



Business Research and Development and Innovation: 2014

Detailed Statistical Tables | NSF 18-302 | March 2018

Raymond M. Wolfe
Project Officer
Research and Development Statistics Program
rwolfe@nsf.gov

General Notes

The Business R&D and Innovation Survey (BRDIS) is the primary source of information on domestic and global research and development expenditures and the R&D workforce for companies operating in the 50 U.S. states and the District of Columbia. The survey is conducted annually by the U.S. Census Bureau in accordance with an interagency agreement with the National Center for Science and Engineering Statistics (NCSES) within the National Science Foundation (NSF).

The results of the survey are used to assess trends in the performance and funding of R&D. Government agencies, corporations, and research organizations use the data to investigate productivity, formulate tax policy, and compare individual company performance with industry averages. Individual researchers in industry and academia use the data to investigate a variety of topics and to prepare professional papers, dissertations, and books. Total R&D expenditure statistics are used by the Bureau of Economic Analysis for inclusion in its System of National Accounts and Foreign Direct Investment programs.

Further, the BRDIS statistics make it possible to evaluate more fully the status of R&D in the United States and to compare the R&D and innovation activities of the United States with those of other nations. The usefulness of the information collected in this survey is enhanced by linking it to the Census Bureau's Longitudinal Establishment and Enterprise Microdata file, which contains information on the outputs and inputs of companies' manufacturing plants. Response to this survey is mandatory and confidential under Title 13 of the United States Code.

In conducting BRDIS, data are collected from a probability sample of for-profit companies, which are classified in select manufacturing and nonmanufacturing industries. BRDIS is administered both to companies known to have performed R&D and to companies with no known history of R&D activity. The survey is sent to a single coordinator within each company, but it is organized into sections that help the coordinator collect specific types of information from different experts (human resources, accounting, R&D managers, etc.) in the company. Foreign-owned companies are instructed to report only for company operations owned by the U.S. subsidiary and, for purposes of the survey, to treat the foreign owners as if they were unrelated third parties.

The target population for BRDIS consists of all for-profit companies that have five or more paid employees in the United States, that have at least one establishment that is in business during the survey year and is located in the United States, and that are classified in certain industries, with a particular focus on those companies that perform R&D in the United States. A company is defined as one or more establishments under common domestic ownership or control.

The Census Bureau's Business Register contains information on more than 3 million establishments with paid employees. It serves as the primary input to the sample frame from which the sample is selected. For companies with more than one establishment, data are summed to the company level to assign an industry classification code and a measure of size, which are used in designing the sample. Companies are excluded from the frame if they are classified in an industry that is outside the scope of BRDIS or have fewer than five employees, based on their prior year aggregated annual payroll and employment data.

Terms used in business accounting and incorporated throughout the tables are defined in appendix A, "Technical Notes."

The BRDIS reports and data can be found at <https://www.nsf.gov/statistics/industry/>.

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65	companies that performed or funded R&D and introduced new or significantly improved products and sales from products

TABLE 1. Business R&D and Innovation Survey aggregate estimates, by questionnaire reference: 2014

Question	Survey item	Aggregate amount
Company and financial information (US\$millions)		
1.8	Worldwide net sales and operating revenues	13,367,485
1.9	Net sales and operating revenues from domestic operations	9,754,470
R&D paid for by the company and performed by the company and others		
2.1	Worldwide R&D paid for by the company (expense), total	428,709
2.3	Worldwide R&D paid for by the company (expense), adjustments	29,389
2.4	Worldwide R&D paid for by the company and performed by the company and others	399,321
2.7a	Domestic R&D paid for by the company and performed by the company and others	319,589
2.7b	Foreign R&D paid for by the company and performed by the company and others	79,732
Domestic R&D paid for by the company and performed by the company and others		
2.10a(1)	Salaries, wages, and fringe benefits	162,704
2.10b(1)	Stock-based compensation	16,247
2.10c(1)	Temporary staffing	12,257
2.10d(1)	Expensed equipment	5,308
2.10e(1)	Materials and supplies	20,619
2.10f(1)	Leased facilities and equipment rental payments	5,170
2.10g(1)	Depreciation and amortization of R&D property and equipment	10,923
2.10h(1)	Payments to business partners for collaborative R&D	6,293
2.10i(1)	Purchased R&D services	30,726
2.10j(1)	All other purchased services except R&D	5,804
2.10k(1)	All other costs	43,538
2.11(3)	Worldwide R&D paid for by the company and performed by others	47,395
2.11(1)	Domestic R&D paid for by the company and performed by others	37,019
2.11(2)	Foreign R&D paid for by the company and performed by others	10,376
2.12(3)	Worldwide R&D paid for and performed by the company	351,926
2.12(1)	Domestic R&D paid for and performed by the company	282,570
2.12(2)	Foreign R&D paid for and performed by the company	69,356
2.11(1) + 2.12(1) + 3.8(1) + 3.9(1)	Domestic R&D paid for by the company and others and performed by the company and others	386,703
2.12(1) + 3.9(1)	Domestic R&D paid for by the company and others and performed by the company	340,728
Domestic R&D paid for and performed by the company		
2.18	Performed at largest domestic location	155,229
2.20	Performed at second-largest domestic location	26,251
2.22	Domestic R&D paid for by foreign operations or subsidiaries and performed by the company	5,298
2.23	Domestic R&D paid for by foreign operations or subsidiaries and performed by the company	10,650
Domestic R&D paid for by the company and performed by others		
2.25a	Companies in the United States	29,080
2.25b	Your company's foreign parent/owner	675
2.25c	Companies outside the United States	4,021
2.25d	U.S. federal government agencies or laboratories	77 i
2.25e	U.S. state and local government agencies or laboratories	8
2.25f	Foreign government agencies or laboratories	1
2.25g	All other organizations in the United States	463
2.25h	All other organizations outside the United States	98
2.25	Undistributed (BRDI-1(S))	2,597 i
2.27	Monetary gifts made by the company to U.S. universities and colleges	701
2.28	Indirect R&D charges to be recouped from the U.S. federal government (IR&D or independent R&D)	4,123
Projected worldwide R&D expense for 2014		
2.29(3)	Worldwide R&D to be paid for and performed by the company	424,439
2.29(1)	Domestic R&D to be paid for and performed by the company	344,818
2.29(2)	Foreign R&D to be paid for and performed by the company	79,621
2.30	Projected R&D services and projected payments for collaborative R&D	31,644
2.31	Total domestic capital expenditures	638,268
2.32	Domestic capital expenditures for R&D	27,775
2.33a	Structures	2,599
2.33b	Equipment	11,564
2.33c	Capitalized software	6,094
2.33d	All other expenditures	3,036
2.33	Undistributed (BRDI-1(S))	4,481 i

	R&D paid for by others and performed by the company and others	
3.1a	R&D reimbursed by the company's foreign parent/owner	16,596
3.1b	Collaborative R&D reimbursed by business partners	8,757
3.1c	R&D paid for by government or private foundation grants	7,115
3.1d	Defense RDT&E goods or services provided to the federal government or government contractors	20,149 i
3.1e	Medical nonclinical R&D services provided to others not owned by the company	3,101
3.1f	Medical clinical trial Phase I–III services provided to others not owned by the company	8,623
3.1g	Nondefense custom software development/computer systems designed for others not owned by the company	593
3.1h	Prototype premarket development, production, and testing for customer's products	2,318
3.1i	All other R&D services not included in 3.1a–3.1h provided to the federal government or to others not owned by the company	6,972 i
3.1j	Worldwide R&D paid for by others and performed by the company and others	74,224
3.4a	Domestic R&D paid for by others and performed by the company and others	67,114
3.4b	Foreign R&D paid for by others and performed by the company and others	7,110
	Domestic R&D paid for by others and performed by the company and others	
3.7a(1)	Salaries, wages, and fringe benefits	32,827
3.7b(1)	Stock-based compensation	371
3.7c(1)	Temporary staffing	1,954
3.7d(1)	Expensed equipment	507 i
3.7e(1)	Materials and supplies	6,709
3.7f(1)	Leased facilities and equipment rental payments	879
3.7g(1)	Depreciation and amortization of R&D property and equipment	1,183
3.7h(1)	Payments to business partners for collaborative R&D	1,701
3.7i(1)	Purchased R&D services	7,255
3.7j(1)	All other purchased services except R&D	2,087 i
3.7k(1)	All other costs	11,640
3.8(3)	Worldwide R&D paid for and performed by others	10,111
3.8(1)	Domestic R&D paid for and performed by others	8,956
3.8(2)	Foreign R&D paid for and performed by others	1,156
3.9(3)	Worldwide R&D paid for by others and performed by the company	64,113
3.9(1)	Domestic R&D paid for by others and performed by the company	58,158
3.9(2)	Foreign R&D paid for by others and performed by the company	5,955
	Domestic R&D paid for by others and performed by the company	
3.14a	Companies in the United States	13,227
3.14b	Your company's foreign parent/owner	13,407
3.14c	Companies outside the United States	3,839
3.14d	U.S. federal government agencies or laboratories	26,554 i
3.14e	U.S. state and local government agencies or laboratories	138
3.14f	Foreign government agencies or laboratories	415 i
3.14g	All other organizations in the United States	523
3.14h	All other organizations outside the United States	55
	Federally funded R&D performed by the company	
3.18a	Department of Defense	19,265 i
3.18b	Department of Energy	1,219 i
3.18c	National Aeronautics and Space Administration	4,496 i
3.18d	National Institutes of Health	770
3.18e	Department of Homeland Security	83
3.18f	Department of Transportation	24
3.18g	Environmental Protection Agency	9
3.18h	National Science Foundation	14
3.18i	Other U.S. federal agencies	674
	Federally funded R&D performed by the company, by type of agreement	
3.19a	Contracts	25,571 i
3.19b	Grants and all other agreements	984
	Domestic R&D paid for by others and performed by the company	
3.23	Performed at largest domestic location	28,076
3.25	Performed at second-largest domestic location	5,337
	Projected R&D to be paid for by others and performed by the company in 2014	
3.26	Worldwide to be paid for by others and performed by the company	63,796
3.27	Domestic R&D to be paid for by others and performed by the company	53,534
3.28	Domestic R&D to be paid for by U.S. federal government and performed by the company	23,091 i
	Domestic R&D paid for and performed by the company	
	Character of work	
4.6b	Basic research	16,107
4.6a	Applied research	39,012

4.5b	Development	227,451
	Application areas	
4.7	Energy applications	20,041
4.8	Environmental protection applications	8,302
4.9	Defense applications	11,903
4.10	Health or medical applications	66,672
4.11	Agricultural applications	5,981 i
	Technology focus areas	
4.12	Software products and software embedded in other projects or products	94,826
4.13	Optics and photonics	6,709 i
4.14	Products enabled by optics and photonics	3,846 i
4.15	Biotechnology	32,938
4.16	Nanotechnology	16,564 i
	Domestic R&D paid for by others and performed by the company	
	Character of work	
4.20b	Basic research	5,829
4.20a	Applied research	14,403
4.19b	Development	37,927 i
	Application areas	
4.21	Energy applications	2,984
4.22	Environmental protection applications	2,275 i
4.23	Defense applications	22,677 i
4.24	Health or medical applications	17,546
4.25	Agricultural applications	459
	Technology focus areas	
4.26	Software products and software embedded in other projects or products	10,160 i
4.27	Optics and photonics	1,247
4.28	Products enabled by optics and photonics	572 i
4.29	Biotechnology	5,627
4.30	Nanotechnology	1,075
	Federally funded R&D performed by the company	
	Character of work	
4.34b	Basic research	2,044 i
4.34a	Applied research	6,445 i
4.33b	Development	18,065 i
	Technology focus areas	
4.35	Software products and software embedded in other projects or products	4,719 i
Employees (thousands)		
	Worldwide	
5.1	Total employees	31,881
5.3b(3)	Non-R&D employees	29,714
5.3a(3)	R&D employees	2,167
5.5a(3)	Female	560
5.5b(3)	Male	1,607
5.6a(3)	Scientists and engineers	1,535
5.6b(3)	Technicians	410
5.6c(3)	Support staff	222
	Domestic	
5.2(1)	Total employees	21,540
5.3b(1)	Non-R&D employees	20,026
5.3a(1)	R&D employees	1,514
5.5a(1)	Female	376
5.5b(1)	Male	1,138
5.6a(1)	Scientists and engineers	1,060
5.6b(1)	Technicians	295
5.6c(1)	Support staff	158
	Foreign	
5.2(2)	Total employees	10,341
5.3b(2)	Non-R&D employees	9,688
5.3a(2)	R&D employees	653
5.5a(2)	Female	184
5.5b(2)	Male	470
5.6a(2)	Scientists and engineers	475
5.6b(2)	Technicians	114
5.6c(2)	Support staff	64
	R&D scientists and engineers with PhD	

5.7(3)	Worldwide	141
5.7(1)	Domestic	113
5.7(2)	Foreign	28
	Full-time equivalent	
5.8d	R&D employees	1,366
5.8a	Full-time R&D employees	1,197
5.8b	Full-time employees not solely working on R&D	152
5.8c	Part-time employees working on R&D	16
5.9d	R&D scientists and engineers	960
5.9a	Full-time R&D employees	864
5.9b	Full-time employees not solely working on R&D	88
5.9c	Part-time employees working on R&D	8
5.10	Non-U.S. citizens employed as scientists and engineers under temporary visa	30
U.S. patents		
(number) ^a		
6.1	Applied for	125,892
6.2	Applications, foreign	60,352
6.3	Applications originated from organized R&D activities	103,542
6.4	Issued	98,237
U.S. patents		
(US\$millions) ^a		
Revenue received from others		
6.6	From sale of patents	3,422
6.7	From licensing patents	25,489
Amount paid to others		
6.8	To purchase patents	13,033
6.9	To license patents	25,131

i = > 50% of the estimate is a combination of imputation and reweighting to account for nonresponse.

IR&D = independent research and development; RDT&E = research, development, test, and evaluation.

^a These statistics do not include an adjustment to the weight to account for unit nonresponse.

NOTES: Detail may not add to total because of rounding. Statistics are representative of companies located in the 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, 2014.

TABLE 2. Worldwide, domestic, and foreign R&D paid for by the company and others and performed by the company, by industry and company size: 2014

(Millions of U.S. dollars)

Industry and company size	NAICS code	Worldwide R&D performance			Domestic R&D performance			Foreign R&D 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	416,038	351,926	64,113	340,728	282,570	58,158	75,310	69,356	5,955
Manufacturing industries	31-33	286,476	244,474	42,003	232,815	192,160	40,655	53,661	52,313	1,348
Food	311	6,532	6,309	222	5,292 i	5,071 i	220	1,240	1,238	2
Beverages and tobacco products	312	1,423	1,322	101	920	819	101	503	503	0
Textile, apparel, and leather products	313-16	734	719	15 i	631	616	15 i	103	103	0
Wood products	321	368 i	356 i	12 i	362 i	351 i	12 i	5 i	5 i	0
Paper	322	880	868	12	723	711	12	158	158	0
Printing and related support activities	323	238	236	2 i	234	232	2 i	3	3	0
Petroleum and coal products	324	298	293	5	234	229	5	64	64	*
Chemicals	325	79,468	69,462	10,006	66,301	56,488	9,813	13,167	12,974	193
Basic chemicals	3251	3,633	3,325	309 i	2,849	2,554	295 i	784	771	14
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	1,842	1,825	17	1,152	1,136	15 i	690	688	2
Pesticides, fertilizers, and other agricultural chemicals	3253	2,086 i	1,610 i	476	1,790 i	1,327 i	464	295 i	283 i	12
Pharmaceuticals and medicines	3254	66,737	57,606	9,132	56,612	47,646	8,966	10,125	9,960	165
Soaps, cleaning compounds, and toilet preparations	3256	3,499	3,483	16 i	2,547	2,531	16 i	952	952	0
Paints, coatings, adhesives, and other chemicals	3255, 3259	1,670 i	1,614 i	56	1,350 i	1,294 i	56	320 i	320 i	0
Plastics and rubber products	326	4,457	4,297	160	3,574	3,416	158 i	883	881	2
Nonmetallic mineral products	327	1,599	1,574	26	1,445 i	1,420 i	24	155 i	153 i	1
Primary metals	331	770	709	62	677	615	62	94	94	0
Fabricated metal products	332	2,353	2,222	130 i	2,131 i	2,000	130 i	222	222	0
Machinery	333	14,937	14,243	694	12,128	11,458	670	2,810	2,785	24
Agricultural implementa	33311	D	D	40	1,578	1,539	39	D	D	*
Semiconductor machinery	333295	3,434	3,304	130	2,941	2,821	120	493	483	10
Engines, turbines, and power transmission equipment	3336	2,883	2,820	63	2,347	2,285	62	535	534	1
Other machinery	other 333	D	D	461 i	5,261	4,813	448 i	D	D	13
Computer and electronic products	334	94,910	85,365	9,545	73,891	64,695	9,195	21,019	20,669	350
Communications equipment	3342	22,044	20,496	1,548 i	18,342	16,808	1,533 i	3,702	3,687	15
Semiconductor and other electronic components	3344	42,722	40,530	2,193	32,142	30,029	2,112	10,581	10,500	80

TABLE 2. Worldwide, domestic, and foreign R&D paid for by the company and others and performed by the company, by industry and company size: 2014

(Millions of U.S. dollars)

Industry and company size	NAICS code	Worldwide R&D performance			Domestic R&D performance			Foreign R&D 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
Navigational, measuring, electromedical, and control instruments	3345	19,030	13,512	5,518	15,963	10,576	5,387	3,067	2,936	131
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	4,982	4,747	236	3,917	3,697	220	1,066	1,050	16
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	8,486	3,531	4,955	7,861	2,984	4,876	625	547	78
Other measuring and controlling devices	other 3345	5,561	5,234	327	4,186	3,895	291	1,375	1,339	36
Other computer and electronic products	other 334	11,114	10,827	287 i	7,444	7,282	163 i	3,670	3,545	124 i
Electrical equipment, appliances, and components	335	5,750	5,552	197 i	4,365	4,178	187 i	1,385	1,374	11 i
Transportation equipment	336	56,359	36,117	20,242 i	46,746	27,261	19,485 i	9,613	8,856	757
Automobiles, bodies, trailers, and parts	3361-63	D	23,001	D	18,404	15,900	2,504	D	7,101	D
Aerospace products and parts	3364	D	11,936	D	26,181 i	10,300	15,881 i	D	1,636	D
Aircraft, aircraft engines, and aircraft parts	336411-13	D	D	D	24,892 i	10,011	14,881 i	D	D	D
Guided missiles, space vehicles, and related parts	336414-15, 336419	D	D	D	1,290 i	289	1,001 i	D	D	D
Military armored vehicles, tanks, and tank components	336992	D	D	8	18	10	8	D	D	0
Other transportation	other 336	D	D	1,131 i	2,142 i	1,051	1,091 i	D	D	40 i
Furniture and related products	337	418	414	4 i	373	369	4 i	45	45	* i
Miscellaneous	339	14,983	14,415	568	12,789	12,230	559	2,194	2,185	8
Medical equipment and supplies	3391	12,091	11,583	508	10,309	9,809	500	1,782	1,774	8
Other miscellaneous manufacturing	3399	2,892	2,832	60 i	2,481	2,421	60 i	412	411	*
Nonmanufacturing industries	21-23, 42-81	129,562	107,452	22,110	107,913	90,409	17,504	21,649	17,042	4,607
Mining, extraction, and support activities	21	D	D	D	4,703	3,821	882	D	D	D
Utilities	22	311	259	52	310	258	52	1	1	0
Wholesale trade	42	D	D	D	339 i	329 i	10 i	D	D	D
Electronic shopping and electronic auctions	454111-12	D	D	0	1,388	1,388	0	D	D	0
Transportation and warehousing	48-49	692	688	4	679	675	4	13	13	0
Information	51	77,341	75,811	1,531	63,773	62,296	1,477	13,569	13,515	54
Publishing	511	46,157	44,840	1,317	36,140	34,869	1,270	10,017	9,971	47
Newspaper, periodical, book, and directory publishers	5111	92 i	92 i	0	88 i	88 i	0	4 i	4 i	0
Software publishers	5112	46,065	44,748	1,317	36,052	34,781	1,270	10,013	9,967	47
Telecommunications	517	3,816	3,771	45	3,755	3,710	45	61	61	0

TABLE 2. Worldwide, domestic, and foreign R&D paid for by the company and others and performed by the company, by industry and company size: 2014

(Millions of U.S. dollars)

Industry and company size	NAICS code	Worldwide R&D performance			Domestic R&D performance			Foreign R&D 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
Data processing, hosting, and related services	518	10,322	10,215	108	9,029	8,926	103	1,294	1,289	5
Other information	other 51	17,046	16,985	61	14,849	14,791	59	2,196	2,194	2
Finance and insurance	52	4,748	4,715	32	4,122	4,090	32	625	625	0
Real estate and rental and leasing	53	268	268	* i	262	262	* i	6	6	0
Lessors of nonfinancial intangible assets (except copyrighted works)	533	58	58	0	55	55	0	3	3	0
Other real estate and rental and leasing	other 53	210	210	* i	207	207	* i	3	3	0
Professional, scientific, and technical services	54	37,476 i	18,048 i	19,428	30,975 i	16,061 i	14,914	6,501	1,987 i	4,514
Architectural, engineering, and related services	5413	3,440	1,549 i	1,891	3,375	1,503 i	1,871	65	45	20
Computer systems design and related services	5415	12,536 i	10,117 i	2,419 i	11,019 i	8,644 i	2,375 i	1,517 i	1,473 i	44
Scientific R&D services	5417	17,329	2,746	14,583	12,807	2,668	10,139	4,522	78	4,444
Biotechnology R&D	541711	4,898	727	4,170	3,459	692	2,767	1,438	35	1,403
Physical, engineering, and life sciences (except biotechnology) R&D	541712	11,749	1,988	9,760	8,670	1,950	6,720	3,079	38	3,041
Social sciences and humanities R&D	541720	682	30	652	678	26	651	4 i	4 i	1
Other professional, scientific, and technical services	other 54	4,172 i	3,637 i	535	3,775	3,245 i	529	398 i	392 i	6
Health care services	621-23	501 i	439 i	62 i	501 i	439 i	62 i	*	*	0
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	D	D	70	861 i	791 i	70	D	D	0
All companies (number of domestic employees)	-	416,038	351,926	64,113	340,728	282,570	58,158	75,310	69,356	5,955
Small companies ^a										
5-499	-	58,967	46,788	12,179 i	54,773	42,889	11,884 i	4,194	3,899	295
5-99	-	30,333 i	22,876 i	7,456 i	29,078 i	21,695 i	7,383 i	1,255	1,181	74
5-49	-	19,607 i	14,825 i	4,783 i	18,900 i	14,169 i	4,730 i	707 i	655 i	52
5-9	-	3,390 i	2,514 i	875 i	3,295 i	2,426 i	868 i	95 i	88 i	7
10-24	-	7,450 i	5,770 i	1,680 i	7,177 i	5,506 i	1,671 i	273 i	264 i	9 i
25-49	-	8,767 i	6,540 i	2,227 i	8,428 i	6,237 i	2,191 i	339	303	36
50-99	-	10,726	8,052	2,674 i	10,178 i	7,526	2,652 i	547	526	21
100-249	-	14,984	12,385	2,599	13,492	11,006	2,486	1,492	1,379	113
250-499	-	13,650	11,526	2,123	12,203	10,188	2,015	1,447	1,339	108
Medium and large companies										
500-999	-	15,526	13,934	1,592	13,262	11,736	1,525	2,264	2,198	66 i
1,000-4,999	-	71,736	60,665	11,071	57,551	47,807	9,744	14,185	12,858	1,327 i

TABLE 2. Worldwide, domestic, and foreign R&D paid for by the company and others and performed by the company, by industry and company size: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS code	Worldwide R&D performance			Domestic R&D performance			Foreign R&D 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
5,000–9,999	–	51,020	39,991	11,029	38,202	30,680	7,522	12,818	9,312	3,506
10,000–24,999	–	63,639	55,818	7,822	54,445	46,904	7,542	9,194	8,914	280
25,000 or more	–	155,150	134,730	20,421 i	122,495	102,555	19,941 i	32,655	32,175	480 i

* = amount < \$500,000; 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 Upper bound is based on the U.S. Small Business Administration's definition of a small business; the Business R&D and Innovation Survey does not include companies with fewer than five domestic employees.

NOTES: 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.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 3. Worldwide R&D paid for by the company and others and performed by the company, by industry, company size, and worldwide R&D program size: 2014
(Millions of U.S. dollars)

Industry	NAICS codes	R&D program size					
		All companies	Less than \$1 million	\$1 million–\$9.999 million	\$10 million–\$49.999 million	\$50 million–\$99.999 million	\$100 million or more
All industries	21–23, 31–33, 42–81	416,038	9,407 i	27,013	32,840	20,984	325,794
Manufacturing industries	31–33	286,476	4,681 i	13,387	19,987	14,116	234,305
Food	311	6,532	238 i	1,010	616	539	4,130 i
Beverages and tobacco products	312	1,423	11 i	52	153	187	1,020
Textiles, apparel, and leather products	313–16	734	92 i	148	276	217	0
Wood products	321	368 i	20 i	69 i	279 i	0	0
Paper	322	880	60 i	92	177	110 i	441
Printing and related support activities	323	238	50 i	104	84	0	0
Petroleum and coal products	324	298	20 i	48	78	152	0
Chemicals	325	79,468	570 i	2,506	6,018	2,885	67,489
Basic chemicals	3251	3,633	81 i	324	766	393	2,070
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	1,842	47 i	194	67	166	1,368
Pesticides, fertilizers, and other agricultural chemicals	3253	2,086 i	38 i	23	111	0	1,914 i
Pharmaceuticals and medicines	3254	66,737	148 i	1,583	4,637	2,004	58,365
Soaps, cleaning compounds, and toilet preparations	3256	3,499	104 i	155	227	167	2,847
Paints, coatings, adhesives, and other chemicals	3255, 3259	1,670 i	154 i	227	210 i	155	925 i
Plastics and rubber products	326	4,457	304 i	568	692	460	2,433
Nonmetallic mineral products	327	1,599	55 i	166	205	0	1,173
Primary metals	331	770	71 i	113	349	0	237
Fabricated metal products	332	2,353	541 i	756	736	319	0
Machinery	333	14,937	796 i	1,714	1,989	1,461	8,978
Agricultural implements	33311	D	D	86	102	D	1,871
Semiconductor machinery	333295	3,434	19 i	93 i	218	314 i	2,791
Engines, turbines, and power transmission equipment	3336	2,883	18 i	D	169	266	D
Other machinery	other 333	D	D	D	1,501	D	D
Computer and electronic products	334	94,910	801 i	2,526	3,476	4,213	83,893
Communications equipment	3342	22,044	170 i	414	512	900	20,048
Semiconductors and other electronic components	3344	42,722	165 i	640	1,304	1,711	38,901
Navigational, measuring, electromedical, and control instruments	3345	19,030	369 i	1,166	1,093	957	15,446
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	4,982	81 i	331	303	684	3,583
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	8,486	8 i	134 i	242	62	8,040
Other measuring and controlling devices	other 3345	5,561	280 i	700	548	210	3,823

TABLE 3. Worldwide R&D paid for by the company and others and performed by the company, by industry, company size, and worldwide R&D program size: 2014

(Millions of U.S. dollars)

Industry	NAICS codes	R&D program size					
		All companies	Less than \$1 million	\$1 million–\$9.999 million	\$10 million–\$49.999 million	\$50 million–\$99.999 million	\$100 million or more
Other computer and electronic products	other 334	11,114	96 i	306	568	646	9,498
Electrical equipment, appliances, and components	335	5,750	272 i	784	1,341 i	718	2,634
Transportation equipment	336	56,359	253 i	1,135	1,594	1,701	51,676
Automobiles, bodies, trailers, and parts	3361–63	D	D	671	873	1,094	23,280
Aerospace products and parts	3364	D	D	304	521	462	26,646 i
Aircraft, aircraft engines, and aircraft parts	336411–13	D	D	D	401	D	D
Guided missiles, space vehicles, and related parts	336414–15, 336419	D	4 i	D	120	D	D
Military armored vehicles, tanks, and tank components	336992	D	D	20	0	0	0
Other transportation	other 336	D	D	140	200	146	1,750 i
Furniture and related products	337	418	106 i	94	219	0	0
Miscellaneous manufacturing	339	14,983	421 i	1,503	1,706	1,152	10,202
Medical equipment and supplies	3391	12,091	191 i	1,074	1,342	1,087	8,397
Other miscellaneous manufacturing	3399	2,892	230 i	429	363	65	1,805
Nonmanufacturing industries	21–23, 42–81	129,562	4,726 i	13,626	12,853	6,868	91,489
Mining, extraction, and support activities	21	D	29 i	311	191	D	4,531
Utilities	22	311	25 i	48	98	140	0
Wholesale trade	42	D	245 i	D	0	0	0
Electronic shopping and electronic auctions	454111–12	D	38 i	5	0	0	D
Transportation and warehousing	48–49	692	35 i	75 i	0	0	582
Information	51	77,341	893 i	4,418	5,378	3,528	63,124
Publishing	511	46,157	475 i	2,120 i	1,746	1,342	40,474
Newspaper, periodical, book, and directory publishers	5111	92 i	21 i	20 i	51 i	0	0
Software publishers	5112	46,065	454 i	2,100 i	1,694	1,342	40,474
Telecommunications	517	3,816	67 i	276 i	293	627 i	2,552
Data processing, hosting, and related services	518	10,322	274 i	1,690	2,956	1,314	4,088
Other information	other 51	17,046	77 i	331	383	244	16,010
Finance and insurance	52	4,748	55 i	91	309	350	3,943
Real estate and rental and leasing	53	268	17 i	8	52	192	0
Lessors of nonfinancial intangible assets (except copyrighted works)	533	58	3 i	3	52	0	0
Other real estate and rental and leasing	other 53	210	14 i	5	0	192	0
Professional, scientific, and technical services	54	37,476 i	3,086 i	8,117	6,473	2,364	17,436 i
Architectural, engineering, and related services	5413	3,440	351 i	1,084 i	759	495	751
Computer systems design and related services	5415	12,536 i	1,785 i	3,100 i	2,604 i	1,034	4,012 i
Scientific R&D services	5417	17,329	468 i	3,209	1,967	561	11,123
Biotechnology R&D	541711	4,898	113 i	722	D	0	D

