

TABLE 7

Worldwide R&D paid for by others and performed by the company and others, by industry and company size: 2019

(Millions of U.S. dollars)

Industry and company size	NAICS code	Total	Performed by the company	Performed by others
All industries	21-23, 31-33, 42-81	83,738	74,508	9,230
Manufacturing industries	31-33	46,404	38,909	7,496
Food	311	256	245	12
Beverage and tobacco products	312	114	111	3
Textile, apparel, and leather products	313-16	31	31	0
Wood products	321	6	6	*
Paper	322	1	*	*
Printing and related support activities	323	0	0	0
Petroleum and coal products	324	105	102 - 106	0 - 3
Chemicals	325	15,645	10,020	5,625
Basic chemicals	3251	165	164	1
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	85 - 140	85	0 - 55
Pesticide, fertilizer, and other agricultural chemicals	3253	360 - 374	340 - 365	0 - 33
Pharmaceuticals and medicines	3254	14,721	9,181	5,540
Soap, cleaning compound, and toilet preparation	3256	195	164	31
Paint, coating, adhesive, and other chemicals	3255, 3259	59 - 113	59 - 87	0 - 47
Plastics and rubber products	326	137	94	43
Nonmetallic mineral products	327	35	35	*
Primary metals	331	21	19	3
Fabricated metal products	332	285	264	21
Machinery	333	1,347	1,288	59
Agricultural implement	33311	11	11	0
Semiconductor machinery	333242	662	623	38
Engine, turbine, and power transmission equipment	3336	231	216	15
Other machinery	other 333	443	438	5
Computer and electronic products	334	12,275	11,671	604
Communications equipment	3342	1,139	1,103 - 1,107	32 - 36
Semiconductor and other electronic components	3344	3,472	3,405	66
Navigational, measuring, electromedical, and control instruments	3345	7,432	6,939	493
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	239	229	10
Search, detection, navigation, guidance, aeronautical, and nautical system and instrument	334511	6,960	6,520	440
Other measuring and controlling device	other 3345	233	191	43
Other computer and electronic products	other 334	232	220 - 223	10 - 13
Electrical equipment, appliances, and components	335	409	407	2
Transportation equipment	336	15,401	14,319	1,082
Motor vehicles, bodies, trailers, and parts	3361-63	3,761	3,559	201
Aerospace products and parts	3364	10,428	9,551	877
Aircraft, aircraft engine, and aircraft parts	336411-13	9,520	8,643	877
Guided missile, space vehicle, and related parts	336414-15, 336419	908	908	0
Military armored vehicle, tank, and tank component	336992	10	10	0
Other transportation	other 336	1,202	1,198	3
Furniture and related products	337	2	2	*
Miscellaneous	339	335	292 - 298	36 - 43
Medical equipment and supplies	3391	284	248	36
Other miscellaneous manufacturing	3399	50	44 - 50	0 - 7

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Industry and company size	NAICS code	Total	Performed by the company	Performed by others
Nonmanufacturing industries	21–23, 42–81	37,334	35,600	1,734
Mining, quarrying, oil and gas extraction, and support activities	21	211	211	*
Utilities	22	49	38	11
Wholesale trade	42	90	87	3
Electronic shopping and electronic auctions	454111–12	43 - 61	43 - 61	0
Transportation and warehousing	48–49	386	386	0
Information	51	1,289	1,213	76
Publishing	511	667	620	47
Newspaper, periodical, book, and directory publishers	5111	*	*	0
Software publishers	5112	667	620	47
Telecommunications	517	36	33	3
Data processing, hosting, and related services	518	424	404	20
Other information	other 51	161	155	6
Finance and insurance	52	111	110	* i
Real estate and rental and leasing	53	0	0	0
Lessors of nonfinancial intangible assets (except copyrighted works)	533	0	0	0
Other real estate and rental and leasing	other 53	0	0	0
Professional, scientific, and technical services	54	34,756	33,115	1,641
Architectural, engineering, and related services	5413	2,292	1,921	370
Computer systems design and related services	5415	2,774	2,727	47
Scientific research and development services	5417	28,452	27,311	i 1,141
Research and development in biotechnology	541711	8,243	8,121	122
Research and development in the physical, engineering, and life sciences (except biotechnology)	541712	19,341	i 18,444	i 897
Research and development in the social sciences and humanities	541720	867	745	122
Other professional, scientific, and technical services	other 54	1,238	1,156	82
Health care services	621–23	341	338	4
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	37 - 62	37 - 62	0
All companies (number of domestic employees)	–	83,738	74,508	9,230
Small companies				
10–19 ^a	–	1,229	1,079	150
20–49	–	2,753	2,392	362
Medium companies				
50–99	–	2,979	2,593	386
100–249	–	3,851	3,487	364
Large companies				
250–499	–	4,002	3,597	405
500–999	–	2,777	2,566	211
1,000–4,999	–	14,093	11,609	2,484
5,000–9,999	–	9,163	8,220	943
10,000–24,999	–	21,568	19,307	i 2,261
25,000 or more	–	21,322	19,658	1,664

* = 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 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. 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.