

TABLE 42

## Domestic R&amp;D performance, by performer, source of funds, industry, and company size: 2022

(Millions of U.S. dollars)

Industry and company size	NAICS code	Performed by the company			Performed by others		
		Total	Paid for by the company	Paid for by others	Total	Paid for by the company	Paid for by others
All industries	21–23, 31–33, 42–81	691,547	608,058	83,489	54,152	45,489	8,663
Manufacturing industries	31–33	372,459	326,998	45,461	45,181	39,499	5,682
Food	311	7,143	D	D	224	D	D
Beverage and tobacco products	312	767	660	107	131	128	3
Textile, apparel, and leather products	313–16	635	D	D	D	D	*
Wood products	321	259	254	5	22	22	0
Paper	322	1,005	1,004	*	6	6	0
Printing and related support activities	323	165	164	1	4	3	*
Petroleum and coal products	324	860	856	4	195	194	1
Chemicals	325	125,728	113,518	12,210	32,297	28,847	3,450
Basic chemicals	3251	2,860	D	D	D	D	3
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	1,493	1,413	80	D	15	D
Pesticide, fertilizer, and other agricultural chemicals	3253	1,193	D	D	100	D	D
Pharmaceuticals and medicines	3254	116,073	104,720	11,353	31,731	28,319	3,411
Soap, cleaning compound, and toilet preparations	3256	2,886	D	D	D	D	1
Paint, coating, adhesive, and other chemicals	3255, 3259	1,223	1,195	29	D	D	D
Plastics and rubber products	326	3,470	3,251	219	46	37	8
Nonmetallic mineral products	327	1,464	1,435	29	27	19	8
Primary metals	331	1,120	1,099	20	27	18	10
Fabricated metal products	332	3,526	3,304	222	45	43	2
Machinery	333	19,464	18,246	1,218	468	412	56
Agricultural implement	33311	2,287	D	D	D	D	18
Semiconductor machinery	333242	5,438	5,390	48	14	12	2
Engine, turbine, and power transmission equipment	3336	3,026	D	D	D	D	13
Other machinery	other 333	8,713	7,987	725	157	134	22
Computer and electronic products	334	104,718	99,234	5,483	4,276	4,131	145
Communications equipment	3342	11,665	10,870	795	1,194	1,181	14
Semiconductor and other electronic components	3344	49,330	47,380	1,950	379	374	4
Navigational, measuring, electromedical, and control instruments	3345	12,777	10,105	2,671	D	D	125
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	4,578	3,959	619	131	104	27
Search, detection, navigation, guidance, aeronautical, and nautical system and instruments	334511	4,146	2,170	1,976	98	3	95
Other measuring and controlling devices	other 3345	4,053	3,976	77	D	D	3
Other computer and electronic products	other 334	30,946	30,879	67	D	D	2
Electrical equipment, appliances, and components	335	7,086	6,657	429	92	76	15

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Transportation equipment	336	71,259	46,468	24,790	6,239	4,270	1,969
Motor vehicles, bodies, trailers, and parts	3361-63	32,881	30,722	2,159	4,171	3,967	204
Aerospace products and parts	3364	35,356	13,786	21,570	2,005	240	1,765
Aircraft, aircraft engine, and aircraft parts	336411-13	24,571	9,303	15,268	1,852	98	1,754
Guided missile, space vehicle, and related parts	336414-15, 336419	10,785	4,483	6,302	153	142	11
Military armored vehicle, tank, and tank components	336992	30	26	4	1	1	0
Other transportation	other 336	2,992	1,935	1,057	63	63	0
Furniture and related products	337	410	405	5	7	6	1
Miscellaneous	339	23,382	23,032	350	D	1,055	D
Medical equipment and supplies	3391	20,394	20,112	282	972	963	9
Other miscellaneous manufacturing	3399	2,989	2,921	68	D	92	D
Nonmanufacturing industries	21-23, 42-81	319,088	281,060	38,028	8,971	5,989	2,981
Mining, quarrying, oil and gas extraction, and support activities	21	D	D	D	128	115	13
Utilities	22	D	D	D	658	640	18
Wholesale trade	42	D	D	41	142	137	4
Electronic shopping and electronic auctions	454111-12	D	D	0	60	60	0
Transportation and warehousing	48-49	9,395	D	D	39	38	1
Information	51	182,340	181,392	947	3,191	3,146	45
Publishing	511	50,367	49,674	693	1,311	1,272	39
Newspaper, periodical, book, and directory publishers	5111	72	72	1	20	20	0
Software publishers	5112	50,295	49,602	693	1,291	1,252	39
Telecommunications	517	3,690	3,614	76	522	520	2
Data processing, hosting, and related services	518	49,407	49,270	137	936	933	3
Other information	other 51	78,876	78,834	42	422	422	*
Finance and insurance	52	17,222	17,173	49	347	347	0
Real estate and rental and leasing	53	2,398	2,398	0	2	2	0
Lessors of nonfinancial intangible assets (except copyrighted works)	533	5	5	0	1	1	0
Other real estate and rental and leasing	other 53	2,393	2,393	0	1	1	0
Professional, scientific, and technical services	54	74,773	38,633	36,139	4,103	1,226	2,878
Architectural, engineering, and related services	5413	3,883	2,912	971	314	189	126
Computer systems design and related services	5415	22,534	18,878	3,656	529	427	102
Scientific research and development services	5417	39,625	9,297	30,328	3,045	507	2,539
Research and development in nanotechnology	541713	282	179	102	29	22	7
Research and development in biotechnology (except nanobiotechnology)	541714	10,226	2,916	7,310	340	241	99

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Research and development in the physical, engineering, and life sciences (except nanotechnology and biotechnology)	541715	28,420	i 6,176	22,244	i 2,675	i 242	2,433	i
Research and development in the social sciences and humanities	541720	698	27	672	1	i 1	i 0	
Other professional, scientific, and technical services	other 54	8,730	7,547	1,184	214	104	110	
Health care services	621-23	2,855	D	D	204	201	3	
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	3,394	3,300	94	97	78	19	
All companies (number of domestic employees)	-	691,547	608,058	83,489	54,152	45,489	8,663	
Small companies								
10-19 <sup>a</sup>	-	5,277	4,009	1,269	841	D	D	
20-49	-	14,695	12,788	1,907	1,723	1,521	201	
Medium companies								
50-99	-	15,265	13,274	1,990	2,262	D	D	
100-249	-	27,847	24,844	3,003	3,801	3,140	660	
Large companies								
250-499	-	29,549	26,469	3,080	3,692	3,121	570	
500-999	-	31,802	29,007	2,795	2,392	2,019	373	
1,000-4,999	-	104,505	94,615	9,890	6,608	5,479	1,129	
5,000-9,999	-	58,709	54,018	4,692	3,597	3,415	182	
10,000-24,999	-	121,142	96,071	25,072	i 14,229	11,792	2,437	
25,000 or more	-	282,756	252,964	29,792	15,006	12,317	2,689	

\* = 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; r = relative standard error is more than 50%.

NAICS = 2017 North American Industry Classification System.

<sup>a</sup> The Business Enterprise Research and Development 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 and are not comparable with estimates published for years prior to 2018.

**Source(s):**

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