

TABLE 10

Domestic R&D paid for by the company and others and performed by the company, by type of cost, industry, and company size: 2021

(Millions of U.S. dollars)

Industry and company size	NAICS code	Total	Salaries, wages, and fringe benefits	Stock-based compensation	Temporary staffing	Expensed equipment	Materials and supplies	Lease and rental payments	Depreciation	Royalties and licensing fees	Other purchased services (except R&D)	Other
All industries	21-23, 31-33, 42-81	602,499	329,637	61,476	26,923	9,205	41,249	8,911	21,180	3,731	21,489	78,698
Manufacturing industries	31-33	326,060	171,569	18,953	13,858	3,806	32,689	4,822	13,686	2,982	11,936	51,759
Food	311	5,266	3,143	37	201	29	808	72	250	25	152	549
Beverage and tobacco products	312	1,247	637	12	66	2	105	5	68	0	54	297
Textile, apparel, and leather products	313-16	829	648	7	17	3	57	5	15	3	16	56
Wood products	321	444	224	0	34	5	131	14	2	0	1	32
Paper	322	1,139	451	3	8	20	542	5	7	2	3	99
Printing and related support activities	323	204	144	1	7	1	19	4	11	*	10	8
Petroleum and coal products	324	957	511	*	15	1	46	4	43	2	170	165
Chemicals	325	109,490	46,372	6,605	8,162	965	9,963	2,160	4,349	1,485	6,943	22,485
Basic chemicals	3251	2,713	1,557	35	41	17	314	64	178	39	191	276
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	1,389	880	11	57	1 - 15	119	19	99	12	52	120 - 143
Pesticide, fertilizer, and other agricultural chemicals	3253	1,157	662	1	93	2	147	46	79	23	13	91
Pharmaceuticals and medicines	3254	100,220	40,747	6,537	7,880	924	9,153	1,986	3,825	1,406	6,635	21,130
Soap, cleaning compound, and toilet preparations	3256	2,740	1,598	17	75	1	149	36	121	5	29	708
Paint, coating, adhesive, and other chemicals	3255, 3259	1,271	928	5	16	5 - 22	81	9	48	*	23	135 - 160
Plastics and rubber products	326	3,144	1,834	31	88	43	452	18	117	11	98	452
Nonmetallic mineral products	327	1,533	969	13	47	3	80	15	89	*	49	268
Primary metals	331	912	328	1	4	1	356	4	21	*	132	64
Fabricated metal products	332	4,291	2,389	44	169	56	1,081	49	92	7	156	249
Machinery	333	17,730	10,264	364	784	137	2,430	302	714	49	560	2,125
Agricultural implement	33311	1,867	1,028	1	79	7	218	9	59	2	139	326
Semiconductor machinery	333242	5,349	2,742	278	56	37	584	186	390	9	173	896
Engine, turbine, and power transmission equipment	3336	1,374	853	7	36	12	106	25	46	7	113	169
Other machinery	other 333	9,140	5,642	79	614	80	1,523	82	219	31	136	734
Computer and electronic products	334	101,063	57,021	10,716	1,713	1,649	7,263	1,562	5,582	857	1,059	13,641
Communications equipment	3342	12,557	7,340	888	434	138	309	787	502	25	145	1,989
Semiconductor and other electronic components	3344	47,396	25,270	5,017	830	333	4,068	247	2,477	435	281	8,438
Navigational, measuring, electromedical, and control instruments	3345	13,644	8,538	339	264	124	1,453	117	467	26	471	1,846
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	3,087	1,886	200	70	17	203	29	67	19	166	429

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Search, detection, navigation, guidance, aeronautical, and nautical system and instruments	334511	5,301	3,230	47	99	35	792	39	224	1	104	731
Other measuring and controlling devices	other 3345	5,256	3,421	92	95	73	458	49	176	6	200	686
Other computer and electronic products	other 334	27,465	15,873	4,472	184	1,055	1,433	410	2,137	372	161	1,368
Electrical equipment, appliances, and components	335	5,494	3,440	134	238	51	446	82	134	47	198	725
Transportation equipment	336	50,760	31,136	390	1,397	637	7,049	323	1,534	457	1,229	6,609
Motor vehicles, bodies, trailers, and parts	3361-63	26,391	16,671	298	1,072	536	3,219	238	1,085	389	514	2,369
Aerospace products and parts	3364	21,468	12,662	55	246	71	3,254	63	385	17-69	642	4,017-4,073
Aircraft, aircraft engine, and aircraft parts	336411-13	19,845	11,653	54	204	65	2,836	61	380	17-69	621	3,901-3,957
Guided missile, space vehicle, and related parts	336414-15, 336419	1,623	1,010	1	43	6	418	3	6	0	21	115
Military armored vehicle, tank, and tank components	336992	21 - 25	12	0	2	1	*	*	2	0-2	1	0-9
Other transportation	other 336	2,875 - 2,880	1,790	37	76	29	575	22	61	0-52	73	158-218
Furniture and related products	337	426	299	2	11	6	43	2	10	3	22	29
Miscellaneous	339	21,133	11,761	593	898	198	1,819	197	647	32	1,082	3,906
Medical equipment and supplies	3391	18,438	10,031	561	857	171	1,419	138	599	21	1,011	3,629
Other miscellaneous manufacturing	3399	2,695	1,729	32	41	27	400	58	48	12	71	278
Nonmanufacturing industries	21-23, 42-81	276,439	158,068	42,523	13,064	5,399	8,560	4,089	7,494	749	9,553	26,939
Mining, quarrying, oil and gas extraction, and support activities	21	1,260 - 1,334	700	8	9	36	93	54	20	8	335	1-76
Utilities	22	168 - 17,997	7-11,048	2	16	1	2-311	2	9	3	4-82	15-6,521
Wholesale trade	42	1,745 - 1,855	1,295	4	52	2	192	5	33	10	13	136-252
Electronic shopping and electronic auctions	454111-12	5,936 - 24,040	2-11,043	3,694 - 4,337	147	0-341	0-311	169	1,224	*	26	0-6,505
Transportation and warehousing	48-49	7,208	3,119	819	152	290	1,002	204	223	45	437	918
Information	51	147,855	87,928	29,392	7,617	2,947	1,104	1,959	2,924	365	3,171	10,448
Publishing	511	39,152	25,248	5,299	1,834	370	621	402	486	149	1,551	3,190
Newspaper, periodical, book, and directory publishers	5111	103	90	0	2	*	2	*	*	0	7	3
Software publishers	5112	39,049	25,159	5,299	1,832	370	619	402	486	149	1,544	3,187
Telecommunications	517	3,835	2,928	31	111	15	53	18	9	11	633	26
Data processing, hosting, and related services	518	45,192	28,653	7,886	1,180	691	326	669	551	182	803	4,251

