



InfoBrief

Business R&D Performance in the United States Increases to \$765 Billion in 2024

NSF 27-301 | October 29, 2026

Businesses continued to increase their research and development (R&D) performance in 2024, spending \$765 billion on R&D in the United States, a 6.0% increase from 2023 ([table 1](#)). Funding from the companies' own sources accounted for \$679 billion of this spending in 2024, a 6.9% increase from 2023. Funding from other sources accounted for \$86 billion, similar to 2023 funding levels. Data for this InfoBrief are from the 2024 Business Enterprise Research and Development (BERD) Survey, developed and cosponsored by the National Center for Science and Engineering Statistics (NCSES) within the U.S. National Science Foundation (NSF) and by the Census Bureau, which collected and tabulated data for the survey.¹

Table 1. Funds spent for business R&D performed in the United States, by type of R&D, source of funds, and size of company: 2021–24

(Millions of dollars)

Selected characteristic and company size	2021	2022	2023	2024
Domestic R&D performance ^a	602,499	691,547	721,792	765,082
Type of R&D ^b				
Basic research	40,130	42,957	43,465	40,530
Applied research	86,485	100,654	109,927	116,358
Development	475,884	547,935	568,401	608,194
Paid for by the company ^c	527,804	608,058	635,478	679,371
Basic research	32,763	35,918	36,926	34,856
Applied research	69,130	80,834	89,755	95,812
Development	425,912	491,307	508,797	548,704
Paid for by others	74,695	83,489	86,314	85,711
Basic research	7,367	7,040	6,539	5,674
Applied research	17,355	19,821	20,172	20,546
Development	49,972	56,629	59,603	59,490
Source of funds				
Federal	23,582	31,626	32,008	30,995
Other ^d	51,113	51,863	54,306	54,716
Size of company (number of domestic employees)				
Small companies ^e				
10–19	5,477	5,277	5,808	4,790
20–49	15,061	14,695	14,520	16,179
Medium companies				
50–99	14,540	15,265	15,626	17,078
100–249	24,023	27,847	30,641	29,325
Large companies				
250–499	23,932	29,549	29,635	28,852
500–999	27,432	31,802	33,973	44,697
1,000–4,999	94,615	104,505	124,027	123,813
5,000–9,999	62,817	58,709	60,151	62,950
10,000–24,999	104,607	121,142	126,138	140,348
25,000 or more	229,995	282,756	281,273	297,050

i = more than 50% of the estimate is a combination of imputation and reweighting to account for nonresponse.

^a Domestic R&D performance includes both the cost of R&D paid for and performed by the respondent company as well as the cost of R&D paid for by others outside of the company and performed by the respondent company.

^b R&D comprises creative and systematic work undertaken in order to increase the stock of knowledge and to devise new applications of available knowledge. This includes (1) activities aimed at acquiring new knowledge or understanding without specific immediate commercial applications or uses (basic research), (2) activities aimed at solving a specific problem or meeting a specific commercial objective (applied research), and (3) systematic work, drawing on research and practical experience and resulting in additional knowledge, which is directed to producing new processes or to improving existing products—goods or services—or processes (development).

^c Paid for by the company includes foreign subsidiaries of U.S. companies.

^d Other includes companies located inside and outside the United States; U.S. state government agencies and laboratories; U.S. universities, colleges, and academic researchers; and all other organizations located inside and outside the United States.

^e Small company includes only companies with 10 or more domestic employees.

Note(s):
Detail may not add to total because of rounding.

Source(s):
National Center for Science and Engineering Statistics and Census Bureau, Business Enterprise Research and Development Survey.

R&D Performance, by Type of R&D, Industry Sector, and Source of Funding

In 2024, of the \$765 billion that companies spent on R&D, \$41 billion (5%) was for basic research, \$116 billion (15%) was for applied research, and \$608 billion (79%) was for development ([table 1](#)). In 2024, companies in manufacturing industries performed \$405 billion of domestic R&D (53% of total domestic R&D performance), defined as R&D performed in the 50 states and the District of Columbia ([table 2](#)). Most of the funding came from these companies' own funds (88%). Companies in nonmanufacturing industries performed \$360 billion of domestic R&D (47% of total), 90% of which was paid for from companies' own funds.

