

TABLE 33

Domestic R&D paid for by the company and performed by the company and others as a percentage of domestic net sales, by industry and company size: 2016

(Millions of U.S. dollars and percent)

| Industry and company size | NAICS code | Domestic R&D (US\$millions) | | Percent of domestic sales of R&D performers or funders ^a | Percent of domestic sales of R&D performers ^b |
|---|---------------------|-----------------------------|---|---|--|
| All industries | 21-23, 31-33, 42-81 | 355,230 | | 3.9 | 4.0 |
| Manufacturing industries | 31-33 | 245,400 | | 4.5 | D |
| Food | 311 | 4,751 | | 0.9 | 0.9 |
| Beverages and tobacco products | 312 | 1,170 | | 0.8 | 0.8 |
| Textiles, apparel, and leather products | 313-16 | 1,168 | i | 1.2 | 1.2 |
| Wood products | 321 | 191 | | 0.5 | 0.5 |
| Paper | 322 | 854 | | 1.3 | 1.3 |
| Printing and related support activities | 323 | 221 | i | 0.9 | 0.9 |
| Petroleum and coal products | 324 | 423 | | 0.3 | 0.3 |
| Chemicals | 325 | 91,357 | | 8.8 | D |
| Basic chemicals | 3251 | 2,392 | | 1.2 | D |
| Resins, synthetic rubber, and artificial synthetic fibers and filaments | 3252 | 710 | | 1.6 | 1.6 |
| Pesticides, fertilizers, and other agricultural chemicals | 3253 | D | | D | D |
| Pharmaceuticals and medicines | 3254 | 82,611 | | 14.3 | D |
| Soaps, cleaning compounds, and toilet preparations | 3256 | 3,031 | | 3.2 | 3.2 |
| Paints, coatings, adhesives, and other chemicals | 3255, 3259 | D | | D | D |
| Plastics and rubber products | 326 | 3,735 | | 2.0 | 2.0 |
| Nonmetallic mineral products | 327 | 1,572 | | 2.8 | 2.8 |
| Primary metals | 331 | 619 | | 0.6 | 0.6 |
| Fabricated metal products | 332 | 2,207 | | 1.9 | 2.0 |
| Machinery | 333 | 12,135 | | 4.1 | 4.1 |
| Agricultural implements | 33311 | 1,735 | | 4.3 | 4.3 |
| Semiconductor machinery | 333242 | 3,028 | | 17.9 | 17.9 |
| Engines, turbines, and power transmission equipment | 3336 | 1,908 | | 6.0 | 6.0 |
| Other machinery | other 333 | 5,464 | | 2.6 | 2.6 |
| Computer and electronic products | 334 | 69,829 | | 8.9 | 8.9 |
| Communications equipment | 3342 | 11,533 | | 11.1 | 11.1 |
| Semiconductors and other electronic components | 3344 | 29,562 | | 10.8 | 10.8 |
| Navigational, measuring, electromedical, and control instruments | 3345 | 10,419 | | 6.1 | 6.1 |
| Electromedical, electrotherapeutic, and irradiation apparatuses | 334510, 334517 | 2,516 | | 11.3 | 11.3 |
| Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments | 334511 | 3,246 | | 4.4 | 4.4 |
| Other measuring and controlling devices | other 3345 | 4,656 | | 6.1 | 6.1 |
| Other computer and electronic products | other 334 | 18,314 | | 7.8 | 7.8 |
| Electrical equipment, appliances, and components | 335 | 4,451 | | 3.0 | 3.0 |
| Transportation equipment | 336 | 35,654 | | 2.8 | 2.9 |
| Automobiles, bodies, trailers, and parts | 3361-63 | 21,292 | | 2.4 | 2.6 |
| Aerospace products and parts | 3364 | 12,980 | | 3.9 | 3.9 |
| Aircraft, aircraft engines, and aircraft parts | 336411-13 | 12,517 | | 3.9 | 3.9 |
| Guided missiles, space vehicles, and related parts | 336414-15, 336419 | 463 | | 2.7 | 2.7 |
| Military armored vehicles, tanks, and tank components | 336992 | 3 | | 1.3 | 1.3 |
| Other transportation | other 336 | 1,379 | | 2.1 | 2.1 |
| Furniture and related products | 337 | 391 | | 1.1 | 1.1 |
| Miscellaneous manufacturing | 339 | 14,673 | | 5.8 | D |
| Medical equipment and supplies | 3391 | 12,289 | | 6.9 | 6.9 |
| Other miscellaneous manufacturing | 3399 | 2,383 | i | 3.2 | D |

