



National Center for Science and  
Engineering Statistics

# Annual Business Survey: 2022 (Data Year 2021)

Data Tables | NSF 24-303 | October 30, 2023

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## General Notes

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This report provides data from the 2022 Annual Business Survey (ABS) (data year 2021). The ABS is the primary source of data on research and development of for-profit, nonfarm businesses with one to nine employees operating in the 50 U.S. states and the District of Columbia. The ABS also collects data on innovation, technology, intellectual property, and business owner characteristics of business of all sizes. The ABS is designed to incorporate new content each survey year based on topics of relevance. The 2022 ABS is the fifth year of the ABS. The survey is conducted annually by the Census Bureau for the National Center for Science and Engineering Statistics within the National Science Foundation.

The Census Bureau has reviewed this data product to ensure appropriate access, use, and disclosure avoidance protection of the confidential source data (Project No. P-7504866, Disclosure Review Board (DRB) approval number: CBDRB-FY23-0394).

This report is initially published with a selection of tables containing the core data of the survey. The report will be updated with additional tables as more detailed data become available. In some instances, the initial selection of tables may also be updated from a preliminary version to add further data.

The first set of tables in this report, 1–30, released in October 2023.

The second set of tables in this report, 31–85, released in June 2024.

The third and final set of tables in this report, CET-1–CET-64, released in August 2024.

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TABLE 1

**Annual Business Survey aggregate R&D estimates, by questionnaire reference and employment size, for companies with 1–9 employees in selected industries: 2021**

(Thousands of U.S. dollars)

Company and financial information	All companies	1–4 employees	5–9 employees
Number of companies	15,855	9,993	5,861
Total R&D cost	8,131,847	3,659,817	4,472,030
Foreign R&D costs	877,630	489,208	388,422
Domestic R&D costs	7,254,217	3,170,609	4,083,608
Domestic R&D costs for salaries, wages, and fringe benefits	4,036,146	1,660,533	2,375,613
Domestic R&D costs for expensed machinery and equipment (not capitalized)	199,530	78,328	121,202
Domestic R&D costs for materials and supplies	573,007	230,443	342,565
Domestic R&D costs for payments to others for R&D	1,129,548	579,812	549,737
Domestic R&D costs for depreciation on R&D property and equipment	74,926	26,770	48,156
Domestic R&D costs for other costs	1,241,060	594,723	646,336
Domestic R&D performance	6,124,669	2,590,797	3,533,871
Domestic R&D performance paid for by the company	4,550,744	1,980,752	2,569,991
Domestic R&D performance paid for by foreign owner	179,119	59,662	119,457
Domestic R&D performance paid for by another U.S. business	270,888	135,905	134,983
Domestic R&D performance paid for by other businesses located outside the United States	16,580	11,384	5,196
Domestic R&D performance paid for by U.S. university or college	7,685	6,383	1,302
Domestic R&D performance paid for by U.S. nonprofit organization	26,720	11,660	r 15,061
Domestic R&D performance paid for by U.S. federal government	1,004,852	340,324	664,528
Domestic R&D performance paid for by U.S. state or local government	63,157	42,372	20,785
Domestic R&D performance paid for by all other organizations outside the United States	4,923	2,355	r 2,568
Domestic R&D performance for basic research	715,225	329,829	385,395
Domestic R&D performance for applied research	2,221,924	869,487	1,352,437
Domestic R&D performance for development	3,187,520	1,391,481	1,796,039

r = relative standard error &gt; 50%.

**Note(s):**

Detail may not add to total because of rounding. Statistics are representative of companies located in the United States that performed or funded R&D. Selected industries include the 2017 North American Industry Classification System sectors 31, 32, 33, 42, and 51 and industries 5413, 5415, and 5417.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.



TABLE 2

**Total R&D cost, by selected industry and employment size, for companies with 1–9 employees: 2021**

(Number and thousands of U.S. dollars)

Industry	NAICS code	All companies		1–4 employees		5–9 employees	
		Companies (number)	Amount	Companies (number)	Amount	Companies (number)	Amount
All selected industries	31–33, 42, 51, 5413, 5415, 5417	15,855	8,131,847	9,993	3,659,817	5,861	4,472,030
Manufacturing industries	31–33	2,082	990,325	982	415,218	1,102	575,107
Food, beverage, and tobacco products	311–12	71	19,097	16	7,987	54	11,109
Textile, apparel, and leather products	313–16	20	7,096	20	7,096	0	0
Wood products	321	0	138	0	138	0	0
Paper	322	0	0	0	0	0	0
Printing and related support activities	323	0	0	0	0	0	0
Petroleum and coal products	324	2	739	0	0	2	739
Chemicals	325	349	224,348	188	113,915	162	110,433
Pharmaceuticals and medicines	3254	151	178,387	105	93,401	44	84,986
Chemicals, excluding pharmaceuticals	other 325	199	45,962	82	20,514	118	25,447
Plastics and rubber products	326	24	6,700	10	2,703	13	3,997
Nonmetallic mineral products	327	16	3,935	15	3,485	3	450
Primary metals	331	19	2,240	0	591	18	1,648
Fabricated metal products	332	74	16,827	34	10,196	41	6,631
Machinery	333	231	85,202	127	34,750	103	50,452
Computer and electronic products	334	740	372,243	353	109,934	388	262,308
Semiconductor and other electronic components	3344	182	124,080	91	35,134	90	88,946
Navigational, measuring, electromedical, and control instruments	3345	397	194,535	169	51,119	227	143,416
Other computer and electronic products	other 334	162	53,628	95	23,681	69	29,947
Electrical equipment, appliances, and components	335	146	42,416	50	8,593	95	33,824
Transportation equipment	336	78	36,232	42	21,551	37	14,681
Aerospace products and parts	3364	34	13,976	17	8,486	16	5,489
Other transportation equipment	other 336	46	22,257	25	13,065	22	9,192
Furniture and related products	337	4	1,471	2	1,094	3	377
Miscellaneous manufacturing	339	308	171,640	120	93,184	187	78,456
Selected nonmanufacturing industries	42, 51, 5413, 5415, 5417	13,774	7,141,522	9,012	3,244,599	4,760	3,896,923
Wholesale trade	42	551	172,456	213	40,464	339	131,992
Information	51	2,177	961,919	1,088	295,126	1,088	666,793
Software publishers	5112	1,583	657,405	808	219,923	774	437,482
Information, excluding software publishers	51 less 5112	595	304,514	281	75,204	315	229,310
Architectural, engineering, and related services	5413	1,954	667,715	1,277	278,295	678	389,420
Computer systems design and related services	5415	5,533	1,975,063	4,117	1,043,298	1,414	931,765
Scientific research and development services	5417	3,557	3,364,369	2,318	1,587,415	1,240	1,776,953
Research and development in nanotechnology	541713	356	216,133	203	99,765	153	116,368

TABLE 2

**Total R&D cost, by selected industry and employment size, for companies with 1–9 employees: 2021**

(Number and thousands of U.S. dollars)

Industry	NAICS code	All companies		1–4 employees		5–9 employees	
		Companies (number)	Amount	Companies (number)	Amount	Companies (number)	Amount
Research and development in biotechnology (except nanobiotechnology)	541714	1,136	1,491,139	756	731,902	381	759,238
Research and development in the physical, engineering, and life sciences (except nanotechnology and biotechnology)	541715	2,016	1,627,199	1,324	730,715	691	896,484
Social sciences and humanities research and development	541720	48	19,297	31	14,434	16	4,864

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States that performed or funded R&amp;D.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 3

## Total R&amp;D cost, by selected industry and employment size, for companies with 1–9 employees: 2019, 2020, and 2021

(Thousands of U.S. dollars)

Industry	NAICS code	2019			2020			2021		
		All companies	1–4 employees	5–9 employees	All companies	1–4 employees	5–9 employees	All companies	1–4 employees	5–9 employees
All selected industries	31–33, 42, 51, 5413, 5415, 5417	7,247,880	3,217,255	4,030,625	7,522,839	3,623,592	3,899,247	8,131,847	3,659,817	4,472,030
Manufacturing industries	31–33	891,188	415,797	475,391	822,687	359,533	463,154	990,325	415,218	575,107
Food, beverage, and tobacco products	311–12	6,315	4,218	2,096	20,378	16,061	4,317	19,097	7,987	11,109
Textile, apparel, and leather products	313–16	236	236	0	472	472	0	7,096	7,096	0
Wood products	321	4,065	0	4,065	0	0	0	138	138	0
Paper	322	0	0	0	0	0	0	0	0	0
Printing and related support activities	323	555	141	414	0	0	0	0	0	0
Petroleum and coal products	324	0	0	0	0	0	0	739	0	739
Chemicals	325	345,503	163,854	181,649	201,214	96,869	104,345	224,348	113,915	110,433
Pharmaceuticals and medicines	3254	259,782	110,653	149,129	104,539	64,689	39,850	178,387	93,401	84,986
Chemicals, excluding pharmaceuticals	other 325	85,721	53,201	32,520	96,675	32,181	64,495	45,962	20,514	25,447
Plastics and rubber products	326	6,397	3,340	3,057	23,004	18,051	4,953	6,700	2,703	3,997
Nonmetallic mineral products	327	12,945	216	12,729	133	133	0	3,935	3,485	450
Primary metals	331	2,568	2,568	0	9,299	9,299	0	2,240	591	1,648
Fabricated metal products	332	20,594	9,950	10,644	59,474	387	59,087	16,827	10,196	6,631
Machinery	333	33,020	23,556	9,464	94,664	37,612	57,052	85,202	34,750	50,452
Computer and electronic products	334	279,725	146,657	133,068	237,090	101,714	135,376	372,243	109,934	262,308
Semiconductor and other electronic components	3344	44,841	26,337	18,504	40,558	24,002	16,556	124,080	35,134	88,946
Navigational, measuring, electromedical, and control instruments	3345	205,358	115,084	90,274	175,504	67,481	108,022	194,535	51,119	143,416
Other computer and electronic products	other 334	29,526	5,235	24,291	21,029	10,231	10,798	53,628	23,681	29,947
Electrical equipment, appliances, and components	335	13,243	8,404	4,839	32,026	27,642	4,383	42,416	8,593	33,824
Transportation equipment	336	31,730	24,976	6,754	40,780	12,035	28,745	36,232	21,551	14,681
Aerospace products and parts	3364	15,341	10,107	5,234	21,446	11,007	10,439	13,976	8,486	5,489
Other transportation equipment	other 336	16,389	14,869	1,520	19,333	1,028	18,305	22,257	13,065	9,192
Furniture and related products	337	0	0	0	124	0	124	1,471	1,094	377
Miscellaneous manufacturing	339	134,291	27,680	106,611	104,028	39,257	64,770	171,640	93,184	78,456
Selected nonmanufacturing industries	42, 51, 5413, 5415, 5417	6,356,692	2,801,458	3,555,234	6,700,152	3,264,059	3,436,093	7,141,522	3,244,599	3,896,923
Wholesale trade	42	407,800	105,774	302,027	517,963	188,633	329,331	172,456	40,464	131,992
Information	51	708,356	314,081	394,274	829,283	373,836	455,448	961,919	295,126	666,793
Software publishers	5112	396,626	204,864	191,763	571,286	242,501	328,785	657,405	219,923	437,482
Information, excluding software publishers	51 less 5112	311,729	109,218	202,512	257,998	131,335	126,663	304,514	75,204	229,310
Architectural, engineering, and related services	5413	507,143	303,247	203,896	628,231	286,122	342,109	667,715	278,295	389,420
Computer systems design and related services	5415	1,848,184	910,765	937,419	1,473,927	879,174	594,753	1,975,063	1,043,298	931,765
Scientific research and development services	5417	2,885,208	1,167,591	1,717,617	3,250,748	1,536,295	1,714,453	3,364,369	1,587,415	1,776,953

TABLE 3

**Total R&D cost, by selected industry and employment size, for companies with 1–9 employees: 2019, 2020, and 2021**

(Thousands of U.S. dollars)

Industry	NAICS code	2019			2020			2021		
		All companies	1–4 employees	5–9 employees	All companies	1–4 employees	5–9 employees	All companies	1–4 employees	5–9 employees
Research and development in nanotechnology	541713	208,662	96,559	112,103	196,107	91,949	104,158	216,133	99,765	116,368
Research and development in biotechnology (except nanobiotechnology)	541714	1,174,789	496,758	678,031	1,548,115	757,706	790,409	1,491,139	731,902	759,238
Research and development in the physical, engineering, and life sciences (except nanotechnology and biotechnology)	541715	1,462,446	560,509	901,937	1,479,130	677,617	801,514	1,627,199	730,715	896,484
Social sciences and humanities research and development	541720	37,089	11,544	25,546	27,396	9,023	18,373	19,297	14,434	4,864

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States that performed or funded R&D.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 4

**Domestic R&D performed by the company, by selected industry and employment size, for companies with 1–9 employees: 2021**

(Number and thousands of U.S. dollars)

Industry	NAICS code	All companies		1–4 employees		5–9 employees	
		Companies (number)	Amount	Companies (number)	Amount	Companies (number)	Amount
All selected industries	31–33, 42, 51, 5413, 5415, 5417	15,339	6,124,669	9,611	2,590,797	5,727	3,533,871
Manufacturing industries	31–33	2,029	747,124	941	326,147	1,089	420,977
Food, beverage, and tobacco products	311–12	71	18,270	16	7,327	54	10,944
Textile, apparel, and leather products	313–16	20	7,096	20	7,096	0	0
Wood products	321	0	134	0	134	0	0
Paper	322	0	0	0	0	0	0
Printing and related support activities	323	0	0	0	0	0	0
Petroleum and coal products	324	2	739	0	0	2	739
Chemicals	325	320	132,255	164	65,465	156	66,790
Pharmaceuticals and medicines	3254	133	96,666	91	53,353	43	43,313
Chemicals, excluding pharmaceuticals	other 325	186	35,589	74	12,112	112	23,477
Plastics and rubber products	326	22	6,427	11	2,453	13	3,974
Nonmetallic mineral products	327	16	3,638	15	3,187	3	450
Primary metals	331	19	2,117	0	508	18	1,609
Fabricated metal products	332	70	11,983	34	6,702	37	5,281
Machinery	333	231	64,109	127	28,854	103	35,255
Computer and electronic products	334	724	279,203	337	88,957	387	190,246
Semiconductor and other electronic components	3344	181	71,280	90	30,231	90	41,049
Navigational, measuring, electromedical, and control instruments	3345	394	164,799	167	42,347	226	122,452
Other computer and electronic products	other 334	150	43,124	83	16,379	69	26,745
Electrical equipment, appliances, and components	335	145	40,032	50	8,370	94	31,662
Transportation equipment	336	78	33,911	42	19,845	37	14,066
Aerospace products and parts	3364	34	13,003	17	7,688	16	5,315
Other transportation equipment	other 336	46	20,908	25	12,157	22	8,752
Furniture and related products	337	4	1,471	2	1,094	3	377
Miscellaneous manufacturing	339	306	145,741	118	86,156	187	59,584
Selected nonmanufacturing industries	42, 51, 5413, 5415, 5417	13,312	5,377,544	8,671	2,264,650	4,639	3,112,894
Wholesale trade	42	546	143,063	207	35,526	339	107,536
Information	51	2,049	756,657	1,011	214,033	1,038	542,624
Software publishers	5112	1,509	535,950	742	151,758	766	384,192
Information, excluding software publishers	51 less 5112	541	220,707	268	62,275	272	158,432
Architectural, engineering, and related services	5413	1,952	606,186	1,275	244,629	676	361,557
Computer systems design and related services	5415	5,315	1,616,190	3,960	786,257	1,357	829,933
Scientific research and development services	5417	3,447	2,255,449	2,218	984,204	1,230	1,271,244
Research and development in nanotechnology	541713	349	172,582	197	63,725	153	108,858

TABLE 4

**Domestic R&D performed by the company, by selected industry and employment size, for companies with 1–9 employees: 2021**

(Number and thousands of U.S. dollars)

Industry	NAICS code	All companies		1–4 employees		5–9 employees	
		Companies (number)	Amount	Companies (number)	Amount	Companies (number)	Amount
Research and development in biotechnology (except nanobiotechnology)	541714	1,085	868,580	712	421,066	374	447,514
Research and development in the physical, engineering, and life sciences (except nanotechnology and biotechnology)	541715	1,970	1,193,678	1,280	483,287	688	710,391
Social sciences and humanities research and development	541720	42	12,047	26	7,566	16	4,481

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States that performed or funded R&amp;D.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 5

## Domestic R&amp;D performed by the company, by selected industry and R&amp;D program size, for companies with 1–9 employees: 2021

(Thousands of U.S. dollars)

Industry	NAICS code	R&D program size (total)				
		Total	\$50,000–\$99,999	\$100,000–\$499,999	\$500,000–\$999,999	\$1 million or more
All selected industries	31–33, 42, 51, 5413, 5415, 5417	6,124,669	150,438	1,775,504	1,258,925	2,939,802
Manufacturing industries	31–33	747,124	19,513	225,094	167,527	334,991
Food, beverage, and tobacco products	311–12	18,270	119	12,011	3,644	2,495
Textile, apparel, and leather products	313–16	7,096	83	1,786	5,226	0
Wood products	321	134	134	0	0	0
Paper	322	0	0	0	0	0
Printing and related support activities	323	0	0	0	0	0
Petroleum and coal products	324	739	0	0	739	0
Chemicals	325	132,255	4,299	31,054	19,716	77,185
Pharmaceuticals and medicines	3254	96,666	1,180	11,470	13,745	70,271
Chemicals, excluding pharmaceuticals	other 325	35,589	3,119	19,584	5,972	6,914
Plastics and rubber products	326	6,427	537	661	2,653	2,576
Nonmetallic mineral products	327	3,638	73	1,293	2,271	0
Primary metals	331	2,117	561	1,556	0	0
Fabricated metal products	332	11,983	1,190	10,793	0	0
Machinery	333	64,109	375	35,254	6,359	22,121
Computer and electronic products	334	279,203	6,890	71,460	92,815	108,038
Semiconductor and other electronic components	3344	71,280	325	19,441	24,621	26,892
Navigational, measuring, electromedical, and control instruments	3345	164,799	5,594	31,504	50,656	77,044
Other computer and electronic products	other 334	43,124	970	20,515	17,537	4,101
Electrical equipment, appliances, and components	335	40,032	1,859	18,745	1,591	17,837
Transportation equipment	336	33,911	400	7,311	13,666	12,533
Aerospace products and parts	3364	13,003	400	3,453	3,157	5,993
Other transportation equipment	other 336	20,908	0	3,859	10,510	6,540
Furniture and related products	337	1,471	0	377	1,094	0
Miscellaneous manufacturing	339	145,741	2,992	32,792	17,751	92,205
Selected nonmanufacturing industries	42, 51, 5413, 5415, 5417	5,377,544	130,925	1,550,410	1,091,398	2,604,812
Wholesale trade	42	143,063	11,323	57,491	6,703	67,545
Information	51	756,657	12,610	251,541	193,960	298,546
Software publishers	5112	535,950	10,012	174,840	153,661	197,436
Information, excluding software publishers	51 less 5112	220,707	2,598	76,700	40,298	101,110
Architectural, engineering, and related services	5413	606,186	23,035	227,052	240,997	115,102
Computer systems design and related services	5415	1,616,190	66,315	655,872	199,033	694,969
Scientific research and development services	5417	2,255,449	17,642	358,453	450,704	1,428,649
Research and development in nanotechnology	541713	172,582	1,418	42,990	70,412	57,762

TABLE 5

**Domestic R&D performed by the company, by selected industry and R&D program size, for companies with 1–9 employees: 2021**

(Thousands of U.S. dollars)

Industry	NAICS code	R&D program size (total)				
		Total	\$50,000–\$99,999	\$100,000–\$499,999	\$500,000–\$999,999	\$1 million or more
Research and development in biotechnology (except nanobiotechnology)	541714	868,580	5,531	95,409	130,587	637,052
Research and development in the physical, engineering, and life sciences (except nanotechnology and biotechnology)	541715	1,193,678	10,692	211,775	245,938	725,274
Social sciences and humanities research and development	541720	12,047	0	8,279	3,768	0

r = relative standard error > 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States that performed or funded R&D.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.



TABLE 6

## Domestic R&amp;D costs, by selected industry and type of cost, for companies with 1–9 employees: 2021

(Thousands of U.S. dollars)

Industry	NAICS code	Total	Salaries, wages, and fringe benefits	Expensed machinery and equipment	Materials and supplies	Payments to others for R&D	Depreciation on R&D property and equipment	All other costs
All selected industries	31–33, 42, 51, 5413, 5415, 5417	7,254,217	4,036,146	199,530	573,007	1,129,548	74,926	1,241,060
Manufacturing industries	31–33	920,331	425,563	27,714	128,070	173,207	9,581	156,196
Food, beverage, and tobacco products	311–12	19,097	11,185	2,710	3,718	827	57	600
Textile, apparel, and leather products	313–16	7,096	2,523	39	493	0	16	4,024
Wood products	321	138	106	14	3	4	0	11
Paper	322	0	0	0	0	0	0	0
Printing and related support activities	323	0	0	0	0	0	0	0
Petroleum and coal products	324	739	444	30	148	0	0	118
Chemicals	325	208,440	59,578	8,664	25,060	76,185	3,357	35,595
Pharmaceuticals and medicines	3254	163,546	37,379	6,958	22,124	66,881	2,717	27,488
Chemicals, excluding pharmaceuticals	other 325	44,894	22,199	1,706	2,937	9,305	640	8,107
Plastics and rubber products	326	6,486	3,001	491	940	59	115	1,880
Nonmetallic mineral products	327	3,808	3,250	0	327	170	8	52
Primary metals	331	2,240	930	348	253	123	209	376
Fabricated metal products	332	15,819	5,495	1,130	2,569	3,836	367	2,422
Machinery	333	76,360	46,830	1,091	6,670	12,252	81	9,437
Computer and electronic products	334	330,785	172,865	7,014	50,420	51,582	4,163	44,741
Semiconductor and other electronic components	3344	105,362	48,223	3,199	7,767	34,082	2,006	10,084
Navigational, measuring, electromedical, and control instruments	3345	179,628	102,953	2,865	35,825	14,829	1,141	22,014
Other computer and electronic products	other 334	45,795	21,689	950	6,828	2,672	1,016	12,642
Electrical equipment, appliances, and components	335	41,714	25,638	1,707	6,881	1,682	426	5,381
Transportation equipment	336	36,042	20,951	1,703	9,961	2,131	185	1,112
Aerospace products and parts	3364	13,903	9,043	311	3,031	900	45	573
Other transportation equipment	other 336	22,139	11,907	1,391	6,930	1,231	139	540
Furniture and related products	337	1,471	273	286	54	0	36	821
Miscellaneous manufacturing	339	170,097	72,495	2,487	20,574	24,356	560	49,626
Selected nonmanufacturing industries	42, 51, 5413, 5415, 5417	6,333,886	3,610,583	171,816	444,937	956,342	65,345	1,084,863
Wholesale trade	42	154,712	71,006	7,676	43,108	11,649	1,159	20,114
Information	51	784,850	617,001	39,065	17,102	28,193	6,171	77,319
Software publishers	5112	560,818	460,456	9,596	13,299	24,868	6,109	46,490
Information, excluding software publishers	51 less 5112	224,032	156,545	29,469	3,803	3,325	61	30,829
Architectural, engineering, and related services	5413	647,610	447,922	27,288	59,372	41,424	7,188	64,415
Computer systems design and related services	5415	1,690,254	1,226,739	27,900	40,717	74,064	5,269	315,566
Scientific research and development services	5417	3,056,460	1,247,915	69,886	284,639	801,012	45,559	607,450
Research and development in nanotechnology	541713	201,891	111,127	5,676	17,371	29,309	2,815	35,595
Research and development in biotechnology (except nanobiotechnology)	541714	1,288,461	441,338	18,479	115,229	419,881	20,267	273,267

TABLE 6

**Domestic R&D costs, by selected industry and type of cost, for companies with 1–9 employees: 2021**

(Thousands of U.S. dollars)

Industry	NAICS code	Total	Salaries, wages, and fringe benefits	Expensed machinery and equipment	Materials and supplies	Payments to others for R&D	Depreciation on R&D property and equipment	All other costs
Research and development in the physical, engineering, and life sciences (except nanotechnology and biotechnology)	541715	1,538,246	677,439	45,557	151,157	344,568	22,421	297,103
Social sciences and humanities research and development	541720	17,262	9,856	174	474	5,215	56 r	1,485

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States that performed or funded R&amp;D.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 7

## Domestic R&amp;D performed by the company, by selected industry and source of funds, for companies with 1–9 employees: 2021

(Thousands of U.S. dollars)

Industry	NAICS code	Total	Paid for by the company	Foreign owner	Another U.S. company	Other businesses outside the United States	U.S. university or college	U.S. nonprofit organization	U.S. federal government	U.S. state or local government	All other organizations outside the United States
All selected industries	31–33, 42, 51, 5413, 5415, 5417	6,124,669	4,550,744	179,119	270,888	16,580	7,685	26,720	1,004,852	63,157	4,923
Manufacturing industries	31–33	747,124	533,030	41,326	13,745	2,068	1,444	2,178	142,418	10,098	818 r
Food, beverage, and tobacco products	311–12	18,270 r	16,920 r	0	0	0	484	0	865 r	0	0
Textile, apparel, and leather products	313–16	7,096 r	7,096 r	0	0	0	0	0	0	0	0
Wood products	321	134	134	0	0	0	0	0	0	0	0
Paper	322	0	0	0	0	0	0	0	0	0	0
Printing and related support activities	323	0	0	0	0	0	0	0	0	0	0
Petroleum and coal products	324	739	739	0	0	0	0	0	0	0	0
Chemicals	325	132,255	105,357	12,466	2,993	404	26	1,323	9,686	0	0
Pharmaceuticals and medicines	3254	96,666	71,680	12,466	1,988 r	152 r	0	1,323	9,056	0	0
Chemicals, excluding pharmaceuticals	other 325	35,589	33,676	0	1,005	252	26	0	630	0	0
Plastics and rubber products	326	6,427	4,712	0	0	0	0	0	1,715	0	0
Nonmetallic mineral products	327	3,638 r	3,151 r	0	0	0	0	0	486 r	0	0
Primary metals	331	2,117	2,117	0	0	0	0	0	0	0	0
Fabricated metal products	332	11,983 r	11,687 r	0	296 r	0	0	0	0	0	0
Machinery	333	64,109	46,810	0	5,921 r	690 r	329 r	0	8,376	1,983 r	0
Computer and electronic products	334	279,203	218,156	7,113 r	1,818 r	973	186	855 r	48,733	552	818 r
Semiconductor and other electronic components	3344	71,280	63,840	0	0	0	161	129	6,159	173	818 r
Navigational, measuring, electromedical, and control instruments	3345	164,799	118,083	5,818 r	344	588	24	726 r	38,853	362	0
Other computer and electronic products	other 334	43,124	36,232	1,296	1,474 r	385 r	0	0	3,721 r	16	0
Electrical equipment, appliances, and components	335	40,032	24,452	10,662 r	0	0	345	0	468	4,105 r	0
Transportation equipment	336	33,911	26,796	0	559	0	74	0	3,219	3,264 r	0
Aerospace products and parts	3364	13,003	8,931	0	559	0	74	0	3,219	0	0
Other transportation equipment	other 336	20,908	17,865	0	0	0	0	0	0	3,043 r	0
Furniture and related products	337	1,471 r	1,185 r	0	0	0	0	0	286	0	0
Miscellaneous manufacturing	339	145,741	63,719	11,085 r	2,158 r	0	0	0	68,584 r	195	0
Selected nonmanufacturing industries	42, 51, 5413, 5415, 5417	5,377,544	4,017,713	137,793	257,144	14,513	6,241	24,542	862,434	53,059	4,106
Wholesale trade	42	143,063	120,053	507 r	0	1,488	183 r	0	20,777 r	54 r	0
Information	51	756,657	726,206	1,343 r	3,675	2,745	0	513	20,623	1,551	0
Software publishers	5112	535,950	511,079	471	3,307	2,745	0	280 r	16,517	1,551	0
Information, excluding software publishers	51 less 5112	220,707	215,127	872 r	368 r	0	0	233 r	4,107	0	0
Architectural, engineering, and related services	5413	606,186	461,332	2,580	61,996	1,021	1,233 r	4,544 r	70,603	2,877	0
Computer systems design and related services	5415	1,616,190	1,230,848	23,820 r	53,930	0	227 r	9,867 r	295,102 r	1,764 r	631 r
Scientific research and development services	5417	2,255,449	1,479,275	109,543	137,542	9,258	4,597	9,618	455,328	46,813	3,475
Research and development in nanotechnology	541713	172,582	116,927	5,374 r	6,006	0	659 r	2,046 r	40,900	404	0
Research and development in biotechnology (except nanobiotechnology)	541714	868,580	610,670	38,829	49,949	3,284	968 r	4,448	130,369	28,243 r	1,821 r

TABLE 7

**Domestic R&D performed by the company, by selected industry and source of funds, for companies with 1–9 employees: 2021**

(Thousands of U.S. dollars)

Industry	NAICS code	Total	Paid for by the company	Foreign owner	Another U.S. company	Other businesses outside the United States	U.S. university or college	U.S. nonprofit organization	U.S. federal government	U.S. state or local government	All other organizations outside the United States
Research and development in the physical, engineering, and life sciences (except nanotechnology and biotechnology)	541715	1,193,678	735,709	65,340	80,924	5,707	1,765	2,924	281,490	18,165	1,654
Social sciences and humanities research and development	541720	12,047	7,408	0	664	0	1,205	200	2,570	0	0

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States that performed or funded R&amp;D.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

**TABLE 8**  
**Domestic R&D performed by the company and funded by the federal government and selected industry, by employment size, for companies with 1–9 employees: 2021**

(Number and thousands of U.S. dollars)

Industry	NAICS code	All companies		1–4 employees		5–9 employees	
		Companies with federally funded R&D (number)	Amount	Companies with federally funded R&D (number)	Amount	Companies with federally funded R&D (number)	Amount
All selected industries	31–33, 42, 51, 5413, 5415, 5417	1,974	1,004,852	1,102	340,324	871	664,528
Manufacturing industries	31–33	255	142,418	150	89,341	106	53,077
Food, beverage, and tobacco products	311–12	4	865	0	119	3	746
Textile, apparel, and leather products	313–16	0	0	0	0	0	0
Wood products	321	0	0	0	0	0	0
Paper	322	0	0	0	0	0	0
Printing and related support activities	323	0	0	0	0	0	0
Petroleum and coal products	324	0	0	0	0	0	0
Chemicals	325	20	9,686	14	5,352	6	4,334
Pharmaceuticals and medicines	3254	16	9,056	11	4,722	6	4,334
Chemicals, excluding pharmaceuticals	other 325	3	630	3	630	0	0
Plastics and rubber products	326	4	1,715	4	395	0	1,320
Nonmetallic mineral products	327	6	486	6	486	0	0
Primary metals	331	0	0	0	0	0	0
Fabricated metal products	332	0	0	0	0	0	0
Machinery	333	35	8,376	13	1,868	23	6,508
Computer and electronic products	334	118	48,733	65	17,819	52	30,914
Semiconductor and other electronic components	3344	18	6,159	14	3,726	5	2,433
Navigational, measuring, electromedical, and control instruments	3345	85	38,853	39	10,372	45	28,481
Other computer and electronic products	other 334	12	3,721	12	3,721	0	0
Electrical equipment, appliances, and components	335	0	468	0	0	0	468
Transportation equipment	336	5	3,219	0	1,418	3	1,800
Aerospace products and parts	3364	5	3,219	0	1,418	3	1,800
Other transportation equipment	other 336	0	0	0	0	0	0
Furniture and related products	337	3	286	0	0	3	286
Miscellaneous manufacturing	339	59	68,584	47	61,884	13	6,700
Selected nonmanufacturing industries	42, 51, 5413, 5415, 5417	1,717	862,434	952	250,983	764	611,451
Wholesale trade	42	60	20,777	3	1,832	57	18,945
Information	51	76	20,623	46	6,795	29	13,829
Software publishers	5112	56	16,517	27	2,969	28	13,547
Information, excluding software publishers	51 less 5112	20	4,107	19	3,825	0	282
Architectural, engineering, and related services	5413	229	70,603	85	18,868	143	51,736
Computer systems design and related services	5415	244	295,102	98	17,223	145	277,879
Scientific research and development services	5417	1,105	455,328	716	206,267	388	249,062
Research and development in nanotechnology	541713	107	40,900	63	17,352	45	23,547

**TABLE 8**  
**Domestic R&D performed by the company and funded by the federal government and selected industry, by employment size, for companies with 1–9 employees: 2021**

(Number and thousands of U.S. dollars)

Industry	NAICS code	All companies		1–4 employees		5–9 employees	
		Companies with federally funded R&D (number)	Amount	Companies with federally funded R&D (number)	Amount	Companies with federally funded R&D (number)	Amount
Research and development in biotechnology (except nanobiotechnology)	541714	324	130,369	205	60,689	120	69,679
Research and development in the physical, engineering, and life sciences (except nanotechnology and biotechnology)	541715	665	281,490	442	126,068	223	155,423
Social sciences and humanities research and development	541720	10	2,570	8	r 2,157	2	412

r = relative standard error > 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States that performed or funded R&D.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 9

**Domestic R&D performed by the company, by selected industry and type of R&D, for companies with 1–9 employees: 2021**

(Thousands of U.S. dollars)

Industry	NAICS code	Total	Basic research	Applied research	Development
All selected industries	31–33, 42, 51, 5413, 5415, 5417	6,124,669	715,225	2,221,924	3,187,520
Manufacturing industries	31–33	747,124	59,635	275,850	411,640
Food, beverage, and tobacco products	311–12	18,270 r	704	3,942	13,624 r
Textile, apparel, and leather products	313–16	7,096 r	1,425 r	1,980 r	3,691 r
Wood products	321	134	14	21	99
Paper	322	0	0	0	0
Printing and related support activities	323	0	0	0	0
Petroleum and coal products	324	739	0	148	592
Chemicals	325	132,255	14,608	52,897	64,750
Pharmaceuticals and medicines	3254	96,666	11,004	38,762	46,899
Chemicals, excluding pharmaceuticals	other 325	35,589	3,604	14,135	17,850
Plastics and rubber products	326	6,427	204	3,787	2,436 r
Nonmetallic mineral products	327	3,638 r	2,236 r	811 r	590
Primary metals	331	2,117	295	806 r	1,016 r
Fabricated metal products	332	11,983 r	3,864 r	3,509 r	4,609 r
Machinery	333	64,109	4,914	18,164	41,031
Computer and electronic products	334	279,203	21,513	87,924	169,765
Semiconductor and other electronic components	3344	71,280	8,498	29,458	33,324
Navigational, measuring, electromedical, and control instruments	3345	164,799	10,675	46,797	107,327
Other computer and electronic products	other 334	43,124	2,340	11,670	29,114
Electrical equipment, appliances, and components	335	40,032	1,809 r	16,157	22,065
Transportation equipment	336	33,911	1,208 r	6,696	26,007
Aerospace products and parts	3364	13,003	266	4,607	8,130
Other transportation equipment	other 336	20,908	942 r	2,090 r	17,876
Furniture and related products	337	1,471 r	0	559	912 r
Miscellaneous manufacturing	339	145,741	6,841	78,446 r	60,454
Selected nonmanufacturing industries	42, 51, 5413, 5415, 5417	5,377,544	655,590	1,946,074	2,775,881
Wholesale trade	42	143,063	20,107 r	49,941	73,015
Information	51	756,657	80,314	217,708	458,635
Software publishers	5112	535,950	62,233	164,325	309,391
Information, excluding software publishers	51 less 5112	220,707	18,080	53,383	149,244
Architectural, engineering, and related services	5413	606,186	75,293	155,913	374,980
Computer systems design and related services	5415	1,616,190	170,785	595,870	849,535
Scientific research and development services	5417	2,255,449	309,092	926,641	1,019,716
Research and development in nanotechnology	541713	172,582	27,987	73,792	70,804
Research and development in biotechnology (except nanobiotechnology)	541714	868,580	146,062	308,060	414,458
Research and development in the physical, engineering, and life sciences (except nanotechnology and biotechnology)	541715	1,193,678	133,318	538,713	521,647
Social sciences and humanities research and development	541720	12,047	1,725	6,076	4,246

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States that performed or funded R&D.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.



TABLE 10

**Domestic R&D performed by the company, by selected industry, for companies with 1–9 employees: 2019, 2020, and 2021**

(Thousands of U.S. dollars)

Industry	NAICS code	2019	2020	2021
All selected industries	31–33, 42, 51, 5413, 5415, 5417	5,218,911	5,600,668	6,124,669
Manufacturing industries	31–33	622,220	627,387	747,124
Food, beverage, and tobacco products	311–12	5,896	9,614	18,270 r
Textile, apparel, and leather products	313–16	236	472 r	7,096 r
Wood products	321	4,065	0	134
Paper	322	0	0	0
Printing and related support activities	323	555	0	0
Petroleum and coal products	324	0	0	739
Chemicals	325	178,170	160,031	132,255
Pharmaceuticals and medicines	3254	117,508	77,054	96,666
Chemicals, excluding pharmaceuticals	other 325	60,661	82,977	35,589
Plastics and rubber products	326	6,261	18,099	6,427
Nonmetallic mineral products	327	5,860	133	3,638 r
Primary metals	331	2,353	9,077 r	2,117
Fabricated metal products	332	20,518	37,292 r	11,983 r
Machinery	333	22,057	62,840	64,109
Computer and electronic products	334	227,158	189,225	279,203
Semiconductor and other electronic components	3344	38,305	36,372	71,280
Navigational, measuring, electromedical, and control instruments	3345	161,373	135,652	164,799
Other computer and electronic products	other 334	27,480	17,201	43,124
Electrical equipment, appliances, and components	335	9,592	24,958 r	40,032
Transportation equipment	336	24,577	38,247	33,911
Aerospace products and parts	3364	11,859	19,307	13,003
Other transportation equipment	other 336	12,718	18,940 r	20,908
Furniture and related products	337	0	124	1,471 r
Miscellaneous manufacturing	339	114,922	77,276	145,741
Selected nonmanufacturing industries	42, 51, 5413, 5415, 5417	4,596,691	4,973,281	5,377,544
Wholesale trade	42	225,813	392,416	143,063
Information	51	598,684	689,766	756,657
Software publishers	5112	327,921	468,557	535,950
Information, excluding software publishers	51 less 5112	270,764	221,209	220,707
Architectural, engineering, and related services	5413	454,913	574,367	606,186
Computer systems design and related services	5415	1,435,159	1,122,622	1,616,190
Scientific research and development services	5417	1,882,122	2,194,110	2,255,449
Research and development in nanotechnology	541713	175,639	162,996	172,582
Research and development in biotechnology (except nanobiotechnology)	541714	645,887	913,514	868,580
Research and development in the physical, engineering, and life sciences (except nanotechnology and biotechnology)	541715	1,026,911	1,099,371	1,193,678
Social sciences and humanities research and development	541720	31,464	18,229	12,047

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States that performed or funded R&D.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

**TABLE 11**  
**Domestic sales and domestic R&D performed by the company as a percentage of domestic sales, by selected industry and employment size, for companies with 1–9 employees: 2021**

(Thousands of U.S. dollars and percent)

Industry	NAICS code	All companies		1–4 employees		5–9 employees	
		Total sales	R&D as percentage of sales	Total sales	R&D as percentage of sales	Total sales	R&D as percentage of sales
All selected industries	31–33, 42, 51, 5413, 5415, 5417	14,404,579	43	5,896,014	44	8,508,565	42
Manufacturing industries	31–33	2,481,919	30	676,678	48	1,805,241	23
Food, beverage, and tobacco products	311–12	161,694 r	11 r	29,791	25 r	131,903 r	8 r
Textile, apparel, and leather products	313–16	17,383	41 r	17,383	41 r	0	0
Wood products	321	110	122	110	122	0	0
Paper	322	0	0	0	0	0	0
Printing and related support activities	323	0	0	0	0	0	0
Petroleum and coal products	324	0	0	0	0	0	0
Chemicals	325	554,360	24	105,687	62 r	448,673	15
Pharmaceuticals and medicines	3254	115,349	84 r	32,752	163 r	82,597	52 r
Chemicals, excluding pharmaceuticals	other 325	439,010	8	72,934	17 r	366,076	6
Plastics and rubber products	326	36,857	17	13,696 r	18 r	23,161	17
Nonmetallic mineral products	327	13,482 r	27 r	12,333 r	26 r	1,148	39
Primary metals	331	25,945 r	8 r	333	152	25,612 r	6 r
Fabricated metal products	332	44,037 r	27 r	1,898	353	42,139 r	13 r
Machinery	333	206,671	31 r	82,425	35 r	124,246	28 r
Computer and electronic products	334	874,194	32	191,719	46	682,475	28
Semiconductor and other electronic components	3344	213,136	33 r	55,974	54 r	157,163	26 r
Navigational, measuring, electromedical, and control instruments	3345	454,887	36	104,711	40 r	350,177	35
Other computer and electronic products	other 334	206,170	21	31,035	53	175,135	15
Electrical equipment, appliances, and components	335	186,206	21	76,035 r	11 r	110,172 r	29 r
Transportation equipment	336	99,879	34	30,473	65	69,406	20
Aerospace products and parts	3364	29,152	45 r	8,770	88	20,382	26
Other transportation equipment	other 336	70,727	30	21,703 r	56	49,024	18
Furniture and related products	337	2,164	68 r	55 r	2,000 r	2,110	18
Miscellaneous manufacturing	339	258,937	56	114,740 r	75 r	144,197	41 r
Selected nonmanufacturing industries	42, 51, 5413, 5415, 5417	11,922,660	45	5,219,336	43	6,703,324	46
Wholesale trade	42	677,836	21	121,911 r	29 r	555,926	19
Information	51	1,883,352	40	578,490	37	1,304,862	42
Software publishers	5112	1,382,671	39	392,245	39	990,426	39
Information, excluding software publishers	51 less 5112	500,681	44	186,245	33	314,436	50
Architectural, engineering, and related services	5413	2,265,778	27	866,339	28	1,399,439	26
Computer systems design and related services	5415	4,752,032	34	2,569,060	31	2,182,973	38
Scientific research and development services	5417	2,343,661	96	1,083,536	91	1,260,125	101
Research and development in nanotechnology	541713	158,222	109	78,764	81	79,459	137

**TABLE 11**  
**Domestic sales and domestic R&D performed by the company as a percentage of domestic sales, by selected industry and employment size, for companies with 1–9 employees: 2021**

(Thousands of U.S. dollars and percent)

Industry	NAICS code	All companies		1–4 employees		5–9 employees	
		Total sales	R&D as percentage of sales	Total sales	R&D as percentage of sales	Total sales	R&D as percentage of sales
Research and development in biotechnology (except nanobiotechnology)	541714	678,671	128	340,728	124	337,943	132
Research and development in the physical, engineering, and life sciences (except nanotechnology and biotechnology)	541715	1,472,335	81	641,371	75	830,965	85
Social sciences and humanities research and development	541720	23,832	51	12,074	63	11,758	38

r = relative standard error > 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States that performed or funded R&D.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 12

**Domestic R&D performed by the company, by state and employment size, for companies with 1–9 employees: 2021**

(Number and thousands of U.S. dollars)

State	All companies		1–4 employees		5–9 employees	
	Companies (number)	Amount	Companies (number)	Amount	Companies (number)	Amount
All states	15,339	6,124,669	9,611	2,590,797	5,727	3,533,871
Alabama	80	27,599	68	18,036	13	9,563
Alaska	4	826	4	826	0	0
Arizona	256	88,693	162	38,821	93	49,871
Arkansas	56	19,073	19	5,784	38	13,289
California	3,953	2,012,984	2,547	701,550	1,407	1,311,433
Colorado	602	234,304	316	91,543	287	142,761
Connecticut	98	48,150	60	18,600	37	29,550
Delaware	165	69,107	109	44,344	57	24,763
District of Columbia	27	17,781	17	12,430	11	5,351
Florida	711	281,389	455	170,107	257	111,282
Georgia	337	96,196	272	46,919	64	49,277
Hawaii	11	2,953	10	1,828	2	1,125
Idaho	49	18,782	r 15	2,493	36	r 16,289
Illinois	429	150,100	289	54,633	139	r 95,467
Indiana	194	62,734	145	40,815	48	21,919
Iowa	78	18,990	56	11,902	23	7,088
Kansas	106	r 23,961	83	r 16,546	r 24	7,414
Kentucky	97	25,048	69	14,846	29	10,202
Louisiana	23	5,739	10	3,548	11	r 2,192
Maine	46	r 8,666	32	r 4,995	r 15	3,670
Maryland	422	172,731	305	92,600	117	80,131
Massachusetts	570	278,140	331	115,643	239	162,497
Michigan	310	102,184	153	40,265	157	61,919
Minnesota	430	128,300	300	52,184	129	76,117
Mississippi	31	7,556	20	4,695	10	2,862
Missouri	171	32,212	108	r 16,055	r 64	16,158
Montana	34	14,611	14	2,292	19	12,319
Nebraska	19	7,014	16	5,925	2	1,089
Nevada	111	43,669	75	25,364	35	18,305
New Hampshire	67	43,419	34	9,529	34	33,890
New Jersey	256	134,415	161	84,273	95	50,142
New Mexico	63	25,502	35	11,867	28	13,635
New York	665	226,485	424	83,783	242	142,702
North Carolina	431	144,595	280	71,987	150	72,608

TABLE 12

**Domestic R&D performed by the company, by state and employment size, for companies with 1–9 employees: 2021**

(Number and thousands of U.S. dollars)

State	All companies		1–4 employees		5–9 employees	
	Companies (number)	Amount	Companies (number)	Amount	Companies (number)	Amount
North Dakota	12	3,068	5	1,491	8	1,577
Ohio	542	144,642	236	54,361	307	90,281
Oklahoma	107	30,764	89	19,605	20	11,159
Oregon	238	80,522	147	43,015	92	37,507
Pennsylvania	527	183,302	348	131,770	178	51,532
Rhode Island	18	6,696	16	5,937	3	758
South Carolina	178	95,782	36	14,113	144	81,669
South Dakota	12	3,156	7	966	6	2,190
Tennessee	116	47,601	65	19,105	50	28,496
Texas	842	301,057	479	133,984	362	167,073
Utah	189	66,559	140	31,699	48	34,860
Vermont	71	17,876	3	948	67	16,928
Virginia	543	137,037	385	57,374	158	79,663
Washington	572	243,051	425	105,850	147	137,201
West Virginia	20	3,795	18	2,426	2	1,369
Wisconsin	348	147,494	165	39,997	182	107,497
Wyoming	73	30,242	40	5,834	34	24,408
Undistributed	18	8,117	8	5,295	9	2,822

r = relative standard error &gt; 50%.

**Note(s):**

Detail may not add to total because of rounding. Statistics are representative of companies located in the United States that performed or funded R&amp;D.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 13

## Domestic R&amp;D performed by the company, by state and source of funds, for companies with 1–9 employees: 2021

(Thousands of U.S. dollars)

State	Total	Paid for by the company	Foreign owner	Another U.S. company	Other businesses outside the United States	U.S. university or college	U.S. nonprofit organization	U.S. federal government	U.S. state or local government	All other organizations outside the United States
All states	6,124,669	4,550,744	179,119	270,888	16,580	7,685	26,720	1,004,852	63,157	4,923
Alabama	27,599	18,371	0	2,711	0	0	0	6,517	0	0
Alaska	826	0	0	44	0	345	0	437	0	0
Arizona	88,693	66,849	9,015 r	3,175	83 r	0	0	9,137	0	433 r
Arkansas	19,073	16,580	0	1,362 r	0	0	0	1,131	0	0
California	2,012,984	1,366,577	99,861	83,999	5,892	991 r	16,770	405,457 r	32,619 r	818 r
Colorado	234,304	184,814	594 r	19,231	0	536	838 r	26,099	2,192	0
Connecticut	48,150	34,231	2,007 r	604	45	68 r	1,395	9,709	7	84 r
Delaware	69,107	46,860	8,216	2,018 r	12 r	15	0	11,795 r	193 r	0
District of Columbia	17,781	12,813	1,898	1,391	0	0	0	1,678	0	0
Florida	281,389	199,663	0	10,611	711 r	590	0	68,067 r	1,549 r	198
Georgia	96,196	70,475	0	9,078 r	0	0	0	16,523	119 r	0
Hawaii	2,953	2,953	0	0	0	0	0	0	0	0
Idaho	18,782 r	18,325 r	0	5	235	88	0	54	8	67
Illinois	150,100	127,212	2,019 r	1,343	0	62	0	15,413	4,051 r	0
Indiana	62,734	45,816	5,899 r	4,292 r	3,229	228 r	0	3,077	193 r	0
Iowa	18,990	13,102	1,296	0	0	0	0	4,032	361	199 r
Kansas	23,961	15,431	0	3,756 r	0	0	1,435 r	3,338 r	0	0
Kentucky	25,048	18,740	0	900	0	0	0	5,129	279 r	0
Louisiana	5,739	3,398 r	0	67 r	0	0	0	1,368	906	0
Maine	8,666	7,012	166	1,059	0	0	0	429	0	0
Maryland	172,731	108,654	8,081	9,808 r	765 r	903	501	41,262	2,756	0
Massachusetts	278,140	219,594	1,957 r	10,674	201	169 r	2,616	41,361	110	1,458 r
Michigan	102,184	90,822	0	523 r	0	192 r	0	9,687	961	0
Minnesota	128,300	111,347	852	7,038	0	0	0	8,935 r	128	0
Mississippi	7,556	6,973	0	165 r	0	0	0	418	0	0
Missouri	32,212	27,132	0	1,237 r	0	0	0	3,843	0	0
Montana	14,611	11,679	0	1	0	0	0	2,893	38	0
Nebraska	7,014	5,656	0	0	0	0	201 r	1,157	0	0
Nevada	43,669	35,461	0	981 r	179	0	0	6,732 r	316 r	0
New Hampshire	43,419	37,033	0	280	2,538	0	0	3,569	0	0
New Jersey	134,415	104,651	2,668 r	4,528 r	0	0	200 r	20,649	1,720	0
New Mexico	25,502	13,201	0	3,841	0	0	0	8,259	201	0
New York	226,485	186,246	1,066	4,880 r	891	212 r	0	32,905	284 r	0
North Carolina	144,595	107,158	12,156	2,705	0	1,225 r	699 r	19,972	679	0
North Dakota	3,068	2,763	0	0	0	0	0	305	0	0

TABLE 13

**Domestic R&D performed by the company, by state and source of funds, for companies with 1–9 employees: 2021**

(Thousands of U.S. dollars)

State	Total	Paid for by the company		Foreign owner	Another U.S. company	Other businesses outside the United States	U.S. university or college	U.S. nonprofit organization	U.S. federal government	U.S. state or local government	All other organizations outside the United States
Ohio	144,642	129,856		0	3,918	0	74	1,725 r	8,428	641	0
Oklahoma	30,764	22,999		0	5,588 r	0	0	0	2,177	0	0
Oregon	80,522	49,026		5,897 r	15,872	0	1,194 r	0	8,355	179	0
Pennsylvania	183,302	136,052		10,157 r	900	0	0	0	31,426	4,767 r	0
Rhode Island	6,696	3,561		0	0	0	0	0	3,135	0	0
South Carolina	95,782 r	83,633 r		0	811	0	0	0	10,438	900	0
South Dakota	3,156	3,156		0	0	0	0	0	0	0	0
Tennessee	47,601	31,384		0	2,901 r	0	0	0	9,789	3,528	0
Texas	301,057	267,854		1,766	4,027	751	773	0	25,683	138 r	64 r
Utah	66,559	55,690		0	1,406	0	14	0	9,449	0	0
Vermont	17,876 r	1,326		0	431	0	0	0	14,929 r	1,190 r	0
Virginia	137,037	95,486		310 r	6,129 r	514 r	0	129	32,940	0	1,529
Washington	243,051	177,903		3,237	32,777 r	533 r	0	210 r	27,534	784	73
West Virginia	3,795	1,489 r		0	1,369	0	0	0	924	13 r	0
Wisconsin	147,494	135,818 r		0	2,387	0	0	0	8,298	990 r	0
Wyoming	30,242 r	10,755 r		0	0	0	6	0	19,237 r	243	0
Undistributed	8,117	7,162 r		0	65	0	0	0	775	116	0

r = relative standard error &gt; 50%.

**Note(s):**

Detail may not add to total because of rounding. Statistics are representative of companies located in the United States that performed or funded R&amp;D.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 14

**Domestic R&D employees, by selected industry and employment size, for companies with 1–9 employees: 2021**

(Number)

Industry	NAICS code	All companies	1–4 employees	5–9 employees
All selected industries	31–33, 42, 51, 5413, 5415, 5417	38,962	16,374	22,587
Manufacturing industries	31–33	4,686	1,582	3,104
Food, beverage, and tobacco products	311–12	89 r	25	65 r
Textile, apparel, and leather products	313–16	25	25	0
Wood products	321	6	6	0
Paper	322	0	0	0
Printing and related support activities	323	0	0	0
Petroleum and coal products	324	9	0	9
Chemicals	325	607	240	367
Pharmaceuticals and medicines	3254	296	161	135
Chemicals, excluding pharmaceuticals	other 325	311	79	232
Plastics and rubber products	326	29	9 r	21
Nonmetallic mineral products	327	24	17 r	8
Primary metals	331	11 r	1	9 r
Fabricated metal products	332	159 r	35 r	124 r
Machinery	333	512	223	289
Computer and electronic products	334	1,950	610	1,340
Semiconductor and other electronic components	3344	509	167	342
Navigational, measuring, electromedical, and control instruments	3345	1,110	324	786
Other computer and electronic products	other 334	332	120	212
Electrical equipment, appliances, and components	335	306	54	252 r
Transportation equipment	336	190	83	107
Aerospace products and parts	3364	95	34	61
Other transportation equipment	other 336	96	49 r	47
Furniture and related products	337	3	2 r	2
Miscellaneous manufacturing	339	765	251 r	514 r
Selected nonmanufacturing industries	42, 51, 5413, 5415, 5417	34,276	14,793	19,483
Wholesale trade	42	1,119	352	768
Information	51	5,859	1,670	4,189
Software publishers	5112	4,299	1,183	3,117
Information, excluding software publishers	51 less 5112	1,559	487	1,072
Architectural, engineering, and related services	5413	5,330	2,188	3,142
Computer systems design and related services	5415	11,653	6,351	5,302
Scientific research and development services	5417	10,315	4,232	6,083
Research and development in nanotechnology	541713	1,119	392	727
Research and development in biotechnology (except nanobiotechnology)	541714	3,199	1,325	1,874
Research and development in the physical, engineering, and life sciences (except nanotechnology and biotechnology)	541715	5,878	2,455	3,423
Social sciences and humanities research and development	541720	110	52	58

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail may not add to total because of rounding. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States that performed or funded R&amp;D.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.



TABLE 15

**Domestic R&D employees, by selected industry and sex, for companies with 1–9 employees: 2021**

(Number)

Industry	NAICS code	Total	Male	Female
All selected industries	31–33, 42, 51, 5413, 5415, 5417	38,962	30,340	8,622
Manufacturing industries	31–33	4,686	3,735	951
Food, beverage, and tobacco products	311–12	89 r	79 r	10 r
Textile, apparel, and leather products	313–16	25	21	4
Wood products	321	6	4	1
Paper	322	0	0	0
Printing and related support activities	323	0	0	0
Petroleum and coal products	324	9	7	1
Chemicals	325	607	438	169
Pharmaceuticals and medicines	3254	296	201	95
Chemicals, excluding pharmaceuticals	other 325	311	237	74
Plastics and rubber products	326	29	26	3
Nonmetallic mineral products	327	24	23	1
Primary metals	331	11 r	7	4 r
Fabricated metal products	332	159 r	156 r	3
Machinery	333	512	422	90
Computer and electronic products	334	1,950	1,582	368
Semiconductor and other electronic components	3344	509	440	69
Navigational, measuring, electromedical, and control instruments	3345	1,110	852	258
Other computer and electronic products	other 334	332	290	42
Electrical equipment, appliances, and components	335	306	255	51
Transportation equipment	336	190	180	10
Aerospace products and parts	3364	95	88	7
Other transportation equipment	other 336	96	93	3
Furniture and related products	337	3	3	0
Miscellaneous manufacturing	339	765	531	233 r
Selected nonmanufacturing industries	42, 51, 5413, 5415, 5417	34,276	26,605	7,671
Wholesale trade	42	1,119	954	165
Information	51	5,859	4,631	1,228
Software publishers	5112	4,299	3,382	917
Information, excluding software publishers	51 less 5112	1,559	1,248	311
Architectural, engineering, and related services	5413	5,330	4,454	876
Computer systems design and related services	5415	11,653	9,670	1,983
Scientific research and development services	5417	10,315	6,897	3,418
Research and development in nanotechnology	541713	1,119	763	355
Research and development in biotechnology (except nanobiotechnology)	541714	3,199	1,955	1,244
Research and development in the physical, engineering, and life sciences (except nanotechnology and biotechnology)	541715	5,878	4,113	1,765
Social sciences and humanities research and development	541720	110	60	50

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail may not add to total because of rounding. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States that performed or funded R&amp;D.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 16

**Domestic R&D employees, by selected industry and R&D work activity, for companies with 1–9 employees: 2021**

(Number)

Industry	NAICS code	All R&D employees	Researchers (including R&D scientists, engineers, and their managers)	R&D technicians and equivalent staff	R&D support staff (clerical and other)
All selected industries	31–33, 42, 51, 5413, 5415, 5417	38,962	28,417	7,478	3,066
Manufacturing industries	31–33	4,686	3,432	882	372
Food, beverage, and tobacco products	311–12	89 r	88 r	2	0
Textile, apparel, and leather products	313–16	25	11	3	11 r
Wood products	321	6	3	1	1
Paper	322	0	0	0	0
Printing and related support activities	323	0	0	0	0
Petroleum and coal products	324	9	9	0	0
Chemicals	325	607	387	138	82
Pharmaceuticals and medicines	3254	296	227	50	19
Chemicals, excluding pharmaceuticals	other 325	311	160	88	63
Plastics and rubber products	326	29	15	3	12 r
Nonmetallic mineral products	327	24	18	6 r	0
Primary metals	331	11 r	11 r	0	0
Fabricated metal products	332	159 r	57 r	59 r	43 r
Machinery	333	512	380	104	28
Computer and electronic products	334	1,950	1,414	400	137
Semiconductor and other electronic components	3344	509	329	136 r	44
Navigational, measuring, electromedical, and control instruments	3345	1,110	878	176	56
Other computer and electronic products	other 334	332	207	88	37
Electrical equipment, appliances, and components	335	306	204	62 r	40
Transportation equipment	336	190	146	34	11
Aerospace products and parts	3364	95	69	21	5
Other transportation equipment	other 336	96	77	13 r	6 r
Furniture and related products	337	3	3	0	0
Miscellaneous manufacturing	339	765	687	70	7
Selected nonmanufacturing industries	42, 51, 5413, 5415, 5417	34,276	24,985	6,596	2,695
Wholesale trade	42	1,119	860	191	68 r
Information	51	5,859	3,954	1,333	571
Software publishers	5112	4,299	2,911	892	496
Information, excluding software publishers	51 less 5112	1,559	1,043	442	75
Architectural, engineering, and related services	5413	5,330	4,067	920	343
Computer systems design and related services	5415	11,653	8,364	2,444	845
Scientific research and development services	5417	10,315	7,740	1,708	868
Research and development in nanotechnology	541713	1,119	812	140	167
Research and development in biotechnology (except nanobiotechnology)	541714	3,199	2,355	579	266
Research and development in the physical, engineering, and life sciences (except nanotechnology and biotechnology)	541715	5,878	4,474	975	429
Social sciences and humanities research and development	541720	110	91	13	6

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail may not add to total because of rounding. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States that performed or funded R&D.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 17

**Domestic R&D researchers with PhDs, by selected industry, for companies with 1–9 employees: 2021**

(Number)

Industry	NAICS code	All researchers (including R&D scientists, engineers, and their managers)	Researchers with PhD (excluding MD, JD, and EdD)
All selected industries	31–33, 42, 51, 5413, 5415, 5417	28,417	7,358
Manufacturing industries	31–33	3,432	945
Food, beverage, and tobacco products	311–12	88 r	4
Textile, apparel, and leather products	313–16	11	0
Wood products	321	3	3
Paper	322	0	0
Printing and related support activities	323	0	0
Petroleum and coal products	324	9	1
Chemicals	325	387	175
Pharmaceuticals and medicines	3254	227	120
Chemicals, excluding pharmaceuticals	other 325	160	55
Plastics and rubber products	326	15	1
Nonmetallic mineral products	327	18	9 r
Primary metals	331	11 r	9 r
Fabricated metal products	332	57 r	2 r
Machinery	333	380	59
Computer and electronic products	334	1,414	367
Semiconductor and other electronic components	3344	329	127
Navigational, measuring, electromedical, and control instruments	3345	878	211
Other computer and electronic products	other 334	207	29
Electrical equipment, appliances, and components	335	204	42 r
Transportation equipment	336	146	17 r
Aerospace products and parts	3364	69	1
Other transportation equipment	other 336	77	16 r
Furniture and related products	337	3	0
Miscellaneous manufacturing	339	687	253
Selected nonmanufacturing industries	42, 51, 5413, 5415, 5417	24,985	6,412
Wholesale trade	42	860	137
Information	51	3,954	630
Software publishers	5112	2,911	499
Information, excluding software publishers	51 less 5112	1,043	131
Architectural, engineering, and related services	5413	4,067	505
Computer systems design and related services	5415	8,364	936
Scientific research and development services	5417	7,740	4,204
Research and development in nanotechnology	541713	812	498
Research and development in biotechnology (except nanobiotechnology)	541714	2,355	1,504
Research and development in the physical, engineering, and life sciences (except nanotechnology and biotechnology)	541715	4,474	2,171
Social sciences and humanities research and development	541720	91	27

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail may not add to total because of rounding. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States that performed or funded R&amp;D.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 18

**Domestic full-time equivalent R&D employees, by selected industry and work activity, for companies with 1–9 employees: 2021**

(Number)

Industry	NAICS code	R&D employees: full-time equivalent	Researchers: full-time equivalent
All selected industries	31–33, 42, 51, 5413, 5415, 5417	31,015	22,130
Manufacturing industries	31–33	3,572	2,501
Food, beverage, and tobacco products	311–12	87 r	84 r
Textile, apparel, and leather products	313–16	15 r	8
Wood products	321	4	3
Paper	322	0	0
Printing and related support activities	323	0	0
Petroleum and coal products	324	9	9
Chemicals	325	470	316
Pharmaceuticals and medicines	3254	245	198
Chemicals, excluding pharmaceuticals	other 325	225	118
Plastics and rubber products	326	26	13
Nonmetallic mineral products	327	16	14
Primary metals	331	10 r	9 r
Fabricated metal products	332	100 r	41 r
Machinery	333	373	292
Computer and electronic products	334	1,521	924
Semiconductor and other electronic components	3344	427	210
Navigational, measuring, electromedical, and control instruments	3345	854	552
Other computer and electronic products	other 334	240	162
Electrical equipment, appliances, and components	335	234	164
Transportation equipment	336	153	115
Aerospace products and parts	3364	82	59
Other transportation equipment	other 336	71	56
Furniture and related products	337	2 r	2 r
Miscellaneous manufacturing	339	552	506
Selected nonmanufacturing industries	42, 51, 5413, 5415, 5417	27,443	19,629
Wholesale trade	42	755	485
Information	51	5,023	3,122
Software publishers	5112	3,662	2,321
Information, excluding software publishers	51 less 5112	1,362	801
Architectural, engineering, and related services	5413	3,837	2,965
Computer systems design and related services	5415	9,141	6,464
Scientific research and development services	5417	8,686	6,594
Research and development in nanotechnology	541713	872	660
Research and development in biotechnology (except nanobiotechnology)	541714	2,803	2,077
Research and development in the physical, engineering, and life sciences (except nanotechnology and biotechnology)	541715	4,913	3,772
Social sciences and humanities research and development	541720	90	77

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail may not add to total because of rounding. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States that performed or funded R&amp;D.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 19

**Tax credit for research activities, by industry, for companies with R&D expenditures and 1–9 employees: 2021**

(Number and percent)

Industry	NAICS code	Total (number)	Yes, filed Form 6765 in 2021 (%)	No, did not file Form 6765 in 2021 (%)	Did not answer (%)
All selected industries	31–33, 42, 51, 5413, 5415, 5417	15,855	21.8	77.6	0.6
Manufacturing industries	31–33	2,082	21.9	78.1	0.0
Food, beverage, and tobacco products	311–12	71	0.0	100.0	0.0
Textile, apparel, and leather products	313–16	20	20.0	80.0	0.0
Wood products	321	0	0.0	0.0	0.0
Paper	322	0	0.0	0.0	0.0
Printing and related support activities	323	0	0.0	0.0	0.0
Petroleum and coal products	324	2	100.0	0.0	0.0
Chemicals	325	349	15.8	84.2	0.0
Pharmaceuticals and medicines	3254	151	22.5	77.5	0.0
Chemicals, excluding pharmaceuticals	other 325	199	10.1	89.9	0.0
Plastics and rubber products	326	24	16.7	83.3	0.0
Nonmetallic mineral products	327	16	18.8	81.2	0.0
Primary metals	331	19	0.0	100.0	0.0
Fabricated metal products	332	74	17.6	82.4	0.0
Machinery	333	231	26.0	74.0	0.0
Computer and electronic products	334	740	27.0	73.0	0.0
Semiconductor and other electronic components	3344	182	20.3	79.7	0.0
Navigational, measuring, electromedical, and control instruments	3345	397	30.2	69.8	0.0
Other computer and electronic products	other 334	162	27.8	72.2	0.0
Electrical equipment, appliances, and components	335	146	16.4	83.6	0.0
Transportation equipment	336	78	38.5	61.5	0.0
Aerospace products and parts	3364	34	32.4	67.6	0.0
Other transportation equipment	other 336	46	39.1	60.9	0.0
Furniture and related products	337	4	0.0	100.0	0.0
Miscellaneous manufacturing	339	308	20.8	79.2	0.0
Selected nonmanufacturing industries	42, 51, 5413, 5415, 5417	13,774	21.8	77.6	0.6
Wholesale trade	42	551	17.6	82.4	0.0
Information	51	2,177	27.8	71.4	0.8
Software publishers	5112	1,583	29.8	69.7	0.6
Information, excluding software publishers	51 less 5112	595	22.7	76.1	1.2
Architectural, engineering, and related services	5413	1,954	23.2	76.6	0.2
Computer systems design and related services	5415	5,533	16.5	83.0	0.5
Scientific research and development services	5417	3,557	26.1	72.8	1.1
Research and development in nanotechnology	541713	356	39.3	60.7	0.0
Research and development in biotechnology (except nanobiotechnology)	541714	1,136	28.2	71.1	0.7
Research and development in the physical, engineering, and life sciences (except nanotechnology and biotechnology)	541715	2,016	22.9	75.6	1.5
Social sciences and humanities research and development	541720	48	16.7	83.3	0.0

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail across rows may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Detail across columns have been adjusted to add to total. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States that performed or funded R&D.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.



