

TABLE 71

**Domestic R&D paid for by the company and others and performed by the company, depreciation, capital expenditures, and adjusted domestic R&D, by industry and company size: 2016**

(Millions of U.S. dollars and percent change)

Industry and company size	NAICS code	Domestic R&D paid for by the company and others	Depreciation	Capital expenditures related to R&D	Adjusted domestic R&D paid for by the company and others	Change	
						Amount	Percent
All industries	21-23, 31-33, 42-81	374,685	13,674	24,481	385,492	10,807	2.9
Manufacturing industries	31-33	250,553	10,138	15,047	255,462	4,909	2.0
Food	311	4,828	225	312	4,915	87	1.8
Beverage and tobacco products	312	D	55	112	D	57	D
Textile, apparel, and leather products	313-16	1,166	23	67	1,209	44	3.7
Wood products	321	188	3	32	218	30	15.8
Paper	322	851	D	67	D	D	D
Printing and related support activities	323	219	D	69	D	D	D
Petroleum and coal products	324	381	D	58	D	D	D
Chemicals	325	73,575	3,736	4,179	74,018	443	0.6
Basic chemicals	3251	2,545	147	214	2,612	67	2.6
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	711	D	88	D	D	D
Pesticide, fertilizer, and other agricultural chemicals	3253	D	D	101	D	D	D
Pharmaceuticals and medicines	3254	64,628	3,246	3,400	64,781	154	0.2
Soap, cleaning compound, and toilet preparation	3256	2,800	D	284	D	D	D
Paint, coating, adhesive, and other chemicals	3255, 3259	D	D	92	D	D	D
Plastics and rubber products	326	3,752	192	451	4,011	259	6.9
Nonmetallic mineral products	327	1,289	76	242	1,455	166	12.9
Primary metals	331	592	19	57	631	38	6.5
Fabricated metal products	332	2,239	38	130	2,331	92	4.1
Machinery	333	12,585	531	1,126	13,180	595	4.7
Agricultural implement	33311	1,565	46	64	1,583	18	1.2
Semiconductor machinery	333242	3,411	247	287	3,451	40	1.2
Engine, turbine, and power transmission equipment	3336	1,959	91	109	1,977	18	0.9
Other machinery	other 333	5,650	146	665	6,169	519	9.2
Computer and electronic products	334	77,385	3,716	5,024	78,693	1,308	1.7
Communications equipment	3342	13,112	560	477	13,029	-83	-0.6
Semiconductor and other electronic components	3344	31,391	1,691	2,567	32,267	875	2.8
Navigational, measuring, electromedical, and control instruments	3345	14,885	345	573	15,113	229	1.5
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	2,632	81	141	2,692	60	2.3
Search, detection, navigation, guidance, aeronautical, and nautical system and instrument	334511	7,533	144	221	7,609	76	1.0
Other measuring and controlling device	other 3345	4,720	119	212	4,813	92	2.0
Other computer and electronic products	other 334	17,997	1,120	1,407	18,284	287	1.6
Electrical equipment, appliances, and components	335	4,771	125	160	4,806	36	0.7
Transportation equipment	336	51,275	872	2,181	52,585	1,309	2.6
Motor vehicles, bodies, trailers, and parts	3361-63	22,042	640	1,184	22,586	545	2.5

