

TABLE 22

Foreign R&D paid for by the company and others and performed by the company, by type of R&D, industry, and company size: 2017

(Millions of U.S. dollars)

Industry and company size	NAICS code	Total foreign R&D performance			Research (basic and applied)			Development		
		Total	Paid for by the company	Paid for by others	Total	Paid for by the company	Paid for by others	Total	Paid for by the company	Paid for by others
All industries	21-23, 31-33, 42-81	87,528	78,689	8,839	17,141	15,175	1,966	70,387	63,514	6,873
Manufacturing industries	31-33	57,270	55,706	1,564	11,986	11,638	348	45,284	44,067	1,217
Food	311	865	863	3	156	156	0	709	706	3
Beverage and tobacco products	312	667	667	0	208	208	0	459	459	0
Textile, apparel, and leather products	313-16	160	160	*	13	13	0	146	146	*
Wood products	321	1	1	0	1	1	0	0	0	0
Paper	322	259	255	4	24	24	*	235	230	4
Printing and related support activities	323	5	5	0	*	*	0	5	5	0
Petroleum and coal products	324	54	54	*	4	4	*	50	50	*
Chemicals	325	14,450	14,043	407	3,976	3,810	167	10,474	10,234	240
Basic chemicals	3251	560	557	3	261	258 - 262	0 - 4	298	295 - 299	0 - 4
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	321	321	*	224	224	*	97	97	*
Pesticide, fertilizer, and other agricultural chemicals	3253	384 - 401	385	0 - 16	79 - 97	79 - 85	0 - 15	305	300 - 306	0 - 4
Pharmaceuticals and medicines	3254	11,976	11,587	390	3,252	3,099	153	8,725	8,488	237
Soap, cleaning compound, and toilet preparation	3256	778	778	0	99	99	0	679	679	0
Paint, coating, adhesive, and other chemicals	3255, 3259	415 - 432	416	0 - 16	45 - 63	45 - 51	0 - 15	370	365 - 371	0 - 4
Plastics and rubber products	326	902	882	20	172	172	*	730	710	20
Nonmetallic mineral products	327	181	181	0	17	17	0	165	165	0
Primary metals	331	130	129	1	5	5	0	125	124	1
Fabricated metal products	332	166	165	*	43	43	*	122	122	*
Machinery	333	3,266	3,248	18	326	322	3	2,940	2,925	15
Agricultural implement	33311	567	566	1	62	61	1	505	505	1
Semiconductor machinery	333242	786	773	12	50	47	3	736	726	10
Engine, turbine, and power transmission equipment	3336	317 - 460	317 - 460	0	0 - 215	0 - 215	0	102 - 460	102 - 460	0
Other machinery	other 333	1,453 - 1,597	1,448 - 1,592	5	0 - 215	0 - 215	*	1,238 - 1,597	1,234 - 1,592	4
Computer and electronic products	334	22,648	22,242	405	4,681	4,591	91	17,967	17,652	315
Communications equipment	3342	3,132	3,126	6	447	446	1	2,686	2,680	5
Semiconductor and other electronic components	3344	10,898	10,749	149	2,079	2,077	3	8,818	8,673	146
Navigational, measuring, electromedical, and control instruments	3345	3,842	3,597	244	973	886	86	2,869	2,711	158