TABLE 20

**Domestic employees, by selected industry and employment size, for R&D-active companies with 1–9 employees: 2021**

(Number)

Industry	NAICS code	All companies	1–4 employees	5–9 employees
All selected industries	31–33, 42, 51, 5413, 5415, 5417	62,088	22,665	39,423
Manufacturing industries	31–33	9,885	2,375	7,510
Food, beverage, and tobacco products	311–12	476 r	34	442 r
Textile, apparel, and leather products	313–16	39	39	0
Wood products	321	6	6	0
Paper	322	0	0	0
Printing and related support activities	323	0	0	0
Petroleum and coal products	324	9	0	9
Chemicals	325	1,594	429	1,165
Pharmaceuticals and medicines	3254	560	267	293
Chemicals, excluding pharmaceuticals	other 325	1,034	162	872
Plastics and rubber products	326	113	23 r	90
Nonmetallic mineral products	327	30	21 r	9
Primary metals	331	102 r	4	97 r
Fabricated metal products	332	320 r	50	269 r
Machinery	333	921	277	644
Computer and electronic products	334	3,763	948	2,815
Semiconductor and other electronic components	3344	874	259	615
Navigational, measuring, electromedical, and control instruments	3345	2,248	489	1,759
Other computer and electronic products	other 334	642	200	442
Electrical equipment, appliances, and components	335	754	132 r	623
Transportation equipment	336	358	122	236
Aerospace products and parts	3364	145	40	105
Other transportation equipment	other 336	213	82 r	131
Furniture and related products	337	16	5 r	11
Miscellaneous manufacturing	339	1,384	283	1,101
Selected nonmanufacturing industries	42, 51, 5413, 5415, 5417	52,204	20,290	31,913
Wholesale trade	42	2,730	480	2,250
Information	51	9,963	2,638	7,325
Software publishers	5112	7,228	1,944	5,284
Information, excluding software publishers	51 less 5112	2,735	694	2,041
Architectural, engineering, and related services	5413	7,531	2,789	4,742
Computer systems design and related services	5415	18,485	9,018	9,468
Scientific research and development services	5417	13,495	5,367	8,128
Research and development in nanotechnology	541713	1,413	466	947
Research and development in biotechnology (except nanobiotechnology)	541714	4,237	1,735	2,503
Research and development in the physical, engineering, and life sciences (except nanotechnology and biotechnology)	541715	7,668	3,089	4,578
Social sciences and humanities research and development	541720	168	69	100

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail may not add to total because of rounding. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States that performed or funded R&amp;D.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 21

**Product innovating companies, by industry: 2019–21**

(Number and percent)

Industry	NAICS code	Companies (number)	Product innovation			
			Number		Percent	
			Yes	No	Yes	No
All industries	11, 21–23, 31–33, 42–81	4,874,928	459,474	4,415,454	9.4	90.6
Manufacturing industries	31–33	209,282	25,498	183,784	12.2	87.8
Food	311	19,326	2,387	16,939	12.4	87.6
Beverage and tobacco products	312	9,354	1,782	7,572	19.1	80.9
Textile, apparel, and leather products	313–16	9,443	1,097	8,346	11.6	88.4
Wood products	321	9,546	553	8,993	5.8	94.2
Paper	322	1,500	175	1,325	11.7	88.3
Printing and related support activities	323	20,212	1,943	18,269	9.6	90.4
Petroleum and coal products	324	546	22	524	4.0	96.0
Chemicals	325	7,961	1,669	6,292	21.0	79.0
Pesticide, fertilizer, and other agricultural chemicals	3253	580	75	505	12.9	87.1
Pharmaceuticals and medicines	3254	1,536	348	1,188	22.7	77.3
Soap, cleaning compound, and toilet preparation	3256	1,652	338	1,314	20.5	79.5
Other chemicals	other 325	4,194	907	3,287	21.6	78.4
Plastics and rubber products	326	7,060	776	6,284	11.0	89.0
Nonmetallic mineral products	327	7,290	663	6,627	9.1	90.9
Primary metals	331	2,079	120	1,959	5.8	94.2
Fabricated metal products	332	46,128	3,870	42,258	8.4	91.6
Machinery	333	16,440	2,670	13,770	16.2	83.8
Computer and electronic products	334	8,527	2,121	6,406	24.9	75.1
Communications equipment	3342	850	286	564	33.6	66.4
Semiconductor and other electronic components	3344	2,711	559	2,152	20.6	79.4
Navigational, measuring, electromedical, and control instruments	3345	3,737	889	2,848	23.8	76.2
Other computer and electronic products	other 334	1,230	389	841	31.6	68.4
Electrical equipment, appliances, and components	335	3,925	905	3,020	23.1	76.9
Transportation equipment	336	7,325	1,205	6,120	16.5	83.5
Automobiles, bodies, trailers, and parts	3361–63	4,494	751	3,743	16.7	83.3
Aerospace products and parts	3364	1,044	183	861	17.5	82.5
Other transportation	other 336	1,787	270	1,517	15.1	84.9
Furniture and related products	337	12,060	802	11,258	6.7	93.3
Miscellaneous	339	20,536	2,738	17,798	13.3	86.7
Medical equipment and supplies	3391	7,602	880	6,722	11.6	88.4
Other miscellaneous manufacturing	3399	12,933	1,856	11,077	14.4	85.6
Nonmanufacturing industries	11, 21–23, 42–81	4,665,645	433,975	4,231,670	9.3	90.7
Agriculture, forestry, fishing, and hunting	11	19,567	913	18,654	4.7	95.3
Mining, extraction, and support activities	21	14,004	490	13,514	3.5	96.5
Utilities	22	2,994	183	2,811	6.1	93.9
Construction	23	635,568	31,408	604,160	4.9	95.1
Wholesale trade	42	241,440	24,485	216,955	10.1	89.9
Retail trade	44–45	546,067	56,634	489,433	10.4	89.6
Transportation and warehousing	48–49	165,454	10,188	155,266	6.2	93.8
Information	51	65,445	12,343	53,102	18.9	81.1
Publishing	511	17,755	4,711	13,044	26.5	73.5
Newspaper, periodical, book, and directory publishers	5111	9,162	1,101	8,061	12.0	88.0
Software publishers	5112	8,589	3,608	4,981	42.0	58.0
Telecommunications	517	7,319	1,088	6,231	14.9	85.1
Data processing, hosting, and related services	518	8,346	1,909	6,437	22.9	77.1

TABLE 21

**Product innovating companies, by industry: 2019–21**

(Number and percent)

Industry	NAICS code	Companies (number)	Product innovation			
			Number		Percent	
			Yes	No	Yes	No
Other information	other 51	32,027	4,637	27,390	14.5	85.5
Finance and insurance	52	198,128	18,222	179,906	9.2	90.8
Real estate and rental and leasing	53	283,276	15,239	268,037	5.4	94.6
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1,956	188 r	1,768	9.6 r	90.4
Other real estate and rental and leasing	other 53	281,321	15,051	266,270	5.4	94.6
Professional, scientific, and technical services	54	717,229	81,784	635,445	11.4	88.6
Legal services	5411	152,543	6,350	146,193	4.2	95.8
Accounting, tax preparation, bookkeeping, and payroll services	5412	109,075	7,723	101,352	7.1	92.9
Architectural, engineering, and related services	5413	87,994	8,796	79,198	10.0	90.0
Specialized design services	5414	29,258	4,255	25,003	14.5	85.5
Computer systems design and related services	5415	100,282	18,687	81,595	18.6	81.4
Management, scientific, and technical consulting services	5416	144,421	22,712	121,709	15.7	84.3
Scientific research and development services	5417	11,149	2,146	9,003	19.2	80.8
Advertising, public relations, and related services	5418	28,236	4,119	24,117	14.6	85.4
Other professional, scientific, and technical services	5419	54,270	6,997	47,273	12.9	87.1
Management of companies and enterprises	55	3,153	96 r	3,057	3.0 r	97.0
Administrative and support and waste management and remediation services	56	293,539	23,903	269,636	8.1	91.9
Educational services	61	57,078	13,512	43,566	23.7	76.3
Health care and social assistance	62	536,276	61,758	474,518	11.5	88.5
Health care services	621–23	469,939	54,003	415,936	11.5	88.5
Social assistance	624	66,336	7,753	58,583	11.7	88.3
Arts, entertainment, and recreation	71	89,491	9,343	80,148	10.4	89.6
Accommodation and food services	72	455,071	44,441	410,630	9.8	90.2
Other services	81	341,869	29,031	312,838	8.5	91.5

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail across rows may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Detail across columns have been adjusted to add to total. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 22

**Product innovating companies, by company size: 2019–21**

(Number and percent)

Employment size	Companies (number)	Product innovation			
		Number		Percent	
		Yes	No	Yes	No
All companies	4,874,928	459,474	4,415,454	9.4	90.6
Micro companies					
1–4	2,734,191	229,523	2,504,668	8.4	91.6
5–9	950,548	95,959	854,589	10.1	89.9
Small companies					
10–19	577,397	64,370	513,027	11.1	88.9
20–49	399,566	45,023	354,543	11.3	88.7
Medium companies					
50–99	115,591	12,069	103,522	10.4	89.6
100–249	63,969	7,563	56,406	11.8	88.2
Large companies					
250–499	18,124	2,359	15,765	13.0	87.0
500–999	7,668	1,144	6,524	14.9	85.1
1,000–4,999	6,010	1,010	5,000	16.8	r 83.2
5,000–9,999	982	198	784	20.2	79.8 r
10,000–24,999	516	157	359	30.4	69.6
25,000 or more	372	95	277	25.5	74.5

r = relative standard error &gt; 50%.

**Note(s):**

Detail across rows may not add to total because of rounding. Detail across columns have been adjusted to add to total. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 23

**Business process innovating companies, by industry: 2019–21**

(Number and percent)

Industry	NAICS code	Companies (number)	Business process innovation			
			Number		Percent	
			Yes	No	Yes	No
All industries	11, 21–23, 31–33, 42–81	4,874,928	1,207,543	3,667,385	24.8	75.2
Manufacturing industries	31–33	209,282	60,971	148,311	29.1	70.9
Food	311	19,326	6,045	13,281	31.3	68.7
Beverage and tobacco products	312	9,354	3,597	5,757	38.5	61.5
Textile, apparel, and leather products	313–16	9,443	2,303	7,140	24.4	75.6
Wood products	321	9,546	2,223	7,323	23.3	76.7
Paper	322	1,500	540	960	36.0	64.0
Printing and related support activities	323	20,212	5,177	15,035	25.6	74.4
Petroleum and coal products	324	546	83	463	15.2	84.8
Chemicals	325	7,961	2,920	5,041	36.7	63.3
Pesticide, fertilizer, and other agricultural chemicals	3253	580	141	439	24.3	75.7
Pharmaceuticals and medicines	3254	1,536	584	952	38.0	62.0
Soap, cleaning compound, and toilet preparation	3256	1,652	611	1,041	37.0	63.0
Other chemicals	other 325	4,194	1,583	2,611	37.7	62.3
Plastics and rubber products	326	7,060	2,327	4,733	33.0	67.0
Nonmetallic mineral products	327	7,290	1,790	5,500	24.6	75.4
Primary metals	331	2,079	679	1,400	32.7	67.3
Fabricated metal products	332	46,128	12,154	33,974	26.3	73.7
Machinery	333	16,440	5,515	10,925	33.5	66.5
Computer and electronic products	334	8,527	3,414	5,113	40.0	60.0
Communications equipment	3342	850	453	397	53.3	46.7
Semiconductor and other electronic components	3344	2,711	993	1,718	36.6	63.4
Navigational, measuring, electromedical, and control instruments	3345	3,737	1,478	2,259	39.6	60.4
Other computer and electronic products	other 334	1,230	491	739	39.9	60.1
Electrical equipment, appliances, and components	335	3,925	1,591	2,334	40.5	59.5
Transportation equipment	336	7,325	2,221	5,104	30.3	69.7
Automobiles, bodies, trailers, and parts	3361–63	4,494	1,405	3,089	31.3	68.7
Aerospace products and parts	3364	1,044	302	742	28.9	71.1
Other transportation	other 336	1,787	514	1,273	28.8	71.2
Furniture and related products	337	12,060	2,736	9,324	22.7	77.3
Miscellaneous	339	20,536	5,641	14,895	27.5	72.5
Medical equipment and supplies	3391	7,602	1,807	5,795	23.8	76.2
Other miscellaneous manufacturing	3399	12,933	3,833	9,100	29.6	70.4
Nonmanufacturing industries	11, 21–23, 42–81	4,665,645	1,146,573	3,519,072	24.6	75.4
Agriculture, forestry, fishing, and hunting	11	19,567	2,641	16,926	13.5	86.5
Mining, extraction, and support activities	21	14,004	2,091	11,913	14.9	85.1
Utilities	22	2,994	698	2,296	23.3	76.7
Construction	23	635,568	112,634	522,934	17.7	82.3
Wholesale trade	42	241,440	61,317	180,123	25.4	74.6
Retail trade	44–45	546,067	141,820	404,247	26.0	74.0
Transportation and warehousing	48–49	165,454	46,209	119,245	27.9	72.1
Information	51	65,445	20,121	45,324	30.7	69.3
Publishing	511	17,755	6,587	11,168	37.1	62.9
Newspaper, periodical, book, and directory publishers	5111	9,162	2,162	7,000	23.6	76.4
Software publishers	5112	8,589	4,418	4,171	51.4	48.6
Telecommunications	517	7,319	1,987	5,332	27.1	72.9

TABLE 23

**Business process innovating companies, by industry: 2019–21**

(Number and percent)

Industry	NAICS code	Companies (number)	Business process innovation			
			Number		Percent	
			Yes	No	Yes	No
Data processing, hosting, and related services	518	8,346	3,333	5,013	39.9	60.1
Other information	other 51	32,027	8,215	23,812	25.7	74.3
Finance and insurance	52	198,128	51,176	146,952	25.8	74.2
Real estate and rental and leasing	53	283,276	54,403	228,873	19.2	80.8
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1,956	551	1,405	28.2	71.8
Other real estate and rental and leasing	other 53	281,321	53,852	227,469	19.1	80.9
Professional, scientific, and technical services	54	717,229	207,012	510,217	28.9	71.1
Legal services	5411	152,543	28,630	123,913	18.8	81.2
Accounting, tax preparation, bookkeeping, and payroll services	5412	109,075	26,984	82,091	24.7	75.3
Architectural, engineering, and related services	5413	87,994	22,491	65,503	25.6	74.4
Specialized design services	5414	29,258	9,555	19,703	32.7	67.3
Computer systems design and related services	5415	100,282	37,212	63,070	37.1	62.9
Management, scientific, and technical consulting services	5416	144,421	52,587	91,834	36.4	63.6
Scientific research and development services	5417	11,149	4,153	6,996	37.2	62.8
Advertising, public relations, and related services	5418	28,236	9,799	18,437	34.7	65.3
Other professional, scientific, and technical services	5419	54,270	15,603	38,667	28.8	71.2
Management of companies and enterprises	55	3,153	772	2,381	24.5	75.5
Administrative and support and waste management and remediation services	56	293,539	67,547	225,992	23.0	77.0
Educational services	61	57,078	23,600	33,478	41.3	58.7
Health care and social assistance	62	536,276	137,875	398,401	25.7	74.3
Health care services	621–23	469,939	119,711	350,228	25.5	74.5
Social assistance	624	66,336	18,163	48,173	27.4	72.6
Arts, entertainment, and recreation	71	89,491	20,857	68,634	23.3	76.7
Accommodation and food services	72	455,071	122,438	332,633	26.9	73.1
Other services	81	341,869	73,362	268,507	21.5	78.5

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail across rows may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Detail across columns have been adjusted to add to total. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 24

**Business process innovating companies, by company size: 2019–21**

(Number and percent)

Employment size	Companies (number)	Business process innovation			
		Number		Percent	
		Yes	No	Yes	No
All companies	4,874,928	1,207,543	3,667,385	24.8	75.2
Micro companies					
1–4	2,734,191	587,696	2,146,495	21.5	78.5
5–9	950,548	248,624	701,924	26.2	73.8
Small companies					
10–19	577,397	171,026	406,371	29.6	70.4
20–49	399,566	127,045	272,521	31.8	68.2
Medium companies					
50–99	115,591	38,006	77,585	32.9	67.1
100–249	63,969	22,822	41,147	35.7	64.3
Large companies					
250–499	18,124	6,722	11,402	37.1	62.9
500–999	7,668	2,752	4,916	35.9	64.1
1,000–4,999	6,010	2,119	3,891	35.3	64.7
5,000–9,999	982	367	615	37.4	62.6 r
10,000–24,999	516	232	284	45.0	55.0
25,000 or more	372	133	239	35.8	64.2

r = relative standard error &gt; 50%.

**Note(s):**

Detail across rows may not add to total because of rounding. Detail across columns have been adjusted to add to total. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 25

**Companies with new-to-market product innovation, by industry: 2019–21**

(Number and percent)

Industry	NAICS code	Companies (number)	Product innovation new to market			
			Number		Percent	
			Yes	No	Yes	No
All industries	11, 21–23, 31–33, 42–81	4,874,928	168,525	4,706,403	3.5	96.5
Manufacturing industries	31–33	209,282	11,638	197,644	5.6	94.4
Food	311	19,326	1,144	18,182	5.9	94.1
Beverage and tobacco products	312	9,354	629	8,725	6.7	93.3
Textile, apparel, and leather products	313–16	9,443	430	9,013	4.6	95.4
Wood products	321	9,546	248	9,298	2.6	97.4
Paper	322	1,500	91	1,409	6.1	93.9
Printing and related support activities	323	20,212	696	19,516	3.4	96.6
Petroleum and coal products	324	546	5	541	0.9	99.1
Chemicals	325	7,961	754	7,207	9.5	90.5
Pesticide, fertilizer, and other agricultural chemicals	3253	580	25	555	4.3	95.7
Pharmaceuticals and medicines	3254	1,536	230	1,306	15.0	85.0
Soap, cleaning compound, and toilet preparation	3256	1,652	124	1,528	7.5	92.5
Other chemicals	other 325	4,194	374	3,820	8.9	91.1
Plastics and rubber products	326	7,060	406	6,654	5.8	94.2
Nonmetallic mineral products	327	7,290	265	7,025	3.6	96.4
Primary metals	331	2,079	56	2,023	2.7	97.3
Fabricated metal products	332	46,128	1,699	44,429	3.7	96.3
Machinery	333	16,440	1,383	15,057	8.4	91.6
Computer and electronic products	334	8,527	1,194	7,333	14.0	86.0
Communications equipment	3342	850	153	697	18.0	82.0
Semiconductor and other electronic components	3344	2,711	303	2,408	11.2	88.8
Navigational, measuring, electromedical, and control instruments	3345	3,737	503	3,234	13.5	86.5
Other computer and electronic products	other 334	1,230	239	991	19.4	80.6
Electrical equipment, appliances, and components	335	3,925	597	3,328	15.2	84.8
Transportation equipment	336	7,325	602	6,723	8.2	91.8
Automobiles, bodies, trailers, and parts	3361–63	4,494	326	4,168	7.3	92.7
Aerospace products and parts	3364	1,044	120	924	11.5	88.5
Other transportation	other 336	1,787	154	1,633	8.6	91.4
Furniture and related products	337	12,060	347	11,713	2.9	97.1
Miscellaneous	339	20,536	1,092	19,444	5.3	94.7
Medical equipment and supplies	3391	7,602	324	7,278	4.3	95.7
Other miscellaneous manufacturing	3399	12,933	767	12,166	5.9	94.1
Nonmanufacturing industries	11, 21–23, 42–81	4,665,645	156,888	4,508,757	3.4	96.6
Agriculture, forestry, fishing, and hunting	11	19,567	159	19,408	0.8	99.2
Mining, extraction, and support activities	21	14,004	162	13,842	1.2	98.8
Utilities	22	2,994	78	2,916	2.6	97.4
Construction	23	635,568	8,651	626,917	1.4	98.6
Wholesale trade	42	241,440	11,152	230,288	4.6	95.4
Retail trade	44–45	546,067	26,000	520,067	4.8	95.2
Transportation and warehousing	48–49	165,454	2,520	162,934	1.5	98.5
Information	51	65,445	5,741	59,704	8.8	91.2
Publishing	511	17,755	2,753	15,002	15.5	84.5
Newspaper, periodical, book, and directory publishers	5111	9,162	430	8,732	4.7	95.3
Software publishers	5112	8,589	2,324	6,265	27.1	72.9
Telecommunications	517	7,319	337	6,982	4.6	95.4
Data processing, hosting, and related services	518	8,346	948	7,398	11.4	88.6



TABLE 25

**Companies with new-to-market product innovation, by industry: 2019–21**

(Number and percent)

Industry	NAICS code	Companies (number)	Product innovation new to market			
			Number		Percent	
			Yes	No	Yes	No
Other information	other 51	32,027	1,701	30,326	5.3	94.7
Finance and insurance	52	198,128	5,449	192,679	2.8	97.2
Real estate and rental and leasing	53	283,276	4,319	278,957	1.5	98.5
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1,956	104 r	1,852	5.3 r	94.7
Other real estate and rental and leasing	other 53	281,321	4,216	277,105	1.5	98.5
Professional, scientific, and technical services	54	717,229	30,345	686,884	4.2	95.8
Legal services	5411	152,543	1,375	151,168	0.9	99.1
Accounting, tax preparation, bookkeeping, and payroll services	5412	109,075	1,575	107,500	1.4	98.6
Architectural, engineering, and related services	5413	87,994	3,829	84,165	4.4	95.6
Specialized design services	5414	29,258	1,311	27,947	4.5	95.5
Computer systems design and related services	5415	100,282	8,452	91,830	8.4	91.6
Management, scientific, and technical consulting services	5416	144,421	8,791	135,630	6.1	93.9
Scientific research and development services	5417	11,149	1,495	9,654	13.4	86.6
Advertising, public relations, and related services	5418	28,236	1,195	27,041	4.2	95.8
Other professional, scientific, and technical services	5419	54,270	2,326	51,944	4.3	95.7
Management of companies and enterprises	55	3,153	56 r	3,097	1.8 r	98.2
Administrative and support and waste management and remediation services	56	293,539	7,833	285,706	2.7	97.3
Educational services	61	57,078	5,120	51,958	9.0	91.0
Health care and social assistance	62	536,276	18,716	517,560	3.5	96.5
Health care services	621–23	469,939	16,355	453,584	3.5	96.5
Social assistance	624	66,336	2,362	63,974	3.6	96.4
Arts, entertainment, and recreation	71	89,491	3,150	86,341	3.5	96.5
Accommodation and food services	72	455,071	17,449	437,622	3.8	96.2
Other services	81	341,869	9,982	331,887	2.9	97.1

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail across rows may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Detail across columns have been adjusted to add to total. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 26

**Companies with new-to-market product innovation, by company size: 2019–21**

(Number and percent)

Employment size	Companies (number)	Product innovation new to market			
		Number		Percent	
		Yes	No	Yes	No
All companies	4,874,928	168,525	4,706,403	3.5	96.5
Micro companies					
1–4	2,734,191	81,768	2,652,423	3.0	97.0
5–9	950,548	36,804	913,744	3.9	96.1
Small companies					
10–19	577,397	24,367	553,030	4.2	95.8
20–49	399,566	16,319	383,247	4.1	95.9
Medium companies					
50–99	115,591	4,019	111,572	3.5	96.5
100–249	63,969	3,180	60,789	5.0	95.0
Large companies					
250–499	18,124	949	17,175	5.2	94.8
500–999	7,668	386	7,282	5.0	95.0
1,000–4,999	6,010	508	5,502	8.5 r	91.5
5,000–9,999	982	76	906	7.7	92.3 r
10,000–24,999	516	85	431	16.5	83.5
25,000 or more	372	60	312	16.1	83.9

r = relative standard error &gt; 50%.

**Note(s):**

Detail across rows may not add to total because of rounding. Detail across columns have been adjusted to add to total. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 27

**Companies with new-to-the-business product innovation, by industry: 2019–21**

(Number and percent)

Industry	NAICS code	Companies (number)	Product innovation only new to the business			
			Number		Percent	
			Yes	No	Yes	No
All industries	11, 21–23, 31–33, 42–81	4,874,928	312,871	4,562,057	6.4	93.6
Manufacturing industries	31–33	209,282	18,021	191,261	8.6	91.4
Food	311	19,326	1,687	17,639	8.7	91.3
Beverage and tobacco products	312	9,354	1,462	7,892	15.6	84.4
Textile, apparel, and leather products	313–16	9,443	839	8,604	8.9	91.1
Wood products	321	9,546	345	9,201	3.6	96.4
Paper	322	1,500	121	1,379	8.1	91.9
Printing and related support activities	323	20,212	1,573	18,639	7.8	92.2
Petroleum and coal products	324	546	12	534	2.2	97.8
Chemicals	325	7,961	1,079	6,882	13.6	86.4
Pesticide, fertilizer, and other agricultural chemicals	3253	580	43	537	7.4	92.6
Pharmaceuticals and medicines	3254	1,536	227	1,309	14.8	85.2
Soap, cleaning compound, and toilet preparation	3256	1,652	229	1,423	13.9	86.1
Other chemicals	other 325	4,194	578	3,616	13.8	86.2
Plastics and rubber products	326	7,060	532	6,528	7.5	92.5
Nonmetallic mineral products	327	7,290	461	6,829	6.3	93.7
Primary metals	331	2,079	88	1,991	4.2	95.8
Fabricated metal products	332	46,128	2,904	43,224	6.3	93.7
Machinery	333	16,440	1,757	14,683	10.7	89.3
Computer and electronic products	334	8,527	1,405	7,122	16.5	83.5
Communications equipment	3342	850	188	662	22.1	77.9
Semiconductor and other electronic components	3344	2,711	351	2,360	12.9	87.1
Navigational, measuring, electromedical, and control instruments	3345	3,737	574	3,163	15.4	84.6
Other computer and electronic products	other 334	1,230	292	938	23.7	76.3
Electrical equipment, appliances, and components	335	3,925	525	3,400	13.4	86.6
Transportation equipment	336	7,325	870	6,455	11.9	88.1
Automobiles, bodies, trailers, and parts	3361–63	4,494	530	3,964	11.8	88.2
Aerospace products and parts	3364	1,044	126	918	12.1	87.9
Other transportation	other 336	1,787	214	1,573	12.0	88.0
Furniture and related products	337	12,060	465	11,595	3.9	96.1
Miscellaneous	339	20,536	1,893	18,643	9.2	90.8
Medical equipment and supplies	3391	7,602	563	7,039	7.4	92.6
Other miscellaneous manufacturing	3399	12,933	1,329	11,604	10.3	89.7
Nonmanufacturing industries	11, 21–23, 42–81	4,665,645	294,849	4,370,796	6.3	93.7
Agriculture, forestry, fishing, and hunting	11	19,567	603	18,964	3.1	96.9
Mining, extraction, and support activities	21	14,004	230	13,774	1.6	98.4
Utilities	22	2,994	144	2,850	4.8	95.2
Construction	23	635,568	20,189	615,379	3.2	96.8
Wholesale trade	42	241,440	16,637	224,803	6.9	93.1
Retail trade	44–45	546,067	37,795	508,272	6.9	93.1
Transportation and warehousing	48–49	165,454	5,700	159,754	3.4	96.6
Information	51	65,445	9,040	56,405	13.8	86.2
Publishing	511	17,755	3,233	14,522	18.2	81.8
Newspaper, periodical, book, and directory publishers	5111	9,162	786	8,376	8.6	91.4
Software publishers	5112	8,589	2,448	6,141	28.5	71.5
Telecommunications	517	7,319	801	6,518	10.9	89.1

TABLE 27

**Companies with new-to-the-business product innovation, by industry: 2019–21**

(Number and percent)

Industry	NAICS code	Companies (number)	Product innovation only new to the business			
			Number		Percent	
			Yes	No	Yes	No
Data processing, hosting, and related services	518	8,346	1,401	6,945	16.8	83.2
Other information	other 51	32,027	3,601	28,426	11.2	88.8
Finance and insurance	52	198,128	11,591	186,537	5.9	94.1
Real estate and rental and leasing	53	283,276	9,164	274,112	3.2	96.8
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1,956	85 r	1,871	4.3 r	95.7
Other real estate and rental and leasing	other 53	281,321	9,080	272,241	3.2	96.8
Professional, scientific, and technical services	54	717,229	57,810	659,419	8.1	91.9
Legal services	5411	152,543	4,208	148,335	2.8	97.2
Accounting, tax preparation, bookkeeping, and payroll services	5412	109,075	4,951	104,124	4.5	95.5
Architectural, engineering, and related services	5413	87,994	5,901	82,093	6.7	93.3
Specialized design services	5414	29,258	2,932	26,326	10.0	90.0
Computer systems design and related services	5415	100,282	13,814	86,468	13.8	86.2
Management, scientific, and technical consulting services	5416	144,421	16,494	127,927	11.4	88.6
Scientific research and development services	5417	11,149	1,207	9,942	10.8	89.2
Advertising, public relations, and related services	5418	28,236	3,277	24,959	11.6	88.4
Other professional, scientific, and technical services	5419	54,270	5,023	49,247	9.3	90.7
Management of companies and enterprises	55	3,153	96 r	3,057	3.0 r	97.0
Administrative and support and waste management and remediation services	56	293,539	16,048	277,491	5.5	94.5
Educational services	61	57,078	9,613	47,465	16.8	83.2
Health care and social assistance	62	536,276	45,216	491,060	8.4	91.6
Health care services	621–23	469,939	40,443	429,496	8.6	91.4
Social assistance	624	66,336	4,772	61,564	7.2	92.8
Arts, entertainment, and recreation	71	89,491	6,526	82,965	7.3	92.7
Accommodation and food services	72	455,071	28,625	426,446	6.3	93.7
Other services	81	341,869	19,824	322,045	5.8	94.2

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail across rows may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Detail across columns have been adjusted to add to total. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 28

**Companies with new-to-the-business product innovation, by company size: 2019–21**

(Number and percent)

Employment size	Companies (number)	Product innovation only new to the business			
		Number		Percent	
		Yes	No	Yes	No
All companies	4,874,928	312,871	4,562,057	6.4	93.6
Micro companies					
1–4	2,734,191	154,449	2,579,742	5.6	94.4
5–9	950,548	65,107	885,441	6.8	93.2
Small companies					
10–19	577,397	45,015	532,382	7.8	92.2
20–49	399,566	31,288	368,278	7.8	92.2
Medium companies					
50–99	115,591	8,234	107,357	7.1	92.9
100–249	63,969	5,173	58,796	8.1	91.9
Large companies					
250–499	18,124	1,564	16,560	8.6	91.4
500–999	7,668	898	6,770	11.7	88.3
1,000–4,999	6,010	783	5,227	13.0 r	87.0
5,000–9,999	982	156	826	15.9	84.1 r
10,000–24,999	516	119	397	23.1	76.9
25,000 or more	372	84	288	22.6	77.4

r = relative standard error &gt; 50%.

**Note(s):**

Detail across rows may not add to total because of rounding. Detail across columns have been adjusted to add to total.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 29

**Product or business process innovating companies, by industry: 2019–21**

(Number and percent)

Industry	NAICS code	Companies (number)	Product or business process innovation			
			Number		Percent	
			Yes	No	Yes	No
All industries	11, 21–23, 31–33, 42–81	4,874,928	1,310,146	3,564,782	26.9	73.1
Manufacturing industries	31–33	209,282	65,825	143,457	31.5	68.5
Food	311	19,326	6,741	12,585	34.9	65.1
Beverage and tobacco products	312	9,354	3,983	5,371	42.6	57.4
Textile, apparel, and leather products	313–16	9,443	2,581	6,862	27.3	72.7
Wood products	321	9,546	2,322	7,224	24.3	75.7
Paper	322	1,500	572	928	38.1	61.9
Printing and related support activities	323	20,212	5,522	14,690	27.3	72.7
Petroleum and coal products	324	546	93	453	17.0	83.0
Chemicals	325	7,961	3,219	4,742	40.4	59.6
Pesticide, fertilizer, and other agricultural chemicals	3253	580	152	428	26.2	73.8
Pharmaceuticals and medicines	3254	1,536	669	867	43.6	56.4
Soap, cleaning compound, and toilet preparation	3256	1,652	716	936	43.3	56.7
Other chemicals	other 325	4,194	1,680	2,514	40.1	59.9
Plastics and rubber products	326	7,060	2,506	4,554	35.5	64.5
Nonmetallic mineral products	327	7,290	1,969	5,321	27.0	73.0
Primary metals	331	2,079	694	1,385	33.4	66.6
Fabricated metal products	332	46,128	12,693	33,435	27.5	72.5
Machinery	333	16,440	5,855	10,585	35.6	64.4
Computer and electronic products	334	8,527	3,807	4,720	44.6	55.4
Communications equipment	3342	850	494	356	58.1	41.9
Semiconductor and other electronic components	3344	2,711	1,122	1,589	41.4	58.6
Navigational, measuring, electromedical, and control instruments	3345	3,737	1,645	2,092	44.0	56.0
Other computer and electronic products	other 334	1,230	548	682	44.6	55.4
Electrical equipment, appliances, and components	335	3,925	1,750	2,175	44.6	55.4
Transportation equipment	336	7,325	2,437	4,888	33.3	66.7
Automobiles, bodies, trailers, and parts	3361–63	4,494	1,539	2,955	34.2	65.8
Aerospace products and parts	3364	1,044	340	704	32.6	67.4
Other transportation	other 336	1,787	557	1,230	31.2	68.8
Furniture and related products	337	12,060	2,929	9,131	24.3	75.7
Miscellaneous	339	20,536	6,147	14,389	29.9	70.1
Medical equipment and supplies	3391	7,602	1,939	5,663	25.5	74.5
Other miscellaneous manufacturing	3399	12,933	4,206	8,727	32.5	67.5
Nonmanufacturing industries	11, 21–23, 42–81	4,665,645	1,244,320	3,421,325	26.7	73.3
Agriculture, forestry, fishing, and hunting	11	19,567	2,997	16,570	15.3	84.7
Mining, extraction, and support activities	21	14,004	2,285	11,719	16.3	83.7
Utilities	22	2,994	721	2,273	24.1	75.9
Construction	23	635,568	121,436	514,132	19.1	80.9
Wholesale trade	42	241,440	67,241	174,199	27.8	72.2
Retail trade	44–45	546,067	156,491	389,576	28.7	71.3
Transportation and warehousing	48–49	165,454	48,305	117,149	29.2	70.8
Information	51	65,445	22,200	43,245	33.9	66.1
Publishing	511	17,755	7,522	10,233	42.4	57.6
Newspaper, periodical, book, and directory publishers	5111	9,162	2,504	6,658	27.3	72.7
Software publishers	5112	8,589	5,014	3,575	58.4	41.6
Telecommunications	517	7,319	2,247	5,072	30.7	69.3

TABLE 29

**Product or business process innovating companies, by industry: 2019–21**

(Number and percent)

Industry	NAICS code	Companies (number)	Product or business process innovation			
			Number		Percent	
			Yes	No	Yes	No
Data processing, hosting, and related services	518	8,346	3,583	4,763	42.9	57.1
Other information	other 51	32,027	8,846	23,181	27.6	72.4
Finance and insurance	52	198,128	55,938	142,190	28.2	71.8
Real estate and rental and leasing	53	283,276	57,921	225,355	20.4	79.6
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1,956	593	1,363	30.3	69.7
Other real estate and rental and leasing	other 53	281,321	57,329	223,992	20.4	79.6
Professional, scientific, and technical services	54	717,229	220,254	496,975	30.7	69.3
Legal services	5411	152,543	30,133	122,410	19.8	80.2
Accounting, tax preparation, bookkeeping, and payroll services	5412	109,075	28,766	80,309	26.4	73.6
Architectural, engineering, and related services	5413	87,994	23,728	64,266	27.0	73.0
Specialized design services	5414	29,258	10,329	18,929	35.3	64.7
Computer systems design and related services	5415	100,282	39,518	60,764	39.4	60.6
Management, scientific, and technical consulting services	5416	144,421	55,974	88,447	38.8	61.2
Scientific research and development services	5417	11,149	4,479	6,670	40.2	59.8
Advertising, public relations, and related services	5418	28,236	10,448	17,788	37.0	63.0
Other professional, scientific, and technical services	5419	54,270	16,881	37,389	31.1	68.9
Management of companies and enterprises	55	3,153	772	2,381	24.5	75.5
Administrative and support and waste management and remediation services	56	293,539	73,400	220,139	25.0	75.0
Educational services	61	57,078	25,792	31,286	45.2	54.8
Health care and social assistance	62	536,276	152,156	384,120	28.4	71.6
Health care services	621–23	469,939	131,793	338,146	28.0	72.0
Social assistance	624	66,336	20,362	45,974	30.7	69.3
Arts, entertainment, and recreation	71	89,491	23,400	66,091	26.1	73.9
Accommodation and food services	72	455,071	132,952	322,119	29.2	70.8
Other services	81	341,869	80,060	261,809	23.4	76.6

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail across rows may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Detail across columns have been adjusted to add to total. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 30

**Product or business process innovating companies, by company size: 2019–21**

(Number and percent)

Employment size	Companies (number)	Product or business process innovation			
		Number		Percent	
		Yes	No	Yes	No
All companies	4,874,928	1,310,146	3,564,782	26.9	73.1
Micro companies					
1–4	2,734,191	643,403	2,090,788	23.5	76.5
5–9	950,548	269,471	681,077	28.3	71.7
Small companies					
10–19	577,397	183,697	393,700	31.8	68.2
20–49	399,566	135,519	264,047	33.9	66.1
Medium companies					
50–99	115,591	40,501	75,090	35.0	65.0
100–249	63,969	24,420	39,549	38.2	61.8
Large companies					
250–499	18,124	7,052	11,072	38.9	61.1
500–999	7,668	2,898	4,770	37.8	62.2
1,000–4,999	6,010	2,346	3,664	39.0	61.0
5,000–9,999	982	418	564	42.6	57.4 r
10,000–24,999	516	265	251	51.4	48.6
25,000 or more	372	157	215	42.2	57.8

r = relative standard error &gt; 50%.

**Note(s):**

Detail across rows may not add to total because of rounding. Detail across columns have been adjusted to add to total. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.



TABLE 31

**Domestic R&D performed by the company, by firm classification of sex of owners and company size, for companies with 1–9 employees: 2021**

(Number and thousands of U.S. dollars)

Sex of owners	All companies		1–4 employees		5–9 employees	
	Companies (number)	Amount	Companies (number)	Amount	Companies (number)	Amount
All companies	15,339	6,124,669	9,611	2,590,797	5,727	3,533,871
Female owned	1,623	527,911	1,067	233,243	555	294,668
Male owned	12,332	4,889,631	7,687	2,091,498	4,644	2,798,133
Equally owned by male and female	1,105	447,748	748	192,297	358	255,451
Unclassifiable	279	259,378	109	73,759	169	185,619

**Note(s):**

Detail may not add to total because of rounding. Statistics are representative of companies located in the United States that performed or funded R&D. Unclassifiable category includes firms that have no owners with a 10% or greater ownership of the stock or equity in the business. Companies are classified according to owner demographics if persons with that demographic characteristic own more than a 50% stake in the company.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 32

**Domestic R&D performed by the company, by firm classification of race and ethnicity of owners and company size, for companies with 1–9 employees: 2021**

(Number and thousands of U.S. dollars)

Race and ethnicity of owners	All companies		1–4 employees		5–9 employees	
	Companies (number)	Amount	Companies (number)	Amount	Companies (number)	Amount
All companies	15,339	6,124,669	9,611	2,590,797	5,727	3,533,871
Race						
White	11,881	4,574,296	7,435	1,973,782	4,444	2,600,514
Asian	2,657	1,065,869	1,691	439,225	967	626,644
Black or African American	233	71,811	195	45,235	37	26,576
American Indian or Alaska Native	139	76,141	58	7,378	80	68,763
Native Hawaiian or Other Pacific Islander	13	1,881	4	720	9	1,161
Ethnicity						
Hispanic or Latino	456	142,000	275	60,546	181	81,454
Equally Hispanic or Latino and not Hispanic or Latino	121	26,363	112	23,666	8	2,697
Not Hispanic or Latino	14,482	5,696,928	9,115	2,432,826	5,369	3,264,101
Minority status						
Minority	3,437	1,315,999	2,243	578,174	1,194	737,825
Black or African American, American Indian or Alaska Native, or Hispanic or Latino	789	272,077	507	111,114	280	160,963
Equally minority and nonminority	543	249,075	401	127,763	142	121,311
Nonminority	11,082	4,300,217	6,860	1,811,101	4,221	2,489,116
Unclassifiable	279	259,378	109	73,759	169	185,619

r = relative standard error &gt; 50%.

**Note(s):**

Detail may not add to total because of rounding. Companies may be included in one or more race and ethnicity category. Companies classified as “minority” are those companies classified as any race and ethnicity combination other than White and not Hispanic or Latino. Unclassifiable category includes firms that have no owners with a 10% or greater ownership of the stock or equity in the business. Statistics are representative of companies located in the United States that performed or funded R&D. Companies are classified according to owner demographics if persons with that demographic characteristic own more than a 50% stake in the company.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 33

**Domestic employees, by selected industry and company size, for companies with 1–9 employees: 2021**

(Number)

Industry	NAICS code	All companies	1–4 employees	5–9 employees
All selected industries	31–33, 42, 51, 5413, 5415, 5417	1,592,797	769,995	822,802
Manufacturing industries	31–33	468,129	176,297	291,832
Food, beverage, and tobacco products	311–12	64,892	19,682	45,210
Textile, apparel, and leather products	313–16	23,992	9,878	14,114
Wood products	321	21,702	6,509	15,193
Paper	322	1,760	867	893
Printing and related support activities	323	53,377	23,417	29,960
Petroleum and coal products	324	879	468	411
Chemicals	325	15,917	5,940	9,977
Pharmaceuticals and medicines	3254	2,855	1,097	1,758
Chemicals, excluding pharmaceuticals	other 325	13,062	4,843	8,219
Plastics and rubber products	326	9,913	3,920	5,993
Nonmetallic mineral products	327	14,261	4,982	9,279
Primary metals	331	2,770	1,017	1,753
Fabricated metal products	332	108,317	38,367	69,950
Machinery	333	33,246	11,332	21,915
Computer and electronic products	334	18,010	6,592	11,418
Semiconductor and other electronic components	3344	5,103	1,948	3,155
Navigational, measuring, electromedical, and control instruments	3345	8,169	2,825	5,344
Other computer and electronic products	other 334	4,738	1,819	2,919
Electrical equipment, appliances, and components	335	7,811	2,577	5,233
Transportation equipment	336	12,877	5,056	7,821
Aerospace products and parts	3364	1,549	719	830
Other transportation equipment	other 336	11,328	4,337	6,991
Furniture and related products	337	27,913	11,316	16,597
Miscellaneous manufacturing	339	50,433	24,350	26,083
Selected nonmanufacturing industries	42, 51, 5413, 5415, 5417	1,124,668	593,698	530,970
Wholesale trade	42	563,446	275,918	287,528
Information	51	139,970	73,919	66,050
Software publishers	5112	20,032	7,885	12,147
Information, excluding software publishers	51 less 5112	119,938	66,035	53,903
Architectural, engineering, and related services	5413	201,299	102,582	98,718
Computer systems design and related services	5415	195,241	129,417	65,825
Scientific research and development services	5417	24,711	11,862	12,849
Research and development in nanotechnology	541713	2,010	792	1,217
Research and development in biotechnology (except nanobiotechnology)	541714	6,368	3,085	3,283
Research and development in the physical, engineering, and life sciences (except nanotechnology and biotechnology)	541715	14,583	7,021	7,563
Social sciences and humanities research and development	541720	1,712	933	779

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail may not add to total because of rounding. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 34

**Annual business survey aggregate sales estimates, by financial information and company size: 2021**

(Thousands of U.S. dollars)

Company and financial information	All companies	1–9 employees	10–49 employees	50–249 employees	250 or more employees
Number of companies	4,874,928	3,684,738	976,962	179,559	33,666
Worldwide sales, revenues, and grants	42,102,962,828	2,656,412,598	4,404,984,035	4,997,016,356	30,044,549,839
Sales and revenues from U.S. operations	35,814,644,033	2,591,963,353	4,100,248,243	4,803,451,233	24,318,981,204

**Note(s):**

Detail may not add to total because of rounding. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 35

**Companies, by company size and industry: 2021**

(Number)

Industry	NAICS code	All companies	1–9 employees	10–49 employees	50–249 employees	250 or more employees
All industries	11, 21–23, 31–33, 42–81	4,874,928	3,684,738	976,962	179,559	33,666
Manufacturing industries	31–33	209,282	119,069	65,537	19,653	5,022
Food	311	19,326	9,962	6,696	2,008	659
Beverage and tobacco products	312	9,354	4,804	3,847	582	120
Textile, apparel, and leather products	313–16	9,443	6,485	2,316	516	125
Wood products	321	9,546	4,917	3,627	761	238
Paper	322	1,500	474	641	279	107
Printing and related support activities	323	20,212	14,910	4,274	869	158
Petroleum and coal products	324	546	236	247	25	38
Chemicals	325	7,961	4,015	2,304	1,137	506
Pesticide, fertilizer, and other agricultural chemicals	3253	580	324	150	100	5
Pharmaceuticals and medicines	3254	1,536	760	430	216	129
Soap, cleaning compound, and toilet preparation	3256	1,652	996	364	151	142
Other chemicals	other 325	4,194	1,933	1,362	671	227
Plastics and rubber products	326	7,060	2,663	2,707	1,292	399
Nonmetallic mineral products	327	7,290	3,486	2,821	825	155
Primary metals	331	2,079	707	763	387	223
Fabricated metal products	332	46,128	26,231	15,085	4,317	495
Machinery	333	16,440	8,007	5,934	2,032	468
Computer and electronic products	334	8,527	4,528	2,527	1,123	350
Communications equipment	3342	850	459	269	101	24
Semiconductor and other electronic components	3344	2,711	1,282	867	391	170
Navigational, measuring, electromedical, and control instruments	3345	3,737	1,955	1,133	509	140
Other computer and electronic products	other 334	1,230	833	259	123	17
Electrical equipment, appliances, and components	335	3,925	1,839	1,393	588	103
Transportation equipment	336	7,325	3,323	2,314	1,235	451
Automobiles, bodies, trailers, and parts	3361–63	4,494	1,912	1,452	807	323
Aerospace products and parts	3364	1,044	439	351	183	71
Other transportation	other 336	1,787	973	513	247	54
Furniture and related products	337	12,060	7,562	3,342	940	218
Miscellaneous	339	20,536	14,897	4,693	734	210
Medical equipment and supplies	3391	7,602	5,725	1,539	259	79
Other miscellaneous manufacturing	3399	12,933	9,171	3,153	474	132
Nonmanufacturing industries	11, 21–23, 42–81	4,665,645	3,565,669	911,426	159,907	28,645
Agriculture, forestry, fishing, and hunting	11	19,567	15,896	2,799	643	227
Mining, extraction, and support activities	21	14,004	9,753	3,187	821	244
Utilities	22	2,994	2,219	530	126	116
Construction	23	635,568	496,330	115,745	21,031	2,464
Wholesale trade	42	241,440	176,730	50,916	11,403	2,388
Retail trade	44–45	546,067	419,239	107,405	17,266	2,157
Transportation and warehousing	48–49	165,454	127,419	28,814	8,028	1,193
Information	51	65,445	50,616	11,135	2,817	875
Publishing	511	17,755	12,388	4,098	958	307
Newspaper, periodical, book, and directory publishers	5111	9,162	6,677	2,059	367	62
Software publishers	5112	8,589	5,707	2,040	593	247
Telecommunications	517	7,319	4,945	1,714	541	118

TABLE 35

**Companies, by company size and industry: 2021**

(Number)

Industry	NAICS code	All companies	1–9 employees	10–49 employees	50–249 employees	250 or more employees
Data processing, hosting, and related services	518	8,346	5,888	1,721	552	184
Other information	other 51	32,027	27,395	3,600	765	267
Finance and insurance	52	198,128	173,895	18,701	4,139	1,391
Real estate and rental and leasing	53	283,276	254,764	23,617	3,853	1,041
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1,956	1,389	454	107	r 4
Other real estate and rental and leasing	other 53	281,321	253,375	23,162	3,745	1,038
Professional, scientific, and technical services	54	717,229	608,746	91,004	14,151	3,329
Legal services	5411	152,543	132,844	16,844	2,278	575
Accounting, tax preparation, bookkeeping, and payroll services	5412	109,075	94,137	13,138	1,472	329
Architectural, engineering, and related services	5413	87,994	68,490	16,040	2,740	725
Specialized design services	5414	29,258	26,648	2,580	30	0
Computer systems design and related services	5415	100,282	85,093	11,675	3,016	502
Management, scientific, and technical consulting services	5416	144,421	130,799	10,721	2,429	473
Scientific research and development services	5417	11,149	7,861	2,386	670	231
Advertising, public relations, and related services	5418	28,236	23,572	3,782	689	196
Other professional, scientific, and technical services	5419	54,270	39,306	13,839	826	297
Management of companies and enterprises	55	3,153	2,825	295	27	i 5
Administrative and support and waste management and remediation services	56	293,539	219,379	56,268	13,477	4,416
Educational services	61	57,078	41,743	13,887	1,116	330
Health care and social assistance	62	536,276	380,443	129,475	23,197	3,159
Health care services	621–23	469,939	344,673	105,017	17,819	2,427
Social assistance	624	66,336	35,769	24,457	5,377	730
Arts, entertainment, and recreation	71	89,491	67,199	18,379	3,478	435
Accommodation and food services	72	455,071	229,734	i 190,103	30,846	4,389
Other services	81	341,869	288,740	49,165	3,481	482

i = > 50% of the estimate is a combination of imputation and reweighting to account for nonresponse; r = relative standard error > 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 36

**Worldwide sales, revenues, and grants, by company size and industry: 2021**

(Thousands of U.S. dollars)

Industry	NAICS code	All companies	1–9 employees	10–49 employees	50–249 employees	250 or more employees
All industries	11, 21–23, 31–33, 42–81	42,102,962,828	2,656,412,598	4,404,984,035	4,997,016,356	30,044,549,839
Manufacturing industries	31–33	7,622,325,794	97,055,004	301,318,014	561,185,289	6,662,767,487
Food	311	1,099,155,191	8,698,857	36,446,506	65,510,554	988,499,273
Beverage and tobacco products	312	196,872,575	3,615,267	9,815,255	9,693,966	173,748,087
Textile, apparel, and leather products	313–16	55,745,347	6,051,300	10,201,404	11,588,982	27,903,662
Wood products	321	168,242,674	4,520,474	18,753,402	24,824,060	120,144,738
Paper	322	151,527,942	999,144	4,035,626	12,253,446	134,239,726
Printing and related support activities	323	72,173,004	10,397,495	12,537,145	15,210,072	34,028,291
Petroleum and coal products	324	923,202,000	412,830	3,487,901	2,961,663	916,339,606
Chemicals	325	1,030,790,862	6,123,081	22,207,661	69,209,754	933,250,365
Pesticide, fertilizer, and other agricultural chemicals	3253	12,997,009	306,137	1,890,416	10,305,420	495,036
Pharmaceuticals and medicines	3254	389,612,587	778,053	3,459,475	8,505,012	376,870,048
Soap, cleaning compound, and toilet preparation	3256	74,074,912	1,478,670	2,980,473	3,517,966	66,097,803
Other chemicals	other 325	554,106,354	3,560,222	13,877,297	46,881,357	489,787,478
Plastics and rubber products	326	268,655,776	2,746,790	14,442,222	37,186,910	214,279,854
Nonmetallic mineral products	327	196,198,701	2,897,818	13,447,042	18,187,055	161,666,786
Primary metals	331	341,069,697	852,308	6,498,747	17,094,669	316,623,972
Fabricated metal products	332	405,462,644	18,527,079	59,893,931	87,848,299	239,193,335
Machinery	333	604,092,182	8,376,475	33,021,814	79,384,633	483,309,260
Computer and electronic products	334	611,486,507	4,547,496	13,313,892	31,350,144	562,274,976
Communications equipment	3342	39,209,294	441,200	1,889,337	4,162,113	32,716,645
Semiconductor and other electronic components	3344	251,487,282	1,375,366	4,250,782	8,457,046	237,404,087
Navigational, measuring, electromedical, and control instruments	3345	273,157,343	1,982,594	5,575,216	13,903,895	251,695,638
Other computer and electronic products	other 334	47,632,588	748,337	1,598,557	4,827,089	40,458,606
Electrical equipment, appliances, and components	335	153,214,805	2,264,025	7,005,298	17,893,981	126,051,501
Transportation equipment	336	1,059,612,066	2,745,172	10,545,443	31,974,404	1,014,347,046
Automobiles, bodies, trailers, and parts	3361–63	818,511,069	1,697,905	7,132,455	22,162,438	787,518,272
Aerospace products and parts	3364	178,897,829	340,706	1,567,320	4,053,645	172,936,158
Other transportation	other 336	62,203,167	706,561	1,845,668	5,758,322	53,892,616
Furniture and related products	337	92,268,778	5,351,277	9,804,857	12,027,387	65,085,257
Miscellaneous	339	192,542,342	7,915,413	15,859,868	16,985,311	151,781,750
Medical equipment and supplies	3391	117,411,173	2,449,395	3,439,242	7,764,293	103,758,243
Other miscellaneous manufacturing	3399	75,131,169	5,466,018	12,420,625	9,221,018	48,023,507
Nonmanufacturing industries	11, 21–23, 42–81	34,480,637,034	2,559,357,594	4,103,666,021	4,435,831,067	23,381,782,352
Agriculture, forestry, fishing, and hunting	11	224,793,037	12,224,331	20,451,031	14,855,002	177,262,673

TABLE 36

## Worldwide sales, revenues, and grants, by company size and industry: 2021

(Thousands of U.S. dollars)

Industry	NAICS code	All companies	1–9 employees	10–49 employees	50–249 employees	250 or more employees
Mining, extraction, and support activities	21	388,225,785	12,186,373	16,352,467	46,796,331	312,890,614
Utilities	22	464,717,307	1,559,599	4,736,934	8,179,288	450,241,486
Construction	23	2,342,407,615	388,301,850	602,597,092	652,338,326	699,170,347
Wholesale trade	42	5,619,649,288	339,910,130	646,190,964	713,194,024	3,920,354,170
Retail trade	44–45	5,289,519,305	446,095,523	647,406,674	773,203,373	3,422,813,736
Transportation and warehousing	48–49	1,575,906,521	110,123,305	130,331,232	174,611,879	1,160,840,105
Information	51	2,930,526,654	34,356,225	50,466,977	92,387,733	2,753,315,719
Publishing	511	743,609,068	7,860,350	15,961,896	30,355,780	689,431,043
Newspaper, periodical, book, and directory publishers	5111	75,631,787	3,761,613	5,905,603	14,694,726	51,269,845
Software publishers	5112	667,976,987	4,098,442	10,056,294	15,661,054	638,161,198
Telecommunications	517	1,034,288,125	4,864,446	14,597,856	35,112,980	979,712,843
Data processing, hosting, and related services	518	98,012,590	5,280,763	6,621,113	13,777,889	72,332,825
Other information	other 51	1,054,616,870	16,350,666	13,286,112	13,141,084	1,011,839,008
Finance and insurance	52	5,211,780,843	163,915,748	478,398,489	594,987,171	3,974,479,435
Real estate and rental and leasing	53	610,138,450	161,755,480	79,899,804	47,913,667	320,569,498
Lessors of nonfinancial intangible assets (except copyrighted works)	533	8,346,167	1,869,381	3,568,599	2,657,088	251,099
Other real estate and rental and leasing	other 53	601,792,283	159,886,099	76,331,205	45,256,579	320,318,399
Professional, scientific, and technical services	54	3,002,916,390	295,025,771	341,830,506	340,886,823	2,025,173,291
Legal services	5411	408,825,789	71,298,630	65,463,577	56,074,450	215,989,132
Accounting, tax preparation, bookkeeping, and payroll services	5412	337,152,235	31,764,249	34,381,479	19,335,936	251,670,572
Architectural, engineering, and related services	5413	313,376,883	34,329,475	57,087,167	56,324,830	165,635,410
Specialized design services	5414	21,586,700	12,223,480	8,892,838	470,382	0
Computer systems design and related services	5415	674,889,258	46,393,400	53,349,807	69,628,238	505,517,813
Management, scientific, and technical consulting services	5416	282,340,367	58,385,030	41,808,605	65,951,607	116,195,125
Scientific research and development services	5417	225,661,529	5,226,884	11,242,012	17,210,583	191,982,050
Advertising, public relations, and related services	5418	166,713,109	17,105,029	19,690,329	43,610,026	86,307,725
Other professional, scientific, and technical services	5419	572,370,521	18,299,594	49,914,692	12,280,771	491,875,465
Management of companies and enterprises	55	19,425,445	3,596,638	4,392,610	11,181,320	254,877
Administrative and support and waste management and remediation services	56	3,073,614,577	113,629,591	173,511,140	271,182,076	2,515,291,770
Educational services	61	96,414,338	14,946,278	36,130,725	11,235,510	34,101,825
Health care and social assistance	62	1,879,220,215	183,795,824	293,389,245	423,286,900	978,748,246
Health care services	621–23	1,567,195,725	175,183,486	263,540,053	378,382,112	750,090,075
Social assistance	624	312,024,490	8,612,338	29,849,192	44,904,788	228,658,171



TABLE 36

**Worldwide sales, revenues, and grants, by company size and industry: 2021**

(Thousands of U.S. dollars)

Industry	NAICS code	All companies	1–9 employees	10–49 employees	50–249 employees	250 or more employees
Arts, entertainment, and recreation	71	159,668,013	41,475,783	41,836,406	25,259,378	51,096,445
Accommodation and food services	72	1,272,722,384	102,586,307	446,392,870	213,629,192	510,114,015
Other services	81	318,990,867	133,872,839	89,350,856	20,703,074	75,064,099

i = > 50% of the estimate is a combination of imputation and reweighting to account for nonresponse; r = relative standard error > 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 37

**Sales and revenues from U.S. operations, by company size and industry: 2021**

(Thousands of U.S. dollars)

Industry	NAICS code	All companies	1–9 employees	10–49 employees	50–249 employees	250 or more employees
All industries	11, 21–23, 31–33, 42–81	35,814,644,033	2,591,963,353	4,100,248,243	4,803,451,233	24,318,981,204
Manufacturing industries	31–33	5,796,370,244	95,011,297	285,583,343	536,323,453	4,879,452,151
Food	311	791,546,555	8,590,818	36,080,214	62,597,440	684,278,083
Beverage and tobacco products	312	133,103,831	3,594,650	8,419,164	9,601,745	111,488,271
Textile, apparel, and leather products	313–16	48,051,550	5,983,563	7,366,229	11,216,396	23,485,362
Wood products	321	152,964,177	4,490,946	17,494,845	23,375,438	107,602,948
Paper	322	130,099,699	982,639	4,019,087	12,180,179	112,917,794
Printing and related support activities	323	66,887,145	10,341,248	12,436,198	15,034,662	29,075,038
Petroleum and coal products	324	830,513,652	411,116	3,476,033	2,936,378	823,690,125
Chemicals	325	664,152,545	5,899,783	21,247,101	67,272,412	569,733,249
Pesticide, fertilizer, and other agricultural chemicals	3253	12,922,227	298,024	1,884,136	10,296,765	443,303
Pharmaceuticals and medicines	3254	244,727,550	755,425	3,280,806	7,960,870	232,730,449
Soap, cleaning compound, and toilet preparation	3256	47,730,671	1,443,361	2,937,451	3,383,536	39,966,324
Other chemicals	other 325	358,772,096	3,402,973	13,144,709	45,631,241	296,593,173
Plastics and rubber products	326	217,962,312	2,667,693	14,098,425	35,964,022	165,232,173
Nonmetallic mineral products	327	155,659,834	2,833,935	12,131,985	16,808,613	123,885,301
Primary metals	331	293,082,625	850,430	6,089,164	16,710,300	269,432,732
Fabricated metal products	332	351,844,512	18,137,262	57,049,145	84,124,682	192,533,424
Machinery	333	409,685,282	8,195,993	31,960,260	73,597,903	295,931,126
Computer and electronic products	334	388,264,483	4,094,352	12,215,346	28,999,610	342,955,175
Communications equipment	3342	30,184,577	408,541	1,776,122	4,124,096	23,875,818
Semiconductor and other electronic components	3344	118,620,443	1,336,558	3,902,833	7,402,361	105,978,692
Navigational, measuring, electromedical, and control instruments	3345	208,972,438	1,640,999	5,067,246	12,717,126	189,547,067
Other computer and electronic products	other 334	30,487,024	708,255	1,469,144	4,756,027	23,553,598
Electrical equipment, appliances, and components	335	107,246,772	2,174,215	6,409,602	16,563,384	82,099,572
Transportation equipment	336	837,843,085	2,684,511	9,936,800	30,962,834	794,258,939
Automobiles, bodies, trailers, and parts	3361–63	629,298,191	1,674,103	6,614,794	21,731,808	599,277,485
Aerospace products and parts	3364	156,216,692	327,652	1,521,906	3,984,390	150,382,745
Other transportation	other 336	52,328,202	682,756	1,800,100	5,246,636	44,598,710
Furniture and related products	337	85,448,290	5,332,541	9,660,808	11,923,853	58,531,088
Miscellaneous	339	132,001,193	7,732,898	15,492,940	16,453,603	92,321,752
Medical equipment and supplies	3391	72,628,927	2,320,502	3,304,530	7,428,259	59,575,635
Other miscellaneous manufacturing	3399	59,372,267	5,412,396	12,188,410	9,025,343	32,746,117
Nonmanufacturing industries	11, 21–23, 42–81	30,018,273,789	2,496,952,056	3,814,664,899	4,267,127,780	19,439,529,053
Agriculture, forestry, fishing, and hunting	11	221,884,480	12,130,090	20,437,338	12,055,883	177,261,169

TABLE 37

**Sales and revenues from U.S. operations, by company size and industry: 2021**

(Thousands of U.S. dollars)

Industry	NAICS code	All companies	1–9 employees	10–49 employees	50–249 employees	250 or more employees
Mining, extraction, and support activities	21	341,780,064	12,050,838	16,304,945	46,594,885	266,829,396
Utilities	22	451,945,818	1,557,613	4,736,671	7,440,476	438,211,058
Construction	23	2,284,082,221	379,765,912	580,825,238	634,180,610	689,310,461
Wholesale trade	42	4,541,609,393	325,857,472	625,438,914	662,114,447	2,928,198,559
Retail trade	44–45	4,975,610,178	436,617,408	637,494,775	752,867,146	3,148,630,850
Transportation and warehousing	48–49	1,363,328,918	106,585,258	126,099,931	159,346,163	971,297,566
Information	51	2,134,724,628	33,300,736	49,078,454	80,746,532	1,971,598,907
Publishing	511	495,882,218	7,550,591	15,088,587	20,838,115	452,404,926
Newspaper, periodical, book, and directory publishers	5111	61,665,671	3,579,321	5,672,415	7,968,820	44,445,115
Software publishers	5112	434,216,253	3,970,975	9,416,172	12,869,295	407,959,811
Telecommunications	517	943,313,401	4,635,977	14,546,455	34,898,881	889,232,088
Data processing, hosting, and related services	518	87,584,367	5,115,375	6,441,720	12,706,831	63,320,442
Other information	other 51	607,944,641	15,998,793	13,001,692	12,302,706	566,641,450
Finance and insurance	52	4,730,236,436	160,324,670	376,030,890	593,271,574	3,600,609,302
Real estate and rental and leasing	53	555,073,316	160,228,743	78,149,316	47,740,705	268,954,553
Lessors of nonfinancial intangible assets (except copyrighted works)	533	7,733,984	1,848,562	3,217,999	2,657,088	10,334
Other real estate and rental and leasing	other 53	547,339,333	158,380,180	74,931,317	45,083,617	268,944,219
Professional, scientific, and technical services	54	2,513,703,001	291,145,907	327,197,299	319,440,279	1,575,919,516
Legal services	5411	385,067,730	70,551,435	64,036,821	55,046,917	195,432,557
Accounting, tax preparation, bookkeeping, and payroll services	5412	325,697,429	31,648,494	27,591,918	18,676,138	247,780,879
Architectural, engineering, and related services	5413	299,496,822	33,953,827	56,079,716	54,100,527	155,362,751
Specialized design services	5414	21,432,469	12,166,058	8,797,576	468,834	0
Computer systems design and related services	5415	530,190,313	45,328,770	50,947,779	66,560,882	367,352,882
Management, scientific, and technical consulting services	5416	258,487,683	57,472,861	40,746,786	64,588,363	95,679,673
Scientific research and development services	5417	200,954,690	4,957,417	10,275,518	16,216,334	169,505,421
Advertising, public relations, and related services	5418	139,497,729	16,802,683	19,394,696	31,659,806	71,640,544
Other professional, scientific, and technical services	5419	352,878,138	18,264,361	49,326,489	12,122,479	273,164,808
Management of companies and enterprises	55	19,423,456	3,594,648	4,392,610	11,181,320	254,877
Administrative and support and waste management and remediation services	56	2,381,251,242	112,083,099	159,348,130	270,081,010	1,839,739,004
Educational services	61	92,538,750	14,736,888	35,963,368	11,231,339	30,607,154
Health care and social assistance	62	1,832,342,348	181,148,999	283,975,018	401,591,054	965,627,278
Health care services	621–23	1,521,878,029	173,601,374	254,601,064	356,686,266	736,989,325
Social assistance	624	310,464,320	7,547,625	29,373,954	44,904,788	228,637,952

TABLE 37

**Sales and revenues from U.S. operations, by company size and industry: 2021**

(Thousands of U.S. dollars)

Industry	NAICS code	All companies	1–9 employees	10–49 employees	50–249 employees	250 or more employees
Arts, entertainment, and recreation	71	151,756,355	38,502,657	41,017,592	24,764,649	47,471,457
Accommodation and food services	72	1,125,816,002	98,596,568	360,408,364	211,925,219	454,885,852
Other services	81	301,167,182	128,724,552	87,766,045	20,554,490	64,122,094

i = > 50% of the estimate is a combination of imputation and reweighting to account for nonresponse; r = relative standard error > 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 38

## Domestic employees, by company size and industry: 2021

(Number)

Industry	NAICS code	All companies	1–9 employees	10–49 employees	50–249 employees	250 or more employees
All industries	11, 21–23, 31–33, 42–81	112,723,718	11,945,074	19,747,521	17,504,479	63,526,645
Manufacturing industries	31–33	13,370,866	468,129	1,399,314	2,045,037	9,458,386
Food	311	1,668,324	42,453	144,532	202,078	1,279,262
Beverage and tobacco products	312	448,197	22,439	77,780	52,061	295,917
Textile, apparel, and leather products	313–16	216,413	23,992	49,447	52,106	90,868
Wood products	321	455,566	21,702	78,072	79,505	276,288
Paper	322	320,343	1,760	15,291	30,673	272,620
Printing and related support activities	323	405,547	53,377	88,473	79,809	183,888
Petroleum and coal products	324	157,591	879	5,109	2,657	148,947
Chemicals	325	1,063,551	15,917	51,528	129,092	867,013
Pesticide, fertilizer, and other agricultural chemicals	3253	17,360	1,159	2,933	11,388	1,880
Pharmaceuticals and medicines	3254	415,178	2,855	9,550	23,300	379,472
Soap, cleaning compound, and toilet preparation	3256	111,792	3,774	7,946	13,157	86,914
Other chemicals	other 325	519,221	8,128	31,099	81,247	398,747
Plastics and rubber products	326	664,613	9,913	63,697	148,396	442,606
Nonmetallic mineral products	327	478,621	14,261	57,492	80,746	326,122
Primary metals	331	417,943	2,770	19,299	39,272	356,603
Fabricated metal products	332	1,380,992	108,317	314,494	447,117	511,063
Machinery	333	1,354,377	33,246	131,929	226,406	962,796
Computer and electronic products	334	1,053,432	18,010	57,818	112,297	865,307
Communications equipment	3342	62,404	1,827	6,248	9,083	45,246
Semiconductor and other electronic components	3344	363,975	5,103	21,484	42,005	295,383
Navigational, measuring, electromedical, and control instruments	3345	572,272	8,169	24,838	48,384	490,881
Other computer and electronic products	other 334	54,781	2,911	5,248	12,825	33,797
Electrical equipment, appliances, and components	335	438,759	7,811	30,087	60,145	340,716
Transportation equipment	336	1,880,960	12,877	50,995	130,755	1,686,333
Automobiles, bodies, trailers, and parts	3361–63	1,283,899	7,643	32,238	83,600	1,160,419
Aerospace products and parts	3364	436,103	1,549	7,243	19,822	407,489
Other transportation	other 336	160,958	3,685	11,514	27,334	118,425
Furniture and related products	337	462,309	27,913	68,863	100,631	264,902
Miscellaneous	339	503,267	50,433	94,406	71,291	287,137
Medical equipment and supplies	3391	268,946	19,237	29,953	26,109	193,647
Other miscellaneous manufacturing	3399	234,320	31,196	64,452	45,182	93,490
Nonmanufacturing industries	11, 21–23, 42–81	99,352,852	11,476,945	18,348,207	15,459,442	54,068,258
Agriculture, forestry, fishing, and hunting	11	418,520	49,096	58,296	67,085	244,044
Mining, extraction, and support activities	21	439,068	31,103	67,686	71,132	269,147
Utilities	22	463,275	6,699	10,108	14,793	431,675
Construction	23	10,133,097	1,626,301	2,318,040	1,956,674	4,232,082
Wholesale trade	42	6,269,784	563,446	1,021,630	1,155,525	3,529,183
Retail trade	44–45	15,072,116	1,535,321	2,108,407	1,575,690	9,852,698
Transportation and warehousing	48–49	5,424,900	357,989	610,714	828,592	3,627,605
Information	51	4,678,815	139,970	214,872	290,376	4,033,598
Publishing	511	1,239,360	42,648	81,672	100,915	1,014,126
Newspaper, periodical, book, and directory publishers	5111	258,997	22,611	39,420	39,704	157,261

TABLE 38

**Domestic employees, by company size and industry: 2021**

(Number)

Industry	NAICS code	All companies	1–9 employees	10–49 employees	50–249 employees	250 or more employees
Software publishers	5112	980,358	20,032	42,251	61,210	856,865
Telecommunications	517	1,328,220	16,935	35,061	58,972	1,217,253
Data processing, hosting, and related services	518	560,827	18,348	34,962	53,851	453,666
Other information	other 51	1,550,408	62,039	63,177	76,638	1,348,554
Finance and insurance	52	5,500,815	515,215	350,928	426,269	4,208,404
Real estate and rental and leasing	53	2,418,091	598,156	453,520	362,537	1,003,879
Lessors of nonfinancial intangible assets (except copyrighted works)	533	29,822	r 3,271	7,045	17,552	r 1,954
Other real estate and rental and leasing	other 53	2,388,269	594,885	446,475	344,985	1,001,925
Professional, scientific, and technical services	54	8,924,508	1,614,043	1,749,325	1,374,798	4,186,341
Legal services	5411	1,330,549	392,761	314,839	221,632	401,318
Accounting, tax preparation, bookkeeping, and payroll services	5412	1,277,151	278,742	235,893	144,103	618,412
Architectural, engineering, and related services	5413	1,449,184	201,299	325,590	260,736	661,558
Specialized design services	5414	109,657	66,362	40,812	2,483	0
Computer systems design and related services	5415	1,763,768	195,241	239,806	315,575	1,013,145
Management, scientific, and technical consulting services	5416	1,209,257	276,390	206,111	233,897	492,860
Scientific research and development services	5417	427,983	24,711	49,038	69,092	285,141
Advertising, public relations, and related services	5418	416,659	62,711	70,762	65,337	217,849
Other professional, scientific, and technical services	5419	940,300	115,826	266,474	61,942	496,058
Management of companies and enterprises	55	22,873	i 7,666	4,441	6,299	i 4,467
Administrative and support and waste management and remediation services	56	11,184,984	709,730	1,168,812	1,420,487	7,885,955
Educational services	61	822,306	140,623	268,870	109,579	303,234
Health care and social assistance	62	9,744,007	1,386,093	2,476,302	2,345,328	3,536,284
Health care services	621–23	8,025,316	1,265,451	1,950,622	1,815,106	2,994,136
Social assistance	624	1,718,691	120,642	525,679	530,222	542,149
Arts, entertainment, and recreation	71	1,337,916	186,035	398,502	338,949	414,431
Accommodation and food services	72	13,880,661	1,024,952	i 4,202,956	2,834,433	5,818,319
Other services	81	2,617,117	984,509	864,800	280,896	486,912

i = > 50% of the estimate is a combination of imputation and reweighting to account for nonresponse; r = relative standard error > 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 39