TABLE 3. Worldwide R&D paid for by the company and others and performed by the company, by industry, company size, and worldwide R&D program size: 2014
(Millions of U.S. dollars)

Industry	NAICS codes	R&D program size					
		All companies	Less than \$1 million	\$1 million–\$9.999 million	\$10 million–\$49.999 million	\$50 million–\$99.999 million	\$100 million or more
Physical, engineering, and life sciences (except biotechnology) R&D	541712	11,749	345 i	2,453	1,572	561	6,818
Social sciences and humanities R&D	541720	682	10 i	34	D	0	D
Other professional, scientific, and technical services	other 54	4,172 i	481 i	724	1,143	274	1,549 i
Health care services	621–23	501 i	97 i	127	156	121 i	0
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	D	207 i	D	196	D	D
All companies (number of domestic employees)	–	416,038	9,407 i	27,013	32,840	20,984	325,794
Small companies ^a							
5–499	–	58,967	9,149 i	23,443	18,242	4,792	3,341
5–99	–	30,333 i	7,685 i	15,604	6,694	349 i	0
5–49	–	19,607 i	6,231 i	10,769	2,553 i	54	0
5–9	–	3,390 i	1,588 i	1,802	0	0	0
10–24	–	7,450 i	2,844 i	4,167	440 i	0	0
25–49	–	8,767 i	1,799 i	4,801	2,113 i	54	0
50–99	–	10,726	1,455 i	4,835	4,141	295 i	0
100–249	–	14,984	1,112 i	5,438	6,259	1,738	438
250–499	–	13,650	352 i	2,401	5,289	2,705	2,903
Medium and large companies							
500–999	–	15,526	132 i	1,522	4,596	4,075	5,201
1,000–4,999	–	71,736	74 i	1,669	7,294	8,039	54,660
5,000–9,999	–	51,020	4 i	178	1,462	2,529	46,847
10,000–24,999	–	63,639	44 i	113	796	1,015 i	61,672
25,000 or more	–	155,150	4 i	86	451	535	154,074

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

NOTES: 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. R&D program size classifications are based on R&D performance.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 4. Companies with worldwide, domestic, and foreign R&D paid for by the company and by others and performed by the company, by source of funds, industry, and company size: 2014
(Number of companies)

Industry and company size	NAICS code	Worldwide R&D performance			Domestic R&D performance			Foreign R&D performance		
		Total	Paid for by		Total	Paid for by		Total	Paid for by	
			company	others		company	others		company	others
All industries	21–23, 31–33, 42–81	53,595	50,374	10,049	53,284	50,062	10,005	3,131	2,939	539
Manufacturing industries	31–33	24,853	23,518	5,586	24,846	23,510	5,557	1,464	1,416	284
Food	311	1,436	1,403	251	1,436	1,403	250	42	42	D
Chemicals	325	2,829	2,585	883	2,829	2,585	877	214	200	36
Pharmaceuticals and medicines	3254	1,125	946	547	1,125	946	545	113	103	24
Other chemicals	other 325	1,704	1,639	336	1,704	1,639	332	101	97	12
Plastics and rubber products	326	1,527	1,414	378	1,527	1,414	377	98	98	19
Nonmetallic mineral products	327	527	468	113	527	468	113	12	12	D
Fabricated metal products	332	3,298	3,100	663	3,298	3,100	663	64	64	0
Machinery	333	3,878	3,664	793	3,878	3,664	788	143	129	24
Computer and electronic products	334	3,051	2,888	778	3,048	2,885	769	371	360	47
Electrical equipment, appliances, and components	335	1,481	1,449	357	1,480	1,448	357	173	173	105
Transportation equipment	336	1,592	1,521	306	1,591	1,520	301	105	96	38
Miscellaneous manufacturing	339	2,591	2,478	565	2,591	2,477	563	134	133	9
Other manufacturing	312–316, 321–324, 331, 337	2,646	2,552	498	2,644	2,550	498	110	110	D
Nonmanufacturing industries	21–23, 42–81	28,744	26,856	4,464	28,440	26,552	4,449	1,667	1,523	255
Wholesale trade	42	D	D	D	2,708	2,601	332	D	D	D
Information	51	4,179	4,022	560	4,148	3,991	554	493	490	24
Telecommunications	517	294	280	151	294	280	151	12	12	0
Data processing, hosting, and related services	518	1,267	1,249	121	1,262	1,244	119	194	194	4
Other information	other 51	2,618	2,493	288	2,592	2,468	284	287	284	20
Professional, scientific, and technical services	54	14,388	12,940	3,313	14,120	12,672	3,306	1,105	965	226
Architectural, engineering, and related services	5413	2,349	1,978	673	2,349	1,978	673	117	15	104
Scientific R&D services	5417	1,883	1,510	824	1,882	1,509	822	121	109	34
Biotechnology R&D	541711	527	473	157	527	473	156	40	36	11
Other scientific R&D	other 5417	1,355	1,037	667	1,354	1,036	666	81	73	22
Other professional, scientific, and technical services	other 54	10,157	9,454	1,817	9,891	9,187	1,812	866	840	88
Other nonmanufacturing	21–23, 44–45, 48–49, 52–53, 55–56, 621–24, 71–72, 81	D	D	D	7,464	7,287	256	D	D	D
All companies (number of domestic employees)	–	53,595	50,374	10,049	53,284	50,062	10,005	3,131	2,939	539
Small companies ^a										
5–499	–	51,251	48,107	9,618	50,946	47,801	9,599	2,276	2,102	419
5–99	–	44,992	42,148	8,618	44,689	41,845	8,604	1,689	1,534	374
5–49	–	38,654	36,201	7,232	38,371	35,918	7,223	1,423	1,273	361
5–9	–	13,423	12,530	2,434	13,172	12,279	2,433	606	484	195
10–24	–	15,657	14,648	3,139	15,638	14,629	3,139	602	582	145
25–49	–	9,574	9,023	1,659	9,561	9,010	1,652	215	206	20

TABLE 4. Companies with worldwide, domestic, and foreign R&D paid for by the company and by others and performed by the company, by source of funds, industry, and company size: 2014
(Number of companies)

Industry and company size	NAICS code	Worldwide R&D performance			Domestic R&D performance			Foreign R&D performance		
		Total	Paid for by		Total	Paid for by		Total	Paid for by	
			company	others		company	others		company	others
50–99	–	6,338	5,947	1,386	6,318	5,927	1,381	266	261	13
100–249	–	4,745	4,525	757	4,743	4,523	755	350	339	25
250–499	–	1,514	1,434	244	1,514	1,433	240	237	228	21
Medium and large companies										
500–999	–	916	884	135	915	883	131	222	221	15
1,000–4,999	–	936	902	154	933	899	142	381	371	45
5,000–9,999	–	184	179	49	183	178	43	108	105	22
10,000–24,999	–	197	192	51	197	192	51	79	77	17
25,000 or more	–	111	109	42	110	108	39	65	64	21

D = data withheld to avoid disclosing operations of individual companies.

NAICS = 2012 North American Industry Classification System.

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

NOTES: Statistics are based on companies in the United States that reported to the survey. These statistics do not include an adjustment to the weight to account for unit nonresponse. 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. Changes in data collection and imputation processes have affected the comparability of company count estimates in this table with estimates published for previous years.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 5. Worldwide R&D paid for by the company and performed by the company and others, by industry and company size: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS code	Total	Performed by the company	Performed by others
All industries	21–23, 31–33, 42–81	399,321	351,926	47,395
Manufacturing industries	31–33	286,694	244,474	42,220
Food	311	6,880	6,309	570 i
Beverages and tobacco products	312	1,655	1,322	333
Textiles, apparel, and leather products	313–16	736	719	17
Wood products	321	371 i	356 i	15 i
Paper	322	898	868	30
Printing and related support activities	323	243	236	7
Petroleum and coal products	324	372	293	79
Chemicals	325	101,004	69,462	31,542
Basic chemicals	3251	3,586	3,325	261
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	1,939	1,825	114
Pesticides, fertilizers, and other agricultural chemicals	3253	1,762 i	1,610 i	152 i
Pharmaceuticals and medicines	3254	88,135	57,606	30,529
Soaps, cleaning compounds, and toilet preparations	3256	3,927	3,483	444
Paints, coatings, adhesives, and other chemicals	3255, 3259	1,656	1,614 i	41
Plastics and rubber products	326	4,537	4,297	240
Nonmetallic mineral products	327	1,758	1,574	184
Primary metals	331	772	709	63
Fabricated metal products	332	2,256	2,222	33
Machinery	333	15,024	14,243	781
Agricultural implements	33311	2,429	D	D
Semiconductor machinery	333295	3,326	3,304	22
Engines, turbines, and power transmission equipment	3336	D	2,820	D
Other machinery	other 333	D	D	D
Computer and electronic products	334	87,622	85,365	2,258
Communications equipment	3342	21,261	20,496	765
Semiconductors and other electronic components	3344	41,288	40,530	758
Navigational, measuring, electromedical, and control instruments	3345	14,104	13,512	592
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	4,938	4,747	192
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	3,758	3,531	227
Other measuring and controlling devices	other 3345	5,407	5,234	173
Other computer and electronic products	other 334	10,970	10,827	143
Electrical equipment, appliances, and components	335	5,860	5,552	308
Transportation equipment	336	40,984	36,117	4,867
Automobiles, bodies, trailers, and parts	3361–63	26,193	23,001	3,192
Aerospace products and parts	3364	13,586	11,936	1,650
Aircraft, aircraft engines, and aircraft parts	336411–13	D	D	D
Guided missiles, space vehicles, and related parts	336414–15, 336419	D	D	D
Military armored vehicles, tanks, and tank components	336992	D	D	1
Other transportation	other 336	D	D	24
Furniture and related products	337	441	414	27
Miscellaneous manufacturing	339	15,281	14,415	866
Medical equipment and supplies	3391	12,322	11,583	739
Other miscellaneous manufacturing	3399	2,959	2,832	127
Nonmanufacturing industries	21–23, 42–81	112,626	107,452	5,175
Mining, extraction, and support activities	21	D	D	D
Utilities	22	491	259	232
Wholesale trade	42	438	D	D
Electronic shopping and electronic auctions	454111–12	D	D	D
Transportation and warehousing	48–49	709	688	21 i
Information	51	77,949	75,811	2,139
Publishing	511	46,291	44,840	1,451
Newspaper, periodical, book, and directory publishers	5111	102	92 i	10 i

TABLE 5. Worldwide R&D paid for by the company and performed by the company and others, by industry and company size: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS code	Total	Performed by the company	Performed by others
Software publishers	5112	46,189	44,748	1,441
Telecommunications	517	4,045	3,771	274 i
Data processing, hosting, and related services	518	10,455	10,215	240
Other information	other 51	17,159	16,985	174
Finance and insurance	52	4,844	4,715	128
Real estate and rental and leasing	53	276	268	8 i
Lessors of nonfinancial intangible assets (except copyrighted works)	533	58	58	*
Other real estate and rental and leasing	other 53	218	210	8 i
Professional, scientific, and technical services	54	D	18,048 i	D
Architectural, engineering, and related services	5413	1,598	1,549 i	50 i
Computer systems design and related services	5415	10,277	10,117 i	160 i
Scientific R&D services	5417	D	2,746	D
Biotechnology R&D	541711	D	727	D
Physical, engineering, and life sciences (except biotechnology) R&D	541712	2,384	1,988	396
Social sciences and humanities R&D	541720	51	30	21
Other professional, scientific, and technical services	other 54	D	3,637 i	D
Health care services	621–23	474	439 i	35 i
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	D	D	D
All companies (number of domestic employees)	–	399,321	351,926	47,395
Small companies ^a				
5–499	–	53,455	46,788	6,668
5–99	–	27,069	22,876 i	4,192
5–49	–	17,392	14,825 i	2,568
5–9	–	3,072	2,514 i	558 i
10–24	–	6,723	5,770 i	953
25–49	–	7,597	6,540 i	1,056
50–99	–	9,677	8,052	1,625
100–249	–	13,909	12,385	1,524
250–499	–	12,477	11,526	951
Medium and large companies				
500–999	–	15,310	13,934	1,376
1,000–4,999	–	68,936	60,665	8,271
5,000–9,999	–	43,496	39,991	3,504
10,000–24,999	–	69,784	55,818	13,966
25,000 or more	–	148,340	134,730	13,610

* = amount < \$500,000; 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 Upper bound is based on the U.S. Small Business Administration's definition of a small business; the Business R&D and Innovation Survey does not include companies with fewer than five domestic employees.

NOTES: 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.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 6. Worldwide R&D paid for by the company and performed by the company and others, by business activity:
2014

(Millions of U.S. dollars)

Business activity ^a	Business code ^b	Amount
All business activities	21100–81000	399,321
Oil and gas extraction	21100	1,308
Mining	21200	56
Support activities for mining, including oil and gas	21300	2,065
Utilities	22100	527
Construction	23000	297
Food manufacturing	31100	7,254
Beverage manufacturing	31210	753
Tobacco manufacturing	31220	672
Textile, apparel, and leather products manufacturing	31990	780
Wood products manufacturing	32100	362 i
Paper manufacturing	32200	1,615
Printing and related support activities	32300	390
Petroleum refineries	32401	617
Asphalt paving, roofing, and saturated materials manufacturing	32402	78
Other petroleum and coal products manufacturing, including motor oil, hydraulic fluid, and charcoal	32403	460 i
Basic chemicals manufacturing	32510	4,036
Resin, synthetic rubber, and artificial synthetic fibers and filaments manufacturing	32520	1,771
Pesticide, fertilizer, and other agricultural chemical manufacturing	32530	2,478 i
Pharmaceutical, medicinal, botanical, and biological products (except diagnostic) manufacturing	32541	68,838
In vitro diagnostic substances manufacturing	32542	1,251
Biotechnology-based pharmaceutical and biological products (except diagnostics)	32543	14,872
Soap, cleaning compound, and toilet preparations manufacturing	32591	3,493
Paint, adhesive, and other chemical manufacturing	32592	2,123
Plastics and rubber products manufacturing	32600	3,540
Clay and glass products manufacturing	32710	1,130
Cement, concrete, lime, gypsum, and other nonmetallic mineral products manufacturing	32790	800
Primary metal manufacturing	33100	853
Fabricated metal products manufacturing	33200	2,564
Agricultural machinery and equipment manufacturing	33311	1,990
Construction machinery manufacturing	33312	1,725
Mining, oil, and gas field machinery and equipment manufacturing	33319	1,395
Semiconductor machinery manufacturing	33321	3,363
Industrial machinery manufacturing (except semiconductor machinery)	33322	1,244
Photographic and photocopying equipment manufacturing	33331	25
Commercial, service industry, temperature control, and air-flow control machinery manufacturing	33332	2,077
Digital cameras manufacturing	33333	33
Engine, turbine, and power transmission equipment manufacturing	33360	3,332
Metalworking and other general purpose machinery manufacturing	33390	2,640
Computers and peripheral equipment manufacturing and magnetic and optical media ^c	33412	13,506
Telephone apparatus manufacturing, including routers, modems, and gateways	33421	10,526
Radio, television, and wireless communication equipment manufacturing	33422	5,844 i
Other communication equipment manufacturing, (except radio, television, and wireless communication equipment)	33429	1,782

TABLE 6. Worldwide R&D paid for by the company and performed by the company and others, by business activity:
2014

(Millions of U.S. dollars)

Business activity ^a	Business code ^b	Amount
Audio and video equipment manufacturing	33430	1,281
Semiconductor and other electronic components manufacturing	33440	41,797
Electromedical, electrotherapeutic, and irradiation apparatus manufacturing	33451	4,256
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments manufacturing	33452	2,423
Measuring and control instruments manufacturing (not listed elsewhere)	33459	5,550
Electrical equipment, appliances, and components manufacturing	33500	5,531
Motor vehicles manufacturing	33610	18,984
Motor vehicle body and trailer manufacturing	33620	104
Motor vehicle parts manufacturing	33630	7,055
Aircraft manufacturing	33641	4,204
Aircraft engine and engine parts manufacturing	33642	2,059 i
Other aircraft parts and auxiliary equipment manufacturing	33643	2,966
Guided missiles, space vehicles, and related parts manufacturing	33644	875
Railroad rolling stock manufacturing	33651	363
Ship and boat building	33660	489
Motorcycle, bicycle, and parts manufacturing	33691	283
Military armored vehicle, tank, and tank components manufacturing	33692	158
All other transportation equipment manufacturing	33699	355
Furniture and related products manufacturing	33700	451
Medical equipment and supplies manufacturing	33910	14,318
Miscellaneous manufacturing not listed elsewhere (games, office supplies, slot machines, etc.)	33990	2,849
Merchant wholesalers, durable goods	42300	513
Merchant wholesalers, nondurable goods	42400	217
Wholesale electronic markets and agents and brokers (business to business)	42500	D
Retail trade (except electronic shopping and electronic auctions)	44000	70
Electronic shopping and electronic auctions	45411	D
Transportation	48000	412
Couriers, messengers, and express delivery services	49200	348
Warehousing and storage	49300	3
Newspaper, periodical, book, and directory publishers (except Internet)	51110	103
Software publishers (except Internet)	51120	40,318
Motion picture and sound recording (except Internet)	51200	83 i
Broadcasting (except Internet)	51500	206
Wired telecommunications carriers	51710	1,154
Wireless telecommunications carriers (except satellite)	51720	2,498
Satellite telecommunications	51740	134
Other telecommunications (not listed elsewhere)	51790	330
Data processing, hosting, and related services	51800	5,394
Cloud computing applications and Internet-based software services	51801	6,703
Other information services, including Internet publishing, broadcasting, and Web search portals	51910	17,469
Finance: banking and credit intermediation	52200	3,553
Securities, commodity contracts, and other financial investments and related activities, including funds and trusts	52310	1,147
Insurance carriers and related activities	52400	1,069
Real estate	53100	199
Rental and leasing services	53200	80

TABLE 6. Worldwide R&D paid for by the company and performed by the company and others, by business activity:
2014

(Millions of U.S. dollars)

Business activity ^a	Business code ^b	Amount
Lessors of nonfinancial intangible assets, including patent licensing	53300	97
Legal, accounting, tax preparation, bookkeeping, and payroll services	54111	1,128
Architectural, engineering, and related services	54130	1,683
Specialized design services	54140	42
Computer systems design and related services	54150	13,249
Management, scientific, and technical consulting services	54160	1,681
R&D services in social sciences and humanities	54172	47
R&D services in biotechnology	54173	1,345
R&D services in physical, engineering, and life sciences (except biotechnology)	54174	2,542
Advertising and related services	54180	424
Professional, scientific, and technical services (not listed elsewhere)	54190	808
Management of companies and enterprises	55100	43
Administrative and support services	56100	459
Waste management and remediation services	56200	D
Offices of physicians	62110	39
Medical and diagnostic laboratories	62150	410
Other ambulatory health care services (ambulance, dental, home health care)	62199	37
Hospitals and nursing care facilities	62200	2
Social assistance services	62400	17
Arts, entertainment, and recreation	71000	103 i
Accommodation and food services	72000	D
Other services (not listed elsewhere)	81000	549
Undistributed	–	69

D = relative standard error not calculated when estimate is suppressed for confidentiality; i = > 50% of the estimate is a combination of imputation and reweighting to account for nonresponse.

NAICS = 2012 North American Industry Classification System.

^a Data 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 NAICS industry definitions.

^c Estimates for this business code may not be comparable to those from prior years due to the introduction of a related business code for survey year 2014: 33333, Digital cameras manufacturing.

NOTES: Detail may not add to total because of rounding. Statistics are representative of companies located in the United States that performed or funded R&D. For companies that did not report business codes, the classification used for sampling was assigned.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 7. Worldwide R&D paid for by others and performed by the company and others, by industry and company size: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS code	Total	Performed by the company	Performed by others
All industries	21–23, 31–33, 42–81	74,224	64,113	10,111
Manufacturing industries	31–33	49,266	42,003	7,263
Food	311	269	222	47
Beverages and tobacco products	312	102	101	1
Textiles, apparel, and leather products	313–16	15	15 i	* i
Wood products	321	13 i	12 i	1 i
Paper	322	12	12	0
Printing and related support activities	323	3	2 i	1 i
Petroleum and coal products	324	6	5	2 i
Chemicals	325	14,210	10,006	4,203
Basic chemicals	3251	317	309 i	8
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	20	17	2
Pesticides, fertilizers, and other agricultural chemicals	3253	480	476	4 i
Pharmaceuticals and medicines	3254	13,310	9,132	4,179
Soaps, cleaning compounds, and toilet preparations	3256	18	16 i	2 i
Paints, coatings, adhesives, and other chemicals	3255, 3259	64	56	8
Plastics and rubber products	326	165	160	4
Nonmetallic mineral products	327	28	26	2
Primary metals	331	62	62	1 i
Fabricated metal products	332	136	130 i	5 i
Machinery	333	809	694	115
Agricultural implements	33311	51	40	11
Semiconductor machinery	333295	134	130	4
Engines, turbines, and power transmission equipment	3336	D	63	D
Other machinery	other 333	D	461 i	D
Computer and electronic products	334	10,115	9,545	570
Communications equipment	3342	1,582	1,548 i	34 i
Semiconductors and other electronic components	3344	2,372	2,193	179
Navigational, measuring, electromedical, and control instruments	3345	5,857	5,518	339
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	247	236	12
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	5,260	4,955	305
Other measuring and controlling devices	other 3345	350	327	23 i
Other computer and electronic products	other 334	304 i	287 i	17
Electrical equipment, appliances, and components	335	216	197 i	19 i
Transportation equipment	336	22,508 i	20,242 i	2,266 i
Automobiles, bodies, trailers, and parts	3361–63	3,196	D	D
Aerospace products and parts	3364	18,172 i	D	D
Aircraft, aircraft engines, and aircraft parts	336411–13	D	D	D
Guided missiles, space vehicles, and related parts	336414–15, 336419	D	D	D
Military armored vehicles, tanks, and tank components	336992	8	8	* i
Other transportation	other 336	1,132 i	1,131 i	1 i
Furniture and related products	337	5	4 i	* i
Miscellaneous	339	594	568	26
Medical equipment and supplies	3391	525	508	17
Other miscellaneous manufacturing	3399	69	60 i	9 i
Nonmanufacturing industries	21–23, 42–81	24,959	22,110	2,849
Mining, extraction, and support activities	21	D	D	D
Utilities	22	84	52	32
Wholesale trade	42	D	D	D
Electronic shopping and electronic auctions	454111–12	0	0	0
Transportation and warehousing	48–49	4	4	*
Information	51	1,599	1,531	69

TABLE 7. Worldwide R&D paid for by others and performed by the company and others, by industry and company size: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS code	Total	Performed by the company	Performed by others
Publishing	511	1,379	1,317	62
Newspaper, periodical, book, and directory publishers	5111	0	0	0
Software publishers	5112	1,379	1,317	62
Telecommunications	517	45	45	0
Data processing, hosting, and related services	518	112	108	4
Other information	other 51	64	61	3
Finance and insurance	52	32	32	0
Real estate and rental and leasing	53	*	* i	0
Lessors of nonfinancial intangible assets (except copyrighted works)	533	0	0	0
Other real estate and rental and leasing	other 53	*	* i	0
Professional, scientific, and technical services	54	D	19,428	D
Architectural, engineering, and related services	5413	2,049	1,891	158
Computer systems design and related services	5415	2,475	2,419 i	56 i
Scientific R&D services	5417	D	14,583	D
Biotechnology R&D	541711	D	4,170	D
Physical, engineering, and life sciences (except biotechnology) R&D	541712	11,799	9,760	2,039
Social sciences and humanities R&D	541720	782	652	130
Other professional, scientific, and technical services	other 54	D	535	D
Health care services	621–23	69	62 i	7 i
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	85	70	15
All companies (number of domestic employees)	–	74,224	64,113	10,111
Small companies ^a				
5–499	–	14,233	12,179 i	2,054
5–99	–	8,882	7,456 i	1,425 i
5–49	–	5,588	4,783 i	805
5–9	–	1,017	875 i	142 i
10–24	–	1,938	1,680 i	258
25–49	–	2,633	2,227 i	406
50–99	–	3,294	2,674 i	620 i
100–249	–	2,982	2,599	383
250–499	–	2,369	2,123	246
Medium and large companies				
500–999	–	1,797	1,592	206
1,000–4,999	–	13,454	11,071	2,383
5,000–9,999	–	13,011	11,029	1,983
10,000–24,999	–	8,770	7,822	948
25,000 or more	–	22,958 i	20,421 i	2,538 i

* = amount < \$500,000; 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 Upper bound is based on the U.S. Small Business Administration's definition of a small business; the Business R&D and Innovation Survey does not include companies with fewer than five domestic employees.