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|--|--|-----------------------------|---|---|--|
| Nonmanufacturing industries | 21-23, 42-81 | 109,830 | | 2.9 | D |
| Mining, extraction, and support activities | 21 | 3,169 | | 1.5 | 1.6 |
| Utilities | 22 | 515 | | 0.2 | 0.2 |
| Wholesale trade | 42 | 519 | i | 0.3 | 0.3 |
| Electronic shopping and electronic auctions | 454111-12 | 1,581 | i | 1.4 | 1.4 |
| Transportation and warehousing | 48-49 | 501 | | 0.3 | 0.3 |
| Information | 51 | 72,073 | | 6.8 | 6.8 |
| Publishing | 511 | 34,507 | | 8.6 | 8.6 |
| Newspaper, periodical, book, and directory publishers | 5111 | 82 | i | 2.3 | 2.3 |
| Software publishers | 5112 | 34,425 | | 8.7 | 8.7 |
| Telecommunications | 517 | 3,711 | i | 0.8 | D |
| Data processing, hosting, and related services | 518 | 12,045 | | 11.5 | 11.5 |
| Other information | other 51 | 21,810 | | 20.8 | D |
| Finance and insurance | 52 | 7,332 | | 1.0 | 1.0 |
| Real estate and rental and leasing | 53 | 478 | | 9.0 | 9.0 |
| Lessors of nonfinancial intangible assets (except copyrighted works) | 533 | 30 | | 4.3 | 4.3 |
| Other real estate and rental and leasing | other 53 | 449 | | 9.7 | 9.7 |
| Professional, scientific, and technical services | 54 | 21,837 | | 5.2 | D |
| Architectural, engineering, and related services | 5413 | 1,917 | | 1.9 | 1.9 |
| Computer systems design and related services | 5415 | 13,361 | | 7.6 | 7.6 |
| Scientific research and development services | 5417 | 3,578 | | 5.4 | D |
| Biotechnology research and development | 541711 | 1,127 | | 4.1 | 4.0 |
| Physical, engineering, and life sciences (except biotechnology) research and development | 541712 | 2,418 | | 6.6 | D |
| Social sciences and humanities research and development | 541720 | 32 | | 1.2 | 1.2 |
| Other professional, scientific, and technical services | other 54 | 2,981 | | 3.8 | 3.8 |
| Health care services | 621-23 | 805 | | 1.0 | 1.0 |
| Other nonmanufacturing | 23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81 | 1,018 | i | 0.2 | 0.3 |
| All companies (number of domestic employees) | - | 355,230 | | 3.9 | 4.0 |
| Micro companies ^c | | | | | |
| 5 - 9 | - | 1,299 | i | 19.2 | 19.3 |
| Small companies | | | | | |
| 10 - 19 | - | 4,455 | i | 17.3 | 17.3 |
| 20 - 49 | - | 8,821 | | 8.8 | D |
| Medium companies | | | | | |
| 50 - 99 | - | 9,251 | | 8.1 | 8.1 |
| 100 - 249 | - | 13,681 | | 5.0 | 5.0 |
| Large companies | | | | | |
| 250 - 499 | - | 12,579 | | 4.5 | 4.6 |
| 500 - 999 | - | 15,009 | | 4.6 | 4.7 |
| 1,000 - 4,999 | - | 60,616 | | 4.9 | D |
| 5,000 - 9,999 | - | 38,311 | | 3.9 | 3.9 |
| 10,000 - 24,999 | - | 64,542 | | 3.8 | 4.0 |
| 25,000 or more | - | 126,664 | | 3.0 | 3.2 |

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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 Statistics used for both the numerator and denominator in the calculation of these percentages are representative of companies located in the United States that performed or funded R&D.

^b Statistics used for both the numerator and denominator in the calculation of these percentages are representative of companies located in the United States that performed R&D. The calculation of percentages in this column excludes R&D and sales of companies that fund R&D but do not perform R&D.

^c 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, unless indicated otherwise.

Source(s)

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