

Table 44-A. 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 (part A): 2024

(Millions of U.S. dollars)

Industry and company size	NAICS code	Total outside the United States	Puerto Rico ^a	Canada	Austria	Belgium	Czechia	Denmark	Finland	France	Germany	Hungary	Ireland	Italy	Luxembourg	Netherlands	Norway	Poland	Russia	Spain	Sweden	Switzerland	Turkey (Türkiye)	United Kingdom	Other European locations
All industries	21–23, 31–33, 42–81	164,727	321	13,227	1,193	3,977	1,260	1,068	831	4,547	11,015	466	5,088	2,192	242	4,922	400	2,049	192	2,342	1,569	8,620	269	18,477	5,248
Manufacturing industries	31–33	90,435	314	5,792	550	3,355	335	662	401	2,412	7,756	158	2,419	1,417	202	3,433	254	845	113	1,146	746	5,561	179	6,761	2,430
Food	311	1,523	63	62	5	16	1	4	*	77	100	5	30	12	0	28	*	28	5	39	1	46	6	153	62
Beverage and tobacco products	312	998	0	1	0	21	0	D	0	D	0	0	D	80	0	*	0	D	12	0	6	416	D	141	8
Textile, apparel, and leather products	313–16	118	0	D	2	4	3	0	5	19	6	0	0	2	0	4	0	1	0	0	*	17	0	4	2
Wood products	321	2	0	D	0	0	0	0	0	D	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Paper	322	78	0	12	0	0	*	0	1	3	10	0	0	1	D	1	0	2	2	*	*	D	0	13	1
Printing and related support activities	323	5	0	0	0	1	0	0	0	0	0	0	0	1	0	D	0	0	0	0	0	0	0	0	0
Petroleum and coal products	324	199	0	D	0	D	0	0	0	D	2	0	0	2	0	3	0	0	0	0	0	D	0	64	0
Chemicals	325	26,941	172	1,009	112	2,937	56	231	74	710	1,843	45	972	490	143	2,560	46	163	68	517	150	3,904	109	2,540	1,179
Basic chemicals	3251	921	0	4	2	41	*	D	14	74	74	2	2	70	2	126	3	D	2	25	38	32	4	122	24
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	516	0	D	0	30	0	0	0	5	64	0	0	17	140	48	0	*	*	16	0	3	*	4	*
Pesticide, fertilizer, and other agricultural chemicals	3253	168	D	D	*	1	*	D	0	14	26	*	0	*	0	D	0	*	0	2	0	D	*	4	1
Pharmaceuticals and medicines	3254	24,122	D	954	109	2,757	55	185	56	573	1,437	42	970	384	*	2,356	42	156	65	469	108	3,819	104	2,309	1,126
Soap, cleaning compound, and toilet preparations	3256	950	D	38	0	105	*	0	*	29	192	1	*	4	0	14	0	4	*	3	0	37	1	75	26
Paint, coating, adhesive, and other chemicals	3255, 3259	264	0	6	1	2	0	D	4	16	51	*	0	13	0	D	1	D	*	2	4	D	1	25	2
Plastics and rubber products	326	418	0	3	*	16	1	1	*	58	78	*	5	23	4	29	*	*	1	11	3	15	0	46	*
Nonmetallic mineral products	327	227	0	14	0	0	*	0	0	43	44	0	0	*	0	*	0	6	*	*	0	*	*	1	2
Primary metals	331	178	0	4	0	1	0	0	0	27	4	0	0	16	0	*	1	*	0	2	0	0	0	24	6
Fabricated metal products	332	748	0	41	2	9	8	1	8	11	52	*	0	8	0	8	2	3	*	4	*	16	0	39	*
Machinery	333	6,419	0	291	114	44	10	50	79	304	976	9	10	135	*	115	22	23	1	97	46	97	3	453	84
Agricultural implement	33311	1,096	0	D	D	D	*	12	D	D	D	*	0	D	*	30	*	*	0	13	*	4	*	D	D
Semiconductor machinery	333242	1,947	0	D	D	D	*	3	0	11	122	0	3	D	0	D	0	0	0	0	0	D	0	35	D
Engine, turbine, and power transmission equipment	3336	1,255	0	143	0	D	*	D	2	35	71	D	1	6	0	11	3	2	*	D	1	44	D	241	D
Other machinery	other 333	2,121	0	D	D	D	9	D	D	D	D	D	6	104	0	D	20	21	1	D	45	D	D	D	D
Computer and electronic products	334	37,633	8	2,795	218	158	219	305	172	667	2,467	43	995	278	1	237	134	495	6	316	303	652	17	1,843	510
Communications equipment	3342	3,848	0	649	D	32	25	23	D	69	141	4	185	54	0	50	D	145	0	19	45	45	6	228	102
Semiconductor and other electronic components	3344	21,742	D	1,542	124	64	49	154	110	316	875	18	464	105	0	98	46	289	*	69	124	138	9	538	217
Navigational, measuring, electromedical, and control instruments	3345	3,359	*	217	D	53	D	52	51	115	580	17	29	73	*	27	D	9	D	34	82	296	1	390	145
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	548	0	30	1	14	0	*	7	7	39	0	1	11	0	3	0	0	0	1	9	92	1	137	28
Search, detection, navigation, guidance, aeronautical, and nautical system and instruments	334511	484	*	116	*	*	4	*	15	2	3	*	*	5	*	3	8	2	0	*	3	4	*	43	64
Other measuring and controlling devices	other 3345	2,327	0	71	D	39	D	51	29	107	538	16	29	57	*	22	D	7	D	33	70	200	0	211	54
Other computer and electronic products	other 334	8,683	D	387	D	8	D	76	D	166	870	4	316	46	*	62	1	51	D	194	51	174	1	686	46
Electrical equipment, appliances, and components	335	1,880	0	410	44	6	1	1	5	83	147	0	6	67	*	30	3	11	0	2	0	69	3	141	41
Transportation equipment	336	8,040	4	958	5	30	20	D	D	159	1,565	32	D	186	54	256	1	102	*	97	158	55	27	965	304