The U.S. federal government was a large source of external funding for R&D (also referred to as R&D paid for by others) across most industries. Of the \$86 billion in domestic R&D performance paid for by others, the federal government accounted for \$31 billion. Eighty-two percent of this federal government funding went to three industry groups: aerospace products and parts (North American Industry Classification System [NAICS] code 3364) (\$17 billion), scientific research and development services (NAICS 5417) (\$5 billion), and computer and electronic products (NAICS 334) (\$3 billion). Business R&D was also funded by other U.S. companies (\$27 billion) and by foreign companies (\$26 billion), which includes foreign parent companies of U.S. subsidiaries. A total of \$19 billion (69%) of all business R&D funded by other U.S. companies was within scientific research and development services (NAICS 5417). Sixty-three percent of foreign company R&D funding went to three industry groups: pharmaceuticals and medicine (NAICS 3254) (\$8 billion), computer and electronic products (NAICS 334) (\$4 billion), and scientific research and development services (NAICS 5417) (\$4 billion) ([table 2](#)). (See "[Survey Information and Data Availability](#)" for information on the availability of data tables with full industry detail.)

Table 2. Funds spent for business R&D performed in the United States, by source of funds, selected industry, and company size: 2024
(Millions of dollars)

Industry, NAICS code, and company size	All R&D ^a	Paid for by the company ^b	Paid for by others					
			Total	Federal	Companies		All other organizations ^d	
					Domestic	Foreign ^c		
All industries, 21–23, 31–33, 42–81	765,082	679,371	85,711	30,995	27,442	26,286	988	
Manufacturing industries, 31–33	405,092	356,431	48,661	23,361	7,184	17,580	535	
Chemicals, 325	143,745	131,790	11,954	684	2,029	9,060	D	
Pharmaceuticals and medicines, 3254	133,627	122,656	10,971	587 i	2,011	8,200	D	
Other 325	10,118	9,134	983	97	18	860	D	
Machinery, 333	22,035	19,844	2,191	161	406	1,576	48	
Computer and electronic products, 334	115,599	107,038	8,561	3,380	789 i	4,245	146	

Table 2. Funds spent for business R&D performed in the United States, by source of funds, selected industry, and company size: 2024

(Millions of dollars)

Industry, NAICS code, and company size	All R&D ^a	Paid for by the company ^b	Paid for by others					
			Total	Federal	Companies		All other organizations ^d	
					Domestic	Foreign ^c		
Communication equipment, 3342	12,839	12,069	771 i	D	D	D	0	
Semiconductor and other electronic products, 3344	52,358	48,546	3,812	243	200	3,310	60	
Other 334	50,402	46,423	3,978	D	D	D	86	
Electrical equipment, appliance, and components, 335	6,999	6,135	864	62	14	779	8	r
Transportation equipment, 336	71,231	47,039	24,192	18,950 i	3,761	1,361	120	
Motor vehicles, bodies, trailers, and parts, 3361–63	31,812	D	D	D	428	1,201	D	
Aerospace products and parts, 3364	35,904	15,130	20,774 i	17,217 i	3,312	D	D	
Other 336	3,515	D	D	D	21	D	D	
Manufacturing nec, other 31–33	45,483	44,585	899	124	185	559	213	
Nonmanufacturing industries, 21–23, 42–81	359,990	322,940	37,050	7,634	20,258 i	8,705 i	453	
Information, 51	228,174	226,853	1,322	60	587	639	36	
Software publishers, 5112	63,108	62,597	511	3	102	397	8	
Other 51	165,066	164,256	811	57	485	242	28	
Finance and insurance, 52	25,463	25,362	101	0	101	0	0	
Professional, scientific, and technical services, 54	74,548	40,134	34,415	7,297	19,437 i	7,292 i	388	
Computer systems design and related services, 5415	26,764	22,353	4,411	1,115	256	3,009	30	
Scientific research and development services, 5417	33,942	5,705	28,237	4,933	18,813 i	4,198 i	292	i
Other 54	13,842	12,076	1,767	1,249	368	85	66	
Nonmanufacturing nec, other 21–23, 42–81	31,805	30,591	1,212	277	133	774	29	
Size of company (number of domestic employees)								
Small companies ^e								
10–19	4,790	3,734	1,056	486	249	199	124	
20–49	16,179	14,153	2,026	808	668	411	138	
Medium companies								
50–99	17,078	14,998	2,080	703	621	697	59	
100–249	29,325	26,548	2,777	1,089	649	899	141	
Large companies								
250–499	28,852	26,185	2,667	878	242	1,502	D	
500–999	44,697	40,152	4,545	853	723	2,893	76	i
1,000–4,999	123,813	110,612	13,201	1,579	5,616 i	5,979	26	i
5,000–9,999	62,950	55,804	7,146	1,150	2,229	3,748 i	19	
10,000–24,999	140,348	120,991	19,357	2,108	7,823 i	9,217 i	210	i
25,000 or more	297,050	266,195	30,855	21,340 i	8,622	742	D	

D = suppressed to avoid disclosure of confidential information; 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 = North American Industry Classification System; nec = not elsewhere classified.