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Other information	other 51	59,676	31,099	16,176	4,493	1,871	103	870	1,878	22	183	2,981
Finance and insurance	52	20,947	11,128	4,792	2,012	658	193	157	643	52	301	1,011
Real estate and rental and leasing	53	2,096	1,034	669	0 - 228	27	4	6	20	0 - 29	8	68 - 332
Lessors of nonfinancial intangible assets (except copyrighted works)	533	5 - 8	1	0	*	0 - 6	1	0	0	0	1	0 - 6
Other real estate and rental and leasing	other 53	2,088 - 2,091	1,033	669	0 - 228	28	3	6	20	0 - 29	7	63 - 332
Professional, scientific, and technical services	54	66,496	38,220	2,372	2,727	1,088	5,376	1,433	2,349	223	5,087	7,621
Architectural, engineering, and related services	5413	4,560	3,454	9	97	20	441	36	14	1	123	365
Computer systems design and related services	5415	20,409	13,569	1,379	950	432	610	255	660	67	341	2,147
Scientific research and development services	5417	34,142	17,018	729	1,164	492	3,847	740	1,388	67	4,293	4,405
Research and development in nanotechnology	541713	228	124	1	9	3	26	7	6	1	6	44
Research and development in biotechnology (except nanobiotechnology)	541714	9,039	3,977	216	262	31	610	133	236	17	1,974	1,581
Research and development in the physical, engineering, and life sciences (except nanotechnology and biotechnology)	541715	24,312	12,487	493	860	459	3,165	596	1,141	49	2,292	2,771
Research and development in the social sciences and humanities	541720	563	429	19	32	*	46	4	5	0	21	8
Other professional, scientific, and technical services	other 54	7,385	4,180	255	516	144	478	403	286	88	330	704
Health care services	621-23	2,060 - 2,138	1,090	133	109	13	279	59	40	19	98	217 - 301
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	2,564 - 3,199	2,507	0 - 634	0 - 228	0 - 341	7 - 319	40	10	0 - 29	0 - 77	0 - 637
All companies (number of domestic employees)	-	602,499	329,637	61,476	26,923	9,205	41,249	8,911	21,180	3,731	21,489	78,698
Small companies												
10-19 ^a	-	5,477	3,243	87	208	209	617	120	99	36	335	523
20-49	-	15,061	9,036	312	557	153	2,246	301	255	199	733	1,270
Medium companies												
50-99	-	14,540	8,573	669	709	187	1,697	360	295	71	547	1,432
100-249	-	24,023	15,114	1,146	840	298	2,289	417	530	177	931	2,281
Large companies												
250-499	-	23,932	13,306	1,893	1,187	274	1,797	532	512	224	1,345	2,864
500-999	-	27,432	15,383	1,914	1,177	267	2,473	498	903	391	889	3,536

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1,000–4,999	–	94,615	50,489	13,881	3,601	1,763	5,393	1,232	2,911	624	3,917	10,804
5,000–9,999	–	62,817	35,433	5,961	2,643	783	4,706	1,326	2,629	363	2,251	6,722
10,000–24,999	–	104,607	55,936	6,261	5,669	993	7,941	1,326	4,680	567	6,571	14,664
25,000 or more	–	229,995	123,125	29,353	10,332	4,279	12,090	2,798	8,367	1,080	3,970	34,602

* = amount < \$500,000; i = more than 50% of the estimate is a combination of imputation and reweighting to account for nonresponse; r = relative standard error is more than 50%.

NAICS = 2017 North American Industry Classification System.

^a The Business Enterprise Research and Development Survey does not include companies with fewer than 10 domestic employees.

Note(s):

Detail may not add to total because of rounding. Industry classification is based on the dominant business code for domestic R&D performance, where available. For companies that did not report business codes, the classification used for sampling was assigned. Statistics are representative of companies located in the United States that performed or funded \$50,000 or more of R&D and are not comparable with estimates published for years prior to 2018. An estimate range may be displayed in place of a single estimate to avoid disclosing operations of individual companies.

Source(s):

National Center for Science and Engineering Statistics and Census Bureau, Business Enterprise Research and Development Survey, 2021.