

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: 2021 (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 ^a	
All industries	21-23, 31-33, 42-81	135,412	456	1,387	233	1,505	1,795	2,566	11,639	643	14,314	41	5,241	1,094	356	3,237	1,998	2,662	470	934	8,232	525	345	260	457	
Manufacturing industries	31-33	78,389	163	929	138	1,072	1,582	1,289	8,327	390	6,773	28	3,190	1,052	148	2,149	1,522	1,674	310	644	5,200	265	104	161	304	
Food	311	1,190	0-43	110	0-47	46	22	33	94	2	33	6	9	3	5	16	3	1	11	10	*	5	20	4	0-219	
Beverage and tobacco products	312	893	0-43	0-19	0-47	36	46	8	51	7	12	*	24	0	*	22	0	0	13	8	0	15	0-18	0	0	
Textile, apparel, and leather products	313-16	169	0	0-19	0	0-11	4	2	26	11	2	0	1	*	*	*	2	1	*	12	*	0	0	1	0	
Wood products	321	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Paper	322	67	0	1	0	0	0	0	2	0	0	0	0	0	0	0	8	0	0	0	0	*	0	0	*	
Printing and related support activities	323	27	0	0	0	0	0	0	*	0	20	0	0	0	0	0	0	1	0	0	0	0	0	0	0	
Petroleum and coal products	324	175	0	*	0	0	0	1	19	0	3	0	1	0	0	1	*	0	*	0	0	11	0	0	*	
Chemicals	325	23,741	120	371	92	174	268	486	2,031	174	493	9	1,613	19	21	367	258	112	51	63	383	165	66	30	7	
Basic chemicals	3251	997	2	24	1	9	6	3	89	26	11	2	15	1	1	65	2	5	1	8	16	16	0-6	9	0-8	
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	580	2	16	0	3	1	3	97	0	9	*	31	*	*	*	12	1	2	*	0	6	*	*	*	
Pesticide, fertilizer, and other agricultural chemicals	3253	123	1	12	*	0-13	0-4	2	1	0-25	0-22	1	1	*	0	0-18	*	*	3	1	0	0	*	0	0	
Pharmaceuticals and medicines	3254	20,936	115	297	89	148	241	474	1,675	124	444	5	1,526	16	20	190	241	104	43	41	363	140	61	20	0-8	
Soap, cleaning compound, and toilet preparations	3256	871	*	20	1	4	19	4	123	1	10	*	37	1	*	96	2	*	*	2	*	2	0-6	2	0-8	
Paint, coating, adhesive, and other chemicals	3255, 3259	234	*	2	*	0-13	0-4	1	45	0-25	0-22	*	3	1	0	0-18	3	2	1	11	4	0	*	0	*	
Plastics and rubber products	326	607	0-17	12	0	11	0-12	4	44	*	1	*	2	21	*	3	1	*	6	4	0	0	*	0	78	
Nonmetallic mineral products	327	198	0	2	0	4	0	*	19	0	0	0	3	0	0	0	44	24	0	0	32	0	0	0	*	
Primary metals	331	50	0	0-15	0	0	0	17	1	0	0	0	0	1	0	*	0	0	0	0	0	0	0	0	0-15	
Fabricated metal products	332	378	0-24	3	*	3	*	2	24	0	5	*	53	1	13	1	0	56	*	*	2	2	*	0	0-24	
Machinery	333	5,343	*	100	1	70	*	47	570	5	576	*	163	7	14	81	216	152	9	4	426	1	1	*	2	
Agricultural implement	33311	907	*	0-96	0	0-64	0	2	0-403	0	0-323	*	0	*	3	0	0	0	0	*	0-38	0	*	0	0	
Semiconductor machinery	333242	1,299	0	0	0	0	0	0	115	4	226	0	33	3	0	63	205	123	0	2	389	0	0	0	*	
Engine, turbine, and power transmission equipment	3336	546	0	5	0	7	0	1	54	0	29	0	*	0	2	0	0	0	4	*	0	0	0	0	0	
Other machinery	other 333	2,591	*	0-96	1	0-64	*	44	0-403	1	0-323	*	130	4	9	18	12	30	5	1	0-38	1	1	*	2	
Computer and electronic products	334	31,535	1-44	54	0-47	233	1,161	199	3,418	99	4,932	11	997	984	90	1,478	328	1,249	177	500	4,011	48	0-18	0-7	0-219	
Communications equipment	3342	3,411	2	0-55	0-47	23	*	62	320	13	984	0-4	13	0-187	12	9	8	56	0-141	8	185	11	0-18	0-7	0	

