

TABLE 81

Domestic R&D paid for and performed by the company, depreciation, capital expenditures, and adjusted domestic R&D, by industry and company size: 2020

(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	466,162	18,558		32,494	480,099	13,936	3.0
Manufacturing industries	31-33	264,596	12,946		19,727	271,377	6,781	2.6
Food	311	4,985	235		449	5,199	213	4.3
Beverage and tobacco products	312	1,056	49		115	1,121	66	6.2
Textile, apparel, and leather products	313-16	812	15		43	840	28	3.4
Wood products	321	183	3		10	190	7	3.6
Paper	322	927	6		94	1,015	i 88	i 9.5
Printing and related support activities	323	282	17	i	66	331	i 50	i 17.6
Petroleum and coal products	324	1,222	57		115	1,279	58	4.7
Chemicals	325	89,403	3,928		5,311	90,787	1,383	1.5
Basic chemicals	3251	2,523	146		270	2,647	124	4.9
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	1,161	84		106	1,182	21	1.8
Pesticide, fertilizer, and other agricultural chemicals	3253	775	39	i	32 - 53	774 - 781	i 0 - 6	i D
Pharmaceuticals and medicines	3254	80,858	3,492		4,619	81,986	1,128	1.4
Soap, cleaning compound, and toilet preparation	3256	2,476	87		194	2,582	106	i 4.3
Paint, coating, adhesive, and other chemicals	3255, 3259	1,610	80		72 - 93	1,610 - 1,617	0 - 7	D
Plastics and rubber products	326	2,607	82		310	2,836	228	8.8
Nonmetallic mineral products	327	1,619	i 70	i	166	i 1,715	i 96	i 5.9
Primary metals	331	795	21		96	870	75	9.5
Fabricated metal products	332	3,336	84		278	3,530	194	5.8
Machinery	333	15,071	615		1,298	15,754	683	4.5
Agricultural implement	33311	1,760	41		152	1,871	111	6.3
Semiconductor machinery	333242	4,121	317		400	4,204	82	2.0
Engine, turbine, and power transmission equipment	3336	1,523	57		109	1,575	i 52	3.4
Other machinery	other 333	7,667	200		638	8,105	438	5.7
Computer and electronic products	334	88,505	5,828		7,578	90,254	1,749	i 2.0
Communications equipment	3342	11,107	505		742	11,345	238	i 2.1
Semiconductor and other electronic components	3344	40,801	2,949		3,850	41,702	i 901	i 2.2
Navigational, measuring, electromedical, and control instruments	3345	11,012	395		1,046	i 11,663	651	i 5.9
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	2,606	76		211	i 2,741	135	i 5.2
Search, detection, navigation, guidance, aeronautical, and nautical system and instrument	334511	3,561	86		638	i 4,114	i 553	i 15.5
Other measuring and controlling device	other 3345	4,844	233		197	4,807	-37	-0.8
Other computer and electronic products	other 334	25,585	1,980		1,940	25,545	-40	-0.2
Electrical equipment, appliances, and components	335	4,492	130		638	5,000	507	11.3
Transportation equipment	336	30,232	1,045		1,924	31,111	879	2.9
Motor vehicles, bodies, trailers, and parts	3361-63	19,522	867		1,418	20,073	551	2.8

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						Amount	Percent
Aerospace products and parts	3364	9,111	144	403	9,370	259	2.8
Aircraft, aircraft engine, and aircraft parts	336411-13	8,281	112	318	8,487	207	2.5
Guided missile, space vehicle, and related parts	336414-15, 336419	831	33	85	882	52	6.3
Military armored vehicle, tank, and tank component	336992	4	0	1	5	1	16.2
Other transportation	other 336	1,594	34	102	1,663	68	4.3
Furniture and related products	337	492	9	35	518	26	5.2
Miscellaneous	339	18,576	750	1,201	19,027	451	2.4
Medical equipment and supplies	3391	15,944	694	1,020	16,269	325	2.0
Other miscellaneous manufacturing	3399	2,632	56	182	2,758	126	4.8
Nonmanufacturing industries	21-23, 42-81	201,566	5,612	12,767	208,721	7,155	3.5
Mining, quarrying, oil and gas extraction, and support activities	21	1,121	15	110	1,216	95	8.5
Utilities	22	224	10	362	577	353	157.4
Wholesale trade	42	1,001	15	181	1,167	166	16.6
Electronic shopping and electronic auctions	454111-12	3,837 - 19,343	i 0 - 772	i 1,643	i 3 - 19,357	i 14	D
Transportation and warehousing	48-49	4,954	i 0 - 209	220 - 311	5,117	i 164	i 3.3
Information	51	128,350	3,643	5,301	130,007	1,658	1.3
Publishing	511	34,516	418	1,091	35,188	672	1.9
Newspaper, periodical, book, and directory publishers	5111	60	*	6	i 67	6	i 10.2
Software publishers	5112	34,456	418	1,085	35,122	666	1.9
Telecommunications	517	3,371	14	205	i 3,563	i 192	i 5.7
Data processing, hosting, and related services	518	41,105	841	2,130	42,395	1,290	3.1
Other information	other 51	49,358	2,371	1,874	48,861	-496	-1.0
Finance and insurance	52	12,204	300	1,969	13,873	1,669	i 13.7
Real estate and rental and leasing	53	3,249	43	35	3,241	-8	-0.3
Lessors of nonfinancial intangible assets (except copyrighted works)	533	7	*	2	i 9	i 2	i 28.9
Other real estate and rental and leasing	other 53	3,242	43	33	3,232	-10	-0.3
Professional, scientific, and technical services	54	28,322	793	2,838	30,367	2,045	7.2
Architectural, engineering, and related services	5413	2,214	17	135	2,331	117	5.3
Computer systems design and related services	5415	14,293	539	1,148	14,902	609	4.3
Scientific research and development services	5417	6,246	166	1,063	7,143	i 896	14.4
Research and development in nanotechnology	541713	126	i 7	i 14	i 133	i 7	i 5.6
Research and development in biotechnology (except nanobiotechnology)	541714	1,176	37	328	1,468	291	24.8

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										Amount	Percent	
Research and development in the physical, engineering, and life sciences (except nanotechnology and biotechnology)	541715	4,906	i	122		712	i	5,496	i	589	i	12.0
Research and development in the social sciences and humanities	541720	38		*		9		46		9		23.1
Other professional, scientific, and technical services	other 54	5,570		71		493	i	5,992		423	i	7.6
Health care services	621-23	1,374		26		83	i	1,431		57	i	4.2
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	1,429 - 16,934		0 - 772	i	29 - 1,669		2,371 - 17,878		943		D
All companies (number of domestic employees)	-	466,162		18,558		32,494		480,099		13,936		3.0
Small companies												
10-19 ^a	-	4,019		108		452		4,363		344		8.6
20-49	-	10,970		198		1,025		11,796		827		7.5
Medium companies												
50-99	-	11,177		251		1,152		12,078		901		8.1
100-249	-	22,132		444		1,593		23,281		1,149		5.2
Large companies												
250-499	-	18,067		656		1,295		18,706		639		3.5
500-999	-	18,458		718		1,559		19,299		841		4.6
1,000-4,999	-	75,917		2,359		6,406		79,963		4,047		5.3
5,000-9,999	-	42,451		1,869		2,803		43,385		934		2.2
10,000-24,999	-	72,827		3,817		6,249		75,260		2,433		3.3
25,000 or more	-	190,145		8,139		9,960		191,967		1,822		1.0

* = 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 = 2017 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. 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, 2020.