NOTES: 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.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 8. Worldwide, domestic, and foreign sales for companies located in the United States that performed or funded R&D, by industry and company size: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS code	Sales					
		R&D performers or funders ^a			Domestic R&D performers ^b		
		Worldwide	Domestic	Foreign	Worldwide	Domestic	Foreign
All industries	21–23, 31–33, 42–81	13,367,485	9,754,470	3,613,015	13,062,476	9,507,759	3,554,717
Manufacturing industries	31–33	8,232,757	5,743,154	2,489,603	8,137,759	5,685,599	2,452,160
Food	311	886,317	640,233	246,084	886,317	640,233	246,084
Beverages and tobacco products	312	D	142,384	D	213,860	142,384	71,476
Textiles, apparel, and leather products	313–16	70,389	55,591	14,797	70,389	55,591	14,797
Wood products	321	53,914 i	48,116 i	5,798 i	53,914 i	48,116 i	5,798 i
Paper	322	105,853	77,024	28,830	105,853	77,024	28,830
Printing and related support activities	323	29,193	25,979	3,215	29,193	25,979	3,215
Petroleum and coal products	324	273,618	215,017	58,601	273,618	215,017	58,601
Chemicals	325	1,853,188	1,355,762	497,426	1,850,037	1,352,615	497,422
Basic chemicals	3251	597,379	509,495	87,883	596,932	509,048	87,883
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	225,383	166,641	58,742	225,383	166,641	58,742
Pesticides, fertilizers, and other agricultural chemicals	3253	58,443	51,272	7,170	58,443	51,272	7,170
Pharmaceuticals and medicines	3254	619,070	423,380	195,690	616,453	420,763	195,690
Soaps, cleaning compounds, and toilet preparations	3256	257,289	146,635	110,654	257,202	146,552	110,650
Paints, coatings, adhesives, and other chemicals	3255, 3259	95,624	58,338	37,286	95,624	58,338	37,286
Plastics and rubber products	326	250,319	162,835	87,484	250,319	162,835	87,484
Nonmetallic mineral products	327	62,212	43,769	18,443	57,942	42,027	15,915
Primary metals	331	130,706	101,633	29,073	130,706	101,633	29,073
Fabricated metal products	332	202,066	150,964	51,102	202,066	150,964	51,102
Machinery	333	D	D	D	520,551	335,978	184,573
Agricultural implements	33311	77,962	47,264	30,698	77,962	47,264	30,698
Semiconductor machinery	333295	26,529	10,999	15,530	26,529	10,999	15,530
Engines, turbines, and power transmission equipment	3336	D	D	D	86,186	50,822	35,364
Other machinery	other 333	329,874	226,893	102,982	329,874	226,893	102,982
Computer and electronic products	334	1,275,370	727,065	548,305	1,273,605	726,384	547,221
Communications equipment	3342	345,854	181,973	163,881	345,813	181,968	163,845
Semiconductors and other electronic components	3344	384,017	208,945	175,072	382,293	208,269	174,024
Navigational, measuring, electromedical, and control instruments	3345	276,731	180,473	96,258	276,731	180,473	96,258
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	56,667	40,364	16,303	56,667	40,364	16,303
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	105,032	76,756	28,276	105,032	76,756	28,276
Other measuring and controlling devices	other 3345	115,033	63,353	51,679	115,033	63,353	51,679
Other computer and electronic products	other 334	268,768	155,674	113,094	268,768	155,674	113,094
Electrical equipment, appliances, and components	335	243,448	155,531	87,917	243,304	155,399	87,905
Transportation equipment	336	1,546,570	1,143,014	403,556	1,492,831	1,091,348	401,483
Automobiles, bodies, trailers, and parts	3361–63	1,013,627	711,564	302,063	963,070	661,050	302,019

TABLE 8. Worldwide, domestic, and foreign sales for companies located in the United States that performed or funded R&D, by industry and company size: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS code	Sales					
		R&D performers or funders ^a			Domestic R&D performers ^b		
		Worldwide	Domestic	Foreign	Worldwide	Domestic	Foreign
Aerospace products and parts	3364	459,401	371,259	88,142	459,401	371,259	88,142
Aircraft, aircraft engines, and aircraft parts	336411–13	436,775	352,434	84,341	436,775	352,434	84,341
Guided missiles, space vehicles, and related parts	336414–15, 336419	22,626	18,824	3,802	22,626	18,824	3,802
Military armored vehicles, tanks, and tank components	336992	D	721	D	D	721	D
Other transportation	other 336	D	59,471	D	D	58,318	D
Furniture and related products	337	D	D	D	41,591	36,718	4,873
Miscellaneous manufacturing	339	441,661	325,353	116,308	441,661	325,353	116,308
Medical equipment and supplies	3391	305,436	236,055	69,382	305,436	236,055	69,382
Other miscellaneous manufacturing	3399	136,224	89,298	46,926	136,224	89,298	46,926
Nonmanufacturing industries	21–23, 42–81	5,134,728	4,011,316	1,123,412	4,924,717	3,822,160	1,102,557
Mining, extraction, and support activities	21	D	465,765	D	863,833	427,181	436,651
Utilities	22	324,886	319,569	5,317	211,012	207,469	3,543
Wholesale trade	42	211,343	187,921	23,422	201,247	178,415	22,832
Electronic shopping and electronic auctions	454111–12	D	63,087 i	D	D	63,087 i	D
Transportation and warehousing	48–49	187,109	153,648	33,461	183,581	151,794	31,787
Information	51	1,403,562	1,103,940	299,623	1,390,621	1,093,842	296,779
Publishing	511	586,558	D	D	585,232	375,565	209,667
Newspaper, periodical, book, and directory publishers	5111	6,902	5,083	1,819 i	6,902	5,083	1,819 i
Software publishers	5112	579,656	D	D	578,330	370,482	207,848
Telecommunications	517	508,720	505,429	3,291	508,720	505,429	3,291
Data processing, hosting, and related services	518	D	100,313	D	122,736	100,259	22,477
Other information	other 51	D	D	D	173,932	112,589	61,344
Finance and insurance	52	685,465	609,972	75,492	684,640	609,147	75,492
Real estate and rental and leasing	53	2,568	2,517	51	2,568	2,517	51
Lessors of nonfinancial intangible assets (except copyrighted works)	533	321	317	4	321	317	4
Other real estate and rental and leasing	other 53	2,247	2,200	47	2,247	2,200	47
Professional, scientific, and technical services	54	570,271	435,030	135,241	561,078	431,146	129,932
Architectural, engineering, and related services	5413	173,779	105,834	67,946	173,779	105,834	67,946
Computer systems design and related services	5415	146,239	120,189	26,051	142,109	117,101	25,008
Scientific R&D services	5417	65,467	56,382	9,085	65,280	56,195	9,085
Biotechnology R&D	541711	18,175	16,133	2,042	18,175	16,133	2,042
Physical, engineering, and life sciences (except biotechnology) R&D	541712	46,321	39,292	7,029	46,139	39,110	7,029
Social sciences and humanities R&D	541720	971	957	13 i	966	952	13 i
Other professional, scientific, and technical services	other 54	184,786	152,626	32,160	179,909	152,016	27,893
Health care services	621–23	54,640	54,338	301	54,431	54,129	301
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	D	615,529	D	D	603,432	D

TABLE 8. Worldwide, domestic, and foreign sales for companies located in the United States that performed or funded R&D, by industry and company size: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS code	Sales					
		R&D performers or funders ^a			Domestic R&D performers ^b		
		Worldwide	Domestic	Foreign	Worldwide	Domestic	Foreign
All companies (number of domestic employees)	–	13,367,485	9,754,470	3,613,015	13,062,476	9,507,759	3,554,717
Small companies ^c							
5–499	–	1,238,401	1,097,545	140,856	1,185,742	1,082,588	103,154
5–99	–	D	445,616	D	462,031	440,096	21,935
5–49	–	270,547	256,194	14,353	263,615	253,938	9,677
5–9	–	39,561	32,734	6,827	34,155	31,595	2,560
10–24	–	83,584	81,680	1,904	83,412	81,627	1,785
25–49	–	147,402	141,781	5,621	146,047	140,716	5,332
50–99	–	D	189,422	D	198,416	186,158	12,258
100–249	–	D	362,909	D	385,777	362,528	23,249
250–499	–	347,137	289,020	58,117	337,934	279,964	57,970
Medium and large companies							
500–999	–	D	378,580	D	456,993	376,058	80,935
1,000–4,999	–	1,745,237	1,274,714	470,523	1,699,057	1,235,840	463,217
5,000–9,999	–	1,282,194	895,882	386,313	1,241,100	863,259	377,841
10,000–24,999	–	D	2,047,688	D	2,587,957	1,929,255	658,702
25,000 or more	–	5,932,896	4,060,062	1,872,834	5,891,627	4,020,758	1,870,869

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 are representative of companies located in the United States that performed or funded R&D and are comparable to previously published sales statistics from the Business R&D and Innovation Survey.

^b Statistics are representative of companies located in the United States that performed R&D.

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

NOTES: Domestic sales are the amount of sales that originated from domestic operations. Foreign sales are the amount of sales that originated from foreign operations. 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.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 9. Worldwide, domestic, and foreign sales for companies located in the United States that performed or funded R&D, by business activity: 2014
(Millions of U.S. dollars)

Business activity ^a	Business code ^b	Sales		
		Worldwide	Domestic	Foreign
All business activities	21100–81000	13,367,485	9,754,470	3,613,015
Oil and gas extraction	21100	247,194	135,668	111,527
Mining	21200	D	22,961	D
Support activities for mining, including oil and gas	21300	133,556	100,872	32,684
Utilities	22100	334,148	325,919	8,229
Construction	23000	91,502	66,830	24,672
Food manufacturing	31100	842,747	611,375	231,372
Beverage manufacturing	31210	166,875	109,728	57,147
Tobacco manufacturing	31220	D	36,177	D
Textile, apparel, and leather products manufacturing	31990	66,546	51,532	15,014
Wood products manufacturing	32100	51,908	44,736	7,172
Paper manufacturing	32200	148,802	106,183	42,619
Printing and related support activities	32300	34,198	29,149	5,049
Petroleum refineries	32401	787,825	521,504	266,321
Asphalt paving, roofing, and saturated materials manufacturing	32402	11,086	8,873	2,213
Other petroleum and coal products manufacturing, including motor oil, hydraulic fluid, and charcoal	32403	22,350	12,854	9,496
Basic chemicals manufacturing	32510	265,004	190,065	74,938
Resin, synthetic rubber, and artificial synthetic fibers and filaments manufacturing	32520	108,869	72,448	36,421
Pesticide, fertilizer, and other agricultural chemical manufacturing	32530	68,809	55,191	13,618
Pharmaceutical, medicinal, botanical, and biological products (except diagnostic) manufacturing	32541	572,234	416,415	155,819
In vitro diagnostic substances manufacturing	32542	25,420	14,044	11,376
Biotechnology-based pharmaceutical and biological products (except diagnostics)	32543	56,469	48,447	8,022
Soap, cleaning compound, and toilet preparations manufacturing	32591	197,090	101,484	95,606
Paint, adhesive, and other chemical manufacturing	32592	124,752	71,310	53,442
Plastics and rubber products manufacturing	32600	234,347	159,627	74,720
Clay and glass products manufacturing	32710	34,867	21,580	13,287
Cement, concrete, lime, gypsum, and other nonmetallic mineral products manufacturing	32790	35,322	25,941	9,381
Primary metal manufacturing	33100	126,883	102,773	24,110
Fabricated metal products manufacturing	33200	233,548	167,565	65,983
Agricultural machinery and equipment manufacturing	33311	63,420	36,659	26,760
Construction machinery manufacturing	33312	64,246	40,201	24,045
Mining, oil, and gas field machinery and equipment manufacturing	33319	72,384	39,519	32,865
Semiconductor machinery manufacturing	33321	27,334	11,068	16,266
Industrial machinery manufacturing (except semiconductor machinery)	33322	53,940	37,388	16,552
Photographic and photocopying equipment manufacturing	33331	9,176	7,258	1,919
Commercial, service industry, temperature control, and air-flow control machinery manufacturing	33332	111,813	71,725	40,088
Digital cameras manufacturing	33333	14	14	0
Engine, turbine, and power transmission equipment manufacturing	33360	D	45,129	D
Metalworking and other general purpose machinery manufacturing	33390	149,833	98,386	51,447
Computers and peripheral equipment manufacturing and magnetic and optical media ^c	33412	297,051	165,511	131,540
Telephone apparatus manufacturing, including routers, modems, and gateways	33421	72,421	40,004	32,417
Radio, television, and wireless communication equipment manufacturing	33422	168,789 i	94,343 i	74,446 i

TABLE 9. Worldwide, domestic, and foreign sales for companies located in the United States that performed or funded R&D, by business activity: 2014
(Millions of U.S. dollars)

Business activity ^a	Business code ^b	Sales		
		Worldwide	Domestic	Foreign
Other communication equipment manufacturing (except radio, television, and wireless communication equipment)	33429	14,546	12,800	1,747
Audio and video equipment manufacturing	33430	18,326	13,155	5,171
Semiconductor and other electronic components manufacturing	33440	367,272	163,596	203,677
Electromedical, electrotherapeutic, and irradiation apparatus manufacturing	33451	42,868	28,526	14,342 i
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments manufacturing	33452	67,096	55,085	12,010
Measuring and control instruments manufacturing (not listed elsewhere)	33459	103,084	55,741	47,343
Electrical equipment, appliances, and components manufacturing	33500	229,800	152,540	77,261
Motor vehicles manufacturing	33610	539,141	385,648	153,492
Motor vehicle body and trailer manufacturing	33620	32,719	32,146	573
Motor vehicle parts manufacturing	33630	377,060	242,518	134,542
Aircraft manufacturing	33641	139,328	131,907	7,420
Aircraft engine and engine parts manufacturing	33642	47,951	40,889	7,062 i
Other aircraft parts and auxiliary equipment manufacturing	33643	84,623	68,251	16,372
Guided missiles, space vehicles, and related parts manufacturing	33644	30,198	27,833	2,366
Railroad rolling stock manufacturing	33651	19,682	16,118	3,564 i
Ship and boat building	33660	39,048	32,077 i	6,971 i
Motorcycle, bicycle, and parts manufacturing	33691	9,143	7,778	1,365
Military armored vehicle, tank, and tank components manufacturing	33692	7,493	4,885	2,608
All other transportation equipment manufacturing	33699	11,879	D	D
Furniture and related products manufacturing	33700	45,123	39,276	5,846
Medical equipment and supplies manufacturing	33910	234,181	155,880	78,301
Miscellaneous manufacturing not listed elsewhere (games, office supplies, slot machines, etc.)	33990	132,880	88,980	43,900
Merchant wholesalers, durable goods	42300	180,968	162,411	18,557
Merchant wholesalers, nondurable goods	42400	700,636	460,431	240,204
Wholesale electronic markets and agents and brokers (business to business)	42500	55,220	54,947	273
Retail trade (except electronic shopping and electronic auctions)	44000	444,690	402,347	42,343
Electronic shopping and electronic auctions	45411	D	43,787 i	D
Transportation	48000	115,753	110,063	5,690
Couriers, messengers, and express delivery services	49200	170,934	123,456	47,478
Warehousing and storage	49300	2,586	1,972	615
Newspaper, periodical, book, and directory publishers (except Internet)	51110	10,520	8,480	2,040
Software publishers (except Internet)	51120	272,941	160,163	112,778
Motion picture and sound recording (except Internet)	51200	D	D	D
Broadcasting (except Internet)	51500	D	59,598	D
Wired telecommunications carriers	51710	229,791	226,939	2,852
Wireless telecommunications carriers (except satellite)	51720	243,545	243,500	45
Satellite telecommunications	51740	3,581	3,518	63
Other telecommunications (not listed elsewhere)	51790	6,507	5,973	534
Data processing, hosting, and related services	51800	82,955	68,510	14,445
Cloud computing applications and Internet-based software services	51801	D	26,460	D
Other information services, including Internet publishing, broadcasting, and Web search portals	51910	102,819	57,965	44,855 i
Finance: banking and credit intermediation	52200	364,173	317,095	47,078
Securities, commodity contracts, and other financial investments and related activities, including funds and trusts	52310	73,979	54,301	19,678
Insurance carriers and related activities	52400	380,105	347,700	32,405 i

TABLE 9. Worldwide, domestic, and foreign sales for companies located in the United States that performed or funded R&D, by business activity: 2014 (Millions of U.S. dollars)

Business activity ^a	Business code ^b	Sales		
		Worldwide	Domestic	Foreign
Real estate	53100	D	10,123	D
Rental and leasing services	53200	21,955	15,314	6,642
Lessors of nonfinancial intangible assets, including patent licensing	53300	2,125	1,989	137
Legal, accounting, tax preparation, bookkeeping, and payroll services	54111	22,316	18,500 i	3,816 i
Architectural, engineering, and related services	54130	134,606	85,598	49,008
Specialized design services	54140	2,165	1,487	678
Computer systems design and related services	54150	270,896	167,272	103,624
Management, scientific, and technical consulting services	54160	93,064	84,818	8,245
R&D services in social sciences and humanities	54172	992	969	22
R&D services in biotechnology	54173	17,705	16,034	1,671
R&D services in physical, engineering, and life sciences (except biotechnology)	54174	32,722	27,407	5,314
Advertising and related services	54180	D	34,380	D
Professional, scientific, and technical services (not listed elsewhere)	54190	32,733	24,730	8,003
Management of companies and enterprises	55100	9,141	8,458	683
Administrative and support services	56100	243,632	214,328	29,304
Waste management and remediation services	56200	4,766	4,152	614
Offices of physicians	62110	19,041	19,041	0
Medical and diagnostic laboratories	62150	5,919	5,024	895
Other ambulatory health care services (ambulance, dental, home health care)	62199	5,274	5,274	0
Hospitals and nursing care facilities	62200	26,866	26,866	0
Social assistance services	62400	1,338	1,336	2
Arts, entertainment, and recreation	71000	D	12,903	D
Accommodation and food services	72000	46,228	31,664	14,564
Other services (not listed elsewhere)	81000	78,366	60,946	17,421
Less: intersegment eliminations	–	328,436	159,838	168,598
Undistributed	–	4,602	1,945	2,657

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 Data 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 NAICS industry definitions.

^c Estimates for this business code may not be comparable to those from prior years due to the introduction of a related business code for survey year 2014: 33333, Digital cameras manufacturing.

NOTES: Domestic sales are the amount of sales that originated from domestic operations. Foreign sales are the amount of sales that originated from foreign operations. Detail may not add to total because of rounding. Statistics are representative of companies located in the United States that performed or funded R&D. For companies that did not report business codes, the classification used for sampling was assigned.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 10. Domestic R&D paid for by the company and others and performed by the company, by industry and company size: 2014

(Millions of U.S. dollars)

Industry	NAICS codes	Company size (domestic employees)											
		All companies	5–9 ^a	10–24	25–49	50–99	100–249	250–499	500–999	1,000–4,999	5,000–9,999	10,000–24,999	25,000 or more
All industries	21–23, 31–33, 42–81	340,728	3,295 i	7,177 i	8,428 i	10,178 i	13,492	12,203	13,262	57,551	38,202	54,445	122,495
Manufacturing industries	31–33	232,815	1,274 i	2,896 i	3,133	6,476 i	7,429	6,954	9,399	41,192	24,761	47,571	81,731
Food	311	5,292 i	494	14 i	67 i	49 i	251 i	149	137	576	404	1,254	1,896 i
Beverages and tobacco products	312	920	4 i	1 i	D	1 i	D	D	11	45	D	34	545
Textiles, apparel, and leather products	313–16	631	12 i	17 i	16 i	26 i	59 i	40	27	170	238	25	0
Wood products	321	362 i	1 i	2 i	2 i	35 i	7 i	15 i	48 i	97 i	88 i	68 i	0
Paper	322	723	* i	6 i	7 i	14 i	57 i	26	29	58	38	473	15
Printing and related support activities	323	234	* i	6 i	D	9 i	53 i	37	19	85	5	D	0
Petroleum and coal products	324	234	5 i	D	8	38	9	32	49	26	0	D	0
Chemicals	325	66,301	197 i	935	1,274	2,823	2,392	2,106	1,654	13,957	7,932	17,589	15,442
Basic chemicals	3251	2,849	3 i	63 i	97	101 i	276	69	158	D	192	D	364
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	1,152	D	D	41	30 i	54	54	49	310	0	D	317
Pesticides, fertilizers, and other agricultural chemicals	3253	1,790 i	* i	D	D	D	30	D	3 i	D	D	D	0
Pharmaceuticals and medicines	3254	56,612	172	740	1,032	2,565	1,886	1,864	1,400	11,337	6,963	15,140	13,513
Soaps, cleaning compounds, and toilet preparations	3256	2,547	* i	48	48 i	34 i	84 i	D	37	294	502 i	D	1,194
Paints, coatings, adhesives, and other chemicals	3255, 3259	1,350 i	D	D	D	D	63	D	5	566 i	D	D	55
Plastics and rubber products	326	3,574	31 i	91 i	98 i	138 i	187 i	225	251	690	460	1,403	0
Nonmetallic mineral products	327	1,445 i	3 i	47 i	19 i	22 i	35	28	115	96	55	1,026 i	0
Primary metals	331	677	* i	1	D	25 i	43 i	47 i	94	185	D	25	196
Fabricated metal products	332	2,131 i	25 i	118 i	87 i	216 i	355 i	294	207	400	364	64	0
Machinery	333	12,128	D	324 i	347 i	553 i	756	531	695	2,877	1,890	1,371	D
Agricultural implements	33311	1,578	D	19	D	20	33	31	28	230	14	D	D
Semiconductor machinery	333295	2,941	D	D	D	D	D	D	D	D	D	0	0
Engines, turbines, and power transmission equipment	3336	2,347	D	D	D	67	D	D	D	82	D	D	D
Other machinery	other 333	5,261	D	D	D	D	D	D	D	D	D	D	D
Computer and electronic products	334	73,891	246 i	488 i	652 i	1,137	1,861	2,119	4,418	14,104	8,887	11,462	28,517
Communications equipment	3342	18,342	27 i	80 i	98 i	158	377	414 i	1,421	2,419 i	715 i	2,283	10,350
Semiconductors and other electronic components	3344	32,142	72 i	114 i	174	339	719	1,124	1,356	7,756	5,009	6,723	8,756
Navigational, measuring, electromedical, and control instruments	3345	15,963	135 i	227 i	310 i	506 i	565	379	783	2,494	1,338	2,416	6,811
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	3,917	86 i	106 i	74	112	272	160 i	220	1,060	178	925	726

TABLE 10. Domestic R&D paid for by the company and others and performed by the company, by industry and company size: 2014

(Millions of U.S. dollars)

Industry	NAICS codes	Company size (domestic employees)											
		All companies	5–9 ^a	10–24	25–49	50–99	100–249	250–499	500–999	1,000–4,999	5,000–9,999	10,000–24,999	25,000 or more
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	7,861	8 i	30 i	44 i	51 i	70	68	11	655	436	799	5,688
Other measuring and controlling devices	other 3345	4,186	40 i	91 i	191 i	344 i	223	151	552	779	725	692	397
Other computer and electronic products	other 334	7,444	12 i	67 i	70	133	200	202	858	1,436	1,824	40	2,601
Electrical equipment, appliances, and components	335	4,365	16 i	183	155 i	639 i	314	179	333	783	423	991	350
Transportation equipment	336	46,746	30 i	255	104 i	279	336	505	676	3,461	2,961	7,291	30,848
Automobiles, bodies, trailers, and parts	3361–63	18,404	12 i	5 i	39	148	220 i	362	503	2,687	1,506	2,504	10,419
Aerospace products and parts	3364	26,181 i	D	245	D	61	69	41	D	615	D	4,776	19,038 i
Aircraft, aircraft engines, and aircraft parts	336411–13	24,892 i	D	245	D	D	66	41	D	D	D	D	19,038 i
Guided missiles, space vehicles, and related parts	336414–15, 336419	1,290 i	D	* i	21 i	D	3	0	D	D	D	D	0
Military armored vehicles, tanks, and tank components	336992	18	*	3	0	7	2	0	0	6	0	0	0
Other transportation	other 336	2,142 i	D	3 i	D	63	45	102	D	154	D	11	1,390 i
Furniture and related products	337	373	12 i	26 i	19 i	10 i	29 i	34	9 i	131	104	0	0
Miscellaneous manufacturing	339	12,789	D	D	D	464	D	D	627	3,450	722 i	4,420	D
Medical equipment and supplies	3391	10,309	54 i	299	210 i	362	487 i	311	463	2,403	435 i	4,420	863
Other miscellaneous manufacturing	3399	2,481	D	D	D	102 i	D	D	164	1,047	287 i	0	D
Nonmanufacturing industries	21–23, 42–81	107,913	2,021 i	4,281 i	5,295 i	3,702	6,064	5,249	3,862	16,359	13,441	6,875	40,765
Mining, extraction, and support activities	21	4,703	D	1 i	1 i	D	D	D	D	111	D	2,037	D
Utilities	22	310	17 i	* i	6	0	* i	D	3	138	9	D	D
Wholesale trade	42	339 i	26 i	59 i	58 i	58 i	87 i	25 i	14 i	9	0	2 i	0
Electronic shopping and electronic auctions	454111–12	1,388	8 i	D	1 i	D	D	D	0	D	0	D	D
Transportation and warehousing	48–49	679	0	* i	2 i	0	30 i	242	26	9	19 i	0	351
Information	51	63,773	D	785 i	1,392 i	1,009	2,498	2,557	D	9,297	8,933	D	33,226
Publishing	511	36,140	D	472 i	760 i	448	1,040	935	764	4,984	4,964	D	21,304
Newspaper, periodical, book, and directory publishers	5111	88 i	2 i	9 i	3 i	3 i	42 i	2 i	24 i	0	0	3 i	0
Software publishers	5112	36,052	D	463 i	757 i	445	998	933	741	4,984	4,964	D	21,304
Telecommunications	517	3,755	25 i	85 i	111 i	48	68	117 i	153	66 i	0	330 i	2,750
Data processing, hosting, and related services	518	9,029	D	D	463 i	465	1,183	1,206	D	2,905	D	1,204	D
Other information	other 51	14,849	D	D	58 i	48	207	298	131	1,341	D	* i	D
Finance and insurance	52	4,122	10 i	42 i	* i	18 i	67	75	353	231	134	795	2,396
Real estate and rental and leasing	53	262	* i	3	2 i	9 i	58	3 i	0	189	0	0	0
Lessors of nonfinancial intangible assets (except copyrighted works)	533	55	0	3	1 i	1 i	49	0	0	0	0	0	0

TABLE 10. Domestic R&D paid for by the company and others and performed by the company, by industry and company size: 2014
(Millions of U.S. dollars)

Industry	NAICS codes	Company size (domestic employees)											
		All companies	5–9 ^a	10–24	25–49	50–99	100–249	250–499	500–999	1,000–4,999	5,000–9,999	10,000–24,999	25,000 or more
Other real estate and rental and leasing	other 53	207	* i	0	* i	7 i	8 i	3 i	0	189	0	0	0
Professional, scientific, and technical services	54	30,975 i	1,571 i	3,304 i	3,760 i	2,401 i	2,894	2,134	1,118	6,182 i	4,195	1,280 i	2,135
Architectural, engineering, and related services	5413	3,375	175 i	217 i	463 i	225 i	339	217	101	473	297	117	751
Computer systems design and related services	5415	11,019 i	527 i	1,258 i	2,106 i	1,150 i	932 i	710	521 i	2,410 i	685 i	710 i	11
Scientific R&D services	5417	12,807	743 i	1,522	1,054	781	1,185	705	226	2,969 i	3,170	419	34 i
Biotechnology R&D	541711	3,459	146 i	429	D	148	D	11 i	0	D	1,531	0	34 i
Physical, engineering, and life sciences (except biotechnology) R&D	541712	8,670	594 i	1,080	821	620	987	694	226	1,591 i	1,639	419	0
Social sciences and humanities R&D	541720	678	3 i	13	D	13	D	0	0	D	0	0	0
Other professional, scientific, and technical services	other 54	3,775	126 i	308	137	246	439 i	502	271	331	43	35	1,338 i
Health care services	621–23	501 i	D	10	21	30 i	202 i	81	108	D	0	1 i	D
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	861 i	38 i	D	53 i	D	D	D	133	D	D	D	D

* = amount < \$500,000; 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 Upper bound is based on the U.S. Small Business Administration's definition of a small business; the Business R&D and Innovation Survey does not include companies with fewer than five domestic employees.

NOTES: 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.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 11. Domestic R&D paid for by the company and others and performed by the company, by character of work, industry, and company size: 2014

(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	340,728	21,936	53,415	265,377
Manufacturing industries	31–33	232,815	17,822	36,585	178,408
Food	311	5,292 i	689 i	1,087 i	3,516
Beverages and tobacco products	312	920	D	D	D
Textiles, apparel, and leather products	313–16	631	45	75	511
Wood products	321	362 i	16 i	80 i	267 i
Printing and related support activities	323	234	5 i	73	156 i
Chemicals	325	66,301	9,037	13,837	43,427
Pharmaceuticals and medicines	3254	56,612	8,101	11,346	37,165
Other chemicals	other 325	9,688	936	2,490	6,262
Plastics and rubber products	326	3,574	433	897	2,244
Nonmetallic mineral products	327	1,445 i	202 i	347 i	896 i
Primary metals	331	677	52 i	131 i	494 i
Fabricated metal products	332	2,131 i	160 i	347 i	1,623 i
Machinery	333	12,128	626	1,312	10,190
Computer and electronic products	334	73,891	2,792	8,740 i	62,358 i
Semiconductor and other electronic components	3344	32,142	1,199	4,088 i	26,855 i
Navigational, measuring, electromedical, and control instruments	3345	15,963	841	2,032	13,090
Other computer and electronic products	other 334	25,786	752 i	2,621 i	22,413 i
Electrical equipment, appliances, and components	335	4,365	140	590	3,635
Transportation equipment	336	46,746	2,911 i	7,141	36,693
Aerospace products and parts	3364	26,181 i	1,988 i	4,553 i	19,640 i
Other transportation equipment	other 336	20,565	923	2,588	17,054
Furniture and related products	337	373	22	87	264
Miscellaneous manufacturing	322, 324, 339	13,746	D	D	D
Nonmanufacturing industries	21–23, 42–81	107,913	4,114	16,830	86,970
Information	51	63,773	2,105	6,137	55,530
Publishing	511	36,140	1,208	3,260	31,672
Telecommunications	517	3,755	312	1,114	2,328
Data processing, hosting, and related services	518	9,029	415	862	7,751
Other information	other 51	14,849	170	900	13,779
Professional, scientific, and technical services	54	30,975 i	1,572 i	8,777	20,626 i
Architectural, engineering, and related services	5413	3,375	254 i	1,227	1,893 i
Computer systems design and related services	5415	11,019 i	373 i	1,493 i	9,153 i
Scientific R&D services	5417	12,807	801 i	5,583	6,424 i
Biotechnology R&D	541711	3,459	81 i	785	2,593 i
Physical, engineering, and life sciences (except biotechnology) R&D	541712	8,670	650 i	4,344	3,676 i
Social sciences and humanities R&D	541720	678	69 i	454 i	154 i

TABLE 11. Domestic R&D paid for by the company and others and performed by the company, by character of work, industry, and company size: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS code	Total	Basic research	Applied research	Development
Other professional, scientific, and technical services	other 54	3,775	144	474	3,157 i
Other nonmanufacturing	21-23, 42-49, 52, 53, 55-81	13,166	437	1,916	10,813
All companies (number of domestic employees)	-	340,728	21,936	53,415	265,377
Small companies ^a					
5-499	-	54,773	3,424	9,640	41,709 i
5-99	-	29,078 i	1,734 i	5,222 i	22,122 i
5-49	-	18,900 i	1,124 i	3,450 i	14,326 i
5-9	-	3,295 i	178 i	556 i	2,561 i
10-24	-	7,177 i	489 i	1,413 i	5,275 i
25-49	-	8,428 i	457 i	1,481 i	6,490 i
50-99	-	10,178 i	610 i	1,772 i	7,797 i
100-249	-	13,492	805	2,452	10,235
250-499	-	12,203	885	1,966	9,351
Medium and large companies					
500-999	-	13,262	795	2,274	10,193
1,000-4,999	-	57,551	4,424	10,489	42,638
5,000-9,999	-	38,202	1,640	5,956	30,607
10,000-24,999	-	54,445	2,815	9,334	42,296
25,000 or more	-	122,495	8,838	15,723	97,935