## Sources of domestic sales and revenue, by industry: 2021

(Thousands of U.S. dollars)

Industry	NAICS code	Total	Selling goods	Selling services	Licensing	Grants	Other sources
All industries	11, 21–23, 31–33, 42–81	35,814,644,033	18,194,761,606	15,512,028,897	252,058,761	110,456,400	1,745,338,369
Manufacturing industries	31–33	5,796,370,244	5,430,561,799	293,666,907	13,692,097	2,602,327	55,847,115
Food	311	791,546,555	727,012,948	52,789,189	10,193,844	231,161	1,319,412
Beverage and tobacco products	312	133,103,831	130,176,521	1,456,803	24,875	258,752	1,186,880
Textile, apparel, and leather products	313–16	48,051,550	45,757,784	1,770,681	270,240 r	125,655 r	127,191
Wood products	321	152,964,177	146,865,031	5,839,230	5,464	20,481	233,971
Paper	322	130,099,699	127,954,663	2,099,983	37,699	6,218	1,135
Printing and related support activities	323	66,887,145	56,878,543	8,690,371	59,115	69,116	1,190,000
Petroleum and coal products	324	830,513,652	825,107,105 i	5,296,452 i	0	0	110,095 i
Chemicals	325	664,152,545	625,902,370	29,805,084	1,250,023	232,852	6,962,215
Pesticide, fertilizer, and other agricultural chemicals	3253	12,922,227	12,156,704	730,649	124 r	1,706	33,045 r
Pharmaceuticals and medicines	3254	244,727,550	225,920,049	13,503,867	459,562	55,959	4,788,114
Soap, cleaning compound, and toilet preparation	3256	47,730,671	46,754,695	646,484	183,200	7,537	138,756 r
Other chemicals	other 325	358,772,096	341,400,062	14,791,691	599,861	172,493 r	1,807,989
Plastics and rubber products	326	217,962,312	209,314,590	3,338,546	88,799	31,565	5,188,812 r
Nonmetallic mineral products	327	155,659,834	149,172,591	6,283,746	20,100	54,921	128,474
Primary metals	331	293,082,625	289,565,625	3,324,444	403 r	22,554	169,598
Fabricated metal products	332	351,844,512	323,823,523	26,607,749	27,456	363,287	1,022,496
Machinery	333	409,685,282	364,643,310	29,160,433	90,914	174,382	15,616,243
Computer and electronic products	334	388,264,483	355,029,659 i	31,232,345	502,965	268,010	1,231,503
Communications equipment	3342	30,184,577	26,009,483	3,245,879	38,167	5,799	885,249
Semiconductor and other electronic components	3344	118,620,443	108,294,832	10,242,811	25,995 r	33,723	23,081 r
Navigational, measuring, electromedical, and control instruments	3345	208,972,438 i	194,117,606 i	14,143,092 i	292,416 i	254,372 i	164,952 i
Other computer and electronic products	other 334	30,487,024	27,442,326	2,870,592	151,390	4,122	18,593 r
Electrical equipment, appliances, and components	335	107,246,772	104,640,549	2,233,010	9,129	178,243	185,841
Transportation equipment	336	837,843,085	766,013,140	54,467,192	251,621	265,776	16,845,356
Automobiles, bodies, trailers, and parts	3361–63	629,298,191	602,686,812	10,009,576	76,620	62,510	16,462,674
Aerospace products and parts	3364	156,216,692	119,944,049	36,147,512	12,955	63,589	48,587
Other transportation	other 336	52,328,202	43,817,727	7,816,468	161,684	138,616	393,707
Furniture and related products	337	85,448,290	81,225,908	3,999,730	10,754	55,568	156,331
Miscellaneous	339	132,001,193	114,762,056 i	15,635,941 i	176,017	152,923	1,274,255 r
Medical equipment and supplies	3391	72,628,927	68,088,166 i	4,236,451 i	39,493 i	135,316 i	129,501 i
Other miscellaneous manufacturing	3399	59,372,267	48,373,019	9,898,915	116,815	35,194	948,323 r
Nonmanufacturing industries	11, 21–23, 42–81	30,018,273,789	12,876,050,008	15,118,615,391	237,147,220	107,166,810	1,679,294,360
Agriculture, forestry, fishing, and hunting	11	221,884,480	29,520,311	187,570,212	1,546,609 r	69,298	3,178,049
Mining, extraction, and support activities	21	341,780,064	273,483,265	49,099,437	543,527	86,188	18,567,646

TABLE 39

## Sources of domestic sales and revenue, by industry: 2021

(Thousands of U.S. dollars)

Industry	NAICS code	Total	Selling goods	Selling services	Licensing	Grants	Other sources
Utilities	22	451,945,818	214,218,936	225,800,849	40,045 r	13,101	11,872,887
Construction	23	2,284,082,221	569,271,751	1,549,618,781	2,455,329	2,238,549	160,497,812
Wholesale trade	42	4,541,609,393	4,141,984,335	339,155,518	23,864,330	1,261,099	35,344,112
Retail trade	44-45	4,975,610,178	4,665,779,771	275,631,017	3,705,803	1,683,019	28,810,569
Transportation and warehousing	48-49	1,363,328,918	198,742,102	1,103,996,092	811,664	5,774,887	54,004,172
Information	51	2,134,724,628	500,830,422 i	1,475,311,113 i	105,287,719 i	1,470,964	51,824,410 i
Publishing	511	495,882,218	88,206,763	323,524,184 i	68,027,493	168,127	15,955,651
Newspaper, periodical, book, and directory publishers	5111	61,665,671	27,440,249	31,754,948	1,289,632	96,012	1,084,829
Software publishers	5112	434,216,253	59,892,930 i	292,218,531 i	67,118,139 i	68,131	14,918,521 i
Telecommunications	517	943,313,401	165,439,288	772,600,063	202,728	218,371	4,852,952
Data processing, hosting, and related services	518	87,584,367	6,138,539	78,702,166	1,673,002	96,104 r	974,557
Other information	other 51	607,944,641	288,720,863 i	236,591,939 i	42,947,124 i	1,268,314 i	38,416,401 i
Finance and insurance	52	4,730,236,436	591,527,561	3,445,359,783	2,677,017	5,087,204 r	685,584,871
Real estate and rental and leasing	53	555,073,316	106,198,765	344,798,079	5,628,782	330,451	98,117,240
Lessors of nonfinancial intangible assets (except copyrighted works)	533	7,733,984	3,207,162	525,412 r	3,833,547	485 r	167,378
Other real estate and rental and leasing	other 53	547,339,333	102,913,635	344,465,787	1,625,750	330,151	98,004,010
Professional, scientific, and technical services	54	2,513,703,001	441,506,493	1,749,194,414	73,017,771 r	60,696,482 r	189,287,842
Legal services	5411	385,067,730	4,111,808	361,303,340	66,904	173,561	19,412,117
Accounting, tax preparation, bookkeeping, and payroll services	5412	325,697,429	4,174,899	318,608,386	376,030	1,011,660 r	1,526,454
Architectural, engineering, and related services	5413	299,496,822	37,089,239	257,050,727	813,341	497,806	4,045,710
Specialized design services	5414	21,432,469	11,705,209	9,306,896	212,122	40,660	167,584
Computer systems design and related services	5415	530,190,313	136,088,203	304,335,577	10,996,354	1,203,019	77,567,160
Management, scientific, and technical consulting services	5416	258,487,683	60,026,005	184,252,329	1,411,927	439,758	12,357,663
Scientific research and development services	5417	200,954,690	123,280,542	35,091,869	9,186,628	8,077,659	25,317,992
Advertising, public relations, and related services	5418	139,497,729	13,788,811	122,543,246	1,002,719 r	52,942	2,110,011
Other professional, scientific, and technical services	5419	352,878,138 r	70,693,049 r	135,564,509	48,609,297 r	48,649,200 r	49,362,083 r
Management of companies and enterprises	55	19,423,456 i	13,961,356 i	1,614,178	17,716 r	0	3,830,206 r
Administrative and support and waste management and remediation services	56	2,381,251,242	134,964,463	2,208,620,010	2,901,772	2,924,775	31,840,222
Educational services	61	92,538,750	12,741,322	73,672,699	511,823	1,458,998	4,153,909
Health care and social assistance	62	1,832,342,348	72,912,948	1,531,813,524	2,335,848	10,799,662	214,480,366
Health care services	621-23	1,521,878,029	72,441,886	1,228,247,197	2,059,278	8,553,471	210,576,198
Social assistance	624	310,464,320	1,958,047	298,057,570	291,487	2,194,092	7,963,124 r
Arts, entertainment, and recreation	71	151,756,355	29,859,900	90,578,211	9,622,730	1,911,541	19,783,973
Accommodation and food services	72	1,125,816,002	815,888,579	237,731,142	9,505,910	11,154,657	51,535,714
Other services	81	301,167,182	79,950,539	209,097,071	571,853	731,857	10,815,862 r



i = > 50% of the estimate is a combination of imputation and reweighting to account for nonresponse; r = relative standard error > 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail across rows may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Industry classification is based on dominant establishment payroll. Detail across columns have been adjusted to add to total. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 40

**Sources of domestic sales and revenue, by company size: 2021**

(Thousands of U.S. dollars)

Employment size	Total	Selling goods	Selling services	Licensing	Grants	Other sources
All companies	35,814,644,033	18,194,761,606	15,512,028,897	252,058,761	110,456,400	1,745,338,369
Micro companies						
1–4	1,350,353,086	553,752,558	682,238,114	10,068,233	6,234,181	98,060,000
5–9	1,241,610,267	576,694,588	591,598,348	4,674,695	8,041,482	60,601,154
Small companies						
10–19	1,658,181,784	814,395,857	702,405,069	9,101,019	11,569,494	120,710,346
20–49	2,442,066,459	1,252,307,808	1,067,908,145	12,349,437	7,810,188	101,690,881
Medium companies						
50–99	1,830,072,799	1,033,004,573	704,131,660	6,545,382	4,157,038	82,234,146
100–249	2,973,378,435	1,201,805,770	1,536,563,195	9,319,912	5,617,296	220,072,262
Large companies						
250–499	1,652,729,774	814,762,435	733,521,471	6,526,674	1,592,758	96,326,436
500–999	1,540,939,867	752,948,730	660,063,289	21,758,642	2,162,597	104,006,610
1,000–4,999	4,805,485,015	2,506,403,376	2,007,575,352	30,562,881	1,354,282	259,589,124
5,000–9,999	3,472,543,408	1,583,809,533	1,457,653,989	54,900,864 r	51,164,310 r	325,014,712
10,000–24,999	4,269,597,626	2,092,213,714	1,978,611,945	18,495,020	4,872,766	175,404,182
25,000 or more	8,577,685,515	5,017,559,881	3,391,685,609	66,359,402	4,174,743	97,905,879

r = relative standard error &gt; 50%.

**Note(s):**

Detail across rows may not add to total because of rounding. Detail across columns have been adjusted to add to total. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 41

**Sources of domestic sales and revenue, by R&D activity, for companies with 1–9 employees in selected industries: 2021**

(Thousands of U.S. dollars)

R&D activity	Total	Selling goods	Selling services	Licensing	Grants	Other sources
All companies	538,409,519	393,247,621	124,578,461	4,563,294	2,488,190	13,531,953
R&D-performing companies	14,404,579	5,370,258	6,611,722	800,020	1,091,674	530,905
Non-R&D-performing companies	524,004,940	387,929,630	117,933,467	3,756,395	1,386,114	12,999,334

**Note(s):**

Detail across rows may not add to total because of rounding. Detail across columns have been adjusted to add to total. Only companies in the following North American Industrial Classification System sectors and industries are included in this table: 31–33, 42, 51, 5413, 5415, and 5417. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 42

**Product innovating companies, by firm classification of sex of owners: 2019–21**

(Number and percent)

Sex of owners	Companies (number)	Product innovation			
		Number		Percent	
		Yes	No	Yes	No
All companies	4,874,928	459,474	4,415,454	9.4	90.6
Female owned	1,094,826	121,905	972,921	11.1	88.9
Male owned	3,054,668	271,626	2,783,042	8.9	91.1
Equally owned by male and female	695,951	61,893	634,058	8.9	91.1
Unclassifiable	29,483	4,050	25,433	13.7	86.3

**Note(s):**

Detail across rows may not add to total because of rounding. Detail across columns have been adjusted to add to total. Unclassifiable category includes firms that have no owners with a 10% or greater ownership of the stock or equity in the business. Companies are classified according to owner demographics if persons with that demographic characteristic own more than a 50% stake in the company.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 43

**Product innovating companies, by firm classification of race and ethnicity of owners: 2019–21**

(Number and percent)

Race and ethnicity of owners	Companies (number)	Product innovation			
		Number		Percent	
		Yes	No	Yes	No
All companies	4,874,928	459,474	4,415,454	9.4	90.6
Race					
White	4,166,399	376,259	3,790,140	9.0	91.0
Asian	528,892	61,739	467,153	11.7	88.3
Black or African American	114,570	14,308	100,262	12.5	87.5
American Indian or Alaska Native	42,474	5,209	37,265	12.3	87.7
Native Hawaiian or Other Pacific Islander	7,097	534	6,563	7.5	92.5
Ethnicity					
Hispanic or Latino	314,814	37,051	277,763	11.8	88.2
Equally Hispanic or Latino and not Hispanic or Latino	44,160	5,374	38,786	12.2	87.8
Not Hispanic or Latino	4,486,469	412,999	4,073,470	9.2	90.8
Minority status					
Minority	978,056	114,990	863,066	11.8	88.2
Black or African American, American Indian or Alaska Native, or Hispanic or Latino	445,131	52,765	392,366	11.9	88.1
Equally minority and nonminority	80,198	9,069	71,129	11.3	88.7
Nonminority	3,787,192	331,366	3,455,826	8.7	91.3
Unclassifiable	29,483	4,050	25,433	13.7	86.3

**Note(s):**

Detail across rows may not add to total because of rounding. Detail across columns have been adjusted to add to total. Companies may be included in one or more race and ethnicity category. Companies classified as “minority” are those companies classified as any race and ethnicity combination other than White and not Hispanic or Latino. Unclassifiable category includes firms that have no owners with a 10% or greater ownership of the stock or equity in the business. Statistics are representative of companies located in the United States. Companies are classified according to owner demographics if persons with that demographic characteristic own more than a 50% stake in the company.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 44

**Product innovating companies, by state: 2019–21**

(Number and percent)

State	Companies (number)	Product innovation			
		Number		Percent	
		Yes	No	Yes	No
All states	4,874,928	459,474	4,415,454	9.4	90.6
Alabama	54,555	4,474	50,081	8.2	91.8
Alaska	12,348	907	11,441	7.3	92.7
Arizona	88,464	9,357	79,107	10.6	89.4
Arkansas	38,563	2,706	35,857	7.0	93.0
California	634,097	67,456	566,641	10.6	89.4
Colorado	117,663	12,765	104,898	10.8	89.2
Connecticut	53,634	5,997	47,637	11.2	88.8
Delaware	15,699	1,657	14,042	10.6	89.4
District of Columbia	9,241	934	8,307	10.1	89.9
Florida	360,086	34,062	326,024	9.5	90.5
Georgia	136,770	13,189	123,581	9.6	90.4
Hawaii	19,188	2,020	17,168	10.5	89.5
Idaho	36,955	2,363	34,592	6.4	93.6
Illinois	201,521	19,277	182,244	9.6	90.4
Indiana	88,279	9,046	79,233	10.2	89.8
Iowa	53,977	4,127	49,850	7.6	92.4
Kansas	44,314	3,202	41,112	7.2	92.8
Kentucky	50,989	4,158	46,831	8.2	91.8
Louisiana	57,184	4,096	53,088	7.2	92.8
Maine	27,706	2,435	25,271	8.8	91.2
Maryland	84,070	7,499	76,571	8.9	91.1
Massachusetts	100,546	9,502	91,044	9.5	90.5
Michigan	140,638	11,719	128,919	8.3	91.7
Minnesota	94,726	8,849	85,877	9.3	90.7
Mississippi	28,818	1,542	27,276	5.4	94.6
Missouri	87,519	6,922	80,597	7.9	92.1
Montana	27,978	2,723	25,255	9.7	90.3
Nebraska	37,419	2,855	34,564	7.6	92.4
Nevada	42,070	4,283	37,787	10.2	89.8
New Hampshire	23,247	2,227	21,020	9.6	90.4
New Jersey	144,339	13,483	130,856	9.3	90.7
New Mexico	25,042	2,307	22,735	9.2	90.8
New York	304,459	28,861	275,598	9.5	90.5
North Carolina	150,019	13,486	136,533	9.0	91.0
North Dakota	16,437	1,241	15,196	7.6	92.4
Ohio	146,552	12,463	134,089	8.5	91.5
Oklahoma	55,545	4,339	51,206	7.8	92.2
Oregon	79,966	7,297	72,669	9.1	90.9
Pennsylvania	179,439	15,547	163,892	8.7	91.3
Rhode Island	16,277	1,116	15,161	6.9	93.1
South Carolina	65,627	5,475	60,152	8.3	91.7
South Dakota	18,767	1,481	17,286	7.9	92.1
Tennessee	74,530	6,459	68,071	8.7	91.3
Texas	329,394	31,852	297,542	9.7	90.3
Utah	62,622	7,072	55,550	11.3	88.7
Vermont	13,670	1,188	12,482	8.7	91.3
Virginia	125,104	11,984	113,120	9.6	90.4
Washington	131,286	14,274	117,012	10.9	89.1

TABLE 44

**Product innovating companies, by state: 2019–21**

(Number and percent)

State	Companies (number)	Product innovation			
		Number		Percent	
		Yes	No	Yes	No
West Virginia	18,510	1,110	17,400	6.0	94.0
Wisconsin	94,186	9,110	85,076	9.7	90.3
Wyoming	14,919	1,319	13,600	8.8	91.2
Undistributed	39,971	5,655	34,316	14.1	85.9

**Note(s):**

Detail across rows may not add to total because of rounding. Detail across columns have been adjusted to add to total. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 45

**Goods and services innovating companies, by industry: 2019–21**

(Percent)

Industry	NAICS code	All companies (number)	Goods innovation	Services innovation
All industries	11, 21–23, 31–33, 42–81	4,874,928	5.0	7.1
Manufacturing industries	31–33	209,282	10.6	5.2
Food	311	19,326	10.2	5.2
Beverage and tobacco products	312	9,354	15.3	9.0
Textile, apparel, and leather products	313–16	9,443	10.5	5.1
Wood products	321	9,546	5.3	2.0
Paper	322	1,500	10.6	3.2
Printing and related support activities	323	20,212	7.2	6.7
Petroleum and coal products	324	546	4.0	1.6
Chemicals	325	7,961	19.9	5.5
Pesticide, fertilizer, and other agricultural chemicals	3253	580	10.2	6.7 r
Pharmaceuticals and medicines	3254	1,536	20.6	10.9
Soap, cleaning compound, and toilet preparation	3256	1,652	20.3	5.2
Other chemicals	other 325	4,194	20.8	3.3
Plastics and rubber products	326	7,060	10.2	3.9
Nonmetallic mineral products	327	7,290	7.0	4.4
Primary metals	331	2,079	5.1	1.8 r
Fabricated metal products	332	46,128	6.7	4.0
Machinery	333	16,440	14.7	6.8
Computer and electronic products	334	8,527	22.9	10.4
Communications equipment	3342	850	31.5	12.6
Semiconductor and other electronic components	3344	2,711	19.2	10.2
Navigational, measuring, electromedical, and control instruments	3345	3,737	21.7	8.7
Other computer and electronic products	other 334	1,230	29.1	14.4
Electrical equipment, appliances, and components	335	3,925	22.2	7.0
Transportation equipment	336	7,325	15.2	5.6
Automobiles, bodies, trailers, and parts	3361–63	4,494	15.7	4.7
Aerospace products and parts	3364	1,044	16.1	8.3
Other transportation	other 336	1,787	13.5	6.4
Furniture and related products	337	12,060	6.3	1.8
Miscellaneous	339	20,536	11.9	5.2
Medical equipment and supplies	3391	7,602	9.8	5.5
Other miscellaneous manufacturing	3399	12,933	13.1	5.0
Nonmanufacturing industries	11, 21–23, 42–81	4,665,645	4.7	7.2
Agriculture, forestry, fishing, and hunting	11	19,567	2.5	3.8
Mining, extraction, and support activities	21	14,004	1.7	2.5
Utilities	22	2,994	2.5	5.3
Construction	23	635,568	2.9	3.5
Wholesale trade	42	241,440	8.4	5.0
Retail trade	44–45	546,067	7.8	6.1
Transportation and warehousing	48–49	165,454	3.2	5.0
Information	51	65,445	9.9	15.1
Publishing	511	17,755	17.8	19.0
Newspaper, periodical, book, and directory publishers	5111	9,162	6.6	9.5
Software publishers	5112	8,589	29.9	29.1
Telecommunications	517	7,319	8.3	12.5
Data processing, hosting, and related services	518	8,346	10.8	19.3
Other information	other 51	32,027	5.6	12.6
Finance and insurance	52	198,128	2.6	8.5



TABLE 45

**Goods and services innovating companies, by industry: 2019–21**

(Percent)

Industry	NAICS code	All companies (number)	Goods innovation	Services innovation
Real estate and rental and leasing	53	283,276	2.1	4.5
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1,956	4.9 r	7.0 r
Other real estate and rental and leasing	other 53	281,321	2.1	4.5
Professional, scientific, and technical services	54	717,229	4.2	9.9
Legal services	5411	152,543	0.6	4.0
Accounting, tax preparation, bookkeeping, and payroll services	5412	109,075	1.7	6.1
Architectural, engineering, and related services	5413	87,994	4.3	7.8
Specialized design services	5414	29,258	7.0	11.8
Computer systems design and related services	5415	100,282	8.6	15.9
Management, scientific, and technical consulting services	5416	144,421	4.7	14.3
Scientific research and development services	5417	11,149	13.2	12.5
Advertising, public relations, and related services	5418	28,236	5.2	12.7
Other professional, scientific, and technical services	5419	54,270	5.7	11.3
Management of companies and enterprises	55	3,153	1.8 r	3.0 r
Administrative and support and waste management and remediation services	56	293,539	3.3	6.9
Educational services	61	57,078	6.0	22.4
Health care and social assistance	62	536,276	4.6	10.2
Health care services	621–23	469,939	4.5	10.2
Social assistance	624	66,336	4.8	10.1
Arts, entertainment, and recreation	71	89,491	3.7	9.3
Accommodation and food services	72	455,071	6.4	6.7
Other services	81	341,869	4.5	6.7

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail may not add to total because of rounding. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 46

**Goods and services innovating companies, by company size: 2019–21**

(Percent)

Employment size	All companies (number)	Goods innovation	Services innovation
All companies	4,874,928	5.0	7.1
Micro companies			
1–4	2,734,191	4.1	6.5
5–9	950,548	5.7	7.6
Small companies			
10–19	577,397	6.3	8.3
20–49	399,566	6.2	8.3
Medium companies			
50–99	115,591	6.3	7.4
100–249	63,969	7.0	8.2
Large companies			
250–499	18,124	7.8	8.0
500–999	7,668	9.9	8.6
1,000–4,999	6,010	11.0 r	11.4 r
5,000–9,999	982	11.7	14.7
10,000–24,999	516	22.3	22.5
25,000 or more	372	18.8	19.6

r = relative standard error &gt; 50%.

**Note(s):**

Detail may not add to total because of rounding.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 47

**Product innovating companies, by industry: 2019, 2020, and 2021**

(Number and percent)

Industry	NAICS code	2019			2020			2021		
		All companies (number)	Product innovation (%)	No product innovation (%)	All companies (number)	Product innovation (%)	No product innovation (%)	All companies (number)	Product innovation (%)	No product innovation (%)
All industries	11, 21–23, 31–33, 42–81	4,857,473	10.9	89.1	4,865,616	9.0	91.0	4,874,928	9.4	90.6
Manufacturing industries	31–33	217,058	16.3	83.7	213,833	13.2	86.8	209,282	12.2	87.8
Food	311	18,379	13.2	86.8	18,385	11.3	88.7	19,326	12.4	87.6
Beverage and tobacco products	312	8,381	19.1	80.9	9,314	15.8	84.2	9,354	19.1	80.9
Textile, apparel, and leather products	313–16	10,205	15.9	84.1	9,850	11.1	88.9	9,443	11.6	88.4
Wood products	321	10,340	9.3	90.7	10,237	6.1	93.9	9,546	5.8	94.2
Paper	322	1,795	14.1	85.9	1,907	9.8	90.2	1,500	11.7	88.3
Printing and related support activities	323	21,035	15.9	84.1	20,357	9.9	90.1	20,212	9.6	90.4
Petroleum and coal products	324	693	3.9	96.1	463	11.9	88.1	546	4.0	96.0
Chemicals	325	7,759	20.2	79.8	8,095	20.2	79.8	7,961	21.0	79.0
Pesticide, fertilizer, and other agricultural chemicals	3,253	555	13.0	87.0	514	12.8	87.2	580	12.9	87.1
Pharmaceuticals and medicines	3,254	1,467	24.3	75.7	1,417	23.1	76.9	1,536	22.7	77.3
Soap, cleaning compound, and toilet preparation	3,256	1,772	20.5	79.5	1,807	16.3	83.7	1,652	20.5	79.5
Other chemicals	other 325	3,966	19.5	80.5	4,357	21.7	78.3	4,194	21.6	78.4
Plastics and rubber products	326	7,811	16.8	83.2	7,478	13.1	86.9	7,060	11.0	89.0
Nonmetallic mineral products	327	7,758	12.3	87.7	7,300	7.7	92.3	7,290	9.1	90.9
Primary metals	331	2,437	14.0	86.0	2,394	11.7	88.3	2,079	5.8	94.2
Fabricated metal products	332	48,470	12.6	87.4	46,992	9.4	90.6	46,128	8.4	91.6
Machinery	333	18,350	22.8	77.2	18,052	21.3	78.7	16,440	16.2	83.8
Computer and electronic products	334	8,851	33.1	66.9	8,732	27.7	72.3	8,527	24.9	75.1
Communications equipment	3,342	938	42.0	58.0	836	28.8	71.2	850	33.6	66.4
Semiconductor and other electronic components	3,344	2,914	24.8	75.2	2,773	21.9	78.1	2,711	20.6	79.4
Navigational, measuring, electromedical, and control instruments	3,345	3,649	37.5	62.5	3,753	31.8	68.2	3,737	23.8	76.2
Other computer and electronic products	other 334	1,349	32.5	67.5	1,369	27.3	72.7	1,230	31.6	68.4
Electrical equipment, appliances, and components	335	3,874	26.9	73.1	4,064	25.0	75.0	3,925	23.1	76.9
Transportation equipment	336	7,638	19.8	80.2	7,786	17.6	82.4	7,325	16.5	83.5
Automobiles, bodies, trailers, and parts	3361–63	4,728	18.5	81.5	5,054	16.4	83.6	4,494	16.7	83.3
Aerospace products and parts	3,364	1,099	19.5	80.5	994	15.4	84.6	1,044	17.5	82.5
Other transportation	other 336	1,810	23.1	76.9	1,738	22.0	78.0	1,787	15.1	84.9
Furniture and related products	337	12,927	12.0	88.0	12,594	8.3	91.7	12,060	6.7	93.3
Miscellaneous	339	20,251	17.5	82.5	19,761	15.4	84.6	20,536	13.3	86.7
Medical equipment and supplies	3,391	8,014	19.2	80.8	7,588	13.9	86.1	7,602	11.6	88.4
Other miscellaneous manufacturing	3,399	12,237	16.3	83.7	12,172	16.3	83.7	12,933	14.4	85.6
Nonmanufacturing industries	11, 21–23, 42–81	4,640,414	10.7	89.3	4,651,784	8.8	91.2	4,665,645	9.3	90.7

TABLE 47

**Product innovating companies, by industry: 2019, 2020, and 2021**

(Number and percent)

Industry	NAICS code	2019			2020			2021		
		All companies (number)	Product innovation (%)	No product innovation (%)	All companies (number)	Product innovation (%)	No product innovation (%)	All companies (number)	Product innovation (%)	No product innovation (%)
Agriculture, forestry, fishing, and hunting	11	22,732	5.8	94.2	21,859	4.7	95.3	19,567	4.7	95.3
Mining, extraction, and support activities	21	15,475	3.4	96.6	15,323	2.6	97.4	14,004	3.5	96.5
Utilities	22	2,615	7.1	92.9	2,729	5.1	94.9	2,994	6.1	93.9
Construction	23	627,340	6.4	93.6	627,170	5.2	94.8	635,568	4.9	95.1
Wholesale trade	42	253,680	16.1	83.9	246,019	12.8	87.2	241,440	10.1	89.9
Retail trade	44-45	554,596	11.7	88.3	548,126	8.7	91.3	546,067	10.4	89.6
Transportation and warehousing	48-49	157,728	7.5	92.5	160,599	6.0	94.0	165,454	6.2	93.8
Information	51	62,834	24.8	75.2	63,631	22.2	77.8	65,445	18.9	81.1
Publishing	511	18,521	31.0	69.0	17,644	28.5	71.5	17,755	26.5	73.5
Newspaper, periodical, book, and directory publishers	5,111	9,824	19.9	80.1	9,186	15.9	84.1	9,162	12.0	88.0
Software publishers	5,112	8,698	43.6	56.4	8,459	42.2	57.8	8,589	42.0	58.0
Telecommunications	517	6,907	22.0	78.0	7,670	23.2	76.8	7,319	14.9	85.1
Data processing, hosting, and related services	518	8,155	31.2	68.8	8,311	31.2	68.8	8,346	22.9	77.1
Other information	other 51	29,253	19.8	80.2	30,006	15.6	84.4	32,027	14.5	85.5
Finance and insurance	52	203,913	10.5	89.5	198,294	9.8	90.2	198,128	9.2	90.8
Real estate and rental and leasing	53	266,098	7.0	93.0	272,733	5.5	94.5	283,276	5.4	94.6
Lessors of nonfinancial intangible assets (except copyrighted works)	533	2,106	15.3	84.7	1,581	13.9	86.1	1,956	9.6	90.4
Other real estate and rental and leasing	other 53	263,991	7.0	93.0	271,153	5.4	94.6	281,321	5.4	94.6
Professional, scientific, and technical services	54	704,191	13.3	86.7	709,564	11.8	88.2	717,229	11.4	88.6
Legal services	5,411	151,977	4.6	95.4	153,271	4.2	95.8	152,543	4.2	95.8
Accounting, tax preparation, bookkeeping, and payroll services	5,412	106,233	6.4	93.6	106,909	5.9	94.1	109,075	7.1	92.9
Architectural, engineering, and related services	5,413	87,739	13.2	86.8	88,331	11.9	88.1	87,994	10.0	90.0
Specialized design services	5,414	27,355	15.3	84.7	29,243	14.5	85.5	29,258	14.5	85.5
Computer systems design and related services	5,415	97,862	24.7	75.3	98,634	22.1	77.9	100,282	18.6	81.4
Management, scientific, and technical consulting services	5,416	137,973	16.5	83.5	139,202	14.8	85.2	144,421	15.7	84.3
Scientific research and development services	5,417	10,517	24.9	75.1	10,785	22.2	77.8	11,149	19.2	80.8
Advertising, public relations, and related services	5,418	27,194	15.5	84.5	27,701	14.4	85.6	28,236	14.6	85.4
Other professional, scientific, and technical services	5,419	57,339	17.7	82.3	55,490	12.9	87.1	54,270	12.9	87.1
Management of companies and enterprises	55	2,391	7.1	92.9	2,331	7.3	92.7	3,153	3.0	97.0
Administrative and support and waste management and remediation services	56	285,195	9.3	90.7	291,891	7.4	92.6	293,539	8.1	91.9
Educational services	61	55,306	18.3	81.7	56,639	18.2	81.8	57,078	23.7	76.3
Health care and social assistance	62	526,683	11.4	88.6	531,069	10.8	89.2	536,276	11.5	88.5
Health care services	621-23	462,026	11.1	88.9	466,688	10.7	89.3	469,939	11.5	88.5
Social assistance	624	64,657	13.2	86.8	64,382	11.3	88.7	66,336	11.7	88.3

TABLE 47

**Product innovating companies, by industry: 2019, 2020, and 2021**

(Number and percent)

Industry	NAICS code	2019			2020			2021		
		All companies (number)	Product innovation (%)	No product innovation (%)	All companies (number)	Product innovation (%)	No product innovation (%)	All companies (number)	Product innovation (%)	No product innovation (%)
Arts, entertainment, and recreation	71	90,036	11.1	88.9	90,143	10.5	89.5	89,491	10.4	89.6
Accommodation and food services	72	464,061	8.9	91.1	464,142	7.0	93.0	455,071	9.8	90.2
Other services	81	345,543	11.0	89.0	349,519	7.1	92.9	341,869	8.5	91.5

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail across rows may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Detail across columns have been adjusted to add to total. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 48

**Product innovating companies, by company size: 2019, 2020, and 2021**

(Number and percent)

Employment size	2019			2020			2021		
	All companies (number)	Product innovation (%)	No product innovation (%)	All companies (number)	Product innovation (%)	No product innovation (%)	All companies (number)	Product innovation (%)	No product innovation (%)
All companies	4,857,473	10.9	89.1	4,865,616	9.0	91.0	4,874,928	9.4	90.6
Micro companies									
1–4	2,701,088	10.0	90.0	2,735,868	7.8	92.2	2,734,191	8.4	91.6
5–9	946,725	11.9	88.1	937,171	9.5	90.5	950,548	10.1	89.9
Small companies									
10–19	590,193	12.8	87.2	587,934	10.5	89.5	577,397	11.1	88.9
20–49	401,365	11.3	88.7	393,667	11.3	88.7	399,566	11.3	88.7
Medium companies									
50–99	118,677	12.0	88.0	113,856	13.5	86.5	115,591	10.4	89.6
100–249	64,454	12.0	88.0	64,375	15.8	84.2	63,969	11.8	88.2
Large companies									
250–499	19,208	14.2	85.8	17,147	19.6	80.4	18,124	13.0	87.0
500–999	8,130	14.2	85.8	7,487	19.3	80.7	7,668	14.9	85.1
1,000–4,999	6,023	19.1 r	80.9	6,271	23.2	76.8	6,010	16.8 r	83.2
5,000–9,999	775	25.3	74.7	980	26.6	73.4	982	20.2	79.8 r
10,000–24,999	496	29.2	70.8	543	33.9	66.1	516	30.4	69.6
25,000 or more	335	32.2	67.8	320	42.2	57.8	372	25.5	74.5

r = relative standard error &gt; 50%.

**Note(s):**

Detail across rows may not add to total because of rounding. Detail across columns have been adjusted to add to total. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 49

**Changes in R&D due to the coronavirus pandemic, by company size, for R&D performing companies with 1–9 employees in selected industries: 2021**

(Percent)

Employment size	All R&D performing companies (number)	New R&D project were started	Existing R&D projects were canceled	Existing R&D projects were disrupted
Micro companies	15,339	37.3	12.9	49.6
1–4	9,611	35.3	12.2	47.7
5–9	5,727	40.6	14.1	52.6

**Note(s):**

Percentages are from a "check all that apply" question. Only companies in the following North American Industrial Classification System sectors and industries are included in this table: 31–33, 42, 51, 5413, 5415, and 5417. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 50

**Impact of coronavirus pandemic on R&D expenditures, by company size, for R&D performing companies with 1–9 employees in selected industries: 2021**

(Percent)

Employment size	All R&D performing companies (number)	Increased in-house R&D expenditures	Decreased in-house R&D expenditures	No change in in-house R&D expenditures	Don't know
Micro companies	14,925	13.1	16.8	61.3	8.8
1–4	9,268	13.8	18.1	62.5	5.7 r
5–9	5,656	12.1	14.7	59.1	14.0

r = relative standard error &gt; 50%.

**Note(s):**

Detail across rows may not add to total because of rounding. Detail across columns have been adjusted to add to total. Only companies in the following North American Industrial Classification System sectors and industries are included in this table: 31–33, 42, 51, 5413, 5415, and 5417. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States that reported R&D.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.



TABLE 51

**In-house R&D on coronavirus pandemic-related R&D projects, by company size, for R&D performing companies with 1–9 employees in selected industries: 2021**

(Percent)

Employment size	All R&D performing companies (number)	Performed R&D on coronavirus pandemic-related projects	Did not perform R&D on coronavirus pandemic-related projects
Micro companies	14,925	11.1	88.9
1–4	9,268	9.7	90.3
5–9	5,656	13.4	86.6

**Note(s):**

Detail across rows may not add to total because of rounding. Detail across columns have been adjusted to add to total. Only companies in the following North American Industrial Classification System sectors and industries are included in this table: 31–33, 42, 51, 5413, 5415, and 5417. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States that reported R&D.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

**TABLE 52**  
**Impact of coronavirus pandemic on R&D full-time equivalent personnel, by company size, for R&D performing companies with 1–9 employees in selected industries: 2021**

(Percent)

Employment size	All R&D performing companies (number)	Increase in R&D FTE personnel	Decrease in R&D FTE personnel	No change in R&D personnel	Don't know
Micro companies	14,925	3.7	8.7	84.2	3.5 r
1–4	9,268	2.9	7.7	87.2	2.2 r
5–9	5,656	4.9	10.3	79.4	5.4

r = relative standard error > 50%.

FTE = full-time equivalent.

**Note(s):**

Detail across rows may not add to total because of rounding. Detail across columns have been adjusted to add to total. Only companies in the following North American Industrial Classification System sectors and industries are included in this table: 31–33, 42, 51, 5413, 5415, and 5417. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States that reported R&D.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 53

**Tax credit for research activities for companies with 1–9 employees, by industry: 2021**

(Percent)

Industry	NAICS code	Total (number)	Yes, filed Form 6765 in 2021	No, did not file Form 6765 in 2021
All selected industries	31–33, 42, 51, 5413, 5415, 5417	507,858	2.4	97.6
Manufacturing industries	31–33	119,069	1.8	98.2
Food, beverage, and tobacco products	311–12	14,764	1.8	98.2
Textile, apparel, and leather products	313–16	6,485	2.1	97.9
Wood products	321	4,917	0.6	r 99.4
Paper	322	474	14.1	r 85.9
Printing and related support activities	323	14,910	0.9	99.1
Petroleum and coal products	324	236	0.9	99.1
Chemicals	325	4,015	3.3	96.7
Pharmaceuticals and medicines	3254	760	6.8	93.2
Chemicals, excluding pharmaceuticals	other 325	3,253	2.7	97.3
Plastics and rubber products	326	2,663	1.5	98.5
Nonmetallic mineral products	327	3,486	2.1	r 97.9
Primary metals	331	707	2.1	r 97.9
Fabricated metal products	332	26,231	1.2	98.8
Machinery	333	8,007	1.9	98.1
Computer and electronic products	334	4,528	8.2	91.8
Semiconductor and other electronic components	3344	1,282	8.4	91.6
Navigational, measuring, electromedical, and control instruments	3345	1,955	9.1	90.9
Other computer and electronic products	other 334	1,291	6.8	93.2
Electrical equipment, appliances, and components	335	1,839	2.9	97.1
Transportation equipment	336	3,323	1.5	98.5
Aerospace products and parts	3364	439	2.9	97.1
Other transportation equipment	other 336	2,885	1.3	98.7
Furniture and related products	337	7,562	1.2	98.8
Miscellaneous manufacturing	339	14,897	2.0	98.0
Selected nonmanufacturing industries	42, 51, 5413, 5415, 5417	388,788	2.5	97.5
Wholesale trade	42	176,730	1.6	98.4
Information	51	50,616	3.3	96.7
Software publishers	5112	5,707	12.5	87.5
Information, excluding software publishers	51 less 5112	44,911	2.1	97.9
Architectural, engineering, and related services	5413	68,490	2.5	97.5
Computer systems design and related services	5415	85,093	2.7	97.3
Scientific research and development services	5417	7,861	14.7	85.3
Research and development in nanotechnology	541713	576	26.6	73.4
Research and development in biotechnology (except nanobiotechnology)	541714	1,999	19.5	80.5
Research and development in the physical, engineering, and life sciences (except nanotechnology and biotechnology)	541715	4,626	12.9	87.1
Social sciences and humanities research and development	541720	643	2.1	97.9

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail across rows may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Detail across columns have been adjusted to add to total. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States that performed or funded R&D.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 54

**Product or business process innovating companies, by firm classification of sex of owners: 2019–21**

(Number and percent)

Sex of owners	Companies (number)	Product or business process innovation			
		Number		Percent	
		Yes	No	Yes	No
All companies	4,874,928	1,310,146	3,564,782	26.9	73.1
Female owned	1,094,826	331,403	763,423	30.3	69.7
Male owned	3,054,668	793,721	2,260,947	26.0	74.0
Equally owned by male and female	695,951	175,430	520,521	25.2	74.8
Unclassifiable	29,483	9,592	19,891	32.5	67.5

**Note(s):**

Detail across rows may not add to total because of rounding. Detail across columns have been adjusted to add to total. Unclassifiable category includes firms that have no owners with a 10% or greater ownership of the stock or equity in the business. Statistics are representative of companies located in the United States. Companies are classified according to owner demographics if persons with that demographic characteristic own more than a 50% stake in the company.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 55

**Product or business process innovating companies, by firm classification of race and ethnicity of owners: 2019–21**

(Number and percent)

Race and ethnicity of owners	Companies (number)	Product or business process innovation			
		Number		Percent	
		Yes	No	Yes	No
All companies	4,874,928	1,310,146	3,564,782	26.9	73.1
Race					
White	4,166,399	1,088,355	3,078,044	26.1	73.9
Asian	528,892	163,382	365,510	30.9	69.1
Black or African American	114,570	40,388	74,182	35.3	64.7
American Indian or Alaska Native	42,474	12,858	29,616	30.3	69.7
Native Hawaiian or Other Pacific Islander	7,097	1,744	5,353	24.6	75.4
Ethnicity					
Hispanic or Latino	314,814	104,756	210,058	33.3	66.7
Equally Hispanic or Latino and not Hispanic or Latino	44,160	13,335	30,825	30.2	69.8
Not Hispanic or Latino	4,486,469	1,182,461	3,304,008	26.4	73.6
Minority status					
Minority	978,056	312,524	665,532	32.0	68.0
Black or African American, American Indian or Alaska Native, or Hispanic or Latino	445,131	148,489	296,642	33.4	66.6
Equally minority and nonminority	80,198	23,627	56,571	29.5	70.5
Nonminority	3,787,192	964,403	2,822,789	25.5	74.5
Unclassifiable	29,483	9,592	19,891	32.5	67.5

**Note(s):**

Detail across rows may not add to total because of rounding. Detail across columns have been adjusted to add to total. Companies may be included in one or more race and ethnicity category. Companies classified as “minority” are those companies classified as any race and ethnicity combination other than White and not Hispanic or Latino. Unclassifiable category includes firms that have no owners with a 10% or greater ownership of the stock or equity in the business. Statistics are representative of companies located in the United States. Companies are classified according to owner demographics if persons with that demographic characteristic own more than a 50% stake in the company.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 56

**Companies performing or funding R&D on select technologies, by sector: 2021**

(Percent)

Technology	All industries	Manufacturing industries	Nonmanufacturing industries
Advanced computing	2.4	2.0	2.4
Advanced sensing	0.8	2.0	0.7
Artificial intelligence	1.0	1.1	1.0
Autonomous systems and robotics	0.5	2.3	0.4
Additive manufacturing	0.7	4.3	0.6
Biotechnology	0.3	0.5	0.3
Human-machine interfaces	0.4	0.6	0.4
Communication and networking technologies	1.1	1.7	1.0
Advanced financial technologies	0.5	0.4	0.5
Advanced semiconductors and microelectronics	0.2	0.8	0.2
Advanced engineering materials	0.3	1.5	0.3
Renewable energy generation and storage	0.5	1.0	0.5
Advanced gas turbine engine technologies	0.2	0.4	0.2
Advanced nuclear energy technologies	0.1	0.2	0.1

**Note(s):**

Detail may not add to total because of rounding. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 57

**Companies performing or funding R&D on select technologies, by company size: 2021**

(Percent)

Technology	All companies	1-4 employees	5-9 employees	10-19 employees	20-49 employees	50-99 employees	100-249 employees	250-499 employees	500-999 employees	1,000-4,999 employees	5,000-9,999 employees	10,000-24,999 employees	25,000 or more employees	
Advanced computing	2.4	2.1	2.7	2.3	2.7	4.2	3.8	5.3	7.5	9.0	21.1	r	21.7	21.5
Advanced sensing	0.8	0.6	0.8	0.7	0.9	1.5	1.8	3.1	2.0	4.4	15.5	r	12.6	16.1
Artificial intelligence	1.0	0.9	0.9	0.9	1.1	1.6	2.2	3.9	3.4	r	6.9	r	16.7	21.5
Autonomous systems and robotics	0.5	0.4	0.4	0.5	0.8	1.0	2.1	4.0	2.5	5.2	9.9		12.0	14.5
Additive manufacturing	0.7	0.5	0.8	0.8	1.1	1.5	2.3	1.8	2.1	3.8	7.2		9.1	8.3
Biotechnology	0.3	0.3	0.3	0.3	0.4	0.5	0.5	0.5	0.7	1.1	8.5	r	3.1	3.8
Human-machine interfaces	0.4	0.4	0.4	0.4	0.4	0.6	0.6	0.3	0.7	2.1	5.1		6.6	12.9
Communication and networking technologies	1.1	0.9	1.0	1.1	1.4	2.0	2.0	2.4	3.1	r	5.0	r	11.6	14.5
Advanced financial technologies	0.5	0.5	0.5	0.4	0.5	0.9	0.5	1.2	r	0.9	1.9	r	5.4	5.9
Advanced semiconductors and microelectronics	0.2	0.2	0.2	0.2	0.4	0.5	0.6	0.7	0.5	1.5	2.5		3.9	6.2
Advanced engineering materials	0.3	0.3	0.4	0.4	0.5	0.8	0.8	0.5	1.2	3.0	5.1		8.3	6.2
Renewable energy generation and storage	0.5	0.5	0.5	0.5	0.6	0.6	0.8	1.0	r	1.1	3.0		6.9	8.9
Advanced gas turbine engine technologies	0.2	0.2	0.2	0.2	0.2	0.2	0.3	r	0.2	0.1	1.0		2.5	3.1
Advanced nuclear energy technologies	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.5	1.0		1.9	0.8

r = relative standard error > 50%.

**Note(s):**

Detail may not add to total because of rounding. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 58

**Companies using select technologies, by sector: 2021**

(Percent)

Technology	All industries	Manufacturing industries	Nonmanufacturing industries
Advanced computing	24.2	23.6	24.3
Advanced sensing	4.9	8.2	4.8
Artificial intelligence	4.6	4.6	4.6
Autonomous systems and robotics	2.3	7.9	2.0
Additive manufacturing	2.9	11.5	2.5
Biotechnology	1.3	1.2	1.3
Human-machine interfaces	1.9	2.0	1.8
Communication and networking technologies	8.5	9.0	8.5
Advanced financial technologies	3.2	2.9	3.2
Advanced semiconductors and microelectronics	1.5	3.9	1.4
Advanced engineering materials	1.8	4.9	1.7
Renewable energy generation and storage	2.5	3.3	2.5
Advanced gas turbine engine technologies	1.0	1.3	1.0
Advanced nuclear energy technologies	0.8	0.7	0.8

**Note(s):**

Detail may not add to total because of rounding. Statistics are representative of companies located in the United States. Estimates represent the percentage of companies reporting using each technology to any extent (a lot, somewhat, or a little).

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.



TABLE 59

**Companies using select technologies, by company size: 2021**

(Percent)

Technology	All companies	1–4 employees	5–9 employees	10–19 employees	20–49 employees	50–99 employees	100–249 employees	250–499 employees	500–999 employees	1,000–4,999 employees	5,000–9,999 employees	10,000–24,999 employees	25,000 or more employees	
Advanced computing	24.2	21.3	24.5	28.0	30.1	36.5	39.7	46.8	52.2	51.5	61.0	r	69.8	55.4
Advanced sensing	4.9	4.1	5.0	5.4	6.3	8.7	11.3	16.6	18.3	19.0	32.1	r	35.5	32.0
Artificial intelligence	4.6	4.1	4.6	5.0	4.9	6.6	9.0	13.2	15.3	19.7	33.8	r	42.1	35.2
Autonomous systems and robotics	2.3	1.8	2.2	2.6	3.1	5.3	6.3	10.4	11.3	15.3	23.6		31.4	26.6
Additive manufacturing	2.9	2.3	3.3	3.8	3.8	5.1	5.8	6.1	7.8	10.2	15.0		19.4	15.6
Biotechnology	1.3	1.2	1.5	1.6	1.1	1.7	1.4	1.5	1.7	2.2	10.0	r	7.6	6.2
Human-machine interfaces	1.9	1.8	1.9	2.0	1.7	2.2	2.7	3.1	2.7	5.7	9.5		15.5	15.3
Communication and networking technologies	8.5	7.0	8.3	10.2	11.8	15.9	19.5	22.7	25.0	29.1	33.6		38.4	38.4
Advanced financial technologies	3.2	2.7	3.3	3.7	3.9	5.5	6.4	9.3	8.1	11.3	16.2		19.8	20.7
Advanced semiconductors and microelectronics	1.5	1.3	1.6	1.8	1.9	2.8	2.9	3.9	3.9	r	5.9		10.0	11.4
Advanced engineering materials	1.8	1.5	2.1	2.3	2.4	3.3	3.4	3.1	5.2	7.3	11.1		15.1	14.5
Renewable energy generation and storage	2.5	2.2	2.6	2.6	2.9	3.9	5.1	4.3	6.5	10.3	r		16.6	24.2
Advanced gas turbine engine technologies	1.0	1.0	1.0	1.0	1.0	1.3	1.9	1.5	1.3	3.4	6.0		11.2	6.7
Advanced nuclear energy technologies	0.8	0.8	0.9	0.8	0.7	1.0	0.9	0.7	r	0.7	1.5		3.3	4.7

r = relative standard error &gt; 50%.

**Note(s):**

Detail may not add to total because of rounding. Statistics are representative of companies located in the United States. Estimates represent the percentage of companies reporting using each technology to any extent (a lot, somewhat, or a little).

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 60

## Source of technology capabilities, by industry: 2021

(Percent)

Industry	NAICS code	Companies (number)	Acquired technology products	Acquired intellectual property rights	Modified or adapted existing technology	Developed new technology
All industries	11, 21–23, 31–33, 42–81	4,874,928	18.3	1.8	10.3	3.3
Manufacturing industries	31–33	209,282	26.4	3.6	16.8	7.4
Food	311	19,326	18.8	2.9	10.6	3.3
Beverage and tobacco products	312	9,354	26.0	2.6	13.5	3.5
Textile, apparel, and leather products	313–16	9,443	15.5	2.8	8.0	3.5
Wood products	321	9,546	24.5	1.1	12.8	3.2
Paper	322	1,500	24.3	7.1	19.1	7.5
Printing and related support activities	323	20,212	27.3	2.1	13.4	2.9
Petroleum and coal products	324	546	9.3	2.7	13.2	5.1
Chemicals	325	7,961	28.4	7.9	22.3	8.0
Pesticide, fertilizer, and other agricultural chemicals	3253	580	27.9	2.6	14.3	2.4
Pharmaceuticals and medicines	3254	1,536	36.7	14.8	26.8	11.3
Soap, cleaning compound, and toilet preparation	3256	1,652	24.5	4.5	18.0	5.0
Other chemicals	other 325	4,194	26.9	7.3	23.4	8.7
Plastics and rubber products	326	7,060	28.1	5.0	21.2	7.5
Nonmetallic mineral products	327	7,290	20.5	1.9	13.9	3.2
Primary metals	331	2,079	31.3	2.8	20.9	6.7
Fabricated metal products	332	46,128	29.1	1.9	16.1	6.6
Machinery	333	16,440	33.6	7.2	26.2	14.8
Computer and electronic products	334	8,527	30.5	8.2	35.4	31.6
Communications equipment	3342	850	30.1	5.6	43.8	42.7
Semiconductor and other electronic components	3344	2,711	34.2	6.6	35.3	25.4
Navigational, measuring, electromedical, and control instruments	3345	3,737	30.6	10.1	34.7	34.2
Other computer and electronic products	other 334	1,230	22.3	8.2	32.3	30.0
Electrical equipment, appliances, and components	335	3,925	29.8	5.9	27.8	20.0
Transportation equipment	336	7,325	28.0	5.9	20.8	10.3
Automobiles, bodies, trailers, and parts	3361–63	4,494	28.8	6.0	21.7	10.7
Aerospace products and parts	3364	1,044	37.9	7.9	26.5	14.6
Other transportation	other 336	1,787	20.1	4.5	15.1	6.9
Furniture and related products	337	12,060	23.8	2.1	10.6	2.7
Miscellaneous	339	20,536	26.2	4.2	16.7	7.7
Medical equipment and supplies	3391	7,602	28.5	4.7	19.4	9.7
Other miscellaneous manufacturing	3399	12,933	24.8	3.9	15.1	6.5
Nonmanufacturing industries	11, 21–23, 42–81	4,665,645	17.9	1.7	10.0	3.1
Agriculture, forestry, fishing, and hunting	11	19,567	17.9	0.0	7.0	2.1
Mining, extraction, and support activities	21	14,004	19.4	1.6	8.3	1.7
Utilities	22	2,994	19.9	2.0	10.5	5.1
Construction	23	635,568	14.1	0.8	6.3	1.4
Wholesale trade	42	241,440	16.9	2.9	9.9	3.8
Retail trade	44–45	546,067	15.8	1.8	8.0	2.2
Transportation and warehousing	48–49	165,454	16.2	0.8	7.6	2.4
Information	51	65,445	25.0	5.1	21.2	16.5
Publishing	511	17,755	24.5	7.3	26.6	28.7
Newspaper, periodical, book, and directory publishers	5111	9,162	22.3	3.8	12.2	5.6
Software publishers	5112	8,589	26.7	10.9	41.9	53.4
Telecommunications	517	7,319	30.6	3.9	19.8	5.5

TABLE 60

**Source of technology capabilities, by industry: 2021**

(Percent)

Industry	NAICS code	Companies (number)	Acquired technology products	Acquired intellectual property rights	Modified or adapted existing technology	Developed new technology
Data processing, hosting, and related services	518	8,346	27.7	4.9	32.9	34.0
Other information	other 51	32,027	23.3	4.3	15.6	7.7
Finance and insurance	52	198,128	21.2	1.6	14.6	3.5
Real estate and rental and leasing	53	283,276	15.0	1.0	8.4	1.6
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1,956	17.4	11.4	r 11.0	5.3
Other real estate and rental and leasing	other 53	281,321	15.0	0.9	8.4	1.5
Professional, scientific, and technical services	54	717,229	25.9	2.6	18.1	7.9
Legal services	5411	152,543	25.0	1.4	18.1	1.7
Accounting, tax preparation, bookkeeping, and payroll services	5412	109,075	39.0	2.4	17.4	2.6
Architectural, engineering, and related services	5413	87,994	29.6	2.4	19.4	8.2
Specialized design services	5414	29,258	21.8	1.6	11.7	3.9
Computer systems design and related services	5415	100,282	22.9	3.5	27.6	25.1
Management, scientific, and technical consulting services	5416	144,421	18.6	2.8	14.5	6.9
Scientific research and development services	5417	11,149	27.9	17.2	33.3	31.4
Advertising, public relations, and related services	5418	28,236	20.3	3.0	14.1	5.9
Other professional, scientific, and technical services	5419	54,270	25.3	2.1	12.0	4.4
Management of companies and enterprises	55	3,153	20.1	3.8	r 10.3	5.9
Administrative and support and waste management and remediation services	56	293,539	15.2	1.1	7.9	2.3
Educational services	61	57,078	16.9	2.9	14.0	3.9
Health care and social assistance	62	536,276	21.8	1.7	11.5	2.0
Health care services	621-23	469,939	22.9	1.8	12.0	2.0
Social assistance	624	66,336	13.8	1.3	8.4	1.9
Arts, entertainment, and recreation	71	89,491	15.5	2.7	7.6	1.7
Accommodation and food services	72	455,071	11.8	1.4	5.4	1.5
Other services	81	341,869	18.1	1.4	6.5	1.5

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 61

**Source of technology capabilities, by company size: 2021**

(Percent)

Employment size	Companies (number)	Acquired technology products	Acquired intellectual property rights	Modified or adapted existing technology	Developed new technology
All companies	4,874,928	18.3	1.8	10.3	3.3
Micro companies					
1–4	2,734,191	14.6	1.3	8.2	2.6
5–9	950,548	20.2	1.9	10.5	3.0
Small companies					
10–19	577,397	22.7	2.2	12.5	3.9
20–49	399,566	25.2	2.6	14.6	4.8
Medium companies					
50–99	115,591	29.9	3.0	18.6	6.8
100–249	63,969	34.5	4.2	22.8	9.9
Large companies					
250–499	18,124	38.7	5.6	25.6	10.6
500–999	7,668	39.2	9.7	36.7	18.7
1,000–4,999	6,010	42.0	11.6	37.2	21.6
5,000–9,999	982	50.8 r	24.7 r	51.3 r	30.0
10,000–24,999	516	56.4	31.0	58.1	45.3
25,000 or more	372	47.0	26.3	44.6	35.8

r = relative standard error &gt; 50%.

**Note(s):**

Detail may not add to total because of rounding. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 62

**Companies with design activities, by industry: 2021**

(Number and percent)

Industry	NAICS code	Companies (number)	Design activities			
			Number		Percent	
			Yes	No	Yes	No
All industries	11, 21–23, 31–33, 42–81	4,874,928	784,863	4,090,065	16.1	83.9
Manufacturing industries	31–33	209,282	70,947	138,335	33.9	66.1
Food	311	19,326	3,923	15,403	20.3	79.7
Beverage and tobacco products	312	9,354	3,049	6,305	32.6	67.4
Textile, apparel, and leather products	313–16	9,443	3,041	6,402	32.2	67.8
Wood products	321	9,546	2,721	6,825	28.5	71.5
Paper	322	1,500	653	848	43.5	56.5
Printing and related support activities	323	20,212	5,680	14,532	28.1	71.9
Petroleum and coal products	324	546	63	483	11.6	88.4
Chemicals	325	7,961	2,404	5,557	30.2	69.8
Pesticide, fertilizer, and other agricultural chemicals	3253	580	93	487	16.0	84.0
Pharmaceuticals and medicines	3254	1,536	541	995	35.2	64.8
Soap, cleaning compound, and toilet preparation	3256	1,652	484	1,168	29.3	70.7
Other chemicals	other 325	4,194	1,288	2,906	30.7	69.3
Plastics and rubber products	326	7,060	2,344	4,716	33.2	66.8
Nonmetallic mineral products	327	7,290	2,151	5,139	29.5	70.5
Primary metals	331	2,079	536	1,543	25.8	74.2
Fabricated metal products	332	46,128	14,761	31,367	32.0	68.0
Machinery	333	16,440	7,464	8,976	45.4	54.6
Computer and electronic products	334	8,527	3,948	4,579	46.3	53.7
Communications equipment	3342	850	453	397	53.3	46.7
Semiconductor and other electronic components	3344	2,711	1,071	1,640	39.5	60.5
Navigational, measuring, electromedical, and control instruments	3345	3,737	1,883	1,854	50.4	49.6
Other computer and electronic products	other 334	1,230	542	688	44.1	55.9
Electrical equipment, appliances, and components	335	3,925	1,904	2,021	48.5	51.5
Transportation equipment	336	7,325	2,740	4,585	37.4	62.6
Automobiles, bodies, trailers, and parts	3361–63	4,494	1,685	2,809	37.5	62.5
Aerospace products and parts	3364	1,044	374	670	35.8	64.2
Other transportation	other 336	1,787	688	1,099	38.5	61.5
Furniture and related products	337	12,060	5,475	6,585	45.4	54.6
Miscellaneous	339	20,536	7,968	12,568	38.8	61.2
Medical equipment and supplies	3391	7,602	2,889	4,713	38.0	62.0
Other miscellaneous manufacturing	3399	12,933	5,070	7,863	39.2	60.8
Nonmanufacturing industries	11, 21–23, 42–81	4,665,645	713,844	3,951,801	15.3	84.7

TABLE 62

**Companies with design activities, by industry: 2021**

(Number and percent)

Industry	NAICS code	Companies (number)	Design activities			
			Number		Percent	
			Yes	No	Yes	No
Agriculture, forestry, fishing, and hunting	11	19,567	1,213	18,354	6.2	93.8
Mining, extraction, and support activities	21	14,004	1,008	12,996	7.2	92.8
Utilities	22	2,994	338	2,656	11.3	88.7
Construction	23	635,568	102,962	532,606	16.2	83.8
Wholesale trade	42	241,440	38,630	202,810	16.0	84.0
Retail trade	44-45	546,067	77,542	468,525	14.2	85.8
Transportation and warehousing	48-49	165,454	15,387	150,067	9.3	90.7
Information	51	65,445	19,503	45,942	29.8	70.2
Publishing	511	17,755	7,635	10,120	43.0	57.0
Newspaper, periodical, book, and directory publishers	5111	9,162	2,474	6,688	27.0	73.0
Software publishers	5112	8,589	5,162	3,427	60.1	39.9
Telecommunications	517	7,319	1,274	6,045	17.4	82.6
Data processing, hosting, and related services	518	8,346	3,614	4,732	43.3	56.7
Other information	other 51	32,027	7,014	25,013	21.9	78.1
Finance and insurance	52	198,128	25,955	172,173	13.1	86.9
Real estate and rental and leasing	53	283,276	29,177	254,099	10.3	89.7
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1,956	311 r	1,645	15.9 r	84.1
Other real estate and rental and leasing	other 53	281,321	28,695	252,626	10.2	89.8
Professional, scientific, and technical services	54	717,229	182,893	534,336	25.5	74.5
Legal services	5411	152,543	10,983	141,560	7.2	92.8
Accounting, tax preparation, bookkeeping, and payroll services	5412	109,075	11,889	97,186	10.9	89.1
Architectural, engineering, and related services	5413	87,994	38,541	49,453	43.8	56.2
Specialized design services	5414	29,258	17,994	11,264	61.5	38.5
Computer systems design and related services	5415	100,282	40,915	59,367	40.8	59.2
Management, scientific, and technical consulting services	5416	144,421	39,716	104,705	27.5	72.5
Scientific research and development services	5417	11,149	3,735	7,414	33.5	66.5
Advertising, public relations, and related services	5418	28,236	9,459	18,777	33.5	66.5
Other professional, scientific, and technical services	5419	54,270	9,986	44,284	18.4	81.6
Management of companies and enterprises	55	3,153	322	2,831	10.2	89.8
Administrative and support and waste management and remediation services	56	293,539	41,095	252,444	14.0	86.0
Educational services	61	57,078	12,785	44,293	22.4	77.6
Health care and social assistance	62	536,276	63,281	472,995	11.8	88.2
Health care services	621-23	469,939	56,393	413,546	12.0	88.0
Social assistance	624	66,336	6,965	59,371	10.5	89.5

TABLE 62

**Companies with design activities, by industry: 2021**

(Number and percent)

Industry	NAICS code	Companies (number)	Design activities			
			Number		Percent	
			Yes	No	Yes	No
Arts, entertainment, and recreation	71	89,491	13,603	75,888	15.2	84.8
Accommodation and food services	72	455,071	46,417	408,654 <sup>i</sup>	10.2	89.8
Other services	81	341,869	39,315	302,554	11.5	88.5

<sup>i</sup> = > 50% of the estimate is a combination of imputation and reweighting to account for nonresponse; r = relative standard error > 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 63

**Companies with design activities, by company size: 2021**

(Number and percent)

Employment size	Companies (number)	Design activities			
		Number		Percent	
		Yes	No	Yes	No
All companies	4,874,928	784,863	4,090,065	16.1	83.9
Micro companies					
1–4	2,734,191	390,989	2,343,202	14.3	85.7
5–9	950,548	159,692	790,856	16.8	83.2
Small companies					
10–19	577,397	100,467	476,930	17.4	82.6
20–49	399,566	79,913	319,653	20.0	80.0
Medium companies					
50–99	115,591	25,661	89,930	22.2	77.8
100–249	63,969	17,336	46,633	27.1	72.9
Large companies					
250–499	18,124	4,567	13,557	25.2	74.8
500–999	7,668	2,270	5,398	29.6	70.4
1,000–4,999	6,010	1,959	4,051	32.6	67.4
5,000–9,999	982	444	538	45.2 r	54.8
10,000–24,999	516	269	247	52.1	47.9
25,000 or more	372	186	186	50.0	50.0

r = relative standard error &gt; 50%.

**Note(s):**

Detail may not add to total because of rounding. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.



TABLE 64

**Companies that provided resources for design activities, by industry: 2021**

(Number and percent)

Industry	NAICS code	Companies (number)	Provides resources for design activities			
			Number		Percent	
			Yes	No	Yes	No
All industries	11, 21–23, 31–33, 42–81	750,408	302,414	447,994	40.3	59.7
Manufacturing industries	31–33	67,813	34,856	32,957	51.4	48.6
Food	311	3,704	1,208	2,496	32.6	67.4
Beverage and tobacco products	312	2,929	1,022	1,907	34.9	65.1
Textile, apparel, and leather products	313–16	2,865	1,195	1,670	41.7	58.3
Wood products	321	2,645	1,291	1,354	48.8	51.2
Paper	322	612	372	240	60.8	39.2
Printing and related support activities	323	5,436	3,441	1,995	63.3	36.7
Petroleum and coal products	324	60	37	23	61.7	38.3
Chemicals	325	2,285	1,047	1,238	45.8	54.2
Pesticide, fertilizer, and other agricultural chemicals	3253	92	25	67	27.2	72.8
Pharmaceuticals and medicines	3254	515	247	268	48.0	52.0
Soap, cleaning compound, and toilet preparation	3256	465	226	239	48.6	51.4
Other chemicals	other 325	1,211	552	659	45.6	54.4
Plastics and rubber products	326	2,182	1,268	914	58.1	41.9
Nonmetallic mineral products	327	2,065	1,078	987	52.2	47.8
Primary metals	331	513	302	211	58.9	41.1
Fabricated metal products	332	14,130	6,924	7,206	49.0	51.0
Machinery	333	7,164	4,306	2,858	60.1	39.9
Computer and electronic products	334	3,815	2,369	1,446	62.1	37.9
Communications equipment	3342	440	273	167	62.0	38.0
Semiconductor and other electronic components	3344	1,035	644	391	62.2	37.8
Navigational, measuring, electromedical, and control instruments	3345	1,815	1,202	613	66.2	33.8
Other computer and electronic products	other 334	526	254	272	48.3	51.7
Electrical equipment, appliances, and components	335	1,826	1,152	674	63.1	36.9
Transportation equipment	336	2,626	1,360	1,266	51.8	48.2
Automobiles, bodies, trailers, and parts	3361–63	1,601	784	817	49.0	51.0
Aerospace products and parts	3364	359	247	112	68.8	31.2
Other transportation	other 336	666	327	339	49.1	50.9
Furniture and related products	337	5,275	2,669	2,606	50.6	49.4
Miscellaneous	339	7,673	3,806	3,867	49.6	50.4
Medical equipment and supplies	3391	2,807	1,274	1,533	45.4	54.6
Other miscellaneous manufacturing	3399	4,865	2,535	2,330	52.1	47.9
Nonmanufacturing industries	11, 21–23, 42–81	682,596	267,578	415,018	39.2	60.8

TABLE 64

**Companies that provided resources for design activities, by industry: 2021**

(Number and percent)

Industry	NAICS code	Companies (number)	Provides resources for design activities			
			Number		Percent	
			Yes	No	Yes	No
Agriculture, forestry, fishing, and hunting	11	1,151	288	863	25.0	75.0
Mining, extraction, and support activities	21	984	264	720	26.8	73.2
Utilities	22	327	129	198	39.4	60.6
Construction	23	98,077	39,133	58,944	39.9	60.1
Wholesale trade	42	37,252	18,067	19,185	48.5	51.5
Retail trade	44-45	73,853	27,621	46,232	37.4	62.6
Transportation and warehousing	48-49	14,680	3,538	11,142	24.1	75.9
Information	51	18,813	9,538	9,275	50.7	49.3
Publishing	511	7,333	4,150	3,183	56.6	43.4
Newspaper, periodical, book, and directory publishers	5111	2,385	1,364	1,021	57.2	42.8
Software publishers	5112	4,945	2,784	2,161	56.3	43.7
Telecommunications	517	1,201	528	673	44.0	56.0
Data processing, hosting, and related services	518	3,473	1,667	1,806	48.0	52.0
Other information	other 51	6,804	3,198	3,606	47.0	53.0
Finance and insurance	52	25,092	7,176	17,916	28.6	71.4
Real estate and rental and leasing	53	27,937	7,934	20,003	28.4	71.6
Lessors of nonfinancial intangible assets (except copyrighted works)	533	291 r	205 r	86 r	70.4	29.6
Other real estate and rental and leasing	other 53	27,645	7,741	19,904	28.0	72.0
Professional, scientific, and technical services	54	178,183	96,041	82,142	53.9	46.1
Legal services	5411	10,578	2,147	8,431	20.3	79.7
Accounting, tax preparation, bookkeeping, and payroll services	5412	11,676	2,335	9,341	20.0	80.0
Architectural, engineering, and related services	5413	37,464	24,464	13,000	65.3	34.7
Specialized design services	5414	17,483	12,151	5,332	69.5	30.5
Computer systems design and related services	5415	39,599	23,047	16,552	58.2	41.8
Management, scientific, and technical consulting services	5416	38,860	20,129	18,731	51.8	48.2
Scientific research and development services	5417	3,609	2,198	1,411	60.9	39.1
Advertising, public relations, and related services	5418	9,258	5,768	3,490	62.3	37.7
Other professional, scientific, and technical services	5419	9,658	3,786	5,872	39.2	60.8
Management of companies and enterprises	55	310	191 r	119 r	61.6	38.4 r
Administrative and support and waste management and remediation services	56	39,252	13,189	26,063	33.6	66.4
Educational services	61	12,285	5,025	7,260	40.9	59.1
Health care and social assistance	62	60,694	16,994	43,700	28.0	72.0
Health care services	621-23	54,110	14,718	39,392	27.2	72.8
Social assistance	624	6,585	2,305	4,280	35.0	65.0

TABLE 64

**Companies that provided resources for design activities, by industry: 2021**

(Number and percent)

Industry	NAICS code	Companies (number)	Provides resources for design activities			
			Number		Percent	
			Yes	No	Yes	No
Arts, entertainment, and recreation	71	13,056	4,139	8,917	31.7	68.3
Accommodation and food services	72	43,135	8,713	34,422	20.2	79.8
Other services	81	37,517	9,379	28,138	25.0	75.0

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 65

**Companies that provided resources for design activities, by company size: 2021**

(Number and percent)

Employment size	Companies (number)	Provides resources for design activities			
		Number		Percent	
		Yes	No	Yes	No
All companies	750,408	302,202	448,206	40.3	59.7
Micro companies					
1–4	375,378	140,823	234,555	37.5	62.5
5–9	152,540	57,538	95,002	37.7	62.3
Small companies					
10–19	95,781	40,950	54,831	42.8	57.2
20–49	76,295	35,323	40,972	46.3	53.7
Medium companies					
50–99	24,536	12,169	12,367	49.6	50.4
100–249	16,581	9,139	7,442	55.1	44.9
Large companies					
250–499	4,408	2,754	1,654	62.5	37.5
500–999	2,191	1,462	729	66.7	33.3
1,000–4,999	1,873	1,359	514	72.6	r 27.4
5,000–9,999	425	346	79	81.4	r 18.6
10,000–24,999	254	206	48	80.9	19.1
25,000 or more	150	134	16	89.3	10.7

r = relative standard error &gt; 50%.

