

TABLE 45-B

R&D paid for by the company and others and performed by the company outside of the United States, by selected location, industry, and company size: 2020 (part B)

(Millions of U.S. dollars)

Industry and company size	NAICS code	Total outside the United States	Argentina	Brazil	Chile	Mexico	Other Latin American locations	Australia	China	Hong Kong	India	Indonesia	Japan	Malaysia	New Zealand	Singapore	South Korea	Taiwan	Thailand	Other Asian or Pacific locations	Israel	Other Middle Eastern locations	South Africa	Other African locations	Undistributed	
All industries	21-23, 31-33, 42-81	109,705	390	1,199	188	1,087	1,729	i 2,167	8,985	493	11,067	31	4,490	925	250	2,624	1,650	2,232	370	786	6,827	347	249	i 232	645	i
Manufacturing industries	31-33	66,243	152	825	115	828	1,541	i 1,114	6,544	241	5,329	3-27	2,899	897	87-140	1,765	1,225	1,401	233-312	554	4,399	212	81	184	489	i
Food	311	1,153-1,161	0-25	97	0-28	34	66	33	107	i 1	45	0-24	0-40	4	10	26	10	7	0-79	12	0-61	0-35	0-24	0-12	0-259	i
Beverage and tobacco products	312	759	0-25	0-32	0-28	27	0-43	5	48	0	10	0-24	29	0	0	19	0	0	0-75	0-16	0	0-35	3	0	0	
Textile, apparel, and leather products	313-16	152	*	1	*	1	4	2	21	5	*	0	2	*	0-14	*	2	0-14	0	8	0	0	0	0	*	i
Wood products	321	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0-7	i
Paper	322	93	0-25	i 0-32	* i	1 i	2 i	1 i	1 i	0	* i	* i	0	* i	0	8	2 i	1 i	* i	1 i	0-61	i *	1 i	* i	0-63	i
Printing and related support activities	323	10	0	0	0	0	0	0	*	0	5	0	0	0	0	0	0	*	0	0	0	0	0	0	1	i
Petroleum and coal products	324	165	0	0	0	0	0	1	0-94	0	1	0	0-40	0	0	1	*	0	*	0	0	0-35	0	0	0-105	i
Chemicals	325	19,362	114	296	75	139	221	292	1,462	104	558	0-25	1,324	33	0-38	313	182	113	28-66	97	282	116	47	40	0-42	i
Basic chemicals	3251	846	3	22	1	8	4	2	97	1	9	0-24	15	1	*	60	3	6	0-34	6	21	10	0-7	2	0-37	i
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	512	1	13	0	3	2	3	35	3	8	*	27	*	*	2	9	1	i 2	40	0	21	0	19	*	i
Pesticide, fertilizer, and other agricultural chemicals	3253	92-108	*	12	*	2	1	*	4	1	4	1	2	*	*	4	*	*	2	2	0	0	0	0	0-42	i
Pharmaceuticals and medicines	3254	16,761	105	216	72	109	201	277	1,163	98	501	0-24	1,240	27	0-27	169	165	103	26	34	250	83	38	0-21	0-26	i
Soap, cleaning compound, and toilet preparation	3256	767	3	26	*	5	11	2	110	1	9	0-21	32	3	*	73	2	0-5	0-21	3	0-13	0-4	0-7	0-21	0-21	i
Paint, coating, adhesive, and other chemicals	3255, 3259	370-385	2	7	2	11	*	8	53	1	27	*	9	2	0-34	5	3	0-5	0-34	12	0-13	0-4	4	0	0-42	i
Plastics and rubber products	326	529	3	12	0	35	i 1	4	77	i *	6	* i	8	0	*	3	3	*	6	0	16	0	0-24	0	14-70	i
Nonmetallic mineral products	327	206	i 0	2	0	5	i 0-43	1	16	i 0	1	* i	2	0	0	0	0-69	i 0-19	i 0	0	0-61	i *	0	0	0-140	i
Primary metals	331	32	0	4	0	0	0	16	*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fabricated metal products	332	349	1	2	*	5	*	1	23	0	4	*	47	1	13	1	1	51	*	12	0	2	3	0	4	i
Machinery	333	4,285	3	99	2	25	1	45	410	2-46	400	* i	164	5	1-45	80	168	120	i 3-47	1-17	324	8	0-24	0-12	31-75	i
Agricultural implement	33311	639-681	2	0-99	0	0-23	*	2	0-270	0	0-236	0	*	*	2	*	0	0	0	0	0	0	0-24	0	0-43	i
Semiconductor machinery	333242	1,027	0	0	0	0	0	0	92	i 3	154	i 0	36	i 2	0	48	i 161	99	i 0	1	299	0	0	0	*	i

