

TABLE 84

Domestic R&D paid for by others and performed by the company, depreciation, capital expenditures, and adjusted domestic R&D, by industry and company size: 2017

(Millions of U.S. dollars and percent)

Industry and company size	NAICS code	Domestic R&D paid for by others and performed by the company	Depreciation	Capital expenditures related to R&D ^a	Adjusted domestic R&D paid for by the company and others	Change	
						Amount	Percent
All industries	21-23, 31-33, 42-81	61,065	1,578	0	59,487	-1,578	-2.6
Manufacturing industries	31-33	41,072	1,055	0	40,017	-1,055	-2.6
Food	311	244	10	0	235	-10	-3.9
Beverage and tobacco products	312	107	9	0	98	-9	-8.5
Textile, apparel, and leather products	313-16	1	*	i 0	1	*	i -3.1
Wood products	321	5	*	0	5	*	-2.0
Paper	322	29	1	0	29	-1	-2.3
Printing and related support activities	323	11	*	i 0	11	*	i -1.1
Petroleum and coal products	324	15	0 - 5	0	D	D	D
Chemicals	325	11,692	551	0	11,141	-551	i -4.7
Basic chemicals	3251	181	10	0	170	i -10	i -5.6
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	16	1	0	15	-1	-5.1
Pesticide, fertilizer, and other agricultural chemicals	3253	284 - 383	0 - 25	0	D	D	D
Pharmaceuticals and medicines	3254	10,973	510	0	10,463	-510	i -4.6
Soap, cleaning compound, and toilet preparation	3256	118 - 213	8	0	D	-8	D
Paint, coating, adhesive, and other chemicals	3255, 3259	23	0 - 23	0	D	D	D
Plastics and rubber products	326	117	1	0	116	-1	-0.7
Nonmetallic mineral products	327	30	i *	0	30	i *	-1.3
Primary metals	331	8	*	i 0	8	*	i -0.3
Fabricated metal products	332	107	*	i 0	107	*	i -0.1
Machinery	333	940	44	0	896	-44	-4.7
Agricultural implement	33311	59	i 4	i 0	55	i -4	i -6.3
Semiconductor machinery	333242	465	35	0	430	-35	-7.6
Engine, turbine, and power transmission equipment	3336	159	*	0	159	*	-0.1
Other machinery	other 333	257	5	0	252	-5	-1.9
Computer and electronic products	334	8,633	222	0	8,410	-222	-2.6
Communications equipment	3342	1,715	i 31	i 0	1,683	i -31	i -1.8
Semiconductor and other electronic components	3344	2,289	117	0	2,172	-117	-5.1
Navigational, measuring, electromedical, and control instruments	3345	4,420	65	0	4,354	-65	-1.5
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	150	2	0	148	-2	-1.1
Search, detection, navigation, guidance, aeronautical, and nautical system and instrument	334511	4,083	58	0	4,024	-58	-1.4
Other measuring and controlling device	other 3345	187	6	0	182	-6	-2.9
Other computer and electronic products	other 334	209	8	0	201	-8	-4.0
Electrical equipment, appliances, and components	335	181	16	0	165	-16	-9.1
Transportation equipment	336	18,663	i 196	0	18,467	i -196	-1.1
Motor vehicles, bodies, trailers, and parts	3361-63	2,745	100	0	2,644	-100	-3.6