^a All R&D is the cost of R&D paid for and performed by the respondent company and paid for by others outside of the company and performed by the respondent company.

^b Paid for by the company includes foreign subsidiaries of U.S. companies (\$39.1 billion).

^c Foreign includes foreign parent companies of U.S. subsidiaries (\$23.8 billion) and unaffiliated companies (\$2.5 billion). Excludes funds from foreign subsidiaries to U.S. companies paid for through intercompany transactions (\$39.1 billion).

^d All other organizations includes U.S. state government agencies and laboratories (\$0.2 billion); U.S. universities, colleges, and academic researchers (< \$0.01 billion); and all other organizations located inside (\$0.6 billion) and outside the United States (< \$0.01 billion).

^e Small companies includes only companies with 10 or more domestic employees.

Note(s):

Detail may not add to total because of rounding. Industry classification was 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.

Source(s):

National Center for Science and Engineering Statistics and Census Bureau, Business Enterprise Research and Development Survey, 2024.

Sales, R&D Intensity, and Employment of Companies That Performed or Funded R&D

U.S. companies that performed or funded R&D reported domestic net sales of \$15 trillion in 2024 (table 3).² For all industries, the R&D intensity (R&D-to-sales ratio)³ was 5.1%; for manufacturers, 5.6%; and for nonmanufacturers, 4.6%. Manufacturing industries with high levels of R&D intensity in 2024 were semiconductor and other electronic products (NAICS 3344) (19.4%) and pharmaceuticals and medicines (NAICS 3254) (18.5%). Among the nonmanufacturing industries, industries with high levels of R&D intensity were scientific research and development services (NAICS 5417) (27.9%) and software publishers (NAICS 5112) (16.0%).

Table 3. Sales, R&D, R&D intensity, and employment for companies that performed or funded business R&D in the United States, by selected industry and company size: 2024

(Millions of dollars, percent R&D intensity, and thousands of employees)

Industry, NAICS code, and company size	Domestic net sales (\$millions) ^a	All R&D (\$millions) ^b	R&D intensity (%) ^c	Domestic employment (headcounts in thousands) ^d	
				Total	R&D ^e
All industries, 21–23, 31–33, 42–81	15,135,435	765,082	5.1	23,145	2,130
Manufacturing industries, 31–33	7,285,331	405,092	5.6	10,183	1,032
Chemicals, 325	1,259,907	143,745	11.4	1,397	227
Pharmaceuticals and medicines, 3254	724,024	133,627	18.5	691	176
Other 325	535,883	10,118	1.9	706	51
Machinery, 333	515,264	22,035	4.3	996	101
Computer and electronic products, 334	807,047	115,599	14.3	1,059	272
Communication equipment, 3342	115,196	12,839	11.1	194	36
Semiconductor and other electronic products, 3344	269,245	52,358	19.4	291	104
Other 334	422,606	50,402	11.9	574	132
Electrical equipment, appliance, and components, 335	162,178	6,999	4.3	297	25
Transportation equipment, 336	1,606,030	71,231	4.4	1,929	197
Motor vehicles, bodies, trailers, and parts, 3361–63	1,129,921	31,812	2.8	946	111
Aerospace products and parts, 3364	383,543	35,904	9.4	790	73
Other 336	92,566	3,515	3.8	193	13
Manufacturing nec, other 31–33	2,934,905	45,483	1.5	4,505	210
Nonmanufacturing industries, 21–23, 42–81	7,850,104	359,990	4.6	12,962	1,098
Information, 51	2,097,762	228,174	10.9	2,295	502
Software publishers, 5112	394,856	63,108	16.0	487	148
Other 51	1,702,906	165,066	9.7	1,808	354
Finance and insurance, 52	1,819,292	25,463	1.4	1,673	90
Professional, scientific, and technical services, 54	688,304	74,548	10.8	1,782	354
Computer systems design and related services, 5415	261,257	26,764	10.2	506	111
Scientific research and development services, 5417	121,831	33,942	27.9	352	124
Other 54	305,216	13,842	4.5	924	119
Nonmanufacturing nec, other 21–23, 42–81	3,244,746	31,805	1.0	7,212	152
Size of company (number of domestic employees)					
Small companies ^f					
10–19	30,319	4,790	15.8	69	26
20–49	100,439	16,179	16.1	249	74

