

**TABLE 43**  
**Domestic R&D performance, by source of funds, performer, industry, and company size: 2022**  
(Millions of U.S. dollars)

Industry and company size	NAICS code	Paid for by the company			Paid for by others				
		Total	R&D performed by others (purchased and collaborative R&D)	R&D performed by the company	Total	R&D performed by others (subcontracted or passed-through R&D costs)	R&D performed by the company		
							Total	Paid for by the U.S. government	Paid for by non-U.S. government sources
All industries	21-23, 31-33, 42-81	653,547	45,489	608,058	92,152	8,663	83,489	31,626	51,863
Manufacturing industries	31-33	366,498	39,499	326,998	51,143	5,682	45,461	24,082	21,379
Food	311	7,012	D	D	355	D	D	0	D
Beverage and tobacco products	312	788	128	660	110	3	107	0	107
Textile, apparel, and leather products	313-16	629	D	D	D	*	D	5	D
Wood products	321	276	22	254	5	0	5	*	5
Paper	322	1,010	6	1,004	*	0	*	0	*
Printing and related support activities	323	167	3	164	1	*	1	0	1
Petroleum and coal products	324	1,050	194	856	5	1	4	*	4
Chemicals	325	142,366	28,847	113,518	15,660	3,450	12,210	766	11,444
Basic chemicals	3251	2,714	D	D	D	3	D	D	165
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	1,428	15	1,413	D	D	80	i	D
Pesticide, fertilizer, and other agricultural chemicals	3253	D	D	D	D	D	D	0	D
Pharmaceuticals and medicines	3254	133,039	28,319	104,720	14,765	3,411	11,353	703	10,651
Soap, cleaning compound, and toilet preparations	3256	2,978	D	D	D	1	D	0	D
Paint, coating, adhesive, and other chemicals	3255, 3259	D	D	1,195	D	D	29	19	9
Plastics and rubber products	326	3,288	37	3,251	227	8	219	25	194
Nonmetallic mineral products	327	1,454	19	1,435	37	8	29	r	3
Primary metals	331	1,117	18	1,099	30	10	20	r	*
Fabricated metal products	332	3,347	43	3,304	224	i	2	222	i
Machinery	333	18,658	412	18,246	1,273	56	1,218	673	545
Agricultural implement	33311	2,390	D	D	D	18	D	D	137
Semiconductor machinery	333242	5,402	12	5,390	50	2	48	14	34
Engine, turbine, and power transmission equipment	3336	2,745	D	D	D	13	D	235	D
Other machinery	other 333	8,122	134	7,987	748	22	r	725	D
Computer and electronic products	334	103,366	4,131	99,234	5,628	145	5,483	2,560	2,923
Communications equipment	3342	12,051	1,181	10,870	809	i	14	795	i
Semiconductor and other electronic components	3344	47,754	374	47,380	1,954	4	1,950	71	1,879
Navigational, measuring, electromedical, and control instruments	3345	D	D	10,105	2,796	125	2,671	2,246	425

