

TABLE 7

Worldwide R&D paid for by others and performed by the company and others, by industry and company size: 2016

(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	74,224	63,774	10,450
Manufacturing industries	31-33	48,428	40,161	8,268
Food	311	221	220	1
Beverages and tobacco products	312	D	D	*
Textiles, apparel, and leather products	313-16	10	9	1
Wood products	321	D	7	i D
Paper	322	*	*	* i
Printing and related support activities	323	D	1	i D
Petroleum and coal products	324	D	14	D
Chemicals	325	14,490	9,577	4,913
Basic chemicals	3251	268	265	3
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	18	18	*
Pesticides, fertilizers, and other agricultural chemicals	3253	D	D	D
Pharmaceuticals and medicines	3254	13,665	8,791	4,875
Soaps, cleaning compounds, and toilet preparations	3256	173	142	31
Paints, coatings, adhesives, and other chemicals	3255, 3259	D	D	D
Plastics and rubber products	326	175	171	4 i
Nonmetallic mineral products	327	16	15	1
Primary metals	331	D	10	D
Fabricated metal products	332	145	114	i 31 i
Machinery	333	941	901	40
Agricultural implements	33311	14	14	*
Semiconductor machinery	333242	415	393	22
Engines, turbines, and power transmission equipment	3336	60	59	i 2
Other machinery	other 333	452	435	17
Computer and electronic products	334	9,396	9,130	266
Communications equipment	3342	1,871	i 1,826	i 45 i
Semiconductors and other electronic components	3344	2,287	2,241	46
Navigational, measuring, electromedical, and control instruments	3345	5,149	4,976	173
Electromedical, electrotherapeutic, and irradiation apparatuses	334510, 334517	178	167	11
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	4,773	4,616	157
Other measuring and controlling devices	other 3345	197	193	4
Other computer and electronic products	other 334	89	86	3
Electrical equipment, appliances, and components	335	482	i 469	i 13 i
Transportation equipment	336	22,132	19,168	2,963
Automobiles, bodies, trailers, and parts	3361-63	3,417	3,219	198
Aerospace products and parts	3364	17,463	14,701	2,762
Aircraft, aircraft engines, and aircraft parts	336411-13	16,378	13,616	2,762
Guided missiles, space vehicles, and related parts	336414-15, 336419	1,085	1,084	i 1
Military armored vehicles, tanks, and tank components	336992	D	D	0
Other transportation	other 336	D	D	3
Furniture and related products	337	*	*	0
Miscellaneous	339	285	D	D
Medical equipment and supplies	3391	240	213	26
Other miscellaneous manufacturing	3399	45	D	D
Nonmanufacturing industries	21-23, 42-81	25,795	23,613	2,182
Mining, extraction, and support activities	21	437	437	0
Utilities	22	40	26	14
Wholesale trade	42	13	10	i 3 i

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Industry and company size	NAICS code	Total	Performed by the company	Performed by others
Electronic shopping and electronic auctions	454111-12	0	0	0
Transportation and warehousing	48-49	3	3	i 0
Information	51	776	703	74
Publishing	511	480	412	68
Newspaper, periodical, book, and directory publishers	5111	3	3	i *
Software publishers	5112	477	409	68
Telecommunications	517	D	D	0
Data processing, hosting, and related services	518	160	155	5
Other information	other 51	D	D	*
Finance and insurance	52	100	94	6
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	24,300	22,236	2,064
Architectural, engineering, and related services	5413	2,000	1,636	363
Computer systems design and related services	5415	2,678	2,581	i 97
Scientific research and development services	5417	18,878	17,379	1,499
Biotechnology research and development	541711	D	5,326	D
Physical, engineering, and life sciences (except biotechnology) research and development	541712	12,623	11,362	1,261
Social sciences and humanities research and development	541720	D	691	D
Other professional, scientific, and technical services	other 54	744	640	104
Health care services	621-23	68	66	2
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	59	38	21
All companies (number of domestic employees)	-	74,224	63,774	10,450
Micro companies ^a				
5 - 9	-	635	537	i 98
Small companies				
10 - 19	-	1,265	1,095	i 170
20 - 49	-	2,541	2,201	340
Medium companies				
50 - 99	-	1,993	1,581	412
100 - 249	-	3,953	3,196	757
Large companies				
250 - 499	-	1,998	1,691	307
500 - 999	-	1,245	938	308
1,000 - 4,999	-	14,569	12,194	2,375
5,000 - 9,999	-	6,821	5,412	1,409
10,000 - 24,999	-	16,290	14,961	1,329
25,000 or more	-	22,914	19,968	2,945

* = amount < \$500,000; D = data withheld to avoid disclosing operations of individual companies; 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 R&D and Innovation Survey does not include companies with fewer than five 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.

Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2016.