

TABLE 66

**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: 2022**

(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	691,547	22,557	36,069	705,060	13,513	r 2.0
Manufacturing industries	31-33	372,459	14,074	23,717	382,102	9,642	r 2.6
Food	311	7,143	270	544	7,417	274	i 3.8
Beverage and tobacco products	312	767	34	76	808	41	i 5.4
Textile, apparel, and leather products	313-16	635	16	44	664	28	i 4.4
Wood products	321	259	3	40	297	37	i 14.5
Paper	322	1,005	7	266	1,264	259	i 25.8
Printing and related support activities	323	165	10	12	167	2	i 1.2
Petroleum and coal products	324	860	36	142	966	106	i 12.3
Chemicals	325	125,728	4,278	6,121	127,571	1,843	i 1.5
Basic chemicals	3251	2,860	174	392	3,078	218	i 7.6
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	1,493	92	171	1,572	79	i 5.3
Pesticide, fertilizer, and other agricultural chemicals	3253	1,193	74	55	1,173	-20	i -1.6
Pharmaceuticals and medicines	3254	116,073	3,788	5,234	117,520	1,446	i 1.2
Soap, cleaning compound, and toilet preparations	3256	2,886	100	195	2,982	96	i 3.3
Paint, coating, adhesive, and other chemicals	3255, 3259	1,223	50	73	1,247	24	i 1.9
Plastics and rubber products	326	3,470	109	320	3,681	211	i 6.1
Nonmetallic mineral products	327	1,464	75	70	1,459	-5	i -0.3
Primary metals	331	1,120	31	225	1,313	193	i 17.3
Fabricated metal products	332	3,526	98	300	3,728	202	i 5.7
Machinery	333	19,464	790	1,788	20,462	998	i 5.1
Agricultural implement	33311	2,287	89	141	2,339	52	i 2.3
Semiconductor machinery	333242	5,438	400	581	5,620	181	i 3.3
Engine, turbine, and power transmission equipment	3336	3,026	79	144	3,091	65	i 2.1
Other machinery	other 333	8,713	223	922	9,412	699	i 8.0
Computer and electronic products	334	104,718	5,692	8,444	107,469	2,752	i 2.6
Communications equipment	3342	11,665	387	482	11,760	95	i 0.8
Semiconductor and other electronic components	3344	49,330	2,753	4,981	51,558	2,228	i 4.5
Navigational, measuring, electromedical, and control instruments	3345	12,777	306	479	12,949	172	i 1.3
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	4,578	113	149	4,614	36	i 0.8
Search, detection, navigation, guidance, aeronautical, and nautical system and instruments	334511	4,146	64	134	4,216	70	i 1.7
Other measuring and controlling devices	other 3345	4,053	129	195	4,119	66	i 1.6
Other computer and electronic products	other 334	30,946	2,246	2,503	31,202	257	i 0.8
Electrical equipment, appliances, and components	335	7,086	179	675	7,582	496	i 7.0
Transportation equipment	336	71,259	1,549	3,128	72,837	1,579	i 2.2
Motor vehicles, bodies, trailers, and parts	3361-63	32,881	1,049	2,159	33,991	1,110	i 3.4
Aerospace products and parts	3364	35,356	433	819	35,742	386	i 1.1

