

TABLE 2

## Worldwide, domestic, and foreign R&amp;D paid for by the company and others and performed by the company, by industry and company size: 2022

(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	841,131	743,067	98,064	691,547	608,058	83,489	149,584	135,009	14,575	i
Manufacturing industries	31-33	456,879	409,728	47,151	372,459	326,998	45,461	84,419	82,730	1,690	
Food	311	8,605	8,247	358	7,143	D	D	1,463	D	D	
Beverage and tobacco products	312	1,397	1,290	107	767	660	107	630	630	0	
Textile, apparel, and leather products	313-16	748	733	15	635	D	D	113	D	D	
Wood products	321	263	258	5	259	254	5	4	4	0	
Paper	322	1,086	1,085	*	1,005	1,004	*	81	81	*	i
Printing and related support activities	323	167	166	1	165	164	1	2	2	0	
Petroleum and coal products	324	1,107	1,098	9	860	856	4	247	242	5	
Chemicals	325	150,790	138,276	12,514	125,728	113,518	12,210	25,061	24,757	304	
Basic chemicals	3251	3,816	3,604	212	2,860	D	D	956	D	D	
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	2,032	D	D	1,493	1,413	80	539	D	D	i
Pesticide, fertilizer, and other agricultural chemicals	3253	1,344	D	D	1,193	D	D	151	D	D	
Pharmaceuticals and medicines	3254	138,339	126,722	11,617	116,073	104,720	11,353	22,266	22,003	263	
Soap, cleaning compound, and toilet preparations	3256	3,803	3,564	238	2,886	D	D	917	D	D	
Paint, coating, adhesive, and other chemicals	3255, 3259	1,456	D	D	1,223	1,195	29	232	D	D	
Plastics and rubber products	326	4,151	3,903	248	3,470	3,251	219	682	652	29	
Nonmetallic mineral products	327	1,623	1,594	29	1,464	1,435	29	159	159	0	
Primary metals	331	1,139	1,117	22	1,120	1,099	20	19	18	2	r
Fabricated metal products	332	3,757	3,501	256	3,526	3,304	222	231	197	34	i
Machinery	333	25,378	24,024	1,354	19,464	18,246	1,218	5,914	5,778	136	
Agricultural implement	33311	3,277	3,132	145	2,287	D	D	990	D	D	
Semiconductor machinery	333242	7,074	7,008	66	5,438	5,390	48	1,636	1,618	18	
Engine, turbine, and power transmission equipment	3336	4,097	3,760	337	3,026	D	D	1,071	D	D	
Other machinery	other 333	10,930	10,124	806	8,713	7,987	725	2,217	2,137	81	
Computer and electronic products	334	140,254	134,627	5,627	104,718	99,234	5,483	35,536	35,392	144	
Communications equipment	3342	15,174	14,367	807	11,665	10,870	795	3,509	3,497	12	i
Semiconductor and other electronic components	3344	71,114	69,078	2,035	49,330	47,380	1,950	21,784	21,698	85	
Navigational, measuring, electromedical, and control instruments	3345	15,445	12,736	2,709	12,777	10,105	2,671	2,668	2,630	38	
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	5,007	4,380	626	4,578	3,959	619	429	421	8	i
Search, detection, navigation, guidance, aeronautical, and nautical system and instruments	334511	4,473	2,475	1,998	4,146	2,170	1,976	327	305	22	
Other measuring and controlling devices	other 3345	5,965	5,880	85	4,053	3,976	77	1,912	1,905	8	
Other computer and electronic products	other 334	38,521	38,446	76	30,946	30,879	67	7,575	7,567	9	
Electrical equipment, appliances, and components	335	8,661	8,226	435	7,086	6,657	429	1,575	1,569	5	i

