

TABLE 10

## Domestic R&amp;D paid for by the company and others and performed by the company, by type of cost, industry, and company size: 2022

(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	691,547	369,910	71,737	30,981	10,873	45,638	10,911	22,557	3,860	23,141	101,939
Manufacturing industries	31-33	372,459	191,374	21,680	14,312	4,416	36,060	5,825	14,074	3,196	14,892	66,629
Food	311	7,143	3,469	84	289	21	1,048	114	270	7 r	230	1,611
Beverage and tobacco products	312	767	419	3	40 i	6	62	9	34	*	22	171
Textile, apparel, and leather products	313-16	635	455	10	18	4	63	7	16	1	25	38
Wood products	321	259	194	1	4 r	9 r	32	2	3	* r	4	10
Paper	322	1,005	513	2	2 i	13	378	5	7	* i	6	77
Printing and related support activities	323	165	100	1	11 i	1	15 i	5	10 i	1	12 i	9 i
Petroleum and coal products	324	860	447	2	53	2	54	2	36	* i	104	161
Chemicals	325	125,728	53,410	7,716	8,068	1,007	11,728	2,580	4,278	1,470	9,459	26,012
Basic chemicals	3251	2,860	1,694	29	74	14	272	81	174	22	131	369
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	1,493	933	1	53	4	125	16	92	23	83	163
Pesticide, fertilizer, and other agricultural chemicals	3253	1,193	647 i	3 i	94 i	12 i	163 i	53 i	74 i	D	12 i	D
Pharmaceuticals and medicines	3254	116,073	47,456	7,667	7,757	958	10,946	2,384	3,788	1,403	9,151	24,565
Soap, cleaning compound, and toilet preparations	3256	2,886	1,805	13	83	5	151	34	100	D	46	D
Paint, coating, adhesive, and other chemicals	3255, 3259	1,223	875	3	6	14	72	12	50	D	36	D
Plastics and rubber products	326	3,470	1,906	6	84	128 i	509	18	109	7	87	616
Nonmetallic mineral products	327	1,464	932	6	44	7	76	8	75	2	55	258
Primary metals	331	1,120	423	1	2	*	576	1	31	*	45	41
Fabricated metal products	332	3,526	2,275	8	67	57	643	27	98	9	55	288 i
Machinery	333	19,464	10,935	441	828	182	2,798	158	790	62	693	2,577
Agricultural implement	33311	2,287	1,261	*	124	8	278	10	89	1 i	129	386
Semiconductor machinery	333242	5,438	2,700	352	49	50	660	49	400	*	54	1,125
Engine, turbine, and power transmission equipment	3336	3,026	1,849	17	277	8	353 i	3	79	7	183	249 i
Other machinery	other 333	8,713	5,126	71	378	116	1,507	95	223	54	328	816
Computer and electronic products	334	104,718	56,023	11,634	2,065	2,040	8,798	2,094	5,692	974	1,165	14,233
Communications equipment	3342	11,665	6,888	986	362	171	294	832	387	8	194	1,543
Semiconductor and other electronic components	3344	49,330	25,578	4,699	1,088	192	4,688	432	2,753	554	208	9,137
Navigational, measuring, electromedical, and control instruments	3345	12,777	7,564	353	409	165	1,470	132	306	25 i	398	1,955
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	4,578	2,394	236	153	21	312	51	113	23 i	268	1,007
Search, detection, navigation, guidance, aeronautical, and nautical system and instruments	334511	4,146	2,401	52	185	51	801	50	64	*	77	464
Other measuring and controlling devices	other 3345	4,053	2,768	64	71	93	357	30	129	2	54	484

