

TABLE 103. Worldwide, domestic, and foreign R&D paid for by the company and paid for by others and performed by the company, by source of funds, industry, and company size: 2010
(Millions of U.S. dollars)

| Industry and company size | NAICS code | Total performance | | | Domestic performance | | | Foreign performance | | |
|--|------------------------|-------------------|---------------------|--------------------|----------------------|---------------------|--------------------|---------------------|---------------------|--------------------|
| | | Total | Paid for by company | Paid for by others | Total | Paid for by company | Paid for by others | Total | Paid for by company | Paid for by others |
| All industries | 21–23, 31–33, 42–81 | 338,205 | 277,071 | 61,134 | 278,977 | 221,706 | 57,271 | 59,228 | 55,366 | 3,863 |
| Manufacturing industries | 31–33 | 241,013 | 202,711 | 38,302 | 196,711 | 159,579 | 37,133 | 44,302 | 43,132 | 1,169 |
| Food | 311 | D | 4,658 | D | D | 3,659 | D | 1,002 | 999 | 3 |
| Beverage and tobacco products | 312 | D | 1,486 | D | D | 717 | D | 769 i | 769 i | 0 |
| Textiles, apparel, and leather products | 313–316 | 527 | 515 | 12 | 489 | 478 | 12 | 37 | 37 | * |
| Wood products | 321 | 250 | 231 | 18 | 247 | 229 | 18 | 3 | 3 | * |
| Paper | 322 | 1,566 | 1,539 | 28 | 1,274 | 1,247 | 28 | 292 | 292 | * |
| Printing and related support activities | 323 | 269 | 239 | 31 | 231 | 201 | 30 | 38 | 38 | * |
| Petroleum and coal products | 324 | D | 1,243 | D | D | 1,104 | D | D | 139 | D |
| Chemicals | 325 | 72,288 | 67,431 | 4,857 | 58,038 | 53,555 | 4,483 | 14,249 | 13,876 | 374 |
| Basic chemicals | 3251 | 2,683 | 2,569 | 114 | 1,803 | 1,718 | 85 | 880 | 852 | 29 |
| Resin, synthetic rubber, fibers, and filaments | 3252 | 1,057 | 1,036 | 21 | 828 | 807 | 21 | 229 | 229 | 0 |
| Pesticide, fertilizer, and other agricultural chemical | 3253 | D | D | D | D | 760 i | D | D | D | D |
| Pharmaceuticals and medicines | 3254 | 60,482 | 56,124 | 4,358 | 49,415 | 45,398 | 4,017 | 11,067 | 10,726 | 341 |
| Soap, cleaning compound, and toilet preparation | 3256 | 3,265 | 3,261 | 4 | 2,387 | 2,383 | 4 | 878 | 878 | 0 |
| Paint, coating, adhesive, and other chemical | 3255, 3259 | D | D | D | D | 2,491 | D | D | D | D |
| Plastics and rubber products | 326 | 2,548 | 2,230 | 318 i | 2,121 | 1,809 | 312 i | 427 | 421 | 6 i |
| Nonmetallic mineral products | 327 | 1,548 | 1,515 | 32 | 1,276 i | 1,246 i | 30 | 272 i | 270 i | 2 |
| Primary metals | 331 | 771 | 696 | 75 | 653 | 579 | 74 | 118 | 118 | * |
| Fabricated metal products | 332 | 1,793 | 1,554 | 239 | 1,703 | 1,464 | 239 | 90 | 90 | * |
| Machinery | 333 | 12,050 | 11,460 | 590 | 9,955 | 9,384 | 571 | 2,094 | 2,075 | 19 |
| Agricultural implement | 33311 | D | 1,574 | D | 1,196 | 1,172 | 23 | D | 402 | D |
| Semiconductor machinery | 333295 | 2,422 | 2,294 | 128 | 2,126 | 1,999 | 127 | 296 | 294 | 1 |
| Engine, turbine, and power transmission equipment | 3336 | 1,476 | 1,359 | 117 | 1,344 | 1,231 | 113 | 132 | 127 | 4 |
| Other machinery | other 333 | D | 6,233 | D | 5,290 | 4,981 | 308 | D | 1,252 | D |
| Computer and electronic products | 334 | 73,427 | 64,455 | 8,972 | 59,875 | 51,223 | 8,652 | 13,552 | 13,232 | 320 |
| Communications equipment | 3342 | 16,437 | 14,725 | 1,713 | 13,349 | 11,663 | 1,687 | 3,088 | 3,062 | 26 |
| Semiconductor and other electronic components | 3344 | 28,230 | 27,527 | 703 | 21,933 | 21,318 | 615 | 6,297 | 6,209 | 88 |
| Navigational, measuring, electromedical, and control instruments | 3345 | 17,699 | 11,746 | 5,953 | 15,561 | 9,729 | 5,832 | 2,138 | 2,018 | 121 |
| Electromedical, electrotherapeutic, and irradiation apparatus | 334510, 334517 | 4,339 | 4,139 | 200 | 3,997 | 3,800 | 197 | 342 | 338 | 3 |
| Search, detection, navigation, guidance, aeronautical, and nautical system and instruments | 334511 | 8,773 | 3,157 | 5,616 | 8,298 | 2,787 | 5,511 | 475 | 370 | 105 |
| Other measuring and controlling instruments | other 3345 | 4,587 | 4,450 | 137 | 3,266 | 3,141 | 124 | 1,322 | 1,309 | 12 |
| Other computer and electronic products | other 334 | 11,061 | 10,457 | 604 | 9,032 | 8,514 | 518 | 2,029 | 1,944 | 85 i |
| Electrical equipment, appliances, and components | 335 | 4,769 | 4,587 | 183 | 3,320 | 3,141 | 180 | 1,449 | 1,446 | 3 |
| Transportation equipment | 336 | 51,384 | 29,126 | 22,258 i | 42,913 | 21,076 | 21,837 i | 8,472 | 8,050 | 422 |
| Automobiles, bodies, trailers, and parts | 3361–3363 | 17,792 | D | D | D | 10,098 | D | D | D | D |
| Aerospace products and parts | 3364 | 31,645 | 11,710 | 19,935 i | 29,854 | 10,152 | 19,702 i | 1,791 | 1,558 | 233 |
| Aircraft, aircraft engine, and aircraft parts | 336411–336413 | D | D | D | 24,900 i | 9,353 | 15,547 i | D | D | D |
| Guided missile, space vehicle, and related parts | 336414, 336415, 336419 | D | D | D | 4,955 | 800 | 4,155 | D | D | D |
| Military armored vehicle, tank, and tank components | 336992 | D | D | D | D | 26 | D | D | D | 0 |
| Other transportation | other 336 | D | D | D | D | 800 i | D | D | D | D |
| Furniture and related products | 337 | 406 | 403 | 3 | 373 | 370 | 3 | 33 | 33 | 0 |