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Aircraft, aircraft engine, and aircraft parts	336411-13	24,571 i	154	408	24,825 i	254 i	1.0
Guided missile, space vehicle, and related parts	336414-15, 336419	10,785	279	411	10,918	133	1.2
Military armored vehicle, tank, and tank components	336992	30	*	*	30	*	-0.1
Other transportation	other 336	2,992	67	150	3,074 i	83	2.8
Furniture and related products	337	410	9	19	420	10	2.5
Miscellaneous	339	23,382	889	1,503	23,997	614	2.6
Medical equipment and supplies	3391	20,394	798	1,259	20,855	461	2.3
Other miscellaneous manufacturing	3399	2,989	91	244	3,142 i	153	5.1
Nonmanufacturing industries	21-23, 42-81	319,088	8,482	12,353	322,958 i	3,870 r	1.2
Mining, quarrying, oil and gas extraction, and support activities	21	D	D	D	1,230 i	D	D
Utilities	22	D	D	D	D	245 i	D
Wholesale trade	42	D	D	49	1,818 i	D	D
Electronic shopping and electronic auctions	454111-12	D	D	D	D	D	D
Transportation and warehousing	48-49	9,395	325	303	9,374 i	-22 i	-0.2
Information	51	182,340	4,054	7,889	186,175	3,835	2.1
Publishing	511	50,367	656	2,916	52,627	2,260	4.5
Newspaper, periodical, book, and directory publishers	5111	72	0	1 i	73	1 i	1.6
Software publishers	5112	50,295	656	2,915	52,554	2,259	4.5
Telecommunications	517	3,690	30 i	487 i	4,147 i	457 i	12.4
Data processing, hosting, and related services	518	49,407	562	1,053	49,898	491	1.0
Other information	other 51	78,876	2,806	3,433 i	79,502 i	627 i	0.8
Finance and insurance	52	17,222	738	59 i	16,543 i	-679 i	-3.9
Real estate and rental and leasing	53	2,398 i	48	145 i	2,495 i	97 i	4.0
Lessors of nonfinancial intangible assets (except copyrighted works)	533	5 i	0	*	5 i	*	7.2
Other real estate and rental and leasing	other 53	2,393 i	48	145 i	2,490 i	97 i	4.0
Professional, scientific, and technical services	54	74,773	2,182	2,370	74,961 i	188 i	0.3
Architectural, engineering, and related services	5413	3,883	26	91 i	3,948 i	65 i	1.7
Computer systems design and related services	5415	22,534	618	528	22,444	-90	-0.4
Scientific research and development services	5417	39,625 i	1,429 i	1,423	39,619 i	-7 i	*
Research and development in nanotechnology	541713	282	9	21	293	11	4.1
Research and development in biotechnology (except nanobiotechnology)	541714	10,226	236	345	10,335 i	109	1.1
Research and development in the physical, engineering, and life sciences (except nanotechnology and biotechnology)	541715	28,420 i	1,184 i	1,055	28,291 i	-129 i	-0.5
Research and development in the social sciences and humanities	541720	698	*	2	700	2	0.3
Other professional, scientific, and technical services	other 54	8,730	109	329 i	8,950 i	220 i	2.5
Health care services	621-23	2,855	141	38	2,752 i	-103 i	-3.6

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Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	3,394	D	D	3,501	108	i	3.2
All companies (number of domestic employees)	–	691,547	22,557	36,069	705,060	13,513	r	2.0
Small companies								
10–19 <sup>a</sup>	–	5,277	72	204	5,408	131	i	2.5
20–49	–	14,695	279	847	15,264	569	r	3.9
Medium companies								
50–99	–	15,265	263	887	15,888	624	r	4.1
100–249	–	27,847	641	1,540	28,746	899	r	3.2
Large companies								
250–499	–	29,549	768	1,322	30,103	554		1.9
500–999	–	31,802	999	1,729	32,532	730		2.3
1,000–4,999	–	104,505	2,808	4,944	106,642	2,136	i	2.0
5,000–9,999	–	58,709	2,303	3,152	59,559	850	i	1.4
10,000–24,999	–	121,142	5,002	7,313	123,453	2,311	i	1.9
25,000 or more	–	282,756	9,423	14,131	287,464	4,709	i	1.7

\* = -\$500,000 < amount < \$500,000 (or -0.05% < amount < 0.05%); 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.

<sup>a</sup> 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. To enable comparisons between U.S. statistics from the BERD Survey and statistics from 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. R&D from the BERD Survey, and adding capital expenditures relating to R&D operations, which is excluded from U.S. R&D from the BERD Survey.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, Business Enterprise Research and Development Survey, 2022.