

TABLE 67

Domestic R&D paid for 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 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	527,804	18,433	52,844	562,215	34,411	6.5
Manufacturing industries	31-33	287,666	12,251	28,450	303,865	16,199	5.6
Food	311	4,963 - 4,968	224 - 236	946	5,673 - 5,690 i	710 - 722	D
Beverage and tobacco products	312	1,228	67	297 i	1,458	230 i	18.7
Textile, apparel, and leather products	313-16	818	15	69	872 i	54 i	6.6
Wood products	321	433 - 442	2	15	446 - 454	13	D
Paper	322	1,139	7	511	1,643 i	504 i	44.2
Printing and related support activities	323	196 - 205 i	11 i	39	225 - 234 i	29 i	D
Petroleum and coal products	324	952	43	171 i	1,079	127 i	13.4
Chemicals	325	97,097	3,679	8,291	101,709	4,612	4.8
Basic chemicals	3251	2,559	165	317	2,711	152	5.9
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	1,291 - 1,320 i	73 - 100	62	1,253 - 1,309 i	-38 - -11 i	D
Pesticide, fertilizer, and other agricultural chemicals	3253	915 - 946	53 - 80 i	170 i	1,005 - 1,063 i	90 - 117 i	D
Pharmaceuticals and medicines	3254	88,524	3,204	7,504	92,823	4,299	4.9
Soap, cleaning compound, and toilet preparations	3256	2,531	107	174	2,598	67	2.7
Paint, coating, adhesive, and other chemicals	3255, 3259	1,242 - 1,252	22 - 49	64	1,257 - 1,294	15 - 42	D
Plastics and rubber products	326	2,961	111	353 i	3,203	242 i	8.2
Nonmetallic mineral products	327	1,503	88	193	1,607 i	105	7.0
Primary metals	331	887 - 890	15 - 22	172	1,037 - 1,047 i	150 - 157	D
Fabricated metal products	332	3,879	79	397	4,197	318	8.2
Machinery	333	16,726	681	1,295	17,341	614	3.7
Agricultural implement	33311	1,799 - 1,807	41 - 60	216	1,955 - 1,982	156 - 175	D
Semiconductor machinery	333242	5,182	373	314	5,122 i	-60 i	-1.2
Engine, turbine, and power transmission equipment	3336	1,239 - 1,246	35 - 47	115	1,307 - 1,326	68 - 80	D
Other machinery	other 333	8,499	201 - 220	651	8,930 - 8,949	431 - 450	D
Computer and electronic products	334	94,211	5,272	9,468	98,407	4,196	4.5
Communications equipment	3342	11,339	480	731	11,591	252 i	2.2
Semiconductor and other electronic components	3344	45,516	2,360	5,014 i	48,170 i	2,654 i	5.8
Navigational, measuring, electromedical, and control instruments	3345	10,014	299	952	10,666 i	653	6.5
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	2,837	64	78 i	2,850 i	14 i	0.5
Search, detection, navigation, guidance, aeronautical, and nautical system and instruments	334511	2,109	65	357	2,401	292 i	13.9
Other measuring and controlling devices	other 3345	5,068	170	517	5,415	347	6.8
Other computer and electronic products	other 334	27,342	2,133	2,770	27,980	638	2.3