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|---|-------------------------|-------------------|---------------------|--------------------|----------------------|---------------------|--------------------|---------------------|---------------------|--------------------|
| | | Total | Paid for by company | Paid for by others | Total | Paid for by company | Paid for by others | Total | Paid for by company | Paid for by others |
| Miscellaneous manufacturing | 339 | 9,748 | 9,343 | 405 | D | 8,097 | D | D | 1,246 | D |
| Medical equipment and supplies | 3391 | 7,624 | 7,291 | 333 | 6,597 | D | D | 1,027 | D | D |
| Other miscellaneous manufacturing | 3399 | 2,124 | 2,052 | 72 | D | D | 72 | D | D | 0 |
| Nonmanufacturing industries | 21–23, 42–81 | 97,192 | 74,360 | 22,832 | 82,265 | 62,127 | 20,138 | 14,927 | 12,233 | 2,693 |
| Mining, extraction, and support activities | 21 | 2,782 | 2,482 | 299 | 2,542 | 2,254 | 289 | 239 | 229 | 11 |
| Utilities | 22 | 442 | 388 | 54 | 425 | 371 | 54 | 17 | 17 | 0 |
| Construction | 23 | 1,083 | 708 | 375 | 1,079 | 704 | 375 | 4 | 4 | 0 |
| Wholesale trade | 42 | 1,329 | 1,095 | 233 | 1,274 | 1,040 | 233 | 55 i | 55 i | * |
| Retail trade | 44, 45 | D | D | * | D | D | * | D | D | 0 |
| Electronic shopping and electronic auctions | 454111, 454112 | D | D | 0 | D | D | 0 | D | D | 0 |
| Other retail trade | other 44, 45 | D | D | * | D | D | * | D | D | 0 |
| Transportation and warehousing | 48, 49 | 124 | 117 | 7 i | 96 | 88 | 7 i | 29 | 29 | 0 |
| Information | 51 | 44,865 | 44,075 | 790 | 36,852 | 36,085 | 768 | 8,013 | 7,991 | 22 |
| Publishing | 511 | 33,937 | 33,320 | 616 | 26,982 | 26,387 | 595 | 6,955 | 6,934 | 22 |
| Newspaper, periodical, book, and directory publishers | 5111 | 848 | 848 | * | 791 | 791 | * | 57 | 57 | 0 |
| Software publishers | 5112 | 33,089 | 32,473 | 616 | 26,191 | 25,596 | 595 | 6,898 | 6,877 | 22 |
| Telecommunications | 517 | 1,981 | 1,868 | 113 | 1,868 | 1,755 | 113 | 113 | 113 | * |
| Data processing, hosting, and related services | 518 | 2,671 | 2,624 | 47 | 2,538 | 2,491 | 47 | 133 i | 133 i | * |
| Other information | other 51 | 6,276 | 6,263 | 13 | 5,465 | 5,452 | 13 | 811 | 811 | 0 |
| Finance and insurance | 52 | 2,591 | 2,590 | 1 | 2,109 | 2,109 | 0 | 481 | 481 | 1 |
| Real estate and rental and leasing | 53 | 366 | 364 | 2 | 329 | 327 | 2 | 37 | 37 | 0 |
| Professional, scientific, and technical services | 54 | 39,208 | 18,312 | 20,897 | 33,690 | 15,438 | 18,252 | 5,518 | 2,874 | 2,644 |
| Architectural, engineering, and related services | 5413 | 4,235 | 1,459 | 2,776 | 4,093 | 1,381 | 2,712 | 142 | 78 i | 64 |
| Computer systems design and related services | 5415 | 13,318 | 11,650 | 1,669 | 11,050 | 9,416 | 1,634 | 2,268 | 2,233 | 35 |
| Scientific R&D services | 5417 | 17,560 | 3,102 | 14,458 | 14,818 | 2,851 | 11,968 | 2,742 | 252 | 2,490 |
| Biotechnology R&D | 541711 | 6,366 | 1,780 | 4,586 | 5,610 | 1,720 | 3,890 | 756 | 60 | 696 |
| Physical, engineering, and life sciences (except biotechnology) R&D | 541712 | 10,644 | 1,305 | 9,339 | 8,663 | 1,116 | 7,547 | 1,981 | 189 | 1,792 |
| Social sciences and humanities R&D | 541720 | 550 | 18 | 533 | 545 | 15 | 530 | 5 i | 3 i | 2 |
| Other professional, scientific, and technical services | other 54 | 4,095 | 2,101 | 1,994 | 3,729 | 1,790 | 1,939 | 366 | 311 | 55 |
| Health care services | 621–623 | D | D | 121 | 1,232 | 1,126 | 107 | D | D | 14 |
| Other nonmanufacturing | 55, 56, 624, 71, 72, 81 | D | D | 53 | D | D | 52 | D | D | 1 |
| All companies (number of employees) | – | 338,205 | 277,071 | 61,134 | 278,977 | 221,706 | 57,271 | 59,228 | 55,366 | 3,863 |
| Small companies (number of employees) ^a | | | | | | | | | | |
| 5–499 | – | 56,446 | 44,790 | 11,656 | 52,202 | 40,822 | 11,379 | 4,244 | 3,968 | 277 |
| 5–99 | – | 31,672 | 24,472 | 7,201 | 30,052 | 22,974 | 7,078 | 1,620 | 1,498 | 122 |
| 5–49 | – | 22,144 | 17,439 | 4,705 | 21,197 | 16,574 | 4,623 | 947 | 865 | 82 |
| 5–9 | – | 4,029 | 3,059 | 970 | 3,851 | 2,907 | 944 | 179 | 152 | 27 |
| 10–24 | – | 9,175 | 7,154 | 2,021 | 8,722 | 6,720 | 2,002 | 453 | 434 | 19 |
| 25–49 | – | 8,940 | 7,226 | 1,714 | 8,624 | 6,947 | 1,678 | 316 | 279 | 37 |
| 50–99 | – | 9,528 | 7,033 | 2,495 | 8,855 | 6,400 | 2,455 | 673 i | 633 i | 40 |
| 100–249 | – | 13,242 | 10,767 | 2,476 | 11,866 | 9,435 | 2,431 | 1,376 i | 1,332 i | 44 |

