

TABLE 33

**Domestic R&D paid for 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	428,968	25,916	59,697	343,355
Manufacturing industries	31-33	248,109	18,732	38,686	190,691
Food	311	3,937	209	731	2,997
Beverage and tobacco products	312	971	85	205	681
Textile, apparel, and leather products	313-16	873	74	106	694
Wood products	321	180	26	22	132
Paper	322	1,064	132	272	659
Printing and related support activities	323	420	24	70	325
Petroleum and coal products	324	1,203	208 - 238	395 - 426	545 - 590
Chemicals	325	87,288	11,990	17,547	57,751
Basic chemicals	3251	2,198	236	683	1,279
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	1,092	187	272	633
Pesticide, fertilizer, and other agricultural chemicals	3253	1,501	399	380 - 452	650 - 722
Pharmaceuticals and medicines	3254	78,652	11,000	15,527	52,125
Soap, cleaning compound, and toilet preparation	3256	2,596	92	434	2,071
Paint, coating, adhesive, and other chemicals	3255, 3259	1,249	76	182 - 254	919 - 992
Plastics and rubber products	326	2,770	155	431	2,185
Nonmetallic mineral products	327	1,473	171	242	1,060
Primary metals	331	649	46	115	487
Fabricated metal products	332	2,632	165	499	1,968
Machinery	333	13,930	672	1,524	11,734
Agricultural implement	33311	1,913	124	240	1,549
Semiconductor machinery	333242	3,854	80 - 107	284 - 388	3,386 - 3,464
Engine, turbine, and power transmission equipment	3336	1,096	40	129	927
Other machinery	other 333	7,067	400 - 427	768 - 873	5,792 - 5,872
Computer and electronic products	334	75,570	1,718	9,729	64,123
Communications equipment	3342	11,495	349	1,237	9,909
Semiconductor and other electronic components	3344	31,975	482	3,118	28,374
Navigational, measuring, electromedical, and control instruments	3345	10,912	525	2,056	8,331
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	3,117	119	948	2,050
Search, detection, navigation, guidance, aeronautical, and nautical system and instrument	334511	3,400	74	501	2,825
Other measuring and controlling device	other 3345	4,395	332	607	3,455
Other computer and electronic products	other 334	21,188	362	3,317	17,509
Electrical equipment, appliances, and components	335	4,886	353	690	3,842
Transportation equipment	336	31,505	1,981	4,179	25,345
Motor vehicles, bodies, trailers, and parts	3361-63	20,883	1,315	2,814	16,754
Aerospace products and parts	3364	8,900	607	1,201	7,092
Aircraft, aircraft engine, and aircraft parts	336411-13	8,341	603	1,179	6,559
Guided missile, space vehicle, and related parts	336414-15, 336419	559	4	23	532
Military armored vehicle, tank, and tank component	336992	25	*	0	25
Other transportation	other 336	1,697	59	164	1,475

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Furniture and related products	337	407	39	72	296
Miscellaneous	339	18,352	647 - 686	1,818 - 1,858	15,827 - 15,860
Medical equipment and supplies	3391	15,812	474	1,527	13,811
Other miscellaneous manufacturing	3399	2,540	173 - 212	291 - 330	2,016 - 2,048
Nonmanufacturing industries	21-23, 42-81	180,858	7,183	21,011	152,664
Mining, quarrying, oil and gas extraction, and support activities	21	2,535	233	591	1,712
Utilities	22	237	33	74	130
Wholesale trade	42	1,104	85	135	884
Electronic shopping and electronic auctions	454111-12	3,088 - 15,775	i 23	2,777 - 3,677	i 0 - 12,975
Transportation and warehousing	48-49	9,504	i 218	i 899	i 8,388
Information	51	109,062	3,615	8,464	96,983
Publishing	511	32,447	1,065	1,719	29,663
Newspaper, periodical, book, and directory publishers	5111	61	1	2	58
Software publishers	5112	32,386	1,065	1,716	29,605
Telecommunications	517	3,700	236 - 267	1,536 - 1,568	i 1,872 - 1,897
Data processing, hosting, and related services	518	30,154	1,644	2,772	25,738
Other information	other 51	42,761	638 - 671	2,404 - 2,437	39,684 - 39,708
Finance and insurance	52	8,890	289	1,196	7,404
Real estate and rental and leasing	53	1,371	270	415	686
Lessors of nonfinancial intangible assets (except copyrighted works)	533	45	3	39	3
Other real estate and rental and leasing	other 53	1,326	267	377	683
Professional, scientific, and technical services	54	29,131	2,050	5,111	21,970
Architectural, engineering, and related services	5413	2,288	186	519	1,582
Computer systems design and related services	5415	18,395	1,049	2,606	14,740
Scientific research and development services	5417	3,265	332	816	2,117
Research and development in biotechnology	541711	1,083	129	283	672
Research and development in the physical, engineering, and life sciences (except biotechnology)	541712	2,155	204	521	1,430
Research and development in the social sciences and humanities	541720	27	* i	11	16
Other professional, scientific, and technical services	other 54	5,182	482	i 1,170	i 3,531
Health care services	621-23	1,928	179	454	1,295
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	1,322 - 14,012	188	0 - 900	234 - 13,217
All companies (number of domestic employees)	-	428,968	25,916	59,697	343,355
Small companies					
10-19 <sup>a</sup>	-	4,432	314	774	3,344
20-49	-	10,040	822	2,362	6,856
Medium companies					
50-99	-	11,492	1,046	2,376	8,070
100-249	-	16,520	1,424	2,736	12,359
Large companies					
250-499	-	15,356	994	2,697	11,665

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500–999	–	21,549	1,620	3,729	16,200
1,000–4,999	–	64,475	5,280	10,184	49,011
5,000–9,999	–	44,728	2,464	5,916 <sup>i</sup>	36,348
10,000–24,999	–	74,385	4,491	9,590	60,304
25,000 or more	–	165,991	7,460	19,334	139,197

\* = 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.

<sup>a</sup> 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.