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		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
Transportation equipment	336	79,294	53,533	25,761	71,259	46,468	24,790	8,035	7,064	971
Motor vehicles, bodies, trailers, and parts	3361-63	38,916	36,269	2,647	32,881	30,722	2,159	6,035	5,547	487
Aerospace products and parts	3364	37,175	15,151	22,024	35,356	13,786	21,570	1,819	1,365	454
Aircraft, aircraft engine, and aircraft parts	336411-13	25,224	9,801	15,423	24,571	9,303	15,268	653	498	155
Guided missile, space vehicle, and related parts	336414-15, 336419	11,951	5,350	6,601	10,785	4,483	6,302	1,166	867	299
Military armored vehicle, tank, and tank components	336992	31	27	4	30	26	4	1	1	0
Other transportation	other 336	3,172	2,085	1,087	2,992	1,935	1,057	181	151	30
Furniture and related products	337	445	440	5	410	405	5	36	36	0
Miscellaneous	339	28,014	27,609	405	23,382	23,032	350	4,631	4,577	55
Medical equipment and supplies	3391	24,628	24,291	337	20,394	20,112	282	4,234	4,180	55
Other miscellaneous manufacturing	3399	3,385	3,317	68	2,989	2,921	68	397	397	0
Nonmanufacturing industries	21-23, 42-81	384,253	333,339	50,914	319,088	281,060	38,028	65,165	52,279	12,886
Mining, quarrying, oil and gas extraction, and support activities	21	1,008	952	55	D	D	D	D	D	D
Utilities	22	D	D	D	D	D	D	D	D	D
Wholesale trade	42	1,861	1,820	41	D	D	41	D	D	0
Electronic shopping and electronic auctions	454111-12	D	D	0	D	D	0	D	D	0
Transportation and warehousing	48-49	9,516	D	D	9,395	D	D	121	121	0
Information	51	219,288	218,176	1,112	182,340	181,392	947	36,948	36,784	164
Publishing	511	62,697	61,855	842	50,367	49,674	693	12,330	12,182	149
Newspaper, periodical, book, and directory publishers	5111	72	72	1	72	72	1	*	*	0
Software publishers	5112	62,625	61,783	841	50,295	49,602	693	12,330	12,182	149
Telecommunications	517	3,891	3,812	79	3,690	3,614	76	201	198	3
Data processing, hosting, and related services	518	61,649	61,500	149	49,407	49,270	137	12,242	12,229	13
Other information	other 51	91,051	91,010	42	78,876	78,834	42	12,176	12,176	0
Finance and insurance	52	19,834	19,735	99	17,222	17,173	49	2,612	2,562	50
Real estate and rental and leasing	53	2,500	2,500	0	2,398	2,398	0	102	102	0
Lessors of nonfinancial intangible assets (except copyrighted works)	533	5	5	0	5	5	0	1	1	0
Other real estate and rental and leasing	other 53	2,494	2,494	0	2,393	2,393	0	101	101	0
Professional, scientific, and technical services	54	93,801	45,005	48,795	74,773	38,633	36,139	19,028	6,372	12,656
Architectural, engineering, and related services	5413	3,919	2,942	977	3,883	2,912	971	36	30	6
Computer systems design and related services	5415	27,108	23,412	3,696	22,534	18,878	3,656	4,575	4,535	40
Scientific research and development services	5417	53,196	10,258	42,938	39,625	9,297	30,328	13,571	961	12,610
Research and development in nanotechnology	541713	311	202	109	282	179	102	30	23	6
Research and development in biotechnology (except nanobiotechnology)	541714	14,299	2,992	11,307	10,226	2,916	7,310	4,073	77	3,997

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Research and development in the physical, engineering, and life sciences (except nanotechnology and biotechnology)	541715	37,886	i 7,037	30,849	i 28,420	i 6,176	22,244	i 9,466	i 861	8,605	i
Research and development in the social sciences and humanities	541720	700	27	673	698	27	672	2	0	2	
Other professional, scientific, and technical services	other 54	9,577	8,393	1,185	8,730	7,547	1,184	847	846	1	
Health care services	621-23	2,948	2,877	70	2,855	D	D	93	D	D	
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	3,539	3,446	94	3,394	3,300	94	146	146	0	
All companies (number of domestic employees)	-	841,131	743,067	98,064	691,547	608,058	83,489	149,584	135,009	14,575	i
Small companies											
10-19 <sup>a</sup>	-	5,537	4,252	1,285	5,277	4,009	1,269	260	244	17	i
20-49	-	15,636	13,702	1,934	14,695	12,788	1,907	941	913	28	i
Medium companies											
50-99	-	16,227	14,201	2,026	15,265	13,274	1,990	962	927	36	
100-249	-	29,864	26,777	3,087	27,847	24,844	3,003	2,017	1,934	84	
Large companies											
250-499	-	33,789	30,553	3,236	29,549	26,469	3,080	4,240	4,083	157	
500-999	-	36,458	33,265	3,194	31,802	29,007	2,795	4,657	4,258	399	i
1,000-4,999	-	128,912	118,460	10,452	104,505	94,615	9,890	24,407	23,845	562	
5,000-9,999	-	72,325	67,222	5,103	58,709	54,018	4,692	13,616	13,204	412	
10,000-24,999	-	153,179	120,150	33,028	i 121,142	96,071	25,072	i 32,036	24,079	7,957	i
25,000 or more	-	349,204	314,486	34,717	282,756	252,964	29,792	66,448	61,523	4,925	i

\* = amount < \$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&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.

**Source(s):**

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