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

NOTES: 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.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 12. Domestic R&D paid for by the company and others and performed by the company, by type of cost, industry, and company size: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS code	Total	Salaries, wages, and fringe benefits	Stock-based compensation	Temporary staffing	Expensed equipment	Materials and supplies	Lease and rental payments	Depreciation	Other purchased services (except R&D)	Other
All industries	21–23, 31–33, 42–81	340,728	195,532	16,619	14,211	5,815	27,328	6,048	12,106	7,891	55,178
Manufacturing industries	31–33	232,815	126,384	8,149	8,312	4,130	23,040	3,726	9,239	6,018	43,817
Food	311	5,292 i	2,705 i	80 i	156 i	724 i	307 i	131 i	316 i	208 i	667
Beverages and tobacco products	312	920	517	13	31	7	65	7	47	4	228
Textiles, apparel, and leather products	313–16	631	413	5	22 i	2	79	10 i	18	20	62
Wood products	321	362 i	246 i	*	11 i	3 i	78 i	4 i	4 i	3 i	14 i
Paper	322	723	490 i	* i	25 i	2 i	89 i	5 i	19 i	13 i	78 i
Printing and related support activities	323	234	143	3 i	5 i	1 i	48	4 i	8 i	1 i	22
Petroleum and coal products	324	234	153	2	14	1	20	3	7	14	20
Chemicals	325	66,301	31,859	2,601	3,009	303	5,316	1,356	2,790	1,677	17,389
Basic chemicals	3251	2,849	1,702	27	65	38	258	74	176	82	426
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	1,152	717	10	45	16	89	29	58	14	175
Pesticides, fertilizers, and other agricultural chemicals	3253	1,790 i	764 i	D	116	4 i	99 i	38 i	107 i	30 i	D
Pharmaceuticals and medicines	3254	56,612	26,165	2,542	2,664	231	4,641	1,180	2,295	1,513	15,382
Soaps, cleaning compounds, and toilet preparations	3256	2,547	1,618	13	91	7	159	23	102	26	509
Paints, coatings, adhesives, and other chemicals	3255, 3259	1,350 i	893	D	27	8	70	13	52	11	D
Plastics and rubber products	326	3,574	2,030	54	100	47	542	41	147	119	496
Nonmetallic mineral products	327	1,445 i	779 i	2 i	44 i	12 i	232 i	16 i	64 i	43 i	253 i
Primary metals	331	677	346	7	8	1	77	2	26	5	205
Fabricated metal products	332	2,131 i	1,488 i	37 i	34 i	38	299 i	17 i	51 i	37 i	130
Machinery	333	12,128	7,101	108 i	668	136	1,750	130	540	138	1,557
Agricultural implements	33311	1,578	832	* i	98	8	331	10	58	1	241
Semiconductor machinery	333295	2,941	1,393	63 i	156	13	420	23	200	21	653
Engine, turbine, and power transmission equipment	3336	2,347	1,471	2	252	10	248 i	15	99	15	236 i
Other machinery	other 333	5,261	3,405	43 i	163 i	105 i	751	81 i	183 i	101 i	427
Computer and electronic products	334	73,891	43,347	4,911	2,038	1,596	5,447	1,407	3,787	1,681	9,677
Communications equipment	3342	18,342	9,086	2,069	362 i	613	1,052	687	941	869	2,662
Semiconductor and other electronic components	3344	32,142	19,658 i	2,362 i	669 i	609 i	2,068 i	475	2,014	245	4,042
Navigational, measuring, electromedical, and control instruments	3345	15,963	9,777	200 i	819	223	1,781	198	443	254	2,269
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	3,917	2,050	124 i	298	116	468	122	181	50	508 i
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	7,861	4,950	24	349	37	950	33	141	127	1,250

TABLE 12. Domestic R&D paid for by the company and others and performed by the company, by type of cost, industry, and company size: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS code	Total	Salaries, wages, and fringe benefits	Stock-based compensation	Temporary staffing	Expensed equipment	Materials and supplies	Lease and rental payments	Depreciation	Other purchased services (except R&D)	Other
Other measuring and controlling devices	other 3345	4,186	2,778	52	172	70	364	43	121	77	511
Other computer and electronic products	other 334	7,444	4,826 i	280	189	152	546 i	47	389	313	703
Electrical equipment, appliances, and components	335	4,365	3,014	28	188	56	335	65 i	124	101 i	454
Transportation equipment	336	46,746	23,873	6	1,457	1,057	7,359	433	916	1,568 i	10,077
Automobiles, bodies, trailers, and parts	3361-63	18,404	10,512	3	1,195	758	2,813	336	550	225	2,011
Aerospace products and parts	3364	26,181 i	12,202 i	1	192	271 i	3,958 i	60	320	1,277 i	7,900
Aircraft, aircraft engines, and aircraft parts	336411-13	24,892 i	D	1	D	D	D	59	320	1,276 i	D
Guided missiles, space vehicles, and related parts	336414-15, 336419	1,290 i	D	0	D	D	D	1 i	1 i	1	D
Military armored vehicles, tanks, and tank components	336992	18	10	0	*	*	4	* i	1	1	2
Other transportation	other 336	2,142 i	1,148 i	2	69 i	28 i	584 i	38 i	44 i	65 i	164 i
Furniture and related products	337	373	270	* i	8 i	1	43	1	4	11 i	36
Miscellaneous	339	12,789	7,611	292	496	143	955	93	372	377	2,451
Medical equipment and supplies	3391	10,309	5,874	267	442	135	847	78	316	363	1,986
Other miscellaneous manufacturing	3399	2,481	1,737	24	53	8 i	107	15	56	14 i	465
Nonmanufacturing industries	21-23, 42-81	107,913	69,147	8,470	5,899	1,685	4,288	2,323	2,868	1,872	11,361
Mining, extraction, and support activities	21	4,703	2,563	43	244	120 i	535	60	99	346	693
Utilities	22	310	104	1	64	2	18	*	55	38	29
Wholesale trade	42	339 i	212 i	0	10 i	*	53 i	8 i	6 i	9 i	41 i
Electronic shopping and electronic auctions	454111-12	1,388	957	D	*	0	*	0	0	0	D
Transportation and warehousing	48-49	679	443	*	64	7 i	89 i	4 i	16 i	1 i	54 i
Information	51	63,773	40,407	7,488	2,891	1,201	1,728	1,517	1,827	475	6,239
Publishing	511	36,140	24,331	2,512	1,350	253	676	587	965	405	5,061
Newspaper, periodical, book, and directory publishers	5111	88 i	61 i	0	2 i	* i	* i	*	0	5 i	21 i
Software publishers	5112	36,052	24,271	2,512	1,348	253	676	587	965	400	5,040
Telecommunications	517	3,755	2,257	242	137	24	799	204	15	5 i	72
Data processing, hosting, and related services	518	9,029	6,444	666	482	180	94	203	229	42	690
Other information	other 51	14,849	7,375	4,069	922	744	159	522	618	24	417
Finance and insurance	52	4,122	2,440	32	1,005	18	7	68	64	291	198
Real estate and rental and leasing	53	262	165	24	6	6	2	5	29	*	25
Lessors of nonfinancial intangible assets (except copyrighted works)	533	55	53	* i	* i	* i	*	* i	1	0	1
Other real estate and rental and leasing	other 53	207	112	24	6	6	2 i	5	28	*	24
Professional, scientific, and technical services	54	30,975 i	20,889 i	720 i	1,563 i	311 i	1,742	648 i	741 i	704	3,657
Architectural, engineering, and related services	5413	3,375	2,280	3 i	152 i	19 i	119 i	34 i	29 i	31 i	708

TABLE 12. Domestic R&D paid for by the company and others and performed by the company, by type of cost, industry, and company size: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS code	Total	Salaries, wages, and fringe benefits	Stock-based compensation	Temporary staffing	Expensed equipment	Materials and supplies	Lease and rental payments	Depreciation	Other purchased services (except R&D)	Other
Computer systems design and related services	5415	11,019 i	7,903 i	555 i	597 i	202 i	408 i	259 i	246 i	151 i	697 i
Scientific R&D services	5417	12,807	7,739	114	601	73	1,139	291	364	506	1,979
Biotechnology R&D	541711	3,459	2,060	D	127	10	335	84	102	354	D
Physical, engineering, and life sciences (except biotechnology) R&D	541712	8,670	5,202	67	461	58	799	191	254	152	1,486
Social sciences and humanities R&D	541720	678	478	D	13	5	4	16	8	* i	D
Other professional, scientific, and technical services	other 54	3,775	2,967	48 i	212 i	16	76	65	103	16 i	273 i
Health care services	621-23	501 i	314 i	24 i	22 i	9 i	57 i	8 i	19 i	3 i	46
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	861 i	653 i	D	30 i	12 i	56 i	5	12	6 i	D
All companies (number of domestic employees)	-	340,728	195,532	16,619	14,211	5,815	27,328	6,048	12,106	7,891	55,178
Small companies ^a											
5-499	-	54,773	34,258	1,741	2,491 i	1,164 i	4,799	1,363	1,558	990 i	6,409
5-99	-	29,078 i	18,018 i	837 i	1,408 i	835 i	2,664 i	761 i	796 i	562 i	3,198 i
5-49	-	18,900 i	11,707 i	541 i	937 i	644	1,777 i	503 i	519 i	347 i	1,924 i
5-9	-	3,295 i	1,775 i	73 i	170 i	383	223 i	95 i	142 i	68 i	365 i
10-24	-	7,177 i	4,456 i	213 i	360 i	155 i	803 i	186 i	168 i	132 i	704 i
25-49	-	8,428 i	5,476 i	256 i	407 i	106 i	751 i	221 i	209 i	147 i	854
50-99	-	10,178 i	6,310 i	296	471	191 i	887	258	277 i	215 i	1,274
100-249	-	13,492	8,683	395	591	172 i	1,152	341	404	241	1,514
250-499	-	12,203	7,557	508	493	157	984	262	359	187	1,697
Medium and large companies											
500-999	-	13,262	8,023	661	519	204	1,050	252	518	201	1,834
1,000-4,999	-	57,551	33,212	3,382	2,099	907 i	3,811	1,173	2,277	1,184	9,507
5,000-9,999	-	38,202	21,784	2,666	1,436	480	2,471	538	1,609	1,061	6,157
10,000-24,999	-	54,445	32,191	1,408 i	2,261	439	5,583	718	1,950	1,069	8,827
25,000 or more	-	122,495	66,063	6,762	5,405	2,622	9,614	2,004	4,194	3,385	22,444

* = amount < \$500,000; 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 Upper bound is based on the U.S. Small Business Administration's definition of a small business; the Business R&D and Innovation Survey does not include companies with fewer than five domestic employees.

NOTES: 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.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 13. Domestic R&D paid for by the company and others and performed by the company, by source of funds and state: 2014
(Millions of U.S. dollars)

State	Total	Paid for by the company	Paid for by others		
			Total	Federal	Nonfederal
All states	340,728	282,570	58,158	26,554 i	31,604
Alabama	1,961	1,299	662	561	101
Alaska	57 e	37 e	20	9	11 e
Arizona	5,499	4,307	1,191	512	680
Arkansas	317	277	41	14	26 e
California	98,488	85,750	12,738 i	6,734 i	6,004
Colorado	4,551	3,829	723	473	249
Connecticut	9,093	6,819	2,274	1,836	438 i
Delaware	2,520	1,839 i	681	13	668
District of Columbia	338	183	154	126	28 e
Florida	5,783	3,877	1,906 i	1,221 i	686
Georgia	4,635	3,843	791 i	193 i	599 i
Hawaii	196	138 i	58	13	45
Idaho	1,448	1,223	225	6	219
Illinois	12,371	11,196	1,175	143	1,031
Indiana	5,901	5,015	887	95	791
Iowa	2,098	1,513	585	442	143
Kansas	1,934	1,325	609	12 e	598
Kentucky	1,158	768	391	340	50 i
Louisiana	386	299	87 i	35 i	53 e
Maine	373	308	65	46	19 e
Maryland	5,124	3,445	1,679	1,156	523 i
Massachusetts	21,105	17,101	4,004	899	3,106
Michigan	17,077	15,421	1,656	338	1,318
Minnesota	6,975	6,403	571	288 i	284
Mississippi	269	198	71	18	53
Missouri	6,720 i	4,037	2,683 i	D	D
Montana	205	188	17 e	4	13 e
Nebraska	590	543	46 e	13	33 e
Nevada	631	576	55 e	19	36 e
New Hampshire	2,041	869	1,171	836	335 i
New Jersey	13,743	11,027	2,716	324	2,393
New Mexico	499	270	228	167	62
New York	13,818	10,794	3,024 i	1,677 i	1,347
North Carolina	8,091	6,125	1,966 i	110	1,856 i
North Dakota	271	247	24	2 e	21
Ohio	8,945	6,137	2,808	1,053 i	1,755
Oklahoma	607	543	64 e	18	47 e
Oregon	6,434	6,160	275	85	190
Pennsylvania	10,816	9,635	1,181 i	208	973 i
Rhode Island	542	479	63	37	26 i
South Carolina	1,089	936	153	81	72 i
South Dakota	135	121	14 e	2 e	13 i
Tennessee	1,586	1,365	221	49	172
Texas	16,373	13,674	2,700	1,134 i	1,566
Utah	2,809	2,275	533 i	420 i	114 i
Vermont	302	259	43	16	27
Virginia	4,994 i	2,877	2,116 i	1,735 i	381 e
Washington	15,699	15,195	504	205 i	298
West Virginia	279	252	28 i	5	23 i

TABLE 13. Domestic R&D paid for by the company and others and performed by the company, by source of funds and state: 2014
(Millions of U.S. dollars)

State	Total	Paid for by the company	Paid for by others		
			Total	Federal	Nonfederal
Wisconsin	4,287	3,677	610	56 i	554
Wyoming	59	44	15	1 e	13
Undistributed ^a	9,506	7,852	1,654	D	D

D = data withheld to avoid disclosing operations of individual companies; e = > 50% of value is modeled—see appendix A, "Technical Notes"; i = > 50% of the estimate is a combination of imputation and reweighting to account for nonresponse.

^a Includes data reported on Form BRDI-1 that were not allocated to a specific state and also data reported on Form BRDI-1(S) by multi-establishment companies. For single-establishment companies, data reported on Form BRDI-1(S) were allocated to the state in the address used to mail the survey form.

NOTES: Detail may not add to total because of rounding. Statistics are representative of companies located in the 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, 2014.

TABLE 14. Domestic R&D paid for by the company and others and performed by the company, by industry, company size, and domestic R&D program size: 2014
(Millions of U.S. dollars)

Industry	NAICS codes	R&D program size					
		All companies	Less than \$1 million	\$1 million–\$9.999 million	\$10 million–\$49.999 million	\$50 million–\$99.999 million	\$100 million or more
All industries	21–23, 31–33, 42–81	340,728	9,448 i	26,406	31,985	18,818	254,071
Manufacturing industries	31–33	232,815	4,678 i	13,377	19,634	12,995	182,132
Food	311	5,292 i	236 i	999	625	366	3,066 i
Beverages and tobacco products	312	920	D	D	D	187	D
Textiles, apparel, and leather products	313–16	631	92 i	155	198	187	0
Wood products	321	362 i	20 i	65 i	277 i	0	0
Paper	322	723	60 i	105	111	110 i	338
Printing and related support activities	323	234	50 i	101	84	0	0
Petroleum and coal products	324	234	D	55	100	D	0
Chemicals	325	66,301	575 i	2,537	5,847	2,765	54,577
Basic chemicals	3251	2,849	81 i	386	711	486	1,185
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	1,152	47 i	175	137	0	793
Pesticides, fertilizers, and other agricultural chemicals	3253	1,790 i	D	D	D	0	1,634 i
Pharmaceuticals and medicines	3254	56,612	150 i	1,600	4,429	2,010	48,424
Soaps, cleaning compounds, and toilet preparations	3256	2,547	104 i	154	253	95	1,941
Paints, coatings, adhesives, and other chemicals	3255, 3259	1,350 i	D	D	D	174 i	601 i
Plastics and rubber products	326	3,574	D	589	562	D	D
Nonmetallic mineral products	327	1,445 i	D	175	190	95	D
Primary metals	331	677	D	130	278	0	D
Fabricated metal products	332	2,131 i	542 i	741	D	D	0
Machinery	333	12,128	797 i	1,719	2,035	1,221	6,356
Agricultural implements	33311	1,578	D	96	90	171	D
Semiconductor machinery	333295	2,941	19 i	93 i	266	151 i	2,412
Engines, turbines, and power transmission equipment	3336	2,347	D	D	135	D	D
Other machinery	other 333	5,261	D	D	1,543	D	D
Computer and electronic products	334	73,891	801 i	2,493	3,379	4,147	63,071
Communications equipment	3342	18,342	170 i	403	468	1,054	16,246
Semiconductors and other electronic components	3344	32,142	167 i	654	1,238	1,510	28,573
Navigational, measuring, electromedical, and control instruments	3345	15,963	369 i	1,138	1,163	1,077	12,216
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	3,917	81 i	327	327	581	2,602
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	7,861	8 i	132 i	235	62	7,423
Other measuring and controlling devices	other 3345	4,186	280 i	679	602	434	2,191

TABLE 14. Domestic R&D paid for by the company and others and performed by the company, by industry, company size, and domestic R&D program size: 2014
(Millions of U.S. dollars)

Industry	NAICS codes	R&D program size					
		All companies	Less than \$1 million	\$1 million–\$9.999 million	\$10 million–\$49.999 million	\$50 million–\$99.999 million	\$100 million or more
Other computer and electronic products	other 334	7,444	95 i	298	509	506	6,036
Electrical equipment, appliances, and components	335	4,365	269 i	774	1,355 i	496	1,470
Transportation equipment	336	46,746	250 i	1,115	1,817	1,710	41,854
Automobiles, bodies, trailers, and parts	3361–63	18,404	129 i	651	1,080	1,187	15,357
Aerospace products and parts	3364	26,181 i	58 i	312	521	442	24,847 i
Aircraft, aircraft engines, and aircraft parts	336411–13	24,892 i	D	D	407	D	D
Guided missiles, space vehicles, and related parts	336414–15, 336419	1,290 i	D	D	114	D	D
Military armored vehicles, tanks, and tank components	336992	18	2 i	16	0	0	0
Other transportation	other 336	2,142 i	61 i	135	216	81	1,649 i
Furniture and related products	337	373	105 i	90	178	0	0
Miscellaneous manufacturing	339	12,789	D	D	D	D	D
Medical equipment and supplies	3391	10,309	191 i	1,056	1,459	676	6,926
Other miscellaneous manufacturing	3399	2,481	D	D	D	D	D
Nonmanufacturing industries	21–23, 42–81	107,913	4,770 i	13,029	12,351	5,823	71,940
Mining, extraction, and support activities	21	4,703	D	301	D	D	4,116
Utilities	22	310	25 i	47	98	140	0
Wholesale trade	42	339 i	244 i	95	0	0	0
Electronic shopping and electronic auctions	454111–12	1,388	D	5	0	0	D
Transportation and warehousing	48–49	679	D	62 i	0	0	D
Information	51	63,773	894 i	4,177	4,852	3,090	50,760
Publishing	511	36,140	464 i	2,024 i	1,455	1,335	30,862
Newspaper, periodical, book, and directory publishers	5111	88 i	21 i	20 i	47 i	0	0
Software publishers	5112	36,052	443 i	2,004 i	1,408	1,335	30,862
Telecommunications	517	3,755	68 i	275 i	290	569 i	2,552
Data processing, hosting, and related services	518	9,029	284 i	1,615	2,743	984	3,403
Other information	other 51	14,849	78 i	263	364	201	13,942
Finance and insurance	52	4,122	55 i	96	258	335	3,378
Real estate and rental and leasing	53	262	17 i	8	49	189	0
Lessors of nonfinancial intangible assets (except copyrighted works)	533	55	3 i	3	49	0	0
Other real estate and rental and leasing	other 53	207	14 i	5	0	189	0
Professional, scientific, and technical services	54	30,975 i	3,127 i	7,796	6,601 i	1,693	11,757 i
Architectural, engineering, and related services	5413	3,375	351 i	1,071 i	781	420	751
Computer systems design and related services	5415	11,019 i	1,818 i	2,855 i	2,754 i	495 i	3,097 i
Scientific R&D services	5417	12,807	485 i	3,153	1,979	562	6,627
Biotechnology R&D	541711	3,459	115 i	709	D	0	D

TABLE 14. Domestic R&D paid for by the company and others and performed by the company, by industry, company size, and domestic R&D program size: 2014
(Millions of U.S. dollars)

Industry	NAICS codes	R&D program size					
		All companies	Less than \$1 million	\$1 million–\$9.999 million	\$10 million–\$49.999 million	\$50 million–\$99.999 million	\$100 million or more
Physical, engineering, and life sciences (except biotechnology) R&D	541712	8,670	359 i	2,415	1,615	562	3,718
Social sciences and humanities R&D	541720	678	11 i	29	D	0	D
Other professional, scientific, and technical services	other 54	3,775	473 i	717	1,087	215	1,282 i
Health care services	621–23	501 i	97 i	127	156	121 i	0
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	861 i	D	317	D	D	0
All companies (number of domestic employees)	–	340,728	9,448 i	26,406	31,985	18,818	254,071
Small companies ^a							
5–499	–	54,773	9,183 i	22,746	16,688	3,780	2,375
5–99	–	29,078 i	7,718 i	14,881	6,137	342 i	0
5–49	–	18,900 i	6,195 i	10,360	2,291 i	54	0
5–9	–	3,295 i	1,559 i	1,736	0	0	0
10–24	–	7,177 i	2,840 i	3,944	393 i	0	0
25–49	–	8,428 i	1,796 i	4,680	1,898 i	54	0
50–99	–	10,178 i	1,523 i	4,521	3,846	288 i	0
100–249	–	13,492	1,116 i	5,384	5,575	1,311	106
250–499	–	12,203	349 i	2,481	4,977	2,126	2,269
Medium and large companies							
500–999	–	13,262	138 i	1,565	4,608	3,229	3,722
1,000–4,999	–	57,551	75 i	1,696	7,675	7,580	40,524
5,000–9,999	–	38,202	4 i	193	1,699	2,512	33,795
10,000–24,999	–	54,445	44 i	120	855	1,252 i	52,175
25,000 or more	–	122,495	4 i	86	461	465	121,479

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

NOTES: 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. R&D program size classifications are based on R&D performance.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 15. Domestic R&D paid for by the company and others and performed by the company, by business activity: 2014
(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	340,728	282,570	58,158
Oil and gas extraction	21100	1,108	904	204 i
Mining	21200	54	50	4
Support activities for mining, including oil and gas	21300	2,419	1,840	579
Utilities	22100	340	287	53
Construction	23000	204 i	201 i	3 i
Food manufacturing	31100	5,297 i	5,103 i	194
Beverage manufacturing	31210	D	529	D
Tobacco manufacturing	31220	D	162	D
Textile, apparel, and leather products manufacturing	31990	662 i	647 i	15 i
Wood products manufacturing	32100	348 i	338 i	11 i
Paper manufacturing	32200	1,028	1,015	13
Printing and related support activities	32300	363	361	2 i
Petroleum refineries	32401	D	528	D
Asphalt paving, roofing, and saturated materials manufacturing	32402	66	66	* i
Other petroleum and coal products manufacturing, including motor oil, hydraulic fluid, and charcoal	32403	279 i	272 i	8
Basic chemicals manufacturing	32510	3,145	2,847	298
Resin, synthetic rubber, and artificial synthetic fibers and filaments manufacturing	32520	1,052	1,027	25
Pesticide, fertilizer, and other agricultural chemical manufacturing	32530	2,116 i	1,718 i	397
Pharmaceutical, medicinal, botanical, and biological products (except diagnostic) manufacturing	32541	43,553	36,633	6,920
In vitro diagnostic substances manufacturing	32542	799	733	66
Biotechnology-based pharmaceutical and biological products (except diagnostics)	32543	10,242	8,684	1,558
Soap, cleaning compound, and toilet preparations manufacturing	32591	2,364	2,326	38
Paint, adhesive, and other chemical manufacturing	32592	1,554 i	1,518 i	36 i
Plastics and rubber products manufacturing	32600	3,039 i	2,878 i	161 i
Clay and glass products manufacturing	32710	1,003 i	992 i	11 i
Cement, concrete, lime, gypsum, and other nonmetallic mineral products manufacturing	32790	564 i	548 i	16
Primary metal manufacturing	33100	703	664	39 i
Fabricated metal products manufacturing	33200	2,287	2,168	119 i
Agricultural machinery and equipment manufacturing	33311	1,230	1,194	35
Construction machinery manufacturing	33312	1,306	1,296	10
Mining, oil, and gas field machinery and equipment manufacturing	33319	1,076	984	92
Semiconductor machinery manufacturing	33321	2,979	2,859	121
Industrial machinery manufacturing (except semiconductor machinery)	33322	1,213	1,062	150 i
Photographic and photocopying equipment manufacturing	33331	79	24 i	55
Commercial, service industry, temperature control, and air-flow control machinery manufacturing	33332	1,448	1,410	38 i
Digital cameras manufacturing	33333	25	25	0
Engine, turbine, and power transmission equipment manufacturing	33360	1,840	1,710	130
Metalworking and other general purpose machinery manufacturing	33390	2,143	1,997	146 i
Computers and peripheral equipment manufacturing and magnetic and optical media ^c	33412	9,753	9,632	121
Telephone apparatus manufacturing, including routers, modems, and gateways	33421	7,734	7,718	16
Radio, television, and wireless communication equipment manufacturing	33422	6,321 i	4,826 i	1,495 i
Other communication equipment manufacturing (except radio, television, and wireless communication equipment)	33429	1,687	1,610	77

TABLE 15. Domestic R&D paid for by the company and others and performed by the company, by business activity: 2014
(Millions of U.S. dollars)

Business activity ^a	Business code ^b	Total	Paid for by the company	Paid for by others
Audio and video equipment manufacturing	33430	1,018	997	21 i
Semiconductor and other electronic components manufacturing	33440	32,454	30,466	1,988 i
Electromedical, electrotherapeutic, and irradiation apparatus manufacturing	33451	3,613	3,378	235
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments manufacturing	33452	6,231	2,109	4,121
Measuring and control instruments manufacturing (not listed elsewhere)	33459	4,201	3,932	268
Electrical equipment, appliances, and components manufacturing	33500	4,492	4,245	247 i
Motor vehicles manufacturing	33610	12,134	10,700	1,434
Motor vehicle body and trailer manufacturing	33620	96	95	1 i
Motor vehicle parts manufacturing	33630	5,908	4,929	979 i
Aircraft manufacturing	33641	15,566 i	4,001	11,565 i
Aircraft engine and engine parts manufacturing	33642	2,284 i	1,772 i	512
Other aircraft parts and auxiliary equipment manufacturing	33643	4,423	2,410	2,013
Guided missiles, space vehicles, and related parts manufacturing	33644	2,823 i	781	2,043 i
Railroad rolling stock manufacturing	33651	294	292	2 i
Ship and boat building	33660	1,568 i	437 i	1,131 i
Motorcycle, bicycle, and parts manufacturing	33691	251	245	7 i
Military armored vehicle, tank, and tank components manufacturing	33692	357	139 i	218
All other transportation equipment manufacturing	33699	421	324	97
Furniture and related products manufacturing	33700	385	379	6 i
Medical equipment and supplies manufacturing	33910	10,988	10,468	520
Miscellaneous manufacturing not listed elsewhere (games, office supplies, slot machines, etc.)	33990	2,419	2,357	61 i
Merchant wholesalers, durable goods	42300	410 i	392 i	18
Merchant wholesalers, nondurable goods	42400	D	151 i	D
Wholesale electronic markets and agents and brokers (business to business)	42500	139	19 i	120
Retail trade (except electronic shopping and electronic auctions)	44000	63 i	62 i	1 i
Electronic shopping and electronic auctions	45411	1,051	1,051	0
Transportation	48000	388	380	8
Couriers, messengers, and express delivery services	49200	344	344	0
Warehousing and storage	49300	3	3	0
Newspaper, periodical, book, and directory publishers (except Internet)	51110	89 i	89 i	0
Software publishers (except Internet)	51120	30,886	30,355	531
Motion picture and sound recording (except Internet)	51200	71 i	66 i	5 i
Broadcasting (except Internet)	51500	70 i	70 i	0
Wired telecommunications carriers	51710	933 i	931 i	2 i
Wireless telecommunications carriers (except satellite)	51720	2,479	2,471	8 i
Satellite telecommunications	51740	107	105	2
Other telecommunications (not listed elsewhere)	51790	255	222	33
Data processing, hosting, and related services	51800	4,746	4,699	46
Cloud computing applications and Internet-based software services	51801	5,691	5,650	41 i
Other information services, including Internet publishing, broadcasting, and Web search portals	51910	15,330	15,250	80 i
Finance: banking and credit intermediation	52200	2,451	2,418	32
Securities, commodity contracts, and other financial investments and related activities, including funds and trusts	52310	937	937	0
Insurance carriers and related activities	52400	887	887	0
Real estate	53100	193	193	0
Rental and leasing services	53200	59	57	1

TABLE 15. Domestic R&D paid for by the company and others and performed by the company, by business activity: 2014
(Millions of U.S. dollars)

Business activity ^a	Business code ^b	Total	Paid for by the company	Paid for by others
Lessors of nonfinancial intangible assets, including patent licensing	53300	78	78	*
Legal, accounting, tax preparation, bookkeeping, and payroll services	54111	826 i	826 i	1 i
Architectural, engineering, and related services	54130	3,458 i	1,570 i	1,887
Specialized design services	54140	97	27 i	70
Computer systems design and related services	54150	13,182 i	10,298 i	2,884 i
Management, scientific, and technical consulting services	54160	1,958	1,568	390
R&D services in social sciences and humanities	54172	745	26	719
R&D services in biotechnology	54173	3,289 i	857	2,431 i
R&D services in physical, engineering, and life sciences (except biotechnology)	54174	8,763	2,099	6,663
Advertising and related services	54180	435	405	29
Professional, scientific, and technical services (not listed elsewhere)	54190	1,017	727	290
Management of companies and enterprises	55100	25 i	21 i	3
Administrative and support services	56100	401 i	336 i	65
Waste management and remediation services	56200	31	16	15
Offices of physicians	62110	88 i	39 i	49 i
Medical and diagnostic laboratories	62150	965	376 i	588
Other ambulatory health care services (ambulance, dental, home health care)	62199	35 i	34 i	2 i
Hospitals and nursing care facilities	62200	7 i	2 i	5 i
Social assistance services	62400	16	16	0
Arts, entertainment, and recreation	71000	91 i	91 i	0
Accommodation and food services	72000	57	57	0
Other services (not listed elsewhere)	81000	575	399	176
Undistributed	–	63	53	10

* = amount < \$500,000; 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 Data 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 based on NAICS industry definitions.