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Engine, turbine, and power transmission equipment	3336	558	0	1	0	3	*	1	50	0	12	0	*	0	0	22	0	0	4	1	0	*	0	0	32	i						
Other machinery	other 333	2,021 - 2,062	1	0 - 99	2	0 - 23	*	42	0 - 270	0 - 43	0 - 236	*	128	2	0 - 43	10	7	21	0 - 43	0 - 16	25	8	0 - 24	0 - 12	0 - 43	i						
Computer and electronic products	334	26,567	2 - 27	25 - 54	i	*	180	1,135	i	150	2,736	79	3,862	3	927	848	64	1,158	239	1,052	176	378	3,461	42	3	43	i	109 - 377	i			
Communications equipment	3342	3,388	2	0 - 54	*	0 - 165	*	47	320	4	1,021	1	17	0 - 165	10	9	21	52	0 - 148	12	i	212	8	0 - 2	0 - 44	0 - 165	i					
Semiconductor and other electronic components	3344	13,023	0 - 25	0 - 54	i	*	i	181	245 - 480	i	10	1,645	52	2,145	*	461	516	10	710	119	597	29	354	2,502	5	*	i	0 - 44	i	0 - 49	i	
Navigational, measuring, electromedical, and control instruments	3345	3,146	1	0 - 54	0	0 - 83	0	54	328	5	89	1	47	43	25	155	12	7	*	5	34	1	2	0	0 - 43	i						
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	498	i	*	0 - 42	0	0 - 42	0	1	8	0	12	i	0	1	*	*	43	*	0	0	0	0	0	*	0	0 - 42	i				
Search, detection, navigation, guidance, aeronautical, and nautical system and instrument	334511	684	0	0	0	0 - 83	0	0 - 54	0 - 321	1	0 - 78	0	0	*	0	0 - 113	9	2	0	0	0 - 35	1	*	0	0	0						
Other measuring and controlling device	other 3345	1,964	1	0 - 54	0	0 - 83	0	0 - 54	0 - 321	4	0 - 78	1	46	43	25	0 - 113	3	5	*	5	0 - 35	0	2	0	*	i						
Other computer and electronic products	other 334	7,010	*	0 - 54	i	*	0 - 181	654 - 889	i	40	443	19	608	0	402	i	123 - 291	i	19	284	86	i	396	0 - 148	7	i	713	29	0 - 2	0	0 - 377	i
Electrical equipment, appliances, and components	335	1,794	0	46	*	33	*	15	i	379	2	56	*	69	*	*	4	40	14	i	5	4	0 - 25	0	0	0 - 12	0 - 25					
Transportation equipment	336	6,515	3	i	195	1	320	5	442	793	2	i	164	i	0	99	1	0	55	i	478	16	16	5	3	*	3	i	91	63	i	
Motor vehicles, bodies, trailers, and parts	3361-63	5,789 - 5,801	3	i	194	1	285	5	423	781	*	156	i	0	93	1	0	54	i	478	1	i	16	5	3	0	3	i	91	50 - 64	i	
Aerospace products and parts	3364	509	0	0 - 2	0	21	*	17	10	0	4	0	7	0	0	1	0	0	0	*	0	0	0	0	0	0	0	0	0 - 12	i		
Aircraft, aircraft engine, and aircraft parts	336411-13	500	0	0 - 2	0	21	*	17	10	0	4	0	7	0	0	1	0	0	0	*	0	0	0	0	0	0	0	0	0 - 12	i		
Guided missile, space vehicle, and related parts	336414-15, 336419	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Military armored vehicle, tank, and tank component	336992	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Other transportation	other 336	206 - 216	0	0 - 2	i	0	15	0	2	i	2	i	2	i	5	i	0	0	0	*	i	15	*	i	0	0	*	*	i	*	i	0
Furniture and related products	337	39	0	0	0	2	0	0	*	*	0	0	0	0	0	0	0	0	0	*	0	1	0	0	0	0	0	1	i			
Miscellaneous	339	4,217 - 4,224	3 - 29	20	10 - 39	22	67 - 110	107	383 - 478	3 - 49	i	215	0 - 24	193 - 233	4	0 - 53	97	36 - 106	12 - 32	0 - 79	25	255 - 316	11 - 47	1	0 - 12	0 - 268	i					
Medical equipment and supplies	3391	3,822	4	20	11	18	68	95	384	4	i	188	i	24	194	4	0 - 53	96	37	13	0 - 79	24	256	12	1	0 - 12	0 - 162	i				
Other miscellaneous manufacturing	3399	396 - 403	0 - 25	i	*	0 - 28	i	4	i	0 - 43	i	12	0 - 94	0	0 - 40	0	0 - 53	i	1	0 - 69	0 - 19	0	1	i	0 - 61	0 - 35	i	*	*	i	0 - 268	i