**Note(s):**

Detail may not add to total because of rounding. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 66

## Companies with intellectual property protection methods, by industry: 2021

(Percent)

Industry	NAICS code	Companies (number)	Utility patents	Design patents	Copyright	Trademarks	Design complexity	Nondisclosure agreements or noncompete clauses	Branding and product image	Trade secrets
All industries	11, 21–23, 31–33, 42–81	4,874,928	1.6	1.6	6.0	7.7	3.7	13.9	14.1	7.3
Manufacturing industries	31–33	209,282	8.3	7.9	10.4	18.6	13.3	28.1	26.4	20.7
Food	311	19,326	3.4	2.8	10.3	25.6	6.1	26.3	36.9	26.6
Beverage and tobacco products	312	9,354	1.6	4.9	19.2	55.0	8.3	26.0	63.5	26.8
Textile, apparel, and leather products	313–16	9,443	5.1	5.2	11.4	20.3	11.4	15.2	27.1	15.0
Wood products	321	9,546	2.6	2.8	4.1	7.9	6.9	10.6	14.5	9.3
Paper	322	1,500	16.4	13.8	12.6	23.2	18.6	37.0	22.4	20.9
Printing and related support activities	323	20,212	1.9	2.1	10.2	9.7	7.8	14.5	20.2	8.5
Petroleum and coal products	324	546	8.8	5.7	6.2	15.6	9.9	17.2	17.0	38.1
Chemicals	325	7,961	19.2	13.0	20.0	41.1	17.4	52.2	42.1	44.4
Pesticide, fertilizer, and other agricultural chemicals	3253	580	19.7	16.7	21.6	41.6	17.2	38.8	44.8	40.7
Pharmaceuticals and medicines	3254	1,536	24.5	13.6	22.5	46.2	19.6	62.7	47.9	45.1
Soap, cleaning compound, and toilet preparation	3256	1,652	13.5	12.2	22.5	47.7	15.7	48.4	49.0	51.3
Other chemicals	other 325	4,194	19.4	12.5	18.0	36.5	17.3	51.6	36.9	41.8
Plastics and rubber products	326	7,060	13.1	14.5	9.0	19.9	17.0	39.9	23.5	25.0
Nonmetallic mineral products	327	7,290	3.9	5.4	7.7	9.0	11.1	17.0	20.2	15.0
Primary metals	331	2,079	5.5	7.8	5.2	8.9	11.1	33.3	12.4	17.0
Fabricated metal products	332	46,128	5.6	5.6	5.1	8.8	11.3	28.2	14.8	16.7
Machinery	333	16,440	17.4	16.2	12.9	23.1	22.8	45.6	33.2	29.1
Computer and electronic products	334	8,527	26.5	22.0	21.3	34.0	32.9	56.5	40.9	39.4
Communications equipment	3342	850	27.1	21.4	23.5	38.8	41.9	62.6	51.5	43.2
Semiconductor and other electronic components	3344	2,711	19.8	15.6	13.2	21.6	23.1	57.7	30.2	35.6
Navigational, measuring, electromedical, and control instruments	3345	3,737	32.8	27.5	25.9	41.3	38.2	55.7	45.0	43.1
Other computer and electronic products	other 334	1,230	21.8	20.1	24.0	35.9	32.4	52.0	45.0	33.9
Electrical equipment, appliances, and components	335	3,925	24.0	19.7	20.9	31.1	32.1	48.1	38.9	32.9
Transportation equipment	336	7,325	14.2	15.1	12.9	20.2	20.0	33.1	31.2	22.6
Automobiles, bodies, trailers, and parts	3361–63	4,494	13.0	14.4	12.1	19.0	19.2	29.5	31.4	21.0
Aerospace products and parts	3364	1,044	17.9	16.9	13.4	17.3	25.0	51.1	23.7	31.7
Other transportation	other 336	1,787	15.1	15.8	14.3	25.0	19.3	31.9	34.8	21.6
Furniture and related products	337	12,060	1.9	2.3	3.7	5.3	8.2	12.0	15.8	11.3
Miscellaneous	339	20,536	11.4	10.2	13.5	20.0	15.2	25.4	26.9	21.0
Medical equipment and supplies	3391	7,602	13.0	11.4	11.0	14.9	11.6	22.4	16.1	16.7
Other miscellaneous manufacturing	3399	12,933	10.5	9.4	15.0	22.9	17.3	27.2	33.2	23.5
Nonmanufacturing industries	11, 21–23, 42–81	4,665,645	1.3	1.3	5.8	7.2	3.2	13.3	13.6	6.7

TABLE 66

## Companies with intellectual property protection methods, by industry: 2021

(Percent)

Industry	NAICS code	Companies (number)	Utility patents	Design patents	Copyright	Trademarks	Design complexity	Nondisclosure agreements or noncompete clauses	Branding and product image	Trade secrets
Agriculture, forestry, fishing, and hunting	11	19,567	0.1 r	0.7 r	2.1	1.6	0.7 r	5.7	4.8	4.3
Mining, extraction, and support activities	21	14,004	1.9	1.7	1.6	3.1	1.9	14.7	5.0	6.8
Utilities	22	2,994	3.8 r	1.4	3.5	4.0	3.2	16.7	10.4	7.5
Construction	23	635,568	0.5	0.6	1.7	2.2	2.0	6.3	6.0	4.4
Wholesale trade	42	241,440	4.0	4.6	7.7	15.3	5.8	19.7	20.7	11.0
Retail trade	44-45	546,067	1.3	1.6	5.4	9.1	2.7	7.9	14.7	6.2
Transportation and warehousing	48-49	165,454	0.5	0.6	2.0	3.3	1.3	8.1	5.7	3.0
Information	51	65,445	4.8	3.7	30.0	24.2	13.2	35.5	34.2	17.6
Publishing	511	17,755	9.3	5.8	45.5	38.0	20.4	42.4	45.4	23.3
Newspaper, periodical, book, and directory publishers	5111	9,162	2.0	1.6	45.2	26.5	6.2	21.2	34.5	7.6
Software publishers	5112	8,589	17.0	10.3	45.7	50.4	35.5	65.1	57.0	40.1
Telecommunications	517	7,319	2.5	2.6	7.2	10.0	5.8	27.5	18.4	10.9
Data processing, hosting, and related services	518	8,346	9.0	5.1	22.2	26.0	23.0	48.5	37.3	26.0
Other information	other 51	32,027	1.8	2.5	28.6	19.4	8.4	30.1	30.8	13.7
Finance and insurance	52	198,128	0.8	1.0	5.4	7.7	2.7	19.7	17.4	8.4
Real estate and rental and leasing	53	283,276	0.3	0.6	2.9	4.3	1.2	10.0	12.4	3.2
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1,956	12.2	14.1 r	18.5	35.6	7.0 r	35.5	31.2	23.8
Other real estate and rental and leasing	other 53	281,321	0.3	0.5	2.8	4.1	1.1	9.8	12.2	3.1
Professional, scientific, and technical services	54	717,229	2.8	2.1	11.4	8.7	7.6	26.0	18.3	10.2
Legal services	5411	152,543	0.6	0.6	4.5	4.3	0.9	11.8	8.4	3.6
Accounting, tax preparation, bookkeeping, and payroll services	5412	109,075	0.2	0.3	2.1	2.8	1.5	14.6	6.6	2.9
Architectural, engineering, and related services	5413	87,994	4.8	4.1	17.2	6.1	16.5	29.1	17.7	12.0
Specialized design services	5414	29,258	1.6	3.0	17.0	11.5	16.8	27.5	36.4	15.4
Computer systems design and related services	5415	100,282	5.0	3.3	17.3	15.2	14.7	41.3	26.0	18.3
Management, scientific, and technical consulting services	5416	144,421	2.4	2.0	13.7	12.0	6.7	34.3	23.5	12.6
Scientific research and development services	5417	11,149	43.9	19.0	22.7	32.1	26.5	64.2	32.0	45.2
Advertising, public relations, and related services	5418	28,236	1.2	1.7	15.4	15.0	9.1	34.9	35.4	13.5
Other professional, scientific, and technical services	5419	54,270	1.5	1.1	15.2	7.1	4.3	20.6	20.2	7.4
Management of companies and enterprises	55	3,153	2.2 r	4.3 r	9.3	12.2	5.6 r	18.0	17.8	13.4 r
Administrative and support and waste management and remediation services	56	293,539	0.7	0.7	3.4	5.8	2.3	14.8	11.6	6.4
Educational services	61	57,078	1.5	1.4	21.4	18.4	5.9	28.7	34.5	12.5
Health care and social assistance	62	536,276	0.7	0.8	3.2	4.0	1.4	11.9	10.0	3.4
Health care services	621-23	469,939	0.7	0.7	3.1	3.8	1.5	11.8	9.7	3.4
Social assistance	624	66,336	0.7	1.0	3.8	5.0	1.4	12.6	12.2	3.3

TABLE 66

**Companies with intellectual property protection methods, by industry: 2021**

(Percent)

Industry	NAICS code	Companies (number)	Utility patents	Design patents	Copyright	Trademarks	Design complexity	Nondisclosure agreements or noncompete clauses	Branding and product image	Trade secrets
Arts, entertainment, and recreation	71	89,491	0.6	0.8	17.9	12.8	3.6	18.1	21.6	6.9
Accommodation and food services	72	455,071	0.7	1.2	4.7	10.3	1.7	6.5	15.9	8.4
Other services	81	341,869	0.8	0.8	3.0	4.7	1.8	7.2	9.4	5.1

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 67

**Companies with intellectual property protection methods, by company size: 2021**

(Percent)

Employment size	Companies (number)	Utility patents	Design patents	Copyright	Trademarks	Design complexity	Nondisclosure agreements or noncompete clauses	Branding and product image	Trade secrets
All companies	4,874,928	1.6	1.6	6.0	7.7	3.7	13.9	14.1	7.3
Micro companies									
1–4	2,734,191	1.2	1.1	5.7	5.5	3.1	10.7	11.3	5.5
5–9	950,548	1.5	1.5	5.3	7.7	3.5	13.7	14.4	7.3
Small companies									
10–19	577,397	1.8	2.0	6.0	9.9	4.3	17.9	17.6	9.3
20–49	399,566	2.4	2.7	6.9	13.1	4.6	21.7	20.7	11.4
Medium companies									
50–99	115,591	3.8	4.2	8.3	15.8	6.4	27.5	25.0	14.3
100–249	63,969	4.9	5.8	11.1	20.0	8.1	32.4	27.9	17.1
Large companies									
250–499	18,124	8.9	7.9	15.5	25.0	9.0	36.0	32.4	18.3
500–999	7,668	11.1	10.0	17.7	29.3	14.1	40.4	40.2	21.5
1,000–4,999	6,010	15.2	15.8	22.4	34.7	14.0	43.9	40.1	26.0
5,000–9,999	982	29.9 r	29.6 r	37.8 r	52.5 r	26.8 r	56.5 r	55.8 r	35.8 r
10,000–24,999	516	35.9	36.0	45.5	62.2	29.1	59.1	61.2	41.5
25,000 or more	372	34.7	36.3	44.4	55.6	30.6	54.0	55.9	38.2

r = relative standard error &gt; 50%.

**Note(s):**

Detail may not add to total because of rounding. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.



TABLE 68

## Activities conducted by domestic unaffiliated companies, by industry: 2021

(Percent)

Industry	NAICS code	All companies (number)	Core production	Distribution and logistics	Marketing, sales, or after sales services	Administrative or management functions	Research and development	Engineering and other technical services	Information and communication technology services	All other operating activities
All industries	11, 21–23, 31–33, 42–81	4,874,928	12.4	10.5	12.0	10.1	2.3	4.2	8.6	8.9
Manufacturing industries	31–33	209,282	20.6	30.1	13.6	10.1	4.3	9.1	12.3	10.2
Food	311	19,326	13.8	24.2	13.9	9.2	3.6	5.8	9.1	9.4
Beverage and tobacco products	312	9,354	14.6	38.4	21.8	15.7	2.6	6.1	11.9	11.7
Textile, apparel, and leather products	313–16	9,443	21.8	25.4	15.2	10.0	4.6	5.0	9.0	9.4
Wood products	321	9,546	13.5	29.1	11.8	8.0	2.6	6.6	9.8	8.1
Paper	322	1,500	19.8	39.6	12.3	8.4	4.1	9.5	16.1	11.5
Printing and related support activities	323	20,212	29.6	28.6	11.6	9.6	1.6	2.4	10.2	10.7
Petroleum and coal products	324	546	8.6	46.2	4.4	14.5	1.6	9.7	13.4	16.7
Chemicals	325	7,961	21.3	41.9	20.8	12.4	11.2	17.4	17.1	14.7
Pesticide, fertilizer, and other agricultural chemicals	3253	580	24.8	43.4	20.2	9.0	16.7	6.9	9.5	6.4
Pharmaceuticals and medicines	3254	1,536	22.1	38.1	24.6	14.6	16.5	19.1	21.5	16.5
Soap, cleaning compound, and toilet preparation	3256	1,652	20.2	40.5	24.9	8.1	10.0	11.4	11.9	13.4
Other chemicals	other 325	4,194	21.0	43.6	17.9	13.8	9.0	20.6	18.7	15.7
Plastics and rubber products	326	7,060	19.2	40.8	15.2	9.3	6.6	12.5	16.8	11.0
Nonmetallic mineral products	327	7,290	12.1	22.2	11.7	8.0	2.8	10.1	9.8	8.7
Primary metals	331	2,079	20.1	35.3	12.6	12.1	5.3	14.1	19.5	12.3
Fabricated metal products	332	46,128	20.2	28.7	10.6	9.5	2.8	9.6	13.4	10.6
Machinery	333	16,440	24.5	39.9	15.3	9.7	6.2	14.3	16.7	11.8
Computer and electronic products	334	8,527	20.3	31.2	18.4	12.9	10.9	18.5	15.4	10.0
Communications equipment	3342	850	27.4	39.6	19.3	15.1	16.4	20.5	16.0	12.1
Semiconductor and other electronic components	3344	2,711	21.1	29.4	18.2	16.0	8.2	18.8	19.0	13.2
Navigational, measuring, electromedical, and control instruments	3345	3,737	17.2	31.9	18.8	11.5	12.7	18.8	14.5	8.1
Other computer and electronic products	other 334	1,230	23.3	27.5	16.6	9.3	7.5	15.4	10.1	7.8
Electrical equipment, appliances, and components	335	3,925	21.0	36.2	17.5	11.7	8.3	17.9	15.5	11.6
Transportation equipment	336	7,325	19.7	30.2	14.2	11.7	7.0	13.0	13.4	11.0
Automobiles, bodies, trailers, and parts	3361–63	4,494	18.6	30.3	14.8	10.8	7.0	11.3	11.5	9.8
Aerospace products and parts	3364	1,044	24.4	32.0	8.7	11.4	10.1	17.9	19.4	9.7
Other transportation	other 336	1,787	19.5	28.9	15.9	14.3	5.2	14.2	14.7	14.6
Furniture and related products	337	12,060	21.0	22.1	9.9	8.4	2.5	4.2	7.0	5.9
Miscellaneous	339	20,536	25.3	27.4	14.3	10.6	4.6	8.4	11.3	9.4
Medical equipment and supplies	3391	7,602	24.6	25.3	10.9	9.7	5.2	8.1	7.3	8.4
Other miscellaneous manufacturing	3399	12,933	25.7	28.7	16.3	11.2	4.2	8.6	13.7	10.1
Nonmanufacturing industries	11, 21–23, 42–81	4,665,645	12.0	9.7	11.9	10.1	2.2	4.0	8.4	8.9

TABLE 68

## Activities conducted by domestic unaffiliated companies, by industry: 2021

(Percent)

Industry	NAICS code	All companies (number)	Core production	Distribution and logistics	Marketing, sales, or after sales services	Administrative or management functions	Research and development	Engineering and other technical services	Information and communication technology services	All other operating activities
Agriculture, forestry, fishing, and hunting	11	19,567	6.5	11.9	6.1	7.0	1.3	2.0	3.8	6.9
Mining, extraction, and support activities	21	14,004	14.4	16.4	6.8	9.5	1.7	11.4	10.0	13.4
Utilities	22	2,994	8.4	7.4	7.5	7.7	2.4	12.2	7.5	9.7
Construction	23	635,568	17.7	10.4	8.2	8.3	1.3	8.2	5.9	8.7
Wholesale trade	42	241,440	22.5	35.0	18.7	13.1	5.9	8.0	12.8	12.4
Retail trade	44-45	546,067	17.1	17.5	15.2	8.8	3.1	3.3	7.9	8.7
Transportation and warehousing	48-49	165,454	7.4	18.6	6.9	8.8	1.1	1.9	6.0	9.1
Information	51	65,445	17.9	12.6	17.0	14.4	5.4	7.8	13.4	13.2
Publishing	511	17,755	23.7	19.4	19.8	14.3	8.8	8.7	15.4	13.7
Newspaper, periodical, book, and directory publishers	5111	9,162	31.7	30.3	15.3	11.4	2.3	2.4	13.9	10.3
Software publishers	5112	8,589	15.1	7.7	24.6	17.3	15.7	15.4	16.9	17.2
Telecommunications	517	7,319	14.1	10.2	16.4	12.2	3.7	11.6	15.2	11.7
Data processing, hosting, and related services	518	8,346	15.2	8.4	16.4	16.6	7.1	8.6	18.6	13.1
Other information	other 51	32,027	16.3	10.5	15.8	14.4	3.5	6.2	10.5	13.2
Finance and insurance	52	198,128	4.9	2.8	14.8	11.3	2.6	1.7	11.3	7.0
Real estate and rental and leasing	53	283,276	5.0	3.1	16.2	13.2	1.3	2.1	7.4	9.1
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1,956	16.6	14.4	16.6	19.6	7.1 r	4.4 r	12.2	14.5
Other real estate and rental and leasing	other 53	281,321	5.0	3.1	16.2	13.1	1.2	2.1	7.4	9.1
Professional, scientific, and technical services	54	717,229	10.2	5.7	10.8	11.9	2.8	6.4	12.1	9.7
Legal services	5411	152,543	4.0	2.0	13.1	10.4	0.7	1.1	15.0	10.1
Accounting, tax preparation, bookkeeping, and payroll services	5412	109,075	4.6	1.7	5.7	5.3	1.0	0.9	11.3	8.1
Architectural, engineering, and related services	5413	87,994	12.6	6.4	6.8	11.3	3.2	23.3	10.9	9.0
Specialized design services	5414	29,258	26.7	22.7	14.7	13.8	2.0	6.1	10.9	9.9
Computer systems design and related services	5415	100,282	12.6	5.8	11.0	13.6	4.7	8.9	13.6	10.1
Management, scientific, and technical consulting services	5416	144,421	10.2	6.2	12.3	16.4	3.5	5.0	10.1	9.8
Scientific research and development services	5417	11,149	17.1	17.3	12.5	20.2	24.2	17.8	17.1	17.6
Advertising, public relations, and related services	5418	28,236	21.6	14.0	17.3	16.9	4.1	3.9	11.6	12.7
Other professional, scientific, and technical services	5419	54,270	14.2	6.1	10.7	10.0	1.6	2.8	9.9	8.2
Management of companies and enterprises	55	3,153	2.2 r	5.0	8.0 r	6.1 r	2.3 r	4.3 r	7.5 r	9.2 r
Administrative and support and waste management and remediation services	56	293,539	9.9	5.9	9.5	8.6	1.6	2.3	6.2	7.1
Educational services	61	57,078	9.1	4.8	14.8	11.0	2.4	1.8	9.0	8.7
Health care and social assistance	62	536,276	7.9	3.4	11.2	11.3	1.4	1.6	11.1	8.8
Health care services	621-23	469,939	8.4	3.6	11.9	11.7	1.5	1.8	12.0	9.1
Social assistance	624	66,336	4.2	2.1	6.6	8.2	1.1	0.7	4.5	6.9

TABLE 68

**Activities conducted by domestic unaffiliated companies, by industry: 2021**

(Percent)

Industry	NAICS code	All companies (number)	Core production	Distribution and logistics	Marketing, sales, or after sales services	Administrative or management functions	Research and development	Engineering and other technical services	Information and communication technology services	All other operating activities
Arts, entertainment, and recreation	71	89,491	9.9	8.4	15.0	12.4	2.0	2.3	7.2	9.3
Accommodation and food services	72	455,071	11.1	7.8	11.7	8.6	2.0	1.7	5.2	8.0
Other services	81	341,869	11.9	6.8	10.0	7.4	1.5	1.9	5.1	7.5

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 69

**Activities conducted by domestic unaffiliated companies, by company size: 2021**

(Percent)

Employment size	All companies (number)	Core production	Distribution and logistics	Marketing, sales, or after sales services	Administrative or management functions	Research and development	Engineering and other technical services	Information and communication technology services	All other operating activities
All companies	4,874,928	12.4	10.5	12.0	10.1	2.3	4.2	8.6	8.9
Micro companies									
1–4	2,734,191	10.9	8.5	10.1	9.7	2.0	3.3	6.2	8.0
5–9	950,548	13.6	10.9	12.7	10.1	2.2	4.3	8.7	9.0
Small companies									
10–19	577,397	14.4	12.8	14.3	10.3	2.5	5.1	11.4	9.8
20–49	399,566	14.5	15.3	16.2	11.2	3.0	6.0	14.3	10.4
Medium companies									
50–99	115,591	16.0	18.3	17.5	11.4	4.1	9.6	18.0	12.7
100–249	63,969	17.3	21.8	19.1	13.0	5.4	10.7	21.5	15.6
Large companies									
250–499	18,124	18.4	20.8	20.5	12.0	7.2	12.5	24.5	18.1
500–999	7,668	14.6	23.9	20.3	11.9	8.0	14.3	21.2	17.7
1,000–4,999	6,010	17.2	25.5	21.0	13.9	9.2	15.5	26.0	19.3
5,000–9,999	982	24.3	32.7	22.1	15.9	11.8	21.6	26.6	19.0
10,000–24,999	516	26.7	36.4	32.2	27.3	18.0	28.1	38.4	30.2
25,000 or more	372	24.5	32.0	28.8	19.4	14.8	22.6	32.8	22.0

r = relative standard error &gt; 50%.

**Note(s):**

Detail may not add to total because of rounding. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 70

## Activities conducted by foreign unaffiliated companies, by industry: 2021

(Percent)

Industry	NAICS code	All companies (number)	Core production	Distribution and logistics	Marketing, sales, or after sales services	Administrative or management functions	Research and development	Engineering and other technical services	Information and communication technology services	All other operating activities
All industries	11, 21–23, 31–33, 42–81	4,874,928	3.3	2.3	2.1	1.5	0.7	1.0	1.2	1.3
Manufacturing industries	31–33	209,282	5.8	5.5	2.4	1.3	1.2	2.0	1.5	1.5
Food	311	19,326	3.6	3.3	1.8	1.0	0.5	0.7	1.2	1.2
Beverage and tobacco products	312	9,354	2.1	4.4	2.6	1.3	0.9 r	0.8	1.2	0.8
Textile, apparel, and leather products	313–16	9,443	10.3	6.0	2.1	1.2	1.2	1.0	1.5	1.4
Wood products	321	9,546	2.2	2.9	1.1	0.5	0.1	1.2	1.4 r	0.3
Paper	322	1,500	7.4 r	8.3 r	2.1 r	2.1 r	1.6 r	3.9	2.6 r	2.9
Printing and related support activities	323	20,212	5.4	3.8	1.4	0.9	0.2	1.0	1.1	1.1
Petroleum and coal products	324	546	1.5	2.9 r	1.3	1.3	0.4 r	2.9 r	2.9 r	1.1
Chemicals	325	7,961	6.8	9.1	3.9	1.9	2.7	2.2	1.8	1.6
Pesticide, fertilizer, and other agricultural chemicals	3253	580	11.9 r	2.6 r	0.5	1.9 r	0.7 r	0.0	0.3	0.0
Pharmaceuticals and medicines	3254	1,536	7.1	9.4	4.9	2.5	4.4	2.4	2.7	2.7
Soap, cleaning compound, and toilet preparation	3256	1,652	8.4	7.6	3.1	1.5	1.3	0.8	1.0	0.8
Other chemicals	other 325	4,194	5.5	10.3	4.4	1.9	2.9	2.9	2.0	1.7
Plastics and rubber products	326	7,060	7.0	10.1	3.2	2.2	2.2	3.5	2.4	2.4
Nonmetallic mineral products	327	7,290	4.7	4.7	2.2	1.3 r	0.7 r	1.4	1.3	2.4
Primary metals	331	2,079	5.7 r	7.0	0.9	1.0	1.8 r	3.3 r	1.6	1.6
Fabricated metal products	332	46,128	3.6	3.4	1.6	1.1	0.4	1.3	0.9	1.1
Machinery	333	16,440	8.9	9.7	4.6	1.8	2.5	3.6	2.3	2.2
Computer and electronic products	334	8,527	12.2	12.5	6.2	2.4	4.0	7.1	3.4	2.8
Communications equipment	3342	850	19.8	16.5	6.9	1.4	6.1 r	9.5	3.3 r	3.1 r
Semiconductor and other electronic components	3344	2,711	11.2	9.7	4.1	2.9	2.4	7.1	3.6	2.5 r
Navigational, measuring, electromedical, and control instruments	3345	3,737	10.9	15.4	8.2	2.4	4.0	5.9	3.4	3.0
Other computer and electronic products	other 334	1,230	13.3	7.2	4.0	1.9 r	6.3	9.2	3.3	2.6
Electrical equipment, appliances, and components	335	3,925	14.4	13.3	4.6	1.7	4.9	8.3	1.2	3.0
Transportation equipment	336	7,325	8.4	6.6	1.7	2.1	2.2	4.0	1.8	2.3
Automobiles, bodies, trailers, and parts	3361–63	4,494	9.1	6.5	1.0	1.6	1.9	3.6	1.7	2.1
Aerospace products and parts	3364	1,044	6.4	6.1	2.1	2.1	2.2	4.6	1.6	1.0 r
Other transportation	other 336	1,787	7.6	7.3	3.1	3.4	3.0	4.5	2.1	3.6
Furniture and related products	337	12,060	3.9	3.0	1.3	0.8	0.5	0.5	0.9	0.5
Miscellaneous	339	20,536	8.0	6.0	2.7	1.6	1.7	1.9	1.8	1.7
Medical equipment and supplies	3391	7,602	6.3	5.9	4.1	2.5	3.1	2.9	2.4	2.7
Other miscellaneous manufacturing	3399	12,933	8.9	6.1	1.8	1.0	0.9	1.3	1.5	1.2
Nonmanufacturing industries	11, 21–23, 42–81	4,665,645	3.2	2.1	2.1	1.5	0.7	1.0	1.2	1.3

TABLE 70

## Activities conducted by foreign unaffiliated companies, by industry: 2021

(Percent)

Industry	NAICS code	All companies (number)	Core production	Distribution and logistics	Marketing, sales, or after sales services	Administrative or management functions	Research and development	Engineering and other technical services	Information and communication technology services	All other operating activities
Agriculture, forestry, fishing, and hunting	11	19,567	1.9	1.4	1.4	0.3 r	0.3 r	0.3 r	0.4 r	0.7 r
Mining, extraction, and support activities	21	14,004	1.3	1.2	0.8	1.0	0.5	1.7	0.8	0.9
Utilities	22	2,994	1.2	0.8	1.1	0.4	0.2 r	2.8 r	0.7	1.5
Construction	23	635,568	2.4	1.4	1.2	1.0	0.4	1.1	0.6	1.1
Wholesale trade	42	241,440	13.1	11.7	4.9	2.9	2.9	3.5	2.3	2.3
Retail trade	44-45	546,067	6.1	4.2	2.7	1.4	1.0	1.1	1.3	1.5
Transportation and warehousing	48-49	165,454	1.8	4.3	1.4	1.6	0.2	0.4	1.0	1.7
Information	51	65,445	6.4	2.8	3.7	2.4	2.6	3.8	2.9	2.7
Publishing	511	17,755	8.1	4.2	5.2	2.6	5.4	5.9	3.5	2.3
Newspaper, periodical, book, and directory publishers	5111	9,162	7.2	6.1	4.0	0.9	0.4	0.3	2.0	1.4 r
Software publishers	5112	8,589	8.9	2.2	6.5	4.3	10.7	11.8	5.2	3.4
Telecommunications	517	7,319	4.5	1.6	2.6	2.1	1.5	3.0	2.5	2.1
Data processing, hosting, and related services	518	8,346	6.3	1.6	4.4	4.4	3.6	6.3	5.2	4.3
Other information	other 51	32,027	5.9	2.6	2.9	1.9	1.0	2.2	2.1	2.5
Finance and insurance	52	198,128	0.8	0.4	2.4	1.7	0.5	0.3	1.3	1.0
Real estate and rental and leasing	53	283,276	0.9	0.7	2.7	1.9	0.3	0.3	1.1	1.2
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1,956	13.8	11.6	2.1 r	7.3 r	2.2 r	5.2 r	5.1 r	7.3 r
Other real estate and rental and leasing	other 53	281,321	0.8	0.6	2.7	1.8	0.2	0.3	1.0	1.1
Professional, scientific, and technical services	54	717,229	3.1	1.4	2.1	1.9	1.1	1.6	1.8	1.4
Legal services	5411	152,543	0.5	0.2	1.4	1.3	0.1	0.1 r	1.4	1.1
Accounting, tax preparation, bookkeeping, and payroll services	5412	109,075	1.1	0.3	0.9	1.3	0.2	0.2	1.4	1.5
Architectural, engineering, and related services	5413	87,994	3.1	1.4	1.4	1.4	0.9	3.2	1.1	0.9
Specialized design services	5414	29,258	8.9	5.8	1.9	1.8	0.9	1.2	1.3	0.7
Computer systems design and related services	5415	100,282	5.5	1.2	3.2	2.7	2.4	4.3	3.9	2.0
Management, scientific, and technical consulting services	5416	144,421	3.6	1.8	3.0	2.6	1.4	1.6	1.7	1.6
Scientific research and development services	5417	11,149	7.7	6.1	3.6	4.6	11.3	6.1	2.6	4.0
Advertising, public relations, and related services	5418	28,236	6.9	3.8	4.1	2.5	1.1	1.6	2.5	2.5
Other professional, scientific, and technical services	5419	54,270	3.3	1.0	1.6	1.2	0.5	0.7	1.2	1.2
Management of companies and enterprises	55	3,153	2.2 r	1.6 r	0.0	1.6 r	0.0	2.1 r	0.0	0.0
Administrative and support and waste management and remediation services	56	293,539	1.7	1.0	1.5	1.1	0.3	0.3	0.9	0.8
Educational services	61	57,078	2.0	0.5	2.7	1.9	0.4	0.5	1.5	1.1
Health care and social assistance	62	536,276	1.3	0.5	1.8	1.5	0.4	0.4	1.1	1.1
Health care services	621-23	469,939	1.3	0.5	1.9	1.5	0.4	0.4	1.2	1.1
Social assistance	624	66,336	1.1	0.4	1.3	1.7	0.3	0.3	0.7	1.2

TABLE 70

**Activities conducted by foreign unaffiliated companies, by industry: 2021**

(Percent)

Industry	NAICS code	All companies (number)	Core production	Distribution and logistics	Marketing, sales, or after sales services	Administrative or management functions	Research and development	Engineering and other technical services	Information and communication technology services	All other operating activities
Arts, entertainment, and recreation	71	89,491	2.1	2.2	2.9	1.6	0.7	0.4	0.7	1.0
Accommodation and food services	72	455,071	2.0	1.1	1.8	1.3	0.5	0.4	0.8	1.3
Other services	81	341,869	2.5	1.1	1.7	1.2	0.3	0.5	0.8	1.4

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 71

**Activities conducted by foreign unaffiliated companies, by company size: 2021**

(Percent)

Employment size	All companies (number)	Core production	Distribution and logistics	Marketing, sales, or after sales services	Administrative or management functions	Research and development	Engineering and other technical services	Information and communication technology services	All other operating activities
All companies	4,874,928	3.3	2.3	2.1	1.5	0.7	1.0	1.2	1.3
Micro companies									
1–4	2,734,191	3.0	2.0	2.0	1.5	0.7	0.8	1.0	1.3
5–9	950,548	3.4	2.1	2.1	1.5	0.6	0.9	1.0	1.3
Small companies									
10–19	577,397	3.8	2.7	2.2	1.4	0.9	1.3	1.5	1.3
20–49	399,566	3.6	2.6	2.4	1.6	0.9	1.3	1.6	1.4
Medium companies									
50–99	115,591	3.8	3.5	2.8	1.9	1.3	1.9	2.1	1.4
100–249	63,969	4.7	4.5	2.8	1.6	1.5	2.2	2.0	2.3
Large companies									
250–499	18,124	4.7	4.4	1.9	1.8	1.8	2.9	3.5	2.9
500–999	7,668	8.4	9.2	4.2 r	3.9 r	3.7 r	5.6 r	6.3	5.4 r
1,000–4,999	6,010	8.2	9.7	5.7	5.8	4.3	6.2	8.2	6.8
5,000–9,999	982	17.1 r	20.5 r	9.0	9.6	5.9	15.3 r	14.3	9.9
10,000–24,999	516	18.4	20.3	13.0	16.1	10.5	18.0	18.2	15.1
25,000 or more	372	19.9	19.9	14.8	12.4	10.5	14.0	17.7	16.7

r = relative standard error &gt; 50%.

**Note(s):**

Detail may not add to total because of rounding. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.



TABLE 72

## Activities conducted by domestic or foreign unaffiliated companies, by industry: 2021

(Percent)

Industry	NAICS code	All companies (number)	Core production	Distribution and logistics	Marketing, sales, or after sales services	Administrative or management functions	Research and development	Engineering and other technical services	Information and communication technology services	All other operating activities
All industries	11, 21–23, 31–33, 42–81	4,874,928	13.4	10.9	12.5	10.6	2.6	4.6	8.9	9.2
Manufacturing industries	31–33	209,282	22.2	30.8	14.2	10.5	4.8	9.7	12.6	10.5
Food	311	19,326	15.0	24.4	14.2	9.4	3.8	5.9	9.4	9.5
Beverage and tobacco products	312	9,354	15.0	38.8	22.5	16.0	3.0	6.2	12.2	11.8
Textile, apparel, and leather products	313–16	9,443	24.7	26.2	16.0	10.4	4.9	5.6	9.1	9.4
Wood products	321	9,546	14.0	29.6	11.9	8.2	2.7	7.4	9.8	8.1
Paper	322	1,500	20.5	39.7	12.3	8.9	4.3	9.7	16.3	11.9
Printing and related support activities	323	20,212	30.4	29.5	11.8	10.0	1.7	3.0	10.5	10.9
Petroleum and coal products	324	546	8.6	46.2	4.9	14.7	2.0	9.7	13.6	17.4
Chemicals	325	7,961	22.6	42.6	21.6	12.8	12.0	17.7	17.3	14.9
Pesticide, fertilizer, and other agricultural chemicals	3253	580	24.8	43.4	20.3	9.8	17.4	6.9	9.5	6.6
Pharmaceuticals and medicines	3254	1,536	23.8	39.1	25.3	15.2	17.4	19.3	21.9	16.7
Soap, cleaning compound, and toilet preparation	3256	1,652	22.9	41.9	25.6	8.3	10.6	11.7	12.0	13.5
Other chemicals	other 325	4,194	21.6	44.1	18.8	14.2	9.8	20.9	18.9	16.0
Plastics and rubber products	326	7,060	21.3	41.1	15.9	10.1	7.9	13.6	17.2	11.4
Nonmetallic mineral products	327	7,290	14.1	23.0	12.7	8.8	2.9	10.4	10.1	9.4
Primary metals	331	2,079	21.1	35.6	12.8	12.1	6.6	15.3	19.9	12.5
Fabricated metal products	332	46,128	21.2	28.9	11.0	9.8	2.9	9.9	13.6	10.8
Machinery	333	16,440	27.7	41.1	16.5	10.5	7.3	15.8	17.6	12.3
Computer and electronic products	334	8,527	25.0	33.7	20.9	13.8	12.3	20.5	16.5	10.7
Communications equipment	3342	850	32.5	40.9	21.4	15.6	18.4	22.0	17.2	13.3
Semiconductor and other electronic components	3344	2,711	25.7	30.9	19.8	16.7	9.0	20.7	19.8	13.4
Navigational, measuring, electromedical, and control instruments	3345	3,737	21.7	35.9	22.4	12.5	13.7	20.2	15.3	9.1
Other computer and electronic products	other 334	1,230	28.5	28.5	18.6	9.8	11.0	19.9	12.0	7.9
Electrical equipment, appliances, and components	335	3,925	25.1	38.4	19.7	11.9	10.6	21.0	16.0	12.1
Transportation equipment	336	7,325	22.0	30.8	14.8	12.3	8.0	13.8	13.7	11.7
Automobiles, bodies, trailers, and parts	3361–63	4,494	20.6	30.4	15.0	11.0	7.9	12.0	11.9	10.4
Aerospace products and parts	3364	1,044	25.7	33.0	9.6	12.2	10.8	19.3	19.3	9.8
Other transportation	other 336	1,787	23.1	30.3	17.3	15.7	6.9	14.9	14.8	15.9
Furniture and related products	337	12,060	22.2	22.7	10.3	8.7	2.7	4.3	7.0	6.1
Miscellaneous	339	20,536	27.1	28.6	14.6	11.0	5.1	9.0	11.9	9.6
Medical equipment and supplies	3391	7,602	25.9	26.3	11.0	10.0	6.0	8.4	8.1	8.5
Other miscellaneous manufacturing	3399	12,933	27.7	29.9	16.7	11.6	4.6	9.3	14.1	10.3
Nonmanufacturing industries	11, 21–23, 42–81	4,665,645	13.0	10.0	12.4	10.6	2.5	4.4	8.8	9.2

TABLE 72

**Activities conducted by domestic or foreign unaffiliated companies, by industry: 2021**

(Percent)

Industry	NAICS code	All companies (number)	Core production	Distribution and logistics	Marketing, sales, or after sales services	Administrative or management functions	Research and development	Engineering and other technical services	Information and communication technology services	All other operating activities
Agriculture, forestry, fishing, and hunting	11	19,567	8.0	11.9	6.3	7.0	1.5	2.0	3.8	7.1
Mining, extraction, and support activities	21	14,004	14.7	16.5	6.9	9.9	1.8	11.8	10.2	13.5
Utilities	22	2,994	8.7	7.7	7.9	7.8	2.5	12.5	7.8	10.3
Construction	23	635,568	18.1	10.7	8.5	8.6	1.5	8.4	6.0	9.0
Wholesale trade	42	241,440	28.0	36.5	20.0	14.1	7.2	9.6	13.5	12.9
Retail trade	44-45	546,067	18.7	18.2	15.9	9.2	3.4	3.7	8.3	9.1
Transportation and warehousing	48-49	165,454	8.1	19.3	7.3	9.2	1.2	2.0	6.4	9.5
Information	51	65,445	20.1	13.1	17.9	15.2	6.6	9.5	14.3	13.7
Publishing	511	17,755	26.2	19.9	21.2	15.3	11.6	11.6	16.2	14.0
Newspaper, periodical, book, and directory publishers	5111	9,162	32.3	30.8	16.3	11.8	2.5	2.5	14.4	10.5
Software publishers	5112	8,589	19.8	8.4	26.4	19.0	21.3	21.4	18.2	17.8
Telecommunications	517	7,319	15.3	11.1	17.0	13.0	4.4	13.4	16.3	12.0
Data processing, hosting, and related services	518	8,346	17.7	8.7	17.9	17.5	8.7	11.2	19.7	14.0
Other information	other 51	32,027	18.5	11.0	16.3	15.0	3.9	7.0	11.4	13.8
Finance and insurance	52	198,128	5.1	2.9	15.4	11.8	2.8	1.8	11.6	7.2
Real estate and rental and leasing	53	283,276	5.3	3.4	16.8	13.6	1.3	2.3	7.7	9.4
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1,956	20.9	18.7	18.7	23.9	7.1 r	7.4 r	14.3	16.6
Other real estate and rental and leasing	other 53	281,321	5.2	3.2	16.8	13.5	1.3	2.2	7.6	9.3
Professional, scientific, and technical services	54	717,229	11.2	6.0	11.4	12.5	3.2	7.0	12.6	10.1
Legal services	5411	152,543	4.2	2.1	13.5	10.6	0.8	1.1	15.3	10.3
Accounting, tax preparation, bookkeeping, and payroll services	5412	109,075	4.9	1.7	6.1	5.8	1.0	0.9	11.7	8.4
Architectural, engineering, and related services	5413	87,994	13.5	6.6	7.4	11.9	3.5	24.0	11.3	9.4
Specialized design services	5414	29,258	28.5	23.1	14.9	14.3	2.7	6.6	11.4	10.2
Computer systems design and related services	5415	100,282	14.8	6.0	12.2	14.5	5.8	10.8	14.9	10.6
Management, scientific, and technical consulting services	5416	144,421	11.6	6.7	13.0	17.3	4.2	5.7	10.4	10.3
Scientific research and development services	5417	11,149	19.4	18.5	13.8	22.1	26.3	19.4	17.9	18.2
Advertising, public relations, and related services	5418	28,236	22.8	14.3	18.5	17.4	4.5	4.2	12.5	13.3
Other professional, scientific, and technical services	5419	54,270	15.3	6.3	11.1	10.4	1.9	3.1	10.2	8.8
Management of companies and enterprises	55	3,153	4.4 r	5.0	8.0 r	7.7 r	2.3 r	4.3 r	7.5 r	9.2 r
Administrative and support and waste management and remediation services	56	293,539	10.5	6.3	9.9	8.9	1.7	2.4	6.5	7.4
Educational services	61	57,078	9.4	4.8	15.4	11.6	2.6	2.0	9.4	8.8
Health care and social assistance	62	536,276	8.2	3.5	11.6	11.7	1.6	1.8	11.4	9.1
Health care services	621-23	469,939	8.7	3.7	12.3	12.1	1.6	1.9	12.3	9.3
Social assistance	624	66,336	4.6	2.1	6.9	8.9	1.2	0.8	4.8	7.4

TABLE 72

**Activities conducted by domestic or foreign unaffiliated companies, by industry: 2021**

(Percent)

Industry	NAICS code	All companies (number)	Core production	Distribution and logistics	Marketing, sales, or after sales services	Administrative or management functions	Research and development	Engineering and other technical services	Information and communication technology services	All other operating activities
Arts, entertainment, and recreation	71	89,491	10.5	8.8	15.7	12.9	2.2	2.5	7.3	9.4
Accommodation and food services	72	455,071	11.6	8.0	12.0	8.9	2.2	1.8	5.5	8.3
Other services	81	341,869	12.6	7.0	10.3	7.7	1.6	2.0	5.4	7.9

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 73

**Activities conducted by domestic or foreign unaffiliated companies, by company size: 2021**

(Percent)

Employment size	All companies (number)	Core production	Distribution and logistics	Marketing, sales, or after sales services	Administrative or management functions	Research and development	Engineering and other technical services	Information and communication technology services	All other operating activities
All companies	4,874,928	13.4	10.9	12.5	10.6	2.6	4.6	8.9	9.2
Micro companies									
1-4	2,734,191	11.9	8.9	10.6	10.2	2.3	3.6	6.6	8.4
5-9	950,548	14.7	11.3	13.2	10.6	2.4	4.6	9.0	9.3
Small companies									
10-19	577,397	15.4	13.2	14.8	10.6	2.8	5.5	11.8	10.0
20-49	399,566	15.6	15.6	16.6	11.6	3.3	6.5	14.6	10.6
Medium companies									
50-99	115,591	17.0	18.5	18.2	11.9	4.4	10.0	18.4	12.9
100-249	63,969	17.9	22.1	20.0	13.6	6.0	11.4	22.0	15.8
Large companies									
250-499	18,124	19.3	21.3	20.6	12.5	7.4	12.7	24.6	18.8
500-999	7,668	17.3	25.0	21.5	13.3	8.5	15.6	21.7	18.7
1,000-4,999	6,010	19.2	26.0	21.9	15.5	10.1	16.5	27.0	19.8
5,000-9,999	982	26.8	33.7	23.3	18.2	12.4	22.5	28.5	19.8
10,000-24,999	516	29.7	37.0	32.8	30.2	19.8	30.0	39.0	31.8
25,000 or more	372	26.9	32.3	29.6	20.7	16.4	24.7	33.3	23.7

r = relative standard error &gt; 50%.

**Note(s):**

Detail may not add to total because of rounding. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 74

## Activities conducted by foreign affiliated companies, by industry: 2021

(Percent)

Industry	NAICS code	Companies (number)	Core production	Distribution and logistics	Marketing, sales, or after sales services	Administrative or management functions	Research and development	Engineering and other technical services	Information and communication technology services	All other operating activities
All industries	11, 21–23, 31–33, 42–81	4,874,928	1.8	1.2	1.3	1.2	0.7	0.7	0.7	1.0
Manufacturing industries	31–33	209,282	3.5	2.8	2.2	2.0	1.6	2.0	1.3	1.4
Food	311	19,326	2.3	1.6	1.5	1.6	0.9	0.8	1.3	0.7
Beverage and tobacco products	312	9,354	1.1	1.3	1.4	1.3	0.3 r	0.4 r	0.3 r	0.6
Textile, apparel, and leather products	313–16	9,443	4.1	2.7	1.0	0.7	0.8	0.8	0.5	1.0
Wood products	321	9,546	0.6	0.7	1.2	0.6	0.3 r	0.3 r	0.4	0.7 r
Paper	322	1,500	4.7	3.1	2.3	4.5	3.2 r	3.5 r	3.5 r	1.5
Printing and related support activities	323	20,212	2.7	2.4	1.4	0.7	0.1	0.7	0.6	0.2
Petroleum and coal products	324	546	2.4	3.1	1.5	1.6	1.3 r	1.6 r	0.7	1.3
Chemicals	325	7,961	4.4	5.4	4.4	4.7	4.4	3.3	2.8	2.2
Pesticide, fertilizer, and other agricultural chemicals	3253	580	0.7 r	1.7 r	1.0 r	1.6 r	1.7 r	0.0	0.7 r	0.0
Pharmaceuticals and medicines	3254	1,536	5.2	6.7	6.0	6.0	3.7	2.7	3.3	3.8 r
Soap, cleaning compound, and toilet preparation	3256	1,652	3.5	1.9	2.0	1.2 r	5.4 r	4.5 r	0.9 r	0.4
Other chemicals	other 325	4,194	5.0	6.8	5.2	6.1	4.5	3.4	3.7	2.6
Plastics and rubber products	326	7,060	3.4	3.3	2.3	2.7	1.6	2.5	2.0	1.6
Nonmetallic mineral products	327	7,290	2.6	1.9	0.9	0.9	0.7	1.1	0.8	1.0
Primary metals	331	2,079	5.6	4.5	3.8 r	6.1	3.6 r	5.6	3.2	2.0
Fabricated metal products	332	46,128	1.8	1.9	1.2	1.2	0.8	1.3	0.7	1.1
Machinery	333	16,440	8.2	6.8	6.6	5.3	4.8	6.0	3.5	3.7
Computer and electronic products	334	8,527	8.7	5.5	6.6	5.5	6.5	7.7	3.8	3.7
Communications equipment	3342	850	10.0 r	6.0 r	5.2	6.6 r	8.5 r	11.3 r	2.6 r	2.7 r
Semiconductor and other electronic components	3344	2,711	7.3	4.7	4.7	3.8	4.5	5.8	3.8	3.3
Navigational, measuring, electromedical, and control instruments	3345	3,737	9.6	6.3	8.5	6.3	8.3	9.3	4.1	4.5
Other computer and electronic products	other 334	1,230	8.3	4.9	5.8	6.5	3.8	4.4	3.7	3.3
Electrical equipment, appliances, and components	335	3,925	8.7	5.6	2.9	3.2	4.4	5.9	1.7	1.8
Transportation equipment	336	7,325	4.8	4.3	3.1	4.0	3.5	4.4	2.9	3.0
Automobiles, bodies, trailers, and parts	3361–63	4,494	5.8	5.7	3.8	5.0	4.1	5.4	3.4	3.3
Aerospace products and parts	3364	1,044	4.4	2.3	2.8	3.6	4.4	5.4	3.1	3.3
Other transportation	other 336	1,787	2.5	2.2	1.5	1.8	1.3	1.5	1.4	2.2
Furniture and related products	337	12,060	1.8	0.9	0.4	0.8 r	0.2	0.3	0.4	0.4 r
Miscellaneous	339	20,536	4.4	2.4	1.7	1.3	1.2	1.2	1.0	1.6
Medical equipment and supplies	3391	7,602	4.4	2.9	2.2	2.3	2.2	1.9	1.2 r	2.3
Other miscellaneous manufacturing	3399	12,933	4.5	2.2	1.4	0.8	0.6	0.8	0.8 r	1.2
Nonmanufacturing industries	11, 21–23, 42–81	4,665,645	1.7	1.2	1.3	1.2	0.6	0.7	0.7	0.9

TABLE 74

## Activities conducted by foreign affiliated companies, by industry: 2021

(Percent)

Industry	NAICS code	Companies (number)	Core production	Distribution and logistics	Marketing, sales, or after sales services	Administrative or management functions	Research and development	Engineering and other technical services	Information and communication technology services	All other operating activities
Agriculture, forestry, fishing, and hunting	11	19,567	0.3 r	0.6 r	0.3 r	1.0 r	0.6 r	0.6 r	0.3 r	0.3 r
Mining, extraction, and support activities	21	14,004	1.1	1.3	1.4	2.3	0.7	1.2	1.0 r	0.9
Utilities	22	2,994	0.5	0.4	0.6	0.9	0.3	0.5	0.6	0.8
Construction	23	635,568	1.1	0.7	0.5	0.6	0.2	0.4	0.3	0.6
Wholesale trade	42	241,440	7.5	6.3	4.0	3.5	3.1	3.4	2.3	2.3
Retail trade	44-45	546,067	2.8	2.0	1.6	1.1	0.8	0.8	0.8	1.0
Transportation and warehousing	48-49	165,454	1.3	3.1	0.9	1.0	0.4	0.3	0.7	1.2
Information	51	65,445	3.1	1.3	2.7	2.8	2.1	2.4	2.0	1.9
Publishing	511	17,755	4.4	1.5	3.4	3.2	3.5	3.6	2.1	1.9
Newspaper, periodical, book, and directory publishers	5111	9,162	2.0	1.3	1.3 r	0.3	0.3	0.2	0.4	0.4
Software publishers	5112	8,589	7.1	1.7	5.7	6.3	6.9	7.2	4.0	3.5
Telecommunications	517	7,319	1.5	1.4	2.3	1.7	0.4	1.4	1.7	1.3
Data processing, hosting, and related services	518	8,346	3.8	1.4	4.5	5.3	3.5	4.6	3.1	3.1
Other information	other 51	32,027	2.5	1.1	2.0	2.1	1.4	1.5	1.7	1.7
Finance and insurance	52	198,128	0.8	0.3	1.9	1.6	0.5	0.4	1.0	0.9
Real estate and rental and leasing	53	283,276	0.7	0.4	1.4	1.4	0.3	0.2	0.4	0.7
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1,956	2.1 r	0.0	2.1 r	5.1 r	4.3 r	2.2 r	0.0	3.0 r
Other real estate and rental and leasing	other 53	281,321	0.6	0.4	1.4	1.4	0.2	0.2	0.4	0.7
Professional, scientific, and technical services	54	717,229	1.6	0.7	1.4	1.4	0.8	1.0	1.0	0.9
Legal services	5411	152,543	0.4	0.2	0.7	0.8	0.2	0.2	0.6	0.5
Accounting, tax preparation, bookkeeping, and payroll services	5412	109,075	0.4	0.1 r	0.7	1.0	0.1 r	0.1	0.3	0.8
Architectural, engineering, and related services	5413	87,994	1.7	0.7	1.3	1.2	0.8	2.0	0.6	0.9
Specialized design services	5414	29,258	3.0	1.8	0.8	1.2	0.4 r	0.3 r	0.2 r	0.8
Computer systems design and related services	5415	100,282	3.5	0.9	2.7	2.4	2.1	3.0	3.2	1.5
Management, scientific, and technical consulting services	5416	144,421	1.6	1.0	1.8	2.0	0.9	0.7	0.8	0.9
Scientific research and development services	5417	11,149	4.6	3.7	3.7	5.7	7.1	3.8	2.6	3.6
Advertising, public relations, and related services	5418	28,236	2.8	1.4	2.2	1.6	0.5	0.8	1.3	1.3
Other professional, scientific, and technical services	5419	54,270	1.6	0.7	0.7	0.4 r	0.4	0.4	0.6	0.5
Management of companies and enterprises	55	3,153	3.8 r	0.0	0.0	5.4 r	2.2 r	2.2 r	2.2 r	0.0
Administrative and support and waste management and remediation services	56	293,539	1.0	0.6	0.9	0.9	0.2	0.2	0.4	0.6
Educational services	61	57,078	0.8	0.3	1.2	1.1	0.3 r	0.2 r	0.3	0.8
Health care and social assistance	62	536,276	0.7	0.3	0.9	0.8	0.3	0.2	0.5	0.7
Health care services	621-23	469,939	0.8	0.3	0.9	0.7	0.3	0.2	0.5	0.7
Social assistance	624	66,336	0.6	0.3	0.9	1.0	0.4	0.2 r	0.3	0.9

TABLE 74

**Activities conducted by foreign affiliated companies, by industry: 2021**

(Percent)

Industry	NAICS code	Companies (number)	Core production	Distribution and logistics	Marketing, sales, or after sales services	Administrative or management functions	Research and development	Engineering and other technical services	Information and communication technology services	All other operating activities
Arts, entertainment, and recreation	71	89,491	0.9	0.8	1.8	1.8	0.4	0.3	0.7	1.0
Accommodation and food services	72	455,071	1.4	1.0	1.2	0.9	0.5	0.4	0.5	1.2
Other services	81	341,869	1.2	0.6	0.8	0.5	0.3	0.4	0.4	0.9

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 75

**Activities conducted by foreign affiliated companies, by company size: 2021**

(Percent)

Employment size	Companies (number)	Core production	Distribution and logistics	Marketing, sales, or after sales services	Administrative or management functions	Research and development	Engineering and other technical services	Information and communication technology services	All other operating activities
All companies	4,874,928	1.8	1.2	1.3	1.2	0.7	0.7	0.7	1.0
Micro companies									
1-4	2,734,191	1.5	1.1	1.2	1.0	0.5	0.6	0.6	0.9
5-9	950,548	1.8	1.2	1.3	1.0	0.6	0.7	0.7	0.9
Small companies									
10-19	577,397	1.8	1.3	1.4	1.4	0.8	0.8	0.9	1.0
20-49	399,566	1.9	1.3	1.5	1.4	0.8	0.8	1.0	0.9
Medium companies									
50-99	115,591	2.8	2.2	2.3	2.4	1.5	1.8	1.7	1.4
100-249	63,969	3.8	3.2	3.3	3.4	1.9	2.3	2.0	2.2
Large companies									
250-499	18,124	5.7	3.3	3.5	5.2	3.2	3.1	2.7	3.6
500-999	7,668	10.1	7.7	7.9 r	12.2	7.1 r	7.8 r	7.7 r	7.5 r
1,000-4,999	6,010	12.3	9.1	10.3	12.7	8.0	9.3	9.6	10.5
5,000-9,999	982	25.8 r	23.8 r	17.0	20.5	14.0	21.8 r	17.5	19.0
10,000-24,999	516	29.7	24.6	27.3	31.0	22.7	25.6	27.1	26.4
25,000 or more	372	25.3	22.6	24.5	27.4	19.4	22.3	23.7	23.4

r = relative standard error &gt; 50%.

**Note(s):**

Detail may not add to total because of rounding. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.



TABLE 76

**Companies with manufacturing activities in the United States, by industry: 2021**

(Number and percent)

Industry	NAICS code	Companies (number)	Manufacturing activity			
			Number		Percent	
			Yes	No	Yes	No
All industries	11, 21–23, 31–33, 42–81	4,874,928	460,226	4,414,702	9.4	90.6
Manufacturing industries	31–33	209,282	173,364	35,918	82.8	17.2
Food	311	19,326	15,073	4,253	78.0	22.0
Beverage and tobacco products	312	9,354	8,483	871	90.7	9.3
Textile, apparel, and leather products	313–16	9,443	7,391	2,052	78.3	21.7
Wood products	321	9,546	8,237	1,309	86.3	13.7
Paper	322	1,500	1,353	147	90.2	9.8
Printing and related support activities	323	20,212	14,563	5,649	72.1	27.9
Petroleum and coal products	324	546	327	219	59.9	40.1
Chemicals	325	7,961	6,706	1,255	84.2	15.8
Pesticide, fertilizer, and other agricultural chemicals	3253	580	453	127	78.1	21.9
Pharmaceuticals and medicines	3254	1,536	1,239	297	80.7	19.3
Soap, cleaning compound, and toilet preparation	3256	1,652	1,444	208	87.4	12.6
Other chemicals	other 325	4,194	3,569	625	85.1	14.9
Plastics and rubber products	326	7,060	6,237	823	88.3	11.7
Nonmetallic mineral products	327	7,290	5,544	1,746	76.0	24.0
Primary metals	331	2,079	1,788	291	86.0	14.0
Fabricated metal products	332	46,128	38,633	7,495	83.8	16.2
Machinery	333	16,440	14,310	2,130	87.0	13.0
Computer and electronic products	334	8,527	6,949	1,578	81.5	18.5
Communications equipment	3342	850	700	150	82.4	17.6
Semiconductor and other electronic components	3344	2,711	2,336	375	86.2	13.8
Navigational, measuring, electromedical, and control instruments	3345	3,737	3,048	689	81.6	18.4
Other computer and electronic products	other 334	1,230	866	364	70.4	29.6
Electrical equipment, appliances, and components	335	3,925	3,377	548	86.0	14.0
Transportation equipment	336	7,325	5,986	1,339	81.7	18.3
Automobiles, bodies, trailers, and parts	3361–63	4,494	3,784	710	84.2	15.8
Aerospace products and parts	3364	1,044	855	189	81.9	18.1
Other transportation	other 336	1,787	1,348	439	75.4	24.6
Furniture and related products	337	12,060	10,611	1,449	88.0	12.0
Miscellaneous	339	20,536	17,793	2,743	86.6	13.4
Medical equipment and supplies	3391	7,602	6,611	991	87.0	13.0
Other miscellaneous manufacturing	3399	12,933	11,181	1,752	86.5	13.5
Nonmanufacturing industries	11, 21–23, 42–81	4,665,645	286,863	4,378,782	6.1	93.9
Agriculture, forestry, fishing, and hunting	11	19,567	2,167	17,400	11.1	88.9
Mining, extraction, and support activities	21	14,004	1,913	12,091	13.7	86.3
Utilities	22	2,994	164	2,830	5.5	94.5
Construction	23	635,568	39,914	595,654	6.3	93.7
Wholesale trade	42	241,440	48,057	193,383	19.9	80.1
Retail trade	44–45	546,067	64,732	481,335	11.9	88.1
Transportation and warehousing	48–49	165,454	3,879	161,575	2.3	97.7
Information	51	65,445	5,197	60,248	7.9	92.1
Publishing	511	17,755	3,481	14,274	19.6	80.4
Newspaper, periodical, book, and directory publishers	5111	9,162	2,784	6,378	30.4	69.6
Software publishers	5112	8,589	695	7,894	8.1	91.9
Telecommunications	517	7,319	244	7,075	3.3	96.7
Data processing, hosting, and related services	518	8,346	401	7,945	4.8	95.2

TABLE 76

**Companies with manufacturing activities in the United States, by industry: 2021**

(Number and percent)

Industry	NAICS code	Companies (number)	Manufacturing activity			
			Number		Percent	
			Yes	No	Yes	No
Other information	other 51	32,027	1,069	30,958	3.3	96.7
Finance and insurance	52	198,128	851	197,277	0.4	99.6
Real estate and rental and leasing	53	283,276	2,450	280,826	0.9	99.1
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1,956	190 r	1,766	9.7 r	90.3
Other real estate and rental and leasing	other 53	281,321	2,260	279,061	0.8	99.2
Professional, scientific, and technical services	54	717,229	27,016	690,213	3.8	96.2
Legal services	5411	152,543	375	152,168	0.2	99.8
Accounting, tax preparation, bookkeeping, and payroll services	5412	109,075	563	108,512	0.5	99.5
Architectural, engineering, and related services	5413	87,994	6,083	81,911	6.9	93.1
Specialized design services	5414	29,258	4,386	24,872	15.0	85.0
Computer systems design and related services	5415	100,282	3,547	96,735	3.5	96.5
Management, scientific, and technical consulting services	5416	144,421	4,044	140,377	2.8	97.2
Scientific research and development services	5417	11,149	2,667	8,482	23.9	76.1
Advertising, public relations, and related services	5418	28,236	2,946	25,290	10.4	89.6
Other professional, scientific, and technical services	5419	54,270	2,412	51,858	4.4	95.6
Management of companies and enterprises	55	3,153	232	2,921	7.4	92.6
Administrative and support and waste management and remediation services	56	293,539	7,391	286,148	2.5	97.5
Educational services	61	57,078	2,059	55,019	3.6	96.4
Health care and social assistance	62	536,276	10,090	526,186	1.9	98.1
Health care services	621-23	469,939	9,789	460,150	2.1	97.9
Social assistance	624	66,336	301	66,035	0.5	99.5
Arts, entertainment, and recreation	71	89,491	3,659	85,832	4.1	95.9
Accommodation and food services	72	455,071	50,469	404,602	11.1	88.9
Other services	81	341,869	16,620	325,249	4.9	95.1

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 77

**Companies with manufacturing activities in the United States, by company size: 2021**

(Number and percent)

Employment size	Companies (number)	Manufacturing activity			
		Number		Percent	
		Yes	No	Yes	No
All companies	4,874,928	460,226	4,414,702	9.4	90.6
Micro companies					
1–4	2,734,191	183,062	2,551,129	6.7	93.3
5–9	950,548	100,155	850,393	10.5	89.5
Small companies					
10–19	577,397	75,481	501,916	13.1	86.9
20–49	399,566	59,519	340,047	14.9	85.1
Medium companies					
50–99	115,591	19,891	95,700	17.2	82.8
100–249	63,969	14,066	49,903	22.0	78.0
Large companies					
250–499	18,124	3,853	14,271	21.3	78.7
500–999	7,668	1,906	5,762	24.9	75.1
1,000–4,999	6,010	1,617	4,393	26.9	73.1
5,000–9,999	982	348	634	35.4	r 64.6
10,000–24,999	516	196	320	38.0	62.0
25,000 or more	372	128	244	34.4	65.6

r = relative standard error &gt; 50%.

