

TABLE 45

Domestic R&D paid for by the U.S. federal government and performed by the company, by type of R&D, industry, and company size: 2019

(Millions of U.S. dollars)

Industry and company size	NAICS code	Total	Basic research	Applied research	Development
All industries	21-23, 31-33, 42-81	21,941	2,313 i	4,883	14,745
Manufacturing industries	31-33	16,023 i	1,590 i	2,391 i	12,042 i
Food	311	* i	* i	0	* i
Beverage and tobacco products	312	0	0	0	0
Textile, apparel, and leather products	313-16	7 i	0	4 i	3
Wood products	321	0	0	0	0
Paper	322	* i	* i	0	0
Printing and related support activities	323	0	0	0	0
Petroleum and coal products	324	* i	0	* i	0
Chemicals	325	289	13	57	219
Basic chemicals	3251	2 i	* i	* i	2
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	* i	* i	* i	* i
Pesticide, fertilizer, and other agricultural chemicals	3253	0 - 8 i	0	0 - 8 i	0
Pharmaceuticals and medicines	3254	269	12	42	214
Soap, cleaning compound, and toilet preparation	3256	* i	* i	* i	* i
Paint, coating, adhesive, and other chemicals	3255, 3259	11 - 20	*	6 - 16	4
Plastics and rubber products	326	* i	0	0	* i
Nonmetallic mineral products	327	2 i	0	1 i	1 i
Primary metals	331	2	0 - 2 i	0 - 2	1
Fabricated metal products	332	4	* i	2 i	2 i
Machinery	333	193	5	14 i	173
Agricultural implement	33311	1 i	*	* i	* i
Semiconductor machinery	333242	* i	* i	0	* i
Engine, turbine, and power transmission equipment	3336	155	5	7 i	143
Other machinery	other 333	37	*	6 i	31
Computer and electronic products	334	5,802	146	910	4,746
Communications equipment	3342	320 - 453 i	3	102 i	214 - 347 i
Semiconductor and other electronic components	3344	468	26 i	68	374 i
Navigational, measuring, electromedical, and control instruments	3345	4,852	104	721	4,027
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	11 i	* i	1 i	10 i
Search, detection, navigation, guidance, aeronautical, and nautical system and instrument	334511	4,813	98	709	4,006
Other measuring and controlling device	other 3345	28	6	12	10
Other computer and electronic products	other 334	31 - 161	13	19	0 - 130
Electrical equipment, appliances, and components	335	27	* i	1 i	26
Transportation equipment	336	9,652 i	1,422 i	1,394 i	6,835 i
Motor vehicles, bodies, trailers, and parts	3361-63	38 - 481	10	28 - 158	0 - 442
Aerospace products and parts	3364	8,454 i	1,413 i	1,237 i	5,804 i
Aircraft, aircraft engine, and aircraft parts	336411-13	7,558 i	1,410 i	1,235 i	4,913 i
Guided missile, space vehicle, and related parts	336414-15, 336419	896	2	2	891
Military armored vehicle, tank, and tank component	336992	0 - 11	0	0 - 11 i	0 - 11
Other transportation	other 336	706 - 1,160	*	0 - 128	580 - 1,032
Furniture and related products	337	0 - 3 i	0 - 2 i	* i	0 - 1 i
Miscellaneous	339	36 - 48	0 - 6	4 - 13 i	29 - 41
Medical equipment and supplies	3391	25	1	5 i	19

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Other miscellaneous manufacturing	3399	11 - 24	0 - 5	0 - 8	10 - 22
Nonmanufacturing industries	21-23, 42-81	5,918	724	2,491	2,703
Mining, quarrying, oil and gas extraction, and support activities	21	1	0	0	1
Utilities	22	27 - 34	*	5	21 - 28
Wholesale trade	42	0	0	0	0
Electronic shopping and electronic auctions	454111-12	0 - 8 i	* i	* i	0 - 8 i
Transportation and warehousing	48-49	2	0	0	2 i
Information	51	185	11	52	122
Publishing	511	57	10	33	13
Newspaper, periodical, book, and directory publishers	5111	* i	* i	0	0
Software publishers	5112	57	10	33	13
Telecommunications	517	4 i	0	* i	3 i
Data processing, hosting, and related services	518	116	*	11	105
Other information	other 51	8 i	* i	8 i	0
Finance and insurance	52	0	0	0	0
Real estate and rental and leasing	53	0	0	0	0
Lessors of nonfinancial intangible assets (except copyrighted works)	533	0	0	0	0
Other real estate and rental and leasing	other 53	0	0	0	0
Professional, scientific, and technical services	54	5,685	712	2,429	2,544
Architectural, engineering, and related services	5413	1,214	96	801	316
Computer systems design and related services	5415	454	28 i	158	268
Scientific research and development services	5417	3,343	562	1,415	1,365
Research and development in biotechnology	541711	108	3	47 i	58
Research and development in the physical, engineering, and life sciences (except biotechnology)	541712	2,571	167	1,186	1,218
Research and development in the social sciences and humanities	541720	664	392	182 i	89 i
Other professional, scientific, and technical services	other 54	674	25	54	595
Health care services	621-23	2	*	1	1 i
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	9 - 19	1	4	3 - 15
All companies (number of domestic employees)	-	21,941	2,313 i	4,883	14,745
Small companies					
10-19 ^a	-	502	28 i	146 i	328 i
20-49	-	811	30	188	593
Medium companies					
50-99	-	697	45	162	489
100-249	-	988	97	279	612
Large companies					
250-499	-	1,393	121	384	889 i
500-999	-	248 i	22	77	149 i
1,000-4,999	-	1,710	29 i	639	1,042
5,000-9,999	-	977	378	93	506
10,000-24,999	-	1,717 i	55 i	255 i	1,407 i
25,000 or more	-	12,897 i	1,509 i	2,660 i	8,729 i

* = 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 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. 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.