

TABLE 66

R&D costs paid for by the company and others projected for 2019, by industry and company size: 2018

(Millions of U.S. dollars)

Industry and company size	NAICS code	Projected worldwide R&D cost		Projected domestic R&D cost						Projected foreign R&D cost paid for by the company
		Paid for by company	Paid for by others	Paid for by company			Paid for by others			
				Total	Purchased and collaborative R&D	R&D performed by the company	Total	U.S. government	Non-U.S. government sources	
All industries	21-23, 31-33, 42-81	558,974	88,631	452,151	43,137	409,013	71,163	28,899	42,264	106,823
Manufacturing industries	31-33	359,136	53,657	283,524	39,112	244,412	45,446	22,543	22,903	75,613
Food	311	5,679	261	4,765	244	4,521	249	1	248	915
Beverage and tobacco products	312	1,990	121	1,262	209	1,054	121	0	121	728
Textile, apparel, and leather products	313-16	1,261	5	1,043	14	1,029	4	0	4	218
Wood products	321	207	5	204	8	197	5	*	5	3
Paper	322	1,056	2	961	4	957	1	0	1	95
Printing and related support activities	323	261	3	257	2	255	3	*	3	5
Petroleum and coal products	324	1,607	23	1,371	198	1,173	23	*	23	236
Chemicals	325	137,537	16,734	111,673	31,110	80,562	12,498	251	12,248	25,865
Basic chemicals	3251	3,091	192	2,409	52	2,357	190	1	189	682
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	1,826	136	1,227	98	1,129	82 - 103	0 - 20	83	599
Pesticide, fertilizer, and other agricultural chemicals	3253	1,345	338	1,036	123	914	337	2	335	308
Pharmaceuticals and medicines	3254	125,902	15,873	102,827	30,507	72,320	11,728	230	11,498	23,075
Soap, cleaning compound, and toilet preparation	3256	3,902	168	2,901	286	2,615	134 - 155	0 - 20	135	1,001
Paint, coating, adhesive, and other chemicals	3255, 3259	1,471	28	1,272	45	1,227	6 - 27	0 - 20	7	198
Plastics and rubber products	326	3,418	160	2,918	82	2,835	131	6	125	500
Nonmetallic mineral products	327	1,828	25	1,569	13	1,556	25	2	24	259
Primary metals	331	923	21	767	20	746	20	4	16	156
Fabricated metal products	332	2,502	78	2,310	39	2,271	69	2	67	192
Machinery	333	17,982	1,261	13,378	343	13,034	1,154	188	967	4,604
Agricultural implement	33311	3,190	10	2,021	52	1,969	8	1	8	1,169
Semiconductor machinery	333242	4,500	686	3,526	2	3,524	674	2	671	975
Engine, turbine, and power transmission equipment	3336	3,426	176	2,448	74	2,374	160	134	26	978
Other machinery	other 333	6,865	388	5,383	215	5,167	312	51	261	1,483
Computer and electronic products	334	110,085	11,632	80,608	1,941	78,668	10,510	5,663	4,847	29,477
Communications equipment	3342	16,598	1,700	13,052	818	12,233	1,517	855	662	3,547
Semiconductor and other electronic components	3344	45,298	2,505	30,518	470	30,048	2,287	77	2,210	14,780

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Navigational, measuring, electromedical, and control instruments	3345	16,329	7,208	11,928	400	11,529	6,516	4,624	1,892	i	4,401	i
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	4,672	i 181	3,399	86	3,313	178	1	i 177		1,273	i
Search, detection, navigation, guidance, aeronautical, and nautical system and instrument	334511	4,876	i 6,724	3,758	i 207	3,551	i 6,084	4,504	1,579	i	1,119	i
Other measuring and controlling device	other 3345	6,781	303	4,771	106	4,665	255	120	135		2,009	
Other computer and electronic products	other 334	31,860	220	25,110	253	i 24,858	i 190	107	i 83		6,749	i
Electrical equipment, appliances, and components	335	6,418	319	4,602	125	4,477	179	48	131		1,816	i
Transportation equipment	336	44,545	22,540	i 37,496	3,705	33,791	20,066	16,313	i 3,753		7,049	
Motor vehicles, bodies, trailers, and parts	3361-63	30,210	3,091	23,822	2,934	20,888	2,644	66 - 1,151	1,493 - 2,577		6,388	
Aerospace products and parts	3364	12,316	18,335	i 11,851	735	11,116	16,338	i 15,162	i 1,177		465	
Aircraft, aircraft engine, and aircraft parts	336411-13	11,714	17,365	i 11,249	575	10,674	15,368	i 14,224	i 1,145		465	
Guided missile, space vehicle, and related parts	336414-15, 336419	602	970	i 601	159	442	970	i 938	i 32	i	1	
Military armored vehicle, tank, and tank component	336992	4	2	4	0	4	2	2	*		0	
Other transportation	other 336	2,015	1,112	1,819	37	1,782	1,082	0 - 1,083	0 - 1,083		196	
Furniture and related products	337	404	8	i 379	10	i 368	6	i 3	i 3		25	
Miscellaneous	339	21,434	458	17,962	1,044	16,918	380	62	319		3,472	
Medical equipment and supplies	3391	18,179	290	15,146	895	14,251	219	48	171		3,033	
Other miscellaneous manufacturing	3399	3,255	169	2,817	150	i 2,667	161	13	148		438	
Nonmanufacturing industries	21-23, 42-81	199,837	34,974	168,627	4,026	164,601	25,717	6,356	19,360		31,210	i
Mining, quarrying, oil and gas extraction, and support activities	21	2,184	181	i 1,934	193	i 1,740	i 179	i 0	179	i	250	
Utilities	22	453	97	i 446	211	235	96	i 42	54	i	7	
Wholesale trade	42	1,290	i 31	i 1,139	91	i 1,048	i 29	i 0	29	i	151	i
Electronic shopping and electronic auctions	454111-12	6 - 21,485	i 121	6 - 16,746	i 7	0 - 16,739	i 121	121	0		0 - 4,744	i
Transportation and warehousing	48-49	1,282	8	1,227	24	1,204	8	4	4		55	
Information	51	130,594	992	110,831	2,139	108,692	913	79	834		19,763	
Publishing	511	44,112	574	36,415	1,126	35,289	515	67	449		7,697	

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50-99	-	15,290	2,266	14,116	1,664	12,453	2,019	703	1,316	1,174
100-249	-	20,447	4,928	18,377	2,074	16,303	4,435	1,636	2,799	2,070
Large companies										
250-499	-	23,478	4,052	20,363	2,528	17,835	3,402	1,002	2,401	3,114
500-999	-	20,573	2,971	18,038	1,122	16,916	2,306	182	2,124	2,535
1,000-4,999	-	86,469	12,425	69,180	5,324	63,857	10,705	1,498	9,207	17,289
5,000-9,999	-	56,781	14,576	45,683	6,595	39,088	9,715	1,281	8,434	11,098
10,000-24,999	-	120,509	14,899	94,443	14,188	80,255	11,300	2,271	9,029	26,066
25,000 or more	-	196,719	29,132	154,704	6,960	147,744	24,360	18,931	5,429	42,015

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

NAICS = 2012 North American Industry Classification System.

^a Business 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. Beginning in survey year 2018, statistics are representative of companies located in the United States that performed or funded \$50,000 or more of R&D. This change has affected the comparability of these estimates 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 U.S. Census Bureau, Business Research and Development Survey, 2018.