

TABLE 80

Domestic R&D paid for 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 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	428,968	17,058	29,106	441,016	12,048	2.8
Manufacturing industries	31-33	248,109	11,368	17,674	254,415	6,306	2.5
Food	311	3,937	169	432	4,200	263	6.7
Beverage and tobacco products	312	971	43	160	1,088	117	12.1
Textile, apparel, and leather products	313-16	873	14	85	945	72	8.2
Wood products	321	180	2	7	185	5	2.8
Paper	322	1,064	8	65	1,120	57	5.3
Printing and related support activities	323	420	5	11	425	6	1.3
Petroleum and coal products	324	1,203	41	125	1,287	84	7.0
Chemicals	325	87,288	3,475	5,634	89,448	2,160	2.5
Basic chemicals	3251	2,198	152	358	2,404	207	9.4
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	1,092	62	225	1,255	163	15.0
Pesticide, fertilizer, and other agricultural chemicals	3253	1,501	105	57	1,453	-48	-3.2
Pharmaceuticals and medicines	3254	78,652	3,028	4,476	80,100	1,448	1.8
Soap, cleaning compound, and toilet preparation	3256	2,596	86	170	2,681	85	3.3
Paint, coating, adhesive, and other chemicals	3255, 3259	1,249	43	347	1,554	305	24.4
Plastics and rubber products	326	2,770	83	393	3,080	310	11.2
Nonmetallic mineral products	327	1,473	59	69	1,483	10	0.7
Primary metals	331	649	27	89	711	62	9.6
Fabricated metal products	332	2,632	40	204	2,796	165	6.3
Machinery	333	13,930	556	953	14,327	397	2.9
Agricultural implement	33311	1,913	35	58	1,935	23	1.2
Semiconductor machinery	333242	3,854	308	419	3,965	111	2.9
Engine, turbine, and power transmission equipment	3336	1,096	46	85	1,134	39	3.5
Other machinery	other 333	7,067	166	391	7,292	226	3.2
Computer and electronic products	334	75,570	5,066	5,765	76,269	699	0.9
Communications equipment	3342	11,495	556	780	11,719	224	1.9
Semiconductor and other electronic components	3344	31,975	2,613	2,698	32,060	85	0.3
Navigational, measuring, electromedical, and control instruments	3345	10,912	229	899	11,582	670	6.1
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	3,117	68	222	3,271	154	5.0
Search, detection, navigation, guidance, aeronautical, and nautical system and instrument	334511	3,400	68	448	3,780	380	11.2
Other measuring and controlling device	other 3345	4,395	93	228	4,530	135	3.1
Other computer and electronic products	other 334	21,188	1,668	1,388	20,908	-280	-1.3
Electrical equipment, appliances, and components	335	4,886	118	477	5,245	359	7.3
Transportation equipment	336	31,505	990	2,066	32,581	1,076	3.4
Motor vehicles, bodies, trailers, and parts	3361-63	20,883	861	1,454	21,477	593	2.8

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Aerospace products and parts	3364	8,900	107	486 - 495	9,281 - 9,287	382 - 387	D
Aircraft, aircraft engine, and aircraft parts	336411-13	8,341	100	438	8,679	338	4.0
Guided missile, space vehicle, and related parts	336414-15, 336419	559	7	48 - 57	603 - 608	44 - 48	D
Military armored vehicle, tank, and tank component	336992	25	0	1	25	1	2.1
Other transportation	other 336	1,697	23	117 - 127	1,790 - 1,799	93 - 101	D
Furniture and related products	337	407	8	48	447	40	9.9
Miscellaneous	339	18,352	664	1,089	18,777	425	2.3
Medical equipment and supplies	3391	15,812	620	954	16,146	334	2.1
Other miscellaneous manufacturing	3399	2,540	44	135	2,631	91	3.6
Nonmanufacturing industries	21-23, 42-81	180,858	5,690	11,432	186,601	5,743	3.2
Mining, quarrying, oil and gas extraction, and support activities	21	2,535	86	441	2,889	355	14.0
Utilities	22	237	0 - 96	210	351 - 456	113 - 220	D
Wholesale trade	42	1,104	16	66 - 155	1,153 - 1,244	49 - 140	D
Electronic shopping and electronic auctions	454111-12	3,088 - 15,775	0 - 793	77 - 89	1,828 - 15,719	-1260 - -55	D
Transportation and warehousing	48-49	9,504	71	495	9,928	424	4.5
Information	51	109,062	3,075	5,270	111,257	2,195	2.0
Publishing	511	32,447	372	1,166	33,241	794	2.4
Newspaper, periodical, book, and directory publishers	5111	61	*	1	62	1	1.7
Software publishers	5112	32,386	371	1,165	33,180	793	2.4
Telecommunications	517	3,700	33	241	3,909	209	5.6
Data processing, hosting, and related services	518	30,154	492	2,260	31,922	1,768	5.9
Other information	other 51	42,761	2,179	1,603	42,185	-576	-1.3
Finance and insurance	52	8,890	534	1,548	9,903	1,014	11.4
Real estate and rental and leasing	53	1,371	2 - 258	5 - 78	1,380	9	0.7
Lessors of nonfinancial intangible assets (except copyrighted works)	533	45	3	*	42	-3	-6.4
Other real estate and rental and leasing	other 53	1,326	0 - 255	5 - 78	1,338	12	0.9
Professional, scientific, and technical services	54	29,131	1,081	2,371	30,421	1,290	4.4
Architectural, engineering, and related services	5413	2,288	11	153	2,430	142	6.2
Computer systems design and related services	5415	18,395	707	935	18,623	228	1.2
Scientific research and development services	5417	3,265	161	944	4,049	783	24.0
Research and development in biotechnology	541711	1,083	60	228	1,252	168	15.5

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Research and development in the physical, engineering, and life sciences (except biotechnology)	541712	2,155	101	707	2,761	606	28.1
Research and development in the social sciences and humanities	541720	27	*	9	36	9	33.4
Other professional, scientific, and technical services	other 54	5,182	203	340	5,319	i 137	2.6
Health care services	621-23	1,928	34	385	i 2,279	351	i 18.2
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	1,322 - 14,012	0 - 793	480	1,322 - 15,210	i 1,202	D
All companies (number of domestic employees)	-	428,968	17,058	29,106	441,016	12,048	2.8
Small companies							
10-19 ^a	-	4,432	102	610	4,940	508	11.5
20-49	-	10,040	187	1,086	10,939	899	9.0
Medium companies							
50-99	-	11,492	221	958	12,229	737	6.4
100-249	-	16,520	397	1,492	17,615	1,095	6.6
Large companies							
250-499	-	15,356	336	1,502	16,522	1,167	7.6
500-999	-	21,549	662	1,612	22,499	950	4.4
1,000-4,999	-	64,475	2,191	5,382	67,665	3,190	4.9
5,000-9,999	-	44,728	1,969	3,100	45,859	1,131	2.5
10,000-24,999	-	74,385	3,673	4,606	75,318	932	i 1.3
25,000 or more	-	165,991	7,320	8,758	167,429	1,439	0.9

* = 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 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.