

TABLE 79

**Domestic R&D paid for and performed by the company, depreciation, capital expenditures, and adjusted domestic R&D, by industry and company size: 2018**

(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	377,806	14,772		28,707	391,741	13,936	3.7	
Manufacturing industries	31-33	234,682	10,359		18,065	242,388	7,706	3.3	
Food	311	4,412	201		417	4,628 i	217	4.9	
Beverage and tobacco products	312	1,004	47		80	1,037 i	33	3.3	
Textile, apparel, and leather products	313-16	986	15		80	1,050	65	6.5	
Wood products	321	199	3		9	206	6	3.1	
Paper	322	932	6		60	985 i	54 i	5.8	
Printing and related support activities	323	238	13	i	19 i	244 i	6 i	2.6	
Petroleum and coal products	324	1,246	35		221	1,432	186	14.9	
Chemicals	325	73,584	3,399		5,230	75,415	1,831	2.5	
Basic chemicals	3251	2,251	131		227	2,346	95	4.2	
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	1,568	94 - 112		194 - 215	1,651 - 1,692	83 - 124	D	
Pesticide, fertilizer, and other agricultural chemicals	3253	1,135 i	94 i		44 - 68	1,085 - 1,108 i	-50 - -26 i	D	
Pharmaceuticals and medicines	3254	64,800	2,933		4,430	66,297	1,497	2.3	
Soap, cleaning compound, and toilet preparation	3256	2,573	84 - 104		202	2,670 - 2,688	97 - 115	D	
Paint, coating, adhesive, and other chemicals	3255, 3259	1,257	43		110	1,324 i	67	5.3	
Plastics and rubber products	326	2,667	79		330	2,918	251	9.4	
Nonmetallic mineral products	327	1,361	73 i		137	1,425 i	64	4.7	
Primary metals	331	817	43		110	884 i	67	8.2	
Fabricated metal products	332	2,222	28		208	2,402	180	8.1	
Machinery	333	13,765	588		1,069	14,247	482	3.5	
Agricultural implement	33311	1,862	41		72	1,893	31 i	1.7	
Semiconductor machinery	333242	3,623	274		484	3,833	210	5.8	
Engine, turbine, and power transmission equipment	3336	2,310	95		138	2,353	43	1.9	
Other machinery	other 333	5,970	178		376	6,168	198	3.3	
Computer and electronic products	334	73,922	4,363		6,404	75,963	2,041	2.8	
Communications equipment	3342	11,822	592		873	12,103	281 i	2.4	
Semiconductor and other electronic components	3344	28,642	2,306 i		2,686 i	29,023 i	380 i	1.3	
Navigational, measuring, electromedical, and control instruments	3345	10,864	228		714	11,349	485	4.5	
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	3,046	71		150 i	3,125	80 i	2.6	
Search, detection, navigation, guidance, aeronautical, and nautical system and instrument	334511	3,388	69		346	3,665	277 i	8.2	
Other measuring and controlling device	other 3345	4,430	89		218	4,559	129	2.9	
Other computer and electronic products	other 334	22,594	1,238		2,132	23,488	894	4.0	
Electrical equipment, appliances, and components	335	4,222	101		354	4,474	253	6.0	
Transportation equipment	336	35,894	808		2,184	37,270	1,376	3.8	
Motor vehicles, bodies, trailers, and parts	3361-63	23,080	682		1,570	23,968	888	3.8	