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Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	1,078	1,077	1	159	159	*	919	918	1
Search, detection, navigation, guidance, aeronautical, and nautical system and instrument	334511	960	738	222	400	325	75	560	413	147
Other measuring and controlling device	other 3345	1,804	1,782	22	414	402	11	1,390	1,379	10
Other computer and electronic products	other 334	4,776	4,769	7	1,182	1,181	1	3,594	3,588	6
Electrical equipment, appliances, and components	335	1,867	1,864	3	254	252	1	1,613	1,611	2
Transportation equipment	336	8,822	8,150	672	1,734	1,653	82	7,088	6,497	590
Automobiles, bodies, trailers, and parts	3361-63	6,597	6,282	315	1,088	1,076	12	5,509	5,206	303
Aerospace products and parts	3364	2,053	1,725	328	589	545	44	1,464	1,180	284
Aircraft, aircraft engine, and aircraft parts	336411-13	2,050	1,725	325	587	545	42	1,463	1,179	284
Guided missile, space vehicle, and related parts	336414-15, 336419	3	1	2	2	0	2	1	1	*
Military armored vehicle, tank, and tank component	336992	0	0	0	0	0	0	0	0	0
Other transportation	other 336	173	143	29	58	32	26	115	112	3
Furniture and related products	337	40	40	0	8	8	0	31	31	0
Miscellaneous	339	2,787	2,758	30	363	359	4	2,424	2,398	26
Medical equipment and supplies	3391	2,490	2,461	30	321	318	4	2,169	2,143	26
Other miscellaneous manufacturing	3399	297	297	*	42	42	0	255	255	*
Nonmanufacturing industries	21-23, 42-81	30,258	22,983	7,275	5,155	3,537	1,619	25,103	19,446	5,656
Mining, extraction, and support activities	21	329 - 337	306	24 - 30	94 - 102	78 - 102	0 - 17	235	204 - 227	8 - 30
Utilities	22	9	9	*	5	5	0	5	5	*
Wholesale trade	42	37	37	*	1	1	0	36	36	*
Electronic shopping and electronic auctions	454111-12	2,555 - 2,779	2,555 - 2,779	0	1,038 - 1,271	1,038 - 1,271	0	1,291 - 1,523	1,291 - 1,523	0
Transportation and warehousing	48-49	7	6	1	1	1	0	6	5	1
Information	51	14,646	14,620	26	1,236	1,232	4	13,410	13,388	22
Publishing	511	8,831	8,824	7	807	807	*	8,024	8,016	7
Newspaper, periodical, book, and directory publishers	5111	7	7	0	0	0	0	7	7	0
Software publishers	5112	8,824	8,817	7	807	807	*	8,017	8,009	7
Telecommunications	517	94	92	2	22	22	*	72	70	2
Data processing, hosting, and related services	518	2,272	2,255	17	246	242	4	2,026	2,012	13
Other information	other 51	3,450	3,450	0	160	160	0	3,289	3,289	0
Finance and insurance	52	965	965	0	42	42	0	923	923	0

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Real estate and rental and leasing	53	191	191	0	33	33	0	158	158	0
Lessors of nonfinancial intangible assets (except copyrighted works)	533	173	173	0	27	27	0	146	146	0
Other real estate and rental and leasing	other 53	18	18	0	6	6	0	12	12	0
Professional, scientific, and technical services	54	11,064	3,892	7,172	2,301	685 - 702	1,599 - 1,616	8,763	3,190 - 3,208	5,556 - 5,574
Architectural, engineering, and related services	5413	53	51	2	10	9	*	43	41	2
Computer systems design and related services	5415	3,498	3,423	75	576	509	67	2,921	2,913	8
Scientific research and development services	5417	7,124	82	7,042	1,549	17	1,533	5,574	65	5,509
Biotechnology research and development	541711	1,996	6	1,990	243	2	242	1,752	4	1,748
Physical, engineering, and life sciences (except biotechnology) research and development	541712	5,125	76	5,048	1,303	15	1,287	3,822	61	3,761
Social sciences and humanities research and development	541720	4	0	4	4	0	4	0	0	0
Other professional, scientific, and technical services	other 54	390	336	54	165	149 - 166	0 - 17	225	170 - 188	37 - 55
Health care services	621-23	224 - 231	182	43 - 49	176	176	0	48 - 56	6	43 - 49
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	0 - 217	0 - 217	0	0 - 217	0 - 217	0	0 - 217	0 - 217	0
All companies (number of domestic employees)	-	87,528	78,689	8,839	17,141	15,175	1,966	70,387	63,514	6,873
Small companies										
10-19 ^a	-	136	128	8	21	18	3	115	110	5
20-49	-	577	569	8	114	114	*	463	455	8
Medium companies										
50-99	-	482	473	9	55	50	5	426	423	4
100-249	-	1,380	1,215	165	249	231	18	1,131	984	147
Large companies										
250-499	-	2,272	2,010	262	338	337	1	1,934	1,673	261
500-999	-	2,516	2,380	136	601	476	126	1,915	1,904	11
1,000-4,999	-	15,143	14,031	1,112	2,527	2,330	197	12,616	11,701	915
5,000-9,999	-	14,230	9,508	4,722	3,303	2,307	996	10,927	7,201	3,726
10,000-24,999	-	14,505	13,913	592	2,700	2,536	164	11,804	11,377	427

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25,000 or more	-	36,287	34,462	1,825	7,232 i	6,776 i	456	29,055	27,686	1,369

* = 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. Statistics are representative of companies located in the United States that performed or funded R&D. 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, 2017.