Table 3. Sales, R&D, R&D intensity, and employment for companies that performed or funded business R&D in the United States, by selected industry and company size: 2024

(Millions of dollars, percent R&D intensity, and thousands of employees)

Industry, NAICS code, and company size	Domestic net sales (\$millions) ^a	All R&D (\$millions) ^b	R&D intensity (%) ^c	Domestic employment (headcounts in thousands) ^d	
				Total	R&D ^e
Medium companies					
50–99	129,288	17,078	13.2	333	87
100–249	302,493	29,325	9.7	690	130
Large companies					
250–499	394,434	28,852	7.3	713	112
500–999	573,710	44,697	7.8	1,108	122
1,000–4,999	2,186,331	123,813	5.7	3,121	381
5,000–9,999	1,536,232	62,950	4.1	1,945	203
10,000–24,999	2,862,457	140,348	4.9	3,560	323
25,000 or more	7,019,731	297,050	4.2	11,358	671
Size of company by group (number of domestic employees)					
Small ^f and medium companies					
10–249	562,539	67,372	12.0	1,341	317
Larger companies					
250–24,999	7,553,164	400,660	5.3	10,447	1,141
Largest companies					
25,000 or more	7,019,731	297,050	4.2	11,358	671

NAICS = North American Industry Classification System; nec = not elsewhere classified.

^a Dollar values are for goods sold or services rendered by R&D-performing or R&D-funding companies located in the United States to customers outside of the company, including the U.S. federal government, foreign customers, and the company's foreign subsidiaries. Included are revenues from a company's foreign operations and subsidiaries and from discontinued operations. If a respondent company is owned by a foreign parent company, sales to the parent company and to affiliates not owned by the respondent company are included. Excluded are intracompany transfers, returns, allowances, freight charges, and excise, sales, and other revenue-based taxes.

^b All R&D is the cost of R&D paid for and performed by the respondent company and paid for by others outside of the company and performed by the respondent company.

^c R&D intensity is the cost of domestic R&D paid for by the respondent company and others outside of the company and performed by the company divided by domestic net sales of companies that performed or funded R&D.

^d Data recorded on 12 March represent employment figures for the year.

^e Headcounts of researchers, R&D managers, technicians, clerical staff, and others assigned to R&D groups.

^f Small companies includes only companies with 10 or more domestic employees.

Note(s):

Detail may not add to total because of rounding. Industry classification was 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.

Source(s):

National Center for Science and Engineering Statistics and Census Bureau, Business Enterprise Research and Development Survey, 2024.

Businesses that performed or funded R&D employed 23.1 million people in the United States in 2024 (table 3).⁴ Approximately 2.1 million (9%) were business R&D employees.⁵

Of the 2.1 million people working on R&D in companies that performed or funded business R&D in 2024, 1.5 million (70%) were men and 0.6 million (30%) were women. For both male and female R&D workers, a higher share worked in nonmanufacturing (51% males and 53% females) than in manufacturing (49% males and 47% females) (table 4). Researchers—that is, scientists, engineers, and their managers—accounted for 1.5 million of the 2.1 million R&D workers (69%). Of the R&D researchers, 153,000 held a PhD. R&D technicians and equivalent staff numbered 470,000, and 198,000 were grouped as other supporting staff.

Table 4. Domestic employment, R&D employment by sex and work activity, R&D researchers by level of education, and full-time equivalent researcher employment for companies that performed or funded business R&D in the United States, by industrial sector: 2024

(Thousands of employees)

Industry and NAICS code	Domestic employment ^a	R&D employment																	
		Total		Male		Female		Researchers ^b			Technicians and equivalent staff		Other supporting staff ^c		Full-time equivalent ^d				
								Total	With PhD	Total					Researchers ^b				
All industries, 21–23, 31–33, 42–81	23,145	2,130		1,495		635		1,462		153		470		198		1,937		1,288	
Manufacturing industries, 31–33	10,183	1,032		735		297		718		96		198		116		956		633	
Nonmanufacturing industries, 21–23, 42–81	12,962	1,098		761		338		744		57		273		82		981		655	

i = more than 50% of the estimate is a combination of imputation and reweighting to account for nonresponse.

NAICS = North American Industry Classification System.

^a Data recorded on 12 March represent employment figures for the year.

^b Researchers includes R&D scientists and engineers and their managers.