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Aerospace products and parts	3364	11,160	103	461	11,518	359	3.2
Aircraft, aircraft engine, and aircraft parts	336411-13	10,746	102	343	10,987	241 i	2.2
Guided missile, space vehicle, and related parts	336414-15, 336419	414	*	118	532	118	28.5
Military armored vehicle, tank, and tank component	336992	6	* i	*	6	*	1.4
Other transportation	other 336	1,649	23	153	1,779	130 i	7.9
Furniture and related products	337	404	3	73	475	71	17.4
Miscellaneous	339	16,807	554	1,080	17,332	526	3.1
Medical equipment and supplies	3391	14,267	521	702	14,448	181	1.3
Other miscellaneous manufacturing	3399	2,540	33	378 i	2,885 i	345 i	13.6
Nonmanufacturing industries	21-23, 42-81	143,123	4,413	10,642	149,353	6,229	4.4
Mining, quarrying, oil and gas extraction, and support activities	21	1,775	0 - 52	351	2,074 - 2,078	299 - 303	D
Utilities	22	224	5	280 i	500 i	276 i	123.0
Wholesale trade	42	881 i	0 - 4 i	40 i	916 - 920 i	35 - 39 i	D
Electronic shopping and electronic auctions	454111-12	11,557 i	199 - 645	233 i	10,878 - 11,470 i	-679 - -87 i	D
Transportation and warehousing	48-49	935	17 - 26	211 i	1,120 - 1,123	185 - 188 i	D
Information	51	93,487	2,706	5,110	95,891	2,404	2.6
Publishing	511	32,281	434	1,425	33,272	991	3.1
Newspaper, periodical, book, and directory publishers	5111	131	14 i	19 i	135 i	5 i	3.5
Software publishers	5112	32,150	420	1,406	33,136	986	3.1
Telecommunications	517	3,631	22 - 30	333 i	3,934 - 3,939 i	303 - 308 i	D
Data processing, hosting, and related services	518	23,115	451	1,503	24,168	1,052	4.6
Other information	other 51	34,459	1,790 - 1,798	1,848	34,511 - 34,518	52 - 58	D
Finance and insurance	52	7,426	290	1,865 i	9,001 i	1,575 i	21.2
Real estate and rental and leasing	53	1,022	44	55	1,033	11	1.1
Lessors of nonfinancial intangible assets (except copyrighted works)	533	6	0	*	6	*	0.5
Other real estate and rental and leasing	other 53	1,016	44	55	1,027	11	1.1
Professional, scientific, and technical services	54	22,374	601 - 691	2,045	23,772 - 23,818	1,398 - 1,444	D
Architectural, engineering, and related services	5413	2,277	0 - 65	110	2,348 - 2,396	71 - 120	D
Computer systems design and related services	5415	13,633	483	1,008	14,158	525	3.9
Scientific research and development services	5417	2,424	82	557	2,899	475	19.6
Research and development in biotechnology	541711	820	30	196 - 201	987 - 991	167 - 171	D

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								Amount	Percent
Research and development in the physical, engineering, and life sciences (except biotechnology)	541712	1,577	52		351		1,876	299	19.0
Research and development in the social sciences and humanities	541720	27	*		6 - 9		33 - 35	6 - 9	D
Other professional, scientific, and technical services	other 54	4,041	0 - 61	i	369		4,350 - 4,369	309 - 328	D
Health care services	621-23	1,401	26 - 48	i	171	i	1,524 - 1,527	123 - 126	i D
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	2,041	0 - 348		280		2,040 - 2,635	0 - 594	D
All companies (number of domestic employees)	-	377,806	14,772		28,707		391,741	13,936	3.7
Small companies									
10-19 <sup>a</sup>	-	3,340	46		348		3,642	302	9.0
20-49	-	9,556	145		1,036		10,448	891	9.3
Medium companies									
50-99	-	10,446	187		1,030		11,289	843	8.1
100-249	-	14,626	365		1,266		15,527	900	6.2
Large companies									
250-499	-	16,604	391		1,729		17,942	1,338	8.1
500-999	-	15,561	404		1,256		16,413	852	5.5
1,000-4,999	-	58,509	1,949		5,263		61,824	3,315	5.7
5,000-9,999	-	36,274	1,503		3,462		38,233	1,959	5.4
10,000-24,999	-	74,423	4,000		5,679		76,102	1,679	2.3
25,000 or more	-	138,465	5,781		7,638		140,322	1,857	1.3

\* = 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.

<sup>a</sup> The Business Research and Development Survey (BRDS) did 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 and are not comparable with estimates published for years prior to 2018. 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. BRDS 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. BRDS domestic R&D, and adding capital expenditures relating to R&D operations, which is *excluded* from U.S. BRDS domestic R&D.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, Business Research and Development Survey, 2018.