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Aerospace products and parts	3364	14,480 i	36 - 97	0	D	D	D
Aircraft, aircraft engine, and aircraft parts	336411-13	13,103 i	34 - 97	0	D	D	D
Guided missile, space vehicle, and related parts	336414-15, 336419	1,377	0 - 3	0	D	D	D
Military armored vehicle, tank, and tank component	336992	5	0 - 1	0	D	D	D
Other transportation	other 336	1,433	0 - 59 i	0	D	D	D
Furniture and related products	337	3	*	0	3	*	-3.9
Miscellaneous	339	285	2 - 9	0	D	D	D
Medical equipment and supplies	3391	240	3	0	238	-3	-1.2
Other miscellaneous manufacturing	3399	44	0 - 7	0	D	D	D
Nonmanufacturing industries	21-23, 42-81	19,993	522	0	19,470	-522	-2.6
Mining, quarrying, oil and gas extraction, and support activities	21	309	7	0	302	-7	-2.1
Utilities	22	36 i	0	0	36 i	0	0.0
Wholesale trade	42	31	*	0	31	*	-0.3
Electronic shopping and electronic auctions	454111-12	0	0	0	0	0	0.0
Transportation and warehousing	48-49	31	*	0	31	*	-1.5
Information	51	1,354	14	0	1,340	-14	-1.0
Publishing	511	1,062	8	0	1,055	-8	-0.7
Newspaper, periodical, book, and directory publishers	5111	0	0	0	0	0	0.0
Software publishers	5112	1,062	8	0	1,055	-8	-0.7
Telecommunications	517	40 - 163	1	0	D	-1	D
Data processing, hosting, and related services	518	119	*	0	119	*	-0.2
Other information	other 51	11 - 134	5	0	D	-5	D
Finance and insurance	52	51	0	0	51	0	0.0
Real estate and rental and leasing	53	10	0	0	10	0	0.0
Lessors of nonfinancial intangible assets (except copyrighted works)	533	0	0	0	0	0	0.0
Other real estate and rental and leasing	other 53	10	0	0	10	0	0.0
Professional, scientific, and technical services	54	17,951	499	0	17,452	-499	-2.8
Architectural, engineering, and related services	5413	1,147	9	0	1,139	-9	-0.8
Computer systems design and related services	5415	1,658	9 i	0	1,649	-9 i	-0.5
Scientific research and development services	5417	14,504	473	0	14,031	-473	-3.3
Research and development in biotechnology	541711	3,653	129	0	3,524	-129	-3.5
Research and development in the physical, engineering, and life sciences (except biotechnology)	541712	9,978	333	0	9,645	-333	-3.3
Research and development in the social sciences and humanities	541720	873	12	0	861	-12	-1.3
Other professional, scientific, and technical services	other 54	641	8	0	634	-8	-1.2
Health care services	621-23	144	1 i	0	143 i	-1 i	-0.8

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Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	76	1	0	75	-1	-1.9
All companies (number of domestic employees)	–	61,065	1,578	0	59,487	-1,578	-2.6
Small companies							
10–19 ^b	–	909	9	0	900	-9	-1.0
20–49	–	1,842	40	0	1,802	-40	-2.2
Medium companies							
50–99	–	2,071	48	0	2,023	-48	-2.3
100–249	–	3,703	67	0	3,636	-67	-1.8
Large companies							
250–499	–	2,331	52	0	2,279	-52	-2.2
500–999	–	1,576	56	0	1,519	-56	-3.6
1,000–4,999	–	12,771	527	0	12,244	-527	-4.1
5,000–9,999	–	7,497	264	0	7,233	-264	-3.5
10,000–24,999	–	10,070	274	i	9,796	-274	i -2.7
25,000 or more	–	18,295	i 240	0	18,055	i -240	-1.3

* = $-\$500,000 < \text{amount} < \$500,000$ (or $-0.05\% < \text{amount} < 0.05\%$); 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 Capital expenditures related to R&D are assumed to be \$0 for domestic R&D paid for by others and performed by the company.

^b The Business Research and Development Survey did not include companies with fewer than 10 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. An estimate range may be displayed in place of a single estimate to avoid disclosing operations of individual companies. To enable comparisons between U.S. Business Enterprise Research and Development (BERD) Survey 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. BERD domestic R&D, and adding capital expenditures relating to R&D operations, which was *excluded* from U.S. BERD domestic R&D.

Source(s):

National Center for Science and Engineering Statistics and Census Bureau, Business Research and Development Survey, 2017.