

TABLE 86

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: 2019

(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	63,989	1,803	0	62,185	-1,803	-2.8
Manufacturing industries	31-33	37,564	1,051	0	36,513	-1,051	-2.8
Food	311	243	12	0	231	-12	-4.8
Beverage and tobacco products	312	111	9	0	102	-9	-7.8
Textile, apparel, and leather products	313-16	31	*	0	30	*	-0.4
Wood products	321	6	*	0	6	*	-0.9
Paper	322	*	0	0	*	0	0
Printing and related support activities	323	0	0	0	0	0	NA
Petroleum and coal products	324	103	0-7	0	95-104	-7-0	D
Chemicals	325	9,775	486	0	9,289	-486	-5.0
Basic chemicals	3251	162	15	0	147	-15	-9.4
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	80	11	0	69	-11	-13.9
Pesticide, fertilizer, and other agricultural chemicals	3253	320-345	0-28	0	293-345	-28-0	D
Pharmaceuticals and medicines	3254	8,966	423	0	8,544	-423	-4.7
Soap, cleaning compound, and toilet preparation	3256	164	12	0	152	-12	-7.2
Paint, coating, adhesive, and other chemicals	3255, 3259	56-84	0-28	0	30-84	-28-0	D
Plastics and rubber products	326	85	1	0	84	-1	-1.5
Nonmetallic mineral products	327	35	2	0	33	-2	-6.2
Primary metals	331	16	*	0	16	*	-0.6
Fabricated metal products	332	254	7	0	247	-7	-2.8
Machinery	333	1,254	49	0	1,205	-49	-3.9
Agricultural implement	33311	9	0	0	9	0	0
Semiconductor machinery	333242	604	43	0	561	-43	-7.1
Engine, turbine, and power transmission equipment	3336	205	3	0	202	-3	-1.6
Other machinery	other 333	436	3	0	433	-3	-0.7
Computer and electronic products	334	11,159	301	0	10,859	-301	-2.7
Communications equipment	3342	1,100	18	0	1,083	-18	-1.6
Semiconductor and other electronic components	3344	3,208	172	0	3,036	-172	-5.3
Navigational, measuring, electromedical, and control instruments	3345	6,650	104	0	6,546	-104	-1.6
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	225	5	0	221	-5	-2.0
Search, detection, navigation, guidance, aeronautical, and nautical system and instrument	334511	6,262	94	0	6,168	-94	-1.5
Other measuring and controlling device	other 3345	163	6	0	157	-6	-3.4
Other computer and electronic products	other 334	201	7	0	193	-7	-3.7
Electrical equipment, appliances, and components	335	377	16	0	360	-16	-4.4
Transportation equipment	336	13,870	163	0	13,707	-163	-1.2
Motor vehicles, bodies, trailers, and parts	3361-63	3,233	106	0	3,127	-106	-3.3

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Aerospace products and parts	3364	9,458 i	32 - 58	0	9,400 - 9,426 i	-58 - -32	D
Aircraft, aircraft engine, and aircraft parts	336411-13	8,550 i	33	0	8,517 i	-33	-0.4
Guided missile, space vehicle, and related parts	336414-15, 336419	908	0 - 26	0	883 - 909	-26 - 0	D
Military armored vehicle, tank, and tank component	336992	10	*	0	10	*	-2.3
Other transportation	other 336	1,168	0 - 26 i	0	1,142 - 1,169 i	-26 - 0 i	D
Furniture and related products	337	2	*	0	2	*	-0.1
Miscellaneous	339	244	2 - 10	0	234 - 242	-10 - -2	D
Medical equipment and supplies	3391	202	3	0	199	-3	-1.4
Other miscellaneous manufacturing	3399	42	0 - 7	0	34 - 43	-7 - 0	D
Nonmanufacturing industries	21-23, 42-81	26,425	752 i	0	25,672	-752 i	-2.8
Mining, quarrying, oil and gas extraction, and support activities	21	183	6	0	177	-6	-3.1
Utilities	22	38	0 - 4	0	34 - 39	-4 - 0	D
Wholesale trade	42	87	1	0	86	-1	-1.5
Electronic shopping and electronic auctions	454111-12	43 - 61	0	0	43 - 61	0	0
Transportation and warehousing	48-49	386	*	0	386	*	-0.1
Information	51	1,165	23	0	1,141	-23	-2.0
Publishing	511	572	10	0	562	-10	-1.8
Newspaper, periodical, book, and directory publishers	5111	*	0	0	*	0	0
Software publishers	5112	572	10	0	562	-10	-1.8
Telecommunications	517	33	1	0	32	-1	-2.5
Data processing, hosting, and related services	518	404	1	0	404	-1	-0.1
Other information	other 51	155	12	0	144	-12	-7.7
Finance and insurance	52	28	0	0	28	0	0
Real estate and rental and leasing	53	0	0	0	0	0	NA
Lessors of nonfinancial intangible assets (except copyrighted works)	533	0	0	0	0	0	NA
Other real estate and rental and leasing	other 53	0	0	0	0	0	NA
Professional, scientific, and technical services	54	24,103	719 i	0	23,384	-719 i	-3.0
Architectural, engineering, and related services	5413	1,919	11	0	1,909	-11	-0.6
Computer systems design and related services	5415	2,651	15	0	2,637	-15	-0.6
Scientific research and development services	5417	18,403	677 i	0	17,726	-677 i	-3.7
Research and development in biotechnology	541711	5,374	122	0	5,252	-122	-2.3
Research and development in the physical, engineering, and life sciences (except biotechnology)	541712	12,291 i	540 i	0	11,751 i	-540 i	-4.4

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Research and development in the social sciences and humanities	541720	738	15	0	723	-15	-2.1
Other professional, scientific, and technical services	other 54	1,129	17	0	1,113	-17	-1.5
Health care services	621-23	337	1	0	337	-1	-0.2
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	34 - 58	0 - 4	0	31 - 58	-4 - 0	D
All companies (number of domestic employees)	-	63,989	1,803	0	62,185	-1,803	-2.8
Small companies							
10-19 ^b	-	1,070	11	0	1,059	-11	-1.0
20-49	-	2,378	35	0	2,343	-35	-1.5
Medium companies							
50-99	-	2,529	50	0	2,480	-50	-2.0
100-249	-	3,274	70	0	3,204	-70	-2.1
Large companies							
250-499	-	3,527	78	0	3,449	-78	-2.2
500-999	-	2,420	77	0	2,343	-77	-3.2
1,000-4,999	-	11,196	553	0	10,643	-553	-4.9
5,000-9,999	-	6,083	299	0	5,784	-299	-4.9
10,000-24,999	-	13,878	385	0	13,493	-385	-2.8
25,000 or more	-	17,635	247	0	17,388	-247	-1.4

* = $-\$500,000 < \text{amount} < \$500,000$ (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; NA = not available.

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 Enterprise Research and Development (BERD) Survey does 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. Beginning in survey year 2018, statistics are representative of companies located in the United States that performed or funded \$50,000 or more of 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. BERD 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 is *included* in U.S. BERD domestic R&D, and adding capital expenditures relating to R&D operations, which is *excluded* from U.S. BERD domestic R&D.

Source(s):

National Center for Science and Engineering Statistics and Census Bureau, Business Enterprise Research and Development Survey, 2019.