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|--|------------|-------------------|---------------------|--------------------|----------------------|---------------------|--------------------|---------------------|---------------------|--------------------|
| | | Total | Paid for by company | Paid for by others | Total | Paid for by company | Paid for by others | Total | Paid for by company | Paid for by others |
| 250-499 | - | 11,531 | 9,551 | 1,980 | 10,283 | 8,413 | 1,870 | 1,248 | 1,138 | 110 |
| Medium and large companies (number of employees) | | | | | | | | | | |
| 500-999 | - | 11,861 | 10,366 | 1,495 | 10,116 | 8,640 | 1,477 | 1,745 | 1,727 | 18 |
| 1,000-4,999 | - | 59,812 | 50,264 | 9,548 | 48,227 | 39,468 | 8,760 | 11,584 | 10,796 | 788 |
| 5,000-9,999 | - | 34,374 | 26,833 | 7,542 | 27,463 | 21,940 | 5,523 | 6,911 | 4,893 | 2,018 |
| 10,000-24,999 | - | 50,746 | 45,234 | 5,512 | 41,835 | 36,688 | 5,147 | 8,910 | 8,546 | 365 |
| 25,000 or more | - | 124,967 | 99,585 | 25,382 i | 99,133 | 74,148 | 24,985 i | 25,833 | 25,437 | 397 |

* = amount < \$500,000; D = data withheld to avoid disclosing operations of individual companies; i = value > 50% of estimate is a combination of imputation and reweighting to account for nonresponse.

NAICS = 2007 North American Industry Classification System.

^a Upper bound based on U.S. Small Business Administration's definition of small business; Business R&D and Innovation Survey (BRDIS) does not include companies with fewer than five domestic employees.

NOTES: Detail may not add to total because of rounding. Industry classification based on dominant business code for domestic R&D performance where available. For companies that did not report business codes, classification used for sampling was assigned. Statistics are representative of companies located in United States that performed or funded R&D.

SOURCE: National Science Foundation/National Center for Science and Engineering Statistics and U.S. Census Bureau, Business R&D and Innovation Survey, 2010.