

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

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(Thousands of U.S. dollars)

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		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.