^c Other supporting staff includes clerical staff and others assigned to R&D groups.

^d The number of persons employed who were assigned full time to R&D, plus a prorated number of employees who worked on R&D only part of the time.

Note(s):

Detail may not add to total because of rounding. Industry classification was 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. Excludes data for federally funded research and development centers. Also available in the full set of data tables are statistics on domestic R&D employment, by state; foreign R&D personnel headcounts, by country; and headcounts of leased (i.e., external) R&D personnel, by function.

Source(s):

National Center for Science and Engineering Statistics and Census Bureau, Business Enterprise Research and Development Survey, 2024.

R&D Performance, by Company Size

The largest companies (25,000 or more domestic employees) performed 39% of the nation’s total business R&D in 2024, and their R&D intensity was 4.2% (table 3). They accounted for 46% of sales, employed 49% of those who worked for R&D-performing or R&D-funding companies, and employed 32% of business R&D employees in the United States.

Larger companies with 250–24,999 domestic employees performed 52% of the nation’s total business R&D in 2024, and their R&D intensity was 5.3%. They accounted for 50% of sales, employed 45% of those who worked for R&D-performing or R&D-funding companies, and employed 54% of business R&D employees in the United States.

Small- and medium-sized companies (10–249 domestic employees) accounted for a low share (9%) of the nation’s total business R&D in 2024, but they had the highest R&D intensities of all business size classes. Small- and medium-sized companies that performed or funded R&D had an R&D intensity of 12.0%, higher than that of larger companies (5.3%), and the largest companies (4.2%). Small- and medium-sized companies accounted for 4% of sales and employed 6% of the 23 million employees who worked for R&D-performing or R&D-funding companies. They employed 15% of the 2.1 million employees engaged in business R&D in the United States.

R&D Performance, by State

In 2024, of the \$765 billion of business R&D performed in the United States, businesses in California alone accounted for 33.7% (table 5). Other states with large amounts of business R&D were Washington (7.7% of the national total in 2024), Massachusetts (7.1%), Texas (5.4%), New York (5.1%), and Michigan (3.3%).⁶

Table 5. Funds spent for business R&D performed in the United States, by state and source of funds: 2024

(Millions of dollars)

State	All R&D ^a	Paid for by the company	Paid for by others
United States	765,082	679,371	85,711
Alabama	4,934	2,412	2,523
Alaska	80	73	7
Arizona	9,762	7,649	2,114
Arkansas	719	633	86
California	257,566	243,582	13,984
Colorado	11,675	9,175	2,501
Connecticut	10,021	7,360	2,661
Delaware	8,345	6,204	2,141
District of Columbia	1,202	1,092	110
Florida	14,355	10,815	3,540
Georgia	10,506	9,208	1,298
Hawaii	372	346	27
Idaho	3,458	3,190	267
Illinois	20,761	19,566	1,194
Indiana	17,761	14,745	3,016
Iowa	4,757	4,249	508
Kansas	2,285	1,950	334
Kentucky	1,389	998	391
Louisiana	722	624	98
Maine	703	616	87
Maryland	9,468	6,149	3,318
Massachusetts	54,044	47,870	6,174
Michigan	25,628	23,226	2,401
Minnesota	9,433	8,536	898
Mississippi	547	472	75
Missouri	5,872	5,498	375
Montana	444	395	49
Nebraska	2,502	2,441	61
Nevada	2,905	2,554	351
New Hampshire	4,197	2,043	2,154
New Jersey	24,973	20,872	4,101
New Mexico	1,032	855	177
New York	39,007	36,658	2,349
North Carolina	19,178	14,076	5,103
North Dakota	597	574	23
Ohio	13,865	10,313	3,552
Oklahoma	2,659	2,569	90
Oregon	11,189	10,887	302
Pennsylvania	20,601	17,963	2,637
Rhode Island	700	652	48
South Carolina	3,606	3,278	329
South Dakota	298	261	37
Tennessee	4,571	3,391	1,180
Texas	41,538	34,206	7,332

Table 5. Funds spent for business R&D performed in the United States, by state and source of funds: 2024

(Millions of dollars)

State	All R&D ^a	Paid for by the company		Paid for by others	
Utah	4,709	4,504		204	
Vermont	805	773		33	
Virginia	9,883	7,345		2,538	
Washington	59,099	57,853		1,245	
West Virginia	445	392		53	
Wisconsin	9,163	7,582		1,581	i
Wyoming	74	71		3	
Undistributed funds ^b	675	623		52	

i = more than 50% of the estimate is a combination of imputation and reweighting to account for nonresponse.