^c Estimates for this business code may not be comparable to those from prior years due to the introduction of a related business code for survey year 2014: 33333, Digital cameras manufacturing.

NOTES: Detail may not add to total because of rounding. Statistics are representative of companies located in the United States that performed or funded R&D. For companies that did not report business codes, the classification used for sampling was assigned.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 16. Domestic R&D paid for by the company and others and performed by the company as a percentage of domestic net sales, by industry and company size: 2014

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	340,728	3.5	3.6
Manufacturing industries	31–33	232,815	4.1	4.1
Food	311	5,292 i	0.8	0.8
Beverages and tobacco products	312	920	0.6	0.6
Textiles, apparel, and leather products	313–316	631	1.1	1.1
Wood products	321	362 i	0.8	0.8
Paper	322	723	0.9	0.9
Printing and related support activities	323	234	0.9	0.9
Petroleum and coal products	324	234	0.1	0.1
Chemicals	325	66,301	4.9	4.9
Basic chemicals	3251	2,849	0.6	0.6
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	1,152	0.7	0.7
Pesticides, fertilizers, and other agricultural chemicals	3253	1,790 i	3.5	3.5
Pharmaceuticals and medicines	3254	56,612	13.4	13.5
Soaps, cleaning compounds, and toilet preparations	3256	2,547	1.7	1.7
Paints, coatings, adhesives, and other chemicals	3255, 3259	1,350 i	2.3	2.3
Plastics and rubber products	326	3,574	2.2	2.2
Nonmetallic mineral products	327	1,445 i	3.3	3.4
Primary metals	331	677	0.7	0.7
Fabricated metal products	332	2,131 i	1.4	1.4
Machinery	333	12,128	D	3.6
Agricultural implements	33311	1,578	3.3	3.3
Semiconductor machinery	333295	2,941	26.7	26.7
Engines, turbines, and power transmission equipment	3336	2,347	D	4.6
Other machinery	other 333	5,261	2.3	2.3
Computer and electronic products	334	73,891	10.2	10.2
Communications equipment	3342	18,342	10.1	10.1
Semiconductors and other electronic components	3344	32,142	15.4	15.4
Navigational, measuring, electromedical, and control instruments	3345	15,963	8.8	8.8
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	3,917	9.7	9.7
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	7,861	10.2	10.2
Other measuring and controlling devices	other 3345	4,186	6.6	6.6
Other computer and electronic products	other 334	7,444	4.8	4.8
Electrical equipment, appliances, and components	335	4,365	2.8	2.8
Transportation equipment	336	46,746	4.1	4.3
Automobiles, bodies, trailers, and parts	3361–63	18,404	2.6	2.8
Aerospace products and parts	3364	26,181 i	7.1	7.1
Aircraft, aircraft engines, and aircraft parts	336411–13	24,892 i	7.1	7.1
Guided missiles, space vehicles, and related parts	336414–15, 336419	1,290 i	6.9	6.9
Military armored vehicles, tanks, and tank components	336992	18	2.5	2.5
Other transportation	other 336	2,142 i	3.6	3.7
Furniture and related products	337	373	D	1.0
Miscellaneous manufacturing	339	12,789	3.9	3.9
Medical equipment and supplies	3391	10,309	4.4	4.4
Other miscellaneous manufacturing	3399	2,481	2.8	2.8

TABLE 16. Domestic R&D paid for by the company and others and performed by the company as a percentage of domestic net sales, by industry and company size: 2014

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
Nonmanufacturing industries	21–23, 42–81	107,913	2.7	2.8
Mining, extraction, and support activities	21	4,703	1.0	1.1
Utilities	22	310	0.1	0.1
Wholesale trade	42	339 i	0.2	0.2
Electronic shopping and electronic auctions	454111–12	1,388	2.2	2.2
Transportation and warehousing	48–49	679	0.4	0.4
Information	51	63,773	5.8	5.8
Publishing	511	36,140	D	9.6
Newspaper, periodical, book, and directory publishers	5111	88 i	1.7	1.7
Software publishers	5112	36,052	D	9.7
Telecommunications	517	3,755	0.7	0.7
Data processing, hosting, and related services	518	9,029	9.0	9.0
Other information	other 51	14,849	D	13.2
Finance and insurance	52	4,122	0.7	0.7
Real estate and rental and leasing	53	262	10.4	10.4
Lessors of nonfinancial intangible assets (except copyrighted works)	533	55	17.5	17.5
Other real estate and rental and leasing	other 53	207	9.4	9.4
Professional, scientific, and technical services	54	30,975 i	7.1	7.2
Architectural, engineering, and related services	5413	3,375	3.2	3.2
Computer systems design and related services	5415	11,019 i	9.2	9.4
Scientific R&D services	5417	12,807	22.7	22.8
Biotechnology R&D	541711	3,459	21.4	21.4
Physical, engineering, and life sciences (except biotechnology) R&D	541712	8,670	22.1	22.2
Social sciences and humanities R&D	541720	678	70.8	71.2
Other professional, scientific, and technical services	other 54	3,775	2.5	2.5
Health care services	621–23	501 i	0.9	0.9
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	861 i	0.1	0.1
All companies (number of domestic employees)	–	340,728	3.5	3.6
Small companies ^c				
5–499	–	54,773	5.0	5.1
5–99	–	29,078 i	6.5	6.6
5–49	–	18,900 i	7.4	7.4
5–9	–	3,295 i	10.1	10.4
10–24	–	7,177 i	8.8	8.8
25–49	–	8,428 i	5.9	6.0
50–99	–	10,178 i	5.4	5.5
100–249	–	13,492	3.7	3.7
250–499	–	12,203	4.2	4.4
Medium and large companies				
500–999	–	13,262	3.5	3.5
1,000–4,999	–	57,551	4.5	4.7

TABLE 16. Domestic R&D paid for by the company and others and performed by the company as a percentage of domestic net sales, by industry and company size: 2014

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
5,000–9,999	–	38,202	4.3	4.4
10,000–24,999	–	54,445	2.7	2.8
25,000 or more	–	122,495	3.0	3.0

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

NOTES: 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: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 17. Domestic R&D paid for by the company and others and performed by the company and others as a percentage of domestic net sales, by industry and company size: 2014

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 only ^b
All industries	21–23, 31–33, 42–81	386,703	4.0	4.1
Manufacturing industries	31–33	273,017	4.8	4.8
Food	311	5,846 i	0.9	0.9
Beverages and tobacco products	312	1,126	0.8	0.8
Textiles, apparel, and leather products	313–316	644	1.2	1.2
Wood products	321	377 i	0.8	0.8
Paper	322	747	1.0	1.0
Printing and related support activities	323	242	0.9	0.9
Petroleum and coal products	324	280	0.1	0.1
Chemicals	325	95,162	7.0	7.0
Basic chemicals	3251	3,044	0.6	0.6
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	1,227	0.7	0.7
Pesticides, fertilizers, and other agricultural chemicals	3253	1,932 i	3.8	3.8
Pharmaceuticals and medicines	3254	84,677	20.0	20.0
Soaps, cleaning compounds, and toilet preparations	3256	2,895	2.0	2.0
Paints, coatings, adhesives, and other chemicals	3255, 3259	1,387	2.4	2.4
Plastics and rubber products	326	3,741	2.3	2.3
Nonmetallic mineral products	327	1,616 i	3.7	3.5
Primary metals	331	726	0.7	0.7
Fabricated metal products	332	2,167	1.4	1.4
Machinery	333	12,798	D	3.8
Agricultural implements	33311	1,857	3.9	3.9
Semiconductor machinery	333295	2,946	26.8	26.8
Engines, turbines, and power transmission equipment	3336	2,406	D	4.7
Other machinery	other 333	5,589	2.5	2.5
Computer and electronic products	334	75,955	10.4	10.5
Communications equipment	3342	18,966	10.4	10.4
Semiconductors and other electronic components	3344	32,703	15.7	15.7
Navigational, measuring, electromedical, and control instruments	3345	16,688	9.2	9.2
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	4,078	10.1	10.1
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	8,288	10.8	10.8
Other measuring and controlling devices	other 3345	4,322	6.8	6.8
Other computer and electronic products	other 334	7,598	4.9	4.9
Electrical equipment, appliances, and components	335	4,618	3.0	3.0
Transportation equipment	336	53,049	4.6	4.9
Automobiles, bodies, trailers, and parts	3361–63	21,125	3.0	3.2
Aerospace products and parts	3364	29,744 i	8.0	8.0
Aircraft, aircraft engines, and aircraft parts	336411–13	D	D	D
Guided missiles, space vehicles, and related parts	336414–15, 336419	D	D	D
Military armored vehicles, tanks, and tank components	336992	18	2.6	2.6
Other transportation	other 336	2,162 i	3.6	3.7
Furniture and related products	337	399	D	1.1
Miscellaneous manufacturing	339	13,522	4.2	4.2
Medical equipment and supplies	3391	10,925	4.6	4.6
Other miscellaneous manufacturing	3399	2,597	2.9	2.9

TABLE 17. Domestic R&D paid for by the company and others and performed by the company and others as a percentage of domestic net sales, by industry and company size: 2014

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 only ^b
Nonmanufacturing industries	21–23, 42–81	113,686	2.8	3.0
Mining, extraction, and support activities	21	5,188	1.1	1.2
Utilities	22	574	0.2	0.2
Wholesale trade	42	424 i	0.2	0.2
Electronic shopping and electronic auctions	454111–12	1,388	2.2	2.2
Transportation and warehousing	48–49	700	0.5	0.5
Information	51	65,589	5.9	6.0
Publishing	511	37,369	D	10.0
Newspaper, periodical, book, and directory publishers	5111	98 i	1.9	1.9
Software publishers	5112	37,272	D	10.1
Telecommunications	517	4,029	0.8	0.8
Data processing, hosting, and related services	518	9,206	9.2	9.2
Other information	other 51	14,985	D	13.2
Finance and insurance	52	4,213	0.7	0.7
Real estate and rental and leasing	53	270	10.7	10.7
Lessors of nonfinancial intangible assets (except copyrighted works)	533	55	17.5	17.5
Other real estate and rental and leasing	other 53	215	9.8	9.8
Professional, scientific, and technical services	54	33,846 i	7.8	7.8
Architectural, engineering, and related services	5413	3,582	3.4	3.4
Computer systems design and related services	5415	11,221 i	9.3	9.6
Scientific R&D services	5417	15,149	26.9	26.8
Biotechnology R&D	541711	3,875	24.0	24.0
Physical, engineering, and life sciences (except biotechnology) R&D	541712	10,445	26.6	26.4
Social sciences and humanities R&D	541720	828	86.6	87.0
Other professional, scientific, and technical services	other 54	3,895	2.6	2.6
Health care services	621–23	543 i	1.0	1.0
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	952 i	0.2	0.2
All companies (number of domestic employees)	–	386,703	4.0	4.1
Small companies ^c				
5–499	–	62,598	5.7	5.8
5–99	–	34,155 i	7.7	7.7
5–49	–	21,978 i	8.6	8.6
5–9	–	3,920 i	12.0	12.4
10–24	–	8,284 i	10.1	10.1
25–49	–	9,773 i	6.9	6.9
50–99	–	12,178	6.4	6.5
100–249	–	15,163	4.2	4.2
250–499	–	13,279	4.6	4.7
Medium and large companies				
500–999	–	14,520	3.8	3.9
1,000–4,999	–	66,032	5.2	5.3

TABLE 17. Domestic R&D paid for by the company and others and performed by the company and others as a percentage of domestic net sales, by industry and company size: 2014

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 only ^b
5,000–9,999	–	42,016	4.7	4.9
10,000–24,999	–	66,291	3.2	3.4
25,000 or more	–	135,246	3.3	3.4

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

NOTES: 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: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 18. Domestic R&D paid for and performed by the company, by industry and company size: 2014
(Millions of U.S. dollars)

Industry	NAICS codes	Company size (domestic employees)											
		All companies	5–9 ^a	10–24	25–49	50–99	100–249	250–499	500–999	1,000–4,999	5,000–9,999	10,000–24,999	25,000 or more
All industries	21–23, 31–33, 42–81	282,570	2,426 i	5,506 i	6,237 i	7,526	11,006	10,188	11,736	47,807	30,680	46,904	102,555
Manufacturing industries	31–33	192,160	1,094 i	2,384 i	2,742	4,932	6,497	6,057	8,433	34,708	20,538	41,316	63,460
Food	311	5,071 i	490	14 i	67 i	46 i	187 i	138	129	452	403	1,254	1,890 i
Beverages and tobacco products	312	819	4 i	1 i	1 i	1 i	13	18	11	45	148	34	545
Textiles, apparel, and leather products	313–16	616	7 i	17 i	15 i	20 i	57 i	38	27	170	238	25	0
Wood products	321	351 i	1 i	2 i	2 i	35 i	7 i	15 i	42 i	97 i	88 i	63 i	0
Paper	322	711	* i	6 i	6 i	12 i	49 i	23	29	58	38	473	15
Printing and related support activities	323	232	* i	6 i	D	9 i	52 i	37	19	85	5	D	0
Petroleum and coal products	324	229	5 i	D	8	38	9	32	49	26	0	D	0
Chemicals	325	56,488	138	676	1,099	1,659	2,108	1,923	1,318	10,394	6,103	16,035	15,035
Basic chemicals	3251	2,554	3 i	38 i	74	83 i	217	67	115	720	188	691	360
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	1,136	D	D	37	D	54	53	49	310	0	D	317
Pesticides, fertilizers, and other agricultural chemicals	3253	1,327 i	* i	D	D	D	30	D	3 i	219 i	D	D	0
Pharmaceuticals and medicines	3254	47,646	122	533	886	1,431	1,667	1,683	1,110	8,289	5,158	13,658	13,109
Soaps, cleaning compounds, and toilet preparations	3256	2,531	* i	37	48 i	33 i	82 i	D	36	293	502 i	D	1,194
Paints, coatings, adhesives, and other chemicals	3255, 3259	1,294 i	D	D	D	D	59	D	5	563 i	D	D	55
Plastics and rubber products	326	3,416	30 i	88 i	69 i	123 i	169 i	217	216	641	460	1,402	0
Nonmetallic mineral products	327	1,420 i	3 i	47 i	15 i	22 i	29	24	112	91	55	1,024 i	0
Primary metals	331	615	* i	1	15 i	24 i	41 i	34	93	154	40	25	190
Fabricated metal products	332	2,000	23 i	114 i	71 i	190 i	339 i	286	205	382	326 i	64	0
Machinery	333	11,458	D	208 i	313 i	452 i	721	523	605	2,736	1,786	1,340	D
Agricultural implements	33311	1,539	D	19	D	20	32	31	28	225	14	D	D
Semiconductor machinery	333295	2,821	D	D	D	63 i	88	D	176	1,215 i	D	0	0
Engines, turbines, and power transmission equipment	3336	2,285	D	D	D	59	D	D	15	82	223	D	D
Other machinery	other 333	4,813	D	D	D	311 i	D	D	386	1,213	D	D	0
Computer and electronic products	334	64,695	165 i	384 i	584 i	1,012	1,520	1,780	4,127	12,883	7,513	9,998	24,730
Communications equipment	3342	16,808	22 i	79 i	98 i	153	262	317 i	1,408	2,045 i	715 i	1,358	10,350
Semiconductors and other electronic components	3344	30,029	65 i	55 i	154	289	658	893	1,247	7,197	4,023	6,718	8,732
Navigational, measuring, electromedical, and control instruments	3345	10,576	71 i	185 i	267 i	443 i	417	368	696	2,231	951	1,900	3,047
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	3,697	29 i	96 i	67	111	176	156 i	197	1,048	168	924	726

TABLE 18. Domestic R&D paid for and performed by the company, by industry and company size: 2014
(Millions of U.S. dollars)

Industry	NAICS codes	Company size (domestic employees)											
		All companies	5–9 ^a	10–24	25–49	50–99	100–249	250–499	500–999	1,000–4,999	5,000–9,999	10,000–24,999	25,000 or more
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	2,984	3 i	11 i	31 i	19 i	29	67	9	437	170	285	1,924
Other measuring and controlling devices	other 3345	3,895	39 i	77 i	169 i	313 i	212	145	491	747	613	692	397
Other computer and electronic products	other 334	7,282	7 i	64 i	65	128	184	202	775	1,410	1,824	22	2,601
Electrical equipment, appliances, and components	335	4,178	14 i	178	140 i	626 i	299	171	331	743	423	905	350
Transportation equipment	336	27,261	26 i	252	82 i	204	325	349	530	2,228	2,087	4,382	16,795
Automobiles, bodies, trailers, and parts	3361–63	15,900	12 i	5 i	34	99	210 i	222	395	1,542	1,325	2,265	9,790
Aerospace products and parts	3364	10,300	2 i	242	17 i	42 i	68	39	111	528	467	2,106	6,679
Aircraft, aircraft engines, and aircraft parts	336411–13	10,011	2 i	242	D	40 i	66	39	D	389	D	D	6,679
Guided missiles, space vehicles, and related parts	336414–15, 336419	289	* i	* i	D	1	3	0	D	138	D	D	0
Military armored vehicles, tanks, and tank components	336992	10	* i	2	0	*	2	0	0	5	0	0	0
Other transportation	other 336	1,051	11 i	3 i	31 i	63	44	88	25	154	296	11	326 i
Furniture and related products	337	369	12 i	24 i	18 i	8 i	29 i	34	9 i	131	104	0	0
Miscellaneous manufacturing	339	12,230	D	D	D	452	543 i	416	580	3,392	722 i	4,221	D
Medical equipment and supplies	3391	9,809	43 i	288	199 i	353	362	285	422	2,345	435 i	4,221	855
Other miscellaneous manufacturing	3399	2,421	D	D	D	99 i	182 i	131	158	1,046	287 i	0	D
Nonmanufacturing industries	21–23, 42–81	90,409	1,333 i	3,122 i	3,495 i	2,594	4,509	4,130	3,304	13,099	10,142	5,588	39,094
Mining, extraction, and support activities	21	3,821	11 i	1 i	1 i	D	112	42	84	106	D	1,573	1,739
Utilities	22	258	17 i	* i	4	0	* i	2	3	135	8	50	39
Wholesale trade	42	329 i	26 i	53 i	56 i	58 i	85 i	25 i	14 i	9	0	2 i	0
Electronic shopping and electronic auctions	454111–12	1,388	8 i	D	1 i	D	D	D	0	D	0	D	D
Transportation and warehousing	48–49	675	0	* i	2 i	0	30 i	242	23	9	19 i	0	351
Information	51	62,296	281 i	740 i	1,346 i	948	2,375	2,494	1,875	9,250	8,933	1,538	32,516
Publishing	511	34,869	134 i	448 i	732 i	430	922	921	747	4,939	4,964	3 i	20,628
Newspaper, periodical, book, and directory publishers	5111	88 i	2 i	9 i	3 i	3 i	42 i	2 i	24 i	0	0	3 i	0
Software publishers	5112	34,781	132 i	439 i	730 i	427	880	919	723	4,939	4,964	0	20,628
Telecommunications	517	3,710	15 i	85 i	99 i	30	68	115 i	153	66 i	0	330 i	2,750
Data processing, hosting, and related services	518	8,926	D	D	459 i	444	1,178	1,203	844	2,903	D	1,204	D
Other information	other 51	14,791	D	D	56 i	44	207	254	131	1,341	D	* i	D
Finance and insurance	52	4,090	10 i	42 i	* i	18 i	66	75	353	231	134	795	2,365
Real estate and rental and leasing	53	262	* i	3	2 i	9 i	58	3 i	0	189	0	0	0
Lessors of nonfinancial intangible assets (except copyrighted works)	533	55	0	3	1 i	1 i	49	0	0	0	0	0	0

TABLE 18. Domestic R&D paid for and performed by the company, by industry and company size: 2014
(Millions of U.S. dollars)

Industry	NAICS codes	Company size (domestic employees)											
		All companies	5–9 ^a	10–24	25–49	50–99	100–249	250–499	500–999	1,000–4,999	5,000–9,999	10,000–24,999	25,000 or more
Other real estate and rental and leasing	other 53	207	* i	0	* i	7 i	8 i	3 i	0	189	0	0	0
Professional, scientific, and technical services	54	16,061 i	913 i	2,210 i	2,015 i	1,488 i	1,549 i	1,111	712 i	2,999	897 i	803 i	1,364 i
Architectural, engineering, and related services	5413	1,503 i	34 i	148 i	302 i	99 i	166 i	173 i	80	288	162	51	*
Computer systems design and related services	5415	8,644 i	286 i	934 i	1,120 i	879 i	712 i	483	435 i	2,389 i	685 i	710 i	11
Scientific R&D services	5417	2,668	476 i	913	493	350	305	84	16	0	7	8 i	16 i
Biotechnology R&D	541711	692	D	258 i	D	114	D	11 i	0	0	0	0	16 i
Physical, engineering, and life sciences (except biotechnology) R&D	541712	1,950	386 i	651	351	231	227 i	73	16	0	7	8 i	0
Social sciences and humanities R&D	541720	26	D	4 i	D	5	D	0	0	0	0	0	0
Other professional, scientific, and technical services	other 54	3,245 i	117 i	215 i	100 i	160 i	366 i	371	181	321	43	35	1,336 i
Health care services	621–23	439 i	27 i	3 i	19	19 i	174 i	79	107	1 i	0	* i	9
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	791 i	38 i	D	50 i	D	D	D	133	D	D	D	D

* = amount < \$500,000; 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 Upper bound is based on the U.S. Small Business Administration's definition of a small business; the Business R&D and Innovation Survey does not include companies with fewer than five domestic employees.

NOTES: 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.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 19. Domestic R&D paid for and performed by the company, by character of work, industry, and company size: 2014
(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	282,570	16,107	39,012	227,451
Manufacturing industries	31–33	192,160	13,050	29,392	149,718
Food	311	5,071 i	680 i	1,015 i	3,376
Beverages and tobacco products	312	819	102	214	504
Textiles, apparel, and leather products	313–16	616	45	72	499
Wood products	321	351 i	15 i	79 i	257 i
Printing and related support activities	323	232	5 i	72	155 i
Chemicals	325	56,488	6,945	12,194	37,349
Pharmaceuticals and medicines	3254	47,646	6,201	10,110	31,335
Other chemicals	other 325	8,842	744	2,084	6,014
Plastics and rubber products	326	3,416	433	890	2,093
Nonmetallic mineral products	327	1,420 i	199 i	337 i	884 i
Primary metals	331	615	43 i	120 i	452 i
Fabricated metal products	332	2,000	100 i	307 i	1,593 i
Machinery	333	11,458	618	1,225	9,614
Computer and electronic products	334	64,695	1,740 i	7,559 i	55,397 i
Semiconductor and other electronic components	3344	30,029	681 i	3,904 i	25,445 i
Navigational, measuring, electromedical, and control instruments	3345	10,576	624 i	1,377	8,575
Other computer and electronic products	other 334	24,090	435 i	2,278 i	21,377 i
Electrical equipment, appliances, and components	335	4,178	140	576	3,463
Transportation equipment	336	27,261	1,391	3,080	22,790
Aerospace products and parts	3364	10,300	534	2,043	7,722
Other transportation equipment	other 336	16,961	857	1,037	15,068
Furniture and related products	337	369	22	86	261
Miscellaneous manufacturing	322, 324, 339	13,170	572	1,567	11,032
Nonmanufacturing industries	21–23, 42–81	90,409	3,057	9,620	77,732
Information	51	62,296	2,001	5,468	54,827
Publishing	511	34,869	1,122	2,627	31,120
Telecommunications	517	3,710	308	1,107	2,295
Data processing, hosting, and related services	518	8,926	401	836	7,689
Other information	other 51	14,791	169	897	13,724
Professional, scientific, and technical services	54	16,061 i	780 i	2,448 i	12,833 i
Architectural, engineering, and related services	5413	1,503 i	142 i	372 i	990 i
Computer systems design and related services	5415	8,644 i	336 i	1,229 i	7,079 i
Scientific R&D services	5417	2,668	191 i	542	1,935
Biotechnology R&D	541711	692	49 i	167 i	476 i
Physical, engineering, and life sciences (except biotechnology) R&D	541712	1,950	138	358	1,454
Social sciences and humanities R&D	541720	26	4	17	5
Other professional, scientific, and technical services	other 54	3,245 i	112	304	2,830 i
Other nonmanufacturing	21–23, 42–49, 52, 53, 55–81	12,053	277	1,704	10,072
All companies (number of domestic employees)	–	282,570	16,107	39,012	227,451
Small companies ^a					
5–499	–	42,889	2,249	7,152	33,489
5–99	–	21,695 i	1,066 i	3,779 i	16,850 i
5–49	–	14,169 i	753 i	2,425 i	10,991 i
5–9	–	2,426 i	122 i	348 i	1,956 i
10–24	–	5,506 i	301 i	1,010 i	4,195 i
25–49	–	6,237 i	330 i	1,067 i	4,840 i
50–99	–	7,526	313 i	1,353	5,859
100–249	–	11,006	554	1,851	8,601
250–499	–	10,188	629	1,522	8,037
Medium and large companies					

TABLE 19. Domestic R&D paid for and performed by the company, by character of work, industry, and company size: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS code	Total	Basic research	Applied research	Development
500–999	–	11,736	590	1,804	9,343
1,000–4,999	–	47,807	2,714	7,414	37,680
5,000–9,999	–	30,680	980	3,244	26,456
10,000–24,999	–	46,904	2,379	8,137	36,387
25,000 or more	–	102,555	7,196	11,263	84,096

i = > 50% of the estimate is a combination of imputation and reweighting to account for nonresponse.

NAICS = 2012 North American Industry Classification System.