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Electrical equipment, appliances, and components	335	5,007	113	389	5,283	276	5.5
Transportation equipment	336	34,405	1,181	3,652	36,875 i	2,471 i	7.2
Motor vehicles, bodies, trailers, and parts	3361-63	22,754	969	2,813 i	24,598 i	1,844 i	8.1
Aerospace products and parts	3364	9,900	177	704	10,428 i	527	5.3
Aircraft, aircraft engine, and aircraft parts	336411-13	9,293	171	603	9,725 i	433	4.7
Guided missile, space vehicle, and related parts	336414-15, 336419	608	6	101	702	95	15.6
Military armored vehicle, tank, and tank components	336992	20 - 24	2 r	0 - 3	18 - 25 i	-2 - 1	D
Other transportation	other 336	1,726 - 1,731	33	133 - 137	1,826 - 1,835 i	100 - 104 i	D
Furniture and related products	337	423	10	29	441	19	4.4
Miscellaneous	339	20,822	644	2,164	22,343	1,521	7.3
Medical equipment and supplies	3391	18,204	597	1,936	19,543	1,339	7.4
Other miscellaneous manufacturing	3399	2,618	46	228	2,800	182	6.9
Nonmanufacturing industries	21-23, 42-81	240,138	6,182 i	24,394 i	258,350 i	18,212 i	7.6
Mining, quarrying, oil and gas extraction, and support activities	21	1,077 - 1,151	14	263 - 344	1,326 - 1,481	249 - 330	D
Utilities	22	133 - 17,961	9	1,003 i	1,127 - 18,955 i	994 i	D
Wholesale trade	42	1,661 - 1,770 i	30	693 - 816 i	2,324 - 2,556 i	663 - 786 i	D
Electronic shopping and electronic auctions	454111-12	5,931 - 24,034 i	1,222 i	1,087 i	5,796 - 23,900 i	-135 i	D
Transportation and warehousing	48-49	7,198 - 7,200	221 - 224	261	7,235 - 7,240	38 - 40	D
Information	51	146,488	2,893	10,768	154,364 i	7,876 i	5.4
Publishing	511	38,521	461	2,887	40,948	2,427	6.3
Newspaper, periodical, book, and directory publishers	5111	81	*	11 i	91 i	10 i	12.7
Software publishers	5112	38,441	460	2,877	40,857	2,417	6.3
Telecommunications	517	3,736 - 3,805	3 - 10	239 i	3,965 - 4,041 i	229 - 236 i	D
Data processing, hosting, and related services	518	44,585	549	3,821	47,857	3,272	7.3
Other information	other 51	59,577 - 59,647	1,872 - 1,879 i	3,820 i	61,518 - 61,595 i	1,941 - 1,948 i	D
Finance and insurance	52	20,902	643	3,491	23,751 i	2,849	13.6
Real estate and rental and leasing	53	2,095 - 2,097	20	243	2,317 - 2,320	223	D
Lessors of nonfinancial intangible assets (except copyrighted works)	533	5 - 8	0	4 - 11	9 - 19	4 - 11	D
Other real estate and rental and leasing	other 53	2,087 - 2,091	20	231 - 239	2,298 - 2,310	211 - 219	D

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Professional, scientific, and technical services	54	32,083	1,081	5,028	36,030	3,948	i 12.3
Architectural, engineering, and related services	5413	2,553	9	249	2,793	240	i 9.4
Computer systems design and related services	5415	17,188	612	2,367	18,943	1,755	i 10.2
Scientific research and development services	5417	6,123	188	1,467	7,402	1,279	20.9
Research and development in nanotechnology	541713	154	6	18	166	12	i 7.8
Research and development in biotechnology (except nanobiotechnology)	541714	1,664	53	535	2,146	482	28.9
Research and development in the physical, engineering, and life sciences (except nanotechnology and biotechnology)	541715	4,266	128	904	5,042	776	i 18.2
Research and development in the social sciences and humanities	541720	38	1	10	48	10	25.3
Other professional, scientific, and technical services	other 54	6,218	272	945	6,891	673	i 10.8
Health care services	621-23	1,965 - 2,043	39	345 - 436	2,271 - 2,440	306 - 397	i D
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	2,501 - 3,136	5 - 11	914 - 1,215	3,404 - 4,346	903 - 1,210	D
All companies (number of domestic employees)	-	527,804	18,433	52,844	562,215	34,411	6.5
Small companies							
10-19 ^a	-	4,258	83	474	4,649	391	i 9.2
20-49	-	12,626	226	1,719	14,119	1,493	i 11.8
Medium companies							
50-99	-	12,488	250	1,733	13,970	1,483	11.9
100-249	-	20,030	461	3,102	22,672	2,641	13.2
Large companies							
250-499	-	20,574	439	2,835	22,970	2,396	11.6
500-999	-	23,655	737	3,012	25,931	2,275	9.6
1,000-4,999	-	83,609	2,369	8,427	89,667	6,058	7.2
5,000-9,999	-	53,873	2,150	5,864	57,587	3,714	6.9
10,000-24,999	-	84,057	3,847	7,891	88,102	4,045	i 4.8
25,000 or more	-	212,634	7,872	17,787	222,548	9,914	i 4.7

* = amount is between \$0 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%.

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, 2021.