^a All R&D is the cost of domestic R&D paid for by the respondent company and others outside of the company and performed by the respondent company.

^b Undistributed funds includes data reported that were not allocated to a specific state by multi-establishment companies. For single-establishment companies, data reported were allocated to the state in the address used to mail the survey form.

Note(s):

Detail may not add to total because of rounding.

Source(s):

National Center for Science and Engineering Statistics and Census Bureau, Business Enterprise Research and Development Survey, 2024.

Capital Expenditures

Companies that performed or funded R&D in the United States in 2024 spent more than \$1 trillion on capital, that is, assets with expected useful lives of more than 1 year (table 6). Of this amount, \$45 billion (4%) was for assets used for domestic R&D operations (i.e., land acquisitions, buildings and land improvement, equipment, capitalized software, and other assets). Companies in manufacturing industries spent \$27 billion on capital for domestic R&D, and companies in nonmanufacturing industries spent \$18 billion. Industries with high levels of capital expenditures on assets used for domestic R&D in 2024 were information (NAICS 51) (\$12 billion, or 27% of national capital expenditures on assets used for R&D) and pharmaceuticals and medicines (NAICS 3254) (\$8 billion, or 18%). Among all types of capital assets, both manufacturing and nonmanufacturing industries spent the most on equipment. For equipment, manufacturing disbursed \$16 billion, or 58% of total capital assets used for domestic R&D and nonmanufacturing industries spent \$12 billion, or 67%.

Table 6. Capital expenditures in the United States, total and amount used for domestic R&D, by type of expenditure, industry, and company size: 2024

(Millions of U.S. dollars)

Selected industry, NAICS code, and company size	Domestic capital total ^b	Used for domestic R&D ^a							
		Domestic total ^{b,c}	Land acquisition	Buildings and land improvement ^d	Equipment	Capitalized software	Other intellectual property	All other and undistributed ^e	
All industries, 21–23, 31–33, 42–81	1,107,042	44,908	109	5,743	27,488	4,153	3,368	4,047	
Manufacturing industries, 31–33	398,263	27,213	55	4,350	15,707	2,050	2,431	2,620	
Chemicals, 325	79,937	8,951	23	2,157	4,249	339	1,609	575	
Pharmaceuticals and medicines, 3254	38,358	8,021	20	2,016	3,589	314	1,565	517	
Other 325	41,579	930	3	141	660	25	44	58	
Machinery, 333	24,001	2,314	*	542	1,387	144	77	164	
Computer and electronic products, 334	60,989	6,901	4	289	5,138	660	271	540	
Communication equipment, 3342	10,691	i 455	2	D	351	35	i D	D	

Table 6. Capital expenditures in the United States, total and amount used for domestic R&D, by type of expenditure, industry, and company size: 2024

(Millions of U.S. dollars)

Selected industry, NAICS code, and company size	Domestic capital total ^b		Used for domestic R&D ^a													
			Domestic total ^{b,c}		Land acquisition		Buildings and land improvement ^d		Equipment		Capitalized software		Other intellectual property		All other and undistributed ^e	
Semiconductor and other electronic products, 3344	31,789	i	3,077	i	0		48	i	2,670	i	185		38		137	i
Other 334	18,509		3,369		2		D		2,117		440		D		D	
Electrical equipment, appliance, and components, 335	9,422		767		2		97		495		71		20	i	81	
Transportation equipment, 336	73,286		4,402		23		703	i	2,325		478		136		738	
Motor vehicles, bodies, trailers, and parts, 3361–63	57,894		2,955		D		513	i	1,443	i	438		120		D	
Aerospace products and parts, 3364	12,773		1,188		D		134		749		37		3	i	D	
Other 336	2,619		259		D		56		133		3		13		D	
Manufacturing nec, other 31–33	150,628		3,878		3		562		2,113		358		318		522	
Nonmanufacturing industries, 21–23, 42–81	708,779		17,695		54	i	1,394		11,781		2,103		937		1,427	
Information, 51	282,581		12,081		2		377		9,308		962		702		730	
Software publishers, 5112	60,768		4,385		1		169		3,633		207		238		136	
Telecommunications, 517	75,287		375	i	0		8		271	i	72		1		23	
Other 51	146,526		7,321		1		200		5,404		683		463		571	
Finance and insurance, 52	32,513		249		0		6		68	i	156		4		14	
Professional, scientific, and technical services, 54	24,164		3,146		22		588		1,252		698		180		405	
Computer systems design and related services, 5415	7,591		899		*	i	118		337		305		68	i	72	
Scientific research and development services, 5417	6,869		1,286		21		290		612		138		80		146	
Other 54	9,704		961		D		180		303		255		32		187	
Nonmanufacturing nec, other 21–23, 42–81	369,521		2,219		30		423		1,153		287		51		278	
Size of company (number of domestic employees)																
Small companies ^f																
10–19	1,774		382		*		22	i	185		30	i	52		92	
20–49	23,436	i	2,223	i	1	i	131		1,744	i	88	i	101	i	157	
Medium companies																
50–99	8,248		1,291		12		267		653		128		78		153	
100–249	18,334		2,100		7		296		977		437		115		267	
Large companies																
250–499	24,609		1,993		4		386		829		441		138		196	
500–999	32,517		2,863		3	i	398		1,005		457		177	i	823	
1,000–4,999	104,665		4,960		8		795		2,840		612		303		402	
5,000–9,999	124,498		4,163		1	i	378		2,426		276		947		135	i
10,000–24,999	260,446		6,956		12	i	1,665		3,641		403		871		365	i
25,000 or more	508,514		17,976		60		1,404		13,188		1,280		586		1,458	

