

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: 2021

(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	737,911	648,075	89,837	602,499	527,804	74,695	135,412	120,270	15,142	i
Manufacturing industries	31-33	404,449	364,349	40,100	326,060	287,666	38,394	78,389	76,683	1,706	
Food	311	6,456	6,151	305	5,266	4,963 - 4,968	297 - 302	1,190	1,182 - 1,187	3 - 8	
Beverage and tobacco products	312	2,139	2,121	19	1,247	1,228	19	893	893	0	
Textile, apparel, and leather products	313-16	997	987	11	829	818	11	169	169	0	
Wood products	321	447	437 - 445	2 - 10	444	433 - 442	2 - 10	4	4	0	
Paper	322	1,206	1,206	*	1,139	1,139	0	67	67	*	i
Printing and related support activities	323	231	223 - 232	0 - 7	204	196 - 205	0 - 7	27	27	0	
Petroleum and coal products	324	1,131	1,127	5	957	952	5	175	175	0	
Chemicals	325	133,231	120,516	12,715	109,490	97,097	12,393	23,741	23,419	322	
Basic chemicals	3251	3,710	3,553	157	2,713	2,559	154	997	994	4	
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	1,969	1,844 - 1,889	81 - 125	1,389	1,291 - 1,320	69 - 98	580	550 - 581	0 - 29	
Pesticide, fertilizer, and other agricultural chemicals	3253	1,279	1,025 - 1,069	211 - 254	1,157	915 - 946	211 - 241	123	94 - 123	0 - 29	
Pharmaceuticals and medicines	3254	121,157	109,180	11,976	100,220	88,524	11,697	20,936	20,656	280	
Soap, cleaning compound, and toilet preparations	3256	3,611	3,392	219	2,740	2,531	209	871	861	10	
Paint, coating, adhesive, and other chemicals	3255, 3259	1,505	1,477	28	1,271	1,242 - 1,252	19 - 28	234	224 - 234	0 - 9	
Plastics and rubber products	326	3,752	3,564	188	3,144	2,961	183	607	603	5	
Nonmetallic mineral products	327	1,731	1,700	31	1,533	1,503	31	198	198	0	
Primary metals	331	963	936	27	912	887 - 890	22 - 26	50	46 - 49	2 - 5	
Fabricated metal products	332	4,669	4,225	444	4,291	3,879	412	378	346	32	
Machinery	333	23,073	21,951	1,121	17,730	16,726	1,003	5,343	5,225	118	
Agricultural implement	33311	2,774	2,707	67	1,867	1,799 - 1,807	60 - 68	907	899 - 907	0 - 8	
Semiconductor machinery	333242	6,648	6,460	189	5,349	5,182	167	1,299	1,278	21	
Engine, turbine, and power transmission equipment	3336	1,920	1,772	147	1,374	1,239 - 1,246	128 - 134	546	526 - 533	13 - 19	i
Other machinery	other 333	11,731	11,012	718	9,140	8,499	641	2,591	2,513	77	
Computer and electronic products	334	132,597	125,475	7,123	101,063	94,211	6,852	31,535	31,264	271	
Communications equipment	3342	15,968	14,731	1,237	12,557	11,339	1,218	3,411	3,392	19	
Semiconductor and other electronic components	3344	63,917	61,900	2,018	47,396	45,516	1,880	16,521	16,384	137	
Navigational, measuring, electromedical, and control instruments	3345	17,220	13,480	3,740	13,644	10,014	3,630	3,576	3,466	110	
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	3,554	3,291	263	3,087	2,837	250	467	454	12	

