

TABLE 2

Worldwide, domestic, and foreign R&D paid for by the company and others and performed by the company, by industry and company size: 2020

(Millions of U.S. dollars)

Industry and company size	NAICS code	Worldwide R&D performance			Domestic R&D performance			Foreign R&D performance		
		Total	Paid for by the company	Paid for by others	Total	Paid for by the company	Paid for by others	Total	Paid for by the company	Paid for by others
All industries	21-23, 31-33, 42-81	647,324	564,350	82,975	537,619	466,162	71,457	109,705	98,187	11,518 i
Manufacturing industries	31-33	374,688	329,425	45,263	308,445	264,596	43,848	66,243	64,829	1,414
Food	311	6,392 - 6,399	6,139	253 - 260	5,239	4,985	254	1,153 - 1,161	1,154	0 - 6
Beverage and tobacco products	312	1,935	1,814	121	1,177 i	1,056	121	759	759	0
Textile, apparel, and leather products	313-16	973	964	9	822	812	9	152	152	0
Wood products	321	195	192	3	187	183	3	8	8	0
Paper	322	1,021	1,020	1	928	927	1	93	93	* i
Printing and related support activities	323	294	292	1	283	282	1	10	10	0
Petroleum and coal products	324	1,476 - 1,490	1,387	89 - 103	1,311 - 1,324	1,222	89 - 103	165	165	* i
Chemicals	325	120,440	108,521	11,919	101,079	89,403	11,675	19,362	19,118	244
Basic chemicals	3251	3,540	3,364	175	2,694	2,523	171	846	842	4
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	1,745	1,665	81	1,234	1,161	73	512	504	8
Pesticide, fertilizer, and other agricultural chemicals	3253	1,157 - 1,172	866	291 - 306	1,060 - 1,066	775	284 - 291	92 - 108	91	0 - 17
Pharmaceuticals and medicines	3254	108,537	97,406	11,131	91,776	80,858	10,918	16,761	16,548	213
Soap, cleaning compound, and toilet preparation	3256	3,432	3,239	192	2,665	2,476	189	767	763	3
Paint, coating, adhesive, and other chemicals	3255, 3259	2,013 - 2,028	1,981	32 - 47	1,643 - 1,649	1,610	32 - 39	370 - 385	370	0 - 14 i
Plastics and rubber products	326	3,162	3,136	26	2,634	2,607	26	529	529	* i
Nonmetallic mineral products	327	1,924 i	1,822 i	102	1,717 i	1,619 i	98	206 i	203 i	3
Primary metals	331	847	827	20	815	795	20	32	32	* i
Fabricated metal products	332	3,746	3,681	65	3,396	3,336	60	349	345	5 i
Machinery	333	20,508	19,254	1,254	16,223	15,071	1,152	4,285	4,183	102
Agricultural implement	33311	2,450	2,399	51 i	1,769 - 1,811	1,760	10 - 52	639 - 681	640	0 - 41
Semiconductor machinery	333242	5,834	5,134	700	4,807	4,121	686	1,027	1,013	14
Engine, turbine, and power transmission equipment	3336	2,203	2,032	171	1,645	1,523	122	558	509	49
Other machinery	other 333	10,022	9,689	333	7,959 - 8,001	7,667	292 - 334	2,021 - 2,062	2,021	0 - 41
Computer and electronic products	334	126,102	114,726	11,376	99,535	88,505	11,030	26,567	26,222	346
Communications equipment	3342	15,491	14,486	1,005 i	12,103	11,107	996 i	3,388	3,379	9

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Semiconductor and other electronic components	3344	56,204	53,669	2,535	43,181	40,801	2,380	13,023	12,868	155
Navigational, measuring, electromedical, and control instruments	3345	21,651	13,995	7,655	18,505	11,012	7,493	3,146	2,984	163
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	3,356	3,094	262	2,858	2,606	251	498	488	10
Search, detection, navigation, guidance, aeronautical, and nautical system and instrument	334511	11,270	4,119	7,151	10,586	3,561	7,025	684	558	126
Other measuring and controlling device	other 3345	7,025	6,783	243	5,061	4,844	217	1,964	1,939	26
Other computer and electronic products	other 334	32,756	32,576	180	25,747	25,585	161	7,010	6,991	19
Electrical equipment, appliances, and components	335	6,792	6,244	549	4,998	4,492	506	1,794	1,751	43
Transportation equipment	336	55,311	36,134	19,177	48,796	30,232	18,564	6,515	5,902	613
Motor vehicles, bodies, trailers, and parts	3361-63	28,910 - 28,922	24,821	4,089 - 4,101	23,121	19,522	3,599	5,789 - 5,801	5,299	490 - 502
Aerospace products and parts	3364	23,424	9,526	13,897	22,914	9,111	13,803	509	415	94
Aircraft, aircraft engine, and aircraft parts	336411-13	21,791	8,686	13,105	21,291	8,281	13,011	500	406	94
Guided missile, space vehicle, and related parts	336414-15, 336419	1,633	840	793	1,623	831	793	10	10	0
Military armored vehicle, tank, and tank component	336992	11	4	6	11	4	6	0	0	0
Other transportation	other 336	2,955 - 2,966	1,782	1,173 - 1,184	2,750	1,594	1,155	206 - 216	187	18 - 29
Furniture and related products	337	535	532	3	496	492	3	39	39	0
Miscellaneous	339	23,013 - 23,027	22,739	274 - 287	18,791 - 18,809	18,576	215 - 233	4,217 - 4,224	4,164	54 - 60
Medical equipment and supplies	3391	19,938	19,718	221	16,116	15,944	173	3,822	3,774	48
Other miscellaneous manufacturing	3399	3,075 - 3,088	3,022	53 - 66	2,674 - 2,692	2,632	42 - 60	396 - 403	390	6 - 13
Nonmanufacturing industries	21-23, 42-81	272,637	234,925	37,712	229,174	201,566	27,608	43,462	33,359	10,104
Mining, quarrying, oil and gas extraction, and support activities	21	1,285 - 1,292	1,239	46 - 53	1,165	1,121	45	120 - 127	119	2 - 8
Utilities	22	271	230	40	264	224	40	6	6	0
Wholesale trade	42	1,104	1,045	59	1,058	1,001	58	45	44	1
Electronic shopping and electronic auctions	454111-12	3,937 - 24,262	3,935 - 24,223	2 - 50	3,840 - 19,390	3,837 - 19,343	2 - 50	97 - 4,884	97 - 4,884	0
Transportation and warehousing	48-49	4,994	4,991	3	4,957	4,954	3	37	37	0
Information	51	152,363	151,219	1,144	129,463	128,350	1,113	22,900	22,869	31
Publishing	511	42,708	42,169	539	35,025	34,516	509	7,683	7,654	29

