

TABLE 74

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: 2019

(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	492,956	18,861		29,106		503,201	10,245	2.1
Manufacturing industries	31-33	285,674	12,419		17,674		290,928	5,255	1.8
Food	311	4,180	181		432		4,431	251	6.0
Beverage and tobacco products	312	1,082	52		160		1,190	i 108	i 10.0
Textile, apparel, and leather products	313-16	904	14		85		976	72	7.9
Wood products	321	186	2		7		191	5	2.6
Paper	322	1,064	8	i	65	i	1,121	i 57	i 5.3
Printing and related support activities	323	420	i 5		11	i	425	i 6	i 1.3
Petroleum and coal products	324	1,306	40 - 49		125		1,387 - 1,391	81 - 85	D
Chemicals	325	97,063	3,961		5,634		98,737	1,674	1.7
Basic chemicals	3251	2,360	167		358		2,551	191	8.1
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	1,172	73		225		1,324	152	i 13.0
Pesticide, fertilizer, and other agricultural chemicals	3253	1,822 - 1,846	104 - 133		57		1,761 - 1,784	-76 - -62	D
Pharmaceuticals and medicines	3254	87,619	3,451		4,476		88,644	1,025	1.2
Soap, cleaning compound, and toilet preparation	3256	2,760	97		170		2,833	73	2.6
Paint, coating, adhesive, and other chemicals	3255, 3259	1,305 - 1,333	42 - 71		347	i	1,601 - 1,623	i 296 - 306	i D
Plastics and rubber products	326	2,856	85		393		3,164	309	10.8
Nonmetallic mineral products	327	1,508	i 61	i	69		1,516	i 8	i 0.5
Primary metals	331	665	27		89		727	62	9.4
Fabricated metal products	332	2,885	47		204		3,043	158	5.5
Machinery	333	15,184	605		953		15,532	348	2.3
Agricultural implement	33311	1,921	35		58		1,944	23	1.2
Semiconductor machinery	333242	4,459	351		419		4,526	68	1.5
Engine, turbine, and power transmission equipment	3336	1,301	50		85		1,336	35	2.7
Other machinery	other 333	7,503	168		391		7,726	223	3.0
Computer and electronic products	334	86,729	5,366		5,765		87,128	399	i 0.5
Communications equipment	3342	12,595	574		780		12,802	207	1.6
Semiconductor and other electronic components	3344	35,183	i 2,784	i	2,698	i	35,096	i -87	i -0.2
Navigational, measuring, electromedical, and control instruments	3345	17,562	333		899		18,128	566	i 3.2
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	3,342	73		222	i	3,492	i 150	i 4.5
Search, detection, navigation, guidance, aeronautical, and nautical system and instrument	334511	9,662	162		448	i	9,949	286	i 3.0
Other measuring and controlling device	other 3345	4,558	98		228		4,688	130	2.8
Other computer and electronic products	other 334	21,388	1,675		1,388		21,101	-287	-1.3
Electrical equipment, appliances, and components	335	5,263	135		477		5,605	342	6.5
Transportation equipment	336	45,375	1,153		2,066		46,287	i 913	2.0

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						Amount	Percent
Motor vehicles, bodies, trailers, and parts	3361-63	24,117	967	1,454	24,604	488	2.0
Aerospace products and parts	3364	18,358	139 - 165	486 - 495	18,706 - 18,710	349 - 352	D
Aircraft, aircraft engine, and aircraft parts	336411-13	16,891	133	438	17,195	305	1.8
Guided missile, space vehicle, and related parts	336414-15, 336419	1,467	6 - 32	48 - 57	1,511 - 1,514	44 - 46	D
Military armored vehicle, tank, and tank component	336992	35	*	1	35	*	0.8
Other transportation	other 336	2,865	22 - 48	117 - 127	2,936 - 2,943	71 - 77	D
Furniture and related products	337	409	8	48	449	40	9.9
Miscellaneous	339	18,596	666 - 674	1089	19,015 - 19,020	420 - 423	D
Medical equipment and supplies	3391	16,014	623	954	16,345	332	2.1
Other miscellaneous manufacturing	3399	2,582	43 - 52	135	2,670 - 2,674	88 - 92	D
Nonmanufacturing industries	21-23, 42-81	207,283	6,442	11,432	212,273	4,990	2.4
Mining, quarrying, oil and gas extraction, and support activities	21	2,717	92	441	3,066	349	12.8
Utilities	22	275	0 - 100	210	387 - 494	112 - 219	D
Wholesale trade	42	1,191	18	66 - 155	1,239 - 1,330	48 - 139	D
Electronic shopping and electronic auctions	454111-12	3,131 - 15,818	0 - 793	77 - 89	1,871 - 15,762	1,260 - 55	D
Transportation and warehousing	48-49	9,890	71	495	10,314	423	4.3
Information	51	110,227	3,099	5,270	112,398	2,171	2.0
Publishing	511	33,019	382	1,166	33,803	784	2.4
Newspaper, periodical, book, and directory publishers	5111	61	*	1	62	1	1.7
Software publishers	5112	32,958	382	1,165	33,741	783	2.4
Telecommunications	517	3,733	33	241	3,941	208	5.6
Data processing, hosting, and related services	518	30,558	492	2,260	32,325	1,767	5.8
Other information	other 51	42,917	2,191	1,603	42,328	-588	-1.4
Finance and insurance	52	8,917	534	1,548	9,931	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	53,233	1,801	2,371	53,804	571	1.1
Architectural, engineering, and related services	5413	4,207	21	153	4,338	131	3.1
Computer systems design and related services	5415	21,046	722	935	21,260	213	1.0
Scientific research and development services	5417	21,669	838	944	21,774	106	0.5

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							Amount	Percent
Research and development in biotechnology	541711	6,457	181		228 i	6,503	46	0.7
Research and development in the physical, engineering, and life sciences (except biotechnology)	541712	14,446 i	641 i		707	14,512 i	65 i	0.5
Research and development in the social sciences and humanities	541720	766	15		9	759	-6	-0.8
Other professional, scientific, and technical services	other 54	6,312	220		340	6,432	120	1.9
Health care services	621-23	2,265	35		385 i	2,616	351 i	15.5
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	1,380 - 14,067	0 - 794		480	1,380 - 15,265 i	0 - 1,201	D
All companies (number of domestic employees)	-	492,956	18,861		29,106	503,201	10,245	2.1
Small companies								
10-19 ^a	-	5,501	113		610	5,999	498	9.0
20-49	-	12,418	221		1,086	13,283	864	7.0
Medium companies								
50-99	-	14,021	270		958	14,709	688	4.9
100-249	-	19,793	466		1,492	20,819	1,025	5.2
Large companies								
250-499	-	18,883	413		1,502	19,972	1,089	5.8
500-999	-	23,969	739		1,612	24,842	874	3.6
1,000-4,999	-	75,671	2,745		5,382	78,308	2,637	3.5
5,000-9,999	-	50,811	2,268		3,100	51,642	832	1.6
10,000-24,999	-	88,263	4,058		4,606	88,811 i	548 i	0.6
25,000 or more	-	183,626	7,567		8,758	184,817	1,191	0.6

* = 0 < amount < \$500,000 or greater than 0.00% but less than 0.05%; D = data withheld to avoid disclosing operations of individual companies; i = > 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 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 is *included* in U.S. BERD Survey domestic R&D, and adding capital expenditures relating to R&D operations, which is *excluded* from U.S. BERD Survey domestic R&D.

Source(s):

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