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Nonmanufacturing industries	21-23, 42-81	43,462	239	374	74	259	189	1,053	2,441	252	5,739	4-29	1,591	28	111-164	858	425	831	57-138	232	2,427	135	167	48	156
Mining, quarrying, oil and gas extraction, and support activities	21	120-127	0	1	0	0	0	0-84	0-84	0	2	0	0-84	0	0	0	0	0	0	0	0	0-84	0-46	0	0
Utilities	22	6	0	*	0	*	0	*	*	0	0	*	0	0	*	0	0	0	*	0	5	0	0-2	0	0
Wholesale trade	42	45	0	0	0	0	0	*	4	*	1	1	0	0	0	0	0	24	0	*	0	0	0	0	0-17
Electronic shopping and electronic auctions	454111-12	97-4,884	1	19-157	1	0-25	0-26	0-285	0-398	0-88	0-1,136	0-1	0-671	0-5	1	0-332	0-226	0-24	0-138	2	0-198	0-92	0-46	*	0
Transportation and warehousing	48-49	37	0	*	0	0	0	0	0	0	3	0	0	0	0	0-35	0	0	0	0	0	0	0	0	*
Information	51	22,900	113	78-124	7-49	122	78	488	1,268	165	3,568	3-27	187-446	8	27-80	333	51-278	576	0-138	173	1,748	16	20-66	31-39	42-119
Publishing	511	7,683	0-10	20	7	11	15	135	817	0-165	1,290	1	130	3	0-53	84	36	0-175	0-138	118	579	10	4	30	0-33
Newspaper, periodical, book, and directory publishers	5111	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Software publishers	5112	7,683	0-10	20	7	11	15	135	817	0-165	1,290	1	130	3	0-53	84	36	0-175	0-138	118	579	10	4	30	0-33
Telecommunications	517	94	0	*	0	0-6	1	*	2	1	10	0	0	0	0	*	5	0	0	0	6	0	*	0	0-42
Data processing, hosting, and related services	518	8,147	104	23	1	107	62	168	296	0-165	1,990	3	58	4	27	45	12	0-172	0-138	50	648	4	17	2	0-118
Other information	other 51	6,976	0-10	33-82	0-42	0-6	*	185	153	0-165	279	0-24	0-259	1	1	203	0-226	228-577	0-138	4	516	1	0-46	0-8	0-118
Finance and insurance	52	1,541	1	2	0-42	0-25	14	22	46	0-88	0-1,040	0	0-671	1	0-53	0-332	5	0-24	0-138	0-54	0-198	0-92	0-46	0-8	0-81
Real estate and rental and leasing	53	163	*	0-86	*	0-25	0-26	0-151	0-151	*	0-151	*	0-151	*	0	0-151	0-151	*	*	*	*	0	*	*	0
Lessors of nonfinancial intangible assets (except copyrighted works)	533	0-15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other real estate and rental and leasing	other 53	148-164	*	0-86	*	0-25	0-26	0-151	0-151	*	0-151	*	0-151	*	0	0-151	0-151	*	*	*	*	0	*	*	0
Professional, scientific, and technical services	54	13,744	123	138	25	114	73	260	728	0-68	1,032	1	734	16	84	195	144	209	0-80	4-59	478	29	102	10	33-53
Architectural, engineering, and related services	5413	20	0	*	0	*	0	8	0-6	*	2	0	0	0	0	*	*	0-6	0-6	*	*	*	*	0	2
Computer systems design and related services	5415	3,324	1	19	*	48	18	52	210	*	687	0	72	3	9	10	1	113	0-29	0-29	379	3	12	3	0-20
Scientific research and development services	5417	10,070	122	111	22	66	54	196	495	0-66	313	1	659	12	75	184	139	74	0-66	4-59	80	26	90	7	31

