

TABLE 71

Domestic R&D paid for by the company and others and performed by the company, by industry and company size: 2008–16

(Millions of U.S. dollars)

Industry and company size	NAICS code	2008	2009	2010	2011	2012	2013	2014	2015	2016
All industries	21–23, 31–33, 42–81	290,680	282,505	279,289	290,240	302,759	323,107	340,539	355,671	374,685
Manufacturing industries	31–33	203,755	196,441	199,147	202,363	208,577	222,718	231,705	236,170	250,553
Food	311	2,100	4,099	D	4,393	4,087	5,021	4,854 i	4,828	4,828
Beverages and tobacco products	312	780	477	D	D	D	827	920	1,006	D
Textiles, apparel, and leather products	313–16	815	439	482	608	553	662	631	748	1,166 i
Wood products	321	273	280	252	211	280	220	336 i	195	188
Paper	322	NA	NA	1,341	676	752	920	723	766	851
Printing and related support activities	323	349	210	231	181	256 i	252 i	234	196 i	219 i
Petroleum and coal products	324	NA	NA	D	D	888	281	234	214	381
Chemicals	325	58,250	54,753	58,343	55,853	56,748	62,086	66,134	68,032	73,575
Basic chemicals	3251	NA	NA	1,810	D	2,705	2,620	2,849	3,042	2,545
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	NA	NA	783	798	997	1,197	1,154	1,201	711
Pesticides, fertilizers, and other agricultural chemicals	3253	NA	NA	D	D	D	1,691 i	1,743 i	D	D
Pharmaceuticals and medicines	3254	48,131	46,415	49,469	46,308	47,851	52,790	56,482	57,332	64,628
Soaps, cleaning compounds, and toilet preparations	3256	NA	NA	2,400	2,476	2,342	2,434	2,548	2,579	2,800
Paints, coatings, adhesives, and other chemicals	3255, 3259	NA	NA	D	1,290	D	1,354	1,357 i	D	D
Plastics and rubber products	326	1,817	2,388	2,129	2,278	3,585	3,647	3,614	2,549	3,752
Nonmetallic mineral products	327	1,556	1,098 i	1,314 i	1,175	1,327 i	1,329 i	1,445 i	1,259	1,289
Primary metals	331	695	863	681	655	741	618	677	625	592
Fabricated metal products	332	2,419	2,057	1,727	1,857	1,827 i	2,194 i	2,107 i	2,273 i	2,239
Machinery	333	10,104	9,226	10,260	14,725	13,752	12,586	12,106	13,539	12,585
Agricultural implements	33311	NA	NA	1,345	1,277	1,546	1,597	1,578	1,531	1,565
Semiconductor machinery	333242	NA	NA	2,173	2,351	1,291	3,194	2,941	3,214	3,411
Engines, turbines, and power transmission equipment	3336	NA	NA	1,430	4,273	4,336	1,448	2,356	2,515	1,959
Other machinery	other 333	NA	NA	5,312	6,824	6,579	6,347	5,229	6,280	5,650
Computer and electronic products	334	60,464	55,856	61,623	62,438	66,290	68,629	73,256	72,182	77,385
Communications equipment	3342	NA	NA	13,875	12,335	14,352	15,663	18,345	19,424	13,112

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Semiconductors and other electronic components	3344	22,324	20,023	23,011	24,237	28,218	30,176	31,668	30,451	31,391
Navigational, measuring, electromedical, and control instruments	3345	15,460	14,318	15,747	15,852	15,918	15,119	15,871	14,202	14,885
Electromedical, electrotherapeutic, and irradiation apparatuses	334510, 334517	NA	NA	4,189	4,430	4,413	2,634	3,975	2,676	2,632
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	NA	NA	8,293	8,066	7,734	8,106	7,861	7,360	7,533
Other measuring and controlling devices	other 3345	NA	NA	3,265	3,356	3,772	4,379	4,035	4,165	4,720
Other computer and electronic products	other 334	NA	NA	8,990	10,014	7,801	7,671	7,372	8,105	17,997
Electrical equipment, appliances, and components	335	3,143	3,317	3,320	3,624	3,078	4,133	4,323	4,359	4,771
Transportation equipment	336	50,552	48,209	42,940	41,094	42,340	43,648	46,977	49,286	51,275
Automobiles, bodies, trailers, and parts	3361–63	NA	NA	D	D	D	16,733	18,518	19,113	22,042
Aerospace products and parts	3364	36,941	34,563	29,857	26,086	24,874	24,783	26,292	27,440	26,645
Aircraft, aircraft engines, and aircraft parts	336411–13	NA	NA	24,777	24,839	23,454	D	25,002	25,793	25,221
Guided missiles, space vehicles, and related parts	336414–15, 336419	NA	NA	5,080	1,247	1,420	D	1,290	1,647	1,424
Military armored vehicles, tanks, and tank components	336992	NA	NA	D	51	D	9	18	16	D
Other transportation	other 336	NA	NA	D	D	D	2,124	2,148	2,716	D
Furniture and related products	337	477	395	374	319	360	374	377	452	366
Miscellaneous	339	NA	NA	D	D	D	15,292	12,757	13,662	D
Medical equipment and supplies	3391	NA	NA	6,459	7,796	8,333	12,741	10,309	11,353	11,668
Other miscellaneous manufacturing	3399	NA	NA	D	D	D	2,551	2,449	2,309	D
Nonmanufacturing industries	21–23, 42–81	86,926	86,064	80,142	87,877	94,183	100,389	108,834	119,501	124,132
Mining, extraction, and support activities	21	NA	NA	2,545	2,365	3,031	4,000	4,633	4,012	3,296
Utilities	22	NA	NA	425	358	348	294	313	480	351
Wholesale trade	42	NA	NA	1,092	1,556	2,053	452	339	1,698	452
Electronic shopping and electronic auctions	454111–12	NA	NA	D	949	1,353	1,356	1,388	D	1,569