**Note(s):**

Detail may not add to total because of rounding. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 78

## Companies with contracted out manufacturing, by contractor company type and industry: 2021

(Percent)

Industry	NAICS code	Companies (number)	No contracted out manufacturing	Any contracted out manufacturing	Contracted out manufacturing performed by U.S.-located unaffiliated companies	Contracted out manufacturing performed by foreign affiliated companies	Contracted out manufacturing performed by foreign unaffiliated companies
All industries	11, 21-23, 31-33, 42-81	4,874,928	96.5	3.5	2.8	0.3	1.1
Manufacturing industries	31-33	209,282	84.4	15.6	13.6	1.4	3.7
Food	311	19,326	91.9	8.1	7.3	1.0	1.4
Beverage and tobacco products	312	9,354	88.2	11.8	11.5	0.1	0.8
Textile, apparel, and leather products	313-16	9,443	78.4	21.6	16.5	2.0	7.8
Wood products	321	9,546	93.5	6.5	5.9	0.1	1.1
Paper	322	1,500	87.5	12.5	12.1	1.4	1.4
Printing and related support activities	323	20,212	80.7	19.3	18.7	0.4	2.1
Petroleum and coal products	324	546	98.5	1.5	1.5	0.2	0.2
Chemicals	325	7,961	84.5	15.5	13.2	2.4	4.1
Pesticide, fertilizer, and other agricultural chemicals	3253	580	79.1	20.9	18.6	0.0	11.9
Pharmaceuticals and medicines	3254	1,536	81.5	18.5	16.0	2.3	4.5
Soap, cleaning compound, and toilet preparation	3256	1,652	85.0	15.0	13.2	2.5	5.1
Other chemicals	other 325	4,194	86.2	13.8	11.4	2.6	2.6
Plastics and rubber products	326	7,060	86.3	13.7	11.1	1.8	4.2
Nonmetallic mineral products	327	7,290	93.4	6.6	5.2	0.6	1.6
Primary metals	331	2,079	79.2	20.8	17.8	2.4	3.2
Fabricated metal products	332	46,128	85.6	14.4	13.6	0.5	1.6
Machinery	333	16,440	77.5	22.5	18.0	5.3	7.7
Computer and electronic products	334	8,527	72.2	27.8	19.8	5.3	10.8
Communications equipment	3342	850	67.1	32.9	18.1	11.5	15.9
Semiconductor and other electronic components	3344	2,711	75.2	24.8	18.4	4.8	8.3
Navigational, measuring, electromedical, and control instruments	3345	3,737	71.7	28.3	21.1	4.2	11.1
Other computer and electronic products	other 334	1,230	71.1	28.9	19.6	5.0	12.0
Electrical equipment, appliances, and components	335	3,925	73.6	26.4	18.9	4.1	12.2
Transportation equipment	336	7,325	81.4	18.6	16.5	2.5	6.1
Automobiles, bodies, trailers, and parts	3361-63	4,494	80.8	19.2	17.0	3.3	7.1
Aerospace products and parts	3364	1,044	75.2	24.8	24.3	1.6	3.8
Other transportation	other 336	1,787	86.5	13.5	10.6	0.9	5.0
Furniture and related products	337	12,060	88.1	11.9	11.3	0.1	1.9
Miscellaneous	339	20,536	83.0	17.0	14.7	0.7	5.6
Medical equipment and supplies	3391	7,602	86.6	13.4	12.1	0.5	2.7
Other miscellaneous manufacturing	3399	12,933	81.0	19.0	16.2	0.8	7.3

TABLE 78

## Companies with contracted out manufacturing, by contractor company type and industry: 2021

(Percent)

Industry	NAICS code	Companies (number)	No contracted out manufacturing	Any contracted out manufacturing	Contracted out manufacturing performed by U.S.-located unaffiliated companies	Contracted out manufacturing performed by foreign affiliated companies	Contracted out manufacturing performed by foreign unaffiliated companies
Nonmanufacturing industries	11, 21–23, 42–81	4,665,645	97.1	2.9	2.3	0.3	1.0
Agriculture, forestry, fishing, and hunting	11	19,567	99.2	0.8 r	0.8 r	0.0	0.3 r
Mining, extraction, and support activities	21	14,004	97.6	2.4	2.2	0.3 r	0.4 r
Utilities	22	2,994	98.1	1.9	1.6 r	0.2	0.2 r
Construction	23	635,568	97.2	2.8	2.7	0.1	0.2
Wholesale trade	42	241,440	83.9	16.1	9.4	2.9	8.1
Retail trade	44–45	546,067	94.7	5.3	3.9	0.4	2.3
Transportation and warehousing	48–49	165,454	99.1	0.9	0.7	0.0 r	0.1
Information	51	65,445	94.9	5.1	4.3	0.2	1.6
Publishing	511	17,755	89.2	10.8	9.4	0.2	3.0
Newspaper, periodical, book, and directory publishers	5111	9,162	81.4	18.6	16.4	0.1 r	5.1
Software publishers	5112	8,589	97.5	2.5	1.9	0.3	0.8
Telecommunications	517	7,319	97.4	2.6	2.0	0.3	1.3
Data processing, hosting, and related services	518	8,346	97.4	2.6	1.8 r	0.1 r	1.6 r
Other information	other 51	32,027	96.9	3.1	2.6	0.1	0.9
Finance and insurance	52	198,128	99.6	0.4	0.3	0.0	0.1
Real estate and rental and leasing	53	283,276	99.4	0.6	0.4	0.0 r	0.2
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1,956	97.3	2.7 r	2.7 r	0.0	2.7 r
Other real estate and rental and leasing	other 53	281,321	99.5	0.5	0.4	0.0 r	0.1
Professional, scientific, and technical services	54	717,229	97.7	2.3	1.9	0.2	0.8
Legal services	5411	152,543	99.9	0.1	0.1	0.0	0.0 r
Accounting, tax preparation, bookkeeping, and payroll services	5412	109,075	99.9	0.1	0.1	0.0	0.0 r
Architectural, engineering, and related services	5413	87,994	96.7	3.3	2.8	0.4	1.1
Specialized design services	5414	29,258	90.2	9.8	8.9	0.1 r	3.1
Computer systems design and related services	5415	100,282	98.1	1.9	1.3	0.4	0.5
Management, scientific, and technical consulting services	5416	144,421	98.0	2.0	1.3	0.2	0.9
Scientific research and development services	5417	11,149	85.9	14.1	11.0	1.6	6.1
Advertising, public relations, and related services	5418	28,236	91.5	8.5	7.7	0.4	2.4
Other professional, scientific, and technical services	5419	54,270	97.3	2.7	2.4	0.3	0.7
Management of companies and enterprises	55	3,153	96.2	3.8 r	1.6 r	0.0	2.2 r
Administrative and support and waste management and remediation services	56	293,539	98.7	1.3	1.1	0.1	0.3
Educational services	61	57,078	98.2	1.8	1.8	0.0	0.4
Health care and social assistance	62	536,276	98.4	1.6	1.5	0.1	0.2

TABLE 78

**Companies with contracted out manufacturing, by contractor company type and industry: 2021**

(Percent)

Industry	NAICS code	Companies (number)	No contracted out manufacturing		Any contracted out manufacturing		Contracted out manufacturing performed by U.S.-located unaffiliated companies		Contracted out manufacturing performed by foreign affiliated companies		Contracted out manufacturing performed by foreign unaffiliated companies	
Health care services	621-23	469,939	98.3		1.7		1.7		0.1		0.1	
Social assistance	624	66,336	99.5		0.5		0.3		0.0		0.2	r
Arts, entertainment, and recreation	71	89,491	97.2		2.8		2.4		0.1	r	0.6	
Accommodation and food services	72	455,071	98.6		1.4		1.2		0.1		0.1	
Other services	81	341,869	98.3		1.7		1.6		0.1		0.3	

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 79

**Companies with contracted out manufacturing, by contractor company type and company size: 2021**

(Percent)

Employment size	Companies (number)	No contracted out manufacturing	Any contracted out manufacturing	Contracted out manufacturing performed by U.S.-located unaffiliated companies	Contracted out manufacturing performed by foreign affiliated companies	Contracted out manufacturing performed by foreign unaffiliated companies
All companies	4,874,928	96.5	3.5	2.8	0.3	1.1
Micro companies						
1–4	2,734,191	97.1	2.9	2.2	0.3	0.9
5–9	950,548	96.3	3.7	3.0	0.3	1.0
Small companies						
10–19	577,397	96.1	3.9	3.3	0.3	1.2
20–49	399,566	95.5	4.5	3.6	0.4	1.4
Medium companies						
50–99	115,591	94.4	5.6	4.7	0.8	1.7
100–249	63,969	92.7	7.3	6.0	1.2	2.5
Large companies						
250–499	18,124	92.4	7.6	6.6	1.6	2.4
500–999	7,668	88.4	11.6	8.1	3.7	4.1
1,000–4,999	6,010	89.5	10.5	7.6	4.5	4.1
5,000–9,999	982	80.5	19.5	15.4	14.3	12.2
10,000–24,999	516	77.1	22.9	18.0	13.8	10.7
25,000 or more	372	81.5	18.5	14.0	12.1	11.8

r = relative standard error &gt; 50%.

**Note(s):**

Detail may not add to total because of rounding. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 80

**Companies with contracted out manufacturing that determined the design of contracted out goods, by industry: 2021**

(Number and percent)

Industry	NAICS code	Companies (number)	Designed goods that were contracted out			
			Number		Percent	
			Yes	No	Yes	No
All industries	11, 21–23, 31–33, 42–81	169,829	100,089	69,740	59.0	41.0
Manufacturing industries	31–33	32,557	19,726	12,831	60.6	39.4
Food	311	1,571	809	762	51.5	48.5
Beverage and tobacco products	312	1,100	609	491	55.4	44.6
Textile, apparel, and leather products	313–16	2,042	1,418	624	69.4	30.6
Wood products	321	622	319	303	51.3	48.7
Paper	322	187	99	88	52.9	47.1
Printing and related support activities	323	3,897	2,229	1,668	57.2	42.8
Petroleum and coal products	324	8	S	S	S	S
Chemicals	325	1,231	764	467	62.1	37.9
Pesticide, fertilizer, and other agricultural chemicals	3253	121	33	88	27.3	72.7
Pharmaceuticals and medicines	3254	284	192	92	67.6	32.4
Soap, cleaning compound, and toilet preparation	3256	247	181	66	73.3	26.7
Other chemicals	other 325	579	358	221	61.8	38.2
Plastics and rubber products	326	967	526	441	54.4	45.6
Nonmetallic mineral products	327	481	356	125	74.0	26.0
Primary metals	331	432	212	220	49.1	50.9
Fabricated metal products	332	6,623	3,353	3,270	50.6	49.4
Machinery	333	3,707	2,530	1,177	68.2	31.8
Computer and electronic products	334	2,370	1,523	847	64.2	35.8
Communications equipment	3342	280	251	29	89.6	10.4
Semiconductor and other electronic components	3344	672	363	309	54.0	46.0
Navigational, measuring, electromedical, and control instruments	3345	1,058	668	390	63.1	36.9
Other computer and electronic products	other 334	356	238	118	66.9	33.1
Electrical equipment, appliances, and components	335	1,036	743	293	71.7	28.3
Transportation equipment	336	1,365	813	552	59.6	40.4
Automobiles, bodies, trailers, and parts	3361–63	865	515	350	59.5	40.5
Aerospace products and parts	3364	259	132	127	51.0	49.0
Other transportation	other 336	241	166	75	68.9	31.1
Furniture and related products	337	1,430	1,050	380	73.4	26.6
Miscellaneous	339	3,483	2,360	1,123	67.8	32.2
Medical equipment and supplies	3391	1,021	687	334	67.3	32.7
Other miscellaneous manufacturing	3399	2,461	1,671	790	67.9	32.1
Nonmanufacturing industries	11, 21–23, 42–81	137,273	80,363	56,910	58.6	41.4



TABLE 80

**Companies with contracted out manufacturing that determined the design of contracted out goods, by industry: 2021**

(Number and percent)

Industry	NAICS code	Companies (number)	Designed goods that were contracted out							
			Number				Percent			
			Yes		No		Yes		No	
Agriculture, forestry, fishing, and hunting	11	166 r	103 r	63 r	62.0 r	38.0 r				
Mining, extraction, and support activities	21	334	205	129	61.4	38.6				
Utilities	22	57	21	36 r	36.8 r	63.2 r				
Construction	23	17,626	9,422	8,204	53.5	46.5				
Wholesale trade	42	38,960	22,143	16,817	56.8	43.2				
Retail trade	44-45	28,791	17,687	11,104	61.4	38.6				
Transportation and warehousing	48-49	1,492	582	910	39.0	61.0				
Information	51	3,315	2,068	1,247	62.4	37.6				
Publishing	511	1,917	1,111	806	58.0	42.0				
Newspaper, periodical, book, and directory publishers	5111	1,704	963	741	56.5	43.5				
Software publishers	5112	212	149	63	70.3	29.7				
Telecommunications	517	190	98	92	51.6	48.4				
Data processing, hosting, and related services	518	214	154	60	72.0	28.0 r				
Other information	other 51	993	706	287	71.1	28.9				
Finance and insurance	52	760	419	341	55.1	44.9				
Real estate and rental and leasing	53	1,578	675	903	42.8	57.2				
Lessors of nonfinancial intangible assets (except copyrighted works)	533	52 r	0	52 r	0.0	100.0 r				
Other real estate and rental and leasing	other 53	1,526	675	851	44.2	55.8				
Professional, scientific, and technical services	54	16,240	11,354	4,886	69.9	30.1				
Legal services	5411	187	67 r	120	35.8 r	64.2 r				
Accounting, tax preparation, bookkeeping, and payroll services	5412	154	86 r	68 r	55.8 r	44.2 r				
Architectural, engineering, and related services	5413	2,914	2,224	690	76.3	23.7				
Specialized design services	5414	2,861	2,348	513	82.1	17.9				
Computer systems design and related services	5415	1,888	1,276	612	67.6	32.4				
Management, scientific, and technical consulting services	5416	2,835	1,917	918	67.6	32.4				
Scientific research and development services	5417	1,567	1,181	386	75.4	24.6				
Advertising, public relations, and related services	5418	2,396	1,554	842	64.8	35.2				
Other professional, scientific, and technical services	5419	1,439	702	737	48.8	51.2				
Management of companies and enterprises	55	120 r	69 r	51 r	57.5 r	42.5 r				
Administrative and support and waste management and remediation services	56	3,768	2,171	1,597	57.6	42.4				
Educational services	61	1,052	719	333	68.3	31.7				
Health care and social assistance	62	8,466	5,084	3,382	60.1	39.9				
Health care services	621-23	8,157	4,858	3,299	59.6	40.4				
Social assistance	624	309	226	83 r	73.1	26.9 r				

TABLE 80

**Companies with contracted out manufacturing that determined the design of contracted out goods, by industry: 2021**

(Number and percent)

Industry	NAICS code	Companies (number)	Designed goods that were contracted out			
			Number		Percent	
			Yes	No	Yes	No
Arts, entertainment, and recreation	71	2,470	1,386	1,084	56.1	43.9
Accommodation and food services	72	6,205	3,261	2,944	52.6	47.4
Other services	81	5,876	2,992	2,884	50.9	49.1

r = relative standard error &gt; 50%; S = suppressed.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 81

**Companies with contracted out manufacturing that determined the design of contracted out goods, by company size: 2021**

(Number and percent)

Employment size	Companies (number)	Designed goods that were contracted out					
		Number			Percent		
		Yes	No	Yes	No	Yes	No
All companies	169,829	100,089	69,740	59.0		41.0	
Micro companies							
1-4	79,914	46,681	33,233	58.5		41.5	
5-9	34,816	20,363	14,453	58.5		41.5	
Small companies							
10-19	22,647	13,536	9,111	59.8		40.2	
20-49	18,014	10,375	7,639	57.6		42.4	
Medium companies							
50-99	6,510	3,866	2,644	59.4		40.6	
100-249	4,641	2,889	1,752	62.2		37.8	
Large companies							
250-499	1,381	990	391	71.7		28.3	
500-999	891	619	272	69.5		30.5	
1,000-4,999	633	454	179	71.7		28.3	
5,000-9,999	191	165	26	86.4	r	13.6	
10,000-24,999	118	94	24	80.0		20.0	
25,000 or more	69	54	15	78.3		21.7	

r = relative standard error &gt; 50%.

**Note(s):**

Detail may not add to total because of rounding. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 82

## Companies manufacturing goods for others, by type of customer, by industry: 2021

(Percent)

Industry	NAICS code	Companies (number)	No manufacturing tasks performed for others	Manufacturing tasks performed for others	Manufactured goods for U.S.-located unaffiliated companies	Manufactured goods for foreign affiliated companies	Manufactured goods for foreign unaffiliated companies
All industries	11, 21–23, 31–33, 42–81	4,874,928	99.3	0.7	0.6	0.1	0.3
Manufacturing industries	31–33	209,282	93.6	6.4	5.1	1.2	3.1
Food	311	19,326	97.7	2.3	1.7	0.5 r	0.5
Beverage and tobacco products	312	9,354	97.7	2.3	1.8	0.0	0.5
Textile, apparel, and leather products	313–16	9,443	94.9	5.1	3.7	0.7	1.9
Wood products	321	9,546	98.0	2.0	1.6	0.2	0.5
Paper	322	1,500	94.5	5.5	3.8	1.6	1.7
Printing and related support activities	323	20,212	96.2	3.8	3.3	0.1	0.8
Petroleum and coal products	324	546	98.2	1.8	1.6	0.4 r	0.7
Chemicals	325	7,961	90.8	9.2	7.3	2.7	4.1
Pesticide, fertilizer, and other agricultural chemicals	3253	580	92.1	7.9 r	6.9 r	1.0 r	0.0
Pharmaceuticals and medicines	3254	1,536	85.8	14.2	9.8	4.9	7.9
Soap, cleaning compound, and toilet preparation	3256	1,652	91.9	8.1	7.2	1.7 r	3.3 r
Other chemicals	other 325	4,194	92.0	8.0	6.5	2.4	3.5
Plastics and rubber products	326	7,060	89.5	10.5	7.9	2.6	7.0
Nonmetallic mineral products	327	7,290	96.4	3.6	2.7	0.7 r	1.2
Primary metals	331	2,079	86.9	13.1	10.3	2.6 r	8.6
Fabricated metal products	332	46,128	91.8	8.2	7.2	1.0	4.0
Machinery	333	16,440	88.1	11.9	8.8	3.3	6.8
Computer and electronic products	334	8,527	88.3	11.7	8.7	3.3	7.2
Communications equipment	3342	850	89.9	10.1 r	7.4 r	0.7	6.9
Semiconductor and other electronic components	3344	2,711	85.4	14.6	10.6	3.9	8.3
Navigational, measuring, electromedical, and control instruments	3345	3,737	87.7	12.3	9.6	4.1	7.8
Other computer and electronic products	other 334	1,230	95.3	4.7	3.0	1.5	2.6
Electrical equipment, appliances, and components	335	3,925	88.3	11.7	10.1	2.2 r	7.6
Transportation equipment	336	7,325	90.1	9.9	7.8	2.5	4.3
Automobiles, bodies, trailers, and parts	3361–63	4,494	89.9	10.1	7.9	3.3	4.3
Aerospace products and parts	3364	1,044	82.5	17.5	14.9	2.3 r	9.1
Other transportation	other 336	1,787	95.3	4.7	3.6	0.7 r	1.4 r
Furniture and related products	337	12,060	97.1	2.9	2.5	0.9 r	0.7
Miscellaneous	339	20,536	96.0	4.0	3.3	0.2	2.3
Medical equipment and supplies	3391	7,602	96.5	3.5	2.7	0.4	2.0
Other miscellaneous manufacturing	3399	12,933	95.7	4.3	3.6	0.1	2.4
Nonmanufacturing industries	11, 21–23, 42–81	4,665,645	99.5	0.5	0.4	0.1	0.2
Agriculture, forestry, fishing, and hunting	11	19,567	100.0	0.0	0.0	0.0	0.0

TABLE 82

## Companies manufacturing goods for others, by type of customer, by industry: 2021

(Percent)

Industry	NAICS code	Companies (number)	No manufacturing tasks performed for others	Manufacturing tasks performed for others	Manufactured goods for U.S.-located unaffiliated companies	Manufactured goods for foreign affiliated companies	Manufactured goods for foreign unaffiliated companies
Mining, extraction, and support activities	21	14,004	99.4	0.6	0.5	0.1	0.4
Utilities	22	2,994	99.9	0.1	0.1	0.1	0.0
Construction	23	635,568	99.7	0.3	0.3	0.0	0.0
Wholesale trade	42	241,440	96.7	3.3	2.1	0.7	1.7
Retail trade	44-45	546,067	99.1	0.9	0.6	0.1	0.3
Transportation and warehousing	48-49	165,454	99.6	0.4	0.3	0.0	0.1
Information	51	65,445	99.6	0.4	0.4	0.1	0.1
Publishing	511	17,755	99.5	0.5	0.4	0.1	0.1
Newspaper, periodical, book, and directory publishers	5111	9,162	99.3	0.7	0.6	0.1	0.2
Software publishers	5112	8,589	99.7	0.3	0.2	0.1	0.1
Telecommunications	517	7,319	99.9	0.1	0.1	0.0	0.0
Data processing, hosting, and related services	518	8,346	99.7	0.3	0.2	0.1	0.0
Other information	other 51	32,027	99.5	0.5	0.5	0.0	0.1
Finance and insurance	52	198,128	100.0	0.0	0.0	0.0	0.0
Real estate and rental and leasing	53	283,276	99.9	0.1	0.1	0.0	0.0
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1,956	100.0	0.0	0.0	0.0	0.0
Other real estate and rental and leasing	other 53	281,321	99.9	0.1	0.1	0.0	0.0
Professional, scientific, and technical services	54	717,229	99.6	0.4	0.3	0.1	0.2
Legal services	5411	152,543	100.0	0.0	0.0	0.0	0.0
Accounting, tax preparation, bookkeeping, and payroll services	5412	109,075	100.0	0.0	0.0	0.0	0.0
Architectural, engineering, and related services	5413	87,994	99.1	0.9	0.8	0.1	0.3
Specialized design services	5414	29,258	98.7	1.3	0.7	0.1	0.7
Computer systems design and related services	5415	100,282	99.7	0.3	0.1	0.1	0.1
Management, scientific, and technical consulting services	5416	144,421	99.6	0.4	0.2	0.1	0.2
Scientific research and development services	5417	11,149	96.7	3.3	2.2	0.8	1.5
Advertising, public relations, and related services	5418	28,236	99.3	0.7	0.5	0.3	0.2
Other professional, scientific, and technical services	5419	54,270	99.9	0.1	0.1	0.1	0.0
Management of companies and enterprises	55	3,153	97.8	2.2	0.0	0.0	2.2
Administrative and support and waste management and remediation services	56	293,539	99.9	0.1	0.1	0.0	0.0
Educational services	61	57,078	99.9	0.1	0.1	0.1	0.0
Health care and social assistance	62	536,276	99.8	0.2	0.1	0.0	0.0
Health care services	621-23	469,939	99.8	0.2	0.2	0.0	0.0
Social assistance	624	66,336	100.0	0.0	0.0	0.0	0.0
Arts, entertainment, and recreation	71	89,491	100.0	0.0	0.0	0.0	0.0
Accommodation and food services	72	455,071	99.7	0.3	0.2	0.0	0.0

TABLE 82

**Companies manufacturing goods for others, by type of customer, by industry: 2021**

(Percent)

Industry	NAICS code	Companies (number)	No manufacturing tasks performed for others	Manufacturing tasks performed for others	Manufactured goods for U.S.-located unaffiliated companies	Manufactured goods for foreign affiliated companies	Manufactured goods for foreign unaffiliated companies
Other services	81	341,869	99.7	0.3	0.3	0.1	0.1 r

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 83

**Companies manufacturing goods for others, by type of customer, by company size: 2021**

(Percent)

Employment size	Companies (number)	No manufacturing tasks performed for others	Manufacturing tasks performed for others	Manufactured goods for U.S.-located unaffiliated companies	Manufactured goods for foreign affiliated companies	Manufactured goods for foreign unaffiliated companies
All companies	4,874,928	99.3	0.7	0.6	0.1	0.3
Micro companies						
1-4	2,734,191	99.5	0.5	0.3	0.1	0.2
5-9	950,548	99.2	0.8	0.6	0.1	0.3
Small companies						
10-19	577,397	99.2	0.8	0.7	0.1	0.4
20-49	399,566	98.8	1.2	1.0	0.1	0.5
Medium companies						
50-99	115,591	98.0	2.0	1.6	0.4	1.0
100-249	63,969	97.1	2.9	2.4	0.8	1.4
Large companies						
250-499	18,124	96.6	3.4	2.4	1.7	1.8
500-999	7,668	95.0	5.0	2.6	2.9	2.2
1,000-4,999	6,010	94.5	5.5	3.1	4.3	2.1
5,000-9,999	982	85.9	14.1	10.1	13.2	1.7
10,000-24,999	516	87.2	12.8	7.4	11.0	3.5
25,000 or more	372	89.8	10.2	6.5	8.1	4.8

r = relative standard error &gt; 50%.

**Note(s):**

Detail may not add to total because of rounding. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 84

**Companies manufacturing goods for others that provided designs or specifications for those goods, by industry: 2021**

(Number and percent)

Industry	NAICS code	Companies (number)	Designed goods that were manufactured for others			
			Number		Percent	
			Yes	No	Yes	No
All industries	11, 21–23, 31–33, 42–81	35,718	21,193	14,525	59.4	40.6
Manufacturing industries	31–33	13,295	7,199	6,096	54.2	45.8
Food	311	436	274	162	62.8	37.2
Beverage and tobacco products	312	212	118	94	55.7	44.3
Textile, apparel, and leather products	313–16	486	409	77	84.2	15.8
Wood products	321	189	107	82	56.6	43.4
Paper	322	82	55	27	67.1	32.9
Printing and related support activities	323	759	327	432	43.0	57.0
Petroleum and coal products	324	10	4	6	40.0	60.0
Chemicals	325	733	467	266	63.7	36.3
Pesticide, fertilizer, and other agricultural chemicals	3253	46	16 r	30 r	34.8 r	65.2 r
Pharmaceuticals and medicines	3254	218	138	80	63.3	36.7
Soap, cleaning compound, and toilet preparation	3256	133	118	15	88.7	11.3 r
Other chemicals	other 325	335	193	142	57.6	42.4
Plastics and rubber products	326	739	354	385	47.9	52.1
Nonmetallic mineral products	327	261	136	125	52.1	47.9
Primary metals	331	273	117	156	42.9	57.1
Fabricated metal products	332	3,789	1,480	2,309	39.1	60.9
Machinery	333	1,955	1,288	667	65.9	34.1
Computer and electronic products	334	1,000	613	387	61.3	38.7
Communications equipment	3342	86	52	34 r	60.5 r	39.5 r
Semiconductor and other electronic components	3344	396	208	188	52.5	47.5
Navigational, measuring, electromedical, and control instruments	3345	461	311	150	67.5	32.5
Other computer and electronic products	other 334	58	41	17	70.7 r	29.3 r
Electrical equipment, appliances, and components	335	460	321	139	69.8	30.2
Transportation equipment	336	723	443	280	61.3	38.7
Automobiles, bodies, trailers, and parts	3361–63	456	324	132	71.1	28.9
Aerospace products and parts	3364	183	75	108	41.0	59.0
Other transportation	other 336	84	45	39	53.6	46.4
Furniture and related products	337	355	263	92 r	74.1	25.9 r
Miscellaneous	339	823	418	405	50.8	49.2
Medical equipment and supplies	3391	265	146	119 r	55.1 r	44.9 r
Other miscellaneous manufacturing	3399	557	271	286	48.7	51.3
Nonmanufacturing industries	11, 21–23, 42–81	22,424	13,994	8,430	62.4	37.6
Agriculture, forestry, fishing, and hunting	11	0	0	0	0.0	0.0
Mining, extraction, and support activities	21	82	64	18	78.0	22.0 r
Utilities	22	4 r	2 r	2 r	50.0 r	50.0 r
Construction	23	1,733	1,003	730	57.9	42.1
Wholesale trade	42	7,989	4,998	2,991	62.6	37.4
Retail trade	44–45	4,740	2,848	1,892	60.1	39.9
Transportation and warehousing	48–49	593	214	379	36.1	63.9
Information	51	285	126	159	44.3	55.7
Publishing	511	90	44	46	48.9	51.1
Newspaper, periodical, book, and directory publishers	5111	68	29	39	42.6	57.4
Software publishers	5112	23	16	7 r	69.6 r	30.4 r
Telecommunications	517	10	0	10	0.0	100.0



TABLE 84

**Companies manufacturing goods for others that provided designs or specifications for those goods, by industry: 2021**

(Number and percent)

Industry	NAICS code	Companies (number)	Designed goods that were manufactured for others					
			Number			Percent		
			Yes	No	Yes	No		
Data processing, hosting, and related services	518	23	7	16	30.0	70.0	r	
Other information	other 51	163	75	88	46.0	54.0		
Finance and insurance	52	85	85	0	100.0	0.0		
Real estate and rental and leasing	53	326	145	181	44.5	55.5		
Lessors of nonfinancial intangible assets (except copyrighted works)	533	0	0	0	0.0	0.0		
Other real estate and rental and leasing	other 53	326	145	181	44.5	55.5		
Professional, scientific, and technical services	54	2,753	1,912	841	69.5	30.5		
Legal services	5411	37	37	0	100.0	0.0		
Accounting, tax preparation, bookkeeping, and payroll services	5412	0	0	0	0.0	0.0		
Architectural, engineering, and related services	5413	817	664	153	81.3	18.7	r	
Specialized design services	5414	385	284	101	73.8	26.2	r	
Computer systems design and related services	5415	271	189	82	69.7	30.3		
Management, scientific, and technical consulting services	5416	625	344	281	55.0	45.0		
Scientific research and development services	5417	363	235	128	64.7	35.3		
Advertising, public relations, and related services	5418	189	101	88	53.4	46.6		
Other professional, scientific, and technical services	5419	66	59	7	89.4	10.6	r	
Management of companies and enterprises	55	69	69	0	100.0	0.0		
Administrative and support and waste management and remediation services	56	372	239	133	64.2	35.8	r	
Educational services	61	85	45	40	52.9	47.1	r	
Health care and social assistance	62	917	527	390	57.5	42.5		
Health care services	621-23	906	527	379	58.2	41.8		
Social assistance	624	10	0	10	0.0	100.0	r	
Arts, entertainment, and recreation	71	43	42	1	97.7	2.3		
Accommodation and food services	72	1,209	800	409	66.2	33.8		
Other services	81	1,137	870	267	76.5	23.5		

i = > 50% of the estimate is a combination of imputation and reweighting to account for nonresponse; r = relative standard error > 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE 85

**Companies manufacturing goods for others that provided designs or specifications for those goods, by company size: 2021**

(Number and percent)

Employment size	Companies (number)	Designed goods that were manufactured for others					
		Number			Percent		
		Yes	No	Yes	No	Yes	No
All companies	35,718	21,193	14,525	59.4	40.6		
Micro companies							
1–4	13,143	7,806	5,337	59.4	40.6		
5–9	7,437	4,506	2,931	60.6	39.4		
Small companies							
10–19	4,763	2,816	1,947	59.1	40.9		
20–49	4,625	2,863	1,762	61.9	38.1		
Medium companies							
50–99	2,351	1,313	1,038	55.8	44.2		
100–249	1,827	798	1,029	43.7	56.3		
Large companies							
250–499	609	380	229	62.4	37.6		
500–999	384	262	122	68.2	31.8	r	r
1,000–4,999	329	245	84	74.5	25.5		
5,000–9,999	138	124	14	89.9	10.1	r	
10,000–24,999	66	51	15	77.3	22.7		
25,000 or more	38	28	10	73.7	26.3		

r = relative standard error &gt; 50%.

**Note(s):**

Detail may not add to total because of rounding. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-1

**Companies performing or funding advanced computing technology R&D, by industry: 2021**

(Number and percent)

Industry	NAICS code	Companies (number)	Advanced computing			
			Number		Percent	
			Yes	No	Yes	No
All industries	11, 21-23, 31-33, 42-81	4,874,928	121,650	4,753,278	2.5	97.5
Manufacturing industries	31-33	209,282	4,482	204,800	2.1	97.9
Food	311	19,326	210	19,116	1.1	98.9
Beverage and tobacco products	312	9,354	61	9,293	0.7	99.3
Textile, apparel, and leather products	313-16	9,443	144	9,299	1.5	98.5
Wood products	321	9,546	137	9,409	1.4	98.6
Paper	322	1,500	42	1,458	2.8	r 97.2
Printing and related support activities	323	20,212	467	19,745	2.3	97.7
Petroleum and coal products	324	546	8	538	1.4	98.6
Chemicals	325	7,961	184	7,777	2.3	97.7
Pesticide, fertilizer, and other agricultural chemicals	3253	580	0	580	0.0	100.0
Pharmaceuticals and medicines	3254	1,536	52	1,484	3.4	96.6
Soap, cleaning compound, and toilet preparation	3256	1,652	42	r 1,610	2.5	r 97.5
Other chemicals	other 325	4,194	88	4,106	2.1	97.9
Plastics and rubber products	326	7,060	150	6,910	2.1	97.9
Nonmetallic mineral products	327	7,290	92	7,198	1.3	98.7
Primary metals	331	2,079	40	2,039	1.9	98.1
Fabricated metal products	332	46,128	938	45,190	2.0	98.0
Machinery	333	16,440	314	16,126	1.9	98.1
Computer and electronic products	334	8,527	631	7,896	7.4	92.6
Communications equipment	3342	850	65	785	7.6	92.4
Semiconductor and other electronic components	3344	2,711	157	2,554	5.8	94.2
Navigational, measuring, electromedical, and control instruments	3345	3,737	278	3,459	7.4	92.6
Other computer and electronic products	other 334	1,230	131	1,099	10.7	89.3
Electrical equipment, appliances, and components	335	3,925	169	3,756	4.3	95.7
Transportation equipment	336	7,325	246	7,079	3.4	96.6
Automobiles, bodies, trailers, and parts	3361-63	4,494	170	4,324	3.8	96.2
Aerospace products and parts	3364	1,044	28	1,016	2.7	97.3
Other transportation	other 336	1,787	49	1,738	2.7	97.3
Furniture and related products	337	12,060	193	11,867	1.6	98.4
Miscellaneous	339	20,536	448	20,088	2.2	97.8
Medical equipment and supplies	3391	7,602	178	7,424	2.3	97.7
Other miscellaneous manufacturing	3399	12,933	271	12,662	2.1	97.9
Nonmanufacturing industries	11, 21-23, 42-81	4,665,645	117,166	4,548,479	2.5	97.5
Agriculture, forestry, fishing, and hunting	11	19,567	148	r 19,419	0.8	r 99.2
Mining, extraction, and support activities	21	14,004	74	13,930	0.5	99.5
Utilities	22	2,994	101	2,893	3.4	r 96.6
Construction	23	635,568	7,539	628,029	1.2	98.8
Wholesale trade	42	241,440	5,899	235,541	2.4	97.6
Retail trade	44-45	546,067	10,539	535,528	1.9	98.1
Transportation and warehousing	48-49	165,454	3,071	162,383	1.9	98.1
Information	51	65,445	5,959	59,486	9.1	90.9
Publishing	511	17,755	2,633	15,122	14.8	85.2
Newspaper, periodical, book, and directory publishers	5111	9,162	234	8,928	2.5	97.5
Software publishers	5112	8,589	2,403	6,186	28.0	72.0
Telecommunications	517	7,319	457	6,862	6.2	93.8

TABLE CET-1

**Companies performing or funding advanced computing technology R&D, by industry: 2021**

(Number and percent)

Industry	NAICS code	Companies (number)	Advanced computing			
			Number		Percent	
			Yes	No	Yes	No
Data processing, hosting, and related services	518	8,346	1,463	6,883	17.5	82.5
Other information	other 51	32,027	1,414	30,613	4.4	95.6
Finance and insurance	52	198,128	6,501	191,627	3.3	96.7
Real estate and rental and leasing	53	283,276	4,761	278,515	1.7	98.3
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1,956	91 r	1,865	4.6 r	95.4
Other real estate and rental and leasing	other 53	281,321	4,672	276,649	1.7	98.3
Professional, scientific, and technical services	54	717,229	36,836	680,393	5.1	94.9
Legal services	5411	152,543	3,955	148,588	2.6	97.4
Accounting, tax preparation, bookkeeping, and payroll services	5412	109,075	4,166	104,909	3.8	96.2
Architectural, engineering, and related services	5413	87,994	3,302	84,692	3.8	96.2
Specialized design services	5414	29,258	731	28,527	2.5	97.5
Computer systems design and related services	5415	100,282	15,301	84,981	15.3	84.7
Management, scientific, and technical consulting services	5416	144,421	5,634	138,787	3.9	96.1
Scientific research and development services	5417	11,149	1,002	10,147	9.0	91.0
Advertising, public relations, and related services	5418	28,236	919	27,317	3.3	96.7
Other professional, scientific, and technical services	5419	54,270	1,812	52,458	3.3	96.7
Management of companies and enterprises	55	3,153	105 r	3,048	3.3 r	96.7
Administrative and support and waste management and remediation services	56	293,539	6,025	287,514	2.1	97.9
Educational services	61	57,078	991	56,087	1.7	98.3
Health care and social assistance	62	536,276	13,979	522,297	2.6	97.4
Health care services	621-23	469,939	12,529	457,410	2.7	97.3
Social assistance	624	66,336	1,444	64,892	2.2	97.8
Arts, entertainment, and recreation	71	89,491	1,383	88,108	1.5	98.5
Accommodation and food services	72	455,071	7,746	447,325	1.7	98.3
Other services	81	341,869	5,034	336,835	1.5	98.5

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail across rows may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Detail across columns have been adjusted to add to total. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-2

**Companies performing or funding advanced computing technology R&D, by company size: 2021**

(Number and percent)

Employment size	Companies (number)	Advanced computing			
		Number		Percent	
		Yes	No	Yes	No
All companies	4,874,928	121,650	4,753,278	2.5	97.5
Micro companies					
1–4	2,734,191	59,124	2,675,067	2.2	97.8
5–9	950,548	26,864	923,684	2.8	97.2
Small companies					
10–19	577,397	14,141	563,256	2.4	97.6
20–49	399,566	11,373	388,193	2.8	97.2
Medium companies					
50–99	115,591	5,048	110,543	4.4	95.6
100–249	63,969	2,569	61,400	4.0	96.0
Large companies					
250–499	18,124	987	17,137	5.4	94.6
500–999	7,668	594	7,074	7.7	92.3
1,000–4,999	6,010	563	5,447	9.4	90.6
5,000–9,999	982	216	766	22.0 r	78.0
10,000–24,999	516	118	398	22.9	77.1
25,000 or more	372	100	272	26.8	73.2

r = relative standard error &gt; 50%.

**Note(s):**

Detail across rows may not add to total because of rounding. Detail across columns have been adjusted to add to total. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-3

**Companies performing or funding advanced sensing technology R&D, by industry: 2021**

(Number and percent)

Industry	NAICS code	Companies (number)	Advanced sensing			
			Number		Percent	
			Yes	No	Yes	No
All industries	11, 21–23, 31–33, 42–81	4,874,928	38,542	4,836,386	0.8	99.2
Manufacturing industries	31–33	209,282	4,417	204,865	2.1	97.9
Food	311	19,326	143	19,183	0.7	r 99.3
Beverage and tobacco products	312	9,354	43	9,311	0.5	r 99.5
Textile, apparel, and leather products	313–16	9,443	74	9,369	0.8	99.2
Wood products	321	9,546	170	9,376	1.8	98.2
Paper	322	1,500	23	r 1,477	1.6	r 98.4
Printing and related support activities	323	20,212	108	20,104	0.5	99.5
Petroleum and coal products	324	546	10	536	1.8	98.2
Chemicals	325	7,961	182	7,779	2.3	97.7
Pesticide, fertilizer, and other agricultural chemicals	3253	580	3	r 577	0.5	r 99.5
Pharmaceuticals and medicines	3254	1,536	20	1,516	1.3	r 98.7
Soap, cleaning compound, and toilet preparation	3256	1,652	29	r 1,623	1.8	r 98.2
Other chemicals	other 325	4,194	132	4,062	3.1	r 96.9
Plastics and rubber products	326	7,060	213	6,847	3.0	97.0
Nonmetallic mineral products	327	7,290	87	7,203	1.2	98.8
Primary metals	331	2,079	40	2,039	1.9	98.1
Fabricated metal products	332	46,128	995	45,133	2.2	97.8
Machinery	333	16,440	624	15,816	3.8	96.2
Computer and electronic products	334	8,527	932	7,595	10.9	89.1
Communications equipment	3342	850	90	760	10.5	89.5
Semiconductor and other electronic components	3344	2,711	238	2,473	8.8	91.2
Navigational, measuring, electromedical, and control instruments	3345	3,737	526	3,211	14.1	85.9
Other computer and electronic products	other 334	1,230	82	1,148	6.6	93.4
Electrical equipment, appliances, and components	335	3,925	209	3,716	5.3	94.7
Transportation equipment	336	7,325	218	7,107	3.0	97.0
Automobiles, bodies, trailers, and parts	3361–63	4,494	161	4,333	3.6	96.4
Aerospace products and parts	3364	1,044	43	1,001	4.1	95.9
Other transportation	other 336	1,787	11	r 1,776	0.6	r 99.4
Furniture and related products	337	12,060	15	12,045	0.1	99.9
Miscellaneous	339	20,536	319	20,217	1.6	98.4
Medical equipment and supplies	3391	7,602	201	7,401	2.6	97.4
Other miscellaneous manufacturing	3399	12,933	119	12,814	0.9	99.1
Nonmanufacturing industries	11, 21–23, 42–81	4,665,645	34,127	4,631,518	0.7	99.3
Agriculture, forestry, fishing, and hunting	11	19,567	132	r 19,435	0.7	r 99.3
Mining, extraction, and support activities	21	14,004	72	13,932	0.5	99.5
Utilities	22	2,994	21	2,973	0.7	99.3
Construction	23	635,568	2,009	633,559	0.3	99.7
Wholesale trade	42	241,440	2,186	239,254	0.9	99.1
Retail trade	44–45	546,067	3,120	542,947	0.6	99.4
Transportation and warehousing	48–49	165,454	959	164,495	0.6	99.4
Information	51	65,445	1,344	64,101	2.1	97.9
Publishing	511	17,755	610	17,145	3.4	96.6
Newspaper, periodical, book, and directory publishers	5111	9,162	12	r 9,150	0.1	r 99.9
Software publishers	5112	8,589	600	7,989	7.0	93.0
Telecommunications	517	7,319	144	7,175	2.0	98.0
Data processing, hosting, and related services	518	8,346	362	7,984	4.3	95.7

TABLE CET-3

**Companies performing or funding advanced sensing technology R&D, by industry: 2021**

(Number and percent)

Industry	NAICS code	Companies (number)	Advanced sensing			
			Number		Percent	
			Yes	No	Yes	No
Other information	other 51	32,027	230	31,797	0.7	99.3
Finance and insurance	52	198,128	1,248	196,880	0.6	99.4
Real estate and rental and leasing	53	283,276	614	282,662	0.2	99.8
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1,956	46 r	1,910	2.4 r	97.6
Other real estate and rental and leasing	other 53	281,321	569	280,752	0.2	99.8
Professional, scientific, and technical services	54	717,229	10,968	706,261	1.5	98.5
Legal services	5411	152,543	274	152,269	0.2	99.8
Accounting, tax preparation, bookkeeping, and payroll services	5412	109,075	343	108,732	0.3	99.7
Architectural, engineering, and related services	5413	87,994	2,987	85,007	3.4	96.6
Specialized design services	5414	29,258	149	29,109	0.5	99.5
Computer systems design and related services	5415	100,282	3,608	96,674	3.6	96.4
Management, scientific, and technical consulting services	5416	144,421	1,944	142,477	1.3	98.7
Scientific research and development services	5417	11,149	1,008	10,141	9.0	91.0
Advertising, public relations, and related services	5418	28,236	107 r	28,129	0.4 r	99.6
Other professional, scientific, and technical services	5419	54,270	544	53,726	1.0	99.0
Management of companies and enterprises	55	3,153	0	3,153	0.0	100.0
Administrative and support and waste management and remediation services	56	293,539	1,200	292,339	0.4	99.6
Educational services	61	57,078	239	56,839	0.4	99.6
Health care and social assistance	62	536,276	4,932	531,344	0.9	99.1
Health care services	621-23	469,939	4,427	465,512	0.9	99.1
Social assistance	624	66,336	503	65,833	0.8	99.2
Arts, entertainment, and recreation	71	89,491	67 r	89,424	0.1 r	99.9
Accommodation and food services	72	455,071	3,114	451,957	0.7	99.3
Other services	81	341,869	1,789	340,080	0.5	99.5

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail across rows may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Detail across columns have been adjusted to add to total. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-4

**Companies performing or funding advanced sensing technology R&D, by company size: 2021**

(Number and percent)

Employment size	Companies (number)	Advanced sensing			
		Number		Percent	
		Yes	No	Yes	No
All companies	4,874,928	38,542	4,836,386	0.8	99.2
Micro companies					
1-4	2,734,191	18,096	2,716,095	0.7	99.3
5-9	950,548	8,320	942,228	0.9	99.1
Small companies					
10-19	577,397	4,030	573,367	0.7	99.3
20-49	399,566	3,833	395,733	1.0	99.0
Medium companies					
50-99	115,591	1,796	113,795	1.6	98.4
100-249	63,969	1,183	62,786	1.8	98.2
Large companies					
250-499	18,124	573	17,551	3.2	96.8
500-999	7,668	156	7,512	2.0	98.0
1,000-4,999	6,010	274	5,736	4.6	95.4
5,000-9,999	982	158	824	16.1 r	83.9
10,000-24,999	516	68	448	13.3	86.7
25,000 or more	372	75	297	20.1	79.9

r = relative standard error &gt; 50%.

**Note(s):**

Detail across rows may not add to total because of rounding. Detail across columns have been adjusted to add to total. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.



TABLE CET-5

**Companies performing or funding artificial intelligence technology R&D, by industry: 2021**

(Number and percent)

Industry	NAICS code	Companies (number)	Artificial intelligence			
			Number		Percent	
			Yes	No	Yes	No
All industries	11, 21-23, 31-33, 42-81	4,874,928	50,367	4,824,561	1.0	99.0
Manufacturing industries	31-33	209,282	2,503	206,779	1.2	98.8
Food	311	19,326	81	19,245	0.4	99.6
Beverage and tobacco products	312	9,354	36	9,318	0.4	99.6
Textile, apparel, and leather products	313-16	9,443	48	9,395	0.5	99.5
Wood products	321	9,546	38	9,508	0.4	99.6
Paper	322	1,500	10	1,490	0.6	99.4
Printing and related support activities	323	20,212	91	20,121	0.4	99.6
Petroleum and coal products	324	546	7	539	1.2	98.8
Chemicals	325	7,961	101	7,860	1.3	98.7
Pesticide, fertilizer, and other agricultural chemicals	3253	580	9	571	1.6	98.4
Pharmaceuticals and medicines	3254	1,536	36	1,500	2.3	97.7
Soap, cleaning compound, and toilet preparation	3256	1,652	27	1,625	1.6	98.4
Other chemicals	other 325	4,194	30	4,164	0.7	99.3
Plastics and rubber products	326	7,060	82	6,978	1.2	98.8
Nonmetallic mineral products	327	7,290	22	7,268	0.3	99.7
Primary metals	331	2,079	32	2,047	1.5	98.5
Fabricated metal products	332	46,128	629	45,499	1.4	98.6
Machinery	333	16,440	364	16,076	2.2	97.8
Computer and electronic products	334	8,527	526	8,001	6.2	93.8
Communications equipment	3342	850	45	805	5.3	94.7
Semiconductor and other electronic components	3344	2,711	128	2,583	4.7	95.3
Navigational, measuring, electromedical, and control instruments	3345	3,737	264	3,473	7.1	92.9
Other computer and electronic products	other 334	1,230	92	1,138	7.5	92.5
Electrical equipment, appliances, and components	335	3,925	90	3,835	2.3	97.7
Transportation equipment	336	7,325	98	7,227	1.3	98.7
Automobiles, bodies, trailers, and parts	3361-63	4,494	65	4,429	1.4	98.6
Aerospace products and parts	3364	1,044	21	1,023	2.0	98.0
Other transportation	other 336	1,787	12	1,775	0.7	99.3
Furniture and related products	337	12,060	99	11,961	0.8	99.2
Miscellaneous	339	20,536	141	20,395	0.7	99.3
Medical equipment and supplies	3391	7,602	50	7,552	0.7	99.3
Other miscellaneous manufacturing	3399	12,933	89	12,844	0.7	99.3
Nonmanufacturing industries	11, 21-23, 42-81	4,665,645	47,866	4,617,779	1.0	99.0
Agriculture, forestry, fishing, and hunting	11	19,567	145	19,422	0.7	99.3
Mining, extraction, and support activities	21	14,004	60	13,944	0.4	99.6
Utilities	22	2,994	30	2,964	1.0	99.0
Construction	23	635,568	2,639	632,929	0.4	99.6
Wholesale trade	42	241,440	2,151	239,289	0.9	99.1
Retail trade	44-45	546,067	3,563	542,504	0.7	99.3
Transportation and warehousing	48-49	165,454	929	164,525	0.6	99.4
Information	51	65,445	4,000	61,445	6.1	93.9
Publishing	511	17,755	1,900	15,855	10.7	89.3
Newspaper, periodical, book, and directory publishers	5111	9,162	111	9,051	1.2	98.8
Software publishers	5112	8,589	1,793	6,796	20.9	79.1
Telecommunications	517	7,319	134	7,185	1.8	98.2
Data processing, hosting, and related services	518	8,346	1,076	7,270	12.9	87.1

TABLE CET-5

**Companies performing or funding artificial intelligence technology R&D, by industry: 2021**

(Number and percent)

Industry	NAICS code	Companies (number)	Artificial intelligence			
			Number		Percent	
			Yes	No	Yes	No
Other information	other 51	32,027	895	31,132	2.8	97.2
Finance and insurance	52	198,128	2,437	195,691	1.2	98.8
Real estate and rental and leasing	53	283,276	1,744	281,532	0.6	99.4
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1,956	46 r	1,910	2.4 r	97.6
Other real estate and rental and leasing	other 53	281,321	1,698	279,623	0.6	99.4
Professional, scientific, and technical services	54	717,229	18,026	699,203	2.5	97.5
Legal services	5411	152,543	689	151,854	0.5	99.5
Accounting, tax preparation, bookkeeping, and payroll services	5412	109,075	639	108,436	0.6	99.4
Architectural, engineering, and related services	5413	87,994	1,545	86,449	1.8	98.2
Specialized design services	5414	29,258	253	29,005	0.9	99.1
Computer systems design and related services	5415	100,282	8,912	91,370	8.9	91.1
Management, scientific, and technical consulting services	5416	144,421	3,601	140,820	2.5	97.5
Scientific research and development services	5417	11,149	1,043	10,106	9.4	90.6
Advertising, public relations, and related services	5418	28,236	518	27,718	1.8	98.2
Other professional, scientific, and technical services	5419	54,270	819	53,451	1.5	98.5
Management of companies and enterprises	55	3,153	72 r	3,081	2.3 r	97.7
Administrative and support and waste management and remediation services	56	293,539	1,866	291,673	0.6	99.4
Educational services	61	57,078	620	56,458	1.1	98.9
Health care and social assistance	62	536,276	4,660	531,616	0.9	99.1
Health care services	621-23	469,939	3,968	465,971	0.8	99.2
Social assistance	624	66,336	695	65,641	1.0	99.0
Arts, entertainment, and recreation	71	89,491	246	89,245	0.3	99.7
Accommodation and food services	72	455,071	2,704	452,367	0.6	99.4
Other services	81	341,869	1,710	340,159	0.5	99.5

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail across rows may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Detail across columns have been adjusted to add to total. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-6

**Companies performing or funding artificial intelligence technology R&D, by company size: 2021**

(Number and percent)

Employment size	Companies (number)	Artificial intelligence			
		Number		Percent	
		Yes	No	Yes	No
All companies	4,874,928	50,367	4,824,561	1.0	99.0
Micro companies					
1–4	2,734,191	25,616	2,708,575	0.9	99.1
5–9	950,548	9,297	941,251	1.0	99.0
Small companies					
10–19	577,397	5,518	571,879	1.0	99.0
20–49	399,566	4,732	394,834	1.2	98.8
Medium companies					
50–99	115,591	1,936	113,655	1.7	98.3
100–249	63,969	1,483	62,486	2.3	97.7
Large companies					
250–499	18,124	720	17,404	4.0	96.0
500–999	7,668	273	7,395	3.6 r	96.4
1,000–4,999	6,010	435	5,575	7.2	92.8
5,000–9,999	982	185	797	18.8 r	81.2
10,000–24,999	516	91	425	17.6	82.4
25,000 or more	372	100	272	26.8	73.2

r = relative standard error &gt; 50%.

**Note(s):**

Detail across rows may not add to total because of rounding. Detail across columns have been adjusted to add to total. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-7

**Companies performing or funding autonomous systems and robotics technology R&D, by industry: 2021**

(Number and percent)

Industry	NAICS code	Companies (number)	Autonomous systems and robotics			
			Number		Percent	
			Yes	No	Yes	No
All industries	11, 21–23, 31–33, 42–81	4,874,928	25,839	4,849,089	0.5	99.5
Manufacturing industries	31–33	209,282	5,058	204,224	2.4	97.6
Food	311	19,326	210	19,116	1.1	98.9
Beverage and tobacco products	312	9,354	18	9,336	0.2	99.8
Textile, apparel, and leather products	313–16	9,443	36	9,407	0.4	99.6
Wood products	321	9,546	182	9,364	1.9	98.1
Paper	322	1,500	23	1,477	1.6	98.4
Printing and related support activities	323	20,212	46	20,166	0.2	99.8
Petroleum and coal products	324	546	8	538	1.4	98.6
Chemicals	325	7,961	189	7,772	2.4	97.6
Pesticide, fertilizer, and other agricultural chemicals	3253	580	7	573	1.2	98.8
Pharmaceuticals and medicines	3254	1,536	15	1,521	1.0	r 99.0
Soap, cleaning compound, and toilet preparation	3256	1,652	51	1,601	3.1	r 96.9
Other chemicals	other 325	4,194	119	4,075	2.8	97.2
Plastics and rubber products	326	7,060	344	6,716	4.9	95.1
Nonmetallic mineral products	327	7,290	87	7,203	1.2	98.8
Primary metals	331	2,079	142	1,937	6.8	93.2
Fabricated metal products	332	46,128	1,369	44,759	3.0	97.0
Machinery	333	16,440	1,042	15,398	6.3	93.7
Computer and electronic products	334	8,527	489	8,038	5.7	94.3
Communications equipment	3342	850	71	779	8.4	r 91.6
Semiconductor and other electronic components	3344	2,711	178	2,533	6.6	93.4
Navigational, measuring, electromedical, and control instruments	3345	3,737	201	3,536	5.4	94.6
Other computer and electronic products	other 334	1,230	37	1,193	3.0	r 97.0
Electrical equipment, appliances, and components	335	3,925	140	3,785	3.6	96.4
Transportation equipment	336	7,325	354	6,971	4.8	95.2
Automobiles, bodies, trailers, and parts	3361–63	4,494	234	4,260	5.2	94.8
Aerospace products and parts	3364	1,044	62	982	6.0	94.0
Other transportation	other 336	1,787	58	1,729	3.2	96.8
Furniture and related products	337	12,060	75	11,985	0.6	99.4
Miscellaneous	339	20,536	294	20,242	1.4	98.6
Medical equipment and supplies	3391	7,602	118	7,484	1.6	98.4
Other miscellaneous manufacturing	3399	12,933	177	12,756	1.4	98.6
Nonmanufacturing industries	11, 21–23, 42–81	4,665,645	20,787	4,644,858	0.4	99.6
Agriculture, forestry, fishing, and hunting	11	19,567	107	19,460	0.5	r 99.5
Mining, extraction, and support activities	21	14,004	18	13,986	0.1	99.9
Utilities	22	2,994	8	2,986	0.3	99.7
Construction	23	635,568	1,433	634,135	0.2	99.8
Wholesale trade	42	241,440	1,633	239,807	0.7	99.3
Retail trade	44–45	546,067	2,090	543,977	0.4	99.6
Transportation and warehousing	48–49	165,454	496	164,958	0.3	99.7
Information	51	65,445	447	64,998	0.7	99.3
Publishing	511	17,755	141	17,614	0.8	99.2
Newspaper, periodical, book, and directory publishers	5111	9,162	8	9,154	0.1	99.9
Software publishers	5112	8,589	132	8,457	1.5	98.5
Telecommunications	517	7,319	91	7,228	1.2	r 98.8
Data processing, hosting, and related services	518	8,346	146	8,200	1.8	98.2

TABLE CET-7

**Companies performing or funding autonomous systems and robotics technology R&D, by industry: 2021**

(Number and percent)

Industry	NAICS code	Companies (number)	Autonomous systems and robotics					
			Number		Percent			
			Yes	No	Yes	No		
Other information	other 51	32,027	69	r	31,958	0.2	r	99.8
Finance and insurance	52	198,128	576		197,552	0.3		99.7
Real estate and rental and leasing	53	283,276	531		282,745	0.2		99.8
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1,956	0		1,956	0.0		100.0
Other real estate and rental and leasing	other 53	281,321	531		280,790	0.2		99.8
Professional, scientific, and technical services	54	717,229	6,930		710,299	1.0		99.0
Legal services	5411	152,543	281		152,262	0.2		99.8
Accounting, tax preparation, bookkeeping, and payroll services	5412	109,075	237	r	108,838	0.2	r	99.8
Architectural, engineering, and related services	5413	87,994	2,136		85,858	2.4		97.6
Specialized design services	5414	29,258	11		29,247	0.0		100.0
Computer systems design and related services	5415	100,282	2,114		98,168	2.1		97.9
Management, scientific, and technical consulting services	5416	144,421	1,428		142,993	1.0		99.0
Scientific research and development services	5417	11,149	520		10,629	4.7		95.3
Advertising, public relations, and related services	5418	28,236	110	r	28,126	0.4	r	99.6
Other professional, scientific, and technical services	5419	54,270	88	r	54,182	0.2	r	99.8
Management of companies and enterprises	55	3,153	72	r	3,081	2.3	r	97.7
Administrative and support and waste management and remediation services	56	293,539	888		292,651	0.3		99.7
Educational services	61	57,078	156		56,922	0.3	r	99.7
Health care and social assistance	62	536,276	1,892		534,384	0.4		99.6
Health care services	621-23	469,939	1,653		468,286	0.4		99.6
Social assistance	624	66,336	239		66,097	0.4		99.6
Arts, entertainment, and recreation	71	89,491	133	r	89,358	0.1	r	99.9
Accommodation and food services	72	455,071	1,970		453,101	0.4		99.6
Other services	81	341,869	1,345		340,524	0.4		99.6

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail across rows may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Detail across columns have been adjusted to add to total. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-8

**Companies performing or funding autonomous systems and robotics technology R&D, by company size: 2021**

(Number and percent)

Employment size	Companies (number)	Autonomous systems and robotics			
		Number		Percent	
		Yes	No	Yes	No
All companies	4,874,928	25,839	4,849,089	0.5	99.5
Micro companies					
1–4	2,734,191	11,630	2,722,561	0.4	99.6
5–9	950,548	3,985	946,563	0.4	99.6
Small companies					
10–19	577,397	2,920	574,477	0.5	99.5
20–49	399,566	3,219	396,347	0.8	99.2
Medium companies					
50–99	115,591	1,222	114,369	1.1	98.9
100–249	63,969	1,371	62,598	2.1	97.9
Large companies					
250–499	18,124	746	17,378	4.1	95.9
500–999	7,668	199	7,469	2.6	97.4
1,000–4,999	6,010	328	5,682	5.4	94.6
5,000–9,999	982	101	881	10.3	89.7 r
10,000–24,999	516	65	451	12.7	87.3
25,000 or more	372	67	305	18.1	81.9

r = relative standard error &gt; 50%.

**Note(s):**

Detail across rows may not add to total because of rounding. Detail across columns have been adjusted to add to total. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-9

**Companies performing or funding additive manufacturing technology R&D, by industry: 2021**

(Number and percent)

Industry	NAICS code	Companies (number)	Additive manufacturing			
			Number		Percent	
			Yes	No	Yes	No
All industries	11, 21–23, 31–33, 42–81	4,874,928	36,663	4,838,265	0.8	99.2
Manufacturing industries	31–33	209,282	9,403	199,879	4.5	95.5
Food	311	19,326	78	19,248	0.4	99.6
Beverage and tobacco products	312	9,354	69	9,285	0.7	99.3
Textile, apparel, and leather products	313–16	9,443	253	9,190	2.7	97.3
Wood products	321	9,546	245	9,301	2.6	97.4
Paper	322	1,500	35	1,465	2.3	97.7
Printing and related support activities	323	20,212	325	19,887	1.6	98.4
Petroleum and coal products	324	546	8	538	1.4	98.6
Chemicals	325	7,961	320	7,641	4.0	96.0
Pesticide, fertilizer, and other agricultural chemicals	3253	580	10	570	1.7	98.3
Pharmaceuticals and medicines	3254	1,536	41	1,495	2.7	97.3
Soap, cleaning compound, and toilet preparation	3256	1,652	41	1,611	2.5	97.5
Other chemicals	other 325	4,194	232	3,962	5.5	94.5
Plastics and rubber products	326	7,060	589	6,471	8.3	91.7
Nonmetallic mineral products	327	7,290	162	7,128	2.2	97.8
Primary metals	331	2,079	137	1,942	6.6	93.4
Fabricated metal products	332	46,128	2,362	43,766	5.1	94.9
Machinery	333	16,440	1,169	15,271	7.1	92.9
Computer and electronic products	334	8,527	744	7,783	8.7	91.3
Communications equipment	3342	850	73	777	8.6	91.4
Semiconductor and other electronic components	3344	2,711	217	2,494	8.0	92.0
Navigational, measuring, electromedical, and control instruments	3345	3,737	388	3,349	10.4	89.6
Other computer and electronic products	other 334	1,230	67	1,163	5.5	94.5
Electrical equipment, appliances, and components	335	3,925	312	3,613	8.0	92.0
Transportation equipment	336	7,325	539	6,786	7.4	92.6
Automobiles, bodies, trailers, and parts	3361–63	4,494	278	4,216	6.2	93.8
Aerospace products and parts	3364	1,044	142	902	13.6	86.4
Other transportation	other 336	1,787	119	1,668	6.6	93.4
Furniture and related products	337	12,060	414	11,646	3.4	96.6
Miscellaneous	339	20,536	1,632	18,904	7.9	92.1
Medical equipment and supplies	3391	7,602	1,016	6,586	13.4	86.6
Other miscellaneous manufacturing	3399	12,933	613	12,320	4.7	95.3
Nonmanufacturing industries	11, 21–23, 42–81	4,665,645	27,270	4,638,375	0.6	99.4
Agriculture, forestry, fishing, and hunting	11	19,567	2	19,565	0.0	100.0
Mining, extraction, and support activities	21	14,004	29	13,975	0.2	99.8
Utilities	22	2,994	3	2,991	0.1	99.9
Construction	23	635,568	2,171	633,397	0.3	99.7
Wholesale trade	42	241,440	3,013	238,427	1.2	98.8
Retail trade	44–45	546,067	3,879	542,188	0.7	99.3
Transportation and warehousing	48–49	165,454	438	165,016	0.3	99.7
Information	51	65,445	438	65,007	0.7	99.3
Publishing	511	17,755	118	17,637	0.7	99.3
Newspaper, periodical, book, and directory publishers	5111	9,162	42	9,120	0.5	99.5
Software publishers	5112	8,589	78	8,511	0.9	99.1
Telecommunications	517	7,319	79	7,240	1.1	98.9
Data processing, hosting, and related services	518	8,346	118	8,228	1.4	98.6

TABLE CET-9

**Companies performing or funding additive manufacturing technology R&D, by industry: 2021**

(Number and percent)

Industry	NAICS code	Companies (number)	Additive manufacturing			
			Number		Percent	
			Yes	No	Yes	No
Other information	other 51	32,027	124	31,903	0.4	99.6
Finance and insurance	52	198,128	409	197,719	0.2	99.8
Real estate and rental and leasing	53	283,276	716	282,560	0.3	99.7
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1,956	0	1,956	0.0	100.0
Other real estate and rental and leasing	other 53	281,321	715	280,606	0.3	99.7
Professional, scientific, and technical services	54	717,229	6,191	711,038	0.9	99.1
Legal services	5411	152,543	257	152,286	0.2	99.8
Accounting, tax preparation, bookkeeping, and payroll services	5412	109,075	135	108,940	0.1	99.9
Architectural, engineering, and related services	5413	87,994	2,130	85,864	2.4	97.6
Specialized design services	5414	29,258	377	28,881	1.3	98.7
Computer systems design and related services	5415	100,282	1,353	98,929	1.3	98.7
Management, scientific, and technical consulting services	5416	144,421	1,003	143,418	0.7	99.3
Scientific research and development services	5417	11,149	602	10,547	5.4	94.6
Advertising, public relations, and related services	5418	28,236	183	28,053	0.6	99.4
Other professional, scientific, and technical services	5419	54,270	153	54,117	0.3	99.7
Management of companies and enterprises	55	3,153	72	3,081	2.3	97.7
Administrative and support and waste management and remediation services	56	293,539	723	292,816	0.2	99.8
Educational services	61	57,078	247	56,831	0.4	99.6
Health care and social assistance	62	536,276	4,942	531,334	0.9	99.1
Health care services	621-23	469,939	4,652	465,287	1.0	99.0
Social assistance	624	66,336	284	66,052	0.4	99.6
Arts, entertainment, and recreation	71	89,491	258	89,233	0.3	99.7
Accommodation and food services	72	455,071	2,096	452,975	0.5	99.5
Other services	81	341,869	1,605	340,264	0.5	99.5

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail across rows may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Detail across columns have been adjusted to add to total. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.



TABLE CET-10

**Companies performing or funding additive manufacturing technology R&D, by company size: 2021**

(Number and percent)

Employment size	Companies (number)	Additive manufacturing			
		Number		Percent	
		Yes	No	Yes	No
All companies	4,874,928	36,663	4,838,265	0.8	99.2
Micro companies					
1–4	2,734,191	14,785	2,719,406	0.5	99.5
5–9	950,548	8,043	942,505	0.8	99.2
Small companies					
10–19	577,397	4,952	572,445	0.9	99.1
20–49	399,566	4,677	394,889	1.2	98.8
Medium companies					
50–99	115,591	1,764	113,827	1.5	98.5
100–249	63,969	1,562	62,407	2.4	97.6
Large companies					
250–499	18,124	342	17,782	1.9	98.1
500–999	7,668	165	7,503	2.2	97.8
1,000–4,999	6,010	240	5,770	4.0	96.0
5,000–9,999	982	74	908	7.5	92.5 r
10,000–24,999	516	50	466	9.6	90.4
25,000 or more	372	39	333	10.4	89.6

r = relative standard error &gt; 50%.

**Note(s):**

Detail across rows may not add to total because of rounding. Detail across columns have been adjusted to add to total. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-11

**Companies performing or funding biotechnology technology R&D, by industry: 2021**

(Number and percent)

Industry	NAICS code	Companies (number)	Biotechnology			
			Number		Percent	
			Yes	No	Yes	No
All industries	11, 21–23, 31–33, 42–81	4,874,928	15,334	4,859,594	0.3	99.7
Manufacturing industries	31–33	209,282	1,017	208,265	0.5	99.5
Food	311	19,326	119	19,207	0.6	r 99.4
Beverage and tobacco products	312	9,354	19	9,335	0.2	99.8
Textile, apparel, and leather products	313–16	9,443	12	9,431	0.1	r 99.9
Wood products	321	9,546	15	r 9,531	0.2	r 99.8
Paper	322	1,500	42	r 1,458	2.8	r 97.2
Printing and related support activities	323	20,212	5	r 20,207	0.0	r 100.0
Petroleum and coal products	324	546	1	r 545	0.2	r 99.8
Chemicals	325	7,961	319	7,642	4.0	96.0
Pesticide, fertilizer, and other agricultural chemicals	3253	580	12	568	2.1	97.9
Pharmaceuticals and medicines	3254	1,536	213	1,323	13.8	86.2
Soap, cleaning compound, and toilet preparation	3256	1,652	19	1,633	1.1	98.9
Other chemicals	other 325	4,194	76	4,118	1.8	98.2
Plastics and rubber products	326	7,060	18	7,042	0.3	r 99.7
Nonmetallic mineral products	327	7,290	22	r 7,268	0.3	r 99.7
Primary metals	331	2,079	2	r 2,077	0.1	r 99.9
Fabricated metal products	332	46,128	21	r 46,107	0.0	r 100.0
Machinery	333	16,440	38	16,402	0.2	99.8
Computer and electronic products	334	8,527	166	8,361	1.9	98.1
Communications equipment	3342	850	0	850	0.0	100.0
Semiconductor and other electronic components	3344	2,711	15	2,696	0.5	99.5
Navigational, measuring, electromedical, and control instruments	3345	3,737	139	3,598	3.7	96.3
Other computer and electronic products	other 334	1,230	12	r 1,218	1.0	r 99.0
Electrical equipment, appliances, and components	335	3,925	24	3,901	0.6	r 99.4
Transportation equipment	336	7,325	27	r 7,298	0.4	r 99.6
Automobiles, bodies, trailers, and parts	3361–63	4,494	19	r 4,475	0.4	r 99.6
Aerospace products and parts	3364	1,044	1	r 1,043	0.1	r 99.9
Other transportation	other 336	1,787	6	r 1,781	0.3	r 99.7
Furniture and related products	337	12,060	3	r 12,057	0.0	r 100.0
Miscellaneous	339	20,536	163	20,373	0.8	99.2
Medical equipment and supplies	3391	7,602	121	7,481	1.6	r 98.4
Other miscellaneous manufacturing	3399	12,933	42	r 12,891	0.3	r 99.7
Nonmanufacturing industries	11, 21–23, 42–81	4,665,645	14,319	4,651,326	0.3	99.7
Agriculture, forestry, fishing, and hunting	11	19,567	119	r 19,448	0.6	r 99.4
Mining, extraction, and support activities	21	14,004	3	14,001	0.0	100.0
Utilities	22	2,994	2	2,992	0.1	99.9
Construction	23	635,568	607	634,961	0.1	99.9
Wholesale trade	42	241,440	807	240,633	0.3	99.7
Retail trade	44–45	546,067	1,383	544,684	0.3	99.7
Transportation and warehousing	48–49	165,454	307	165,147	0.2	99.8
Information	51	65,445	244	65,201	0.4	99.6
Publishing	511	17,755	103	r 17,652	0.6	r 99.4
Newspaper, periodical, book, and directory publishers	5111	9,162	30	r 9,132	0.3	r 99.7
Software publishers	5112	8,589	74	8,515	0.9	r 99.1
Telecommunications	517	7,319	61	r 7,258	0.8	r 99.2
Data processing, hosting, and related services	518	8,346	77	8,269	0.9	99.1

TABLE CET-11

**Companies performing or funding biotechnology technology R&D, by industry: 2021**

(Number and percent)

Industry	NAICS code	Companies (number)	Biotechnology			
			Number		Percent	
			Yes	No	Yes	No
Other information	other 51	32,027	3	r 32,024	0.0	r 100.0
Finance and insurance	52	198,128	330	197,798	0.2	99.8
Real estate and rental and leasing	53	283,276	180	r 283,096	0.1	r 99.9
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1,956	0	1,956	0.0	100.0
Other real estate and rental and leasing	other 53	281,321	180	r 281,141	0.1	r 99.9
Professional, scientific, and technical services	54	717,229	5,063	712,166	0.7	99.3
Legal services	5411	152,543	105	r 152,438	0.1	r 99.9
Accounting, tax preparation, bookkeeping, and payroll services	5412	109,075	89	r 108,986	0.1	r 99.9
Architectural, engineering, and related services	5413	87,994	301	87,693	0.3	99.7
Specialized design services	5414	29,258	0	29,258	0.0	100.0
Computer systems design and related services	5415	100,282	717	99,565	0.7	99.3
Management, scientific, and technical consulting services	5416	144,421	733	143,688	0.5	99.5
Scientific research and development services	5417	11,149	2,864	8,285	25.7	74.3
Advertising, public relations, and related services	5418	28,236	7	28,229	0.0	100.0
Other professional, scientific, and technical services	5419	54,270	260	54,010	0.5	99.5
Management of companies and enterprises	55	3,153	0	3,153	0.0	100.0
Administrative and support and waste management and remediation services	56	293,539	684	292,855	0.2	99.8
Educational services	61	57,078	4	r 57,074	0.0	r 100.0
Health care and social assistance	62	536,276	2,395	533,881	0.4	99.6
Health care services	621-23	469,939	2,283	467,656	0.5	99.5
Social assistance	624	66,336	108	r 66,228	0.2	r 99.8
Arts, entertainment, and recreation	71	89,491	44	r 89,447	0.0	r 100.0
Accommodation and food services	72	455,071	1,614	453,457	0.4	99.6
Other services	81	341,869	494	341,375	0.1	99.9

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail across rows may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Detail across columns have been adjusted to add to total. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-12

**Companies performing or funding biotechnology technology R&D, by company size: 2021**

(Number and percent)

Employment size	Companies (number)	Biotechnology			
		Number		Percent	
		Yes	No	Yes	No
All companies	4,874,928	15,334	4,859,594	0.3	99.7
Micro companies					
1-4	2,734,191	7,588	2,726,603	0.3	99.7
5-9	950,548	2,901	947,647	0.3	99.7
Small companies					
10-19	577,397	2,037	575,360	0.4	99.6
20-49	399,566	1,533	398,033	0.4	99.6
Medium companies					
50-99	115,591	586	115,005	0.5	99.5
100-249	63,969	361	63,608	0.6	99.4
Large companies					
250-499	18,124	89	18,035	0.5	99.5
500-999	7,668	59	7,609	0.8	99.2
1,000-4,999	6,010	67	5,943	1.1	98.9
5,000-9,999	982	87 r	895	8.8 r	91.2
10,000-24,999	516	17	499	3.3	96.7
25,000 or more	372	17	355	4.7	95.3

r = relative standard error &gt; 50%.

