

TABLE 77

Domestic R&D paid for 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 and performed by the company	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	317,731	12,520	24,481	329,692	11,961	3.8
Manufacturing industries	31-33	211,660	9,337	15,047	217,370	5,710	2.7
Food	311	4,611	218	312	4,705	94	2.0
Beverage and tobacco products	312	987	46	112	1,054	66	6.7
Textile, apparel, and leather products	313-16	1,156	23	67	1,200	44	3.8
Wood products	321	181	2	32	211	30	16.6
Paper	322	851	7	67	911	60	7.1
Printing and related support activities	323	219	10	69	279	60	27.3
Petroleum and coal products	324	367	34	58	391	24	6.5
Chemicals	325	64,165	3,371	4,179	64,972	808	1.3
Basic chemicals	3251	2,284	133	214	2,364	81	3.5
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	693	35	88	746	52	7.6
Pesticide, fertilizer, and other agricultural chemicals	3253	1,061	134	101	1,028	-33	-3.2
Pharmaceuticals and medicines	3254	55,983	2,927	3,400	56,456	473	0.8
Soap, cleaning compound, and toilet preparation	3256	2,660	91	284	2,853	194	7.3
Paint, coating, adhesive, and other chemicals	3255, 3259	1,484	51	92	1,525	41	2.8
Plastics and rubber products	326	3,584	189	451	3,845	261	7.3
Nonmetallic mineral products	327	1,274	76	242	1,441	166	13.1
Primary metals	331	583	19	57	621	38	6.6
Fabricated metal products	332	2,127	38	130	2,219	92	4.3
Machinery	333	11,699	506	1,126	12,319	620	5.3
Agricultural implement	33311	1,552	45	64	1,571	19	1.2
Semiconductor machinery	333242	3,028	227	287	3,088	60	2.0
Engine, turbine, and power transmission equipment	3336	1,901	91	109	1,919	18	1.0
Other machinery	other 333	5,218	143	665	5,741	522	10.0
Computer and electronic products	334	68,515	3,507	5,024	70,032	1,517	2.2
Communications equipment	3342	11,293	522	477	11,248	-45	-0.4
Semiconductor and other electronic components	3344	29,176	1,605	2,567	30,138	962	3.3
Navigational, measuring, electromedical, and control instruments	3345	10,131	262	573	10,443	312	3.1
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	2,466	78	141	2,529	63	2.5
Search, detection, navigation, guidance, aeronautical, and nautical system and instrument	334511	3,121	70	221	3,271	151	4.8
Other measuring and controlling device	other 3345	4,544	114	212	4,642	98	2.2
Other computer and electronic products	other 334	17,914	1,118	1,407	18,203	289	1.6
Electrical equipment, appliances, and components	335	4,302	114	160	4,348	46	1.1
Transportation equipment	336	32,905	702	2,181	34,383	1,479	4.5
Motor vehicles, bodies, trailers, and parts	3361-63	19,293	525	1,184	19,952	659	3.4

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Aerospace products and parts	3364	12,272	151	871	12,992	721	5.9
Aircraft, aircraft engine, and aircraft parts	336411-13	11,930	150	853	12,634	704	5.9
Guided missile, space vehicle, and related parts	336414-15, 336419	342	1	18 i	358 i	17 i	4.9
Military armored vehicle, tank, and tank component	336992	3	0	*	3	*	6.6
Other transportation	other 336	1,337	26	125	1,436	99 i	7.4
Furniture and related products	337	366	3	52 i	415 i	49 i	13.4
Miscellaneous	339	13,768	471	726	14,024	256	1.9
Medical equipment and supplies	3391	11,474	434	611	11,651	177	1.5
Other miscellaneous manufacturing	3399	2,294 i	36 i	115 i	2,373 i	79	3.4
Nonmanufacturing industries	21-23, 42-81	106,071	3,183	9,434 i	112,322	6,251 i	5.9
Mining, quarrying, oil and gas extraction, and support activities	21	2,897	97	421	3,220	323	11.2
Utilities	22	325	68 i	D	D	D	D
Wholesale trade	42	442 i	4 i	2,682 i	3,120 i	2,678 i	605.4
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	486	0	112 i	597 i	112 i	23.0
Information	51	70,075	1,967	3,313	71,420	1,346	1.9
Publishing	511	33,174	611	1,352	33,916	742	2.2
Newspaper, periodical, book, and directory publishers	5111	77 i	7 i	21 i	90 i	14 i	18.0
Software publishers	5112	33,098	603	1,331	33,825	728	2.2
Telecommunications	517	3,530 i	26	584 i	4,088 i	558 i	15.8
Data processing, hosting, and related services	518	11,776	279	871	12,368	592	5.0
Other information	other 51	21,594	1,051	506 i	21,049	-545	-2.5
Finance and insurance	52	7,237	94	514 i	7,657 i	420 i	5.8
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	20,845	721	1,637 i	21,761 i	916 i	4.4
Architectural, engineering, and related services	5413	1,816	19	46 i	1,844 i	28 i	1.5
Computer systems design and related services	5415	13,255	570	929	13,613 i	358 i	2.7
Scientific research and development services	5417	2,811	84	375	3,102 i	291 i	10.4
Research and development in biotechnology	541711	750 i	24 i	D	D	D	D
Research and development in the physical, engineering, and life sciences (except biotechnology)	541712	2,029	58	283 i	2,254	225 i	11.1
Research and development in the social sciences and humanities	541720	32	3 i	D	D	D	D
Other professional, scientific, and technical services	other 54	2,962	47	287 i	3,202 i	239 i	8.1
Health care services	621-23	782	33	68	817 i	35	4.5

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Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55– 56, 624, 71–72, 81	939	i	8	i	161	i	1,093	i	154	i 16.4
All companies (number of domestic employees)	–	317,731		12,520		24,481	i	329,692		11,961	i 3.8
Micro companies ^a											
5–9	–	1,044	i	31	i	132	i	1,146	i	101	i 9.7
Small companies											
10–19	–	3,887	i	81	i	643	i	4,449	i	562	i 14.5
20–49	–	7,473	i	172	i	537	i	7,837	i	364	i 4.9
Medium companies											
50–99	–	7,728		216		1,033	i	8,545	i	818	i 10.6
100–249	–	11,722		315		1,737	i	13,143		1,421	i 12.1
Large companies											
250–499	–	11,438		301		1,959	i	13,096		1,658	i 14.5
500–999	–	13,525		450		1,079		14,155		629	4.7
1,000–4,999	–	53,305		2,187		4,433		55,550		2,246	4.2
5,000–9,999	–	35,887		1,241		2,500		37,147	i	1,260	3.5
10,000–24,999	–	53,384		2,948		4,322	i	54,758	i	1,374	i 2.6
25,000 or more	–	118,339		4,578		6,106		119,867		1,528	1.3

* = 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.

^a 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.