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

NOTES: 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.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 20. Domestic R&D paid for and performed by the company, by type of cost, industry, and company size: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS code	Total	Salaries, wages, and fringe benefits	Stock-based compensation	Temporary staffing	Expensed equipment	Materials and supplies	Lease and rental payments	Depreciation	Other purchased services (except R&D)	Other
All industries	21-23, 31-33, 42-81	282,570	162,704	16,247	12,257	5,308	20,619	5,170	10,923	5,804	43,538
Manufacturing industries	31-33	192,160	104,426	7,834	7,104	3,778	17,586	3,155	8,385	4,466	35,426
Food	311	5,071 i	2,559 i	79 i	152 i	723 i	288 i	123 i	308 i	197 i	642 i
Beverages and tobacco products	312	819	453	13	28	2	60	5	37	1	221
Textiles, apparel, and leather products	313-16	616	409	5	22 i	2	75	10 i	17	19	57
Wood products	321	351 i	239 i	*	9 i	3 i	77 i	4 i	3 i	3 i	11 i
Paper	322	711	483 i	* i	25 i	2 i	88 i	5 i	19 i	13 i	76 i
Printing and related support activities	323	232	142	3 i	4 i	1 i	47	4 i	8 i	1 i	22
Petroleum and coal products	324	229	149	2	14	1	20	3	7	14	20
Chemicals	325	56,488	26,768	2,334	2,630	245	4,699	1,109	2,438	1,247	15,017
Basic chemicals	3251	2,554	1,519	24	56	29	227	67	158	80	395
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	1,136	706	10	45	16	86	28	58	13	174
Pesticides, fertilizers, and other agricultural chemicals	3253	1,327 i	543 i	D	37 i	3 i	67 i	18 i	75 i	30 i	D
Pharmaceuticals and medicines	3254	47,646	21,529	2,278	2,378	184	4,092	963	1,995	1,088	13,139
Soaps, cleaning compounds, and toilet preparations	3256	2,531	1,606	12	91	7	159	22	101	25	507
Paints, coatings, adhesives, and other	3255, 3259	1,294 i	865	D	24	7	69	11	52	11	D
Plastics and rubber products	326	3,416	1,996	54	98	32	442	40	144	117	493
Nonmetallic mineral products	327	1,420 i	767 i	2 i	44 i	12 i	228 i	15 i	63 i	43 i	247 i
Primary metals	331	615	308	7	6	1	61	1	26	5	200
Fabricated metal products	332	2,000	1,443 i	11 i	34 i	38	262 i	15	47 i	37 i	113
Machinery	333	11,458	6,727	107 i	631	125	1,634	107	505	122	1,500
Agricultural implements	33311	1,539	806	0	97	8	325	10	54	1	239
Semiconductor machinery	333295	2,821	1,330	62 i	153	12	410	13	185	19	638
Engines, turbines, and power transmission equipment	3336	2,285	1,443	2	252	10	241 i	14	98	15	211 i
Other machinery	other 333	4,813	3,148	43 i	129	96	658	70 i	169	87 i	411
Computer and electronic products	334	64,695	37,312	4,891	1,553	1,500	4,593	1,314	3,498	1,521	8,513
Communications equipment	3342	16,808	8,001	2,068	205	597	1,013	658	868	831	2,568
Semiconductors and other electronic components	3344	30,029	18,113 i	2,355 i	581 i	577 i	1,968 i	438 i	1,905 i	233	3,860
Navigational, measuring, electromedical, and control instruments	3345	10,576	6,484	189 i	586	186	1,076	172	338	150	1,394
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	3,697	1,924	124 i	282	104	426	116	181	50	490 i
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	2,984	1,981	14	149	16	304	14	61	25	421
Other measuring and controlling devices	other 3345	3,895	2,580	51	155	66	345	42	97	76	484

TABLE 20. Domestic R&D paid for and performed by the company, by type of cost, industry, and company size: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS code	Total	Salaries, wages, and fringe benefits	Stock-based compensation	Temporary staffing	Expensed equipment	Materials and supplies	Lease and rental payments	Depreciation	Other purchased services (except R&D)	Other
Other computer and electronic products	other 334	7,282	4,714 i	280	182	140	536 i	46	387	307	691
Electrical equipment, appliances, and components	335	4,178	2,907	28	184	47	305	60	117	100 i	430
Transportation equipment	336	27,261	14,261	6	1,192	914	3,757	247	778	643	5,462
Automobiles, bodies, trailers, and parts	3361-63	15,900	9,296	3	1,032	746	2,233	212	462	189	1,727
Aerospace products and parts	3364	10,300	4,346	1	128	145	1,244	26	294	441	3,677
Aircraft, aircraft engines, and aircraft parts	336411-13	10,011	4,178	1	125	D	1,181	25	293	440	D
Guided missiles, space vehicles, and related parts	336414-15, 336419	289	168	0	3 i	D	63 i	1 i	1 i	1	D
Military armored vehicles, tanks, and tank components	336992	10	6	0	0	0	2	0	1	*	1
Other transportation	other 336	1,051	614	2	32	23 i	277	10	21	14	57
Furniture and related products	337	369	267	0	7	1	42	1	4	10 i	35
Miscellaneous	339	12,230	7,234	292	470	129	909	92	366	372	2,366
Medical equipment and supplies	3391	9,809	5,530	267	420	122	810	76	310	358	1,915
Other miscellaneous manufacturing	3399	2,421	1,704	24	50	7 i	99	15	56	14 i	451
Nonmanufacturing industries	21-23, 42-81	90,409	58,278	8,414	5,153	1,530	3,033	2,014	2,538	1,338	8,112
Mining, extraction, and support activities	21	3,821	2,138	41	208	17	489	42	91	327	467
Utilities	22	258	86	*	47	1	18	*	55	38	13
Wholesale trade	42	329 i	203 i	0	10 i	*	53 i	8 i	6 i	9 i	40 i
Electronic shopping and electronic auctions	454111-12	1,388	957	D	*	0	*	0	0	0	D
Transportation and warehousing	48-49	675	439	*	64	7 i	89 i	4 i	16 i	1 i	54 i
Information	51	62,296	39,481	7,485	2,871	1,198	1,696	1,505	1,816	466	5,778
Publishing	511	34,869	23,567	2,509	1,335	251	655	578	957	404	4,615
Newspaper, periodical, book, and directory publishers	5111	88 i	61 i	0	2 i	* i	* i	*	0	5 i	21 i
Software publishers	5112	34,781	23,507	2,509	1,333	251	655	578	957	399	4,594
Telecommunications	517	3,710	2,226	242	135	23	799	203	15	4 i	63
Data processing, hosting, and related services	518	8,926	6,368	666	481	180	84	203	226	34	685
Other information	other 51	14,791	7,320	4,069	921	744	158	522	618	24	414
Finance and insurance	52	4,090	2,408	32	1,005	18	7	68	64	291	198
Real estate and rental and leasing	53	262	165	24	6	6	2	5	29	*	25
Lessors of nonfinancial intangible assets (except copyrighted works)	533	55	53	* i	* i	* i	*	* i	1	0	1
Other real estate and rental and leasing	other 53	207	112	24	6	6	2 i	5	28	*	24
Professional, scientific, and technical services	54	16,061 i	11,542 i	669 i	892 i	262 i	570 i	372 i	432 i	199 i	1,123 i
Architectural, engineering, and related services	5413	1,503 i	1,131 i	3 i	126 i	14 i	61 i	17 i	24 i	4 i	123 i
Computer systems design and related services	5415	8,644 i	6,231 i	555 i	442 i	200 i	151 i	192 i	237 i	121 i	515 i
Scientific R&D services	5417	2,668	1,624	64	120 i	34 i	298	114 i	72 i	61 i	282

TABLE 20. Domestic R&D paid for and performed by the company, by type of cost, industry, and company size: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS code	Total	Salaries, wages, and fringe benefits	Stock-based compensation	Temporary staffing	Expensed equipment	Materials and supplies	Lease and rental payments	Depreciation	Other purchased services (except R&D)	Other
Biotechnology R&D	541711	692	370 i	28	30 i	4 i	85	39 i	24 i	12 i	99
Physical, engineering, and life sciences (except biotechnology) R&D	541712	1,950	1,237	34 i	90 i	30 i	210	75 i	47 i	49 i	178
Social sciences and humanities R&D	541720	26	16	1	* i	*	3	*	1	* i	4
Other professional, scientific, and technical services	other 54	3,245 i	2,557	48 i	203 i	14	60	48	99	13 i	203 i
Health care services	621-23	439 i	265 i	24 i	20 i	8 i	56 i	6 i	18 i	1 i	41
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	791 i	594 i	D	29 i	12 i	55 i	4	11	6 i	D
All companies (number of domestic employees)	-	282,570	162,704	16,247	12,257	5,308	20,619	5,170	10,923	5,804	43,538
Small companies ^a											
5-499	-	42,889	26,918	1,672	1,963 i	964	3,544	1,038	1,325	721 i	4,746
5-99	-	21,695 i	13,495 i	790 i	1,076 i	688	1,863 i	549 i	677 i	402 i	2,155 i
5-49	-	14,169 i	8,736 i	527 i	719 i	603	1,183 i	372 i	460 i	265 i	1,304 i
5-9	-	2,426 i	1,261 i	70 i	132 i	371	157 i	75 i	132 i	52 i	176 i
10-24	-	5,506 i	3,410 i	207 i	288 i	141 i	551 i	141 i	142 i	109 i	517 i
25-49	-	6,237 i	4,064 i	251 i	299 i	91 i	475 i	156	187 i	104 i	610
50-99	-	7,526	4,760	263	357	85 i	680	176	217 i	137 i	851
100-249	-	11,006	7,078	386	517	145 i	898	278	357	191	1,156
250-499	-	10,188	6,344	495	370	130	784	211	291	128	1,435
Medium and large companies											
500-999	-	11,736	7,165	629	487	181	827	227	474	165 i	1,581
1,000-4,999	-	47,807	27,616	3,167	1,677	841 i	2,926	923	1,959	696	8,002
5,000-9,999	-	30,680	17,400	2,623	1,069	452	1,965	428	1,278	860	4,605
10,000-24,999	-	46,904	27,885	1,403 i	1,923	403	4,236	638	1,833	821	7,762
25,000 or more	-	102,555	55,720	6,753	5,137	2,468	7,123	1,917	4,055	2,541	16,842

* = amount < \$500,000; 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 Upper bound is based on the U.S. Small Business Administration's definition of a small business; the Business R&D and Innovation Survey does not include companies with fewer than five domestic employees.

NOTES: 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.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 21. Companies with domestic R&D paid for and performed by the company, by industry and company size, by state: 2014
(Millions of U.S. dollars)

Industry and company size	Companies ^a		United States	Alabama	Alaska	Arizona	Arkansas	California
	NAICS code	(number)						
All industries	21–23, 31–33, 42–81	50,062	282,570	1,299	37 e	4,307	277	85,750
Manufacturing industries	31–33	23,510	192,160	995	10 e	3,393	188	52,693
Food	311	1,403	5,071 i	12 e	4 e	7 e	43	229
Beverage and tobacco products	312	116	819	* e	* e	* e	* e	22
Textiles, apparel, and leather products	313–316	533	616	3 i	* e	* e	* e	72
Wood products	321	281	351 i	1 i	* e	* e	8 i	37 i
Paper	322	270	711	12 i	* e	* i	1 i	8 i
Printing and related support activities	323	306	232	* e	* e	* e	* e	61
Petroleum and coal products	324	107	229	D	D	D	D	35
Chemicals	325	2,585	56,488	91	1	191	47	12,309
Basic chemicals	3251	279	2,554	10	0	* e	11	188
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	239	1,136	1 e	0	2	17	24
Pesticides, fertilizers, and other agricultural chemicals	3253	148	1,327 i	D	D	7 i	4 i	58
Pharmaceuticals and medicines	3254	946	47,646	72	D	159	11	11,820
Soaps, cleaning compounds, and toilet preparations	3256	387	2,531	1 e	D	3 i	2	141
Paints, coatings, adhesives, and other chemicals	3255, 3259	586	1,294 i	D	0	20	1 e	79
Plastics and rubber products	326	1,414	3,416	9 i	* e	212	4 i	122
Nonmetallic mineral products	327	468	1,420 i	2 i	* e	2 i	1 e	140 i
Primary metals	331	253	615	4 i	0	1	4	8 i
Fabricated metal products	332	3,100	2,000	9 e	* e	14	6	136
Machinery	333	3,664	11,458	32	* e	96	10 e	2,316
Agricultural implements	33311	210	1,539	* e	0	4	* e	24 i
Semiconductor machinery	333295	86	2,821	1 e	0	37	0	1,848
Engines, turbines, and power transmission equipment	3336	96	2,285	7	0	D	* e	126
Other machinery	other 333	3,271	4,813	24	* e	D	9 e	319
Computer and electronic products	334	2,885	64,695	653	2	2,588	33 i	31,276
Communications equipment	3342	496	16,808	99	1	77	6	10,121 i
Semiconductors and other electronic components	3344	656	30,029	10	*	1,712	2 e	16,095
Navigational, measuring, electromedical, and control instruments	3345	1,330	10,576	28	* e	786	24 i	2,839
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	285	3,697	2 e	0	42 i	20 i	1,277
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	81	2,984	6	0	674	0	406
Other measuring and controlling devices	other 3345	965	3,895	20	* e	71 i	4	1,156
Other computer and electronic products	other 334	403	7,282	516	0	13	1	2,221

TABLE 21. Companies with domestic R&D paid for and performed by the company, by industry and company size, by state: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS code	Companies ^a (number)	United States	Alabama	Alaska	Arizona	Arkansas	California
Electrical equipment, appliances, and components	335	1,448	4,178	17 e	*	22	11 e	641
Transportation equipment	336	1,520	27,261	123	2	150 i	10 e	2,168 i
Automobiles, bodies, trailers, and parts	3361-63	913	15,900	50	* e	23	3 e	605 i
Aerospace products and parts	3364	332	10,300	46	2	49	6	1,476
Aircraft, aircraft engines, and aircraft parts	336411-13	312	10,011	44	2	D	6	1,410
Guided missiles, space vehicles, and related parts	336414-15, 336419	20	289	2	0	D	0	66 i
Military armored vehicles, tanks, and tank components	336992	10	10	0	0	*	0	0
Other transportation	other 336	265	1,051	27	* e	77 i	1 e	86
Furniture and related products	337	683	369	8	* e	2 e	1 e	14 e
Miscellaneous	339	2,477	12,230	D	D	D	D	3,100
Medical equipment and supplies	3391	865	9,809	9 e	* e	80	2 e	2,784
Other miscellaneous manufacturing	3399	1,612	2,421	D	D	D	D	316 i
Nonmanufacturing industries	21-23, 42-81	26,552	90,409	304	27 e	915	88	33,057
Mining, extraction, and support activities	21	245	3,821	1 e	9	21	1 e	180
Utilities	22	88	258	15	* e	* e	* e	18
Wholesale trade	42	2,601	329 i	3 e	* e	2 e	1 e	40 e
Electronic shopping and electronic auctions	454111-12	173	1,388	D	* e	D	D	D
Transportation and warehousing	48-49	291	675	* e	* e	* e	* e	3 e
Information	51	3,991	62,296	118	4 e	394	48	27,599
Publishing	511	1,899	34,869	73	1	283	8 e	11,507
Newspaper, periodical, book, and directory publishers	5111	169	88 i	* e	* e	* e	* e	27 i
Software publishers	5112	1,729	34,781	73	1	283	8 e	11,480
Telecommunications	517	280	3,710	4 e	3 e	8 i	7 e	135
Data processing, hosting, and related services	518	1,244	8,926	40	* e	101	33	3,521
Other information	other 51	569	14,791	1 e	* e	2	* e	12,436
Finance and insurance	52	822	4,090	3	* e	296	24	160
Real estate and rental and leasing	53	45	262	* e	* e	* e	* e	80
Lessors of nonfinancial intangible assets (except copyrighted works)	533	13	55	0	0	0	0	46
Other real estate and rental and leasing	other 53	32	207	* e	* e	* e	* e	34
Professional, scientific, and technical services	54	12,672	16,061 i	151 i	12 e	190 i	11 e	3,367 i
Architectural, engineering, and related services	5413	1,978	1,503 i	13 e	5 e	13 e	2 e	149 i
Computer systems design and related services	5415	5,645	8,644 i	110	3 e	99 i	5 e	2,221 i
Scientific R&D services	5417	1,509	2,668	24 e	3 e	49	1 e	680
Biotechnology R&D	541711	473	692	* e	0	18 i	* e	218 i

TABLE 21. Companies with domestic R&D paid for and performed by the company, by industry and company size, by state: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS code	Companies ^a						
		(number)	United States	Alabama	Alaska	Arizona	Arkansas	California
Physical, engineering, and life sciences (except biotechnology) R&D	541712	1,007	1,950	23 e	3 e	31	1 e	457
Social sciences and humanities R&D	541720	29	26	* e	0	* e	* e	5
Other professional, scientific, and technical services	other 54	3,542	3,245 i	4 e	1 e	30 i	3 e	317
Health care services	621-23	1,115	439 i	3	* e	4 i	* e	194
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	4,509	791 i	D	1 e	D	D	D
All companies (number of domestic employees)	-	50,062	282,570	1,299	37 e	4,307	277	85,750
Small companies ^b								
5-499	-	47,801	42,889	298 e	24 e	555	96 e	10,899
5-99	-	41,845	21,695 i	181 e	20 e	250 e	66 e	5,213
5-49	-	35,918	14,169 i	133 e	17 e	163 e	46 e	3,078 i
5-9	-	12,279	2,426 i	32 e	6 e	29 e	13 e	454 e
10-24	-	14,629	5,506 i	50 e	6 e	71 e	18 e	1,194 i
25-49	-	9,010	6,237 i	51 e	6 e	63 e	16 e	1,430
50-99	-	5,927	7,526	48 e	2 e	87 i	20 e	2,135
100-249	-	4,523	11,006	50	4 e	150	10 e	3,352
250-499	-	1,433	10,188	68	1 e	154	20 i	2,334
Medium and large companies								
500-999	-	883	11,736	34	1	68	9	3,328
1,000-4,999	-	899	47,807	270	D	485	34	17,960
5,000-9,999	-	178	30,680	64	D	512	8	13,565
10,000-24,999	-	192	46,904	38	8	549	44	11,531
25,000 or more	-	108	102,555	596	2	2,138	85	28,469
Industry and company size	NAICS codes	Colorado	Connecticut	Delaware	District of Columbia	Florida	Georgia	Hawaii
All industries	21-23, 31-33, 42-81	3,829	6,819	1,839 i	183	3,877	3,843	138 i
Manufacturing industries	31-33	2,689	6,326	1,561 i	44	2,065	2,160	105 i
Food	311	68	26	974 i	* e	43	33 e	4 e
Beverages and tobacco products	312	* e	18	* e	* e	8	D	* e
Textiles, apparel, and leather products	313-16	1 e	2 i	* e	* e	4 i	60	* e
Wood products	321	* e	* e	* e	0	* e	12 i	* e
Paper	322	* i	8 i	1	0	17 i	67	* e
Printing and related support activities	323	4	1 e	* e	* e	2 e	2	* e
Petroleum and coal products	324	9	2	D	* e	4	1	* e
Chemicals	325	164	4,286	415	17	415	347	68 i
Basic chemicals	3251	49	40	44	* e	35	46	0
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	* e	2	14	0	2	58	0

TABLE 21. Companies with domestic R&D paid for and performed by the company, by industry and company size, by state: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS codes	Colorado	Connecticut	Delaware	District of Columbia	Florida	Georgia	Hawaii
Pesticides, fertilizers, and other agricultural chemicals	3253	D	2	D	1 i	10	5 i	D
Pharmaceuticals and medicines	3254	95	4,040	356	16	330	215	D
Soaps, cleaning compounds, and toilet preparations	3256	2 e	173	* e	0	21	14	D
Paints, coatings, adhesives, and other chemicals	3255, 3259	D	29	D	* e	17	9 i	* e
Plastics and rubber products	326	20	78	34	0	12	21	14
Nonmetallic mineral products	327	2 e	1 e	* e	* e	16	15	*
Primary metals	331	5	1 i	4	0	* e	2	* e
Fabricated metal products	332	14	68	1 e	* e	29	49 i	* e
Machinery	333	78	240	* e	0	120	110	1
Agricultural implements	33311	2	* e	* e	0	* e	24	0
Semiconductor machinery	333295	10 i	11	0	0	10	0	0
Engine, turbine, and power transmission equipment	3336	7	D	0	0	32	D	0
Other machinery	other 333	59	D	* e	0	79	D	1
Computer and electronic products	334	1,827	280	100 i	26	730	876	13
Communications equipment	3342	348	56	81 i	20	333 i	489	12
Semiconductors and other electronic components	3344	675	10 e	4	*	159	70	*
Navigational, measuring, electromedical, and control instruments	3345	284	206 i	15	* e	229	292	1 i
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	35 i	97 i	* e	0	116 i	29 i	* i
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	106	15	* e	* e	43	26	0
Other measuring and controlling devices	other 3345	143	94 i	15	0	71	237	* e
Other computer and electronic products	other 334	522	9	0	5 i	8	25	1
Electrical equipment, appliances, and components	335	23	78	3	* e	77	99	0
Transportation equipment	336	220	964	4 e	0	379	210 i	2
Automobiles, bodies, trailers, and parts	3361-63	2 e	13	* e	0	8 e	14 e	* e
Aerospace products and parts	3364	204	940	4 e	0	348	54	1
Aircraft, aircraft engines, and aircraft parts	336411-13	116	929	4 e	0	346	54	1
Guided missiles, space vehicles, and related parts	336414-15, 336419	88	11	0	0	2	0	0
Military armored vehicles, tanks, and tank components	336992	5	0	0	0	* i	0	0
Other transportation	other 336	9	11 i	* e	0	23 i	142 i	* e
Furniture and related products	337	22	1 e	3	* e	3 e	14	* e
Miscellaneous	339	232	272	D	* e	206	D	1 e
Medical equipment and supplies	3391	190	256	20	*	193	98	1 e

TABLE 21. Companies with domestic R&D paid for and performed by the company, by industry and company size, by state: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS codes	Colorado	Connecticut	Delaware	District of Columbia	Florida	Georgia	Hawaii
Other miscellaneous manufacturing	3399	41	16	D	* e	14 e	D	* e
Nonmanufacturing industries	21–23, 42–81	1,140	493	278	140	1,812	1,684	33 e
Mining, extraction, and support activities	21	57	D	* e	* e	1 e	8	*
Utilities	22	2 i	* e	* e	0	4	18	1
Wholesale trade	42	3 e	3 e	* e	* e	8 e	15 i	1 e
Electronic shopping and electronic auctions	454111–12	3	D	D	D	D	D	D
Transportation and warehousing	48–49	* e	D	* e	* e	5 i	2 i	* e
Information	51	738	291	186	51	1,172	843	8 e
Publishing	511	399	78	66	25 i	588	580	5
Newspaper, periodical, book, and directory publishers	5111	* e	* e	* e	17 i	1 e	* e	* e
Software publishers	5112	399	78	65	9 e	587	580	5
Telecommunications	517	89	6 e	79 i	2 e	320	53	2 e
Data processing, hosting, and related services	518	140	203	42	16	245 i	182	1 e
Other information	other 51	110	5	* e	8	19 i	28	* e
Finance and insurance	52	5	25	53	* e	198	504	* e
Real estate and rental and leasing	53	1	* e	* e	22	1 e	3	* e
Lessors of nonfinancial intangible assets (except copyrighted works)	533	*	0	0	0	*	* i	0
Other real estate and rental and leasing	other 53	* e	* e	* e	22	1 e	3	* e
Professional, scientific, and technical services	54	300 i	158 i	37 e	45 e	391 i	281 i	22 e
Architectural, engineering, and related services	5413	41 i	29	2 i	4 e	60 i	26 i	7
Computer systems design and related services	5415	149 i	74 i	21 e	19 e	214 i	136 e	7 e
Scientific R&D services	5417	67	43	12 e	8 e	74	24 i	7 i
Biotechnology R&D	541711	4 i	11	3	*	11	8 i	4 i
Physical, engineering, and life sciences (except biotechnology) R&D	541712	63	32	9 e	8 e	63 e	16	2 e
Social sciences and humanities R&D	541720	* e	* e	0	0	* e	* e	* e
Other professional, scientific, and technical services	other 54	43	12 e	2 e	14 e	43 e	95	1 e
Health care services	621–23	1 e	3	* e	* e	6 e	2 e	* e
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	29	12 i	D	D	D	D	D
All companies (number of domestic employees)	–	3,829	6,819	1,839 i	183	3,877	3,843	138 i
Small companies ^b								

TABLE 21. Companies with domestic R&D paid for and performed by the company, by industry and company size, by state: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS codes	Colorado	Connecticut	Delaware	District of Columbia	Florida	Georgia	Hawaii
5-499	-	883	624	600	77 e	998 e	753 i	49 e
5-99	-	350 e	333 e	58 e	66 e	579 e	450 e	36 e
5-49	-	243 e	233 e	47 e	46 e	397 e	296 e	32 e
5-9	-	46 e	32 e	17	10 e	81 e	57 e	7 e
10-24	-	94 e	90 e	20 e	18 e	167 e	111 e	14 i
25-49	-	103 e	112 i	10 e	18 e	148 e	128 e	11 e
50-99	-	108	100 i	11 e	20	182 e	155	5 e
100-249	-	275	154	27	11 e	185	185	12
250-499	-	257	136	515	1 e	233	117	1
Medium and large companies								
500-999	-	137	118	4	18	249	266	8
1,000-4,999	-	881	662	57	30	468	880	8
5,000-9,999	-	563	811	43	5	483	154	1 i
10,000-24,999	-	561	1,246	35	27	773	250	67 i
25,000 or more	-	804	3,358	1,100 i	26	906	1,540	6

Industry and company size	NAICS codes	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana
All industries	21-23, 31-33, 42-81	1,223	11,196	5,015	1,513	1,325	768	299
Manufacturing industries	31-33	1,157	9,536	4,793	1,378	1,135	649	195
Food	311	56	286	30 e	53	26	22	14 e
Beverages and tobacco products	312	* e	D	* e	* e	* e	27	* e
Textiles, apparel, and leather products	313-16	* e	5	1 e	1 i	* e	3	* e
Wood products	321	3 i	1 i	* e	14 i	1 i	* e	1 i
Paper	322	* e	7 i	2 i	* e	6	2 i	7 i
Printing and related support activities	323	1 i	8 i	2 e	2 i	1 e	* e	1
Petroleum and coal products	324	* e	6 i	1	D	4	2	D
Chemicals	325	19	4,445	2,180	151	216	335	68
Basic chemicals	3251	* e	168	23	48	12	36	41
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	* e	74	3	D	8	15	16
Pesticides, fertilizers, and other agricultural chemicals	3253	3	D	8 i	D	7 i	D	D
Pharmaceuticals and medicines	3254	15	3,991	2,124	42	60	12	7
Soaps, cleaning compounds, and toilet preparations	3256	2 e	94	5 e	D	62 i	1 e	1 e
Paints, coatings, adhesives, and other chemicals	3255, 3259	* e	D	18	1 e	67	D	D
Plastics and rubber products	326	2 i	65	394	33	8	23	29
Nonmetallic mineral products	327	1	32	6	4	1 e	2 e	2 e
Primary metals	331	* e	16	32	21	* e	2 i	* e
Fabricated metal products	332	2 e	152	68	14 i	22	17	6 e
Machinery	333	9 e	1,833	291	751	140	38	33
Agricultural implements	33311	1 i	321	2 i	693	94	* e	15
Semiconductor machinery	333295	3 e	* e	0	0	0	0	0

TABLE 21. Companies with domestic R&D paid for and performed by the company, by industry and company size, by state: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS codes	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana
Engines, turbines, and power transmission equipment	3336	*	D	151	2	D	* e	* e
Other machinery	other 333	5 i	D	138	56	D	38	17 i
Computer and electronic products	334	1,049	1,356 i	159	271	360	42	15
Communications equipment	3342	16	793 i	70	14	25	6	7
Semiconductors and other electronic components	3344	949	164	21	26	6 i	5	* e
Navigational, measuring, electromedical, and control instruments	3345	5	290	57	230	220	18 i	7 e
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	* e	110 i	14	7 i	4	8 i	1 i
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	* e	126	21	197	212	2	2
Other measuring and controlling devices	other 3345	5	54 i	21 i	25 i	4 i	7 i	4 e
Other computer and electronic products	other 334	79	109	10 i	1	109	13	* e
Electrical equipment, appliances, and components	335	3 e	206	49	21	7 e	7 e	5 e
Transportation equipment	336	5 e	605	1,003	11 e	331	110	9 e
Automobiles, bodies, trailers, and parts	3361-3363	1 e	324	921	8 e	29	D	2 e
Aerospace products and parts	3364	3 e	255	75	2	302	D	3
Aircraft, aircraft engines, and aircraft parts	336411-13	3 e	255	75	2	302	D	3
Guided missiles, space vehicles, and related parts	336414-15, 336419	0	0	0	0	0	0	0
Military armored vehicles, tanks, and tank components	336992	0	* i	0	0	0	0	0
Other transportation	other 336	1	26	7 i	* e	* e	* e	4 e
Furniture and related products	337	1 e	10 i	32	23	2 i	7	1 e
Miscellaneous	339	6	D	544	D	10 e	11 e	D
Medical equipment and supplies	3391	2 e	160	526	4 e	5 e	6 e	2 e
Other miscellaneous manufacturing	3399	4	D	17	D	5	5 i	D
Nonmanufacturing industries	21-23, 42-81	66 i	1,660	221	135	190	118 i	104 e
Mining, extraction, and support activities	21	3 i	1 e	7	* e	4	2 e	11 e
Utilities	22	4	1 e	* e	5	1 i	* e	10
Wholesale trade	42	1 e	15 e	4 e	3 e	2 e	4 i	2 e
Electronic shopping and electronic auctions	454111-12	D	2 e	D	D	D	D	D
Transportation and warehousing	48-49	* e	1 e	1 e	* e	* e	* e	1 e
Information	51	34	573	126	92	88	37	26 e
Publishing	511	17 e	293	86	34	45	19	14
Newspaper, periodical, book, and directory publishers	5111	* e	1 e	* e	* e	* e	* e	* e
Software publishers	5112	17 e	293	86	34	45	19	14
Telecommunications	517	2 e	59	9 e	9 e	27	7 e	3 e

TABLE 21. Companies with domestic R&D paid for and performed by the company, by industry and company size, by state: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS codes	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana
Data processing, hosting, and related services	518	15	181	29	36	11	10 e	7 e
Other information	other 51	* e	40	1 e	13	5	1 e	1 e
Finance and insurance	52	1	656	1 e	1 e	2	1	1 e
Real estate and rental and leasing	53	* e	14	* e	*	* e	* e	1 i
Lessors of nonfinancial intangible assets (except copyrighted works)	533	0	* i	0	*	0	0	0
Other real estate and rental and leasing	other 53	* e	14	* e	* e	* e	* e	1 i
Professional, scientific, and technical services	54	21 i	371 i	66 e	30 e	88 i	54 e	46 e
Architectural, engineering, and related services	5413	8	33 e	12 e	5 e	6 e	6 e	25 i
Computer systems design and related services	5415	8 e	163 e	35 e	17 e	46 i	17 e	12 e
Scientific R&D services	5417	4	42	12 e	5 e	6 e	26	3 e
Biotechnology R&D	541711	* e	17	2 e	2 e	* e	3 e	* e
Physical, engineering, and life sciences (except biotechnology) R&D	541712	4	25	11	3 e	6 e	22	2 e
Social sciences and humanities R&D	541720	0	* e	* e	0	0	* e	* e
Other professional, scientific, and technical services	other 54	1 e	134	6 e	3 e	31	5 e	6 e
Health care services	621–23	* e	5	1 e	* e	1 e	1 e	1 e
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	D	20	D	D	D	D	D
All companies (number of domestic employees)	–	1,223	11,196	5,015	1,513	1,325	768	299
Small companies ^b								
5–499	–	108 e	1,526 i	555 i	319	217 e	186 e	157 e
5–99	–	71 e	814 e	305 e	136 e	127 e	113 e	102 e
5–49	–	47 e	544 e	185 e	109 e	99 e	85 e	74 e
5–9	–	11 e	103 e	35 e	20 e	22 e	17 e	20 e
10–24	–	17 e	193 e	77 e	46 e	41 e	32 e	27 e
25–49	–	19 e	248 e	73 e	43 e	37 e	36 e	27 e
50–99	–	24 i	269 e	120 e	27 e	28 e	27 e	28 e
100–249	–	29	408	104 i	121	39 i	33 i	46
250–499	–	9	305	146	61	51	40	9
Medium and large companies								
500–999	–	5	358	82	58	38	31	4
1,000–4,999	–	77	1,400	654	94	350	375	68
5,000–9,999	–	753	649 i	414	55	200	24	2
10,000–24,999	–	13	4,390	3,056	307	373	24	40
25,000 or more	–	267	2,872	253	681	148	127	28

