

TABLE 16

Domestic R&D paid for by the company and others and performed by the company, by business activity: 2018

(Millions of U.S. dollars)

Business activity ^a	Business code ^b	Total	Paid for by the company	Paid for by others
All business activities	21100-81000	441,036	377,806	63,230
Oil and gas extraction	21100	770	674	96
Mining	21200	92	92	*
Support activities for mining, including oil and gas	21300	836	810	26
Utilities	22100	272	221	51
Construction	23000	659	624	35
Food manufacturing	31100	4,737	4,525	212
Beverage manufacturing	31210	702	598	103
Tobacco manufacturing	31220	196	191	5
Textile, apparel, and leather products manufacturing	31990	918	914	4
Wood products manufacturing	32100	261	257	4
Paper manufacturing	32200	1,303	1,298	4
Printing and related support activities	32300	321	318	3
Petroleum refineries	32401	491	473	18
Asphalt paving, roofing, and saturated materials manufacturing	32402	107	107	0
Other petroleum and coal products manufacturing, including motor oil, hydraulic fluid, and charcoal	32403	133	128	5
Basic chemicals manufacturing	32510	2,945	2,759	186
Resin, synthetic rubber, and artificial synthetic fibers and filaments manufacturing	32520	1,264	1,174	90
Pesticide, fertilizer, and other agricultural chemicals manufacturing	32530	2,384	2,038	347
Pharmaceutical, medicinal, botanical, and biological products (except diagnostic substances) manufacturing	32541	48,462	40,982	7,480
In vitro diagnostic substances manufacturing	32542	1,151	1,098	52
Biotechnology-based pharmaceutical and biological products (except diagnostic substances)	32543	23,411	21,262	2,149
Soap, cleaning compound, and toilet preparations manufacturing	32591	2,524	2,358	166
Paint, adhesive, and other chemical manufacturing	32592	1,363	1,332	31
Plastics and rubber products manufacturing	32600	3,136	3,053	84
Clay and glass products manufacturing	32710	1,333	1,325	8
Cement, concrete, lime, gypsum, and other nonmetallic mineral products manufacturing	32790	331	312	19
Primary metal manufacturing	33100	707	680	27
Fabricated metal products manufacturing	33200	2,468 - 3,872	2,469	0 - 1,402
Agricultural machinery and equipment manufacturing	33311	1,529	1,520	9
Construction machinery manufacturing	33312	1,316	1,313	3
Mining, oil, and gas field machinery and equipment manufacturing	33319	1,324	1,248	75
Semiconductor machinery manufacturing	33321	4,131	3,589	542
Industrial machinery manufacturing (except semiconductor machinery)	33322	976	869	106
Photographic and photocopying equipment manufacturing	33331	50	43	7
Commercial, service industry, temperature control, and air-flow control machinery manufacturing	33332	1,665	1,577	87
Digital cameras manufacturing	33333	230	230	0
Engine, turbine, and power transmission equipment manufacturing	33360	2,275	1,933	342
Metalworking and other general purpose machinery manufacturing	33390	2,481	2,371	109
Computers and peripheral equipment manufacturing and magnetic and optical media	33412	21,768	21,615	152
Telephone apparatus manufacturing, including routers, modems, and gateways	33421	8,550	8,540	10
Radio, television, and wireless communication equipment manufacturing	33422	3,218	1,885	1,333
Other communication equipment manufacturing (except radio, television, and wireless communication equipment)	33429	1,749	1,502	247
Audio and video equipment manufacturing	33430	1,084	1,070	14
Semiconductor and other electronic components manufacturing	33440	30,982	28,636	2,345

