i	18	i	36	9	1	i	0	0	0				
Software publishers	5112	33,495	D	D	555	i	558	763	782	1,156	D	5,190	D	D									
Telecommunications	517	D	0	6	i	77	i	D	74	124	D	D	0	D	D								
Data processing, hosting, and related services	518	11,914	10	i	D	740	i	D	897	2,044	1,256	4,226	D	1,609	D								
Other information	other 51	D	D	11	26	D	D	123	D	D	D	D	5	D									
Finance and insurance	52	7,331	0	5	i	8	i	14	i	46	48	588	458	466	2,687	3,013							
Real estate and rental and leasing	53	475	0	5	i	1	i	5	i	25	2	2	435	0	0	0							
Lessors of nonfinancial intangible assets (except copyrighted works)	533	27	0	0	1	i	2	i	24	0	0	0	0	0	0								
Other real estate and rental and leasing	other 53	449	0	5	i	1	i	4	i	1	2	2	435	0	0	0							
Professional, scientific, and technical services	54	37,595	954	i	2,012	i	3,551	i	2,449	3,304	1,829	1,234	6,174	1,541	i	4,234	10,313						
Architectural, engineering, and related services	5413	3,412	69	i	175	i	468	369	i	533	i	290	203	314	187	102	702						
Computer systems design and related services	5415	15,747	151	i	298	i	1,222	i	639	i	1,182	i	595	644	2,010	549	1,837	i	6,619				
Scientific research and development services	5417	14,842	661	i	1,024	i	1,468	1,193	1,307	603	134	3,614	744	i	2,283	1,810							
Biotechnology research and development	541711	4,464	220	i	226	i	337	D	135	i	96	4	D	0	0	1,810							
Physical, engineering, and life sciences (except biotechnology) research and development	541712	9,659	D	785	i	1,107	899	1,168	507	130	1,617	D	2,283	0									
Social sciences and humanities research and development	541720	719	D	13	i	24	D	5	i	0	0	D	D	0	0								
Other professional, scientific, and technical services	other 54	3,595	72	i	515	i	393	i	248	282	341	253	237	60	11	1,182							

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Health care services	621–23	848	D	22 i	42	87	200 i	161 i	178	D	44	0	D	
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	977 i	14 i	12 i	D	D	57	D	75	D	D	119 i	D	

\* = 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.

**Source(s)**

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