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(Millions of U.S. dollars)

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Motor vehicles, bodies, trailers, and parts	3361–63	5,925	4	385	D	28 i	10	D	D	32	1,271	31	D	51	54	240	D	60	0	69	D	D	*	597	283
Aerospace products and parts	3364	1,931	0	541	D	3	D	D	0	111	259	*	D	126	* i	14	D	39	*	1	D	43	27	359	20
Aircraft, aircraft engine, and aircraft parts	336411–13	D	0	D	D	*	5	D	0	D	D	*	*	117	* i	D	D	39	*	1	D	D	27	D	20
Guided missile, space vehicle, and related parts	336414–15, 336419	D	0	D	0	2	D	0	0	D	D	0	D	9	0	D	0	0	0	0	D	D	0	D	0
Military armored vehicle, tank, and tank components	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
Other transportation	other 336	184	0	33	0	*	D	D	0	17	35	0	0	10	0	2	0	3 i	0	27	D	D	0	9	1
Furniture and related products	337	47	0	1	0	0	0	0	0	10	4	0	0	0	0	0	0	0	0	0	1	0	0	11 i	9
Miscellaneous	339	4,981	68 i	145	48	D	18	42	D	240	457	24	357	116 i	D	D	44	D	17	59	78 i	D	D	323	222
Medical equipment and supplies	3391	4,582	67 i	116	47	85 i	17	42	55	239	430	24	357	105 i	0	161	44	8	17	59	68 i	272	13	287	205
Other miscellaneous manufacturing	3399	399	*	29	1	D	1	0	D	1	27	0	0	11	D	D	0	D	0	0	10	D	D	36	16
Nonmanufacturing industries	21–23, 42–81	74,292	7	7,436	643 i	622	925	406	430	2,136	3,259	307	2,669	774	40 i	1,489	146	1,204	79 i	1,196	824	3,059	90	11,716	2,819
Mining, quarrying, oil and gas extraction, and support activities	21	355	0	16	D	8 i	0	0	0	9	60	*	2	147	0	18	13	*	0	*	0	2	0	60	D
Utilities	22	10	0	D	D	0	*	0	0	D	0	0	0	0	0	0	0	D	0	D	0	0	0	D	0
Wholesale trade	42	110 i	0	8 i	0	2	0	0	0	*	15	0	* i	*	0	2	0	0	0	*	0	0	0	19 r	5
Electronic shopping and electronic auctions	454111–12	2291 i	0	138 i	D	* i	4	1 i	D	D	D	* i	428 i	D	D	15	* i	9 i	0	D	D	8	1 i	209 i	D
Transportation and warehousing	48–49	270	0	D	0	*	0	2	D	D	D	*	0	0	0	8	*	0	0	D	D	*	0	1	4
Information	51	46,361	3	4,543	460 i	379	494	314	258	1,270	1,625	145	1,736	286	8	777	97	846	7	731	556	2,232	51	7,247	1,839
Publishing	511	16,913	2	2,106	D	72	304	179	70	401	599	D	389	D	D	D	61	163	1	278	392	176	32 i	1,697	971
Newspaper, periodical, book, and directory publishers	5111	9 i	0	0	0	0	0	0	0	0	0	0	9 i	0	0	0	0	0	0	0	0	0	0	0	0
Software publishers	5112	16,904	2	2,106	D	72	304	179	70	401	599	D	380	D	D	D	61	163	1	278	392	176	32 i	1,697	971
Telecommunications	517	224	0	6	0	8	0	0	0	0	*	0	D	D	0	*	0	0	0	1	0	1	*	D	2
Data processing, hosting, and related services	518	13,775	1	1,595	352 i	D	169	D	D	570	447	87	849	97	D	207	D	465	7	360	97	D	18	1,278	493
Other information	other 51	15,449	*	837	D	D	20	D	D	299	579	D	D	D	*	D	D	218	0	93	67	D	*	D	372
Finance and insurance	52	4,129	*	610	D	11	0	11	0	30	38	47	133	D	1	32	0	46	1	34	55	19	*	788	78
Real estate and rental and leasing	53	106	0	4	0	0	0	0	0	5	2	0	10	D	0	*	0	0	0	D	0	0	0	5	D
Lessors of nonfinancial intangible assets (except copyrighted works)	533	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 real estate and rental and leasing	other 53	106	0	4	0	0	0	0	0	5	2	0	10	D	0	*	0	0	0	D	0	0	0	5	D
Professional, scientific, and technical services	54	20,377	4 i	2,013	181	221	427	77	D	783	1,282	114	335	322	D	636	36	302	66 i	412	183	796	38	3,362	854