**Note(s):**

Detail across rows may not add to total because of rounding. Detail across columns have been adjusted to add to total. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-13

**Companies performing or funding human-machine interfaces technology R&D, by industry: 2021**

(Number and percent)

Industry	NAICS code	Companies (number)	Human-machine interfaces			
			Number		Percent	
			Yes	No	Yes	No
All industries	11, 21–23, 31–33, 42–81	4,874,928	20,789	4,854,139	0.4	99.6
Manufacturing industries	31–33	209,282	1,301	207,981	0.6	99.4
Food	311	19,326	30	19,296	0.2	r 99.8
Beverage and tobacco products	312	9,354	7	r 9,347	0.1	r 99.9
Textile, apparel, and leather products	313–16	9,443	20	9,423	0.2	99.8
Wood products	321	9,546	24	r 9,522	0.2	r 99.8
Paper	322	1,500	1	r 1,499	0.1	r 99.9
Printing and related support activities	323	20,212	6	r 20,206	0.0	r 100.0
Petroleum and coal products	324	546	2	r 544	0.4	r 99.6
Chemicals	325	7,961	30	7,931	0.4	99.6
Pesticide, fertilizer, and other agricultural chemicals	3253	580	3	r 577	0.5	r 99.5
Pharmaceuticals and medicines	3254	1,536	7	r 1,529	0.5	r 99.5
Soap, cleaning compound, and toilet preparation	3256	1,652	5	1,647	0.3	99.7
Other chemicals	other 325	4,194	14	4,180	0.3	99.7
Plastics and rubber products	326	7,060	30	7,030	0.4	99.6
Nonmetallic mineral products	327	7,290	25	7,265	0.3	99.7
Primary metals	331	2,079	10	r 2,069	0.5	r 99.5
Fabricated metal products	332	46,128	128	46,000	0.3	99.7
Machinery	333	16,440	330	16,110	2.0	98.0
Computer and electronic products	334	8,527	248	8,279	2.9	97.1
Communications equipment	3342	850	38	r 812	4.5	r 95.5
Semiconductor and other electronic components	3344	2,711	80	2,631	2.9	97.1
Navigational, measuring, electromedical, and control instruments	3345	3,737	94	3,643	2.5	97.5
Other computer and electronic products	other 334	1,230	35	r 1,195	2.9	r 97.1
Electrical equipment, appliances, and components	335	3,925	77	3,848	2.0	98.0
Transportation equipment	336	7,325	98	7,227	1.3	98.7
Automobiles, bodies, trailers, and parts	3361–63	4,494	44	4,450	1.0	99.0
Aerospace products and parts	3364	1,044	18	1,026	1.7	98.3
Other transportation	other 336	1,787	33	r 1,754	1.8	r 98.2
Furniture and related products	337	12,060	9	12,051	0.1	99.9
Miscellaneous	339	20,536	219	20,317	1.1	r 98.9
Medical equipment and supplies	3391	7,602	135	7,467	1.8	r 98.2
Other miscellaneous manufacturing	3399	12,933	82	r 12,851	0.6	r 99.4
Nonmanufacturing industries	11, 21–23, 42–81	4,665,645	19,487	4,646,158	0.4	99.6
Agriculture, forestry, fishing, and hunting	11	19,567	2	19,565	0.0	100.0
Mining, extraction, and support activities	21	14,004	38	r 13,966	0.3	r 99.7
Utilities	22	2,994	10	2,984	0.3	99.7
Construction	23	635,568	1,263	634,305	0.2	99.8
Wholesale trade	42	241,440	1,024	240,416	0.4	99.6
Retail trade	44–45	546,067	1,155	544,912	0.2	99.8
Transportation and warehousing	48–49	165,454	339	165,115	0.2	99.8
Information	51	65,445	1,167	64,278	1.8	98.2
Publishing	511	17,755	398	17,357	2.2	97.8
Newspaper, periodical, book, and directory publishers	5111	9,162	9	9,153	0.1	99.9
Software publishers	5112	8,589	390	8,199	4.5	95.5
Telecommunications	517	7,319	91	r 7,228	1.2	r 98.8
Data processing, hosting, and related services	518	8,346	233	8,113	2.8	97.2

TABLE CET-13

**Companies performing or funding human-machine interfaces technology R&D, by industry: 2021**

(Number and percent)

Industry	NAICS code	Companies (number)	Human-machine interfaces			
			Number		Percent	
			Yes	No	Yes	No
Other information	other 51	32,027	446	31,581	1.4	98.6
Finance and insurance	52	198,128	421	197,707	0.2	99.8
Real estate and rental and leasing	53	283,276	790	282,486	0.3	99.7
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1,956	46 r	1,910	2.4 r	97.6
Other real estate and rental and leasing	other 53	281,321	745	280,576	0.3	99.7
Professional, scientific, and technical services	54	717,229	6,660	710,569	0.9	99.1
Legal services	5411	152,543	408	152,135	0.3	99.7
Accounting, tax preparation, bookkeeping, and payroll services	5412	109,075	341	108,734	0.3	99.7
Architectural, engineering, and related services	5413	87,994	1,410	86,584	1.6	98.4
Specialized design services	5414	29,258	335	28,923	1.1	98.9
Computer systems design and related services	5415	100,282	2,513	97,769	2.5	97.5
Management, scientific, and technical consulting services	5416	144,421	1,036	143,385	0.7	99.3
Scientific research and development services	5417	11,149	295	10,854	2.6	97.4
Advertising, public relations, and related services	5418	28,236	179	28,057	0.6	99.4
Other professional, scientific, and technical services	5419	54,270	146	54,124	0.3	99.7
Management of companies and enterprises	55	3,153	72 r	3,081	2.3 r	97.7
Administrative and support and waste management and remediation services	56	293,539	842	292,697	0.3	99.7
Educational services	61	57,078	355	56,723	0.6	99.4
Health care and social assistance	62	536,276	2,122	534,154	0.4	99.6
Health care services	621-23	469,939	1,858	468,081	0.4	99.6
Social assistance	624	66,336	264	66,072	0.4	99.6
Arts, entertainment, and recreation	71	89,491	217	89,274	0.2	99.8
Accommodation and food services	72	455,071	2,024	453,047	0.4	99.6
Other services	81	341,869	922	340,947	0.3	99.7

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail across rows may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Detail across columns have been adjusted to add to total. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-14

**Companies performing or funding human-machine interfaces technology R&D, by company size: 2021**

(Number and percent)

Employment size	Companies (number)	Human-machine interfaces				
		Number		Percent		
		Yes	No	Yes	No	
All companies	4,874,928	20,789	4,854,139	0.4	99.6	
Micro companies						
1–4	2,734,191	11,427	2,722,764	0.4	99.6	
5–9	950,548	3,607	946,941	0.4	99.6	
Small companies						
10–19	577,397	2,587	574,810	0.4	99.6	
20–49	399,566	1,653	397,913	0.4	99.6	
Medium companies						
50–99	115,591	721	114,870	0.6	99.4	
100–249	63,969	410	63,559	0.6	99.4	
Large companies						
250–499	18,124	59	18,065	0.3	99.7	
500–999	7,668	55	7,613	0.7	99.3	
1,000–4,999	6,010	131	5,879	2.2	97.8	
5,000–9,999	982	52	930	5.3	94.7	r
10,000–24,999	516	36	480	6.9	93.1	
25,000 or more	372	60	312	16.1	83.9	

r = relative standard error &gt; 50%.

**Note(s):**

Detail across rows may not add to total because of rounding. Detail across columns have been adjusted to add to total. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-15

**Companies performing or funding communication and networking technologies R&D, by industry: 2021**

(Number and percent)

Industry	NAICS code	Companies (number)	Communication and networking technologies			
			Number		Percent	
			Yes	No	Yes	No
All industries	11, 21–23, 31–33, 42–81	4,874,928	54,405	4,820,523	1.1	98.9
Manufacturing industries	31–33	209,282	3,664	205,618	1.8	98.2
Food	311	19,326	138	19,188	0.7	99.3
Beverage and tobacco products	312	9,354	30	9,324	0.3	99.7
Textile, apparel, and leather products	313–16	9,443	70	9,373	0.7	99.3
Wood products	321	9,546	86	9,460	0.9	99.1
Paper	322	1,500	5	1,495	0.4	99.6
Printing and related support activities	323	20,212	217	19,995	1.1	98.9
Petroleum and coal products	324	546	4	542	0.8	99.2
Chemicals	325	7,961	80	7,881	1.0	99.0
Pesticide, fertilizer, and other agricultural chemicals	3253	580	12 r	568	2.1 r	97.9
Pharmaceuticals and medicines	3254	1,536	12	1,524	0.7 r	99.3
Soap, cleaning compound, and toilet preparation	3256	1,652	9	1,643	0.6 r	99.4
Other chemicals	other 325	4,194	48	4,146	1.1	98.9
Plastics and rubber products	326	7,060	107	6,953	1.5	98.5
Nonmetallic mineral products	327	7,290	68	7,222	0.9	99.1
Primary metals	331	2,079	17	2,062	0.8 r	99.2
Fabricated metal products	332	46,128	612	45,516	1.3	98.7
Machinery	333	16,440	337	16,103	2.1	97.9
Computer and electronic products	334	8,527	1,233	7,294	14.5	85.5
Communications equipment	3342	850	373	477	43.9	56.1
Semiconductor and other electronic components	3344	2,711	315	2,396	11.6	88.4
Navigational, measuring, electromedical, and control instruments	3345	3,737	436	3,301	11.7	88.3
Other computer and electronic products	other 334	1,230	111	1,119	9.1	90.9
Electrical equipment, appliances, and components	335	3,925	267	3,658	6.8	93.2
Transportation equipment	336	7,325	168	7,157	2.3	97.7
Automobiles, bodies, trailers, and parts	3361–63	4,494	101	4,393	2.2	97.8
Aerospace products and parts	3364	1,044	28	1,016	2.7	97.3
Other transportation	other 336	1,787	41	1,746	2.3	97.7
Furniture and related products	337	12,060	53	12,007	0.4 r	99.6
Miscellaneous	339	20,536	158	20,378	0.8	99.2
Medical equipment and supplies	3391	7,602	48	7,554	0.6 r	99.4
Other miscellaneous manufacturing	3399	12,933	109	12,824	0.8	99.2
Nonmanufacturing industries	11, 21–23, 42–81	4,665,645	50,741	4,614,904	1.1	98.9
Agriculture, forestry, fishing, and hunting	11	19,567	99 r	19,468	0.5 r	99.5
Mining, extraction, and support activities	21	14,004	43	13,961	0.3	99.7
Utilities	22	2,994	39	2,955	1.3	98.7
Construction	23	635,568	4,719	630,849	0.7	99.3
Wholesale trade	42	241,440	3,846	237,594	1.6	98.4
Retail trade	44–45	546,067	3,969	542,098	0.7	99.3
Transportation and warehousing	48–49	165,454	1,727	163,727	1.0	99.0
Information	51	65,445	2,299	63,146	3.5	96.5
Publishing	511	17,755	604	17,151	3.4	96.6
Newspaper, periodical, book, and directory publishers	5111	9,162	94	9,068	1.0	99.0
Software publishers	5112	8,589	512	8,077	6.0	94.0
Telecommunications	517	7,319	715	6,604	9.8	90.2



TABLE CET-15

**Companies performing or funding communication and networking technologies R&D, by industry: 2021**

(Number and percent)

Industry	NAICS code	Companies (number)	Communication and networking technologies			
			Number		Percent	
			Yes	No	Yes	No
Data processing, hosting, and related services	518	8,346	436	7,910	5.2	94.8
Other information	other 51	32,027	552	31,475	1.7	98.3
Finance and insurance	52	198,128	2,428	195,700	1.2	98.8
Real estate and rental and leasing	53	283,276	1,834	281,442	0.6	99.4
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1,956	46 r	1,910	2.4 r	97.6
Other real estate and rental and leasing	other 53	281,321	1,789	279,532	0.6	99.4
Professional, scientific, and technical services	54	717,229	14,668	702,561	2.0	98.0
Legal services	5411	152,543	1,012	151,531	0.7	99.3
Accounting, tax preparation, bookkeeping, and payroll services	5412	109,075	757	108,318	0.7	99.3
Architectural, engineering, and related services	5413	87,994	2,735	85,259	3.1	96.9
Specialized design services	5414	29,258	259	28,999	0.9	99.1
Computer systems design and related services	5415	100,282	6,050	94,232	6.0	94.0
Management, scientific, and technical consulting services	5416	144,421	2,339	142,082	1.6	98.4
Scientific research and development services	5417	11,149	463	10,686	4.2	95.8
Advertising, public relations, and related services	5418	28,236	427	27,809	1.5	98.5
Other professional, scientific, and technical services	5419	54,270	624	53,646	1.1	98.9
Management of companies and enterprises	55	3,153	0	3,153	0.0	100.0
Administrative and support and waste management and remediation services	56	293,539	2,529	291,010	0.9	99.1
Educational services	61	57,078	852	56,226	1.5	98.5
Health care and social assistance	62	536,276	5,104	531,172	1.0	99.0
Health care services	621-23	469,939	4,375	465,564	0.9	99.1
Social assistance	624	66,336	732	65,604	1.1	98.9
Arts, entertainment, and recreation	71	89,491	495	88,996	0.6	99.4
Accommodation and food services	72	455,071	3,576	451,495	0.8	99.2
Other services	81	341,869	2,336	339,533	0.7	99.3

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail across rows may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Detail across columns have been adjusted to add to total. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-16

**Companies performing or funding communication and networking technologies R&D, by company size: 2021**

(Number and percent)

Employment size	Companies (number)	Communication and networking technologies			
		Number		Percent	
		Yes	No	Yes	No
All companies	4,874,928	54,405	4,820,523	1.1	98.9
Micro companies					
1–4	2,734,191	26,539	2,707,652	1.0	99.0
5–9	950,548	10,172	940,376	1.1	98.9
Small companies					
10–19	577,397	6,868	570,529	1.2	98.8
20–49	399,566	5,783	393,783	1.4	98.6
Medium companies					
50–99	115,591	2,436	113,155	2.1	97.9
100–249	63,969	1,341	62,628	2.1	97.9
Large companies					
250–499	18,124	439	17,685	2.4	97.6
500–999	7,668	249	7,419	3.2 r	96.8
1,000–4,999	6,010	311	5,699	5.2	94.8
5,000–9,999	982	159	823	16.2 r	83.8
10,000–24,999	516	63	453	12.2	87.8
25,000 or more	372	67	305	18.1	81.9

r = relative standard error &gt; 50%.

**Note(s):**

Detail across rows may not add to total because of rounding. Detail across columns have been adjusted to add to total. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-17

**Companies performing or funding advanced financial technologies R&D, by industry: 2021**

(Number and percent)

Industry	NAICS code	Companies (number)	Advanced financial technologies			
			Number		Percent	
			Yes	No	Yes	No
All industries	11, 21–23, 31–33, 42–81	4,874,928	24,197	4,850,731	0.5	99.5
Manufacturing industries	31–33	209,282	859	208,423	0.4	99.6
Food	311	19,326	124 r	19,202	0.6 r	99.4
Beverage and tobacco products	312	9,354	24 r	9,330	0.3 r	99.7
Textile, apparel, and leather products	313–16	9,443	14	9,429	0.1	99.9
Wood products	321	9,546	11	9,535	0.1	99.9
Paper	322	1,500	1 r	1,499	0.1 r	99.9
Printing and related support activities	323	20,212	37	20,175	0.2	99.8
Petroleum and coal products	324	546	2 r	544	0.4 r	99.6
Chemicals	325	7,961	96 r	7,865	1.2 r	98.8
Pesticide, fertilizer, and other agricultural chemicals	3253	580	3 r	577	0.5 r	99.5
Pharmaceuticals and medicines	3254	1,536	12	1,524	0.7 r	99.3
Soap, cleaning compound, and toilet preparation	3256	1,652	7	1,645	0.4	99.6
Other chemicals	other 325	4,194	74 r	4,120	1.8 r	98.2
Plastics and rubber products	326	7,060	42	7,018	0.6 r	99.4
Nonmetallic mineral products	327	7,290	22	7,268	0.3	99.7
Primary metals	331	2,079	7 r	2,072	0.3 r	99.7
Fabricated metal products	332	46,128	79 r	46,049	0.2 r	99.8
Machinery	333	16,440	81	16,359	0.5 r	99.5
Computer and electronic products	334	8,527	104	8,423	1.2	98.8
Communications equipment	3342	850	3 r	847	0.4 r	99.6
Semiconductor and other electronic components	3344	2,711	58	2,653	2.1	97.9
Navigational, measuring, electromedical, and control instruments	3345	3,737	24 r	3,713	0.6 r	99.4
Other computer and electronic products	other 334	1,230	21 r	1,209	1.7 r	98.3
Electrical equipment, appliances, and components	335	3,925	19	3,906	0.5 r	99.5
Transportation equipment	336	7,325	50	7,275	0.7 r	99.3
Automobiles, bodies, trailers, and parts	3361–63	4,494	37	4,457	0.8 r	99.2
Aerospace products and parts	3364	1,044	4 r	1,040	0.4 r	99.6
Other transportation	other 336	1,787	7 r	1,780	0.4 r	99.6
Furniture and related products	337	12,060	10	12,050	0.1	99.9
Miscellaneous	339	20,536	125	20,411	0.6 r	99.4
Medical equipment and supplies	3391	7,602	65 r	7,537	0.9 r	99.1
Other miscellaneous manufacturing	3399	12,933	61	12,872	0.5	99.5
Nonmanufacturing industries	11, 21–23, 42–81	4,665,645	23,336	4,642,309	0.5	99.5
Agriculture, forestry, fishing, and hunting	11	19,567	2	19,565	0.0	100.0
Mining, extraction, and support activities	21	14,004	16	13,988	0.1	99.9
Utilities	22	2,994	6	2,988	0.2	99.8
Construction	23	635,568	1,562	634,006	0.2	99.8
Wholesale trade	42	241,440	847	240,593	0.4	99.6
Retail trade	44–45	546,067	2,250	543,817	0.4	99.6
Transportation and warehousing	48–49	165,454	835	164,619	0.5	99.5
Information	51	65,445	976	64,469	1.5	98.5
Publishing	511	17,755	358	17,397	2.0	98.0
Newspaper, periodical, book, and directory publishers	5111	9,162	43 r	9,119	0.5 r	99.5
Software publishers	5112	8,589	314	8,275	3.7	96.3
Telecommunications	517	7,319	74 r	7,245	1.0 r	99.0
Data processing, hosting, and related services	518	8,346	252	8,094	3.0	97.0

TABLE CET-17

**Companies performing or funding advanced financial technologies R&D, by industry: 2021**

(Number and percent)

Industry	NAICS code	Companies (number)	Advanced financial technologies			
			Number		Percent	
			Yes	No	Yes	No
Other information	other 51	32,027	293	31,734	0.9	99.1
Finance and insurance	52	198,128	2,166	195,962	1.1	98.9
Real estate and rental and leasing	53	283,276	1,129	282,147	0.4	99.6
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1,956	0	1,956	0.0	100.0
Other real estate and rental and leasing	other 53	281,321	1,129	280,192	0.4	99.6
Professional, scientific, and technical services	54	717,229	6,050	711,179	0.8	99.2
Legal services	5411	152,543	455	152,088	0.3	99.7
Accounting, tax preparation, bookkeeping, and payroll services	5412	109,075	964	108,111	0.9	99.1
Architectural, engineering, and related services	5413	87,994	286	87,708	0.3	99.7
Specialized design services	5414	29,258	0	29,258	0.0	100.0
Computer systems design and related services	5415	100,282	2,382	97,900	2.4	97.6
Management, scientific, and technical consulting services	5416	144,421	1,550	142,871	1.1	98.9
Scientific research and development services	5417	11,149	77	11,072	0.7	99.3
Advertising, public relations, and related services	5418	28,236	126	28,110	0.4	99.6
Other professional, scientific, and technical services	5419	54,270	198	54,072	0.4	99.6
Management of companies and enterprises	55	3,153	52 r	3,101	1.6 r	98.4
Administrative and support and waste management and remediation services	56	293,539	920	292,619	0.3	99.7
Educational services	61	57,078	345	56,733	0.6	99.4
Health care and social assistance	62	536,276	2,275	534,001	0.4	99.6
Health care services	621-23	469,939	1,868	468,071	0.4	99.6
Social assistance	624	66,336	410	65,926	0.6	99.4
Arts, entertainment, and recreation	71	89,491	96 r	89,395	0.1 r	99.9
Accommodation and food services	72	455,071	2,595	452,476	0.6	99.4
Other services	81	341,869	1,157	340,712	0.3	99.7

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail across rows may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Detail across columns have been adjusted to add to total. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-18

**Companies performing or funding advanced financial technologies R&D, by company size: 2021**

(Number and percent)

Employment size	Companies (number)	Advanced financial technologies			
		Number		Percent	
		Yes	No	Yes	No
All companies	4,874,928	24,197	4,850,731	0.5	99.5
Micro companies					
1–4	2,734,191	12,880	2,721,311	0.5	99.5
5–9	950,548	4,604	945,944	0.5	99.5
Small companies					
10–19	577,397	2,679	574,718	0.5	99.5
20–49	399,566	2,115	397,451	0.5	99.5
Medium companies					
50–99	115,591	1,030	114,561	0.9	99.1
100–249	63,969	317	63,652	0.5	99.5
Large companies					
250–499	18,124	223	17,901	1.2 r	98.8
500–999	7,668	70	7,598	0.9	99.1
1,000–4,999	6,010	118	5,892	2.0	98.0
5,000–9,999	982	101 r	881	10.3 r	89.7
10,000–24,999	516	29	487	5.7	94.3
25,000 or more	372	27	345	7.4	92.6

r = relative standard error &gt; 50%.

**Note(s):**

Detail across rows may not add to total because of rounding. Detail across columns have been adjusted to add to total. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-19

**Companies performing or funding advanced semiconductors and microelectronics technology R&D, by industry: 2021**

(Number and percent)

Industry	NAICS code	Companies (number)	Advanced semiconductors and microelectronics			
			Number		Percent	
			Yes	No	Yes	No
All industries	11, 21–23, 31–33, 42–81	4,874,928	12,069	4,862,859	0.2	99.8
Manufacturing industries	31–33	209,282	1,751	207,531	0.8	99.2
Food	311	19,326	10	19,316	0.0	100.0
Beverage and tobacco products	312	9,354	0	9,354	0.0	100.0
Textile, apparel, and leather products	313–16	9,443	15	9,428	0.2	99.8
Wood products	321	9,546	11	9,535	0.1	99.9
Paper	322	1,500	2	1,498	0.1	99.9
Printing and related support activities	323	20,212	14	20,198	0.1	99.9
Petroleum and coal products	324	546	1	545	0.2	99.8
Chemicals	325	7,961	49	7,912	0.6	99.4
Pesticide, fertilizer, and other agricultural chemicals	3253	580	3	577	0.5	99.5
Pharmaceuticals and medicines	3254	1,536	5	1,531	0.3	99.7
Soap, cleaning compound, and toilet preparation	3256	1,652	2	1,650	0.1	99.9
Other chemicals	other 325	4,194	39	4,155	0.9	99.1
Plastics and rubber products	326	7,060	52	7,008	0.7	99.3
Nonmetallic mineral products	327	7,290	30	7,260	0.4	99.6
Primary metals	331	2,079	5	2,074	0.2	99.8
Fabricated metal products	332	46,128	226	45,902	0.5	99.5
Machinery	333	16,440	478	15,962	2.9	97.1
Computer and electronic products	334	8,527	454	8,073	5.3	94.7
Communications equipment	3342	850	37	813	4.4	95.6
Semiconductor and other electronic components	3344	2,711	255	2,456	9.4	90.6
Navigational, measuring, electromedical, and control instruments	3345	3,737	131	3,606	3.5	96.5
Other computer and electronic products	other 334	1,230	32	1,198	2.6	97.4
Electrical equipment, appliances, and components	335	3,925	211	3,714	5.4	94.6
Transportation equipment	336	7,325	98	7,227	1.3	98.7
Automobiles, bodies, trailers, and parts	3361–63	4,494	67	4,427	1.5	98.5
Aerospace products and parts	3364	1,044	10	1,034	1.0	99.0
Other transportation	other 336	1,787	21	1,766	1.2	98.8
Furniture and related products	337	12,060	9	12,051	0.1	99.9
Miscellaneous	339	20,536	75	20,461	0.4	99.6
Medical equipment and supplies	3391	7,602	25	7,577	0.3	99.7
Other miscellaneous manufacturing	3399	12,933	51	12,882	0.4	99.6
Nonmanufacturing industries	11, 21–23, 42–81	4,665,645	10,321	4,655,324	0.2	99.8
Agriculture, forestry, fishing, and hunting	11	19,567	2	19,565	0.0	100.0
Mining, extraction, and support activities	21	14,004	8	13,996	0.1	99.9
Utilities	22	2,994	4	2,990	0.1	99.9
Construction	23	635,568	718	634,850	0.1	99.9
Wholesale trade	42	241,440	1,040	240,400	0.4	99.6
Retail trade	44–45	546,067	1,305	544,762	0.2	99.8
Transportation and warehousing	48–49	165,454	235	165,219	0.1	99.9
Information	51	65,445	242	65,203	0.4	99.6
Publishing	511	17,755	53	17,702	0.3	99.7
Newspaper, periodical, book, and directory publishers	5111	9,162	34	9,128	0.4	99.6
Software publishers	5112	8,589	20	8,569	0.2	99.8
Telecommunications	517	7,319	61	7,258	0.8	99.2

TABLE CET-19

**Companies performing or funding advanced semiconductors and microelectronics technology R&D, by industry: 2021**

(Number and percent)

Industry	NAICS code	Companies (number)	Advanced semiconductors and microelectronics			
			Number		Percent	
			Yes	No	Yes	No
Data processing, hosting, and related services	518	8,346	75 r	8,271	0.9 r	99.1
Other information	other 51	32,027	54 r	31,973	0.2 r	99.8
Finance and insurance	52	198,128	187	197,941	0.1	99.9
Real estate and rental and leasing	53	283,276	407	282,869	0.1	99.9
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1,956	0	1,956	0.0	100.0
Other real estate and rental and leasing	other 53	281,321	407	280,914	0.1	99.9
Professional, scientific, and technical services	54	717,229	2,289	714,940	0.3	99.7
Legal services	5411	152,543	145 r	152,398	0.1 r	99.9
Accounting, tax preparation, bookkeeping, and payroll services	5412	109,075	87 r	108,988	0.1 r	99.9
Architectural, engineering, and related services	5413	87,994	635	87,359	0.7	99.3
Specialized design services	5414	29,258	56 r	29,202	0.2 r	99.8
Computer systems design and related services	5415	100,282	380	99,902	0.4	99.6
Management, scientific, and technical consulting services	5416	144,421	456	143,965	0.3	99.7
Scientific research and development services	5417	11,149	398	10,751	3.6	96.4
Advertising, public relations, and related services	5418	28,236	37 r	28,199	0.1 r	99.9
Other professional, scientific, and technical services	5419	54,270	96 r	54,174	0.2 r	99.8
Management of companies and enterprises	55	3,153	0	3,153	0.0	100.0
Administrative and support and waste management and remediation services	56	293,539	392	293,147	0.1	99.9
Educational services	61	57,078	4 r	57,074	0.0 r	100.0
Health care and social assistance	62	536,276	1,177	535,099	0.2	99.8
Health care services	621-23	469,939	1,027	468,912	0.2	99.8
Social assistance	624	66,336	151 r	66,185	0.2 r	99.8
Arts, entertainment, and recreation	71	89,491	43 r	89,448	0.0 r	100.0
Accommodation and food services	72	455,071	1,460	453,611	0.3	99.7
Other services	81	341,869	809	341,060	0.2	99.8

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail across rows may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Detail across columns have been adjusted to add to total. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-20

**Companies performing or funding advanced semiconductors and microelectronics technology R&D, by company size: 2021**

(Number and percent)

Employment size	Companies (number)	Advanced semiconductors and microelectronics			
		Number		Percent	
		Yes	No	Yes	No
All companies	4,874,928	12,069	4,862,859	0.2	99.8
Micro companies					
1–4	2,734,191	5,569	2,728,622	0.2	99.8
5–9	950,548	2,326	948,222	0.2	99.8
Small companies					
10–19	577,397	1,318	576,079	0.2	99.8
20–49	399,566	1,473	398,093	0.4	99.6
Medium companies					
50–99	115,591	660	114,931	0.6	99.4
100–249	63,969	394	63,575	0.6	99.4
Large companies					
250–499	18,124	125	17,999	0.7	99.3
500–999	7,668	40	7,628	0.5	99.5
1,000–4,999	6,010	97	5,913	1.6	98.4
5,000–9,999	982	26	956	2.7	97.3 r
10,000–24,999	516	21	495	4.1	95.9
25,000 or more	372	29	343	7.7	92.3

r = relative standard error &gt; 50%.

**Note(s):**

Detail across rows may not add to total because of rounding. Detail across columns have been adjusted to add to total. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.



TABLE CET-21

**Companies performing or funding advanced engineering materials technology R&D, by industry: 2021**

(Number and percent)

Industry	NAICS code	Companies (number)	Advanced engineering materials			
			Number		Percent	
			Yes	No	Yes	No
All industries	11, 21–23, 31–33, 42–81	4,874,928	17,768	4,857,160	0.4	99.6
Manufacturing industries	31–33	209,282	3,281	206,001	1.6	98.4
Food	311	19,326	21	19,305	0.1	99.9
Beverage and tobacco products	312	9,354	5 r	9,349	0.1 r	99.9
Textile, apparel, and leather products	313–16	9,443	69	9,374	0.7	99.3
Wood products	321	9,546	51 r	9,495	0.5 r	99.5
Paper	322	1,500	23 r	1,477	1.6 r	98.4
Printing and related support activities	323	20,212	27 r	20,185	0.1 r	99.9
Petroleum and coal products	324	546	4	542	0.8	99.2
Chemicals	325	7,961	267	7,694	3.4	96.6
Pesticide, fertilizer, and other agricultural chemicals	3253	580	6	574	1.0 r	99.0
Pharmaceuticals and medicines	3254	1,536	29	1,507	1.9	98.1
Soap, cleaning compound, and toilet preparation	3256	1,652	38 r	1,614	2.3 r	97.7
Other chemicals	other 325	4,194	193	4,001	4.6	95.4
Plastics and rubber products	326	7,060	172	6,888	2.4	97.6
Nonmetallic mineral products	327	7,290	97	7,193	1.3	98.7
Primary metals	331	2,079	95	1,984	4.6	95.4
Fabricated metal products	332	46,128	802	45,326	1.7	98.3
Machinery	333	16,440	535	15,905	3.3	96.7
Computer and electronic products	334	8,527	326	8,201	3.8	96.2
Communications equipment	3342	850	20	830	2.3	97.7
Semiconductor and other electronic components	3344	2,711	122	2,589	4.5	95.5
Navigational, measuring, electromedical, and control instruments	3345	3,737	153	3,584	4.1	95.9
Other computer and electronic products	other 334	1,230	33	1,197	2.7	97.3
Electrical equipment, appliances, and components	335	3,925	147	3,778	3.8	96.3
Transportation equipment	336	7,325	264	7,061	3.6	96.4
Automobiles, bodies, trailers, and parts	3361–63	4,494	155	4,339	3.4	96.6
Aerospace products and parts	3364	1,044	48	996	4.6	95.4
Other transportation	other 336	1,787	62	1,725	3.5	96.5
Furniture and related products	337	12,060	62 r	11,998	0.5 r	99.5
Miscellaneous	339	20,536	305	20,231	1.5	98.5
Medical equipment and supplies	3391	7,602	130	7,472	1.7	98.3
Other miscellaneous manufacturing	3399	12,933	176	12,757	1.4	98.6
Nonmanufacturing industries	11, 21–23, 42–81	4,665,645	14,493	4,651,152	0.3	99.7
Agriculture, forestry, fishing, and hunting	11	19,567	2	19,565	0.0	100.0
Mining, extraction, and support activities	21	14,004	30 r	13,974	0.2 r	99.8
Utilities	22	2,994	4	2,990	0.1 r	99.9
Construction	23	635,568	1,512	634,056	0.2	99.8
Wholesale trade	42	241,440	1,490	239,950	0.6	99.4
Retail trade	44–45	546,067	1,401	544,666	0.3	99.7
Transportation and warehousing	48–49	165,454	411	165,043	0.2	99.8
Information	51	65,445	303	65,142	0.5	99.5
Publishing	511	17,755	87	17,668	0.5 r	99.5
Newspaper, periodical, book, and directory publishers	5111	9,162	3	9,159	0.0	100.0
Software publishers	5112	8,589	85 r	8,504	1.0 r	99.0
Telecommunications	517	7,319	100	7,219	1.4 r	98.6
Data processing, hosting, and related services	518	8,346	17	8,329	0.2	99.8

TABLE CET-21

**Companies performing or funding advanced engineering materials technology R&D, by industry: 2021**

(Number and percent)

Industry	NAICS code	Companies (number)	Advanced engineering materials					
			Number			Percent		
			Yes	No	Yes	No	Yes	No
Other information	other 51	32,027	98	r	31,929	0.3	r	99.7
Finance and insurance	52	198,128	199		197,929	0.1		99.9
Real estate and rental and leasing	53	283,276	381		282,895	0.1		99.9
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1,956	0		1,956	0.0		100.0
Other real estate and rental and leasing	other 53	281,321	381		280,940	0.1		99.9
Professional, scientific, and technical services	54	717,229	3,859		713,370	0.5		99.5
Legal services	5411	152,543	200	r	152,343	0.1	r	99.9
Accounting, tax preparation, bookkeeping, and payroll services	5412	109,075	90	r	108,985	0.1	r	99.9
Architectural, engineering, and related services	5413	87,994	1,510		86,484	1.7		98.3
Specialized design services	5414	29,258	5		29,253	0.0		100.0
Computer systems design and related services	5415	100,282	349		99,933	0.3		99.7
Management, scientific, and technical consulting services	5416	144,421	749		143,672	0.5		99.5
Scientific research and development services	5417	11,149	855		10,294	7.7		92.3
Advertising, public relations, and related services	5418	28,236	38	r	28,198	0.1	r	99.9
Other professional, scientific, and technical services	5419	54,270	65	r	54,205	0.1	r	99.9
Management of companies and enterprises	55	3,153	0		3,153	0.0		100.0
Administrative and support and waste management and remediation services	56	293,539	699		292,840	0.2		99.8
Educational services	61	57,078	4	r	57,074	0.0	r	100.0
Health care and social assistance	62	536,276	1,936		534,340	0.4		99.6
Health care services	621-23	469,939	1,742		468,197	0.4		99.6
Social assistance	624	66,336	193	r	66,143	0.3	r	99.7
Arts, entertainment, and recreation	71	89,491	46	r	89,445	0.1	r	99.9
Accommodation and food services	72	455,071	1,458		453,613	0.3		99.7
Other services	81	341,869	731		341,138	0.2		99.8

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail across rows may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Detail across columns have been adjusted to add to total. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-22

**Companies performing or funding advanced engineering materials technology R&D, by company size: 2021**

(Number and percent)

Employment size	Companies (number)	Advanced engineering materials			
		Number		Percent	
		Yes	No	Yes	No
All companies	4,874,928	17,768	4,857,160	0.4	99.6
Micro companies					
1–4	2,734,191	7,321	2,726,870	0.3	99.7
5–9	950,548	3,608	946,940	0.4	99.6
Small companies					
10–19	577,397	2,594	574,803	0.4	99.6
20–49	399,566	2,286	397,280	0.6	99.4
Medium companies					
50–99	115,591	927	114,664	0.8	99.2
100–249	63,969	541	63,428	0.8	99.2
Large companies					
250–499	18,124	97	18,027	0.5	99.5
500–999	7,668	98	7,570	1.3	98.7
1,000–4,999	6,010	189	5,821	3.1	96.9
5,000–9,999	982	52	930	5.3	94.7 r
10,000–24,999	516	45	471	8.8	91.2
25,000 or more	372	29	343	7.7	92.3

r = relative standard error &gt; 50%.

**Note(s):**

Detail across rows may not add to total because of rounding. Detail across columns have been adjusted to add to total. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-23

**Companies performing or funding renewable energy generation and storage technology R&D, by industry: 2021**

(Number and percent)

Industry	NAICS code	Companies (number)	Renewable energy generation and storage			
			Number		Percent	
			Yes	No	Yes	No
All industries	11, 21–23, 31–33, 42–81	4,874,928	27,803	4,847,125	0.6	99.4
Manufacturing industries	31–33	209,282	2,198	207,084	1.1	98.9
Food	311	19,326	65	19,261	0.3	99.7
Beverage and tobacco products	312	9,354	180	9,174	1.9	98.1
Textile, apparel, and leather products	313–16	9,443	35 r	9,408	0.4 r	99.6
Wood products	321	9,546	32 r	9,514	0.3 r	99.7
Paper	322	1,500	15 r	1,485	1.0 r	99.0
Printing and related support activities	323	20,212	47	20,165	0.2	99.8
Petroleum and coal products	324	546	7	539	1.2	98.8
Chemicals	325	7,961	108	7,853	1.4	98.6
Pesticide, fertilizer, and other agricultural chemicals	3253	580	4 r	576	0.7 r	99.3
Pharmaceuticals and medicines	3254	1,536	15 r	1,521	1.0 r	99.0
Soap, cleaning compound, and toilet preparation	3256	1,652	32 r	1,620	2.0 r	98.0
Other chemicals	other 325	4,194	57	4,137	1.4	98.6
Plastics and rubber products	326	7,060	68	6,992	1.0	99.0
Nonmetallic mineral products	327	7,290	30	7,260	0.4	99.6
Primary metals	331	2,079	15	2,064	0.7	99.3
Fabricated metal products	332	46,128	406	45,722	0.9	99.1
Machinery	333	16,440	277	16,163	1.7	98.3
Computer and electronic products	334	8,527	269	8,258	3.2	96.8
Communications equipment	3342	850	32 r	818	3.8 r	96.2
Semiconductor and other electronic components	3344	2,711	143	2,568	5.3	94.7
Navigational, measuring, electromedical, and control instruments	3345	3,737	76	3,661	2.0	98.0
Other computer and electronic products	other 334	1,230	18	1,212	1.4 r	98.6
Electrical equipment, appliances, and components	335	3,925	212	3,713	5.4	94.6
Transportation equipment	336	7,325	221	7,104	3.0	97.0
Automobiles, bodies, trailers, and parts	3361–63	4,494	157	4,337	3.5	96.5
Aerospace products and parts	3364	1,044	12	1,032	1.2	98.8
Other transportation	other 336	1,787	52	1,735	2.9	97.1
Furniture and related products	337	12,060	46 r	12,014	0.4 r	99.6
Miscellaneous	339	20,536	153	20,383	0.7	99.3
Medical equipment and supplies	3391	7,602	8	7,594	0.1	99.9
Other miscellaneous manufacturing	3399	12,933	146	12,787	1.1	98.9
Nonmanufacturing industries	11, 21–23, 42–81	4,665,645	25,605	4,640,040	0.5	99.5
Agriculture, forestry, fishing, and hunting	11	19,567	50 r	19,517	0.3 r	99.7
Mining, extraction, and support activities	21	14,004	45	13,959	0.3	99.7
Utilities	22	2,994	119	2,875	4.0	96.0
Construction	23	635,568	5,881	629,687	0.9	99.1
Wholesale trade	42	241,440	1,321	240,119	0.5	99.5
Retail trade	44–45	546,067	3,022	543,045	0.6	99.4
Transportation and warehousing	48–49	165,454	742	164,712	0.4	99.6
Information	51	65,445	225	65,220	0.3	99.7
Publishing	511	17,755	44	17,711	0.2	99.8
Newspaper, periodical, book, and directory publishers	5111	9,162	10	9,152	0.1 r	99.9
Software publishers	5112	8,589	33	8,556	0.4 r	99.6
Telecommunications	517	7,319	76 r	7,243	1.0 r	99.0
Data processing, hosting, and related services	518	8,346	77 r	8,269	0.9 r	99.1

TABLE CET-23

**Companies performing or funding renewable energy generation and storage technology R&D, by industry: 2021**

(Number and percent)

Industry	NAICS code	Companies (number)	Renewable energy generation and storage			
			Number		Percent	
			Yes	No	Yes	No
Other information	other 51	32,027	29	31,998	0.1	99.9
Finance and insurance	52	198,128	541	197,587	0.3	99.7
Real estate and rental and leasing	53	283,276	860	282,416	0.3	99.7
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1,956	0	1,956	0.0	100.0
Other real estate and rental and leasing	other 53	281,321	860	280,461	0.3	99.7
Professional, scientific, and technical services	54	717,229	5,527	711,702	0.8	99.2
Legal services	5411	152,543	158 r	152,385	0.1 r	99.9
Accounting, tax preparation, bookkeeping, and payroll services	5412	109,075	267	108,808	0.2	99.8
Architectural, engineering, and related services	5413	87,994	2,272	85,722	2.6	97.4
Specialized design services	5414	29,258	120 r	29,138	0.4 r	99.6
Computer systems design and related services	5415	100,282	691	99,591	0.7	99.3
Management, scientific, and technical consulting services	5416	144,421	1,420	143,001	1.0	99.0
Scientific research and development services	5417	11,149	347	10,802	3.1	96.9
Advertising, public relations, and related services	5418	28,236	99 r	28,137	0.4 r	99.6
Other professional, scientific, and technical services	5419	54,270	140 r	54,130	0.3 r	99.7
Management of companies and enterprises	55	3,153	0	3,153	0.0	100.0
Administrative and support and waste management and remediation services	56	293,539	1,546	291,993	0.5	99.5
Educational services	61	57,078	99 r	56,979	0.2 r	99.8
Health care and social assistance	62	536,276	1,735	534,541	0.3	99.7
Health care services	621-23	469,939	1,490	468,449	0.3	99.7
Social assistance	624	66,336	247	66,089	0.4	99.6
Arts, entertainment, and recreation	71	89,491	249	89,242	0.3	99.7
Accommodation and food services	72	455,071	2,386	452,685	0.5	99.5
Other services	81	341,869	1,250	340,619	0.4	99.6

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail across rows may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Detail across columns have been adjusted to add to total. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-24

**Companies performing or funding renewable energy generation and storage technology R&D, by company size: 2021**

(Number and percent)

Employment size	Companies (number)	Renewable energy generation and storage			
		Number		Percent	
		Yes	No	Yes	No
All companies	4,874,928	27,803	4,847,125	0.6	99.4
Micro companies					
1–4	2,734,191	14,937	2,719,254	0.5	99.5
5–9	950,548	4,983	945,565	0.5	99.5
Small companies					
10–19	577,397	3,231	574,166	0.6	99.4
20–49	399,566	2,716	396,850	0.7	99.3
Medium companies					
50–99	115,591	779	114,812	0.7	99.3
100–249	63,969	532	63,437	0.8	99.2
Large companies					
250–499	18,124	193	17,931	1.1 r	98.9
500–999	7,668	86	7,582	1.1	98.9
1,000–4,999	6,010	190	5,820	3.2	96.8
5,000–9,999	982	71	911	7.2	92.8 r
10,000–24,999	516	48	468	9.4	90.6
25,000 or more	372	42	330	11.4	88.6

r = relative standard error &gt; 50%.

**Note(s):**

Detail across rows may not add to total because of rounding. Detail across columns have been adjusted to add to total. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-25

**Companies performing or funding advanced gas turbine engine technology R&D, by industry: 2021**

(Number and percent)

Industry	NAICS code	Companies (number)	Advanced gas turbine engine technologies			
			Number		Percent	
			Yes	No	Yes	No
All industries	11, 21–23, 31–33, 42–81	4,874,928	8,988	4,865,940	0.2	99.8
Manufacturing industries	31–33	209,282	927	208,355	0.4	99.6
Food	311	19,326	7 r	19,319	0.0 r	100.0
Beverage and tobacco products	312	9,354	31 r	9,323	0.3 r	99.7
Textile, apparel, and leather products	313–16	9,443	9 r	9,434	0.1 r	99.9
Wood products	321	9,546	7 r	9,539	0.1 r	99.9
Paper	322	1,500	4	1,496	0.3	99.7
Printing and related support activities	323	20,212	42 r	20,170	0.2 r	99.8
Petroleum and coal products	324	546	1 r	545	0.2 r	99.8
Chemicals	325	7,961	34	7,927	0.4 r	99.6
Pesticide, fertilizer, and other agricultural chemicals	3253	580	3 r	577	0.5 r	99.5
Pharmaceuticals and medicines	3254	1,536	5 r	1,531	0.3 r	99.7
Soap, cleaning compound, and toilet preparation	3256	1,652	3	1,649	0.2	99.8
Other chemicals	other 325	4,194	23	4,171	0.6 r	99.4
Plastics and rubber products	326	7,060	18	7,042	0.3 r	99.7
Nonmetallic mineral products	327	7,290	50 r	7,240	0.7 r	99.3
Primary metals	331	2,079	17 r	2,062	0.8 r	99.2
Fabricated metal products	332	46,128	317	45,811	0.7	99.3
Machinery	333	16,440	77	16,363	0.5	99.5
Computer and electronic products	334	8,527	114	8,413	1.3	98.7
Communications equipment	3342	850	0	850	0.0	100.0
Semiconductor and other electronic components	3344	2,711	32	2,679	1.2 r	98.8
Navigational, measuring, electromedical, and control instruments	3345	3,737	83	3,654	2.2	97.8
Other computer and electronic products	other 334	1,230	0	1,230	0.0	100.0
Electrical equipment, appliances, and components	335	3,925	51	3,874	1.3	98.7
Transportation equipment	336	7,325	78	7,247	1.1	98.9
Automobiles, bodies, trailers, and parts	3361–63	4,494	30 r	4,464	0.7 r	99.3
Aerospace products and parts	3364	1,044	41	1,003	3.9	96.1
Other transportation	other 336	1,787	9 r	1,778	0.5 r	99.5
Furniture and related products	337	12,060	32 r	12,028	0.3 r	99.7
Miscellaneous	339	20,536	27 r	20,509	0.1 r	99.9
Medical equipment and supplies	3391	7,602	0	7,602	0.0	100.0
Other miscellaneous manufacturing	3399	12,933	27 r	12,906	0.2 r	99.8
Nonmanufacturing industries	11, 21–23, 42–81	4,665,645	8,063	4,657,582	0.2	99.8
Agriculture, forestry, fishing, and hunting	11	19,567	24 r	19,543	0.1 r	99.9
Mining, extraction, and support activities	21	14,004	8 r	13,996	0.1 r	99.9
Utilities	22	2,994	40	2,954	1.4 r	98.6
Construction	23	635,568	1,088	634,480	0.2	99.8
Wholesale trade	42	241,440	527	240,913	0.2	99.8
Retail trade	44–45	546,067	995	545,072	0.2	99.8
Transportation and warehousing	48–49	165,454	268	165,186	0.2	99.8
Information	51	65,445	90	65,355	0.1 r	99.9
Publishing	511	17,755	15	17,740	0.1	99.9
Newspaper, periodical, book, and directory publishers	5111	9,162	3	9,159	0.0	100.0
Software publishers	5112	8,589	12	8,577	0.1	99.9
Telecommunications	517	7,319	56 r	7,263	0.8 r	99.2

TABLE CET-25

**Companies performing or funding advanced gas turbine engine technology R&D, by industry: 2021**

(Number and percent)

Industry	NAICS code	Companies (number)	Advanced gas turbine engine technologies			
			Number		Percent	
			Yes	No	Yes	No
Data processing, hosting, and related services	518	8,346	17	8,329	0.2	99.8
Other information	other 51	32,027	3 r	32,024	0.0 r	100.0
Finance and insurance	52	198,128	202	197,926	0.1	99.9
Real estate and rental and leasing	53	283,276	243	283,033	0.1	99.9
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1,956	0	1,956	0.0	100.0
Other real estate and rental and leasing	other 53	281,321	243	281,078	0.1	99.9
Professional, scientific, and technical services	54	717,229	1,357	715,872	0.2	99.8
Legal services	5411	152,543	200 r	152,343	0.1 r	99.9
Accounting, tax preparation, bookkeeping, and payroll services	5412	109,075	87 r	108,988	0.1 r	99.9
Architectural, engineering, and related services	5413	87,994	261	87,733	0.3	99.7
Specialized design services	5414	29,258	2	29,256	0.0	100.0
Computer systems design and related services	5415	100,282	330	99,952	0.3	99.7
Management, scientific, and technical consulting services	5416	144,421	309	144,112	0.2	99.8
Scientific research and development services	5417	11,149	111	11,038	1.0	99.0
Advertising, public relations, and related services	5418	28,236	44 r	28,192	0.2 r	99.8
Other professional, scientific, and technical services	5419	54,270	15 r	54,255	0.0 r	100.0
Management of companies and enterprises	55	3,153	0	3,153	0.0	100.0
Administrative and support and waste management and remediation services	56	293,539	302	293,237	0.1	99.9
Educational services	61	57,078	4 r	57,074	0.0 r	100.0
Health care and social assistance	62	536,276	837	535,439	0.2	99.8
Health care services	621-23	469,939	645	469,294	0.1	99.9
Social assistance	624	66,336	193 r	66,143	0.3 r	99.7
Arts, entertainment, and recreation	71	89,491	0	89,491	0.0	100.0
Accommodation and food services	72	455,071	1,564	453,507	0.3	99.7
Other services	81	341,869	535	341,334	0.2	99.8

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail across rows may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Detail across columns have been adjusted to add to total. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.



TABLE CET-26

**Companies performing or funding advanced gas turbine engine technology R&D, by company size: 2021**

(Number and percent)

Employment size	Companies (number)	Advanced gas turbine engine technologies			
		Number		Percent	
		Yes	No	Yes	No
All companies	4,874,928	8,988	4,865,940	0.2	99.8
Micro companies					
1–4	2,734,191	4,486	2,729,705	0.2	99.8
5–9	950,548	1,947	948,601	0.2	99.8
Small companies					
10–19	577,397	1,059	576,338	0.2	99.8
20–49	399,566	848	398,718	0.2	99.8
Medium companies					
50–99	115,591	285	115,306	0.2	99.8
100–249	63,969	209	63,760	0.3 r	99.7
Large companies					
250–499	18,124	36	18,088	0.2	99.8
500–999	7,668	9	7,659	0.1	99.9
1,000–4,999	6,010	60	5,950	1.0	99.0
5,000–9,999	982	26	956	2.7	97.3 r
10,000–24,999	516	17	499	3.3	96.7
25,000 or more	372	12	360	3.3	96.7

r = relative standard error &gt; 50%.

**Note(s):**

Detail across rows may not add to total because of rounding. Detail across columns have been adjusted to add to total. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-27

**Companies performing or funding advanced nuclear energy technology R&D, by industry: 2021**

(Number and percent)

Industry	NAICS code	Companies (number)	Advanced nuclear energy technologies			
			Number		Percent	
			Yes	No	Yes	No
All industries	11, 21–23, 31–33, 42–81	4,874,928	7,306	4,867,622	0.1	99.9
Manufacturing industries	31–33	209,282	344	208,938	0.2	99.8
Food	311	19,326	3 r	19,323	0.0 r	100.0
Beverage and tobacco products	312	9,354	0	9,354	0.0	100.0
Textile, apparel, and leather products	313–16	9,443	10 r	9,433	0.1 r	99.9
Wood products	321	9,546	2 r	9,544	0.0 r	100.0
Paper	322	1,500	1 r	1,499	0.1 r	99.9
Printing and related support activities	323	20,212	20 r	20,192	0.1 r	99.9
Petroleum and coal products	324	546	0	546	0.0	100.0
Chemicals	325	7,961	22	7,939	0.3 r	99.7
Pesticide, fertilizer, and other agricultural chemicals	3253	580	3 r	577	0.5 r	99.5
Pharmaceuticals and medicines	3254	1,536	5 r	1,531	0.3 r	99.7
Soap, cleaning compound, and toilet preparation	3256	1,652	3	1,649	0.2	99.8
Other chemicals	other 325	4,194	13 r	4,181	0.3 r	99.7
Plastics and rubber products	326	7,060	18	7,042	0.3 r	99.7
Nonmetallic mineral products	327	7,290	16 r	7,274	0.2 r	99.8
Primary metals	331	2,079	11 r	2,068	0.5 r	99.5
Fabricated metal products	332	46,128	49 r	46,079	0.1 r	99.9
Machinery	333	16,440	23 r	16,417	0.1 r	99.9
Computer and electronic products	334	8,527	60	8,467	0.7	99.3
Communications equipment	3342	850	1 r	849	0.1 r	99.9
Semiconductor and other electronic components	3344	2,711	26 r	2,685	1.0 r	99.0
Navigational, measuring, electromedical, and control instruments	3345	3,737	28 r	3,709	0.7 r	99.3
Other computer and electronic products	other 334	1,230	2	1,228	0.2	99.8
Electrical equipment, appliances, and components	335	3,925	41 r	3,884	1.0 r	99.0
Transportation equipment	336	7,325	32 r	7,293	0.4 r	99.6
Automobiles, bodies, trailers, and parts	3361–63	4,494	19 r	4,475	0.4 r	99.6
Aerospace products and parts	3364	1,044	6 r	1,038	0.6 r	99.4
Other transportation	other 336	1,787	6 r	1,781	0.3 r	99.7
Furniture and related products	337	12,060	6	12,054	0.1 r	99.9
Miscellaneous	339	20,536	24 r	20,512	0.1 r	99.9
Medical equipment and supplies	3391	7,602	3 r	7,599	0.0 r	100.0
Other miscellaneous manufacturing	3399	12,933	22 r	12,911	0.2 r	99.8
Nonmanufacturing industries	11, 21–23, 42–81	4,665,645	6,961	4,658,684	0.1	99.9
Agriculture, forestry, fishing, and hunting	11	19,567	0	19,567	0.0	100.0
Mining, extraction, and support activities	21	14,004	10 r	13,994	0.1 r	99.9
Utilities	22	2,994	17	2,977	0.6	99.4
Construction	23	635,568	684	634,884	0.1	99.9
Wholesale trade	42	241,440	340	241,100	0.1	99.9
Retail trade	44–45	546,067	1,056	545,011	0.2	99.8
Transportation and warehousing	48–49	165,454	247 r	165,207	0.1 r	99.9
Information	51	65,445	112 r	65,333	0.2 r	99.8
Publishing	511	17,755	42 r	17,713	0.2 r	99.8
Newspaper, periodical, book, and directory publishers	5111	9,162	3	9,159	0.0	100.0
Software publishers	5112	8,589	40 r	8,549	0.5 r	99.5
Telecommunications	517	7,319	56 r	7,263	0.8 r	99.2
Data processing, hosting, and related services	518	8,346	13	8,333	0.2 r	99.8

TABLE CET-27

**Companies performing or funding advanced nuclear energy technology R&D, by industry: 2021**

(Number and percent)

Industry	NAICS code	Companies (number)	Advanced nuclear energy technologies			
			Number		Percent	
			Yes	No	Yes	No
Other information	other 51	32,027	3 r	32,024	0.0 r	100.0
Finance and insurance	52	198,128	262	197,866	0.1	99.9
Real estate and rental and leasing	53	283,276	288	282,988	0.1	99.9
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1,956	0	1,956	0.0	100.0
Other real estate and rental and leasing	other 53	281,321	288	281,033	0.1	99.9
Professional, scientific, and technical services	54	717,229	1,022	716,207	0.1	99.9
Legal services	5411	152,543	105 r	152,438	0.1 r	99.9
Accounting, tax preparation, bookkeeping, and payroll services	5412	109,075	87 r	108,988	0.1 r	99.9
Architectural, engineering, and related services	5413	87,994	236	87,758	0.3	99.7
Specialized design services	5414	29,258	0	29,258	0.0	100.0
Computer systems design and related services	5415	100,282	173	100,109	0.2	99.8
Management, scientific, and technical consulting services	5416	144,421	316	144,105	0.2	99.8
Scientific research and development services	5417	11,149	84	11,065	0.8	99.2
Advertising, public relations, and related services	5418	28,236	5 r	28,231	0.0 r	100.0
Other professional, scientific, and technical services	5419	54,270	15 r	54,255	0.0 r	100.0
Management of companies and enterprises	55	3,153	0	3,153	0.0	100.0
Administrative and support and waste management and remediation services	56	293,539	351	293,188	0.1	99.9
Educational services	61	57,078	4 r	57,074	0.0 r	100.0
Health care and social assistance	62	536,276	755	535,521	0.1	99.9
Health care services	621-23	469,939	647	469,292	0.1	99.9
Social assistance	624	66,336	108 r	66,228	0.2 r	99.8
Arts, entertainment, and recreation	71	89,491	0	89,491	0.0	100.0
Accommodation and food services	72	455,071	1,443	453,628	0.3	99.7
Other services	81	341,869	391	341,478	0.1	99.9

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail across rows may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Detail across columns have been adjusted to add to total. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-28

**Companies performing or funding advanced nuclear energy technology R&D, by company size: 2021**

(Number and percent)

Employment size	Companies (number)	Advanced nuclear energy technologies			
		Number		Percent	
		Yes	No	Yes	No
All companies	4,874,928	7,306	4,867,622	0.1	99.9
Micro companies					
1-4	2,734,191	4,209	2,729,982	0.2	99.8
5-9	950,548	1,493	949,055	0.2	99.8
Small companies					
10-19	577,397	831	576,566	0.1	99.9
20-49	399,566	476	399,090	0.1	99.9
Medium companies					
50-99	115,591	184	115,407	0.2	99.8
100-249	63,969	34	63,935	0.1	99.9
Large companies					
250-499	18,124	15	18,109	0.1	99.9
500-999	7,668	9	7,659	0.1	99.9
1,000-4,999	6,010	29	5,981	0.5	99.5
5,000-9,999	982	10	972	1.1	98.9 r
10,000-24,999	516	11	505	2.0	98.0
25,000 or more	372	4	368	1.0	99.0

r = relative standard error &gt; 50%.

**Note(s):**

Detail across rows may not add to total because of rounding. Detail across columns have been adjusted to add to total. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-29

## Companies using advanced computing, by industry: 2021

(Percent)

Industry	NAICS code	Companies (number)	A lot	Somewhat	A little	Not at all
All industries	11, 21–23, 31–33, 42–81	4,874,928	6.6	8.7	10.0	74.7
Manufacturing industries	31–33	209,282	4.0	8.9	11.8	75.3
Food	311	19,326	2.9	5.2	11.2	80.8
Beverage and tobacco products	312	9,354	3.2	7.7	12.0	77.1
Textile, apparel, and leather products	313–16	9,443	2.8	5.5	8.7	83.0
Wood products	321	9,546	2.6	9.1	10.2	78.1
Paper	322	1,500	4.3	17.2	13.2	65.4
Printing and related support activities	323	20,212	5.5	7.8	11.9	74.8
Petroleum and coal products	324	546	2.2	3.0	17.4	77.5
Chemicals	325	7,961	4.6	9.3	12.2	73.8
Pesticide, fertilizer, and other agricultural chemicals	3253	580	2.6	12.7	18.0	66.7
Pharmaceuticals and medicines	3254	1,536	7.1	10.3	14.1	68.5
Soap, cleaning compound, and toilet preparation	3256	1,652	2.3	9.0	8.5	80.2
Other chemicals	other 325	4,194	5.0	8.6	12.0	74.4
Plastics and rubber products	326	7,060	4.4	6.9	15.8	72.9
Nonmetallic mineral products	327	7,290	2.7	6.7	10.7	79.9
Primary metals	331	2,079	4.9	9.1	12.2	73.7
Fabricated metal products	332	46,128	3.1	9.3	11.7	75.9
Machinery	333	16,440	4.5	13.1	13.9	68.5
Computer and electronic products	334	8,527	8.7	14.4	14.6	62.3
Communications equipment	3342	850	10.3	19.2	10.7	59.8
Semiconductor and other electronic components	3344	2,711	7.7	12.6	13.9	65.8
Navigational, measuring, electromedical, and control instruments	3345	3,737	7.9	14.5	16.8	60.7
Other computer and electronic products	other 334	1,230	12.4	15.0	12.3	60.4
Electrical equipment, appliances, and components	335	3,925	4.1	11.3	8.6	76.1
Transportation equipment	336	7,325	3.8	11.8	10.6	73.9
Automobiles, bodies, trailers, and parts	3361–63	4,494	2.2	12.5	10.7	74.6
Aerospace products and parts	3364	1,044	5.0	17.3	12.8	64.9
Other transportation	other 336	1,787	6.7	7.1	8.6	77.6
Furniture and related products	337	12,060	2.8	7.2	12.0	78.0
Miscellaneous	339	20,536	5.0	8.9	11.5	74.6
Medical equipment and supplies	3391	7,602	6.8	9.4	10.6	73.3
Other miscellaneous manufacturing	3399	12,933	3.9	8.6	12.1	75.4
Nonmanufacturing industries	11, 21–23, 42–81	4,665,645	6.7	8.7	9.9	74.7
Agriculture, forestry, fishing, and hunting	11	19,567	3.3	6.4	9.4	80.9
Mining, extraction, and support activities	21	14,004	4.0	9.6	10.4	76.0
Utilities	22	2,994	4.9	13.8	8.6	72.7
Construction	23	635,568	3.1	6.4	9.5	80.9
Wholesale trade	42	241,440	5.0	7.2	10.3	77.5
Retail trade	44–45	546,067	4.0	7.2	10.1	78.7
Transportation and warehousing	48–49	165,454	4.4	7.5	10.2	77.8
Information	51	65,445	17.2	14.7	10.5	57.6
Publishing	511	17,755	22.4	14.1	8.8	54.8
Newspaper, periodical, book, and directory publishers	5111	9,162	9.5	10.6	8.3	71.6
Software publishers	5112	8,589	36.2	17.7	9.3	36.8
Telecommunications	517	7,319	10.9	17.5	12.4	59.2
Data processing, hosting, and related services	518	8,346	32.3	17.2	11.2	39.3
Other information	other 51	32,027	11.9	13.8	10.8	63.5
Finance and insurance	52	198,128	10.7	12.5	10.9	65.9

TABLE CET-29

**Companies using advanced computing, by industry: 2021**

(Percent)

Industry	NAICS code	Companies (number)	A lot	Somewhat	A little	Not at all
Real estate and rental and leasing	53	283,276	6.0	8.7	9.0	76.3
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1,956	14.3	11.5	12.9	r 61.3
Other real estate and rental and leasing	other 53	281,321	5.9	8.7	9.0	76.4
Professional, scientific, and technical services	54	717,229	15.0	13.4	11.2	60.4
Legal services	5411	152,543	13.0	13.0	11.1	62.8
Accounting, tax preparation, bookkeeping, and payroll services	5412	109,075	19.5	16.4	11.9	52.2
Architectural, engineering, and related services	5413	87,994	12.7	11.8	11.7	63.8
Specialized design services	5414	29,258	11.6	11.8	11.9	64.6
Computer systems design and related services	5415	100,282	27.2	17.1	10.5	45.2
Management, scientific, and technical consulting services	5416	144,421	10.6	11.3	10.3	67.7
Scientific research and development services	5417	11,149	12.3	15.2	12.4	60.1
Advertising, public relations, and related services	5418	28,236	10.5	12.9	11.0	65.6
Other professional, scientific, and technical services	5419	54,270	9.3	10.8	12.9	67.0
Management of companies and enterprises	55	3,153	5.4	r 8.6	r 13.8	72.1
Administrative and support and waste management and remediation services	56	293,539	5.2	7.0	9.3	78.5
Educational services	61	57,078	7.2	8.5	8.8	75.6
Health care and social assistance	62	536,276	9.0	10.6	10.8	69.6
Health care services	621-23	469,939	9.6	11.2	11.1	68.1
Social assistance	624	66,336	4.2	7.1	8.6	80.1
Arts, entertainment, and recreation	71	89,491	4.4	7.6	8.8	79.2
Accommodation and food services	72	455,071	2.4	5.6	8.2	83.9
Other services	81	341,869	2.8	5.8	9.3	82.1

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail across rows may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Detail across columns have been adjusted to add to total. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-30

**Companies using advanced computing, by company size: 2021**

(Percent)

Employment size	Companies (number)	A lot	Somewhat	A little	Not at all
All companies	4,874,928	6.6	8.7	10.0	74.7
Micro companies					
1–4	2,734,191	5.5	7.5	9.2	77.8
5–9	950,548	6.9	8.4	10.4	74.3
Small companies					
10–19	577,397	7.6	10.5	11.3	70.6
20–49	399,566	9.0	11.3	11.3	68.3
Medium companies					
50–99	115,591	11.2	13.5	13.5	61.7
100–249	63,969	12.0	15.2	14.3	58.5
Large companies					
250–499	18,124	17.2	17.6	13.4	51.8
500–999	7,668	17.6	22.0	14.4	46.1
1,000–4,999	6,010	19.4 r	21.7	12.8 r	46.2
5,000–9,999	982	22.5	29.8 r	11.5	36.3
10,000–24,999	516	26.7	29.6	17.3	26.5
25,000 or more	372	28.9	24.6	15.0	31.5

r = relative standard error &gt; 50%.

**Note(s):**

Detail across rows may not add to total because of rounding. Detail across columns have been adjusted to add to total. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-31

## Companies using advanced sensing, by industry: 2021

(Percent)

Industry	NAICS code	Companies (number)	A lot	Somewhat	A little	Not at all
All industries	11, 21–23, 31–33, 42–81	4,874,928	0.6	1.8	2.8	94.8
Manufacturing industries	31–33	209,282	1.0	2.9	4.5	91.5
Food	311	19,326	0.9 r	1.3	4.0	93.8
Beverage and tobacco products	312	9,354	0.4	1.5	3.4	94.7
Textile, apparel, and leather products	313–16	9,443	0.3	1.5	2.4	95.7
Wood products	321	9,546	1.1	1.8	4.1	92.9
Paper	322	1,500	0.7	3.2	6.9	89.1
Printing and related support activities	323	20,212	0.2	1.4	3.2	95.2
Petroleum and coal products	324	546	0.4 r	2.2	1.7	95.6
Chemicals	325	7,961	0.6	4.7	4.6	90.0
Pesticide, fertilizer, and other agricultural chemicals	3253	580	0.0	0.5 r	6.2 r	93.3
Pharmaceuticals and medicines	3254	1,536	1.6	3.7	6.8	88.0
Soap, cleaning compound, and toilet preparation	3256	1,652	0.2	6.0 r	2.6 r	91.1
Other chemicals	other 325	4,194	0.6	5.2	4.4	89.8
Plastics and rubber products	326	7,060	1.3	3.1	8.2	87.4
Nonmetallic mineral products	327	7,290	0.5 r	1.5	3.1	94.9
Primary metals	331	2,079	0.4 r	8.0	6.1	85.5
Fabricated metal products	332	46,128	1.0	3.1	4.5	91.3
Machinery	333	16,440	2.0	5.8	6.7	85.5
Computer and electronic products	334	8,527	5.2	8.2	9.0	77.6
Communications equipment	3342	850	2.7	9.2	9.8 r	78.4
Semiconductor and other electronic components	3344	2,711	4.1	8.1	9.7	78.0
Navigational, measuring, electromedical, and control instruments	3345	3,737	6.9	8.4	9.2	75.5
Other computer and electronic products	other 334	1,230	3.8 r	6.7	6.5	83.0
Electrical equipment, appliances, and components	335	3,925	0.8	5.7	7.5	85.9
Transportation equipment	336	7,325	1.3	4.2	5.6	88.9
Automobiles, bodies, trailers, and parts	3361–63	4,494	0.8	5.1	5.6	88.4
Aerospace products and parts	3364	1,044	2.7 r	5.1	8.1	84.1
Other transportation	other 336	1,787	1.7 r	1.1	4.4	92.8
Furniture and related products	337	12,060	0.4	1.0	2.8	95.7
Miscellaneous	339	20,536	1.2	2.7	3.2	92.8
Medical equipment and supplies	3391	7,602	2.8	3.9	3.6	89.7
Other miscellaneous manufacturing	3399	12,933	0.4 r	2.1	2.9	94.6
Nonmanufacturing industries	11, 21–23, 42–81	4,665,645	0.6	1.7	2.7	95.0
Agriculture, forestry, fishing, and hunting	11	19,567	0.1 r	2.5	3.3	94.0
Mining, extraction, and support activities	21	14,004	0.3	2.3	3.3	94.1
Utilities	22	2,994	1.3	3.1	2.9	92.6
Construction	23	635,568	0.3	1.3	2.4	96.0
Wholesale trade	42	241,440	0.5	1.8	3.2	94.5
Retail trade	44–45	546,067	0.3	1.4	2.3	96.0
Transportation and warehousing	48–49	165,454	0.5	1.8	2.8	94.9
Information	51	65,445	1.6	2.0	4.7	91.8
Publishing	511	17,755	2.6	1.7	4.0	91.8
Newspaper, periodical, book, and directory publishers	5111	9,162	0.1 r	0.5	2.3	97.1
Software publishers	5112	8,589	5.3	2.8	5.7	86.2
Telecommunications	517	7,319	2.3	3.6	7.3	86.8
Data processing, hosting, and related services	518	8,346	2.3	3.7	5.4	88.6
Other information	other 51	32,027	0.6 r	1.3	4.2	93.8
Finance and insurance	52	198,128	0.2	1.2	2.7	95.9



TABLE CET-31

**Companies using advanced sensing, by industry: 2021**

(Percent)

Industry	NAICS code	Companies (number)	A lot	Somewhat	A little	Not at all
Real estate and rental and leasing	53	283,276	0.2	0.9	1.9	97.0
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1,956	0.0	0.0	0.0	100.0
Other real estate and rental and leasing	other 53	281,321	0.2	0.9	1.9	97.0
Professional, scientific, and technical services	54	717,229	1.1	2.3	3.9	92.7
Legal services	5411	152,543	0.5	1.3	2.8	95.4
Accounting, tax preparation, bookkeeping, and payroll services	5412	109,075	0.3	0.9	3.1	95.7
Architectural, engineering, and related services	5413	87,994	2.9	4.5	6.2	86.4
Specialized design services	5414	29,258	0.2 r	1.0	3.6	95.2
Computer systems design and related services	5415	100,282	2.2	3.7	6.2	87.9
Management, scientific, and technical consulting services	5416	144,421	0.8	2.1	3.2	93.9
Scientific research and development services	5417	11,149	5.2	5.4	6.3	83.1
Advertising, public relations, and related services	5418	28,236	0.1	1.5	2.9	95.5
Other professional, scientific, and technical services	5419	54,270	0.5 r	2.5	3.1	93.9
Management of companies and enterprises	55	3,153	0.0	4.5 r	2.4 r	93.1
Administrative and support and waste management and remediation services	56	293,539	0.4	0.9	1.6	97.1
Educational services	61	57,078	0.1 r	1.5	1.0	97.4
Health care and social assistance	62	536,276	1.5	3.0	3.3	92.2
Health care services	621-23	469,939	1.7	3.2	3.6	91.5
Social assistance	624	66,336	0.3	1.5	1.2	97.0
Arts, entertainment, and recreation	71	89,491	0.3 r	1.0	2.3	96.4
Accommodation and food services	72	455,071	0.3	1.3	2.0	96.4
Other services	81	341,869	0.2	1.6	2.4	95.8

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail across rows may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Detail across columns have been adjusted to add to total. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-32

**Companies using advanced sensing, by company size: 2021**

(Percent)

Employment size	Companies (number)	A lot	Somewhat	A little	Not at all
All companies	4,874,928	0.6	1.8	2.8	94.8
Micro companies					
1-4	2,734,191	0.5	1.5	2.4	95.6
5-9	950,548	0.6	1.8	2.8	94.8
Small companies					
10-19	577,397	0.7	2.1	2.8	94.3
20-49	399,566	0.8	2.1	3.7	93.4
Medium companies					
50-99	115,591	1.0	3.6	4.5	90.9
100-249	63,969	1.2	4.1	6.5	88.3
Large companies					
250-499	18,124	1.9	6.0	9.4	82.8
500-999	7,668	1.7	6.1	11.1	81.2
1,000-4,999	6,010	2.7	7.6	9.5	80.1
5,000-9,999	982	3.3	17.2	r 13.2	66.2
10,000-24,999	516	5.0	16.3	17.1	61.6
25,000 or more	372	7.3	14.1	18.4	60.2

r = relative standard error &gt; 50%.

