

TABLE 53-A

## R&amp;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: 2019 (part A)

(Millions of U.S. dollars)

Industry and company size	NAICS code	Total outside United States	Puerto Rico <sup>a</sup>	Canada	Austria	Belgium	Czechia	Denmark	Finland	France	Germany	Hungary	Ireland	Italy	Luxembourg	Netherlands	Norway	Poland	Russia	Spain	Sweden	Switzerland	Turkey	United Kingdom	Other European locations
All industries	21-23, 31-33, 42-81	104,464	539 i	6,862	651 i	2,324	527	593	600	3,313	8,879	246	4,207	1,611	274	2,108	363	958	492	1,033	1,247	4,536	159	11,797	2,847
Manufacturing industries	31-33	64,351	516 i	3,610	556 i	2,020	180	375	358	2,091	6,917	96	2,281	1,109	206	1,106	260	608	256	661	639	2,946	75	5,565	1,624
Food	311	835	2	28	1	11	*	1	*	46	39	*	1	6	0	13	8	17	2	10	2	18	1	82	86
Beverage and tobacco products	312	674	0	2	0	19	0	0	0	0	0	0	8	32	0	0	0	*	7	*	0	362	2	40	2
Textile, apparel, and leather products	313-16	157	0	5	0	12	0	0	1	18	7	0	0	5	0	4	0	*	0	0	3	7	0	5	32
Wood products	321	7	0	*	0	0-8	0	0	0	0-8	*	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Paper	322	101	0	53	0	0	0	0	1	2	14	0	0	0	0	1	0	1	0	0	*	1	1	4	0
Printing and related support activities	323	9 i	0	0	0	0	0	0	0	0	9 i	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Petroleum and coal products	324	171 - 176	0	0-70	*	0-39	0	3	0	5	9	0	0	1	*	5	*	*	0	*	*	*	*	0-131	*
Chemicals	325	18,568	103	789	360 i	1,631	30	119	48	711	1,128	38	1,454	319	181	398	46	100	97	324	175	1,772	57	2,224	1,041
Basic chemicals	3251	742	0	0-87	0-3	43	0-4	8	0-6	54	60	0-3	0-2	14	0-122	65	1	0-5	0-3	21	0-6	29	8	88	24
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	523	0	0-87	0	23	0	0	0-6	10	60	0	0	0-16	0-181	24	0	1	0-3	2	0	1	0-3	15	0-52
Pesticide, fertilizer, and other agricultural chemicals	3253	450	35	0-87	8	0-12	0-4	25	0	2	3	0-3	0	*	0	0	0	*	0	1	0	0-6	0	15	10
Pharmaceuticals and medicines	3254	15,868	67	684	351 i	1,459	27	87	43	606	810	36	1,453	288	1	277	45	93	95	298	170	1,724	48	1,964 i	956
Soap, cleaning compound, and toilet preparation	3256	757	1	20 i	0	97	*	0	*	20	173	0-3	0	3	*	8	0	3	1	0-5	0-6	15	0-3	123	2
Paint, coating, adhesive, and other chemicals	3255, 3259	227	*	0-87	0-3	0-12	0-4	0	0	19	21	0-3	0-2	0-16	0-116	23	0	0-5	0	0-5	0	0-6	0	20	0-52
Plastics and rubber products	326	503	0	17	0	16	2	0	6 i	40	164	3	7 i	15	4	4 i	0	1	1	5	2	2	0	12	6
Nonmetallic mineral products	327	192 i	0	15	0	4	0	1 i	0	12 i	19 i	0	0	*	0	0	0	4 i	3 i	0	0	3	0	2	3
Primary metals	331	76	0	5	0	0	0	0	0	*	10	0	*	0	0	0	1	0	*	3	1	*	0	5	11
Fabricated metal products	332	278	0	22	7	3	*	1	5	2	40	*	*	4	0	3	*	*	*	2	*	18	0	41	*
Machinery	333	4,251	0	147	42 i	25	3	67	58	392	678	3	15 i	104	0	84	12	11	1	39	68	187	*	375	44
Agricultural implement	33311	857	0	19	0-12	3	0-4	2	46	78	282	1	0	15	0	24	0	0-12	0-2	11	*	126	0-1	5	1
Semiconductor machinery	333242	915	0	1	0-43 i	0-23	0	0	0	5 i	51 i	0	0-14 i	7 i	0	0-57	0	0	0	0	0	0	0	2 i	0
Engine, turbine, and power transmission equipment	3336	630	0	20	0	*	0-4	51	0	204	40	1	2 i	15	0	5	0	0	0	13	*	31	0-1	41	15