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Aerospace products and parts	3364	26,645	191	871	27,326	680	2.6	
Aircraft, aircraft engine, and aircraft parts	336411-13	25,221	190	853	25,884	664	2.6	
Guided missile, space vehicle, and related parts	336414-15, 336419	1,424	i 1	18	i 1,441	i 17	i 1.2	
Military armored vehicle, tank, and tank component	336992	D	*	*	D	*	D	
Other transportation	other 336	D	41	125	D	84	i D	
Furniture and related products	337	366	3	52	i 415	i 49	i 13.4	
Miscellaneous	339	D	473	726	D	253	D	
Medical equipment and supplies	3391	11,668	436	611	11,844	176	1.5	
Other miscellaneous manufacturing	3399	D	37	i 115	i D	78	D	
Nonmanufacturing industries	21-23, 42-81	124,132	3,536	9,434	i 130,030	5,898	i 4.8	
Mining, quarrying, oil and gas extraction, and support activities	21	3,296	108	421	3,609	313	9.5	
Utilities	22	351	68	i D	D	D	D	
Wholesale trade	42	452	i 4	i 2,682	i 3,130	i 2,678	i 592.0	
Electronic shopping and electronic auctions	454111-12	1,569	i 182	i 136	i 1,523	i -46	i -2.9	
Transportation and warehousing	48-49	488	0	112	i 600	i 112	i 22.9	
Information	51	70,748	1,983	3,313	72,078	1,330	1.9	
Publishing	511	33,574	619	1,352	34,307	733	2.2	
Newspaper, periodical, book, and directory publishers	5111	79	i 7	i 21	i 93	i 14	i 17.3	
Software publishers	5112	33,495	612	1,331	34,215	720	2.1	
Telecommunications	517	D	D	584	i D	D	D	
Data processing, hosting, and related services	518	11,914	282	871	12,503	589	4.9	
Other information	other 51	D	D	506	i D	D	D	
Finance and insurance	52	7,331	94	514	i 7,751	i 420	i 5.7	
Real estate and rental and leasing	53	475	9	D	D	D	D	
Lessors of nonfinancial intangible assets (except copyrighted works)	533	27	0	D	D	D	D	
Other real estate and rental and leasing	other 53	449	9	56	i 495	i 47	i 10.5	
Professional, scientific, and technical services	54	37,595	1,045	1,637	i 38,186	i 591	i 1.6	
Architectural, engineering, and related services	5413	3,412	23	46	i 3,436	i 24	i 0.7	
Computer systems design and related services	5415	15,747	591	929	16,084	i 337	i 2.1	
Scientific research and development services	5417	14,842	380	375	14,838	-4	i 0.0	
Research and development in biotechnology	541711	4,464	D	D	4,489	25	0.6	
Research and development in the physical, engineering, and life sciences (except biotechnology)	541712	9,659	307	i 283	i 9,635	i -24	i -0.3	
Research and development in the social sciences and humanities	541720	719	D	D	714	-5	-0.7	
Other professional, scientific, and technical services	other 54	3,595	52	287	i 3,829	i 235	i 6.5	
Health care services	621-23	848	34	68	882	i 35	4.1	

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						Amount	Percent
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	977 i	8 i	161 i	1,130 i	153 i	15.7
All companies (number of domestic employees)	–	374,685	13,674	24,481 i	385,492	10,807 i	2.9
Micro companies <sup>a</sup>							
5–9	–	1,581 i	37 i	132 i	1,675 i	95 i	6.0
Small companies							
10–19	–	4,958 i	94 i	643 i	5,507 i	549 i	11.1
20–49	–	9,662 i	193 i	537 i	10,006 i	344 i	3.6
Medium companies							
50–99	–	9,298	245	1,033 i	10,087	789 i	8.5
100–249	–	14,875	371	1,737 i	16,241	1,366 i	9.2
Large companies							
250–499	–	13,092	363	1,959 i	14,688	1,596 i	12.2
500–999	–	14,450	469	1,079	15,059	610	4.2
1,000–4,999	–	63,971	2,616	4,433	65,788	1,817	2.8
5,000–9,999	–	40,633	1,294	2,500	41,840 i	1,207 i	3.0
10,000–24,999	–	65,594	3,297	4,322 i	66,619 i	1,025 i	1.6
25,000 or more	–	136,571	4,696	6,106	137,981	1,410	1.0

\* = 0 < amount < \$500,000; D = data withheld to avoid disclosing operations of individual companies; i = more than 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> The Business R&D and Innovation Survey (BRDIS) did not include companies with fewer than 5 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. To enable comparisons between U.S. BRDIS statistics and those of other nations, in this table an internationally comparable adjusted domestic R&D estimate is calculated by subtracting depreciation relating to R&D operations, which was *included* in U.S. BRDIS domestic R&D, and adding capital expenditures relating to R&D operations, which was *excluded* from U.S. BRDIS domestic R&D.

**Source(s):**

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