**Note(s):**

Detail across rows may not add to total because of rounding. Detail across columns have been adjusted to add to total. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-33

## Companies using artificial intelligence, by industry: 2021

(Percent)

Industry	NAICS code	Companies (number)	A lot		Somewhat		A little		Not at all
All industries	11, 21–23, 31–33, 42–81	4,874,928	0.5		1.6		2.7		95.2
Manufacturing industries	31–33	209,282	0.4		1.5		2.9		95.2
Food	311	19,326	0.3		0.4		1.8		97.4
Beverage and tobacco products	312	9,354	0.2	r	0.3		1.4		98.1
Textile, apparel, and leather products	313–16	9,443	0.1	r	1.0	r	2.1		96.8
Wood products	321	9,546	0.1	r	1.1		1.4		97.3
Paper	322	1,500	0.0		0.7		9.2	r	90.1
Printing and related support activities	323	20,212	0.3	r	0.8		2.4		96.5
Petroleum and coal products	324	546	0.2	r	1.4		1.2		97.2
Chemicals	325	7,961	0.4		2.4		3.2		94.0
Pesticide, fertilizer, and other agricultural chemicals	3253	580	0.0		0.9	r	6.4	r	92.7
Pharmaceuticals and medicines	3254	1,536	1.2	r	2.8	r	3.8		92.3
Soap, cleaning compound, and toilet preparation	3256	1,652	0.1	r	5.7	r	2.3	r	91.9
Other chemicals	other 325	4,194	0.2	r	1.2		2.8		95.9
Plastics and rubber products	326	7,060	0.3		1.0		3.6		95.1
Nonmetallic mineral products	327	7,290	0.4	r	2.2		1.7		95.7
Primary metals	331	2,079	0.2		1.7	r	3.5	r	94.7
Fabricated metal products	332	46,128	0.3	r	1.5		3.2		95.0
Machinery	333	16,440	0.8	r	2.3		4.5		92.4
Computer and electronic products	334	8,527	2.2		4.2		5.6		88.0
Communications equipment	3342	850	2.3	r	2.2		5.3		90.3
Semiconductor and other electronic components	3344	2,711	1.2	r	4.4		5.4		89.0
Navigational, measuring, electromedical, and control instruments	3345	3,737	1.9		5.0	r	6.2		86.9
Other computer and electronic products	other 334	1,230	4.7	r	3.4		4.9		87.0
Electrical equipment, appliances, and components	335	3,925	0.3		2.2		5.3		92.2
Transportation equipment	336	7,325	0.9		1.7		2.9		94.5
Automobiles, bodies, trailers, and parts	3361–63	4,494	0.6	r	1.6		3.0		94.7
Aerospace products and parts	3364	1,044	1.1	r	2.7	r	4.9		91.3
Other transportation	other 336	1,787	1.5	r	1.1	r	1.3	r	96.0
Furniture and related products	337	12,060	0.2	r	1.2		1.6		97.0
Miscellaneous	339	20,536	0.4		1.5		2.8		95.3
Medical equipment and supplies	3391	7,602	0.6		2.9		5.2		91.3
Other miscellaneous manufacturing	3399	12,933	0.2	r	0.7		1.2		97.8
Nonmanufacturing industries	11, 21–23, 42–81	4,665,645	0.5		1.6		2.7		95.2
Agriculture, forestry, fishing, and hunting	11	19,567	0.4	r	1.0		1.7		96.9
Mining, extraction, and support activities	21	14,004	0.6	r	1.1		1.6		96.7
Utilities	22	2,994	0.6		0.8		2.4		96.2
Construction	23	635,568	0.2		0.9		1.5		97.4
Wholesale trade	42	241,440	0.4		1.1		2.4		96.0
Retail trade	44–45	546,067	0.3		1.2		2.2		96.3
Transportation and warehousing	48–49	165,454	0.2		1.5		2.3		96.0
Information	51	65,445	2.6		4.5		7.5		85.5
Publishing	511	17,755	5.0		5.0		7.7		82.3
Newspaper, periodical, book, and directory publishers	5111	9,162	0.3	r	0.9	r	2.1		96.7
Software publishers	5112	8,589	10.1		9.5		13.7		66.7
Telecommunications	517	7,319	0.3		3.3		3.9		92.5
Data processing, hosting, and related services	518	8,346	5.4		8.8		11.1		74.7
Other information	other 51	32,027	1.0		3.3		7.1		88.5
Finance and insurance	52	198,128	0.4		2.3		3.7		93.6

TABLE CET-33

**Companies using artificial intelligence, by industry: 2021**

(Percent)

Industry	NAICS code	Companies (number)	A lot	Somewhat	A little	Not at all
Real estate and rental and leasing	53	283,276	0.3	1.5	2.5	95.7
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1,956	0.0	2.3	2.3	95.4
Other real estate and rental and leasing	other 53	281,321	0.3	1.5	2.5	95.7
Professional, scientific, and technical services	54	717,229	1.2	2.8	5.0	90.9
Legal services	5411	152,543	0.3	0.9	2.1	96.7
Accounting, tax preparation, bookkeeping, and payroll services	5412	109,075	0.6	2.4	4.0	93.0
Architectural, engineering, and related services	5413	87,994	0.7	1.6	3.3	94.4
Specialized design services	5414	29,258	0.3	1.4	4.5	93.7
Computer systems design and related services	5415	100,282	4.1	6.9	11.9	77.1
Management, scientific, and technical consulting services	5416	144,421	1.1	2.6	5.6	90.7
Scientific research and development services	5417	11,149	5.4	5.9	7.7	81.1
Advertising, public relations, and related services	5418	28,236	1.4	3.4	4.8	90.4
Other professional, scientific, and technical services	5419	54,270	0.7	2.8	4.3	92.1
Management of companies and enterprises	55	3,153	2.3	0.0	1.9	95.8
Administrative and support and waste management and remediation services	56	293,539	0.4	1.1	1.8	96.7
Educational services	61	57,078	1.0	1.4	2.3	95.3
Health care and social assistance	62	536,276	0.6	1.7	3.0	94.7
Health care services	621-23	469,939	0.6	1.7	3.1	94.6
Social assistance	624	66,336	0.3	1.4	1.8	96.5
Arts, entertainment, and recreation	71	89,491	0.3	0.8	2.4	96.5
Accommodation and food services	72	455,071	0.2	1.3	1.7	96.8
Other services	81	341,869	0.2	1.2	1.8	96.9

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail across rows may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Detail across columns have been adjusted to add to total. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-34

**Companies using artificial intelligence, by company size: 2021**

(Percent)

Employment size	Companies (number)	A lot	Somewhat	A little	Not at all
All companies	4,874,928	0.5	1.6	2.7	95.2
Micro companies					
1–4	2,734,191	0.4	1.5	2.4	95.7
5–9	950,548	0.5	1.5	2.8	95.2
Small companies					
10–19	577,397	0.5	1.7	3.0	94.8
20–49	399,566	0.5	1.8	2.8	94.9
Medium companies					
50–99	115,591	0.7	2.3	3.9	93.1
100–249	63,969	0.6	3.4	5.3	90.6
Large companies					
250–499	18,124	2.4	4.5	6.8	86.3
500–999	7,668	1.3 r	3.5 r	11.0	84.2
1,000–4,999	6,010	1.8	6.4	12.4	79.4
5,000–9,999	982	2.7	17.3 r	15.4	64.6
10,000–24,999	516	5.3	13.0	26.2	55.5
25,000 or more	372	8.3	13.3	22.6	55.8

r = relative standard error &gt; 50%.

**Note(s):**

Detail across rows may not add to total because of rounding. Detail across columns have been adjusted to add to total. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-35

## Companies using autonomous systems and robotics, by industry: 2021

(Percent)

Industry	NAICS code	Companies (number)	A lot	Somewhat	A little	Not at all
All industries	11, 21–23, 31–33, 42–81	4,874,928	0.3	0.8	1.3	97.6
Manufacturing industries	31–33	209,282	1.7	3.0	3.5	91.8
Food	311	19,326	0.9	1.7	2.0	95.4
Beverage and tobacco products	312	9,354	0.3	0.6	2.6	96.5
Textile, apparel, and leather products	313–16	9,443	0.3	0.8	r 1.9	96.9
Wood products	321	9,546	1.2	2.2	1.7	94.9
Paper	322	1,500	2.3	2.7	5.0	90.0
Printing and related support activities	323	20,212	0.1	0.5	r 0.7	98.6
Petroleum and coal products	324	546	1.4	1.7	1.4	95.4
Chemicals	325	7,961	1.1	2.1	3.2	93.7
Pesticide, fertilizer, and other agricultural chemicals	3253	580	1.2	r 0.9	r 7.6	r 90.2
Pharmaceuticals and medicines	3254	1,536	1.7	3.5	r 3.5	91.4
Soap, cleaning compound, and toilet preparation	3256	1,652	0.8	r 2.6	r 2.4	r 94.2
Other chemicals	other 325	4,194	0.7	1.6	2.7	95.0
Plastics and rubber products	326	7,060	3.8	5.1	5.3	85.9
Nonmetallic mineral products	327	7,290	0.8	2.5	2.3	94.4
Primary metals	331	2,079	4.6	4.9	5.5	85.0
Fabricated metal products	332	46,128	2.6	3.5	4.3	89.6
Machinery	333	16,440	3.3	8.0	7.6	81.1
Computer and electronic products	334	8,527	2.1	4.7	6.9	86.3
Communications equipment	3342	850	2.0	2.9	r 5.4	r 89.8
Semiconductor and other electronic components	3344	2,711	3.1	6.9	8.0	82.0
Navigational, measuring, electromedical, and control instruments	3345	3,737	1.5	r 3.6	7.6	87.3
Other computer and electronic products	other 334	1,230	2.0	r 3.8	4.2	90.0
Electrical equipment, appliances, and components	335	3,925	1.8	3.5	r 5.3	89.4
Transportation equipment	336	7,325	3.6	3.9	5.7	86.8
Automobiles, bodies, trailers, and parts	3361–63	4,494	4.1	3.7	6.9	85.3
Aerospace products and parts	3364	1,044	5.0	7.1	5.2	82.7
Other transportation	other 336	1,787	1.7	2.6	r 2.7	93.1
Furniture and related products	337	12,060	1.9	2.0	1.9	94.3
Miscellaneous	339	20,536	0.7	3.2	2.7	93.4
Medical equipment and supplies	3391	7,602	1.2	4.2	3.6	90.9
Other miscellaneous manufacturing	3399	12,933	0.5	2.7	2.1	94.7
Nonmanufacturing industries	11, 21–23, 42–81	4,665,645	0.2	0.7	1.1	97.9
Agriculture, forestry, fishing, and hunting	11	19,567	0.3	r 1.3	r 1.6	96.9
Mining, extraction, and support activities	21	14,004	0.5	r 1.0	1.2	97.2
Utilities	22	2,994	0.2	r 1.0	r 0.6	98.1
Construction	23	635,568	0.2	0.6	1.0	98.1
Wholesale trade	42	241,440	0.4	1.0	1.6	97.0
Retail trade	44–45	546,067	0.2	0.7	1.2	97.9
Transportation and warehousing	48–49	165,454	0.3	0.8	1.4	97.5
Information	51	65,445	0.4	0.6	1.5	97.5
Publishing	511	17,755	0.5	0.4	0.7	98.3
Newspaper, periodical, book, and directory publishers	5111	9,162	0.1	0.1	0.1	99.7
Software publishers	5112	8,589	1.1	0.6	1.5	96.8
Telecommunications	517	7,319	0.5	r 1.5	r 1.4	96.6
Data processing, hosting, and related services	518	8,346	0.6	r 1.1	r 1.3	96.9
Other information	other 51	32,027	0.2	r 0.4	1.9	97.5
Finance and insurance	52	198,128	0.1	0.5	0.6	98.8

TABLE CET-35

**Companies using autonomous systems and robotics, by industry: 2021**

(Percent)

Industry	NAICS code	Companies (number)	A lot	Somewhat	A little	Not at all
Real estate and rental and leasing	53	283,276	0.0	0.4	0.6	99.0
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1,956	0.0	0.0	2.2 r	97.8
Other real estate and rental and leasing	other 53	281,321	0.0	0.4	0.6	99.0
Professional, scientific, and technical services	54	717,229	0.5	1.0	1.3	97.1
Legal services	5411	152,543	0.1 r	0.3	0.5	99.1
Accounting, tax preparation, bookkeeping, and payroll services	5412	109,075	0.1 r	0.4	0.7	98.8
Architectural, engineering, and related services	5413	87,994	2.0	2.4	2.8	92.9
Specialized design services	5414	29,258	0.2 r	0.4 r	0.5 r	98.9
Computer systems design and related services	5415	100,282	0.6	1.8	2.7	94.9
Management, scientific, and technical consulting services	5416	144,421	0.4	0.7	1.1	97.8
Scientific research and development services	5417	11,149	2.4	3.9	4.3	89.3
Advertising, public relations, and related services	5418	28,236	0.0	0.6	0.7	98.7
Other professional, scientific, and technical services	5419	54,270	0.4	0.8	1.0	97.7
Management of companies and enterprises	55	3,153	2.3 r	0.0	0.0	97.7
Administrative and support and waste management and remediation services	56	293,539	0.1	0.4	0.7	98.7
Educational services	61	57,078	0.0	0.5 r	0.9	98.5
Health care and social assistance	62	536,276	0.3	0.9	1.1	97.6
Health care services	621-23	469,939	0.3	0.9	1.1	97.6
Social assistance	624	66,336	0.1 r	0.6	0.8	98.4
Arts, entertainment, and recreation	71	89,491	0.1 r	0.6	0.9	98.3
Accommodation and food services	72	455,071	0.1	0.9	1.2	97.9
Other services	81	341,869	0.2	0.9	1.2	97.7

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail across rows may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Detail across columns have been adjusted to add to total. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-36

**Companies using autonomous systems and robotics, by company size: 2021**

(Percent)

Employment size	Companies (number)	A lot	Somewhat	A little	Not at all
All companies	4,874,928	0.3	0.8	1.3	97.6
Micro companies					
1-4	2,734,191	0.2	0.7	0.9	98.1
5-9	950,548	0.3	0.8	1.3	97.6
Small companies					
10-19	577,397	0.4	1.0	1.3	97.3
20-49	399,566	0.4	1.3	1.5	96.8
Medium companies					
50-99	115,591	1.0	1.9	2.6	94.4
100-249	63,969	1.4	2.1	3.1	93.4
Large companies					
250-499	18,124	1.8	4.1	4.8	89.3
500-999	7,668	2.4	3.4	5.8	r 88.4
1,000-4,999	6,010	2.6	6.0	7.4	84.0
5,000-9,999	982	4.5	9.6	10.6	75.3
10,000-24,999	516	4.1	13.8	15.4	66.6
25,000 or more	372	5.3	14.0	13.6	67.1

r = relative standard error &gt; 50%.

**Note(s):**

Detail across rows may not add to total because of rounding. Detail across columns have been adjusted to add to total. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.



TABLE CET-37

## Companies using additive manufacturing, by industry: 2021

(Percent)

Industry	NAICS code	Companies (number)	A lot	Somewhat	A little	Not at all
All industries	11, 21–23, 31–33, 42–81	4,874,928	0.3	1.0	1.7	97.0
Manufacturing industries	31–33	209,282	1.8	3.8	6.5	88.0
Food	311	19,326	0.2	0.6	1.3	97.9
Beverage and tobacco products	312	9,354	0.1	0.5	1.6	97.8
Textile, apparel, and leather products	313–16	9,443	0.3	2.1	3.6	93.9
Wood products	321	9,546	0.3	1.7	3.3	94.7
Paper	322	1,500	0.6	2.9	8.4	88.1
Printing and related support activities	323	20,212	0.4	1.5	2.4	95.7
Petroleum and coal products	324	546	0.4	0.5	1.4	97.6
Chemicals	325	7,961	0.9	2.2	6.5	90.3
Pesticide, fertilizer, and other agricultural chemicals	3253	580	0.0	0.9	5.3	93.8
Pharmaceuticals and medicines	3254	1,536	1.7	3.5	6.2	88.7
Soap, cleaning compound, and toilet preparation	3256	1,652	0.2	1.1	7.8	90.8
Other chemicals	other 325	4,194	1.0	2.3	6.3	90.4
Plastics and rubber products	326	7,060	2.6	4.3	10.0	83.1
Nonmetallic mineral products	327	7,290	0.2	2.9	4.1	92.8
Primary metals	331	2,079	0.8	5.0	8.9	85.3
Fabricated metal products	332	46,128	1.3	4.3	7.8	86.6
Machinery	333	16,440	2.4	5.1	13.4	79.1
Computer and electronic products	334	8,527	3.6	9.2	13.4	73.8
Communications equipment	3342	850	2.1	6.7	18.1	73.2
Semiconductor and other electronic components	3344	2,711	3.4	9.8	10.8	76.0
Navigational, measuring, electromedical, and control instruments	3345	3,737	4.8	10.4	15.1	69.8
Other computer and electronic products	other 334	1,230	1.5	6.1	10.5	81.8
Electrical equipment, appliances, and components	335	3,925	5.0	6.9	9.5	78.6
Transportation equipment	336	7,325	2.8	6.6	10.4	80.1
Automobiles, bodies, trailers, and parts	3361–63	4,494	2.0	5.5	12.0	80.5
Aerospace products and parts	3364	1,044	6.1	12.9	10.7	70.2
Other transportation	other 336	1,787	2.7	5.6	6.5	85.2
Furniture and related products	337	12,060	1.5	2.6	4.8	91.2
Miscellaneous	339	20,536	6.1	7.5	7.3	79.2
Medical equipment and supplies	3391	7,602	11.1	11.7	9.5	67.7
Other miscellaneous manufacturing	3399	12,933	3.1	4.9	5.9	86.1
Nonmanufacturing industries	11, 21–23, 42–81	4,665,645	0.3	0.9	1.5	97.3
Agriculture, forestry, fishing, and hunting	11	19,567	0.0	0.0	0.6	99.4
Mining, extraction, and support activities	21	14,004	0.2	0.5	0.9	98.3
Utilities	22	2,994	0.2	0.5	0.5	98.8
Construction	23	635,568	0.1	0.6	1.0	98.2
Wholesale trade	42	241,440	0.3	1.5	2.2	96.0
Retail trade	44–45	546,067	0.3	0.9	1.7	97.1
Transportation and warehousing	48–49	165,454	0.0	0.6	1.4	98.0
Information	51	65,445	0.3	0.7	1.6	97.4
Publishing	511	17,755	0.2	0.6	1.7	97.5
Newspaper, periodical, book, and directory publishers	5111	9,162	0.0	0.6	1.0	98.3
Software publishers	5112	8,589	0.5	0.6	2.3	96.6
Telecommunications	517	7,319	0.8	0.5	2.5	96.1
Data processing, hosting, and related services	518	8,346	0.0	1.3	0.9	97.7
Other information	other 51	32,027	0.3	0.7	1.5	97.4
Finance and insurance	52	198,128	0.0	0.4	0.5	99.1

TABLE CET-37

**Companies using additive manufacturing, by industry: 2021**

(Percent)

Industry	NAICS code	Companies (number)	A lot	Somewhat	A little	Not at all
Real estate and rental and leasing	53	283,276	0.0 r	0.4	0.6	99.0
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1,956	0.0	0.0	6.0 r	94.0
Other real estate and rental and leasing	other 53	281,321	0.0 r	0.4	0.6	99.0
Professional, scientific, and technical services	54	717,229	0.4	1.1	1.7	96.7
Legal services	5411	152,543	0.0 r	0.2 r	0.3	99.5
Accounting, tax preparation, bookkeeping, and payroll services	5412	109,075	0.1 r	0.2	0.5	99.2
Architectural, engineering, and related services	5413	87,994	1.5	3.2	4.5	90.8
Specialized design services	5414	29,258	0.5 r	1.8	3.1	94.6
Computer systems design and related services	5415	100,282	0.4	1.3	3.0	95.3
Management, scientific, and technical consulting services	5416	144,421	0.2	0.8	1.3	97.7
Scientific research and development services	5417	11,149	4.1	5.3	6.5	84.1
Advertising, public relations, and related services	5418	28,236	0.3 r	1.2	1.2	97.2
Other professional, scientific, and technical services	5419	54,270	0.1 r	0.8	1.0	98.0
Management of companies and enterprises	55	3,153	2.3 r	0.0	0.0	97.7
Administrative and support and waste management and remediation services	56	293,539	0.1	0.3	0.7	98.9
Educational services	61	57,078	0.2 r	0.9	0.8	98.0
Health care and social assistance	62	536,276	1.0	2.1	2.5	94.4
Health care services	621-23	469,939	1.1	2.3	2.8	93.8
Social assistance	624	66,336	0.3	0.7	0.4	98.5
Arts, entertainment, and recreation	71	89,491	0.1 r	0.8	1.5	97.6
Accommodation and food services	72	455,071	0.2	0.7	1.1	98.0
Other services	81	341,869	0.1	0.6	1.4	97.9

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail across rows may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Detail across columns have been adjusted to add to total. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-38

**Companies using additive manufacturing, by company size: 2021**

(Percent)

Employment size	Companies (number)	A lot	Somewhat	A little	Not at all
All companies	4,874,928	0.3	1.0	1.7	97.0
Micro companies					
1–4	2,734,191	0.2	0.8	1.4	97.6
5–9	950,548	0.5	1.2	1.8	96.5
Small companies					
10–19	577,397	0.5	1.5	2.0	96.0
20–49	399,566	0.5	1.4	2.1	96.0
Medium companies					
50–99	115,591	0.5	1.8	2.9	94.7
100–249	63,969	0.4	2.0	3.7	93.9
Large companies					
250–499	18,124	0.5	1.8	3.9	93.8
500–999	7,668	0.8	3.3	4.0	91.8
1,000–4,999	6,010	1.4	3.4	5.9	89.4
5,000–9,999	982	1.1	6.4	8.2	84.3
10,000–24,999	516	0.9	7.7	12.6	78.9
25,000 or more	372	3.3	6.3	9.3	81.1

r = relative standard error &gt; 50%.

**Note(s):**

Detail across rows may not add to total because of rounding. Detail across columns have been adjusted to add to total. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-39

## Companies using biotechnology, by industry: 2021

(Percent)

Industry	NAICS code	Companies (number)	A lot		Somewhat		A little		Not at all
All industries	11, 21–23, 31–33, 42–81	4,874,928	0.2		0.5		0.6		98.6
Manufacturing industries	31–33	209,282	0.2		0.4		0.6		98.7
Food	311	19,326	0.2	r	0.5	r	0.6		98.6
Beverage and tobacco products	312	9,354	0.1		0.3		1.4		98.2
Textile, apparel, and leather products	313–16	9,443	0.0	r	0.6	r	0.6	r	98.7
Wood products	321	9,546	0.0	r	0.5		0.2	r	99.3
Paper	322	1,500	2.7	r	0.1	r	0.1	r	97.1
Printing and related support activities	323	20,212	0.0	r	0.1	r	0.2	r	99.7
Petroleum and coal products	324	546	0.2	r	0.5		0.4	r	98.8
Chemicals	325	7,961	2.3		1.9		2.1		93.7
Pesticide, fertilizer, and other agricultural chemicals	3253	580	1.2	r	0.5	r	4.7	r	93.6
Pharmaceuticals and medicines	3254	1,536	9.7		4.4		6.3		79.6
Soap, cleaning compound, and toilet preparation	3256	1,652	0.7	r	0.2		1.6	r	97.5
Other chemicals	other 325	4,194	0.3		1.9		0.5		97.2
Plastics and rubber products	326	7,060	0.1		0.0		0.9		99.0
Nonmetallic mineral products	327	7,290	0.0		0.2	r	0.3	r	99.5
Primary metals	331	2,079	0.1	r	0.3	r	0.1		99.5
Fabricated metal products	332	46,128	0.0		0.2		0.4		99.4
Machinery	333	16,440	0.0		0.6		0.8		98.5
Computer and electronic products	334	8,527	0.8	r	0.8		1.2		97.1
Communications equipment	3342	850	0.0		0.0		0.5	r	99.5
Semiconductor and other electronic components	3344	2,711	0.3	r	0.6	r	0.7	r	98.3
Navigational, measuring, electromedical, and control instruments	3345	3,737	1.8	r	1.3	r	1.6		95.3
Other computer and electronic products	other 334	1,230	0.0		0.0		1.9	r	98.1
Electrical equipment, appliances, and components	335	3,925	0.1	r	0.3	r	0.4		99.2
Transportation equipment	336	7,325	0.1	r	0.3	r	0.3		99.3
Automobiles, bodies, trailers, and parts	3361–63	4,494	0.0		0.5	r	0.4		99.1
Aerospace products and parts	3364	1,044	0.0		0.0		0.4	r	99.6
Other transportation	other 336	1,787	0.3	r	0.0		0.0		99.7
Furniture and related products	337	12,060	0.0		0.4		0.1		99.5
Miscellaneous	339	20,536	0.6	r	0.5		0.5		98.3
Medical equipment and supplies	3391	7,602	1.2	r	0.9	r	1.0	r	96.8
Other miscellaneous manufacturing	3399	12,933	0.1	r	0.2	r	0.2		99.5
Nonmanufacturing industries	11, 21–23, 42–81	4,665,645	0.2		0.5		0.6		98.6
Agriculture, forestry, fishing, and hunting	11	19,567	0.2	r	0.8	r	0.7	r	98.2
Mining, extraction, and support activities	21	14,004	0.1	r	0.0	r	0.8	r	99.1
Utilities	22	2,994	0.1	r	0.4		0.1		99.4
Construction	23	635,568	0.1		0.3		0.3		99.3
Wholesale trade	42	241,440	0.2		0.5		0.6		98.6
Retail trade	44–45	546,067	0.1		0.5		0.7		98.6
Transportation and warehousing	48–49	165,454	0.1	r	0.5		0.5		98.9
Information	51	65,445	0.2		0.3		0.5		99.0
Publishing	511	17,755	0.3	r	0.2	r	0.2		99.3
Newspaper, periodical, book, and directory publishers	5111	9,162	0.0		0.0		0.0	r	100.0
Software publishers	5112	8,589	0.5	r	0.5	r	0.4		98.5
Telecommunications	517	7,319	0.1	r	0.7	r	1.4	r	97.8
Data processing, hosting, and related services	518	8,346	0.6	r	0.6	r	0.3	r	98.4
Other information	other 51	32,027	0.2	r	0.1		0.5		99.2
Finance and insurance	52	198,128	0.1	r	0.3		0.3		99.3

TABLE CET-39

**Companies using biotechnology, by industry: 2021**

(Percent)

Industry	NAICS code	Companies (number)	A lot	Somewhat	A little	Not at all
Real estate and rental and leasing	53	283,276	0.0	r 0.3	0.2	99.5
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1,956	0.0	0.0	0.0	100.0
Other real estate and rental and leasing	other 53	281,321	0.0	r 0.3	0.2	99.5
Professional, scientific, and technical services	54	717,229	0.5	0.6	0.6	98.3
Legal services	5411	152,543	0.0	r 0.3	0.2	99.5
Accounting, tax preparation, bookkeeping, and payroll services	5412	109,075	0.1	r 0.2	0.5	99.2
Architectural, engineering, and related services	5413	87,994	0.1	0.5	0.6	98.8
Specialized design services	5414	29,258	0.0	0.1	r 0.3	r 99.6
Computer systems design and related services	5415	100,282	0.4	0.7	0.8	98.0
Management, scientific, and technical consulting services	5416	144,421	0.5	0.6	0.7	98.2
Scientific research and development services	5417	11,149	21.3	6.4	4.6	67.7
Advertising, public relations, and related services	5418	28,236	0.0	r 0.5	r 0.2	r 99.3
Other professional, scientific, and technical services	5419	54,270	0.3	r 1.0	1.0	97.6
Management of companies and enterprises	55	3,153	0.0	0.0	0.0	100.0
Administrative and support and waste management and remediation services	56	293,539	0.1	0.2	0.3	99.4
Educational services	61	57,078	0.0	0.3	r 0.5	99.2
Health care and social assistance	62	536,276	0.3	1.1	1.8	96.8
Health care services	621-23	469,939	0.4	1.2	2.0	96.4
Social assistance	624	66,336	0.2	r 0.5	0.3	98.9
Arts, entertainment, and recreation	71	89,491	0.0	r 0.3	0.4	99.3
Accommodation and food services	72	455,071	0.1	0.7	0.9	98.3
Other services	81	341,869	0.0	0.5	0.6	98.8

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail across rows may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Detail across columns have been adjusted to add to total. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-40

**Companies using biotechnology, by company size: 2021**

(Percent)

Employment size	Companies (number)	A lot	Somewhat	A little	Not at all
All companies	4,874,928	0.2	0.5	0.6	98.6
Micro companies					
1-4	2,734,191	0.2	0.5	0.6	98.6
5-9	950,548	0.2	0.5	0.8	98.4
Small companies					
10-19	577,397	0.2	0.7	0.8	98.2
20-49	399,566	0.2	0.4	0.5	98.8
Medium companies					
50-99	115,591	0.3	0.8	0.6	98.2
100-249	63,969	0.4	0.3	0.7	98.5
Large companies					
250-499	18,124	0.3	0.8	r 0.4	98.5
500-999	7,668	0.5	r 0.5	0.7	98.2
1,000-4,999	6,010	0.5	0.8	0.9	97.7
5,000-9,999	982	0.6	7.6	r 2.1	89.6
10,000-24,999	516	1.8	2.9	2.9	92.5
25,000 or more	372	3.4	1.0	r 4.4	91.3

r = relative standard error &gt; 50%.

**Note(s):**

Detail across rows may not add to total because of rounding. Detail across columns have been adjusted to add to total. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-41

**Companies using human-machine interfaces, by industry: 2021**

(Percent)

Industry	NAICS code	Companies (number)	A lot	Somewhat	A little	Not at all
All industries	11, 21–23, 31–33, 42–81	4,874,928	0.2	0.7	1.0	98.0
Manufacturing industries	31–33	209,282	0.3	0.6	1.2	97.9
Food	311	19,326	0.1 r	0.4 r	0.7	98.7
Beverage and tobacco products	312	9,354	0.0	0.3 r	1.0	98.6
Textile, apparel, and leather products	313–16	9,443	0.1 r	0.9 r	0.6 r	98.4
Wood products	321	9,546	0.1 r	0.7	0.3	98.9
Paper	322	1,500	0.0	0.5 r	0.9 r	98.6
Printing and related support activities	323	20,212	0.1 r	0.1 r	0.4	99.4
Petroleum and coal products	324	546	0.0	0.4 r	0.8	98.8
Chemicals	325	7,961	0.2	0.5	1.4	97.9
Pesticide, fertilizer, and other agricultural chemicals	3253	580	0.0	0.5 r	3.8 r	95.7
Pharmaceuticals and medicines	3254	1,536	0.3 r	1.6	2.2 r	95.9
Soap, cleaning compound, and toilet preparation	3256	1,652	0.2	0.2	1.6 r	98.0
Other chemicals	other 325	4,194	0.1 r	0.4	0.7	98.7
Plastics and rubber products	326	7,060	0.2 r	0.4 r	2.3	97.1
Nonmetallic mineral products	327	7,290	0.2 r	0.2 r	0.8	98.8
Primary metals	331	2,079	0.0	0.2 r	0.9	98.8
Fabricated metal products	332	46,128	0.3 r	0.4	0.9	98.3
Machinery	333	16,440	1.1	1.1	2.7	95.0
Computer and electronic products	334	8,527	0.9 r	2.9	2.7	93.5
Communications equipment	3342	850	0.5	2.2 r	3.6 r	93.7
Semiconductor and other electronic components	3344	2,711	0.5 r	3.6	3.5	92.3
Navigational, measuring, electromedical, and control instruments	3345	3,737	1.1 r	3.3	1.8	93.8
Other computer and electronic products	other 334	1,230	1.4 r	0.7 r	3.2	94.6
Electrical equipment, appliances, and components	335	3,925	0.4	1.7	1.0	96.9
Transportation equipment	336	7,325	0.5 r	1.4	0.8	97.3
Automobiles, bodies, trailers, and parts	3361–63	4,494	0.1	1.7	1.2	97.1
Aerospace products and parts	3364	1,044	0.4 r	1.7	0.7	97.2
Other transportation	other 336	1,787	1.3 r	0.4 r	0.4 r	97.8
Furniture and related products	337	12,060	0.1 r	0.5 r	0.8	98.5
Miscellaneous	339	20,536	0.4 r	0.6	1.2	97.7
Medical equipment and supplies	3391	7,602	0.7 r	1.2	1.6	96.4
Other miscellaneous manufacturing	3399	12,933	0.2 r	0.2 r	0.9	98.6
Nonmanufacturing industries	11, 21–23, 42–81	4,665,645	0.2	0.7	1.0	98.0
Agriculture, forestry, fishing, and hunting	11	19,567	0.0	0.0	0.0 r	100.0
Mining, extraction, and support activities	21	14,004	0.1 r	0.0 r	0.7 r	99.2
Utilities	22	2,994	0.1 r	0.8	0.8	98.2
Construction	23	635,568	0.1	0.5	0.6	98.7
Wholesale trade	42	241,440	0.1	0.7	1.0	98.1
Retail trade	44–45	546,067	0.1	0.6	0.9	98.3
Transportation and warehousing	48–49	165,454	0.1 r	0.5	0.7	98.6
Information	51	65,445	1.0	1.7	2.2	95.1
Publishing	511	17,755	1.5	1.6	2.1	94.9
Newspaper, periodical, book, and directory publishers	5111	9,162	0.4 r	0.2	0.2	99.2
Software publishers	5112	8,589	2.7	3.1	4.1	90.1
Telecommunications	517	7,319	0.4 r	1.2 r	1.2	97.3
Data processing, hosting, and related services	518	8,346	1.6 r	1.5	2.7	94.3
Other information	other 51	32,027	0.7 r	1.8	2.4	95.1
Finance and insurance	52	198,128	0.2	0.5	0.6	98.7

TABLE CET-41

**Companies using human-machine interfaces, by industry: 2021**

(Percent)

Industry	NAICS code	Companies (number)	A lot	Somewhat	A little	Not at all
Real estate and rental and leasing	53	283,276	0.1	0.5	0.8	98.5
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1,956	0.0	0.0	2.3 r	97.7
Other real estate and rental and leasing	other 53	281,321	0.1	0.5	0.8	98.5
Professional, scientific, and technical services	54	717,229	0.4	1.0	1.7	96.8
Legal services	5411	152,543	0.1 r	0.3	0.6	99.0
Accounting, tax preparation, bookkeeping, and payroll services	5412	109,075	0.1 r	0.4	0.6	98.9
Architectural, engineering, and related services	5413	87,994	0.8	1.6	2.7	94.9
Specialized design services	5414	29,258	0.6	0.8	2.6	96.0
Computer systems design and related services	5415	100,282	1.1	2.2	3.7	93.0
Management, scientific, and technical consulting services	5416	144,421	0.2	1.2	1.6	96.9
Scientific research and development services	5417	11,149	1.0	2.1	2.8	94.1
Advertising, public relations, and related services	5418	28,236	0.2	0.9	2.0	96.8
Other professional, scientific, and technical services	5419	54,270	0.2	0.7	1.0	98.0
Management of companies and enterprises	55	3,153	2.3 r	4.0 r	0.0	93.7
Administrative and support and waste management and remediation services	56	293,539	0.2	0.3	0.5	99.0
Educational services	61	57,078	0.2 r	0.6	1.0	98.1
Health care and social assistance	62	536,276	0.3	0.7	1.3	97.7
Health care services	621-23	469,939	0.3	0.8	1.4	97.5
Social assistance	624	66,336	0.3	0.3	0.7	98.6
Arts, entertainment, and recreation	71	89,491	0.3	0.9	1.2	97.5
Accommodation and food services	72	455,071	0.1	0.9	1.0	98.1
Other services	81	341,869	0.1	0.6	0.8	98.4

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail across rows may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Detail across columns have been adjusted to add to total. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.



TABLE CET-42

**Companies using human-machine interfaces, by company size: 2021**

(Percent)

Employment size	Companies (number)	A lot	Somewhat	A little	Not at all
All companies	4,874,928	0.2	0.7	1.0	98.0
Micro companies					
1-4	2,734,191	0.2	0.6	0.9	98.2
5-9	950,548	0.2	0.7	1.0	98.0
Small companies					
10-19	577,397	0.2	0.7	1.0	98.0
20-49	399,566	0.2	0.7	0.8	98.2
Medium companies					
50-99	115,591	0.2	0.8	1.3	97.7
100-249	63,969	0.3 r	0.6	1.9	97.2
Large companies					
250-499	18,124	0.1	1.1 r	2.0	96.8
500-999	7,668	0.3	0.9	1.7	97.1
1,000-4,999	6,010	0.4 r	1.7	3.8	94.1
5,000-9,999	982	0.4	4.3	5.2	90.1 r
10,000-24,999	516	0.4 r	3.9	11.5	84.1
25,000 or more	372	2.0	6.3	10.6	81.1

r = relative standard error &gt; 50%.

**Note(s):**

Detail across rows may not add to total because of rounding. Detail across columns have been adjusted to add to total. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-43

## Companies using communication and networking technologies, by industry: 2021

(Percent)

Industry	NAICS code	Companies (number)	A lot	Somewhat	A little	Not at all
All industries	11, 21–23, 31–33, 42–81	4,874,928	1.9	2.9	4.1	91.1
Manufacturing industries	31–33	209,282	1.5	2.8	5.1	90.6
Food	311	19,326	1.3	1.4	3.4	93.9
Beverage and tobacco products	312	9,354	1.3	2.3	6.3	90.2
Textile, apparel, and leather products	313–16	9,443	0.6	1.7	3.3	94.4
Wood products	321	9,546	1.2	3.0	3.3	92.5
Paper	322	1,500	1.0	5.1	11.8	82.1
Printing and related support activities	323	20,212	0.5	1.7	3.9	94.0
Petroleum and coal products	324	546	1.4	1.7	2.8	94.0
Chemicals	325	7,961	1.7	r 4.1	6.1	88.1
Pesticide, fertilizer, and other agricultural chemicals	3253	580	0.3	1.2	13.4	85.1
Pharmaceuticals and medicines	3254	1,536	1.7	2.6	8.2	87.6
Soap, cleaning compound, and toilet preparation	3256	1,652	0.7	0.8	3.2	95.2
Other chemicals	other 325	4,194	2.2	r 6.5	5.4	85.9
Plastics and rubber products	326	7,060	1.1	3.1	7.3	88.5
Nonmetallic mineral products	327	7,290	1.6	3.1	4.4	90.9
Primary metals	331	2,079	1.8	r 2.6	8.4	87.2
Fabricated metal products	332	46,128	1.1	2.0	4.9	92.0
Machinery	333	16,440	1.8	3.9	7.1	87.3
Computer and electronic products	334	8,527	7.7	11.7	11.0	69.6
Communications equipment	3342	850	26.3	21.3	8.2	44.1
Semiconductor and other electronic components	3344	2,711	5.8	10.8	11.2	72.2
Navigational, measuring, electromedical, and control instruments	3345	3,737	5.3	10.0	11.6	73.1
Other computer and electronic products	other 334	1,230	6.4	12.4	10.3	70.9
Electrical equipment, appliances, and components	335	3,925	4.5	r 5.6	9.4	80.5
Transportation equipment	336	7,325	2.3	3.2	5.3	89.1
Automobiles, bodies, trailers, and parts	3361–63	4,494	1.7	2.9	5.8	89.6
Aerospace products and parts	3364	1,044	4.3	6.8	6.2	82.7
Other transportation	other 336	1,787	2.8	r 2.0	3.3	91.9
Furniture and related products	337	12,060	0.4	1.3	2.7	95.5
Miscellaneous	339	20,536	0.8	2.6	4.3	92.2
Medical equipment and supplies	3391	7,602	0.6	2.2	4.1	93.1
Other miscellaneous manufacturing	3399	12,933	0.9	r 2.8	4.5	91.8
Nonmanufacturing industries	11, 21–23, 42–81	4,665,645	2.0	2.9	4.1	91.0
Agriculture, forestry, fishing, and hunting	11	19,567	1.5	r 2.2	5.0	91.3
Mining, extraction, and support activities	21	14,004	1.6	4.3	6.1	88.0
Utilities	22	2,994	3.4	5.1	6.2	85.3
Construction	23	635,568	1.2	2.0	3.5	93.4
Wholesale trade	42	241,440	2.1	2.9	4.1	90.9
Retail trade	44–45	546,067	1.2	2.2	3.8	92.8
Transportation and warehousing	48–49	165,454	2.0	3.4	5.7	88.8
Information	51	65,445	6.6	6.5	7.6	79.3
Publishing	511	17,755	3.1	4.3	6.8	85.8
Newspaper, periodical, book, and directory publishers	5111	9,162	0.5	3.5	5.1	90.8
Software publishers	5112	8,589	5.8	5.1	8.6	80.4
Telecommunications	517	7,319	20.7	13.4	7.9	58.0
Data processing, hosting, and related services	518	8,346	7.8	9.2	5.3	77.7
Other information	other 51	32,027	5.1	5.6	8.6	80.8
Finance and insurance	52	198,128	2.5	4.2	4.1	89.2

TABLE CET-43

**Companies using communication and networking technologies, by industry: 2021**

(Percent)

Industry	NAICS code	Companies (number)	A lot	Somewhat	A little	Not at all
Real estate and rental and leasing	53	283,276	1.1	2.4	3.5	92.9
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1,956	0.0	2.2	r 4.5	r 93.3
Other real estate and rental and leasing	other 53	281,321	1.1	2.4	3.5	92.9
Professional, scientific, and technical services	54	717,229	4.0	4.6	5.3	86.1
Legal services	5411	152,543	3.2	3.8	4.4	88.6
Accounting, tax preparation, bookkeeping, and payroll services	5412	109,075	3.6	3.8	4.6	88.1
Architectural, engineering, and related services	5413	87,994	3.3	5.4	5.5	85.7
Specialized design services	5414	29,258	1.4	2.5	4.8	91.3
Computer systems design and related services	5415	100,282	10.7	8.7	7.2	73.4
Management, scientific, and technical consulting services	5416	144,421	2.9	4.0	5.1	88.0
Scientific research and development services	5417	11,149	4.3	6.0	6.1	83.5
Advertising, public relations, and related services	5418	28,236	2.2	3.2	6.0	88.6
Other professional, scientific, and technical services	5419	54,270	2.0	2.7	5.3	90.1
Management of companies and enterprises	55	3,153	2.4	r 3.1	r 10.4	84.1
Administrative and support and waste management and remediation services	56	293,539	1.5	1.8	3.4	93.3
Educational services	61	57,078	1.7	2.7	3.9	91.7
Health care and social assistance	62	536,276	2.3	3.2	4.3	90.2
Health care services	621-23	469,939	2.4	3.4	4.6	89.6
Social assistance	624	66,336	1.3	2.0	2.3	94.4
Arts, entertainment, and recreation	71	89,491	1.7	2.7	3.3	92.3
Accommodation and food services	72	455,071	0.9	2.2	3.2	93.7
Other services	81	341,869	1.0	1.8	3.5	93.7

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail across rows may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Detail across columns have been adjusted to add to total. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-44

**Companies using communication and networking technologies, by company size: 2021**

(Percent)

Employment size	Companies (number)	A lot	Somewhat	A little	Not at all	
All companies	4,874,928	1.9	2.9	4.1	91.1	
Micro companies						
1–4	2,734,191	1.6	2.4	3.4	92.6	
5–9	950,548	1.8	2.6	4.2	91.4	
Small companies						
10–19	577,397	2.3	3.7	4.7	89.3	
20–49	399,566	2.6	3.9	5.9	87.6	
Medium companies						
50–99	115,591	4.0	5.4	7.3	83.3	
100–249	63,969	5.1	7.0	8.3	79.6	
Large companies						
250–499	18,124	7.7	8.0	7.6	76.6	
500–999	7,668	6.9	r 10.4	8.4	74.3	
1,000–4,999	6,010	10.4	r 10.6	9.5	69.6	
5,000–9,999	982	11.8	12.2	11.1	64.9	r
10,000–24,999	516	16.0	15.2	9.4	59.4	
25,000 or more	372	20.8	14.7	13.1	51.5	

r = relative standard error &gt; 50%.

**Note(s):**

Detail across rows may not add to total because of rounding. Detail across columns have been adjusted to add to total. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-45

## Companies using advanced financial technologies, by industry: 2021

(Percent)

Industry	NAICS code	Companies (number)	A lot	Somewhat	A little	Not at all
All industries	11, 21–23, 31–33, 42–81	4,874,928	0.3	1.0	1.9	96.8
Manufacturing industries	31–33	209,282	0.3	0.8	1.9	97.0
Food	311	19,326	0.6 r	0.5 r	1.7	97.1
Beverage and tobacco products	312	9,354	0.1	0.7	1.5	97.7
Textile, apparel, and leather products	313–16	9,443	0.1	1.0 r	1.3	97.7
Wood products	321	9,546	0.0	1.1	2.4	96.5
Paper	322	1,500	0.0	1.7 r	2.2	96.1
Printing and related support activities	323	20,212	0.2	0.7	1.2	97.8
Petroleum and coal products	324	546	0.0	0.8	1.4	97.8
Chemicals	325	7,961	0.2 r	1.5	4.7	93.6
Pesticide, fertilizer, and other agricultural chemicals	3253	580	0.0	1.7 r	4.7 r	93.6
Pharmaceuticals and medicines	3254	1,536	0.3 r	1.8 r	4.7	93.2
Soap, cleaning compound, and toilet preparation	3256	1,652	0.4 r	0.2 r	2.2 r	97.2
Other chemicals	other 325	4,194	0.0 r	1.8	5.9	92.3
Plastics and rubber products	326	7,060	0.5	0.9	2.2	96.4
Nonmetallic mineral products	327	7,290	0.3 r	0.7	1.8	97.2
Primary metals	331	2,079	0.2 r	0.4	2.1 r	97.3
Fabricated metal products	332	46,128	0.3	0.6	2.0	97.1
Machinery	333	16,440	0.1	1.2	2.2	96.5
Computer and electronic products	334	8,527	0.3 r	1.3	2.6	95.8
Communications equipment	3342	850	0.0	1.6 r	2.2	96.2
Semiconductor and other electronic components	3344	2,711	0.1 r	1.8 r	2.3	95.9
Navigational, measuring, electromedical, and control instruments	3345	3,737	0.6 r	1.3 r	1.9	96.2
Other computer and electronic products	other 334	1,230	0.0	0.6 r	5.8	93.6
Electrical equipment, appliances, and components	335	3,925	0.6 r	0.7 r	2.2 r	96.5
Transportation equipment	336	7,325	0.9 r	1.1	1.8	96.1
Automobiles, bodies, trailers, and parts	3361–63	4,494	0.8 r	1.6	1.7	95.9
Aerospace products and parts	3364	1,044	0.3 r	1.0	3.5 r	95.1
Other transportation	other 336	1,787	1.3 r	0.1 r	1.0	97.5
Furniture and related products	337	12,060	0.1	0.4	1.3	98.1
Miscellaneous	339	20,536	0.3 r	0.9	1.2	97.5
Medical equipment and supplies	3391	7,602	0.6 r	1.0	1.1	97.2
Other miscellaneous manufacturing	3399	12,933	0.1 r	0.9	1.4	97.6
Nonmanufacturing industries	11, 21–23, 42–81	4,665,645	0.3	1.0	1.9	96.8
Agriculture, forestry, fishing, and hunting	11	19,567	0.0	0.3 r	1.3	98.4
Mining, extraction, and support activities	21	14,004	0.5 r	1.2	2.0	96.3
Utilities	22	2,994	0.3 r	3.1 r	1.7	94.9
Construction	23	635,568	0.2	0.7	1.5	97.6
Wholesale trade	42	241,440	0.3	0.8	1.7	97.2
Retail trade	44–45	546,067	0.2	1.1	2.0	96.7
Transportation and warehousing	48–49	165,454	0.4	1.1	2.4	96.0
Information	51	65,445	0.6	1.7	2.7	95.0
Publishing	511	17,755	1.1	1.6	2.6	94.7
Newspaper, periodical, book, and directory publishers	5111	9,162	0.0	0.5	1.9	97.6
Software publishers	5112	8,589	2.4 r	2.6	3.4	91.6
Telecommunications	517	7,319	0.5	2.5	3.3	93.7
Data processing, hosting, and related services	518	8,346	0.6	3.7	3.8	91.8
Other information	other 51	32,027	0.3 r	1.0	2.3	96.4
Finance and insurance	52	198,128	0.7	1.9	3.0	94.4

TABLE CET-45

**Companies using advanced financial technologies, by industry: 2021**

(Percent)

Industry	NAICS code	Companies (number)	A lot	Somewhat	A little	Not at all
Real estate and rental and leasing	53	283,276	0.3	0.9	1.5	97.3
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1,956	0.0	0.0	0.0	100.0
Other real estate and rental and leasing	other 53	281,321	0.3	0.9	1.5	97.3
Professional, scientific, and technical services	54	717,229	0.6	1.3	2.5	95.6
Legal services	5411	152,543	0.4	0.6	1.8	97.2
Accounting, tax preparation, bookkeeping, and payroll services	5412	109,075	1.4	2.2	3.0	93.4
Architectural, engineering, and related services	5413	87,994	0.2	0.9	1.7	97.1
Specialized design services	5414	29,258	0.0	0.5	1.2	98.3
Computer systems design and related services	5415	100,282	1.0	2.3	4.6	92.1
Management, scientific, and technical consulting services	5416	144,421	0.6	1.3	2.2	95.8
Scientific research and development services	5417	11,149	0.4	1.1	2.4	96.1
Advertising, public relations, and related services	5418	28,236	0.3 r	1.0	3.0	95.7
Other professional, scientific, and technical services	5419	54,270	0.1 r	1.4	1.7	96.8
Management of companies and enterprises	55	3,153	1.7 r	5.4 r	2.3 r	90.7
Administrative and support and waste management and remediation services	56	293,539	0.3	0.7	1.3	97.7
Educational services	61	57,078	0.5	1.0	1.8	96.7
Health care and social assistance	62	536,276	0.3	1.3	1.9	96.6
Health care services	621-23	469,939	0.3	1.2	2.0	96.5
Social assistance	624	66,336	0.3	1.0	1.2	97.6
Arts, entertainment, and recreation	71	89,491	0.2	0.9	1.2	97.6
Accommodation and food services	72	455,071	0.3	1.2	1.9	96.6
Other services	81	341,869	0.2	0.9	1.7	97.2

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail across rows may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Detail across columns have been adjusted to add to total. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-46

**Companies using advanced financial technologies, by company size: 2021**

(Percent)

Employment size	Companies (number)	A lot	Somewhat	A little	Not at all
All companies	4,874,928	0.3	1.0	1.9	96.8
Micro companies					
1–4	2,734,191	0.3	0.9	1.6	97.2
5–9	950,548	0.4	1.2	2.0	96.4
Small companies					
10–19	577,397	0.4	1.3	2.2	96.1
20–49	399,566	0.5	1.3	2.4	95.8
Medium companies					
50–99	115,591	0.5	2.0	3.4	94.1
100–249	63,969	0.6	2.1	4.0	93.3
Large companies					
250–499	18,124	1.4	r 3.0	5.2	90.4
500–999	7,668	0.8	2.8	r 4.9	91.5
1,000–4,999	6,010	1.6	4.1	6.2	88.2
5,000–9,999	982	2.4	4.3	10.2	83.1
10,000–24,999	516	4.4	6.2	10.5	79.0
25,000 or more	372	4.0	7.3	14.6	74.1

r = relative standard error &gt; 50%.

**Note(s):**

Detail across rows may not add to total because of rounding. Detail across columns have been adjusted to add to total. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-47

**Companies using advanced semiconductors and microelectronics, by industry: 2021**

(Percent)

Industry	NAICS code	Companies (number)	A lot	Somewhat	A little	Not at all
All industries	11, 21–23, 31–33, 42–81	4,874,928	0.2	0.6	0.8	98.3
Manufacturing industries	31–33	209,282	0.6	1.4	2.2	95.8
Food	311	19,326	0.1 r	0.3 r	1.4	98.2
Beverage and tobacco products	312	9,354	0.1 r	0.3 r	0.5	99.1
Textile, apparel, and leather products	313–16	9,443	0.0 r	0.9 r	0.6 r	98.5
Wood products	321	9,546	0.2 r	0.4 r	1.1	98.3
Paper	322	1,500	0.1 r	1.4 r	2.6	95.9
Printing and related support activities	323	20,212	0.2 r	0.2 r	0.6	99.0
Petroleum and coal products	324	546	0.0	1.2	1.6	97.2
Chemicals	325	7,961	0.2	0.8	3.7	95.3
Pesticide, fertilizer, and other agricultural chemicals	3253	580	0.0	0.5 r	5.3 r	94.2
Pharmaceuticals and medicines	3254	1,536	0.3 r	0.8 r	2.6	96.2
Soap, cleaning compound, and toilet preparation	3256	1,652	0.2	0.0	1.4 r	98.4
Other chemicals	other 325	4,194	0.3	1.2	4.8 r	93.7
Plastics and rubber products	326	7,060	0.4	0.9	2.6	96.1
Nonmetallic mineral products	327	7,290	0.3 r	0.6	0.8	98.2
Primary metals	331	2,079	0.3 r	1.3	1.4 r	97.1
Fabricated metal products	332	46,128	0.7	1.1	2.3	95.8
Machinery	333	16,440	1.2 r	3.2	4.0	91.6
Computer and electronic products	334	8,527	4.9	6.8	8.3	80.0
Communications equipment	3342	850	5.4 r	7.6	7.7 r	79.3
Semiconductor and other electronic components	3344	2,711	7.9	8.0	9.3	74.8
Navigational, measuring, electromedical, and control instruments	3345	3,737	3.1	6.6	9.0	81.2
Other computer and electronic products	other 334	1,230	3.2 r	4.4	3.6	88.8
Electrical equipment, appliances, and components	335	3,925	1.9	5.4	6.2	86.5
Transportation equipment	336	7,325	0.6	1.7	2.4	95.3
Automobiles, bodies, trailers, and parts	3361–63	4,494	0.3	1.9	2.9	94.8
Aerospace products and parts	3364	1,044	1.1	2.1 r	3.3	93.4
Other transportation	other 336	1,787	1.0 r	0.8 r	0.6	97.5
Furniture and related products	337	12,060	0.1 r	0.8 r	0.9 r	98.1
Miscellaneous	339	20,536	0.1	1.5	1.7	96.8
Medical equipment and supplies	3391	7,602	0.3	1.2	1.1	97.3
Other miscellaneous manufacturing	3399	12,933	0.0 r	1.6	2.0 r	96.5
Nonmanufacturing industries	11, 21–23, 42–81	4,665,645	0.1	0.5	0.7	98.6
Agriculture, forestry, fishing, and hunting	11	19,567	0.0	0.2 r	0.3 r	99.5
Mining, extraction, and support activities	21	14,004	0.1 r	0.7 r	1.0	98.1
Utilities	22	2,994	0.3 r	0.7	1.4	97.6
Construction	23	635,568	0.1	0.5	0.6	98.7
Wholesale trade	42	241,440	0.3	0.7	1.2	97.7
Retail trade	44–45	546,067	0.1	0.6	0.9	98.3
Transportation and warehousing	48–49	165,454	0.1 r	0.5	1.3	98.1
Information	51	65,445	0.4	0.6	0.9	98.0
Publishing	511	17,755	0.4 r	0.4 r	0.5 r	98.6
Newspaper, periodical, book, and directory publishers	5111	9,162	0.3 r	0.3 r	0.6 r	98.8
Software publishers	5112	8,589	0.4 r	0.4	0.5	98.6
Telecommunications	517	7,319	0.3 r	2.3	0.9	96.4
Data processing, hosting, and related services	518	8,346	0.1 r	0.7 r	1.3 r	97.8
Other information	other 51	32,027	0.6	0.4	1.1	97.8
Finance and insurance	52	198,128	0.0	0.4	0.5	99.1



TABLE CET-47

**Companies using advanced semiconductors and microelectronics, by industry: 2021**

(Percent)

Industry	NAICS code	Companies (number)	A lot	Somewhat	A little	Not at all
Real estate and rental and leasing	53	283,276	0.0 r	0.3	0.3	99.4
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1,956	0.0	0.0	0.0	100.0
Other real estate and rental and leasing	other 53	281,321	0.0 r	0.3	0.3	99.4
Professional, scientific, and technical services	54	717,229	0.3	0.6	0.8	98.3
Legal services	5411	152,543	0.0 r	0.3	0.3	99.4
Accounting, tax preparation, bookkeeping, and payroll services	5412	109,075	0.1 r	0.2	0.6	99.1
Architectural, engineering, and related services	5413	87,994	0.9	1.2	1.6	96.2
Specialized design services	5414	29,258	0.0	0.4 r	0.4 r	99.2
Computer systems design and related services	5415	100,282	0.6	0.8	1.5	97.0
Management, scientific, and technical consulting services	5416	144,421	0.1	0.6	0.6	98.7
Scientific research and development services	5417	11,149	2.6	2.9	2.7	91.8
Advertising, public relations, and related services	5418	28,236	0.1 r	0.6 r	0.4	98.9
Other professional, scientific, and technical services	5419	54,270	0.2 r	0.6	0.4	98.8
Management of companies and enterprises	55	3,153	0.0	1.9 r	0.0	98.1
Administrative and support and waste management and remediation services	56	293,539	0.1	0.3	0.4	99.2
Educational services	61	57,078	0.0	0.4 r	0.4	99.2
Health care and social assistance	62	536,276	0.2	0.6	0.8	98.3
Health care services	621-23	469,939	0.2	0.6	0.8	98.3
Social assistance	624	66,336	0.2 r	0.3	0.4	99.0
Arts, entertainment, and recreation	71	89,491	0.0 r	0.4	0.5	99.1
Accommodation and food services	72	455,071	0.1	0.7	0.9	98.3
Other services	81	341,869	0.1	0.6	0.8	98.4

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail across rows may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Detail across columns have been adjusted to add to total. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-48

**Companies using advanced semiconductors and microelectronics, by company size: 2021**

(Percent)

Employment size	Companies (number)	A lot	Somewhat	A little	Not at all	
All companies	4,874,928	0.2	0.6	0.8	98.3	
Micro companies						
1–4	2,734,191	0.1	0.5	0.7	98.6	
5–9	950,548	0.2	0.6	0.8	98.3	
Small companies						
10–19	577,397	0.2	0.7	0.9	98.1	
20–49	399,566	0.2	0.7	1.0	98.0	
Medium companies						
50–99	115,591	0.4	1.0	1.5	97.1	
100–249	63,969	0.3	r 1.2	1.6	97.0	
Large companies						
250–499	18,124	0.4	r 1.4	2.3	95.9	
500–999	7,668	0.4	0.9	2.7	r 96.0	
1,000–4,999	6,010	1.0	r 1.8	3.2	93.9	
5,000–9,999	982	1.5	3.2	5.5	89.8	r
10,000–24,999	516	3.1	4.6	5.0	87.4	
25,000 or more	372	3.0	6.7	7.0	83.3	

r = relative standard error &gt; 50%.

**Note(s):**

Detail across rows may not add to total because of rounding. Detail across columns have been adjusted to add to total. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-49

## Companies using advanced engineering materials, by industry: 2021

(Percent)

Industry	NAICS code	Companies (number)	A lot	Somewhat	A little	Not at all
All industries	11, 21–23, 31–33, 42–81	4,874,928	0.2	0.7	1.0	98.0
Manufacturing industries	31–33	209,282	0.6	1.7	2.8	94.9
Food	311	19,326	0.1 r	0.4 r	1.1	98.4
Beverage and tobacco products	312	9,354	0.0 r	0.1	1.5	98.4
Textile, apparel, and leather products	313–16	9,443	0.1 r	1.3 r	1.1 r	97.6
Wood products	321	9,546	0.4 r	0.7	1.6	97.2
Paper	322	1,500	0.0	1.6 r	2.1	96.3
Printing and related support activities	323	20,212	0.1 r	0.1	0.5	99.3
Petroleum and coal products	324	546	0.0	1.2	1.4	97.4
Chemicals	325	7,961	0.7	2.1	3.9	93.3
Pesticide, fertilizer, and other agricultural chemicals	3253	580	0.0	0.9 r	3.8 r	95.3
Pharmaceuticals and medicines	3254	1,536	0.7 r	1.5 r	2.7	95.1
Soap, cleaning compound, and toilet preparation	3256	1,652	0.5 r	1.5 r	3.1 r	94.9
Other chemicals	other 325	4,194	1.0	2.8	4.7	91.6
Plastics and rubber products	326	7,060	1.0	1.3	5.2	92.5
Nonmetallic mineral products	327	7,290	0.5 r	0.8 r	2.2	96.5
Primary metals	331	2,079	0.7	4.1 r	2.6 r	92.6
Fabricated metal products	332	46,128	0.4	2.3	3.3	93.9
Machinery	333	16,440	1.6	2.6	6.2	89.6
Computer and electronic products	334	8,527	2.1	5.6	7.7	84.7
Communications equipment	3342	850	1.1	3.5 r	5.4 r	90.0
Semiconductor and other electronic components	3344	2,711	3.5	5.7	7.9	82.9
Navigational, measuring, electromedical, and control instruments	3345	3,737	1.2	7.1	9.5	82.2
Other computer and electronic products	other 334	1,230	2.2	2.3	3.4	92.2
Electrical equipment, appliances, and components	335	3,925	1.6	3.3	5.7	89.3
Transportation equipment	336	7,325	1.3	3.0	3.9	91.8
Automobiles, bodies, trailers, and parts	3361–63	4,494	0.5	2.3	4.2	92.9
Aerospace products and parts	3364	1,044	2.1 r	7.0	7.1	83.9
Other transportation	other 336	1,787	2.6 r	2.2 r	1.0	94.2
Furniture and related products	337	12,060	0.1	0.3	1.1	98.4
Miscellaneous	339	20,536	0.7	1.7	2.3	95.3
Medical equipment and supplies	3391	7,602	1.4 r	2.4	3.2	93.0
Other miscellaneous manufacturing	3399	12,933	0.3 r	1.2	1.8	96.7
Nonmanufacturing industries	11, 21–23, 42–81	4,665,645	0.2	0.6	0.9	98.2
Agriculture, forestry, fishing, and hunting	11	19,567	0.0	0.4 r	0.8	98.7
Mining, extraction, and support activities	21	14,004	0.6 r	0.7 r	1.8	96.9
Utilities	22	2,994	0.4 r	1.0	1.2	97.3
Construction	23	635,568	0.1	0.6	1.2	98.1
Wholesale trade	42	241,440	0.1	0.9	1.3	97.7
Retail trade	44–45	546,067	0.1	0.6	1.1	98.2
Transportation and warehousing	48–49	165,454	0.1	0.5	1.0	98.3
Information	51	65,445	0.3	0.4	0.8	98.4
Publishing	511	17,755	0.2 r	0.4 r	0.6	98.8
Newspaper, periodical, book, and directory publishers	5111	9,162	0.1 r	0.4 r	0.1 r	99.4
Software publishers	5112	8,589	0.3 r	0.4 r	1.1 r	98.1
Telecommunications	517	7,319	0.8 r	1.4	1.3	96.5
Data processing, hosting, and related services	518	8,346	0.1 r	0.4 r	0.7	98.8
Other information	other 51	32,027	0.3 r	0.2	0.8	98.7
Finance and insurance	52	198,128	0.0	0.4	0.4	99.2

TABLE CET-49

**Companies using advanced engineering materials, by industry: 2021**

(Percent)

Industry	NAICS code	Companies (number)	A lot	Somewhat	A little	Not at all
Real estate and rental and leasing	53	283,276	0.0 r	0.3	0.4	99.3
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1,956	0.0	0.0	0.0	100.0
Other real estate and rental and leasing	other 53	281,321	0.0 r	0.3	0.4	99.3
Professional, scientific, and technical services	54	717,229	0.3	0.7	0.9	98.0
Legal services	5411	152,543	0.1 r	0.2	0.2	99.5
Accounting, tax preparation, bookkeeping, and payroll services	5412	109,075	0.1 r	0.2	0.4	99.3
Architectural, engineering, and related services	5413	87,994	0.8	2.0	3.1	94.1
Specialized design services	5414	29,258	0.0	0.1 r	0.9	99.0
Computer systems design and related services	5415	100,282	0.2	0.6	1.0	98.1
Management, scientific, and technical consulting services	5416	144,421	0.4	0.8	0.7	98.1
Scientific research and development services	5417	11,149	4.6	4.1	5.5	85.8
Advertising, public relations, and related services	5418	28,236	0.1 r	0.6 r	0.4	98.9
Other professional, scientific, and technical services	5419	54,270	0.0	0.9	0.3	98.8
Management of companies and enterprises	55	3,153	0.0	0.0	0.0	100.0
Administrative and support and waste management and remediation services	56	293,539	0.1	0.3	0.5	99.1
Educational services	61	57,078	0.0	0.4 r	0.2 r	99.4
Health care and social assistance	62	536,276	0.5	1.0	1.1	97.3
Health care services	621-23	469,939	0.5	1.1	1.2	97.1
Social assistance	624	66,336	0.1 r	0.5	0.5	98.8
Arts, entertainment, and recreation	71	89,491	0.2 r	0.5	0.8	98.4
Accommodation and food services	72	455,071	0.1	0.7	1.0	98.2
Other services	81	341,869	0.1 r	0.6	1.0	98.2

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail across rows may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Detail across columns have been adjusted to add to total. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-50

**Companies using advanced engineering materials, by company size: 2021**

(Percent)

Employment size	Companies (number)	A lot	Somewhat	A little	Not at all
All companies	4,874,928	0.2	0.7	1.0	98.0
Micro companies					
1-4	2,734,191	0.1	0.6	0.7	98.5
5-9	950,548	0.2	0.7	1.2	97.9
Small companies					
10-19	577,397	0.3	0.8	1.3	97.6
20-49	399,566	0.2	0.8	1.5	97.5
Medium companies					
50-99	115,591	0.4	1.2	1.9	96.5
100-249	63,969	0.3	0.8	2.3	96.5
Large companies					
250-499	18,124	0.3	1.6	1.2	96.8
500-999	7,668	0.4	1.3	3.5 r	94.7
1,000-4,999	6,010	1.0	2.8	3.8	92.4
5,000-9,999	982	0.9	4.7	6.0	88.4 r
10,000-24,999	516	3.5	5.3	7.2	84.0
25,000 or more	372	3.4	6.0	8.1	82.6

r = relative standard error &gt; 50%.