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Other computer and electronic products	other 334	30,946	15,993	5,596	206	1,512	2,345	698	2,246	386	365	1,599
Electrical equipment, appliances, and components	335	7,086	4,322	293	180	75	487	129	179	47	362	1,012
Transportation equipment	336	71,259	42,202	653	1,555	512	7,143	429	1,549	433	1,580	15,203
Motor vehicles, bodies, trailers, and parts	3361-63	32,881	19,161	560	1,099	382	3,338	245	1,049	395	624	6,029
Aerospace products and parts	3364	35,356	21,094	74	398	113	3,339	145	433	22	899	8,838
Aircraft, aircraft engine, and aircraft parts	336411-13	24,571	13,817	58	234	61	2,186	42	154	3	801	7,214
Guided missile, space vehicle, and related parts	336414-15, 336419	10,785	7,276	16	164	52	1,153	103	279	19	98	1,624
Military armored vehicle, tank, and tank components	336992	30	16	0	2	0	4	0	*	0	2	5
Other transportation	other 336	2,992	1,931	19	56	17	461	39	67	16	56	331
Furniture and related products	337	410	294	*	6	4	42	3	9	1	12	40
Miscellaneous	339	23,382	13,055	821	996	348	1,609	236	889	180	976	4,272
Medical equipment and supplies	3391	20,394	11,041	738	913	309	1,455	183	798	165	888	3,904
Other miscellaneous manufacturing	3399	2,989	2,014	83	83	39	154	52	91	16	88	368
Nonmanufacturing industries	21-23, 42-81	319,088	178,536	50,056	16,670	6,457	9,578	5,086	8,482	664	8,249	35,310
Mining, quarrying, oil and gas extraction, and support activities	21	D	670	16	D	17	89	D	D	2	D	D
Utilities	22	D	D	*	44	D	62	1	D	*	47	D
Wholesale trade	42	D	1,235	3	44	74	147	D	D	2	40	D
Electronic shopping and electronic auctions	454111-12	D	9,112	D	147	D	170	262	D	*	D	D
Transportation and warehousing	48-49	9,395	4,095	1,112	189	205	1,022	275	325	68	697	1,407
Information	51	182,340	101,654	37,620	11,156	4,620	1,699	3,025	4,054	350	3,114	15,048
Publishing	511	50,367	29,611	8,311	2,547	521	1,054	529	656	90	2,041	5,007
Newspaper, periodical, book, and directory publishers	5111	72	68	0	2	*	*	0	0	0	2	*
Software publishers	5112	50,295	29,542	8,311	2,545	521	1,054	529	656	90	2,039	5,007
Telecommunications	517	3,690	2,728	30	732	12	58	25	30	3	20	52
Data processing, hosting, and related services	518	49,407	31,340	8,744	1,615	623	442	533	562	209	755	4,584
Other information	other 51	78,876	37,975	20,536	6,261	3,463	146	1,938	2,806	48	298	5,405
Finance and insurance	52	17,222	12,496	1,035	1,504	227	D	112	738	37	124	D
Real estate and rental and leasing	53	2,398	1,215	728	115	30	3	D	48	D	D	D
Lessors of nonfinancial intangible assets (except copyrighted works)	533	5	1	*	0	0	2	0	0	0	0	2
Other real estate and rental and leasing	other 53	2,393	1,214	728	115	30	1	D	48	D	D	D
Professional, scientific, and technical services	54	74,773	43,516	2,841	3,096	975	6,037	1,241	2,182	163	3,935	10,786
Architectural, engineering, and related services	5413	3,883	3,152	2	68	29	273	42	26	1	91	197
Computer systems design and related services	5415	22,534	15,032	1,751	1,068	261	458	241	618	73	493	2,539

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Scientific research and development services	5417	39,625 i	19,749 i	652	1,315 i	576	4,822 i	901 i	1,429 i	66	3,257 i	6,857 i
Research and development in nanotechnology	541713	282	153	9	16	6	24	7	9	*	3	53
Research and development in biotechnology (except nanobiotechnology)	541714	10,226	4,422	233	380	68	1,087	148	236	18	1,660 i	1,974
Research and development in the physical, engineering, and life sciences (except nanotechnology and biotechnology)	541715	28,420 i	14,772 i	382	885 i	501 i	3,640 i	741 i	1,184 i	48 i	1,465 i	4,803 i
Research and development in the social sciences and humanities	541720	698	402	28	35	*	72	5	*	0	129	27
Other professional, scientific, and technical services	other 54	8,730	5,583	437	645	109	483	56	109	23	94	1,193
Health care services	621–23	2,855	1,480	D	125	29	197	67	141	13	184	D
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	3,394	D	D	D	D	D	D	D	D	D	D
All companies (number of domestic employees)	–	691,547	369,910	71,737	30,981	10,873	45,638	10,911	22,557	3,860	23,141	101,939
Small companies												
10–19 <sup>a</sup>	–	5,277	3,528	93 i	197	51	428	91	72	34	233	550
20–49	–	14,695	9,458	303	474	140	1,381	316	279	94	730	1,520
Medium companies												
50–99	–	15,265	9,432	507	760	210	1,509	388	263	102	687	1,407
100–249	–	27,847	16,397	1,945	1,127	307	2,411	622	641	278	1,309	2,809
Large companies												
250–499	–	29,549	16,233	2,057	1,486	244	2,498	477	768	261	1,317	4,209
500–999	–	31,802	17,013	3,292	1,446	432	2,235	695	999	532	1,382	3,776
1,000–4,999	–	104,505	57,255	13,305	3,933	1,283	5,959	1,685	2,808	726	4,545	13,006
5,000–9,999	–	58,709	32,835	5,463	1,811	819	4,324	928	2,303	305	2,624	7,297
10,000–24,999	–	121,142	63,007	8,458	6,464	1,316	10,194	1,682	5,002	553	5,865	18,600
25,000 or more	–	282,756	144,750	36,313	13,282	6,071	14,700	4,028	9,423	974	4,450	48,765

\* = amount &lt; \$500,000; D = data withheld to avoid disclosing operations of individual companies; i = more than 50% of the estimate is a combination of imputation and reweighting to account for nonresponse; r = relative standard error is more than 50%.

NAICS = 2017 North American Industry Classification System.

<sup>a</sup> The Business Enterprise Research and Development Survey does not include companies with fewer than 10 domestic employees.**Note(s):**

Detail may not add to total because of rounding. Industry classification is based on the dominant business code for domestic R&amp;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&amp;D and are not comparable with estimates published for years prior to 2018.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, Business Enterprise Research and Development Survey, 2022.