Architectural, engineering, and related services	5413	37	0	13	0	0	0	0	0	0	7	0	0	*	0	0	0	*	0	0	1	0	*	6	2
Computer systems design and related services	5415	5,870	0	718	15	25 r	213 i	43 i	19	121	489	27	171	35	*	215	2	98	2	70	14	109	1	735	235
Scientific research and development services	5417	13,219	4 i	881	165	193	192	D	90	602	703	85	159	265	D	380	32	195 i	63 i	324	157	682	34	2,457	577
Research and development in nanotechnology	541713	19	*	*	0	2	0	0	0	*	9	*	0	*	0	0	0	0	0	0	0	*	0	2	0
Research and development in biotechnology (except nanobiotechnology)	541714	2,830	0	186	2	13	5	2	3	67	151	12	3	29	0	15	1	20	5	54	4	610	3	867	52
Research and development in the physical, engineering, and life sciences (except nanotechnology and biotechnology)	541715	10,368	2 i	694	163	179	187	D	87	535	542	74	156	236	D	365	31	175 i	58 i	270	153	72	30	1,587	525 i
Research and development in the social sciences and humanities	541720	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Other professional, scientific, and technical services	other 54	1,250	i	*	401	i	2	3	23	D	D	61	84	2	5	23	0	41	3	9	0	18	12	5	3	164	i	40	i		
Health care services	621–23	98	i	0	11		0		0	*	0	D	0	*	23	i	0	0	D	0	D	4	2	i	0	D	0	16	2	i	
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	186		*	D		0	0	*	1	0	D	D	0	*	D	0	D	0	*	*	D	D	D	*	D	D				
All companies (number of domestic employees)	–	164,727	321		13,227		1,193		3,977	1,260	1,068	831	4,547	11,015	466	5,088	2,192	242	4,922	400	2,049	192	2,342	1,569	8,620	269	18,477		5,248		
Small companies																															
10–19 ^b	–	644		*	26		30		*	*	r	1	r	1	7	r	9	0	1	4	*	8	r	1	3	28	r	20	0	99	7
20–49	–	1,205		*	64		1	r	65	4	59	*	22	61	2	8	*	0	5	*	15	1	16	r	3	4	4	54	42		
Medium companies																															
50–99	–	1,173		*	104	r	17		8	4	11	*	i	21	54	r	2	19	16	0	31	r	0	5	1	11	8	64	8	95	69
100–249	–	2,858		0	369		6		6	16	6	39	i	75	92	15	i	68	100	3	109		0	48	1	21	6	245	2	200	220
Large companies																															
250–499	–	4,436		2	478		10		17	17	i	29	i	20	89	127	79	140	136	1	203		4	49	1	90	11	87	2	490	202
500–999	–	5,095		*	488		26		26	23	8	21		151	435	76	108	50	7	99	22	76	*	34	120	111	17	609	311	i	
1,000–4,999	–	28,998		34	3,223		362	i	257	437	i	230	158	1,101	1,959	70	1,102	324	1	486	34	530	22	557	321	1,381	32	i	3,752	1,079	
5,000–9,999	–	13,367		76	758		108		186	41	161	100		421	991	28	310	i	274	54	217	42	126	8	242	132	185	20	i	1,184	283
10,000–24,999	–	37,522		129	3,013		257		587	166	229	146		1,287	2,205	109	890	600	142	781	101	388	40	664	278	827	44		2,931	1,045	
25,000 or more	–	69,429		79	i	4,705	377		2,825	553	333	345		1,373	5,081	86	2,442		687	34	i	2,985	196	784	117	704	662	5,696	139	9,063	1,990

* = 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.

^a Puerto Rico is not included in the U.S. total due to its classification as a U.S. territory.

^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.

Source(s):

National Center for Science and Engineering Statistics and Census Bureau, Business Enterprise Research and Development Survey, 2024.