**Note(s):**

Detail across rows may not add to total because of rounding. Detail across columns have been adjusted to add to total. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-51

## Companies using renewable energy generation and storage, by industry: 2021

(Percent)

Industry	NAICS code	Companies (number)	A lot	Somewhat	A little	Not at all
All industries	11, 21–23, 31–33, 42–81	4,874,928	0.4	0.8	1.4	97.4
Manufacturing industries	31–33	209,282	0.6	1.0	1.8	96.5
Food	311	19,326	0.5	0.9	1.4	97.2
Beverage and tobacco products	312	9,354	1.8	3.5	3.3	91.4
Textile, apparel, and leather products	313–16	9,443	0.2	1.0	r 1.5	97.3
Wood products	321	9,546	0.3	1.0	1.5	97.1
Paper	322	1,500	4.2	r 0.3	2.3	r 93.2
Printing and related support activities	323	20,212	0.2	r 0.3	0.7	98.8
Petroleum and coal products	324	546	1.0	3.6	0.4	r 95.0
Chemicals	325	7,961	1.3	1.7	3.2	93.9
Pesticide, fertilizer, and other agricultural chemicals	3253	580	0.7	r 1.2	3.8	r 94.3
Pharmaceuticals and medicines	3254	1,536	1.5	r 1.9	2.2	94.4
Soap, cleaning compound, and toilet preparation	3256	1,652	1.1	r 2.3	r 1.9	r 94.7
Other chemicals	other 325	4,194	1.3	r 1.5	3.9	93.3
Plastics and rubber products	326	7,060	0.3	0.8	1.6	97.3
Nonmetallic mineral products	327	7,290	0.3	r 0.7	1.3	97.7
Primary metals	331	2,079	0.6	r 1.8	r 1.4	96.2
Fabricated metal products	332	46,128	0.4	0.4	1.6	97.6
Machinery	333	16,440	0.7	2.0	2.3	95.0
Computer and electronic products	334	8,527	1.3	2.0	4.0	92.6
Communications equipment	3342	850	0.7	r 0.8	4.6	r 93.8
Semiconductor and other electronic components	3344	2,711	2.6	2.9	r 4.7	89.8
Navigational, measuring, electromedical, and control instruments	3345	3,737	0.7	r 2.1	3.9	93.3
Other computer and electronic products	other 334	1,230	0.7	r 0.5	2.9	95.9
Electrical equipment, appliances, and components	335	3,925	4.4	2.9	3.1	89.6
Transportation equipment	336	7,325	1.1	1.4	2.0	95.5
Automobiles, bodies, trailers, and parts	3361–63	4,494	0.8	r 1.6	2.5	95.1
Aerospace products and parts	3364	1,044	0.8	r 0.8	1.6	96.8
Other transportation	other 336	1,787	1.9	0.8	r 1.1	96.2
Furniture and related products	337	12,060	0.6	0.4	1.5	97.5
Miscellaneous	339	20,536	0.1	r 0.6	1.6	97.7
Medical equipment and supplies	3391	7,602	0.0	0.9	r 0.7	98.4
Other miscellaneous manufacturing	3399	12,933	0.2	r 0.5	2.1	97.2
Nonmanufacturing industries	11, 21–23, 42–81	4,665,645	0.4	0.8	1.4	97.4
Agriculture, forestry, fishing, and hunting	11	19,567	0.8	r 1.0	r 0.8	97.3
Mining, extraction, and support activities	21	14,004	0.1	r 1.0	2.3	96.6
Utilities	22	2,994	7.2	3.9	3.5	r 85.4
Construction	23	635,568	0.6	1.0	2.1	96.2
Wholesale trade	42	241,440	0.3	0.9	1.7	97.1
Retail trade	44–45	546,067	0.3	0.8	1.4	97.5
Transportation and warehousing	48–49	165,454	0.2	0.9	1.6	97.3
Information	51	65,445	0.5	1.0	1.3	97.1
Publishing	511	17,755	0.2	r 0.3	0.8	98.6
Newspaper, periodical, book, and directory publishers	5111	9,162	0.1	r 0.2	0.6	99.1
Software publishers	5112	8,589	0.4	r 0.5	0.9	r 98.1
Telecommunications	517	7,319	0.9	3.1	2.3	93.7
Data processing, hosting, and related services	518	8,346	0.5	r 0.5	1.1	97.8
Other information	other 51	32,027	0.5	r 1.0	1.5	96.9
Finance and insurance	52	198,128	0.1	0.7	0.5	98.7

TABLE CET-51

**Companies using renewable energy generation and storage, by industry: 2021**

(Percent)

Industry	NAICS code	Companies (number)	A lot	Somewhat	A little	Not at all
Real estate and rental and leasing	53	283,276	0.3	0.7	0.9	98.0
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1,956	0.0	0.0	0.0	100.0
Other real estate and rental and leasing	other 53	281,321	0.3	0.7	0.9	98.0
Professional, scientific, and technical services	54	717,229	0.4	0.9	1.3	97.3
Legal services	5411	152,543	0.2	0.5	0.7	98.5
Accounting, tax preparation, bookkeeping, and payroll services	5412	109,075	0.3	0.4	0.8	98.5
Architectural, engineering, and related services	5413	87,994	1.1	2.0	3.3	93.6
Specialized design services	5414	29,258	0.0 r	0.4	1.1 r	98.5
Computer systems design and related services	5415	100,282	0.4	1.0	1.2	97.3
Management, scientific, and technical consulting services	5416	144,421	0.5	1.3	1.4	96.7
Scientific research and development services	5417	11,149	1.2	1.6	2.5	94.7
Advertising, public relations, and related services	5418	28,236	0.3	0.9	0.8	98.0
Other professional, scientific, and technical services	5419	54,270	0.6	1.1	1.8	96.5
Management of companies and enterprises	55	3,153	0.0	2.4 r	0.0	97.6
Administrative and support and waste management and remediation services	56	293,539	0.4	0.6	1.0	97.9
Educational services	61	57,078	0.2 r	0.5	0.4 r	98.8
Health care and social assistance	62	536,276	0.4	0.7	1.1	97.7
Health care services	621-23	469,939	0.3	0.7	1.2	97.7
Social assistance	624	66,336	0.6	0.7	0.3	98.3
Arts, entertainment, and recreation	71	89,491	0.4	0.9	0.9	97.7
Accommodation and food services	72	455,071	0.3	0.7	1.4	97.5
Other services	81	341,869	0.2	0.9	1.3	97.6

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail across rows may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Detail across columns have been adjusted to add to total. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-52

**Companies using renewable energy generation and storage, by company size: 2021**

(Percent)

Employment size	Companies (number)	A lot	Somewhat	A little	Not at all	
All companies	4,874,928	0.4	0.8	1.4	97.4	
Micro companies						
1–4	2,734,191	0.3	0.8	1.3	97.6	
5–9	950,548	0.4	0.8	1.5	97.3	
Small companies						
10–19	577,397	0.3	0.9	1.5	97.3	
20–49	399,566	0.5	0.9	1.6	97.0	
Medium companies						
50–99	115,591	0.8	1.5	1.8	95.9	
100–249	63,969	0.5	1.8	3.1	94.6	
Large companies						
250–499	18,124	0.5	r 1.4	2.4	95.7	
500–999	7,668	1.3	r 1.7	3.7	r 93.3	
1,000–4,999	6,010	1.4	2.8	6.6	r 89.2	
5,000–9,999	982	2.2	5.3	9.7	82.8	r
10,000–24,999	516	2.4	8.8	14.4	74.4	
25,000 or more	372	2.7	7.3	15.6	74.4	

r = relative standard error &gt; 50%.

**Note(s):**

Detail across rows may not add to total because of rounding. Detail across columns have been adjusted to add to total. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.



TABLE CET-53

## Companies using advanced gas turbine engine technologies, by industry: 2021

(Percent)

Industry	NAICS code	Companies (number)	A lot	Somewhat	A little	Not at all
All industries	11, 21–23, 31–33, 42–81	4,874,928	0.1	0.4	0.5	99.0
Manufacturing industries	31–33	209,282	0.2	0.5	0.6	98.6
Food	311	19,326	0.1 r	0.2 r	0.5	99.1
Beverage and tobacco products	312	9,354	0.0	0.2 r	0.6 r	99.2
Textile, apparel, and leather products	313–16	9,443	0.0 r	0.6 r	0.9 r	98.5
Wood products	321	9,546	0.1 r	0.3 r	0.6	99.0
Paper	322	1,500	0.1 r	0.1 r	0.3	99.5
Printing and related support activities	323	20,212	0.1 r	0.1 r	0.3	99.5
Petroleum and coal products	324	546	0.2 r	0.8	0.8	98.3
Chemicals	325	7,961	0.1 r	0.5	1.1	98.3
Pesticide, fertilizer, and other agricultural chemicals	3253	580	0.0	0.5 r	4.1 r	95.4
Pharmaceuticals and medicines	3254	1,536	0.3 r	0.7 r	1.2	97.8
Soap, cleaning compound, and toilet preparation	3256	1,652	0.2	0.0	1.6 r	98.2
Other chemicals	other 325	4,194	0.0 r	0.6	0.3	99.0
Plastics and rubber products	326	7,060	0.0 r	0.1	0.9	99.0
Nonmetallic mineral products	327	7,290	0.0	0.7 r	0.5 r	98.8
Primary metals	331	2,079	0.4	0.1 r	0.7 r	98.7
Fabricated metal products	332	46,128	0.3 r	0.8	0.7	98.1
Machinery	333	16,440	0.1	0.8	0.9	98.1
Computer and electronic products	334	8,527	0.2 r	1.2 r	1.3	97.2
Communications equipment	3342	850	0.1 r	0.0	0.0	99.9
Semiconductor and other electronic components	3344	2,711	0.1 r	0.7 r	2.6 r	96.6
Navigational, measuring, electromedical, and control instruments	3345	3,737	0.3 r	2.3 r	0.8	96.6
Other computer and electronic products	other 334	1,230	0.0	0.0	1.1 r	98.9
Electrical equipment, appliances, and components	335	3,925	0.8 r	0.5	0.8	97.8
Transportation equipment	336	7,325	0.4	0.7	1.0	97.8
Automobiles, bodies, trailers, and parts	3361–63	4,494	0.1	0.5 r	1.1	98.3
Aerospace products and parts	3364	1,044	1.9	1.7	1.9	94.6
Other transportation	other 336	1,787	0.3 r	0.5	0.6	98.6
Furniture and related products	337	12,060	0.2 r	0.2	0.2 r	99.4
Miscellaneous	339	20,536	0.0 r	0.5	0.2	99.3
Medical equipment and supplies	3391	7,602	0.0	0.8 r	0.3	98.9
Other miscellaneous manufacturing	3399	12,933	0.0 r	0.3 r	0.2	99.5
Nonmanufacturing industries	11, 21–23, 42–81	4,665,645	0.1	0.4	0.5	99.0
Agriculture, forestry, fishing, and hunting	11	19,567	0.6 r	0.2 r	0.3 r	98.8
Mining, extraction, and support activities	21	14,004	0.1	0.8 r	0.7	98.3
Utilities	22	2,994	1.9 r	0.8	0.6	96.7
Construction	23	635,568	0.1	0.4	0.5	99.0
Wholesale trade	42	241,440	0.2	0.4	0.7	98.6
Retail trade	44–45	546,067	0.1	0.4	0.6	98.8
Transportation and warehousing	48–49	165,454	0.3	0.7	0.8	98.1
Information	51	65,445	0.2	0.2	0.4	99.2
Publishing	511	17,755	0.1 r	0.1	0.1	99.7
Newspaper, periodical, book, and directory publishers	5111	9,162	0.0	0.0	0.0 r	100.0
Software publishers	5112	8,589	0.3 r	0.2	0.2 r	99.3
Telecommunications	517	7,319	0.4 r	0.9 r	1.2 r	97.5
Data processing, hosting, and related services	518	8,346	0.0	0.3 r	0.3 r	99.4
Other information	other 51	32,027	0.1 r	0.1	0.4 r	99.4
Finance and insurance	52	198,128	0.0 r	0.3	0.2	99.5

TABLE CET-53

**Companies using advanced gas turbine engine technologies, by industry: 2021**

(Percent)

Industry	NAICS code	Companies (number)	A lot	Somewhat	A little	Not at all
Real estate and rental and leasing	53	283,276	0.1	0.3	0.2	99.4
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1,956	0.0	0.0	0.0	100.0
Other real estate and rental and leasing	other 53	281,321	0.1	0.3	0.2	99.4
Professional, scientific, and technical services	54	717,229	0.1	0.4	0.4	99.1
Legal services	5411	152,543	0.1 r	0.2 r	0.2	99.5
Accounting, tax preparation, bookkeeping, and payroll services	5412	109,075	0.1 r	0.2	0.4	99.3
Architectural, engineering, and related services	5413	87,994	0.0	0.5	0.8	98.7
Specialized design services	5414	29,258	0.0	0.3 r	0.0	99.7
Computer systems design and related services	5415	100,282	0.1 r	0.5	0.5	98.9
Management, scientific, and technical consulting services	5416	144,421	0.1 r	0.4	0.4	99.1
Scientific research and development services	5417	11,149	0.2	0.8	0.7	98.2
Advertising, public relations, and related services	5418	28,236	0.0 r	0.5 r	0.2 r	99.3
Other professional, scientific, and technical services	5419	54,270	0.0	0.5	0.2 r	99.3
Management of companies and enterprises	55	3,153	0.0	0.2 r	0.0	99.8
Administrative and support and waste management and remediation services	56	293,539	0.1	0.3	0.3	99.3
Educational services	61	57,078	0.0	0.3 r	0.2 r	99.5
Health care and social assistance	62	536,276	0.1	0.4	0.5	99.0
Health care services	621-23	469,939	0.1	0.3	0.5	99.1
Social assistance	624	66,336	0.2 r	0.5	0.5	98.7
Arts, entertainment, and recreation	71	89,491	0.1 r	0.3	0.3	99.3
Accommodation and food services	72	455,071	0.1	0.6	1.0	98.3
Other services	81	341,869	0.0 r	0.5	0.6	98.8

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail across rows may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Detail across columns have been adjusted to add to total. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-54

**Companies using advanced gas turbine engine technologies, by company size: 2021**

(Percent)

Employment size	Companies (number)	A lot	Somewhat	A little	Not at all	
All companies	4,874,928	0.1	0.4	0.5	99.0	
Micro companies						
1–4	2,734,191	0.1	0.4	0.5	99.0	
5–9	950,548	0.1	0.4	0.6	98.8	
Small companies						
10–19	577,397	0.1	0.4	0.5	99.0	
20–49	399,566	0.2	0.4	0.5	98.8	
Medium companies						
50–99	115,591	0.2	0.5	0.6	98.6	
100–249	63,969	0.2	r 0.6	1.0	98.1	
Large companies						
250–499	18,124	0.1	0.8	r 0.7	r 98.4	
500–999	7,668	0.2	r 0.5	0.7	98.6	
1,000–4,999	6,010	0.7	1.2	1.6	96.5	
5,000–9,999	982	0.5	2.7	3.0	93.7	r
10,000–24,999	516	2.7	3.9	5.3	88.1	
25,000 or more	372	1.6	3.4	3.4	91.7	

r = relative standard error &gt; 50%.

**Note(s):**

Detail across rows may not add to total because of rounding. Detail across columns have been adjusted to add to total. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-55

## Companies using advanced nuclear energy technologies, by industry: 2021

(Percent)

Industry	NAICS code	Companies (number)	A lot	Somewhat	A little	Not at all
All industries	11, 21–23, 31–33, 42–81	4,874,928	0.1	0.3	0.4	99.2
Manufacturing industries	31–33	209,282	0.0	0.3	0.4	99.3
Food	311	19,326	0.1 r	0.2 r	0.2	99.5
Beverage and tobacco products	312	9,354	0.0	0.1 r	0.3	99.6
Textile, apparel, and leather products	313–16	9,443	0.0	0.6 r	0.6 r	98.7
Wood products	321	9,546	0.0	0.3 r	0.0	99.7
Paper	322	1,500	0.0	0.1 r	0.4	99.5
Printing and related support activities	323	20,212	0.0 r	0.0	0.3 r	99.7
Petroleum and coal products	324	546	0.0	0.5	0.2 r	99.2
Chemicals	325	7,961	0.1 r	0.3	0.7 r	98.8
Pesticide, fertilizer, and other agricultural chemicals	3253	580	0.0	0.5 r	3.8 r	95.7
Pharmaceuticals and medicines	3254	1,536	0.3 r	0.7 r	1.0 r	97.9
Soap, cleaning compound, and toilet preparation	3256	1,652	0.2	0.0	1.0 r	98.8
Other chemicals	other 325	4,194	0.0 r	0.3	0.1 r	99.6
Plastics and rubber products	326	7,060	0.0 r	0.1	0.8	99.1
Nonmetallic mineral products	327	7,290	0.0	0.2 r	0.2 r	99.6
Primary metals	331	2,079	0.1 r	0.1	0.6 r	99.2
Fabricated metal products	332	46,128	0.0	0.1	0.7	99.2
Machinery	333	16,440	0.0	0.6	0.7	98.6
Computer and electronic products	334	8,527	0.1 r	0.4 r	0.8	98.7
Communications equipment	3342	850	0.0	0.0	0.0	100.0
Semiconductor and other electronic components	3344	2,711	0.1 r	0.7 r	1.1 r	98.0
Navigational, measuring, electromedical, and control instruments	3345	3,737	0.1 r	0.3 r	0.8	98.8
Other computer and electronic products	other 334	1,230	0.0	0.0	0.9 r	99.1
Electrical equipment, appliances, and components	335	3,925	0.1 r	0.7 r	1.0 r	98.1
Transportation equipment	336	7,325	0.1 r	0.4 r	0.3	99.2
Automobiles, bodies, trailers, and parts	3361–63	4,494	0.0	0.4 r	0.3 r	99.3
Aerospace products and parts	3364	1,044	0.2	0.6 r	0.2 r	99.0
Other transportation	other 336	1,787	0.3 r	0.0	0.2 r	99.5
Furniture and related products	337	12,060	0.0	0.2	0.2 r	99.6
Miscellaneous	339	20,536	0.0	0.6	0.2	99.2
Medical equipment and supplies	3391	7,602	0.0	0.8 r	0.2	99.0
Other miscellaneous manufacturing	3399	12,933	0.0	0.4 r	0.1	99.5
Nonmanufacturing industries	11, 21–23, 42–81	4,665,645	0.1	0.4	0.4	99.1
Agriculture, forestry, fishing, and hunting	11	19,567	0.0	0.2 r	0.0 r	99.8
Mining, extraction, and support activities	21	14,004	0.0 r	0.4 r	0.6 r	99.0
Utilities	22	2,994	0.4	0.3	0.6	98.7
Construction	23	635,568	0.1	0.3	0.2	99.4
Wholesale trade	42	241,440	0.1	0.4	0.5	99.0
Retail trade	44–45	546,067	0.1	0.4	0.6	98.8
Transportation and warehousing	48–49	165,454	0.0 r	0.4	0.6	99.0
Information	51	65,445	0.1 r	0.2	0.4	99.3
Publishing	511	17,755	0.1 r	0.1	0.1	99.7
Newspaper, periodical, book, and directory publishers	5111	9,162	0.0	0.0	0.1 r	99.9
Software publishers	5112	8,589	0.3 r	0.1	0.1	99.5
Telecommunications	517	7,319	0.1 r	0.6 r	1.4 r	97.9
Data processing, hosting, and related services	518	8,346	0.0	0.3 r	0.2 r	99.5
Other information	other 51	32,027	0.1 r	0.1	0.4 r	99.4
Finance and insurance	52	198,128	0.0	0.3	0.2	99.5

TABLE CET-55

**Companies using advanced nuclear energy technologies, by industry: 2021**

(Percent)

Industry	NAICS code	Companies (number)	A lot	Somewhat	A little	Not at all
Real estate and rental and leasing	53	283,276	0.0 r	0.2	0.2	99.6
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1,956	0.0	0.0	0.0	100.0
Other real estate and rental and leasing	other 53	281,321	0.0 r	0.2	0.2	99.6
Professional, scientific, and technical services	54	717,229	0.1	0.3	0.3	99.3
Legal services	5411	152,543	0.1 r	0.2 r	0.2	99.5
Accounting, tax preparation, bookkeeping, and payroll services	5412	109,075	0.1 r	0.2	0.4	99.3
Architectural, engineering, and related services	5413	87,994	0.1	0.3	0.4	99.2
Specialized design services	5414	29,258	0.0	0.3 r	0.0	99.7
Computer systems design and related services	5415	100,282	0.1 r	0.3	0.3	99.3
Management, scientific, and technical consulting services	5416	144,421	0.1	0.3	0.3	99.3
Scientific research and development services	5417	11,149	0.2	0.8 r	0.5	98.4
Advertising, public relations, and related services	5418	28,236	0.0 r	0.5 r	0.2 r	99.3
Other professional, scientific, and technical services	5419	54,270	0.0	0.5	0.1 r	99.4
Management of companies and enterprises	55	3,153	0.0	0.2 r	0.0	99.8
Administrative and support and waste management and remediation services	56	293,539	0.1	0.2	0.2	99.5
Educational services	61	57,078	0.0	0.3 r	0.2 r	99.5
Health care and social assistance	62	536,276	0.1	0.4	0.4	99.1
Health care services	621-23	469,939	0.1	0.4	0.5	99.0
Social assistance	624	66,336	0.2 r	0.4	0.3	99.0
Arts, entertainment, and recreation	71	89,491	0.0 r	0.3	0.2 r	99.5
Accommodation and food services	72	455,071	0.1	0.6	0.7	98.5
Other services	81	341,869	0.0 r	0.4	0.5	99.1

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail across rows may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Detail across columns have been adjusted to add to total. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-56

**Companies using advanced nuclear energy technologies, by company size: 2021**

(Percent)

Employment size	Companies (number)	A lot	Somewhat	A little	Not at all	
All companies	4,874,928	0.1	0.3	0.4	99.2	
Micro companies						
1–4	2,734,191	0.1	0.4	0.4	99.1	
5–9	950,548	0.1	0.3	0.5	99.1	
Small companies						
10–19	577,397	0.1	0.4	0.4	99.1	
20–49	399,566	0.0	0.3	0.3	99.4	
Medium companies						
50–99	115,591	0.1	0.4	0.4	99.1	
100–249	63,969	0.0	0.2	r 0.7	99.1	
Large companies						
250–499	18,124	0.0	0.5	r 0.2	99.3	
500–999	7,668	0.1	r 0.3	0.3	99.3	
1,000–4,999	6,010	0.3	0.4	0.8	98.4	
5,000–9,999	982	0.4	1.1	1.9	96.6	r
10,000–24,999	516	0.8	3.1	1.5	94.6	
25,000 or more	372	1.4	0.4	r 2.4	95.9	

r = relative standard error &gt; 50%.

**Note(s):**

Detail across rows may not add to total because of rounding. Detail across columns have been adjusted to add to total. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-57

**Impact that the use of artificial intelligence technology had on workforce characteristics for companies that used the technology somewhat, a little, or a lot: 2021**

(Percent)

Impact	Companies (number)	Increase	Decrease	No impact	Don't know
Number of workers employed	97,227	13.7	6.9	66.0	13.4
Skill level of workers employed	97,227	26.7	4.4	55.2	13.7
Scientific, technological, engineering, and mathematical skills of workers	97,227	19.8	3.3	60.9	16.0
Number of production workers	97,227	7.4	5.5	71.9	15.2
Number of nonproduction workers	97,227	5.3	4.7	73.9	16.1
Number of supervisory workers	97,227	6.8	4.0	74.1	15.1
Number of nonsupervisory workers	97,227	6.2	4.4	73.7	15.7

**Note(s):**

Detail may not add to total because of rounding. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-58

**Impact that the use of artificial intelligence technology had on workforce characteristics for manufacturing companies that used the technology somewhat, a little, or a lot: 2021**

(Percent)

Impact	Companies (number)	Increase	Decrease	No impact	Don't know
Number of workers employed	3,793	14.0	7.9	61.3	16.8
Skill level of workers employed	3,793	25.9	3.7	54.9	15.5
Scientific, technological, engineering, and mathematical skills of workers	3,793	23.6	2.9	r 55.6	17.9
Number of production workers	3,793	9.5	10.9	63.7	15.9
Number of nonproduction workers	3,793	10.6	7.2	66.4	15.8
Number of supervisory workers	3,793	10.4	3.5	69.9	16.2
Number of nonsupervisory workers	3,793	9.3	5.9	67.7	17.1

r = relative standard error &gt; 50%.

**Note(s):**

Detail may not add to total because of rounding. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.



TABLE CET-59

**Impact that the use of artificial intelligence technology had on workforce characteristics for nonmanufacturing companies that used the technology somewhat, a little, or a lot: 2021**

(Percent)

Impact	Companies (number)	Increase	Decrease	No impact	Don't know
Number of workers employed	93,433	13.7	6.8	66.3	13.2
Skill level of workers employed	93,433	26.7	4.4	55.2	13.7
Scientific, technological, engineering, and mathematical skills of workers	93,433	19.7	3.3	61.1	15.9
Number of production workers	93,433	7.3	5.3	72.2	15.2
Number of nonproduction workers	93,433	5.1	4.6	74.2	16.1
Number of supervisory workers	93,433	6.6	4.0	74.3	15.0
Number of nonsupervisory workers	93,433	6.0	4.3	74.0	15.6

**Note(s):**

Detail may not add to total because of rounding. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-60

**Impact that the use of renewable energy generation and storage technology had on workforce characteristics for companies that used the technology somewhat, a little, or a lot: 2021**

(Percent)

Impact	Companies (number)	Increase	Decrease	No impact	Don't know
Number of workers employed	58,859	12.4	6.2	69.0	12.3
Skill level of workers employed	58,859	17.4	4.7	65.4	12.5
Scientific, technological, engineering, and mathematical skills of workers	58,859	13.4	3.7	68.6	14.2
Number of production workers	58,859	7.4	4.8	73.7	14.0
Number of nonproduction workers	58,859	6.4	4.5	74.6	14.4
Number of supervisory workers	58,859	7.1	4.3	75.1	13.5
Number of nonsupervisory workers	58,859	7.7	3.8	74.3	14.1

**Note(s):**

Detail may not add to total because of rounding. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-61

**Impact that the use of renewable energy generation and storage technology had on workforce characteristics for manufacturing companies that used the technology somewhat, a little, or a lot: 2021**

(Percent)

Impact	Companies (number)	Increase	Decrease	No impact	Don't know
Number of workers employed	3,358	14.3	4.0	70.4	11.3
Skill level of workers employed	3,358	13.8	3.7	68.8	13.7
Scientific, technological, engineering, and mathematical skills of workers	3,358	12.4	3.8	70.7	13.1
Number of production workers	3,358	11.4	4.1	71.3	13.2
Number of nonproduction workers	3,358	6.3	4.3	77.0	12.4
Number of supervisory workers	3,358	5.3	2.5	80.2	12.0
Number of nonsupervisory workers	3,358	7.2	2.9	77.7	12.2

r = relative standard error &gt; 50%.

**Note(s):**

Detail may not add to total because of rounding. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-62

**Impact that the use of renewable energy generation and storage technology had on workforce characteristics for nonmanufacturing companies that used the technology somewhat, a little, or a lot: 2021**

(Percent)

Impact	Companies (number)	Increase	Decrease	No impact	Don't know
Number of workers employed	55,502	12.3	6.4	68.8	12.4
Skill level of workers employed	55,502	17.6	4.7	65.2	12.5
Scientific, technological, engineering, and mathematical skills of workers	55,502	13.5	3.7	68.5	14.2
Number of production workers	55,502	7.2	4.8	73.8	14.1
Number of nonproduction workers	55,502	6.4	4.5	74.4	14.6
Number of supervisory workers	55,502	7.2	4.4	74.7	13.6
Number of nonsupervisory workers	55,502	7.8	3.8	74.1	14.2

**Note(s):**

Detail may not add to total because of rounding. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE CET-63

## Source of technology capabilities, by industry: 2021

(Percent)

Industry	NAICS code	Companies (number)	Acquired technology products	Acquired intellectual property rights	Modified or adapted existing technology	Developed new technology
All industries	11, 21–23, 31–33, 42–81	4,874,928	18.3	1.8	10.3	3.3
Manufacturing industries	31–33	209,282	26.4	3.6	16.8	7.4
Food	311	19,326	18.8	2.9	10.6	3.3
Beverage and tobacco products	312	9,354	26.0	2.6	13.5	3.5
Textile, apparel, and leather products	313–16	9,443	15.5	2.8	8.0	3.5
Wood products	321	9,546	24.5	1.1	12.8	3.2
Paper	322	1,500	24.3	7.1	19.1	7.5
Printing and related support activities	323	20,212	27.3	2.1	13.4	2.9
Petroleum and coal products	324	546	9.3	2.7	13.2	5.1
Chemicals	325	7,961	28.4	7.9	22.3	8.0
Pesticide, fertilizer, and other agricultural chemicals	3253	580	27.9	2.6	14.3	2.4
Pharmaceuticals and medicines	3254	1,536	36.7	14.8	26.8	11.3
Soap, cleaning compound, and toilet preparation	3256	1,652	24.5	4.5	18.0	5.0
Other chemicals	other 325	4,194	26.9	7.3	23.4	8.7
Plastics and rubber products	326	7,060	28.1	5.0	21.2	7.5
Nonmetallic mineral products	327	7,290	20.5	1.9	13.9	3.2
Primary metals	331	2,079	31.3	2.8	20.9	6.7
Fabricated metal products	332	46,128	29.1	1.9	16.1	6.6
Machinery	333	16,440	33.6	7.2	26.2	14.8
Computer and electronic products	334	8,527	30.5	8.2	35.4	31.6
Communications equipment	3342	850	30.1	5.6	43.8	42.7
Semiconductor and other electronic components	3344	2,711	34.2	6.6	35.3	25.4
Navigational, measuring, electromedical, and control instruments	3345	3,737	30.6	10.1	34.7	34.2
Other computer and electronic products	other 334	1,230	22.3	8.2	32.3	30.0
Electrical equipment, appliances, and components	335	3,925	29.8	5.9	27.8	20.0
Transportation equipment	336	7,325	28.0	5.9	20.8	10.3
Automobiles, bodies, trailers, and parts	3361–63	4,494	28.8	6.0	21.7	10.7
Aerospace products and parts	3364	1,044	37.9	7.9	26.5	14.6
Other transportation	other 336	1,787	20.1	4.5	15.1	6.9
Furniture and related products	337	12,060	23.8	2.1	10.6	2.7
Miscellaneous	339	20,536	26.2	4.2	16.7	7.7
Medical equipment and supplies	3391	7,602	28.5	4.7	19.4	9.7
Other miscellaneous manufacturing	3399	12,933	24.8	3.9	15.1	6.5
Nonmanufacturing industries	11, 21–23, 42–81	4,665,645	17.9	1.7	10.0	3.1
Agriculture, forestry, fishing, and hunting	11	19,567	17.9	0.0	7.0	2.1
Mining, extraction, and support activities	21	14,004	19.4	1.6	8.3	1.7
Utilities	22	2,994	19.9	2.0	10.5	5.1
Construction	23	635,568	14.1	0.8	6.3	1.4
Wholesale trade	42	241,440	16.9	2.9	9.9	3.8
Retail trade	44–45	546,067	15.8	1.8	8.0	2.2
Transportation and warehousing	48–49	165,454	16.2	0.8	7.6	2.4
Information	51	65,445	25.0	5.1	21.2	16.5
Publishing	511	17,755	24.5	7.3	26.6	28.7
Newspaper, periodical, book, and directory publishers	5111	9,162	22.3	3.8	12.2	5.6
Software publishers	5112	8,589	26.7	10.9	41.9	53.4
Telecommunications	517	7,319	30.6	3.9	19.8	5.5

TABLE CET-63

**Source of technology capabilities, by industry: 2021**

(Percent)

Industry	NAICS code	Companies (number)	Acquired technology products	Acquired intellectual property rights	Modified or adapted existing technology	Developed new technology
Data processing, hosting, and related services	518	8,346	27.7	4.9	32.9	34.0
Other information	other 51	32,027	23.3	4.3	15.6	7.7
Finance and insurance	52	198,128	21.2	1.6	14.6	3.5
Real estate and rental and leasing	53	283,276	15.0	1.0	8.4	1.6
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1,956	17.4	11.4	r 11.0	5.3
Other real estate and rental and leasing	other 53	281,321	15.0	0.9	8.4	1.5
Professional, scientific, and technical services	54	717,229	25.9	2.6	18.1	7.9
Legal services	5411	152,543	25.0	1.4	18.1	1.7
Accounting, tax preparation, bookkeeping, and payroll services	5412	109,075	39.0	2.4	17.4	2.6
Architectural, engineering, and related services	5413	87,994	29.6	2.4	19.4	8.2
Specialized design services	5414	29,258	21.8	1.6	11.7	3.9
Computer systems design and related services	5415	100,282	22.9	3.5	27.6	25.1
Management, scientific, and technical consulting services	5416	144,421	18.6	2.8	14.5	6.9
Scientific research and development services	5417	11,149	27.9	17.2	33.3	31.4
Advertising, public relations, and related services	5418	28,236	20.3	3.0	14.1	5.9
Other professional, scientific, and technical services	5419	54,270	25.3	2.1	12.0	4.4
Management of companies and enterprises	55	3,153	20.1	3.8	r 10.3	5.9
Administrative and support and waste management and remediation services	56	293,539	15.2	1.1	7.9	2.3
Educational services	61	57,078	16.9	2.9	14.0	3.9
Health care and social assistance	62	536,276	21.8	1.7	11.5	2.0
Health care services	621-23	469,939	22.9	1.8	12.0	2.0
Social assistance	624	66,336	13.8	1.3	8.4	1.9
Arts, entertainment, and recreation	71	89,491	15.5	2.7	7.6	1.7
Accommodation and food services	72	455,071	11.8	1.4	5.4	1.5
Other services	81	341,869	18.1	1.4	6.5	1.5

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

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**Source of technology capabilities, by company size: 2021**

(Percent)

Employment size	Companies (number)	Acquired technology products	Acquired intellectual property rights	Modified or adapted existing technology	Developed new technology
All companies	4,874,928	18.3	1.8	10.3	3.3
Micro companies					
1–4	2,734,191	14.6	1.3	8.2	2.6
5–9	950,548	20.2	1.9	10.5	3.0
Small companies					
10–19	577,397	22.7	2.2	12.5	3.9
20–49	399,566	25.2	2.6	14.6	4.8
Medium companies					
50–99	115,591	29.9	3.0	18.6	6.8
100–249	63,969	34.5	4.2	22.8	9.9
Large companies					
250–499	18,124	38.7	5.6	25.6	10.6
500–999	7,668	39.2	9.7	36.7	18.7
1,000–4,999	6,010	42.0	11.6	37.2	21.6
5,000–9,999	982	50.8 r	24.7 r	51.3 r	30.0
10,000–24,999	516	56.4	31.0	58.1	45.3
25,000 or more	372	47.0	26.3	44.6	35.8

r = relative standard error &gt; 50%.

**Note(s):**

Detail may not add to total because of rounding. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

## Technical Notes

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### Survey Overview (2022 Survey Cycle: Data Year 2021)

*Purpose.* The Annual Business Survey (ABS) provides information on selected economic and demographic characteristics for businesses and business owners by sex, ethnicity, race, and veteran status. Further, the survey measures research and development (R&D) for microbusinesses, business topics such as innovation and technology, and other business characteristics. The ABS is conducted jointly by the Census Bureau and the National Center for Science and Engineering Statistics (NCSES) within the National Science Foundation (NSF). The ABS replaces the quinquennial Survey of Business Owners for employer businesses, the Annual Survey of Entrepreneurs, the Business R&D and Innovation for Microbusinesses Survey, and the Innovation section of the Business R&D and Innovation Survey.

The ABS is designed to incorporate new content each survey year based on topics of relevance. For the 2022 ABS, content includes company information, owner characteristics, research activities at nonprofit organizations, R&D, technology, innovation, financing, and management practices. R&D data are collected on the ABS for businesses with a W-2 employment range between one and nine employees.

*Data collection authority.* Title 13, U.S. Code, Sections 8(b), 131, and 182; Title 42, U.S. Code, Sections 1861–76 (NSF Act of 1950, as amended); and Section 505 within the America COMPETES Reauthorization Act of 2010, authorize this collection. Sections 224 and 225 of Title 13 require mandatory response. Office of Management and Budget (OMB) No. 0607-1004.

*Survey sponsor.* NCSES within NSF.

*Survey collection and tabulation agent.* The survey is conducted annually by the Census Bureau in accordance with an interagency agreement with NCSES within NSF.

### Key Survey Information

*Frequency.* Annual.

*Initial survey year.* Calendar year 2017; for innovation, the reference period was 2015–17.

*Reference period.* Calendar year 2021; for innovation, the reference period was 2019–21.

*Response unit.* Nonfarm businesses in the United States.

*Sample or census.* Sample.

*Population size.* A total of 4.9 million employer firms; approximately 505,000 firms with one to nine employees and in North American Industry Classification System (NAICS) industries 31–33 (manufacturing), 42 (wholesale trade), 51 (information), 5413 (architectural, engineering, and related services), 5415 (computer systems design and related services), or 5417 (scientific research and development services) were in scope for the R&D module.

*Sample size.* 300,000 employer businesses.



## Survey Design

*Target population.* Included are all nonfarm businesses filing Internal Revenue Service (IRS) tax forms as individual proprietorships, partnerships, or any type of corporation and with receipts of \$1,000 or more. The target population included only companies that had paid employees according to the IRS Form 941 that covered 12 March 2022, are classified in an in-scope NAICS industry, were physically located in the United States, and were in business at the end of calendar year 2022. The ABS covers firms with paid employees only. The ABS is conducted on a company or firm basis rather than an establishment basis.

*Sampling frame.* The sampling universe was constructed from the final 2020 Business Register. The Business Register is the Census Bureau's comprehensive database of U.S. businesses. Business Register data are compiled from a combination of business tax returns, data collected from the economic census, and data from other Census Bureau surveys. The Business Register includes sole proprietorships, partnerships, and corporations reporting business activity to the IRS on any one of the following IRS tax forms: 1040 (Schedule C), "Profit or Loss from Business" (Sole Proprietorship); 1065, "U.S. Return of Partnership Income"; 941, "Employer's Quarterly Federal Tax Return"; 944, "Employer's Annual Federal Tax Return"; or any one of the 1120 corporate tax forms.

The Business Register contains establishments that are out of scope for the ABS sample. These establishments are removed from the sampling universe. They include the following:

- Establishments engaged in the following NAICS industries:
  - 110000, 111, or 112 - Agriculture production
  - 482 - Railroads
  - 491 - U.S. Postal Service
  - 521 - Monetary authorities—central bank
  - 525 - Funds, trusts, and other financial vehicles
  - 813 - Religious, grantmaking, civic, professional, and similar organizations
  - 814 - Private households
  - 92 - Public administration
- Unclassified with legal form of organization as tax exempt or unknown
- Establishments located in American Samoa, Northern Mariana Islands, Guam, Puerto Rico, or the U.S. Virgin Islands
- Establishments belonging to foreign entities
- Government establishments
- Establishments with zero payroll and zero employment
- Establishments identified as out of business during prior year data review
- Single-unit establishments modeled as likely to be out of business using administrative data from the most recent monthly Business Register data sets

Information on industry classification, receipts, payroll, and employment was extracted from the Business Register during the frame construction.

The sample is also designed to estimate demographic characteristics of the business owners. To efficiently sample for demographic characteristics, a variety of sources of information are used to estimate the likelihood that a business is a woman- or minority-owned business. Administrative sources include the Decennial Census, the American Community Survey (ACS), and the Numident file, which is the Social Security Administration's comprehensive database of information from Social Security applications. Individual business owners are identified through IRS K-1 filings for partnerships and corporations and from the Business Register for sole proprietorships. The owners are matched to the 2000 and 2010 Decennial Censuses to get race, sex, and ethnicity data; to the 2000–20 ACS; and to the Numident file (in that order) through a Protected Identification Key. Country of birth is also identified through the linkages to the ACS or Numident data. Each firm is then placed in one of the following eight strata describing characteristics of business owners for sampling: American Indian or Alaska Native, Asian, Black or African American, Hispanic, non-Hispanic White men, Native Hawaiian and Other Pacific Islander, publicly owned, and women owned. Businesses are assigned to one and only one stratum, with priority given to the less common race or ethnicity groups.

*Sample design.* The ABS frame is stratified by state, expected owner race or ethnicity, and industry and is systematically sampled within each stratum. A standard type of estimation for stratified systematic sampling is used. Large companies were selected with certainty based on volume of sales, payroll, or number of paid employees. Certainty cases have a selection probability of 1, a sampling weight of 1, and represent only themselves. Specifically for the 2022 ABS, firms were selected with certainty based on the following criteria:

- Firms in NAICS 5415 or 5417 with expected employment of fewer than 10 employees that reported at least \$500,000 in R&D expenses in a prior year ABS,
- Firms in NAICS 5413, 31, 32, 33, 42, or 51 with expected employment of fewer than 10 employees that reported at least \$50,000 in R&D expenses in a prior year ABS,
- Firms with more than 500 employees, or
- Firms larger than stratum-specific payroll and receipt cutoffs.

The certainty cutoffs vary by sampling stratum, and each stratum is sampled at varying rates, depending on the number and size of firms in a particular stratum.

The remaining frame is subjected to stratified systematic random sampling. Sampling rates vary by strata and are determined by the following calculations. Note that a systematic sample uses take rate to sample, and the sampling rate is 1/take rate.

The ABS sample consisted of 300,000 businesses. There were 46,000 selected with certainty. The certainty portion of the sample consisted of

- 5,000 with sufficient R&D expenses in previous cycles of the ABS,
- 17,000 with 500 or more employees,
- 16,000 with payroll above the stratum cutoff, and
- 8,000 with receipts above the stratum cutoff. (Note that payroll cutoffs are applied first so cases above both cutoffs appear in payroll count.)

The remaining 254,000 noncertainty cases were selected using the systematic stratified random sample selection. The maximum sample weight was 40.

## Data Collection and Processing Methods

*Data collection.* Prior to mailing the survey, certain businesses selected were determined to be out of scope and were not contacted. The survey was mailed to 300,000 employer businesses in July 2022. Businesses were sent a letter informing them of their requirement to report. The letter also provided instructions on how to access the survey and submit online. There were three mail follow-ups conducted to increase response. Additionally, the Census Bureau conducted e-mail follow-ups to respondents who entered the electronic system but did not submit the questionnaire. The collection period closed in January 2023.

*Mode.* The 2022 ABS was collected using a Web-based survey instrument.

*Check-in rate.* The check-in rate is defined as the unweighted number of surveys that were submitted online by in-scope companies, divided by the unweighted total number of all in-scope companies in the sample. Response to individual questions did not factor into this metric. At the close of the collection period in January 2023, there were 184,000 responses submitted (62% of the sample).

There were an additional 1,900 businesses that contacted the Census Bureau to indicate that the business was no longer in operation or had been sold for the reference year via the call center.

Businesses selected to report R&D represented 39% of those mailed. Of the businesses mailed and selected to report R&D, 71,000 businesses (or 65%) submitted responses.

*Unit response rate (URR).* The URR is the unweighted number of responding companies for the survey. For the ABS, *response* is defined as a company providing the number of owners, number of paid owners, and number of employees or a company responding that it ceased operations prior to 2021.

For the ABS, the URR was 67.0%. The URR for businesses eligible to report the R&D module was 70.3%.

*Item response rates (IRR).* The 2022 ABS collected data on approximately 650 variables, and the distribution of values reported by sample companies is highly skewed. Thus, rather than report unweighted item response rates, total quantity response rates are calculated, which are based on weighted data. The survey skip patterns vary for respondents; therefore, it can be impossible to know an exact denominator for item response calculations.

*Total quantity response rate (TQRR).* For a given published estimate other than count or ratio estimates, TQRR is the percentage of the weighted estimate based on data that were reported by units in the sample or on data that were obtained from other sources and were determined to be equivalent in quality to reported data and weighted only by sampling but not nonresponse weights. The TQRR for total sales in the United States in 2020 was 72.6%.

*Total quantity nonresponse rate (TQNR).* For a given published estimate, TQNR, defined as 100% minus TQRR, is calculated for each tabulation cell from the ABS, except for cells that contain count or ratio estimates. TQNR measures the combined effect of the procedures used to handle unit and item nonresponse on the weighted ABS estimate. Detailed imputation rates are available on request.

*Data editing.* Prior to tabulating the data, response data were reviewed and edited to correct reporting errors. R&D data were tabulated for records reporting \$50,000 or more in R&D expenditures.

Additionally, R&D data were only tabbed for records classified in the following NAICS industries:

- 31–33 - Manufacturing
- 42 - Wholesale trade
- 51 - Information
- 5413 - Architectural, engineering, and related services

- 5415 - Computer systems design and related services
- 5417 - Scientific research and development services

Survey analysts reviewed the R&D reported by the survey respondents. Research was done by evaluating the reported business descriptions, reported R&D-to-sales ratio, and company website information. The majority of corrections involved false-positive reports or data reported using incorrect units (such as whole dollars instead of thousands of dollars). For NAICS industries 5415 and 5417, it is difficult to differentiate R&D from other technical work based solely on company website information. Due to this difficulty and the large number of companies sampled in these industries, it was not feasible to review each case individually; thus, relatively few corrections were made for false-positive reports. All cases were reviewed in these industries that had greater than \$50,000 in R&D expenses.

Additional data errors were detected and corrected through mass corrections and an automated data edit system designed to review the data for reasonableness and consistency. The editing process interactively performed corrections by using standard procedures to fix detectable errors. Quality control techniques were used to verify that operating procedures were carried out as specified.

*Unit nonresponse.* Unit nonresponse is handled by adjusting weighted reported data as follows. Each company's sampling weight is multiplied by a nonresponse adjustment factor. To calculate the adjustment factors, each company in the sample that is eligible for tabulation is assigned to one (and only one) adjustment cell. The adjustment cells are based on employment size and NAICS sector. For employment size, there are five categories: 1–4 employees, 5–9 employees, 10–49 employees, 50–249 employees, and 250 or more employees. For a given adjustment cell, the nonresponse adjustment factor is the ratio of the sum of the sampling weights for all companies in the cell to the sum of the sampling weights for all companies in the cell with reported data. The nonresponse adjustment factor for adjustment cell  $h$  was calculated as follows:

$$NAF_h = \frac{\sum_{r+nr} wgt}{\sum_r wgt},$$

where

$r$  is the respondents (partial and complete),

$nr$  is the nonrespondents,

$wgt$  is the original sampling weight value,

$h$  is the nonresponse adjustment cell, and

$NAF_h$  is the nonresponse adjust factor for cell  $h$ .

For the nonresponse adjustment, a business is considered a respondent if it provided the number of owners, number of paid owners, and number of employees. Businesses that responded they ceased operations prior to 2021 are excluded from nonresponse adjustments as out of scope.

*Tabulation.* Although as many firms as possible were identified as out of scope during sampling, additional out-of-scope firms were identified with either response or updated administrative data not available at the time of sampling. These 33,000 firms were removed for tabulations and include

- Firms reporting zero employment,
- Firms that responded as having gone out of business before 2021,
- Nonprofit organizations,

- Firms that responded as being owned by a domestic parent company, and
- Firms with unclassified NAICS industry.

*Industry classification.* The industry classifications of firms are based on the **2017 NAICS** (<https://www.census.gov/naics/>). Firms with more than one domestic establishment are assigned a single industry classification using a hierarchical system based on the largest payroll sector, largest payroll 3-digit NAICS (within the largest sector), largest payroll 4-digit NAICS (within the largest 3-digit), and largest payroll 6-digit NAICS (within the largest 4-digit). For tabulation, industry classification was based on administrative data for 2017.

*Geography.* Firms with establishments operating in more than one state are tabulated as unclassified geography and counted only once in state and national totals.

*Variance estimation.* The ABS uses the delete-a-group jackknife variance estimator. Note that certainty cases do not contribute to the sampling variance. The delete-a-group jackknife variance estimator requires that every sampling stratum contains at least two sampled firms. Sampling strata that do not meet this requirement are collapsed as needed to create a new set of variance estimation strata that satisfies this requirement.

Data tables showing relative standard errors are available on request from the Survey Manager.

## Survey Quality Measures

The estimates produced from the ABS are subject to both sampling and nonsampling errors.

*Sampling error.* The sampling error is described above in the variance estimation section.

*Coverage error.* Coverage error occurs when the frame fails to completely enumerate the population of interest. There can be both *undercoverage error*, where units are not included in the frame, and *overcoverage error*, where units included in the frame are actually out of scope for the population of interest. The ABS uses the prior-year Business Register to construct the frame, so any changes in businesses that would change the inclusion or exclusion of the business to the survey scope could be sources of coverage error. Prior to tabulation, survey units' information is updated with the most recently available Business Register data to mitigate this source of error.

*Nonsampling error.* All surveys and censuses have nonsampling errors. Nonsampling errors are attributable to various sources, such as the inability to obtain information for all cases in the universe, imputation for missing data, data errors and biases, mistakes in recording or keying data, errors in collection or processing, and coverage problems.

Although explicit measures of the effects of these nonsampling errors are not available, adjustments are made to the published relative standard errors to account for errors associated with imputation of missing data. It is believed that most of the important operational and data errors were detected and corrected through an automated data edit designed to review the data for reasonableness and consistency. Quality control techniques were used to verify that operating procedures were carried out as specified.

*Measurement error.* The most common source of measurement error was reporting in different units (e.g., reporting whole dollars rather than thousands of dollars). Variations in respondent interpretations of the definitions of R&D activities are of particular concern, and error can occur when respondents do not report dollar amounts correctly. Little public information exists for most of the small businesses surveyed by the ABS, so it is difficult to determine whether companies are reporting R&D that satisfies the survey's definitions, particularly where the development of software and Internet applications are concerned. Although no metric of measurement error is produced, ongoing efforts to minimize measurement error include questionnaire pretesting, improvement of questionnaire wording and format, inclusion of more cues and examples in the questionnaire instructions, telephone interviews and consultations with respondents, and post-survey evaluations.

## Data Comparability

Some estimates from the 2022 ABS may not be directly comparable to prior ABS results due to changes in survey methodology. Sources of possible incomparability include changes to questionnaire wording and instructions, changes to data editing and tabulation, and changes to imputation and nonresponse adjustments.

*Changes in survey coverage and population.* There were no changes to survey coverage and population for reference year 2021 (ABS 2022).

*Changes to questionnaire wording and instructions.* The survey section that collected information on R&D from businesses (section D) had nearly identical question wording and instructions for both the ABS 2021 and the ABS 2020 questionnaires. The 2022 ABS collected additional detail from businesses on the location of R&D performance and explicitly highlighted the concept of “domestic R&D performance.” For the 2022 ABS detailed questions about R&D expenditures (types of costs, funding sources, and R&D categories) were tied to domestic R&D performance (a subset of total R&D costs), whereas previous ABS questionnaires asked similar questions tied to total R&D costs.

The following are survey changes in the questionnaire from ABS 2021 to ABS 2022; question number references are in reference to the ABS 2022:

- New question: B.15 Owner Disability (added for all owners)
- New question: C.11 Research Performance by Type of Cost
- New questions: C.17–C.19 Additional questions on Capital Expenditures for Research Activities at Nonprofit Organizations
- New questions: D.10–D.12 Additional questions on Capital Expenditures for businesses with 1–9 employees
- New question: D.18 State Tax Credit for Research Activities
- New section E: Goods, Services, and Business Processes and Technology
- New section F: Design and Intellectual Property
- New section G: Domestic and Foreign Transactions
- Revised section H: Coronavirus Pandemic Impact on Research and Development and Business Activities
  - Removed question: H.5 Outsourcing R&D Expenditures Due to the Coronavirus Pandemic
  - New question: H.5 Changing R&D Payment Due to the Coronavirus Pandemic
  - New question: H.6 Effect of Coronavirus Pandemic on Business Sales
  - New question: H.7 Financial Health of the Business
  - New question: H.8 Outstanding Debt for the Business
  - New question: H.9 Level of Operations During the Coronavirus Pandemic

*Changes in reporting procedures or classification.* There were no changes to reporting procedures or classification for data year 2021.

*Changes to data editing and tabulation.* For data collected in the R&D section of the ABS, every response with \$50,000 or more in R&D costs was reviewed for reasonableness. All positive R&D cases were reviewed in industries with high rates of false-positive reports. Outside of the review for potential false-positive R&D cases, the editing of R&D data was performed similarly in 2020 and 2021. There have been no major changes to the edits from year to year.

Data collected in the innovation section of the ABS were edited similarly in 2018 and 2019, but the estimates for product innovation were tabulated differently. For 2017, a business must have responded positively to both the product innovation question and the subsequent business product innovation question (new to market or new to business) to be considered a product innovator. For 2021 and 2022, only a positive response to the question regarding new or improved goods or services was required to be tabulated as a product innovator.

*Changes in imputation methods.* In 2019, a change was made in how item nonresponse is treated in the ABS. Item nonresponse occurs when a company responds to the survey but leaves some items blank. In 2018, item nonresponse was treated using a combination of mode and donor imputation. For 2019 and future years (including 2021), no imputation was performed to treat item nonresponse, and missing items were included as no or zero in the estimates. For most of the estimates in 2019 (91%), this change in methods did not yield a change in the estimates. For an additional 9% of estimates, there was a difference in the estimate; the difference, however, was not statistically significant. In 2021, the imputation method was updated to exclude out-of-scope firms as donors and recipients. In previous ABS years, all sampled firms were included in imputation and out-of-scope firms were later removed.

*Changes in collection methods.* During the 2022 ABS collection period, a single letter was mailed to respondents using U.S. Postal Service Priority Mail. For the 2022 ABS, the third follow-up used First Class Mail.

## Definitions

- *Affiliated (company or business).* An entity that is owned 10% or more (based on voting interest or an equivalent interest) directly or indirectly by your company.
- *Business processes.* Business process includes the following: (1) methods for producing goods or providing services, (2) distribution and logistics, (3) marketing and sales, (4) information and communication systems, (5) administration and management activities, and (6) product and business process development (including activities to identify, develop, or adapt products or a firm's processes).
- *Core production activity.* This term refers to your primary business activities. For manufacturing companies, core production typically involves production of physical goods. For service companies and other companies, core production refers to the main services or activities provided by your business, such as information and communications technology services, marketing services.
- *Domestic or U.S.-located.* Refers to a location in any of the U.S. 50 states and the District of Columbia.
- *Employment.* Paid employment consists of full- and part-time employees, including salaried officers and executives of corporations who were on the payroll in the pay period including March 12. Included are employees on sick leave, holidays, and vacations; not included are proprietors and partners of unincorporated businesses.
- *Ethnicity.* Based on OMB's guidance, there are two minimum categories for ethnicity: Hispanic or Latino and Not Hispanic or Latino. OMB considers race and Hispanic origin to be two separate and distinct concepts. Hispanics and Latinos may be of any race.
- *Exported goods.* Value of goods, including the value of equipment, supplies, materials, etc. This should equal the amounts reported in the Automated Export System's Electronic Export Information filed with U.S. Customs and Border Protection plus the cost of transporting the goods to customers located in foreign destinations (i.e., outside the United States).
- *Exported services.* An exported service is a service-related product (i.e., services performed, including digital service, license agreement) that is sold or transferred to, or performed for, customers (individual, government, business establishment, etc.) located in foreign destinations (i.e., outside the United States).
- *Firm.* A business organization or entity consisting of one or more domestic establishment locations under common ownership or control.

- *Foreign affiliate.* A foreign affiliate is an entity located outside the United States that is owned at least 10% (based on voting interest or an equivalent interest) directly or indirectly by the U.S. reporter.
- *Foreign parent (of a U.S.-located business).* The first entity outside the United States in an affiliate's ownership chain that has a direct or indirect investment interest of more than 50% of the affiliate's voting securities.
- *Goods.* Usually a tangible object (such as smartphone, furniture, or packaged software) but also includes digital goods (such as downloadable software, music, and film). Exclude the simple resale of new goods and changes of a solely aesthetic nature.
- *Imported goods.* The value of goods purchased from customers located in foreign destinations (i.e., outside the United States) as indicated in import declarations filed with the U.S. Customs and Border Protection.
- *Imported services.* An imported service is a service-related product (i.e., service performed, including digital service, license agreement) that is purchased from customers located in foreign destinations (i.e., outside the United States).
- *Innovation.* A business innovation is a new or improved product or business process (or combination thereof) that differs significantly from the firm's previous products or business processes and that has been introduced on the market or brought into use by the firm.
- *Intellectual property.* Includes patents, processes, and trade secrets; books and music; trademarks; recorded performances and events, such as radio and television programs and motion pictures; broadcast and recorded live performances and events and their content; general use computer software; franchise fees; and other (e.g., digital media).
- *Noise infusion.* A method of disclosure avoidance in which values are perturbed prior to tabulation by applying a random noise multiplier to the magnitude data, such as the sales and receipts for all firms. Disclosure protection is accomplished in a manner that causes the vast majority of cell values to be perturbed by, at most, a few percentage points.
- *North American Industry Classification System (NAICS).* NAICS is the standard used by federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy. This system is used by the United States, Canada, and Mexico.
- *Race.* The data on race were derived from answers to the race question. Race data are collected in accordance with the guidelines provided by OMB, and these data are based on self-identification. The racial categories included in the questionnaire generally reflect a social definition of race recognized in this country and are not an attempt to define race biologically, anthropologically, or genetically. In addition, it is recognized that the categories of the race question include race and national origin or sociocultural groups. OMB requires that race data be collected for a minimum of five groups: White, Black or African American, American Indian or Alaska Native, Asian, and Native Hawaiian or Other Pacific Islander. Respondents may report more than one race.
- *Receipts.* Includes the total sales, shipments, receipts, revenue, or grants for domestic operations, excluding foreign subsidiaries.
- *Research and development (R&D).* R&D is planned, creative work aimed at discovering new knowledge or devising new applications of available knowledge. This includes basic research, applied research, and development (see definitions below). R&D includes both direct costs, such as salaries of researchers, and administrative and overhead costs clearly associated with the company's R&D. However, R&D does not include expenditures for routine product testing, quality control, and technical services unless they are an integral part of an R&D project. R&D also does not include market research; efficiency surveys or management studies; literary, artistic, or historical projects, such as films, music, or books and other publications; and prospecting or exploration for natural resources.
  - *Basic research.* Activities aimed at acquiring new knowledge or understanding without specific immediate commercial applications or uses.



- *Applied research*. Activities aimed at solving a specific problem or meeting a specific commercial objective.
- *Development*. Systematic work, drawing on research and practical experience and resulting in additional knowledge, which is directed to producing new products or processes or to improving existing products or processes.
- R&D activity in software includes
  - Software development or improvement activities that expand scientific or technological knowledge
  - Construction of new theories and algorithms in the field of computer science
- R&D activity in software excludes
  - Software development that does not depend on a scientific or technological advance, such as
    - Supporting or adapting existing systems,
    - Adding functionality to existing application programs,
    - Routine debugging of existing systems and software, and
    - Creation of new software based on known methods and applications.
  - Conversion or translation of existing software and software languages; and
  - Adaptation of a product to a specific client, unless knowledge that significantly improved the base program was added in that process.
- *Services*. Intangible activities, such as retailing, insurance, educational courses, air travel, consulting, etc.; also includes digital services. (Exclude the simple resale of new services.)
- *Sex*. For the purposes of the ABS, sex refers to a person's biological sex. The sex question wording very specifically intends to capture a person's biological sex and not gender.
- *Unaffiliated (company or business)*. Entity that is owned less than 10%, directly or indirectly, by your company (i.e., independent contractors and suppliers).
- *Worldwide sales*. Worldwide and domestic sales and operating revenues, including grants.

## Technical Tables

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Table	Title
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A-1	Companies in the target population and selected for the sample, by industry: 2021
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A-2	Response measures: 2021
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A-3	Unit response rates, by industry: 2021
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TABLE A-1

**Companies in the target population and selected for the sample, by industry: 2021**

(Number of companies)

Industry	NAICS code	Companies in target population <sup>a</sup>	All companies	Noncertainties	Certainties
All industries	11, 21–23, 31–33, 42–81, 00	5,410,000	300,000	254,000	46,500
Manufacturing industries	31–33	227,000	49,000	36,500	12,500
Food	311	21,500	4,600	3,400	1,200
Beverage and tobacco products	312	9,800	2,700	2,100	500
Textile, apparel, and leather products	313–16	11,500	2,600	2,000	600
Wood products	321	11,000	2,400	1,900	500
Paper	322	2,100	550	200	300
Printing and related support activities	323	20,500	3,800	3,100	700
Petroleum and coal products	324	650	150	60	100
Chemicals	325	9,100	3,300	2,100	1,100
Pesticide, fertilizer, and other agricultural chemical	3253	650	200	150	60
Pharmaceuticals and medicines	3254	2,000	1,000	650	350
Soap, cleaning compound, and toilet preparation	3256	1,900	650	450	200
Other chemicals	other 325	4,500	1,400	850	550
Plastic and rubber products	326	8,000	2,200	1,500	650
Nonmetallic mineral products	327	8,200	2,200	1,700	550
Primary metals	331	2,800	1,000	700	350
Fabricated metal products	332	46,000	5,500	4,400	1,100
Machinery	333	18,000	3,300	2,400	900
Computer and electronic products	334	9,300	3,600	2,300	1,300
Communications equipment	3342	1,000	450	250	200
Semiconductor and other electronic components	3344	2,900	1,100	750	350
Navigational, measuring, and control instruments	3345	3,900	1,500	900	600
Other computer and electronic products	other 334	1,500	600	400	200
Electrical equipment, appliances, and components	335	4,100	1,400	950	450
Transportation equipment	336	8,300	2,700	1,800	950
Automobiles, bodies, trailers, and parts	3361–63	5,100	1,500	950	550
Aerospace products and parts	3364	1,200	650	450	200
Other transportation	other 336	2,000	600	450	150
Furniture and related products	337	13,000	2,700	2,200	550
Miscellaneous manufacturing	339	21,000	4,100	3,300	800
Medical equipment and supplies	3391	7,800	1,600	1,200	400
Other miscellaneous manufacturing	3399	13,500	2,500	2,100	400
Nonmanufacturing industries	11, 21–23, 42–81	5,165,000	246,000	213,000	33,000
Agriculture, forestry, fishing and hunting	11	22,500	800	700	90
Mining, extraction, and support activities	21	16,000	2,700	2,100	600

TABLE A-1

**Companies in the target population and selected for the sample, by industry: 2021**

(Number of companies)

Industry	NAICS code	Companies in target population <sup>a</sup>	All companies	Noncertainties	Certainties
Utilities	22	3,500	1,300	950	400
Construction	23	704,000	23,000	21,500	1,600
Wholesale trade	42	264,000	17,500	14,000	3,300
Retail trade	44-45	593,000	22,000	19,500	2,300
Transportation and warehousing	48-49	189,000	13,500	11,500	2,200
Information	51	74,500	16,000	11,500	4,400
Publishing	511	19,500	5,100	3,500	1,500
Newspaper, periodical, book, and directory publishers	5111	9,100	2,200	1,800	350
Software publishers	5112	10,500	2,800	1,700	1,200
Telecommunications	517	11,000	2,900	2,200	700
Data processing, hosting, and related services	518	9,200	2,800	1,900	900
Other information	other 51	34,500	5,300	4,100	1,200
Finance and insurance	52	226,000	8,200	6,900	1,300
Real estate and rental and leasing	53	320,000	11,000	10,500	450
Lessors of nonfinancial intangible assets (except copyrighted works)	533	2,100	90	70	20
Other real estate and rental and leasing	other 53	318,000	11,000	10,500	400
Professional, scientific, and technical services	54	789,000	57,500	48,000	9,400
Legal services	5411	163,000	7,700	6,900	850
Accounting, tax preparation, bookkeeping, and payroll services	5412	112,000	5,200	4,800	400
Architectural, engineering, and related services	5413	89,000	10,500	8,400	2,200
Specialized design services	5414	31,500	1,400	1,400	50
Computer and electronic products	5415	114,000	9,700	7,700	2,000
Management, scientific, and technical consulting services	5416	170,000	8,500	7,400	1,100
Scientific research and development services	5417	13,000	5,800	4,200	1,600
Advertising, public relations, and related services	5418	31,500	5,400	4,500	950
Other professional, scientific, and technical services	5419	63,500	3,000	2,700	300
Management of companies and enterprises	55	4,000	150	150	30
Administrative and support and waste management and remediation services	56	330,000	13,000	11,000	2,400
Educational services	61	65,500	2,400	2,200	200
Health care and social assistance	62	577,000	21,500	19,500	2,100
Health care services	621-23	491,000	18,000	16,500	1,800
Social assistance	624	84,000	3,300	3,000	250
Arts, entertainment, and recreation	71	105,000	3,700	3,300	350
Accommodation and food services	72	504,000	19,500	17,500	1,900
Other services	81	379,000	12,500	12,500	200
Unclassified	00	18,000	4,900	4,400	400

NAICS = 2017 North American Industry Classification System.

<sup>a</sup> Estimates of the number of companies in the target population are based on the original sampling frame that was created to select the 2021 Annual Business Survey.

**Note(s):**

Certainities were companies with a probability of selection of one because they had previously reported R&D costs, 500 or more employees, or high payroll or receipts defined by stratum specific cutoffs. Noncertainties are companies with a probability of selection of less than 1.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE A-2

**Response measures: 2021**

(Percent)

Measure	2021
Check-in rate <sup>a</sup>	61.5
Response rate (unweighted) <sup>b</sup>	67.0

<sup>a</sup> The number of survey responses from sampled companies divided by the total number of companies in the sample. Note this includes companies who contacted the Census Bureau to indicate they were out of business and companies who were later determined to be in-active or otherwise out of scope for tabulations.

<sup>b</sup> The number of active and in-scope companies responding to the number of owners and number of W-2 employees, divided by the total number of in-scope and active companies in the sample.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

TABLE A-3

## Unit response rates, by industry: 2021

(Number)

Industry	NAICS code	In-scope units <sup>a</sup>	Reporting units that met the response criteria (%)
All industries	11, 21–23, 31–33, 42–81, 00	267,000	67
Manufacturing industries	31–33	44,000	68
Food	311	4,300	63
Beverage and tobacco products	312	2,400	71
Textile, apparel, and leather products	313–16	2,300	61
Wood products	321	2,200	68
Paper	322	500	60
Printing and related support activities	323	3,500	69
Petroleum and coal products	324	150	60
Chemicals	325	2,800	68
Pesticide, fertilizer, and other agricultural chemical	3253	150	67
Pharmaceuticals and medicines	3254	900	61
Soap, cleaning compound, and toilet preparation	3256	550	73
Other chemicals	other 325	1,200	67
Plastic and rubber products	326	1,900	68
Nonmetallic mineral products	327	2,000	65
Primary metals	331	800	69
Fabricated metal products	332	5,300	72
Machinery	333	2,900	72
Computer and electronic products	334	3,200	69
Communications equipment	3342	350	71
Semiconductor and other electronic components	3344	1,000	70
Navigational, measuring, and control instruments	3345	1,300	73
Other computer and electronic products	other 334	500	70
Electrical equipment, appliances, and components	335	1,200	71
Transportation equipment	336	2,400	67
Automobiles, bodies, trailers, and parts	3361–63	1,300	69
Aerospace products and parts	3364	550	73
Other transportation	other 336	550	64
Furniture and related products	337	2,500	68
Miscellaneous manufacturing	339	3,800	68
Medical equipment and supplies	3391	1,500	67
Other miscellaneous manufacturing	3399	2,300	70
Nonmanufacturing industries	11, 21–23, 42–81	223,000	67
Agriculture, forestry, fishing and hunting	11	700	64
Mining, extraction, and support activities	21	2,300	65

TABLE A-3

## Unit response rates, by industry: 2021

(Number)

Industry	NAICS code	In-scope units <sup>a</sup>	Reporting units that met the response criteria (%)
Utilities	22	1,000	75
Construction	23	21,000	67
Wholesale trade	42	15,500	68
Retail trade	44-45	20,000	63
Transportation and warehousing	48-49	12,000	60
Information	51	13,500	68
Publishing	511	4,400	68
Newspaper, periodical, book, and directory publishers	5111	2,000	70
Software publishers	5112	2,400	67
Telecommunications	517	2,500	52
Data processing, hosting, and related services	518	2,400	71
Other information	other 51	4,500	71
Finance and insurance	52	7,200	71
Real estate and rental and leasing	53	9,700	67
Lessors of nonfinancial intangible assets (except copyrighted works)	533	80	63
Other real estate and rental and leasing	other 53	9,600	68
Professional, scientific, and technical services	54	52,500	74
Legal services	5411	7,300	75
Accounting, tax preparation, bookkeeping, and payroll services	5412	4,900	78
Architectural, engineering, and related services	5413	9,800	80
Specialized design services	5414	1,300	77
Computer and electronic products	5415	8,800	72
Management, scientific, and technical consulting services	5416	7,700	71
Scientific research and development services	5417	5,100	71
Advertising, public relations, and related services	5418	4,900	69
Other professional, scientific, and technical services	5419	2,700	74
Management of companies and enterprises	55	100	70
Administrative and support and waste management and remediation services	56	12,000	64
Educational services	61	2,100	67
Health care and social assistance	62	20,000	68
Health care services	621-23	17,000	71
Social assistance	624	3,000	60
Arts, entertainment, and recreation	71	3,300	70
Accommodation and food services	72	17,500	55
Other services	81	11,500	63



NAICS = 2017 North American Industry Classification System.

<sup>a</sup> In-scope units are determined using response data and final frame data after all data have been processed.

<sup>b</sup> Reporting units were considered to have fulfilled the response criteria if they provided the number of owners and number of W-2 employees.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2022 Annual Business Survey: Data Year 2021.

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