TABLE 21. Companies with domestic R&D paid for and performed by the company, by industry and company size, by state: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS codes	Maine	Maryland	Massachusetts	Michigan	Minnesota	Mississippi	Missouri
All industries	21-23, 31-33, 42-81	308	3,445	17,101	15,421	6,403	198	4,037
Manufacturing industries	31-33	241	2,215	12,580	14,811	5,348	159	3,038
Food	311	5 e	58	43 e	314	365	15 e	39
Beverages and tobacco products	312	* e	* e	11	* e	* e	* e	22
Textiles, apparel, and leather products	313-16	1 e	1 e	34	40	9	* e	2 i
Wood products	321	* e	* e	3	1 i	81 i	6 i	1 i
Paper	322	12	5	21	3 i	5	1 i	2 i
Printing and related support activities	323	* e	1 e	3 i	9 i	9	* e	1 e
Petroleum and coal products	324	D	D	2	1 i	D	D	* i
Chemicals	325	15 i	1,028 i	7,570	423	329	30 i	1,545 i
Basic chemicals	3251	* e	58	108	68	26	6	D
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	* e	* e	23	215	8	* i	D
Pesticides, fertilizers, and other agricultural chemicals	3253	3 i	3 i	9 i	5	10 i	D	D
Pharmaceuticals and medicines	3254	12 i	947 i	7,296	93	168	4	784
Soaps, cleaning compounds, and toilet preparations	3256	* e	19	116	7	87	1 e	D
Paints, coatings, adhesives, and other chemicals	3255, 3259	* e	1 e	19 i	35	30 i	D	D
Plastics and rubber products	326	1 e	103	141	501	125	5	17
Nonmetallic mineral products	327	* e	4	73	42	9	3	4 i
Primary metals	331	* e	10	2 i	34	14	1	6
Fabricated metal products	332	1 e	11	48	117	51 i	3 e	39
Machinery	333	4 e	166	316	346 i	386	21	95
Agricultural implements	33311	* e	1 i	* e	4	97 i	* e	* e
Semiconductor machinery	333295	0	1 e	214	* e	10 i	0	0
Engines, turbines, and power transmission equipment	3336	1	*	9	16	29	* e	2
Other machinery	other 333	3 e	164	92	326 i	249	21	92
Computer and electronic products	334	72 i	371	3,031	241	1,050	19	112
Communications equipment	3342	3	265	350	51	86 i	5	36
Semiconductors and other electronic components	3344	65 i	38	1,064	23	90	1 e	57
Navigational, measuring, electromedical, and control instruments	3345	2 e	49	1,075	105	291	12	18 i
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	1 i	33	521	20 i	31	4	1 i

TABLE 21. Companies with domestic R&D paid for and performed by the company, by industry and company size, by state: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS codes	Maine	Maryland	Massachusetts	Michigan	Minnesota	Mississippi	Missouri
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	0	10	194	17	134	* e	1 e
Other measuring and controlling devices	other 3345	1 e	5 e	360	67	125	7	17 i
Other computer and electronic products	other 334	2	20	541	62 i	583	1 e	1 e
Electrical equipment, appliances, and components	335	1 e	18	248	533	134	34 e	85
Transportation equipment	336	34	325	341	11,874	342	15	880
Automobiles, bodies, trailers, and parts	3361-63	1 e	49	84	11,645	125 i	13	D
Aerospace products and parts	3364	30	262	236	112	50	1	D
Aircraft, aircraft engines, and aircraft parts	336411-13	D	261	236	112	D	1	D
Guided missiles, space vehicles, and related parts	336414-15, 336419	D	* i	*	0	D	0	3
Military armored vehicles, tanks, and tank components	336992	0	0	2	0	2	0	0
Other transportation	other 336	3 i	14	18	117	164	1	8
Furniture and related products	337	1 e	1 e	1 e	78	23	3 i	2 e
Miscellaneous	339	D	D	693	254	D	D	188
Medical equipment and supplies	3391	91	104	610	232	2,406	2 e	180
Other miscellaneous manufacturing	3399	D	D	83	21 i	D	D	8 i
Nonmanufacturing industries	21-23, 42-81	66 i	1,230	4,520	610	1,055	39	999 i
Mining, extraction, and support activities	21	1	* e	D	13	2	4	1 e
Utilities	22	* e	*	* e	2	* e	2	2
Wholesale trade	42	1 e	3 e	6 e	6 e	9 i	3	4 e
Electronic shopping and electronic auctions	454111-12	D	D	3 i	D	D	D	D
Transportation and warehousing	48-49	* e	341	1 e	D	1 e	* e	1 e
Information	51	39 i	353	3,275	315	708	15	201
Publishing	511	29	196	2,440	214	560	8	71
Newspaper, periodical, book, and directory publishers	5111	* e	1 i	7 i	* e	1 e	* e	2 i
Software publishers	5112	29	196	2,433	213	560	8	68
Telecommunications	517	6 e	19	18	8 e	8 e	2 e	6 e
Data processing, hosting, and related services	518	4 e	133	561	88	130	5	119
Other information	other 51	* e	5	257	5	10	1 e	5
Finance and insurance	52	1	11	81	11	6	1 i	14
Real estate and rental and leasing	53	* e	1 i	3	* e	1 i	* e	* i
Lessors of nonfinancial intangible assets (except copyrighted works)	533	0	0	* i	0	1 i	0	* i
Other real estate and rental and leasing	other 53	* e	1 i	3	* e	* e	* e	* e
Professional, scientific, and technical services	54	21 i	511 e	967	253 i	316 i	13 e	762 i
Architectural, engineering, and related services	5413	4 i	32 i	32 i	45 i	11 e	3 e	11 e

TABLE 21. Companies with domestic R&D paid for and performed by the company, by industry and company size, by state: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS codes	Maine	Maryland	Massachusetts	Michigan	Minnesota	Mississippi	Missouri
Computer systems design and related services	5415	15 i	254 e	392 i	103 e	154 i	3 e	700 i
Scientific R&D services	5417	2 e	128 e	373	75	53	6	38
Biotechnology R&D	541711	1 e	38	D	14	5	0	2 e
Physical, engineering, and life sciences (except biotechnology) R&D	541712	1 e	90 e	211 i	61	48	6	36
Social sciences and humanities R&D	541720	* e	* e	D	* i	* e	0	0
Other professional, scientific, and technical services	other 54	1 e	96	170 i	30 i	98	1 e	13 e
Health care services	621-23	1 i	2	10	2 e	1 e	* e	4
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	D	D	D	7 e	D	D	D
All companies (number of domestic employees)	-	308	3,445	17,101	15,421	6,403	198	4,037
Small companies ^b								
5-499	-	67 e	822	3,597	1,267 i	1,039	87 e	430 i
5-99	-	51 e	547 e	1,801	653 e	489 e	69 e	217 e
5-49	-	32 e	432 e	1,121	438 e	314 e	44 e	141 e
5-9	-	8 e	87 e	139 e	71 e	55 e	10 e	28 e
10-24	-	14 e	153 e	409 i	192 e	113 e	21 e	57 e
25-49	-	10 e	191 e	574	175 e	145 i	13 e	55 e
50-99	-	18 i	115 e	680	215 i	175	25 e	76 e
100-249	-	15	141	764	317	234	14 e	107
250-499	-	1 e	135	1,031	296	317	4 e	107
Medium and large companies								
500-999	-	4	142	984	413	429	6	21
1,000-4,999	-	178	1,096 i	5,042	1,435	837	27	405
5,000-9,999	-	8 i	162	1,729 i	469	805	4	267
10,000-24,999	-	39	487	2,044	1,927	2,003	46 i	1,541 i
25,000 or more	-	11	735	3,705	9,910	1,290	28	1,373
Industry and company size	NAICS codes	Montana	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York
All industries	21-23, 31-33, 42-81	188	543	576	869	11,027	270	10,794
Manufacturing industries	31-33	115	247	462	473	8,297	173	6,183
Food	311	1 e	97	3 e	4	322	2 e	105
Beverages and tobacco products	312	* e	* e	* e	* e	* e	* e	D
Textiles, apparel, and leather products	313-16	2	* e	1	14	6 i	* e	40 i
Wood products	321	* e	* e	* e	* e	6 i	* e	* e
Paper	322	* e	2	* e	1	15 i	* e	18 i
Printing and related support activities	323	* i	* e	* e	* e	8	* e	11

TABLE 21. Companies with domestic R&D paid for and performed by the company, by industry and company size, by state: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS codes	Montana	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York
Petroleum and coal products	324	D	* e	D	D	70	D	1 i
Chemicals	325	7	39 i	12 i	20	6,071	33	2,268
Basic chemicals	3251	* e	2 e	* e	3	236	15	129
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	0	D	* e	1 i	3 i	0	53
Pesticides, fertilizers, and other agricultural chemicals	3253	D	D	D	0	D	D	2
Pharmaceuticals and medicines	3254	5	35 i	3 e	14	5,338	17	1,869
Soaps, cleaning compound,s and toilet preparations	3256	* e	D	D	* e	330 i	D	205
Paints, coatings, adhesives, and other chemicals	3255, 3259	D	* e	D	1	D	* e	9 i
Plastics and rubber products	326	* e	13	1 e	6 i	53 i	* e	75
Nonmetallic mineral products	327	1	1 e	5	8	24	* e	727 i
Primary metals	331	* e	* e	1	8 i	3	* e	7
Fabricated metal products	332	1 e	7	4	11	89	1 e	57 i
Machinery	333	D	33	4 e	51	103 i	15	459
Agricultural implements	33311	* e	24	0	10	* e	* e	* e
Semiconductor machinery	333295	D	0	* e	2 e	62 i	9	58
Engines, turbine, and power transmission equipment	3336	* e	*	* e	*	1	1	33
Other machinery	other 333	1 e	8	4 e	39	40	5 i	368
Computer and electronic products	334	8	34	42	274	1,036	92	938
Communications equipment	3342	2	4	13	89	591 i	5	305 i
Semiconductors and other electronic components	3344	3	4	1 e	99	225	57	141
Navigational, measuring, electromedical, and control instruments	3345	3	21	23 i	68	204	26	479
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	* e	0	8 i	37	45 i	* e	167
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	* e	10	11	16	86	12	232
Other measuring and controlling devices	other 3345	3	12	4 e	15	72 i	14	80
Other computer and electronic products	other 334	* e	5	5	17	16	4	14 e
Electrical equipment, appliances, and components	335	5	5 e	15	11 e	75	4	101
Transportation equipment	336	6 i	12	29	25	99	22	899
Automobiles, bodies, trailers, and parts	3361-63	1 e	9	* e	4	18	*	176
Aerospace products and parts	3364	5 i	2 e	28	15	72	22	705
Aircraft, aircraft engines, and aircraft parts	336411-13	D	2 e	28	15	72	22	705
Guided missiles, space vehicles, and related parts	336414-15, 336419	D	0	0	0	0	* i	0

TABLE 21. Companies with domestic R&D paid for and performed by the company, by industry and company size, by state: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS codes	Montana	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York
Military armored vehicles, tanks, and tank components	336992	0	0	0	*	0	0	0
Other transportation	other 336	* e	1 i	* e	6	10	0	17
Furniture and related products	337	* e	* e	* e	* e	3 e	* e	13 i
Miscellaneous	339	D	3 e	D	D	314	D	D
Medical equipment and supplies	3391	3 e	2 e	2 e	30	298	2 e	188
Other miscellaneous manufacturing	3399	D	1 e	D	D	16 i	D	D
Nonmanufacturing industries	21-23, 42-81	73	297 i	114	396	2,730 i	97 i	4,612
Mining, extraction, and support activities	21	8	1	4	1	D	5	3
Utilities	22	* e	* e	*	* e	4	* i	8
Wholesale trade	42	* e	1 e	1 e	2 i	24 i	1 e	21 e
Electronic shopping and electronic auctions	454111-12	D	D	D	D	D	D	5 e
Transportation and warehousing	48-49	* e	* e	* e	* e	1 e	* e	2 e
Information	51	48	214 i	59	234	944	24	3,337
Publishing	511	6	24 e	43	157	445 i	10 e	2,065
Newspaper, periodical, book, and directory publishers	5111	* e	* e	* i	* e	1 e	* e	2 e
Software publishers	5112	6	24 e	43	156	444 i	10 e	2,063
Telecommunications	517	3 e	5 e	3 e	7 e	350	2 e	79 e
Data processing, hosting, and related services	518	38	173 i	11 i	70	116	2 e	466
Other information	other 51	* e	12	1 e	1 e	33	9	727
Finance and insurance	52	*	29	1	*	139	*	673
Real estate and rental and leasing	53	* e	* e	1	* e	* e	* e	2 i
Lessors of nonfinancial intangible assets (except copyrighted works)	533	0	* i	0	0	0	* i	1 i
Other real estate and rental and leasing	other 53	* e	* e	1	* e	* e	* e	1 e
Professional, scientific, and technical services	54	15 i	39 i	43 e	157	1,343 i	65 i	509 e
Architectural, engineering, and related services	5413	6	3 e	6 i	9	28 i	6 i	41 e
Computer systems design and related services	5415	3 e	23 i	14 e	109	488 i	19 i	284 e
Scientific R&D services	5417	4 e	3 e	19	37	99	25	92
Biotechnology R&D	541711	* e	1 e	* e	18	28	5	34 i
Physical, engineering, and life sciences (except biotechnology) R&D	541712	3 e	2 e	19	19	72	20	58
Social sciences and humanities R&D	541720	* e	0	* e	0	* e	* e	* e
Other professional, scientific, and technical services	other 54	2	11	4 e	2 e	728 i	16 i	91 e

TABLE 21. Companies with domestic R&D paid for and performed by the company, by industry and company size, by state: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS codes	New						
		Montana	Nebraska	Nevada	Hampshire	New Jersey	New Mexico	New York
Health care services	621-23	* e	2	* e	* e	2 e	* e	5 e
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	D	D	D	D	D	D	48
All companies (number of domestic employees)	-	188	543	576	869	11,027	270	10,794
Small companies ^b								
5-499	-	70	141 e	147	293	1,452	132 i	1,768 i
5-99	-	27 e	77 e	89 e	185 i	856 e	107 i	1,015 e
5-49	-	23 e	50 e	66 e	77 e	585 e	74 i	725 e
5-9	-	4 e	12 e	11 e	15 e	85 e	9 e	129 e
10-24	-	9 e	20 e	33 e	30 e	236 e	34 i	287 e
25-49	-	10 e	18 e	22 e	33 e	263 e	31 i	309 e
50-99	-	4 e	27 i	22 e	108	271	33	290 e
100-249	-	38	31 i	31	64	434	20	318
250-499	-	5	33	27	43	162	5	434
Medium and large companies								
500-999	-	17	38	11	162	269	1 e	559
1,000-4,999	-	6	183 i	341	239	1,532	13	1,285
5,000-9,999	-	78	54	13	21 i	995 i	19	1,388 i
10,000-24,999	-	14 i	23	18 i	61	1,777	20	1,780 i
25,000 or more	-	3	104	47	94	5,001	86	4,015

Industry and company size	NAICS codes	North						
		Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island
All industries	21-23, 31-33, 42-81	6,125	247	6,137	543	6,160	9,635	479
Manufacturing industries	31-33	4,207	98	5,434	332	5,361	7,752	386
Food	311	241 i	4 e	133	14	23 e	133	3 e
Beverages and tobacco products	312	58	* e	* e	* e	* e	1 i	* e
Textiles, apparel, and leather products	313-16	64 i	* e	72	* e	33	4 e	3
Wood products	321	5 i	19 i	1 i	1 i	26 i	1 e	2
Paper	322	15 i	* e	25	* e	* e	25	5
Printing and related support activities	323	2 i	* e	10	* e	3	4 i	*
Petroleum and coal products	324	2	D	6 i	D	4	16	D
Chemicals	325	1,378	3	2,142	62	49	4,621	58 i
Basic chemicals	3251	128 i	* e	266	25	* e	101	1
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	12	0	295	6	4	26	7
Pesticides, fertilizers, and other agricultural chemicals	3253	51 i	1 i	33	D	D	12 i	0
Pharmaceuticals and medicines	3254	1,120	2	362	28	40	4,251	47 i
Soaps, cleaning compounds, and toilet preparations	3256	28	* e	1,092	* e	1 e	7 e	1 e
Paints, coatings, adhesives, and other chemicals	3255, 3259	40	* e	93	D	D	224	2
Plastics and rubber products	326	63	2	121	46	17	248	11

TABLE 21. Companies with domestic R&D paid for and performed by the company, by industry and company size, by state: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS codes	North						Rhode Island
		Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	
Nonmetallic mineral products	327	12	2	44	2 e	4	74	* e
Primary metals	331	21	* e	28	1 e	15	188	1
Fabricated metal products	332	23	1 e	184	7 e	70	72 i	11
Machinery	333	176	57	492	40	200	331	9
Agricultural implements	33311	56	49	3	*	1 i	56	0
Semiconductor machinery	333295	0	0	2 e	0	100	7	0
Engines, turbine, and power transmission equipment	3336	66	1	20	* e	3	19	1 i
Other machinery	other 333	54	6 i	467	39	97	249	9
Computer and electronic products	334	1,604	1 e	670	42 i	4,302	1,076	92
Communications equipment	3342	605	* e	122 i	11	41	355	3
Semiconductors and other electronic components	3344	630	* e	85	2 e	4,085	265	23
Navigational, measuring, electromedical, and control instruments	3345	162	1 e	404 i	28 i	111	337	49
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	35 i	0	153	1	17 i	242	18
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	49	0	28	3	60	33	14
Other measuring and controlling devices	other 3345	78	1 e	223 i	24 i	34	62	17
Other computer and electronic products	other 334	206	* e	59	1 i	65	119	16
Electrical equipment, appliances, and components	335	156	1 e	95	12 e	46	296	5 e
Transportation equipment	336	180	6	1,195	39	209	418	2 e
Automobiles, bodies, trailers, and parts	3361-63	135	1 e	294	10 e	189	123	1 e
Aerospace products and parts	3364	39	4	900	29	19	287	*
Aircraft, aircraft engines, and aircraft parts	336411-13	39	4	896	29	19	D	*
Guided missiles, space vehicles, and related parts	336414-15, 336419	0	0	4	0	0	D	0
Military armored vehicles, tanks, and tank components	336992	0	0	*	0	*	0	0
Other transportation	other 336	7	* e	1 e	* e	2 e	8	1 e
Furniture and related products	337	21	* e	9 i	1 e	3 i	10	1 e
Miscellaneous	339	187	D	207	D	357	235	D
Medical equipment and supplies	3391	156	1 e	124	5	28	163	37
Other miscellaneous manufacturing	3399	31	D	83	D	328	72 i	D
Nonmanufacturing industries	21-23, 42-81	1,918	149	703	211	798	1,883	93
Mining, extraction, and support activities	21	4	3 e	7	112	* e	22	* e
Utilities	22	60	* e	21	* e	1 i	16	* e
Wholesale trade	42	12 i	1 e	14 i	3 e	3 e	8 e	1 i
Electronic shopping and electronic auctions	454111-12	D	D	D	D	D	3 i	D
Transportation and warehousing	48-49	1 e	* e	3 i	* e	7	33 i	* e
Information	51	1,411	92	347	51	619	889	61

TABLE 21. Companies with domestic R&D paid for and performed by the company, by industry and company size, by state: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS codes	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island
Publishing	511	1,223	86	266	18	383	622	55
Newspaper, periodical, book, and directory publishers	5111	1 i	* e	* e	* e	* e	2 i	* e
Software publishers	5112	1,222	86	266	18	383	621	55
Telecommunications	517	62	4 e	13 e	7 e	7 e	51	1 e
Data processing, hosting, and related services	518	103	2 e	65	10 e	210	122	5
Other information	other 51	23	* e	3 e	16	18	94	* e
Finance and insurance	52	148	* e	23	1 e	1	156	9
Real estate and rental and leasing	53	* e	* e	* e	* e	5	1 i	* e
Lessors of nonfinancial intangible assets (except copyrighted works)	533	*	0	* i	0	5	0	0
Other real estate and rental and leasing	other 53	* e	* e	* e	* e	* e	1 i	* e
Professional, scientific, and technical services	54	254 i	52 i	264 i	39 e	149	732 i	15 e
Architectural, engineering, and related services	5413	45	10	22 e	8 e	61	116	2 e
Computer systems design and related services	5415	156 i	34 i	125 e	11 e	45 i	425 i	8 e
Scientific R&D services	5417	40	5	68	5 e	16 i	138	4 e
Biotechnology R&D	541711	9	* e	1 e	1 e	1 e	31 i	1 e
Physical, engineering, and life sciences (except biotechnology) R&D	541712	28 e	5	67	4 e	14 i	106	3 e
Social sciences and humanities R&D	541720	3	0	* e	0	1 i	* i	0
Other professional, scientific, and technical services	other 54	13 e	3	49	15	27	53	2 e
Health care services	621–23	12	* e	5 i	1 e	3	2 e	* e
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	D	D	D	D	D	21 i	D
All companies (number of domestic employees)	–	6,125	247	6,137	543	6,160	9,635	479
Small companies ^b								
5–499	–	719 i	52 e	1,111 i	163 e	536	1,421	116 i
5–99	–	455 e	27 e	663 e	106 e	227 e	779 e	74 e
5–49	–	307 e	21 e	447 e	78 e	144 e	517 e	60 e
5–9	–	53 e	6 e	80 e	18 e	30 e	108 e	8 e
10–24	–	121 e	10 e	171 e	36 e	50 e	218 e	21 e
25–49	–	134 e	6 e	196 e	24 e	65 e	191 e	32 i
50–99	–	148 i	6 e	216 e	27 e	83	262 i	13 e
100–249	–	141 i	19	256	40	99	376	28

TABLE 21. Companies with domestic R&D paid for and performed by the company, by industry and company size, by state: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS codes	North						Rhode Island
		Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	
250-499	-	122	6	192	17	210	266	15
Medium and large companies								
500-999	-	466	32 i	243	33	133	350	9
1,000-4,999	-	892	27 i	824	74	754	1,395	294
5,000-9,999	-	920	*	503	18	119	869	3
10,000-24,999	-	1,339	29	735	149	406	2,788	28
25,000 or more	-	1,790	107	2,723	106	4,212	2,812	29
Industry and company size	NAICS codes	South						Virginia
		Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	
All industries	21-23, 31-33, 42-81	936	121	1,365	13,674	2,275	259	2,877
Manufacturing industries	31-33	669	91	1,049	7,841	914	120	1,405
Food	311	7 e	6 e	55	70 e	12 e	3 e	217 i
Beverages and tobacco products	312	* e	* e	3	128	2	* e	95
Textiles, apparel, and leather products	313-16	71	* e	2 e	7	* e	2	1 e
Wood products	321	14 i	* e	7 i	2 i	* e	* i	10 i
Paper	322	43	* e	7	3 i	1	* e	39 i
Printing and related support activities	323	* e	* e	8	2 e	1 i	* e	7
Petroleum and coal products	324	D	* e	D	2 e	D	0	1
Chemicals	325	76	17	273	937	136	34	294
Basic chemicals	3251	14	13	197	162	6	* i	129
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	21	* e	28	88	D	0	18
Pesticides, fertilizers, and other agricultural chemicals	3253	D	3 i	4 i	9 i	D	* e	3
Pharmaceuticals and medicines	3254	25	D	33	588	127	26	138
Soaps, cleaning compounds, and toilet preparations	3256	5 e	D	6 e	62	D	7 i	4
Paints, coatings, adhesives, and other chemicals	3255, 3259	D	* e	6 i	29 i	D	* e	2 e
Plastics and rubber products	326	78 i	3	27	329	4 i	* e	27
Nonmetallic mineral products	327	6 i	1 e	3 i	14	1 e	5	3 e
Primary metals	331	1 i	* e	58	53	3	1 i	1
Fabricated metal products	332	33	2 i	28	84 i	8 i	1 e	12
Machinery	333	38	12	47	612	18 i	12 i	64
Agricultural implements	33311	* e	* e	* e	1 e	* e	* e	* e
Semiconductor machinery	333295	0	0	* e	284	3 i	0	0
Engine, turbine, and power transmission equipment	3336	1	* e	7	99	* e	5 i	35
Other machinery	other 333	37	11	40	228	15 i	8 i	30 i
Computer and electronic products	334	133	43	112	4,821	249	20	351
Communications equipment	3342	21	1	31	629	30	1	242
Semiconductor and other electronic components	3344	71	25	8	2,274	54	2	20 i

TABLE 21. Companies with domestic R&D paid for and performed by the company, by industry and company size, by state: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS codes	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia
Navigational, measuring, electromedical, and control instruments	3345	42	16	65 i	460 i	121 i	17	83
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	16 i	0	53 i	58 i	67 i	4 i	31 i
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	0	* e	1 e	122	17	* e	36
Other measuring and controlling devices	other 3345	26	16	11 e	280 i	38	13	16
Other computer and electronic products	other 334	* e	* e	8	1,458 i	44	* e	7 e
Electrical equipment, appliances, and components	335	76	1 e	67	117	6 e	6 e	29
Transportation equipment	336	73	5	187	416	245	22	208 i
Automobiles, bodies, trailers, and parts	3361-63	51	3 e	174	88	177	* e	21
Aerospace products and parts	3364	10	*	8	314	68	22	106
Aircraft, aircraft engines, and aircraft parts	336411-13	10	*	8	314	D	22	D
Guided missiles, space vehicles, and related parts	336414-15, 336419	0	0	* i	*	D	*	D
Military armored vehicles, tanks, and tank components	336992	*	0	0	0	0	*	0
Other transportation	other 336	11	1	6	13	* e	* e	81 i
Furniture and related products	337	1 e	1 e	1 e	8 e	4	1 e	13
Miscellaneous	339	D	1 e	D	237	D	13	34
Medical equipment and supplies	3391	12	* e	144	213	189	2 e	13 e
Other miscellaneous manufacturing	3399	D	1 e	D	24 e	D	11	21
Nonmanufacturing industries	21-23, 42-81	267	30 i	316	5,832	1,362	139	1,472 i
Mining, extraction, and support activities	21	* e	* e	2	2,864	18	* e	30
Utilities	22	*	2 i	* e	2 e	* e	* e	4
Wholesale trade	42	3 e	1 e	8 i	17 e	12 i	* e	4 e
Electronic shopping and electronic auctions	454111-12	D	* e	D	2 e	D	D	D
Transportation and warehousing	48-49	* e	* e	1 e	27 i	* e	* e	8 i
Information	51	183	18	104	1,739	576	123	617
Publishing	511	50	9	77	1,112	356	109	257
Newspaper, periodical, book, and directory publishers	5111	* e	* e	* e	13 i	* e	* e	* e
Software publishers	5112	50	8	77	1,099	356	109	257
Telecommunications	517	17 e	3 e	3 e	64 i	11 i	3 e	99
Data processing, hosting, and related services	518	97	6	20	486	162 i	10	251
Other information	other 51	19	* e	3 e	77	48	*	10
Finance and insurance	52	26	* e	2 e	151	63	* e	11
Real estate and rental and leasing	53	* e	* e	* e	4	* e	* e	* e
Lessors of nonfinancial intangible assets (except copyrighted works)	533	0	0	0	0	0	0	* i
Other real estate and rental and leasing	other 53	* e	* e	* e	4	* e	* e	* e

TABLE 21. Companies with domestic R&D paid for and performed by the company, by industry and company size, by state: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS codes	South						
		Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia
Professional, scientific, and technical services	54	46 e	7 e	196	849 i	684	15 e	788 e
Architectural, engineering, and related services	5413	14 i	1 e	14 e	195	16	1 e	80
Computer systems design and related services	5415	19 e	4 i	36 e	457 i	36 e	11 i	571 e
Scientific R&D services	5417	8 e	1 e	20 e	103	18 e	3 e	74 e
Biotechnology R&D	541711	* e	1	2 e	8 e	1 e	* e	5 e
Physical, engineering, and life sciences (except biotechnology) R&D	541712	8 e	1 e	18 e	95	17 e	2 e	69 e
Social sciences and humanities R&D	541720	* e	* e	* e	* e	* e	* e	* e
Other professional, scientific, and technical services	other 54	5 e	* e	126	94 i	614	1 e	62 e
Health care services	621-23	5 i	* e	1 e	5 e	* e	* e	5
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	D	2 i	D	172	D	D	D
All companies (number of domestic employees)	-	936	121	1,365	13,674	2,275	259	2,877
Small companies ^b								
5-499	-	198 e	41 e	337 e	2,029 i	494	88 i	963 e
5-99	-	112 e	23 e	212 e	1,262 e	188 e	55 e	688 e
5-49	-	81 e	17 e	135 e	853 e	127 e	26 e	524 e
5-9	-	17 e	5 e	25 e	141 e	23 e	6 e	95 e
10-24	-	34 e	6 e	51 e	332 e	48 e	10 e	214 e
25-49	-	30 e	5 e	58 e	380 e	56 e	11 e	215 e
50-99	-	32 e	6 e	77 e	409 i	61	28 i	163 e
100-249	-	50	16	70	527	125	18	203
250-499	-	35	2	55	239	181	15	72
Medium and large companies								
500-999	-	82	18	44	715	39	5	211
1,000-4,999	-	208	49	256	1,546	663	5	504
5,000-9,999	-	198	1 i	66	1,186	152	34	257
10,000-24,999	-	91	7 i	409	3,154	179	24	147 i
25,000 or more	-	159	4	255	5,044	749	103	795
Industry and company size	NAICS codes	Washington	West Virginia	Wisconsin	Wyoming	Undistributed ^c		
All industries	21-23, 31-33, 42-81	15,195	252	3,677	44	7,852		
Manufacturing industries	31-33	4,022	223	2,802	24	4,017		
Food	311	40 e	48 i	128	* e	633		
Beverages and tobacco products	312	23	* e	* e	* e	D		