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Research and development in nanotechnology	541713	0 - 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	0	0	0	0	0	0	0
Research and development in biotechnology (except nanobiotechnology)	541714	2,929	28	23	8	27	12	82	252	0 - 34	111	0	147	2	10	13	45	17	0 - 34	5	23	0	3	0	0 - 32
Research and development in the physical, engineering, and life sciences (except nanotechnology and biotechnology)	541715	7,135	i 94	i 88	i 14	i 38	i 41	i 113	i 244	i 66	i 202	i 1	i 511	i 10	i 65	i 172	i 94	i 57	i 0 - 66	i 54	i 58	i 26	i 86	i 7	0 - 32
Research and development in the social sciences and humanities	541720	1 - 7	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0 - 6	0	0	0	1	0	0 - 6
Other professional, scientific, and technical services	other 54	330	*	8	3	*	1	4	16 - 24	*	30	0	3	*	1	1	3	15 - 24	0	0 - 30	18	0	0	0	2
Health care services	621-23	18 - 22	i 0	0	0	0	0	0 - 22	0	0	0	0	0 - 22	0	0	0	0	0	0	0	0	0	0	0 - 2	0
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	1 - 4,789	i 0	*	0 - 42	i *	0 - 26	0 - 285	0 - 398	0 - 88	0 - 1,136	0	*	0 - 5	0	0 - 332	0 - 226	0	0 - 138	i 54	0 - 198	0 - 92	0	0	0 - 81
All companies (number of domestic employees)	-	109,705	390	1,199	188	1,087	1,729	i 2,167	8,985	493	11,067	31	4,490	925	250	2,624	1,650	2,232	370	786	6,827	347	249	i 232	645
Small companies																									
10-19 ^a	-	290	*	*	0	*	2	5	27	*	26	0	1	2	i 0	2	10	3	0	3	i 1	0	0	0	27
20-49	-	606	*	1	0	7	2	16	159	6	33	1	i 11	*	0	2	13	69	1	12	12	*	5	10	5 - 78
Medium companies																									
50-99	-	798	1	1	1	2	i 1	20	46	3	200	0	1	*	*	4	*	21	0	5	97	*	*	0	17
100-249	-	2,072	4	1	1	26	26	i 19	151	12	139	*	27	*	1	47	8	92	2	11	190	2	3	1	23
Large companies																									
250-499	-	2,866	10	3	1	20	12	40	216	40	188	*	68	3	24	83	124	109	2	45	310	i *	1	0	0 - 36
500-999	-	3,187	9	24	9	65	5	64	200	25	393	*	35	4	5	52	16	34	13	14	175	4	4	2	0 - 110
1,000-4,999	-	18,520	65	100	8	165	34	358	1,716	55	2,360	8	350	66	36	397	118	254	79	i 379	935	23	16	2	127
5,000-9,999	-	11,845	26	i 118	32	125	i 987	i 108	850	31	855	i 2	465	i 290	i 29	231	158	144	i 183	36	269	24	30	5	213
10,000-24,999	-	23,186	165	i 352	25	206	167	i 307	1,922	43	2,240	5	1,740	44	98	i 932	371	i 570	32	141	430	i 100	111	i 81	*
25,000 or more	-	46,336	111	598	111	470	493	1,229	3,699	277	4,633	14	1,792	515	56	874	831	935	58	141	4,408	193	79	i 130	92 - 236

* = 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. Country detail was not collected from companies reporting less than \$1 million of R&D paid for by the company or reporting less than \$1 million of R&D paid for by others. 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.