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Newspaper, periodical, book, and directory publishers	5111	60	60	0	60	60	0	0	0	0
Software publishers	5112	42,648	42,109	539	34,965	34,456	509	7,683	7,654	29
Telecommunications	517	3,519 - 3,532	3,466	54 - 66	3,425 - 3,437	3,371	54 - 66	94	94	0
Data processing, hosting, and related services	518	49,697	49,250	447	41,551	41,105	446	8,147	8,145	1 i
Other information	other 51	56,425 - 56,440	56,334	91 - 105	49,449 - 49,463	49,358	91 - 105	6,976	6,976	0
Finance and insurance	52	13,837	13,695	142	12,296	12,204	92	1,541	1,490	51
Real estate and rental and leasing	53	3,412	3,412	*	3,249	3,249	*	163	163	0
Lessors of nonfinancial intangible assets (except copyrighted works)	533	6 - 21	6 - 21	*	7	7	*	0 - 15	0 - 15	0
Other real estate and rental and leasing	other 53	3,390 - 3,406	3,390 - 3,406	0	3,242	3,242	0	148 - 164	148 - 164	0
Professional, scientific, and technical services	54	68,112	32,053	36,059	54,367	28,322	26,045	13,744 i	3,731	10,013 i
Architectural, engineering, and related services	5413	4,235	2,225	2,009	4,214	2,214	2,001	20	12 i	9
Computer systems design and related services	5415	21,259	17,502	3,758	17,935	14,293	3,643	3,324	3,209	115
Scientific research and development services	5417	35,670 i	6,442 i	29,227 i	25,600	6,246	19,354	10,070 i	196	9,874 i
Research and development in nanotechnology	541713	179 - 182 i	125 - 129 i	53 i	179 i	126 i	53 i	0 - 3	0 - 3	0
Research and development in biotechnology (except nanobiotechnology)	541714	9,120	1,284	7,836	6,191	1,176	5,014	2,929	108	2,822
Research and development in the physical, engineering, and life sciences (except nanotechnology and biotechnology)	541715	25,674 i	4,988 - 4,996 i	20,678 - 20,685 i	18,539 i	4,906 i	13,632 i	7,135 i	82 - 89 i	7,045 - 7,053 i
Research and development in the social sciences and humanities	541720	692 - 698	37 - 45	653 - 661	691	38	654	1 - 7	0 - 7 i	0 - 7
Other professional, scientific, and technical services	other 54	6,948	5,884	1,065	6,618	5,570	1,048	330	314	16
Health care services	621-23	1,495 - 1,498	1,393	102 - 105	1,477	1,374	103	18 - 22 i	19	0 - 2 i
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	1,504 - 21,828	1,429 - 21,717	63 - 111	1,491 - 17,041	1,429 - 16,934	62 - 109	1 - 4,789 i	0 - 4,787	2 i
All companies (number of domestic employees)	-	647,324	564,350	82,975	537,619	466,162	71,457	109,705	98,187	11,518 i
Small companies										
10-19 ^a	-	5,338	4,282	1,056	5,047	4,019	1,029	290	263	27
20-49	-	13,600	11,538	2,063	12,994	10,970	2,025	606	568	38

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Medium companies										
50–99	–	13,791	11,935	1,857	12,993	11,177	1,816	798	758	41
100–249	–	27,483	24,122	3,361	25,411	22,132	3,280	2,072	1,991	81 i
Large companies										
250–499	–	23,743	20,772	2,971	20,878	18,067	2,811	2,866	2,705	161
500–999	–	24,451	21,478	2,973	21,264	18,458	2,807	3,187	3,020	167
1,000–4,999	–	106,758	94,028	12,730	88,238	75,917	12,322	18,520	18,111	409 i
5,000–9,999	–	60,241	51,966	8,275	48,397	42,451	5,945	11,845	9,515	2,330 i
10,000–24,999	–	111,753	89,792	21,961 i	88,567	72,827	15,739 i	23,186	16,965	6,221 i
25,000 or more	–	260,165	234,437	25,728	213,829	190,145	23,684	46,336	44,292	2,044

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

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, 2020.