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Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	4,063	104	3,959	645	27	619	402	217		
Search, detection, navigation, guidance, aeronautical, and nautical system and instruments	334511	2,173	3	2,170	2,071	95	1,976	1,824	152		
Other measuring and controlling devices	other 3345	D	D	3,976	80	3	77	20	57		
Other computer and electronic products	other 334	D	D	30,879	69	2	67	38	29		
Electrical equipment, appliances, and components	335	6,733	76	6,657	445	15	429	21	408		
Transportation equipment	336	50,738	4,270	46,468	26,759	1,969	24,790	19,934	4,857		
Motor vehicles, bodies, trailers, and parts	3361-63	34,689	3,967	30,722	2,363	204	2,159	D	D		
Aerospace products and parts	3364	14,026	240	13,786	23,335	1,765	21,570	18,855	2,715		
Aircraft, aircraft engine, and aircraft parts	336411-13	9,400	98	9,303	17,023	1,754	15,268	14,298	970		
Guided missile, space vehicle, and related parts	336414-15, 336419	4,625	142	4,483	6,312	11	6,302	4,557	1,745		
Military armored vehicle, tank, and tank components	336992	27	1	26	4	0	4	1	3		
Other transportation	other 336	1,997	63	1,935	1,057	0	1,057	D	D		
Furniture and related products	337	411	6	405	6	1	5	0	5		
Miscellaneous	339	24,087	1,055	23,032	D	D	350	77	273		
Medical equipment and supplies	3391	21,075	963	20,112	291	9	282	58	224		
Other miscellaneous manufacturing	3399	3,012	92	2,921	D	D	68	19	49		
Nonmanufacturing industries	21-23, 42-81	287,049	5,989	281,060	41,009	2,981	38,028	7,544	30,484		
Mining, quarrying, oil and gas extraction, and support activities	21	D	115	D	D	13	D	0	D		
Utilities	22	D	640	D	D	18	D	D	1		
Wholesale trade	42	D	137	D	45	4	41	1	40		
Electronic shopping and electronic auctions	454111-12	D	60	D	0	0	0	0	0		
Transportation and warehousing	48-49	D	38	D	D	1	D	D	D		
Information	51	184,538	3,146	181,392	993	45	947	176	772		
Publishing	511	50,945	1,272	49,674	732	39	693	102	591		
Newspaper, periodical, book, and directory publishers	5111	91	20	72	1	0	1	0	1		
Software publishers	5112	50,854	1,252	49,602	732	39	693	102	590		
Telecommunications	517	4,134	520	3,614	78	2	76	41	35		
Data processing, hosting, and related services	518	50,203	933	49,270	140	3	137	33	104		
Other information	other 51	79,256	422	78,834	42	*	42	0	42		

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Finance and insurance	52	17,520	347	i	17,173	49	0	49	0	49				
Real estate and rental and leasing	53	2,399	2	i	2,398	0	0	0	0	0				
Lessors of nonfinancial intangible assets (except copyrighted works)	533	6	i	1	i	5	0	0	0	0				
Other real estate and rental and leasing	other 53	2,394	1	r	2,393	0	0	0	0	0				
Professional, scientific, and technical services	54	39,859	1,226		38,633	39,017	i	2,878	i	36,139	i	7,273	28,866	i
Architectural, engineering, and related services	5413	3,100	189	i	2,912	1,097	126	971	475	497				
Computer systems design and related services	5415	19,304	427		18,878	3,759	102	3,656	897	2,760				
Scientific research and development services	5417	9,804	507		9,297	32,867	i	2,539	i	30,328	i	5,084	25,244	i
Research and development in nanotechnology	541713	201	22		179	110	7	102	71	31				
Research and development in biotechnology (except nanobiotechnology)	541714	3,157	241		2,916	7,409	99	7,310	701	6,610	i			
Research and development in the physical, engineering, and life sciences (except nanotechnology and biotechnology)	541715	6,418	242		6,176	24,677	i	2,433	i	22,244	i	3,700	18,543	i
Research and development in the social sciences and humanities	541720	28	1	i	27	672	0	672	612	60				
Other professional, scientific, and technical services	other 54	7,650	104		7,547	1,294	110	1,184	818	366				
Health care services	621-23	D	201		D	D	3	D	D	49				
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	3,378	78		3,300	113	19	94	1	93				
All companies (number of domestic employees)	-	653,547	45,489		608,058	92,152	8,663	83,489	31,626	51,863				
Small companies														
10-19 <sup>a</sup>	-	D	D		4,009	D	D	1,269	495	774				
20-49	-	14,310	1,521		12,788	2,108	201	1,907	741	1,166				
Medium companies														
50-99	-	D	D		13,274	D	D	1,990	746	1,244				
100-249	-	27,984	3,140		24,844	3,664	660	3,003	1,402	1,601				
Large companies														
250-499	-	29,591	3,121		26,469	3,650	570	3,080	687	2,393				
500-999	-	31,026	2,019		29,007	3,168	373	2,795	679	2,116				
1,000-4,999	-	100,094	5,479		94,615	11,019	1,129	9,890	1,672	8,218				
5,000-9,999	-	57,432	3,415		54,018	4,874	182	4,692	2,573	2,118				

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10,000–24,999	-	107,863	11,792	96,071	27,508	i	2,437	25,072	i	1,960	23,111	i
25,000 or more	-	265,281	12,317	252,964	32,481		2,689	29,792		20,670	9,122	

\* = 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.