* = 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 = North American Industry Classification System; nec = not elsewhere classified.

^a Domestic R&D is the R&D paid for by the respondent company and others outside of the company and performed by the company.

^b Capital expenditures are payments by a business for assets that usually have a useful life of more than 1 year. The value of assets acquired or improved through capital expenditures is recorded on a company's balance sheet. Statistics from the Business Enterprise Research and Development Survey exclude the cost of assets acquired through mergers and acquisitions.

^c Capital expenditures for long-lived assets used in a company's R&D operations are not included in its R&D expense, but any depreciation recorded for those assets is included in its R&D expense. For 2024, depreciation associated with domestic R&D paid for and performed by the company was \$29.3 billion and with domestic R&D performed by the company and paid for by others was \$2.6 billion.

^d Building and land improvement includes the cost of purchased or improved buildings and other facilities that are fixed to the land.

^e All other and undistributed includes the cost of other capital expenditures, including purchased patents and other intangible assets, and expenditures not distributed among the categories shown.

^f Small companies includes only companies with 10 or more domestic employees.

Note(s):

Detail may not add to total because of rounding. Industry classification was based on 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.

Source(s):

National Center for Science and Engineering Statistics and Census Bureau, Business Enterprise Research and Development Survey, 2024.

Survey Information and Data Availability

The sample for the BERD Survey was selected to represent for-profit,⁷ nonfarm companies that were publicly or privately held, had 10 or more employees in the United States, and performed or funded R&D either domestically or abroad. The estimates in this InfoBrief are based on responses from a sample of the population and may differ from actual values because of sampling variability or other factors. As a result, apparent differences between the estimates for two or more groups may not be statistically significant. All comparative statements in this InfoBrief have undergone statistical testing and are significant at the 90% confidence level unless otherwise noted. The variances of estimates in this report were calculated using design-based formulas. Also, because the statistics from the survey are based on a sample, they are subject to both sampling and nonsampling errors. (See the 2024 [Technical Notes](#).)

Beginning in survey year 2018, companies that performed or funded less than \$50,000 of R&D were excluded from tabulation.

In this InfoBrief, money amounts are expressed in current U.S. dollars and are not adjusted for inflation. A company is defined as a business organization located in the United States, either U.S. owned or a U.S. affiliate of a foreign parent company, of one or more establishments under common ownership or control.

For 2023, a total of 46,000 companies were sampled to represent the population of 1,157,000 companies; for 2024, a total of 45,500 companies were sampled, representing 1,171,000 companies. The actual numbers of reporting units in the sample that remained within the scope of the survey were 42,500 for 2023 and 42,500 for 2024. These lower counts represent the number of reporting units that were determined to be within the scope of the survey after all data collected were processed. Reasons for the reduced counts include mergers, acquisitions, and instances where companies had fewer than 10 employees in the United States or had gone out of business in the interim. Of these in-scope reporting units, 71% were considered to have met the criteria for a complete response to the 2023 survey; 66% fulfilled the 2024 complete response criteria. Industry classification was based on the dominant business activity for domestic R&D performance, where available. For reporting units that did not report business activity codes for R&D, the classification used for sampling was assigned.