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: 2021

(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
Search, detection, navigation, guidance, aeronautical, and nautical system and instruments	334511	5,895	2,628	3,267	5,301	2,109	3,193	594	519	75
Other measuring and controlling devices	other 3345	7,771	7,561	210	5,256	5,068	187	2,516	2,493	23
Other computer and electronic products	other 334	35,492	35,364	128	27,465	27,342	123	8,027	8,022	5
Electrical equipment, appliances, and components	335	7,374	6,847	527	5,494	5,007	486	1,880	1,840	41
Transportation equipment	336	58,423	41,228	17,195	50,760	34,405	16,356	7,663	6,824	839
Motor vehicles, bodies, trailers, and parts	3361-63	33,111	28,824	4,287	26,391	22,754	3,637	6,720	6,070	650 i
Aerospace products and parts	3364	22,180 i	10,448	11,731 i	21,468 i	9,900	11,568 i	711	548	164
Aircraft, aircraft engine, and aircraft parts	336411-13	20,538 i	9,822	10,716 i	19,845 i	9,293	10,552 i	693	529	164
Guided missile, space vehicle, and related parts	336414-15, 336419	1,642	626	1,016	1,623	608	1,016	18	18	0
Military armored vehicle, tank, and tank components	336992	24	23	1	21 - 25	20 - 24	1	0 - 3	0 - 3	0
Other transportation	other 336	3,109	1,934	1,175	2,875 - 2,880	1,726 - 1,731	1,149	228 - 233	202 - 207	26
Furniture and related products	337	464	460	3	426	423	3	37	37	* i
Miscellaneous	339	25,564	25,181	383	21,133	20,822	311	4,431	4,359	72
Medical equipment and supplies	3391	22,444	22,146	298	18,438	18,204	233	4,007	3,942	65
Other miscellaneous manufacturing	3399	3,120	3,035	85	2,695	2,618	78	424	418	7 i
Nonmanufacturing industries	21-23, 42-81	333,462	283,726	49,736 i	276,439	240,138	36,300 i	57,024	43,588	13,436 i
Mining, quarrying, oil and gas extraction, and support activities	21	1,339 i	1,150	189 i	1,260 - 1,334	1,077 - 1,151	183 i	5 - 79	0 - 73	6
Utilities	22	168 - 19,125	134 - 19,090	35 i	17,997	133 - 17,961	35 i	0 - 1,129	0 - 1,129	0
Wholesale trade	42	1,855 i	1,770 i	84	1,745 - 1,855 i	1,661 - 1,770 i	84	0 - 109 i	0 - 109 i	0
Electronic shopping and electronic auctions	454111-12	10,538 - 29,503 i	10,533 - 29,498 i	4 - 8	5,936 - 24,040 i	5,931 - 24,034 i	4 - 8	4,330 - 6,357 i	4,330 - 6,357 i	0
Transportation and warehousing	48-49	7,282	7,272	9	7,208	7,198 - 7,200	8 - 10	73	72 - 74	0 - 1
Information	51	177,113	175,699	1,414	147,855	146,488	1,366	29,258	29,210	48
Publishing	511	49,085	48,429	656	39,152	38,521	631	9,933	9,908	25
Newspaper, periodical, book, and directory publishers	5111	103	81	23 r	103	81	23 r	* i	* i	0
Software publishers	5112	48,981	48,349	633	39,049	38,441	608	9,933	9,908	25
Telecommunications	517	3,912	3,813 - 3,883	30 - 98	3,835	3,736 - 3,805	30 - 98	77 i	77 i	0
Data processing, hosting, and related services	518	55,072	54,442	630	45,192	44,585	607	9,881	9,858	23

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: 2021

(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
Other information	other 51	69,044	68,944 - 69,014	29 - 99	59,676	59,577 - 59,647	29 - 99	9,367	9,367	*
Finance and insurance	52	23,409	23,323	86	20,947	20,902	45	2,461	2,421	40
Real estate and rental and leasing	53	2,199	2,197 - 2,200	0 - 1	2,096	2,095 - 2,097	0 - 1	103	103	0
Lessors of nonfinancial intangible assets (except copyrighted works)	533	7	7	0	5 - 8	5 - 8	0	0 - 2	0 - 2	0
Other real estate and rental and leasing	other 53	2,192	2,190 - 2,193	0 - 1	2,088 - 2,091	2,087 - 2,091	0 - 1	100 - 104	100 - 104	0
Professional, scientific, and technical services	54	85,259	37,506	47,753	66,496	32,083	34,413	18,763	5,423	13,340
Architectural, engineering, and related services	5413	4,598	2,590	2,008	4,560	2,553	2,007	39	38	1
Computer systems design and related services	5415	25,041	21,779	3,262	20,409	17,188	3,221	4,632	4,591	42
Scientific research and development services	5417	47,772	6,476	41,296	34,142	6,123	28,019	13,630	353	13,277
Research and development in nanotechnology	541713	244	170	73	228	154	73	16	16	0
Research and development in biotechnology (except nanobiotechnology)	541714	13,441	1,800	11,641	9,039	1,664	7,374	4,402	136	4,267
Research and development in the physical, engineering, and life sciences (except nanotechnology and biotechnology)	541715	33,519	4,467	29,052	24,312	4,266	20,046	9,207	201	9,005
Research and development in the social sciences and humanities	541720	568	38	530	563	38	525	5	0	5
Other professional, scientific, and technical services	other 54	7,847	6,660	1,187	7,385	6,218	1,166	463	442	21
Health care services	621-23	2,140	2,045	95	2,060 - 2,138	1,965 - 2,043	95	2 - 81	2 - 80	*
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	3,200	3,135	65	2,564 - 3,199	2,501 - 3,136	62 - 66	1 - 637	0 - 634	0 - 3
All companies (number of domestic employees)	-	737,911	648,075	89,837	602,499	527,804	74,695	135,412	120,270	15,142
Small companies										
10-19 ^a	-	5,836	4,611	1,226	5,477	4,258	1,219	359	353	6
20-49	-	15,969	13,501	2,468	15,061	12,626	2,434	909	875	34
Medium companies										
50-99	-	15,406	13,300	2,106	14,540	12,488	2,052	866	812	53
100-249	-	26,406	22,233	4,172	24,023	20,030	3,993	2,382	2,203	179
Large companies										
250-499	-	27,592	24,185	3,407	23,932	20,574	3,358	3,660	3,611	49
500-999	-	31,961	27,917	4,043	27,432	23,655	3,777	4,528	4,262	266
1,000-4,999	-	115,278	103,779	11,500	94,615	83,609	11,006	20,663	20,170	493
5,000-9,999	-	78,388	67,394	10,995	62,817	53,873	8,944	15,571	13,521	2,051

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: 2021

(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
10,000–24,999	–	133,088	103,153	29,935 i	104,607	84,057	20,549	28,481	19,096	9,385 i
25,000 or more	–	287,987	268,001	19,986	229,995	212,634	17,361	57,992	55,367	2,625

* = 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.