

TABLE 68

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: 2021

(Millions of U.S. dollars and percent change)

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	74,695	2,747		0	71,948	-2,747	-3.7	
Manufacturing industries	31-33	38,394	1,435		0	36,959	-1,435	-3.7	
Food	311	297 - 302	14 - 26		0	271 - 288	-26 - -14	D	
Beverage and tobacco products	312	19	1		0	18	-1	-5.0	
Textile, apparel, and leather products	313-16	11	0		0	11	0	0.0	
Wood products	321	2 - 10	*		0	2 - 10	0	D	
Paper	322	0	0		0	0	0	NA	
Printing and related support activities	323	0 - 7	0		0	0 - 7	0	0.0	
Petroleum and coal products	324	5	0		0	5	0	0.0	
Chemicals	325	12,393	670		0	11,723	-670	-5.4	
Basic chemicals	3251	154	12		0	141	-12	-8.1	
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	69 - 98	0 - 25	i	0	44 - 98	-25 - 0	i D	
Pesticide, fertilizer, and other agricultural chemicals	3253	211 - 241	0 - 25	i	0	186 - 241	-25 - 0	i D	
Pharmaceuticals and medicines	3254	11,697	620		0	11,076	-620	-5.3	
Soap, cleaning compound, and toilet preparations	3256	209	14		0	195	-14	-6.8	
Paint, coating, adhesive, and other chemicals	3255, 3259	19 - 28	0 - 25		0	0 - 28	-25 - 0	D	
Plastics and rubber products	326	183	6		0	177	-6	-3.5	
Nonmetallic mineral products	327	31	1		0	30	-1	-3.3	
Primary metals	331	22 - 26	0 - 6	i	0	16 - 26	-6 - 0	D	
Fabricated metal products	332	412	13		0	399	-13	-3.3	
Machinery	333	1,003	33		0	970	-33	-3.3	
Agricultural implement	33311	60 - 68	0 - 17		0	43 - 68	-17 - 0	D	
Semiconductor machinery	333242	167	17		0	151	-17	-10.0	
Engine, turbine, and power transmission equipment	3336	128 - 134	0 - 11		0	117 - 134	-11 - 0	D	
Other machinery	other 333	641	0 - 17		0	625 - 642	-17 - 0	D	
Computer and electronic products	334	6,852	311		0	6,541	-311	-4.5	
Communications equipment	3342	1,218	22	i	0	1,196	-22	i -1.8	
Semiconductor and other electronic components	3344	1,880	116		0	1,764	-116	-6.2	
Navigational, measuring, electromedical, and control instruments	3345	3,630	167		0	3,463	-167	-4.6	
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	250	3		0	248	-3	-1.0	
Search, detection, navigation, guidance, aeronautical, and nautical system and instruments	334511	3,193	159		0	3,034	-159	-5.0	
Other measuring and controlling devices	other 3345	187	6		0	182	-6	-3.1	
Other computer and electronic products	other 334	123	5		0	118	-5	-3.9	
Electrical equipment, appliances, and components	335	486	20		0	466	-20	-4.2	
Transportation equipment	336	16,356	353	i	0	16,003	-353	i -2.2	

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Motor vehicles, bodies, trailers, and parts	3361-63	3,637	116		0	3,521	-116	-3.2	
Aerospace products and parts	3364	11,568	209	i	0	11,359	-209	-1.8	
Aircraft, aircraft engine, and aircraft parts	336411-13	10,552	209	i	0	10,343	-209	-2.0	
Guided missile, space vehicle, and related parts	336414-15, 336419	1,016	*		0	1,015	*	0.0	
Military armored vehicle, tank, and tank components	336992	1	0		0	1	0	0.0	
Other transportation	other 336	1,149	28	i	0	1,121	-28	-2.4	
Furniture and related products	337	3	*		0	3	*	-3.5	
Miscellaneous	339	311	4		0	308	-4	-1.1	
Medical equipment and supplies	3391	233	2		0	232	-2	-0.8	
Other miscellaneous manufacturing	3399	78	2		0	76	-2	-2.2	
Nonmanufacturing industries	21-23, 42-81	36,300	1,312	i	0	34,988	-1,312	-3.6	
Mining, quarrying, oil and gas extraction, and support activities	21	183	6	i	0	177	-6	-3.1	
Utilities	22	35	0		0	35	0	0.0	
Wholesale trade	42	84	2	r	0	82	-2	-2.9	
Electronic shopping and electronic auctions	454111-12	4 - 8	2	r	0	2 - 6	-2	D	
Transportation and warehousing	48-49	8 - 10	0 - 2		0	6 - 10	-2 - 0	D	
Information	51	1,366	32		0	1,335	-32	-2.3	
Publishing	511	631	26		0	605	-26	-4.1	
Newspaper, periodical, book, and directory publishers	5111	23	0	r	0	23	0	0.0	
Software publishers	5112	608	26		0	582	-26	-4.2	
Telecommunications	517	30 - 98	0 - 5		0	25 - 98	-5 - 0	D	
Data processing, hosting, and related services	518	607	2		0	605	-2	-0.3	
Other information	other 51	29 - 99	0 - 5		0	25 - 99	-5 - 0	D	
Finance and insurance	52	45	0		0	45	0	0.0	
Real estate and rental and leasing	53	0 - 1	0		0	0 - 1	0	0.0	
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 - 1	0		0	0 - 1	0	0.0	
Professional, scientific, and technical services	54	34,413	1,268	i	0	33,145	-1,268	-3.7	
Architectural, engineering, and related services	5413	2,007	5		0	2,002	-5	-0.2	
Computer systems design and related services	5415	3,221	49		0	3,172	-49	-1.5	
Scientific research and development services	5417	28,019	1,200	i	0	26,819	-1,200	-4.3	
Research and development in nanotechnology	541713	73	*	i	0	73	*	-0.4	
Research and development in biotechnology (except nanobiotechnology)	541714	7,374	183		0	7,191	-183	-2.5	
Research and development in the physical, engineering, and life sciences (except nanotechnology and biotechnology)	541715	20,046	1,013	i	0	19,034	-1,013	-5.1	
Research and development in the social sciences and humanities	541720	525	4		0	521	-4	-0.8	

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						Amount	Percent
Other professional, scientific, and technical services	other 54	1,166	14	0	1,152	-14	-1.2
Health care services	621-23	95	1	0	94	-1	-0.8
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	62 - 66	0 - 4	0	58 - 66	-4 - 0	D
All companies (number of domestic employees)	-	74,695	2,747	0	71,948	-2,747	-3.7
Small companies							
10-19 ^b	-	1,219	16	0	1,203	-16	-1.3
20-49	-	2,434	29	0	2,406	-29	-1.2
Medium companies							
50-99	-	2,052	45	0	2,008	-45	-2.2
100-249	-	3,993	69	0	3,924	-69	-1.7
Large companies							
250-499	-	3,358	73	0	3,285	-73	-2.2
500-999	-	3,777	167	0	3,610	-167	-4.4
1,000-4,999	-	11,006	542	0	10,464	-542	-4.9
5,000-9,999	-	8,944	478	0	8,466	-478	-5.3
10,000-24,999	-	20,549	833	0	19,716	-833	-4.1
25,000 or more	-	17,361	495	0	16,866	-495	-2.9

* = amount is between -\$500,000 and \$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; r = relative standard error is more than 50%; NA = not available.

NAICS = 2017 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. 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, 2021.