The full set of data tables from the 2024 survey are available at the BERD Survey page: <https://nces.nsf.gov/surveys/business-enterprise-research-development>. Individual data tables and tables with relative standard errors and imputation rates from the 2024 survey are available from NCSES. To minimize reporting burden, survey items are rotated on and off the survey on an odd- and even-numbered year schedule. Statistics on R&D performed by others by type of performer, activities with academia, federal R&D by government agency, R&D by application area, and details of assets were rotated off the survey for 2024. Items rotated on the survey for 2024 include questions on patents, intellectual property, and technology transfer activities.

The BERD Survey contains confidential data that are protected under Title 13 and Title 26 of the U.S. Code. Restricted microdata can be accessed at the secure Federal Statistical Research Data Centers (FSRDCs) administered by the Census Bureau. FSRDCs are partnerships between federal statistical agencies and leading research institutions. FSRDCs provide secure environments supporting qualified researchers using restricted-access data while protecting respondent confidentiality. Researchers interested in accessing microdata can apply for a restricted-use license by submitting a proposal through the Standard Application Process (SAP). The proposal will be evaluated based on the benefit to the sponsoring agencies, scientific merit, feasibility, and risk of disclosure. To learn more and apply for access, visit the [Apply for Access to Restricted-Use Census Bureau Microdata](#) page or the [Standard Application Process](#). For additional information about the application process, including how to initiate a project, please contact the administrator at the primary site where the research will be conducted. Per the Federal Cybersecurity Enhancement Act of 2015, the data are protected from cybersecurity risks through screening of the systems that transmit the data.

This product has been reviewed for unauthorized disclosure of confidential information under NCSES-DRN26-042.

Notes

1 NSF has cosponsored an annual business R&D survey since 1953. The Survey of Industrial Research and Development (SIRD) collected data for 1953–2007, and its successor, the Business R&D and Innovation Survey (BRDIS), collected data for 2008–16. Beginning with 2017, the collection of innovation data was moved to the Annual Business Survey (ABS), another survey cosponsored with the Census Bureau, and BRDIS became the Business Research and Development Survey (BRDS). Beginning with 2019, the business R&D data collection reported here was renamed the Business Enterprise Research and Development (BERD) Survey for international comparability.

2 Determining the amount of domestic net sales and operating revenues was left to the reporting company. However, guidance was given to include revenues from foreign operations and subsidiaries and from discontinued operations and to exclude intracompany transfers, returns, allowances, freight charges, and excise, sales, and other revenue-based taxes.

3 R&D intensity is the cost of domestic R&D paid for by the respondent company and others outside of the company and performed by the company divided by domestic net sales of companies that performed or funded R&D.

4 Employment statistics in this InfoBrief are headcounts unless they are designated as full-time equivalent (FTE) estimates. R&D employees include researchers (defined as R&D scientists and engineers and their managers) and the technicians, technologists, and support staff members who work on R&D or who provide direct support to R&D activities.

5 The number of persons employed who were assigned full time to R&D plus a prorated number of employees who worked on R&D only part of the time was 2 million FTEs, of which 1.3 million FTEs were R&D researchers. These data are available in the [full set of data tables](#): table 50.

6 In addition to statistics for all states and for all states by industry, below-state level statistics are available in the full set of data tables and in other InfoBriefs; see NCSES. 2019. *Over Half of U.S. Business R&D Performed in 10 Metropolitan Areas in 2015*. NSF 19-322. Alexandria, VA: U.S. National Science Foundation. Available at <https://www.nsf.gov/statistics/2019/nsf19322/>. Also see NCSES. 2020. *Businesses Performed 60% of Their U.S. R&D in 10 Metropolitan Areas in 2018*. NSF 21-331. Alexandria, VA: U.S. National Science Foundation. Available at <https://ncses.nsf.gov/pubs/nsf21331>. Information and statistics on U.S. state trends in R&D, science and engineering education, workforce, patents and publications, and knowledge-intensive industries is also available in the Science and Engineering State Indicators data tool at <https://ncses.nsf.gov/indicators/states>.

7 All NAICS industries are in scope, with the exception of agriculture, forestry, fishing, and hunting (NAICS 11); postal service (NAICS 491); educational services (NAICS 61); private households (NAICS 814); and public administration (NAICS 92).

Suggested Citation

National Center for Science and Engineering Statistics (NCSES). 2026. *Business R&D Performance in the United States Increases to \$765 Billion in 2024*. NSF 27-301. Alexandria, VA: U.S. National Science Foundation. Available at <http://ncses.nsf.gov/pubs/nsf27301>.

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