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Transportation and warehousing	48–49	NA	NA	95	132	178	D	679	403	488					
Information	51	37,695	35,953	37,088	42,697	46,900	56,608	64,277	65,457	70,748					
Publishing	511	28,427	26,838	26,957	28,411	29,067	34,365	36,621	33,348	33,574					
Newspaper, periodical, book, and directory publishers	5111	NA	NA	770	372	219	i	342	i	88	i	98	i	79	i
Software publishers	5112	NA	NA	26,187	28,039	28,848	34,023	36,533	33,250	33,495					
Telecommunications	517	1,684	1,523	1,912	2,169	2,729	i	3,049	3,768	3,607	D				
Data processing, hosting, and related services	518	6,567	2,741	2,753	5,111	4,914	7,156	9,062	9,355	11,914					
Other information	other 51	1,016	4,850	5,466	7,006	10,190	12,039	14,826	19,147	D					
Finance and insurance	52	NA	NA	2,101	3,447	3,530	4,412	4,122	5,409	7,331					
Real estate and rental and leasing	53	NA	NA	330	343	363	191	262	300	475					
Lessors of nonfinancial intangible assets (except copyrighted works)	533	NA	NA	NA	324	342	58	i	55	68	27				
Other real estate and rental and leasing	other 53	NA	NA	NA	19	21	i	133	207	232	449				
Professional, scientific, and technical services	54	37,954	42,380	31,798	33,307	34,121	30,926	31,461	i	38,601	37,595				
Architectural, engineering, and related services	5413	3,422	3,258	4,008	3,114	2,483	i	3,132	3,309	4,100	i	3,412			
Computer systems design and related services	5415	12,146	13,351	10,359	10,938	11,006	i	9,241	i	11,053	i	14,334	15,747		
Scientific research and development services	5417	17,913	16,402	13,712	15,713	16,415	14,219	13,324	16,249	14,842					
Biotechnology research and development	541711	NA	7,809	5,537	7,043	7,387	4,492	3,459	5,594	i	4,464				
Physical, engineering, and life sciences (except biotechnology) research and development	541712	NA	7,916	7,628	8,058	8,431	8,935	9,187	9,950	9,659					
Social sciences and humanities research and development	541720	NA	676	547	612	598	792	678	705	719					
Other professional, scientific, and technical services	other 54	4,474	9,370	3,720	3,542	4,216	4,334	3,775	3,918	3,595					
Health care services	621–23	NA	NA	1,049	542	672	i	528	i	501	i	758	i	848	
Other nonmanufacturing	23, 44–45 (excluding	NA	NA	NA	2,181	1,635	D	857	i	D	977	i			

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	454111–12), 55–56, 624, 71–72, 81									
All companies (number of domestic employees)	–	290,680	282,505	279,289	290,240	302,759	323,107	340,539	355,671	374,685
Micro companies ^a										
5–9	–	NA	NA	3,614	4,060	2,926 i	3,390 i	3,314 i	2,983 i	1,581 i
Small companies										
10–19	–	NA	5,674 i	4,958 i						
20–49	–	NA	10,281 i	9,662 i						
Medium companies										
50–99	–	9,351	13,277	8,781	9,295	9,100 i	8,939	10,130 i	11,538	9,298
100–249	–	14,662	12,791	11,631	12,303	12,454	13,704	13,606	13,586	14,875
Large companies										
250–499	–	10,219	11,330	10,194	13,013	11,387	12,021	12,228	13,686	13,092
500–999	–	11,886	10,131	10,053	9,993	11,499	12,013	13,129	15,005	14,450
1,000–4,999	–	46,336	44,197	49,108	51,110	50,311	55,974	57,336	57,998	63,971
5,000–9,999	–	24,764	21,769	27,546	24,452	30,708	31,657	38,327	38,858	40,633
10,000–24,999	–	48,737	51,239	41,853	49,107	50,226	51,103	54,452	59,330	65,594
25,000 or more	–	100,820	97,056	99,291	102,222	110,042	119,493	122,533	126,732	136,571

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; NA = not available.

NAICS = 2012 North American Industry Classification System.

^a 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. For survey year 2008, industry classification was based on the 2002 NAICS. For survey years 2009–13, industry classification was based on the 2007 NAICS. Beginning with survey year 2011, the composition of the other nonmanufacturing industry changed. Most statistics for years prior to 2016 have been revised since original publication. Revised statistics include adjustments based on information obtained after the original statistics were prepared.

Source(s)

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