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Semiconductor and other electronic components	3344	16,521	0-43	0-55	0	0-211	98-631	32	2,160	48	3,014	0-4	526	644	17-33	949	200	719	37	456	2,931	*	0	*	0-219
Navigational, measuring, electromedical, and control instruments	3345	3,576	*	0-55	*	0-141	0-18	56	414	12	134	8	52	50	29	197	12	10	1	21	3-144	0-38	0-18	0	0-140
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	467	*	0-18	0	0-18	0-18	5	10	0	6	6	1	7	0	62	*	0	0	*	4	0	0	0	0-18
Search, detection, navigation, guidance, aeronautical, and nautical system and instruments	334511	594	0	0	0	0-140	0	0-52	0-405	1	0-129	0	*	0	0	136	0-13	1	*	0	0-140	0-38	0-18	0	0-140
Other measuring and controlling devices	other 3345	2,516	0	0-55	*	1	0	0-52	0-405	11	0-129	2	51	43	29	136	0-13	9	1	21	0-140	0	0-18	0	0-140
Other computer and electronic products	other 334	8,027	*	0-55	0-47	0-211	511-1,063	48	524	26	799	0	406	102-292	14-34	324	108	465	0-141	15	750-893	0-38	0-18	0	0-219
Electrical equipment, appliances, and components	335	1,880	0	38	0	58	2	6	613	4	177	0	54	5	2	30	43	10	5	2	0	*	0	0-7	0-22
Transportation equipment	336	7,663	0-43	205	0-47	411	5	368	1,000	3	257	0	60	2	1	78	569	52	25	4	13	0	2	122	0-101
Motor vehicles, bodies, trailers, and parts	3361-63	6,720	0-43	204	0-47	389	5	353	974	*	198	0	59	2	0	73	568	5	24	4	0-14	0	2	111-123	0-101
Aerospace products and parts	3364	711	0	0-2	0	22	*	14	23	1	52	0	2	0	1	5	*	*	1	0	0-14	0	0	0	0-101
Aircraft, aircraft engine, and aircraft parts	336411-13	693	0	0-2	0	22	*	14	23	1	52	0	2	0	1	5	*	*	1	0	0-14	0	0	0	0-101
Guided missile, space vehicle, and related parts	336414-15, 336419	18	0	0	0	0	0	0	0	0	*	0	0	0	0	0	0	0	0	0	0-14	0	0	0	0
Military armored vehicle, tank, and tank components	336992	0-3	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	228-233	0	0-2	0	*	0	2	3	2	7	0	0	0	0	0	*	46	*	0	0	0	*	0-11	0-11
Furniture and related products	337	37	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	*
Miscellaneous	339	4,431	0-43	20	0-47	19-30	66-78	116	416	85	262	1	208	9	2	72	49	14	11	34	333	19	0-18	0-7	0-144
Medical equipment and supplies	3391	4,007	0-43	19	0-47	20	67	98	399	2	212	1	172	7	2	72	37	11	5	34	296	19	0-18	0-7	0-50
Other miscellaneous manufacturing	3399	424	0	*	0-47	0-11	0-12	18	17	83	50	0	36	2	*	1	12	3	6	*	37	0	0	0	0-103
Nonmanufacturing industries	21-23, 42-81	57,024	293	458	95	433	213	1,277	3,311	253	7,542	13	2,051	42	208	1,088	476	988	161	290	3,032	260	241	99	154
Mining, quarrying, oil and gas extraction, and support activities	21	5-79	0	0	0	0	0	0-79	0	0	0-79	0	0-79	0	0	0	0	0	0	0	0	0	*	*	0
Utilities	22	0-1,129	0	0-187	0	0-24	0	*	*	0	0	0-12	0	0	*	0	0	0	0-2	0	0-382	0	*	0	0
Wholesale trade	42	0-109	0	0	0	0-24	0-42	0	0-109	0	0-109	0	*	0	0	0	0-109	0-38	0	0	0	0	0	0	0-7
Electronic shopping and electronic auctions	454111-12	4,330-6,357	2	0-199	2	0-24	0-42	0-401	0-475	0-82	0-1,456	0-12	0-657	0-12	1	0-424	0-194	0-38	0-2	0-27	0-382	0-112	0-65	*	0-7
Transportation and warehousing	48-49	73	0	0-70	0	0	0	0-70	0-70	0	0-70	0	0	0	0	0	0	0	0	0	0	0	*	0	0

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10-19 ^b	-	359	* r	0	0	* r	4 r	1	37	3	48 r	0	3	3	0	*	3	4	0	1	36	*	0	0	42 i
20-49	-	909	*	3	4 r	7	8	20	158	7	129	0	5	1	7 r	4	13	47 r	121 r	7 r	16	1	7	1	0 - 44 i
Medium companies																									
50-99	-	866	*	2	3	4	9	18	76	*	112	*	4	7	*	18 i	*	19	0	4	69	* r	*	5	12 i
100-249	-	2,382	6	2	4	12	25	16	163	29	211	*	32	2	3	40	13	77	2	24	95	2	1	1	0 - 52 i
Large companies																									
250-499	-	3,660	8	5	2	59	12	51	343	27	621	*	47	9	42	63	179 i	128	*	27	342	*	5	0	6 i
500-999	-	4,528	7	13	3	106 i	10	50	278	61	424	1	66	11	13	67	21	70	11	29	316	10	2	0	70 i
1,000-4,999	-	20,663	50	144	21 i	175	87	397	1,696	117	2,606	12	386 i	59	20	557	138	278	94	548	988	10	19	38	144 i
5,000-9,999	-	15,571	4	66	3	137	1,023 i	150	1,417	57	1,338	2	507 i	341 i	49	354	84	238	92 i	40	527	35	15	9	0
10,000-24,999	-	28,481	233 i	434	53	296	137	513	2,416	51	3,267 i	10	1,862	84	156 i	1,048	569 i	656 i	45	78	736 i	100 i	163 i	28	9 i
25,000 or more	-	57,992	146	717	141	710	480	1,349	5,054	291	5,558	16	2,329	577	65	1,087	979	1,145	106	175	5,108	367	132	179	98 - 178 i

* = 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 Includes data reported that were not allocated to a specific country.

^b 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, 2021.