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Other transportation	other 336	234	0	59	0	0	1 i	*	0	14-70 i	28 i	0	0	*	0	1	0	3	0	0-64	1 i	0-9	0	21	4
Furniture and related products	337	35	0	3	0	0	0	5	0	7	3	0	0	3	0	0	0	0	0	0	0	0	0	7	0
Miscellaneous	339	3,482 - 3,488	0-159	86-156	25	16-55	19 i	15	33	162-183	436	4	268	31	1 i	125 i	27	12 i	54	20	103	170	5	198-329	41
Medical equipment and supplies	3391	3,069	0-159	87	19	17	6	14	33	163	415	4	265	29 i	0	123 i	27	1	54	18	80	170	3	199	18
Other miscellaneous manufacturing	3399	413-419	0	0-70 i	6	0-39 i	13 i	*	*	0-21	21	0	3 i	2	1 i	1	0	11 i	0	2 i	23	*	2 i	0-131	22
Nonmanufacturing industries	21-23, 42-81	40,113	23	3,252	95	304	346	217	242	1,221	1,961	150 i	1,926	502	68 i	1,002	103	350	236	372	608	1,590	84	6,233	1,222
Mining, quarrying, oil and gas extraction, and support activities	21	589	0	0-328 i	0	2	*	0	0	0-84	91 i	0	0	0-237	0	0-239	4 i	0	1 i	0	0	0	0	88 i	0
Utilities	22	9	0	*	*	0	*	0	0	0	0	0	0	0	0	0	0	*	0	*	0	0	0	8	0
Wholesale trade	42	113	0	0-28	0	0	0	0	0	* i	86	0	0	0	0	1	0	0	0	0	0	0	0	* i	* i
Electronic shopping and electronic auctions	454111-12	69-4,198 i	0	0-328 i	3 i	* i	1 i	0-24	0-6 i	0-84 i	0-387 i	* i	0-738 i	0-237 i	0-62 i	0-239	0-11 i	0-31 i	* i	0-38 i	14-43 i	6	0-29	0-332 i	0-44 i
Transportation and warehousing	48-49	62	0	0-37	0	1	0	0	0	1	0	0	0	0	0	0-37	0	0-31	9	0	0	0	0	3	0
Information	51	19,051	0-18	1,877	46	164	201	156	204	549	636	72	851	56	6-32	470	86	188	90	157	453	1,032	5-31	2,984	641
Publishing	511	6,949	0-6	1,015	0-12	0-137	63	108	42	225	235	0-15	0-332	27	7	0-227	49	41	45	94	352	72	6	671	358
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	6,949	0-6	1,015	0-12	0-137	63	108	42	225	235	0-15	0-332	27	7	0-227	49	41	45	94	352	72	6	671	358
Telecommunications	517	124	0	0-28	0	0	0	0-28	0	*	0-28	0	0-28	0	0	*	0	21	0	3	0-28	0	0	25	7
Data processing, hosting, and related services	518	5,891	*	634	35	28	135	19	0-163	205	198	58 i	317	0-30	0-25	244	0-38	75	43	50	48	0-205	0-25 i	591	240
Other information	other 51	6,087	0-18	198-230	0-12	0-137	4	0-31	0-163	118	173-205	0-15	173-535	0-30	0-25	0-227	0-38	51	1	11	23-55	754-961	0-25	1,697	36
Finance and insurance	52	1,175	0	43	* i	6 i	6	0	0	15 i	0-176 i	5	0-176	1 i	*	0-176	0	0-31 i	12	0-38 i	61	21	*	315	62
Real estate and rental and leasing	53	104	0	3-98	*	*	*	0-24	0	0-84	0-94	*	0-94	*	0	*	0	0	5	*	*	*	0	0-94	*



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250–499	–	2,709	*	201	5	1	3	4	2	127	120	2	144	20	*	50	9	42	23	30	19	54	2	276	78	
500–999	–	2,953	0	300	4	34	18	42	38	108	249	31	97	32	0 - 39	45	16	16	43	15	11	52	0 - 39	497	181	
1,000–4,999	–	16,553	27	2,294	35	216	68	136	130	546	1,260	62	i 491	192	49	390	33	132	77	139	341	594	42	1,344	893	
5,000–9,999	–	11,965	18	809	62	i 81	86	94	55	i 514	878	51	349	151	0 - 50	498	35	i 213	i 52	i 181	243	393	i 0 - 50	1,239	161	i
10,000–24,999	–	23,612	446	i 839	388	i 643	45	i 146	75	1,074	2,105	54	i 332	548	92 - 159	511	75	194	104	i 373	i 283	567	5 - 72	2,983	i 610	
25,000 or more	–	43,148	44	2,087	142	1,312	284	160	294	895	4,036	36	2,776	608	67	i 572	188	333	145	278	321	2,443	45	5,176	747	

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

NAICS = 2012 North American Industry Classification System.

<sup>a</sup> Puerto Rico is not included in the U.S. total due to its classification as a U.S. territory.<sup>b</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. 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. 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 Census Bureau, Business Enterprise Research and Development Survey, 2019.