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Electromedical, electrotherapeutic, and irradiation apparatus manufacturing	33451	4,087	3,935	152
Search, detection, navigation, guidance, aeronautical, and nautical system and instruments manufacturing	33452	7,714	2,852	4,862
Measuring and control instruments manufacturing (not listed elsewhere)	33459	3,892	3,679	213
Electrical equipment, appliances, and components manufacturing	33500	4,362	4,103	259
Motor vehicles manufacturing	33610	17,587	16,197	1,390
Motor vehicle body and trailer manufacturing	33620	94	93	*
Motor vehicle parts manufacturing	33630	7,777	6,729	1,048
Aircraft manufacturing	33641	14,483 i	6,326 i	8,156 i
Aircraft engine and engine parts manufacturing	33642	2,227	1,370	858
Other aircraft parts and auxiliary equipment manufacturing	33643	1,881	1,510	372
Guided missiles, space vehicles, and related parts manufacturing	33644	3,405	985	2,420
Railroad rolling stock manufacturing	33651	148	148	* i
Ship and boat building	33660	135 - 1,539	136	0 - 1,402
Motorcycle, bicycle, and parts manufacturing	33691	372	359	14
Military armored vehicle, tank, and tank components manufacturing	33692	664 i	344 i	320 i
All other transportation equipment manufacturing	33699	465	458	7
Furniture and related products manufacturing	33700	429	419	10
Medical equipment and supplies manufacturing	33910	13,182	12,948	235
Miscellaneous manufacturing not listed elsewhere (games, office supplies, slot machines, etc.)	33990	2,854	2,713	140 i
Merchant wholesalers, durable goods	42300	785 i	764 i	21
Merchant wholesalers, nondurable goods	42400	272 i	260 i	12
Wholesale electronic markets and agents and brokers (business to business)	42500	94 i	86 i	8
Retail trade (except electronic shopping and electronic auctions)	44000	191	191	0
Electronic shopping and electronic auctions	45411	93 - 9,629 i	0 - 9,535 i	94
Transportation	48000	438	433	4
Couriers, messengers, and express delivery services	49200	447	447	0
Warehousing and storage	49300	76	72	4
Newspaper, periodical, book, and directory publishers (except Internet)	51110	151	151	*
Software publishers (except Internet)	51120	25,785	25,212	573
Motion picture and sound recording (except Internet)	51200	148	148	0
Broadcasting (except Internet)	51500	186	183	3
Wired telecommunications carriers	51710	469	464	5
Wireless telecommunications carriers (except satellite)	51720	2,147	2,110	38
Satellite telecommunications	51740	449	440	9
Other telecommunications (not listed elsewhere)	51790	687	630	56
Data processing, hosting, and related services	51800	6,817	6,668	150 i
Cloud computing applications and Internet-based software services	51801	20,427	20,203	224
Other information services, including Internet publishing, broadcasting, and Web search portals	51910	37,393	37,274	119
Finance: banking and credit intermediation	52200	4,309	4,264	45
Securities, commodity contracts, and other financial investments and related activities, including funds and trusts	52310	1,248	1,248	0
Insurance carriers and related activities	52400	1,720	1,720	0
Real estate	53100	377	377	0
Rental and leasing services	53200	640	640	*
Lessors of nonfinancial intangible assets, including patent licensing	53300	23	23	*
Legal, accounting, tax preparation, bookkeeping, and payroll services	54111	1,159	1,158	2 i

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Architectural, engineering, and related services	54130	4,256	2,413	1,843
Specialized design services	54140	276	191 i	85
Computer systems design and related services	54150	15,681	13,554	2,127
Management, scientific, and technical consulting services	54160	2,778	2,326	452
Research and development services in social sciences and humanities	54172	674	27	647
Research and development services in biotechnology	54173	5,391	944	4,447
Research and development services in physical, engineering, and life sciences (except biotechnology)	54174	14,852	2,052	12,800
Advertising and related services	54180	1,035 i	1,032 i	3
Professional, scientific, and technical services (not listed elsewhere)	54190	1,162	722	440
Management of companies and enterprises	55100	3 - 9,539	0 - 9,535	4
Administrative and support services	56100	2,305	2,292	14
Waste management and remediation services	56200	20	0 - 21	0 - 21
Offices of physicians	62110	156	112	44
Medical and diagnostic laboratories	62150	2,050	1,500 i	549
Other ambulatory health care services (ambulance, dental, home health care)	62199	46	45	1
Hospitals and nursing care facilities	62200	0 - 10,879	0 - 9,535	0 - 1,402 i
Social assistance services	62400	0 - 14	0 - 14	0
Arts, entertainment, and recreation	71000	44	44	0
Accommodation and food services	72000	120	120	0
Other services (not listed elsewhere)	81000	458 - 1,862	459	0 - 1,402
Undistributed	-	0	0	0

* = amount < \$500,000; i = > 50% of the estimate is a combination of imputation and reweighting to account for nonresponse.

^a Data are tabulated independent of the industry classification of the company. Companies were asked to report their sales and R&D activity in one or more business activity codes.

^b Business codes and descriptions are based on 2012 North American Industry Classification System industry definitions.

Note(s):

Detail may not add to total because of rounding. 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 U.S. Census Bureau, Business Research and Development Survey, 2018.