TABLE 21. Companies with domestic R&D paid for and performed by the company, by industry and company size, by state: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS codes	Washington	West Virginia	Wisconsin	Wyoming	Undistributed ^c
Textiles, apparel, and leather products	313-16	8	* e	18	* e	26
Wood products	321	46 i	26 i	4 i	* e	9
Paper	322	1 e	* e	308	* e	14
Printing and related support activities	323	1 e	* e	48	* e	18
Petroleum and coal products	324	* e	D	3 i	D	D
Chemicals	325	315	102	253	1	580
Basic chemicals	3251	6	1	14	*	D
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	2	* i	54	0	D
Pesticides, fertilizers, and other agricultural chemicals	3253	4 i	D	56	0	D
Pharmaceuticals and medicines	3254	298	99	110	1	D
Soaps, cleaning compounds, and toilet preparations	3256	2 e	D	9	0	D
Paints, coatings, adhesives, and other chemicals	3255, 3259	2 i	1 e	11	* e	97
Plastics and rubber products	326	16	16	146	* e	139
Nonmetallic mineral products	327	4 i	2	5	* e	109
Primary metals	331	1	2	20	* e	37
Fabricated metal products	332	55 i	2 e	111	2	248
Machinery	333	186	9	453	4 i	D
Agricultural implements	33311	7	0	45	* e	1
Semiconductor machinery	333295	1	0	0	0	D
Engines, turbine, and power transmission equipment	3336	2	* e	196	0	7
Other machinery	other 333	176	9	211	4 i	444
Computer and electronic products	334	984	7 i	230	15	967
Communications equipment	3342	162	1	26	0	145
Semiconductors and other electronic components	3344	247	* e	32	14	416
Navigational, measuring, electromedical, and control instruments	3345	450	4 i	140	* e	178
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	269	3	61 i	0	34
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	29	0	8	0	25 i
Other measuring and controlling devices	other 3345	151	1 e	70	* e	119
Other computer and electronic products	other 334	125	1 e	33	* e	228
Electrical equipment, appliances, and components	335	23	2 e	454	* e	246
Transportation equipment	336	2,154	5	387	* e	301
Automobiles, bodies, trailers, and parts	3361-63	53	* e	151	* e	D
Aerospace products and parts	3364	2,097	5	101	* e	D

TABLE 21. Companies with domestic R&D paid for and performed by the company, by industry and company size, by state: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS codes	Washington	West Virginia	Wisconsin	Wyoming	Undistributed ^c
Aircraft, aircraft engines, and aircraft parts	336411-13	2,095	4	101	* e	D
Guided missiles, space vehicles, and related parts	336414-15, 336419	2 i	1 i	0	0	*
Military armored vehicles, tanks, and tank components	336992	0	0	* i	0	*
Other transportation	other 336	4 e	* e	136	0	5
Furniture and related products	337	3 e	* e	7 i	* e	17
Miscellaneous	339	162	D	228	D	D
Medical equipment and supplies	3391	58	1 e	67	* e	106
Other miscellaneous manufacturing	3399	104	D	162	D	D
Nonmanufacturing industries	21-23, 42-81	11,173	28 e	874	21 e	3,836
Mining, extraction, and support activities	21	1 e	2 e	18	3 e	D
Utilities	22	3	* i	43	2 i	2
Wholesale trade	42	5 e	1 e	5 e	* e	43
Electronic shopping and electronic auctions	454111-12	10 i	* e	D	* e	0
Transportation and warehousing	48-49	218	* e	1 e	* e	D
Information	51	10,136	16 e	584	9 e	2,528
Publishing	511	9,158	2	480	5	212
Newspaper, periodical, book, and directory publishers	5111	* e	* e	* e	* e	9
Software publishers	5112	9,158	2	480	5	203
Telecommunications	517	9 e	8 e	7 e	2 e	2,000
Data processing, hosting, and related services	518	250	4	86	2 e	306
Other information	other 51	719	2	11	* e	9
Finance and insurance	52	9	* e	127	* e	466
Real estate and rental and leasing	53	118	* e	* e	1 i	2
Lessors of nonfinancial intangible assets (except copyrighted works)	533	*	0	0	0	1
Other real estate and rental and leasing	other 53	117	* e	* e	1 i	2
Professional, scientific, and technical services	54	654	8 e	91 e	5 e	561
Architectural, engineering, and related services	5413	56	2 e	13 i	1 e	167
Computer systems design and related services	5415	444	4 e	37 e	1 e	304
Scientific R&D services	5417	73	1 e	26	1 e	22
Biotechnology R&D	541711	22	* e	4 i	* e	D
Physical, engineering, and life sciences (except biotechnology) R&D	541712	50	1 e	21	* e	11

TABLE 21. Companies with domestic R&D paid for and performed by the company, by industry and company size, by state: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS codes	Washington	West Virginia	Wisconsin	Wyoming	Undistributed ^c
Social sciences and humanities R&D	541720	* e	0	* e	0	D
Other professional, scientific, and technical services	other 54	81	1 e	15	1 e	67
Health care services	621-23	3 i	* e	1 e	* e	142
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	18	1 e	D	1 e	D
All companies (number of domestic employees)	-	15,195	252	3,677	44	7,852
Small companies ^b						
5-499	-	1,846	70 i	704 i	22 e	1,745
5-99	-	645 i	54 i	344 e	11 e	317
5-49	-	405 e	21 e	225 e	9 e	173
5-9	-	72 e	4 e	53 e	2 e	4
10-24	-	160 e	8 e	78 e	4 e	42
25-49	-	173 e	10 e	94 e	3 e	126
50-99	-	240	33 i	119 e	2 e	143
100-249	-	366	13	202	7 e	726
250-499	-	835	3	158	4	702
Medium and large companies						
500-999	-	373	2	218	*	888
1,000-4,999	-	972	2	608	5	D
5,000-9,999	-	626	102	1,025	1	D
10,000-24,999	-	336	27	713	1 e	1,232
25,000 or more	-	11,043	49 i	408	14	2,347

* = amount < \$500,000; D = data withheld to avoid disclosing operations of individual companies; e = estimated, more than 50% of the estimate is modeled—see appendix A, "Technical Notes"; 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 for the number of companies are based only on companies in the United States that reported to the survey. These statistics do not include an adjustment to the weight to account for unit nonresponse. A company having multiple reporting parts for data collection may contribute to the statistics for multiple industries, so the detail may not add to the total for the number of companies.

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

^c Includes data reported on Form BRDI-1 that were not allocated to a specific state and also data reported on Form BRDI-1(S) by multi-establishment companies. For single-establishment companies, data reported on Form BRDI-1(S) were allocated to the state in the address used to mail the survey form.

NOTES: 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. For a given estimate in this table, if the conditions are satisfied for both the i and e flags, the e flag is assigned because the imputation rate may be found in the corresponding table of imputation rates. Statistics are representative of companies located in the United States that performed or funded R&D. Changes in data collection and imputation processes have affected the comparability of company count estimates in this table with estimates published for previous years.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 22. Domestic R&D paid for and performed by the company, by industry, company size, and domestic R&D program size: 2014
(Millions of U.S. dollars)

Industry	NAICS codes	R&D program size					
		All companies	Less than \$1 million	\$1 million–\$9.999 million	\$10 million–\$49.999 million	\$50 million–\$99.999 million	\$100 million or more
All industries	21–23, 31–33, 42–81	282,570	8,248 i	22,095	25,722	16,335	210,170
Manufacturing industries	31–33	192,160	4,242 i	11,985	16,797	11,543	147,593
Food	311	5,071 i	221 i	970	579	312 i	2,989 i
Beverages and tobacco products	312	819	D	51	146	D	D
Textiles, apparel, and leather products	313–16	616	85 i	146	198	187	0
Wood products	321	351 i	20 i	58 i	273 i	0	0
Paper	322	711	56 i	97	111	110 i	338
Printing and related support activities	323	232	48 i	101	84	0	0
Petroleum and coal products	324	229	D	55	100	D	0
Chemicals	325	56,488	524 i	2,031	4,326	2,647	46,960
Basic chemicals	3251	2,554	75 i	322	581	476	1,100
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	1,136	44 i	164	137	0	791
Pesticides, fertilizers, and other agricultural chemicals	3253	1,327 i	36 i	19	98	0	1,174 i
Pharmaceuticals and medicines	3254	47,646	128 i	1,196	3,044	1,902	41,376
Soaps, cleaning compounds, and toilet preparations	3256	2,531	101 i	141	253	95	1,941
Paints, coatings, adhesives, and other chemicals	3255, 3259	1,294 i	140 i	189	213	174 i	578 i
Plastics and rubber products	326	3,416	262 i	550	519	477 i	1,609
Nonmetallic mineral products	327	1,420 i	50 i	162	185	95	928 i
Primary metals	331	615	54 i	126	245	0	190
Fabricated metal products	332	2,000	483 i	721	576	220 i	0
Machinery	333	11,458	724 i	1,546	1,800	1,140	6,249
Agricultural implements	33311	1,539	D	91	90	171	D
Semiconductor machinery	333295	2,821	19 i	93 i	154	151 i	2,404
Engines, turbines, and power transmission equipment	3336	2,285	16 i	D	127	223	D
Other machinery	other 333	4,813	D	D	1,428	594	D
Computer and electronic products	334	64,695	718 i	2,152	2,892	3,446	55,488
Communications equipment	3342	16,808	148 i	379	326	928	15,026
Semiconductors and other electronic components	3344	30,029	151 i	524	1,133	1,194	27,028
Navigational, measuring, electromedical, and control instruments	3345	10,576	337 i	978	947	851	7,463
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	3,697	70 i	255	301	480	2,590
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	2,984	8 i	94 i	126	47	2,711
Other measuring and controlling devices	other 3345	3,895	259 i	629	521	324 i	2,162

TABLE 22. Domestic R&D paid for and performed by the company, by industry, company size, and domestic R&D program size: 2014
(Millions of U.S. dollars)

Industry	NAICS codes	R&D program size					
		All companies	Less than \$1 million	\$1 million–\$9.999 million	\$10 million–\$49.999 million	\$50 million–\$99.999 million	\$100 million or more
Other computer and electronic products	other 334	7,282	81 i	272	486	473	5,970
Electrical equipment, appliances, and components	335	4,178	247 i	736	1,311 i	416	1,469
Transportation equipment	336	27,261	223 i	986	1,627	1,507	22,917
Automobiles, bodies, trailers, and parts	3361–63	15,900	116 i	580	929	1,041	13,234
Aerospace products and parts	3364	10,300	50 i	277	486	386	9,101
Aircraft, aircraft engines, and aircraft parts	336411–13	10,011	48 i	D	372	D	D
Guided missiles, space vehicles, and related parts	336414–15, 336419	289	2 i	D	114	D	D
Military armored vehicles, tanks, and tank components	336992	10	2 i	9	0	0	0
Other transportation	other 336	1,051	55 i	121	212	81	583 i
Furniture and related products	337	369	101 i	90	178	0	0
Miscellaneous manufacturing	339	12,230	D	1,406	1,650	D	D
Medical equipment and supplies	3391	9,809	176 i	994	1,283	636	6,719
Other miscellaneous manufacturing	3399	2,421	D	412	367	D	D
Nonmanufacturing industries	21–23, 42–81	90,409	4,006 i	10,110	8,925	4,792	62,577
Mining, extraction, and support activities	21	3,821	D	179	143	D	3,415
Utilities	22	258	24 i	41	82	111	0
Wholesale trade	42	329 i	237 i	91	0	0	0
Electronic shopping and electronic auctions	454111–12	1,388	D	5	0	0	D
Transportation and warehousing	48–49	675	D	58 i	0	0	D
Information	51	62,296	832 i	4,072	4,668	3,046	49,678
Publishing	511	34,869	431 i	1,969 i	1,321	1,335	29,813
Newspaper, periodical, book, and directory publishers	5111	88 i	21 i	20 i	47 i	0	0
Software publishers	5112	34,781	410 i	1,949 i	1,274	1,335	29,813
Telecommunications	517	3,710	54 i	262 i	272	569 i	2,552
Data processing, hosting, and related services	518	8,926	275 i	1,586	2,711	984	3,370
Other information	other 51	14,791	72 i	255	364	157	13,942
Finance and insurance	52	4,090	55 i	95	258	335	3,347
Real estate and rental and leasing	53	262	17 i	8	49	189	0
Lessors of nonfinancial intangible assets (except copyrighted works)	533	55	3 i	3	49	0	0
Other real estate and rental and leasing	other 53	207	14 i	5	0	189	0
Professional, scientific, and technical services	54	16,061 i	2,474 i	5,172	3,466	741 i	4,209 i
Architectural, engineering, and related services	5413	1,503 i	276 i	617 i	462	148	*
Computer systems design and related services	5415	8,644 i	1,505 i	2,186 i	1,541 i	495 i	2,917 i
Scientific R&D services	5417	2,668	308 i	1,777	562	10	11
Biotechnology R&D	541711	692	D	443	D	0	0

TABLE 22. Domestic R&D paid for and performed by the company, by industry, company size, and domestic R&D program size: 2014
(Millions of U.S. dollars)

Industry	NAICS codes	R&D program size					
		All companies	Less than \$1 million	\$1 million–\$9.999 million	\$10 million–\$49.999 million	\$50 million–\$99.999 million	\$100 million or more
Physical, engineering, and life sciences (except biotechnology) R&D	541712	1,950	223 i	1,328	377	10	11
Social sciences and humanities R&D	541720	26	D	6	D	0	0
Other professional, scientific, and technical services	other 54	3,245 i	385 i	592	901	88	1,281 i
Health care services	621–23	439 i	72 i	106	141	120 i	0
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	791 i	D	283	119	D	0
All companies (number of domestic employees)	–	282,570	8,248 i	22,095	25,722	16,335	210,170
Small companies ^a							
5–499	–	42,889	7,999 i	18,653	11,729	2,782	1,725
5–99	–	21,695 i	6,677 i	11,360	3,354	304 i	0
5–49	–	14,169 i	5,285 i	7,788	1,042	54	0
5–9	–	2,426 i	1,242 i	1,184	0	0	0
10–24	–	5,506 i	2,410 i	2,746	350 i	0	0
25–49	–	6,237 i	1,634 i	3,857 i	692	54	0
50–99	–	7,526	1,392 i	3,573	2,312	250 i	0
100–249	–	11,006	1,010 i	4,958	3,792	1,140	106
250–499	–	10,188	312 i	2,335	4,584	1,338	1,619
Medium and large companies							
500–999	–	11,736	127 i	1,441	4,016	2,795	3,357
1,000–4,999	–	47,807	72 i	1,607	7,102	7,046	31,981
5,000–9,999	–	30,680	4 i	192	1,670	2,153	26,661
10,000–24,999	–	46,904	43 i	120	763	1,147 i	44,831
25,000 or more	–	102,555	3 i	82	442	412	101,614

* = amount < \$500,000; 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 Upper bound is based on the U.S. Small Business Administration's definition of a small business; the Business R&D and Innovation Survey does not include companies with fewer than five domestic employees.

NOTES: 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. R&D program size classifications are based on R&D performance.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 23. Companies with domestic R&D paid for and performed by the company in energy and environmental protection application areas, by industry and company size: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS codes	Domestic R&D		Energy		Environmental protection	
		Companies ^a (number)	Amount	Companies ^b (number)	Amount	Companies ^b (number)	Amount
All industries	21–23, 31–33, 42–81	50,062	282,570	9,784 i	20,041	5,638 i	8,302
Manufacturing industries	31–33	23,510	192,160	6,307 i	14,524	4,172 i	7,118
Food	311	1,403	5,071 i	8	17	12	19
Chemicals	325	2,585	56,488	406 i	756	599 i	513
Basic chemicals	3251	279	2,554	150 i	417	118 i	232
Pharmaceuticals and medicines	3254	946	47,646	9	44 i	5	13 i
Other chemicals	other 325	1,360	6,288	246 i	295	476 i	268
Plastics and rubber products	326	1,414	3,416	323 i	210	251 i	106
Nonmetallic mineral products	327	468	1,420 i	123 i	307 i	116 i	78 i
Fabricated metal products	332	3,100	2,000	1,113 i	192 i	540 i	127
Machinery	333	3,664	11,458	1,616 i	1,669	817 i	1,032
Agricultural implements	33311	210	1,539	29 i	26	45 i	128
Semiconductor machinery	333295	86	2,821	41 i	107	6 i	1 i
Engines, turbines, and power transmission equipment	3336	96	2,285	62 i	716	55 i	643
Other machinery	other 333	3,271	4,813	1,484 i	819 i	711 i	260 i
Computer and electronic products	334	2,885	64,695	952 i	5,682 i	561 i	1,437 i
Semiconductors and other electronic components	3344	656	30,029	292 i	3,198 i	142 i	627 i
Other electronic products	other 334	2,229	34,666	660 i	2,484 i	419 i	810 i
Electrical equipment, appliances, and components	335	1,448	4,178	967 i	1,089	489 i	120 i
Transportation equipment	336	1,520	27,261	286 i	3,838	301 i	3,013
Automobiles, bodies, trailers, and parts	3361–63	913	15,900	198 i	3,202	256 i	2,809
Other transportation	other 336	607	11,361	88 i	636	45 i	204
Miscellaneous manufacturing	339	2,477	12,230	37	478	58 i	525
Other manufacturing	312–16, 321–24, 331, 337	2,550	3,942	476 i	286	427 i	150
Nonmanufacturing industries	21–23, 42–81	26,552	90,409	3,477 i	5,517	1,466 i	1,184
Mining, extraction, and support activities	21	245	3,821	161 i	2,899	38 i	393
Utilities	22	88	258	82 i	249	58 i	157 i
Wholesale trade	42	2,601	329 i	708 i	10 i	D	*
Information	51	3,991	62,296	171 i	1,010	18	178
Publishing	511	1,899	34,869	64 i	825	9	150
Telecommunications	517	280	3,710	34 i	52 i	0	0
Data processing, hosting, and related services	518	1,244	8,926	69 i	115	D	D
Other information	other 51	569	14,791	4	18	D	D
Professional, scientific, and technical services	54	12,672	16,061 i	1,834 i	1,329 i	1,171 i	349 i
Architectural, engineering, and related services	5413	1,978	1,503 i	1,141 i	636 i	1,046 i	201 i
Scientific R&D services	5417	1,509	2,668	227 i	365 i	96 i	84 i
Biotechnology R&D	541711	473	692	24 i	13	D	*
Other scientific R&D	other 5417	1,036	1,976	202 i	352 i	D	84 i

TABLE 23. Companies with domestic R&D paid for and performed by the company in energy and environmental protection application areas, by industry and company size: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS codes	Domestic R&D		Energy		Environmental protection	
		Companies ^a (number)	Amount	Companies ^b (number)	Amount	Companies ^b (number)	Amount
Other professional, scientific, and technical services	other 54	9,187	11,890 i	466 i	327 i	30	64 i
Health care services	621–23	1,115	439 i	0	0	0	0
Other nonmanufacturing	23, 44–45, 48–49, 52–53, 55–56, 624, 71–72, 81	5,840	7,206	520 i	19	D	106 i
All companies (number of domestic employees)	–	50,062	282,570	9,784 i	20,041	5,638 i	8,302
Small companies ^c							
5–499	–	47,801	42,889	9,173 i	3,397 i	5,199 i	1,130 i
5–99	–	41,845	21,695 i	7,962 i	1,795 i	4,472 i	604 i
5–49	–	35,918	14,169 i	6,657 i	1,176 i	3,713 i	387 i
5–9	–	12,279	2,426 i	1,861 i	151 i	987 i	54 i
10–24	–	14,629	5,506 i	2,865 i	402 i	1,636 i	136 i
25–49	–	9,010	6,237 i	1,930 i	624 i	1,090 i	197 i
50–99	–	5,927	7,526	1,306 i	618 i	759 i	217 i
100–249	–	4,523	11,006	903 i	967	516 i	342
250–499	–	1,433	10,188	308 i	635	212 i	184 i
Medium and large companies							
500–999	–	883	11,736	210	793	139	324 i
1,000–4,999	–	899	47,807	251	2,863	180	1,092
5,000–9,999	–	178	30,680	63	1,873	53	808
10,000–24,999	–	192	46,904	50	3,824 i	39	1,843
25,000 or more	–	108	102,555	37	7,291	28	3,106

* = amount < \$500,000; 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 for the number of companies are based only on companies in the United States that reported to the survey. These statistics do not include an adjustment to the weight to account for unit nonresponse. A company having multiple reporting parts for data collection may contribute to the statistics for multiple industries, so the detail may not add to the total for the number of companies.

^b Statistics for the number of companies are based only on companies in the United States that reported to the survey. These statistics do not include an adjustment to the weight to account for unit nonresponse. Changes in data collection and imputation processes have affected the comparability of company count estimates in this table with estimates published for previous years. A company having multiple reporting parts for data collection may contribute to the statistics for multiple industries, so the detail may not add to the total for the number of companies.

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

NOTES: 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. Some R&D may be reported in more than one application area. Some R&D is not classified in any application area.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 24. Companies with domestic R&D paid for and performed by the company in health or medical, defense, and agricultural application areas, by industry and company size: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS codes	Domestic R&D		Health or medical		Defense		Agriculture	
		Companies ^a (number)	Amount	Companies ^b (number)	Amount	Companies ^b (number)	Amount	Companies ^b (number)	Amount
All industries	21–23, 31–33, 42–81	50,062	282,570	9,317 i	66,672	6,406 i	11,903	4,513 i	5,981 i
Manufacturing industries	31–33	23,510	192,160	5,415 i	61,740	3,611 i	8,982	2,828 i	5,741 i
Food	311	1,403	5,071 i	137 i	244 i	D	1 i	600 i	1,530 i
Chemicals	325	2,585	56,488	1,162 i	46,531	280 i	107	294 i	1,618 i
Basic chemicals	3251	279	2,554	80 i	58	15	14	75 i	206
Pharmaceuticals and medicines	3254	946	47,646	849 i	46,289	15	39	13	261 i
Other chemicals	other 325	1,360	6,288	233 i	184	250 i	54 i	207 i	1,151 i
Plastics and rubber products	326	1,414	3,416	456 i	538	D	14	189 i	690
Nonmetallic mineral products	327	468	1,420 i	67 i	49 i	55 i	38 i	5	3
Fabricated metal products	332	3,100	2,000	707 i	117 i	783 i	145 i	429 i	71 i
Machinery	333	3,664	11,458	252 i	99	438 i	204 i	710 i	1,271
Agricultural implements	33311	210	1,539	0	0	0	0	187 i	1,090
Semiconductor machinery	333295	86	2,821	8	9	5 i	1 i	0	0
Engines, turbines, and power transmission equipment	3336	96	2,285	12 i	26	29 i	40	35 i	32
Other machinery	other 333	3,271	4,813	232 i	64	404 i	162 i	489 i	149 i
Computer and electronic products	334	2,885	64,695	932 i	4,739 i	912 i	3,467	353 i	405 i
Semiconductors and other electronic components	3344	656	30,029	225 i	607 i	302 i	707 i	23	46
Other electronic products	other 334	2,229	34,666	707 i	4,133 i	610 i	2,760	330 i	358 i
Electrical equipment, appliances, and components	335	1,448	4,178	320 i	93 i	540 i	212 i	104 i	43
Transportation equipment	336	1,520	27,261	24	783	228 i	4,451	11	10
Automobiles, bodies, trailers, and parts	3361–63	913	15,900	8 i	398	17	31	6	7
Other transportation	other 336	607	11,361	16	385	211 i	4,421	5	4
Miscellaneous manufacturing	339	2,477	12,230	866 i	8,434	53 i	295	11	25
Other manufacturing	312–16, 321–24, 331, 337	2,550	3,942	493 i	113	304 i	47	120 i	75
Nonmanufacturing industries	21–23, 42–81	26,552	90,409	3,903 i	4,932 i	2,795 i	2,921	1,686 i	240 i
Mining, extraction, and support activities	21	245	3,821	6	6	D	5	4	2 i
Utilities	22	88	258	D	1	0	0	4	1
Wholesale trade	42	2,601	329 i	6	10	0	0	4	3
Information	51	3,991	62,296	401 i	2,006	170 i	1,357	17	26
Publishing	511	1,899	34,869	239 i	1,671	105 i	1,167	D	3
Telecommunications	517	280	3,710	D	18 i	23 i	103 i	D	1
Data processing, hosting, and related services	518	1,244	8,926	153 i	315 i	42	88	9	14
Other information	other 51	569	14,791	D	3 i	0	0	D	8
Professional, scientific, and technical services	54	12,672	16,061 i	3,410 i	2,507 i	2,614 i	1,541 i	1,481 i	194 i
Architectural, engineering, and related services	5413	1,978	1,503 i	816 i	42 i	1,026 i	47 i	795 i	56 i
Scientific R&D services	5417	1,509	2,668	910 i	1,514 i	379 i	345 i	147 i	85 i
Biotechnology R&D	541711	473	692	397 i	503 i	44 i	17 i	86 i	47 i
Other scientific R&D	other 5417	1,036	1,976	513 i	1,011 i	334 i	327 i	61 i	39 i

TABLE 24. Companies with domestic R&D paid for and performed by the company in health or medical, defense, and agricultural application areas, by industry and company size: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS codes	Domestic R&D		Health or medical		Defense		Agriculture	
		Companies ^a (number)	Amount	Companies ^b (number)	Amount	Companies ^b (number)	Amount	Companies ^b (number)	Amount
Other professional, scientific, and technical services	other 54	9,187	11,890 i	1,685 i	951 i	1,209 i	1,150 i	539 i	53 i
Health care services	621-23	1,115	439 i	67	358 i	0	0	0	0
Other nonmanufacturing	23, 44-45, 48-49, 52-53, 55-56, 624, 71-72, 81	5,840	7,206	D	45	D	17	176 i	14
All companies (number of domestic employees)	-	50,062	282,570	9,317 i	66,672	6,406 i	11,903	4,513 i	5,981 i
Small companies ^c									
5-499	-	47,801	42,889	8,824 i	11,176	6,105 i	2,066 i	4,249 i	1,425
5-99	-	41,845	21,695 i	7,619 i	5,918	5,340 i	1,326 i	3,607 i	955
5-49	-	35,918	14,169 i	6,404 i	3,748	4,533 i	918 i	3,086 i	781
5-9	-	12,279	2,426 i	1,727 i	458 i	1,292 i	224 i	879 i	518
10-24	-	14,629	5,506 i	2,995 i	1,658 i	2,068 i	305 i	1,313 i	124 i
25-49	-	9,010	6,237 i	1,682 i	1,632	1,173 i	389 i	893 i	139 i
50-99	-	5,927	7,526	1,215 i	2,170	807 i	408 i	522 i	174 i
100-249	-	4,523	11,006	891 i	2,823	584 i	438 i	479 i	264
250-499	-	1,433	10,188	315	2,434	181 i	301	163 i	205
Medium and large companies									
500-999	-	883	11,736	179	2,094	114 i	514	98 i	156 i
1,000-4,999	-	899	47,807	211	12,487	112	1,579	112	658
5,000-9,999	-	178	30,680	42	6,852	29	1,385	26	250
10,000-24,999	-	192	46,904	36	18,447	25	2,258	17	2,201 i
25,000 or more	-	108	102,555	27	15,617	21	4,102	11	1,291

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 for the number of companies are based only on companies in the United States that reported to the survey. These statistics do not include an adjustment to the weight to account for unit nonresponse. A company having multiple reporting parts for data collection may contribute to the statistics for multiple industries, so the detail may not add to the total for the number of companies.

^b Statistics for the number of companies are based only on companies in the United States that reported to the survey. These statistics do not include an adjustment to the weight to account for unit nonresponse. Changes in data collection and imputation processes have affected the comparability of company count estimates in this table with estimates published for previous years. A company having multiple reporting parts for data collection may contribute to the statistics for multiple industries, so the detail may not add to the total for the number of companies.

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

NOTES: 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. Some R&D may be reported in more than one application area. Some R&D is not classified in any application area.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 25. Companies with domestic R&D paid for and performed by the company in selected technology focus areas, by industry and company size: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS codes	Domestic R&D		Software products and embedded software		Biotechnology		Nanotechnology	
		Companies ^a	Amount	Companies ^b	Amount	Companies ^b	Amount	Companies ^b	Amount
		(number)		(number)		(number)		(number)	
All industries	21–23, 31–33, 42–81	50,062	282,570	20,187 i	94,826	2,353 i	32,938	1,462 i	16,564 i
Manufacturing industries	31–33	23,510	192,160	6,499 i	25,324	1,608 i	31,466	1,209 i	14,728 i
Food	311	1,403	5,071 i	12	11	107 i	267 i	3	2 i
Chemicals	325	2,585	56,488	70 i	388	844 i	26,466	303 i	321
Basic chemicals	3251	279	2,554	37 i	41	84 i	407	82 i	127
Pharmaceuticals and medicines	3254	946	47,646	24	308	606 i	25,737	19	86
Other chemicals	other 325	1,360	6,288	9	39 i	155 i	323 i	202 i	107
Plastics and rubber products	326	1,414	3,416	192 i	51	80 i	393	169 i	58
Nonmetallic mineral products	327	468	1,420 i	37 i	28 i	D	*	35 i	265 i
Fabricated metal products	332	3,100	2,000	650 i	179 i	4	13	10	20
Machinery	333	3,664	11,458	1,307 i	1,209	41 i	52	61 i	1,884
Agricultural implements	33311	210	1,539	74 i	104	0	0	0	0
Semiconductor machinery	333295	86	2,821	28 i	454	3	5	38 i	1,841
Engines, turbine, and power transmission equipment	3336	96	2,285	44 i	300	0	0	0	0
Other machinery	other 333	3,271	4,813	1,161 i	351 i	38 i	47	23 i	43
Computer and electronic products	334	2,885	64,695	1,984 i	19,843	321 i	3,328	451 i	11,869 i
Semiconductors and other electronic components	3344	656	30,029	228 i	4,932	18	2,276	172 i	11,389 i
Other electronic products	other 334	2,229	34,666	1,755 i	14,912 i	303 i	1,052 i	279 i	480 i
Electrical equipment, appliances, and components	335	1,448	4,178	971 i	563 i	5	5	52 i	41
Transportation equipment	336	1,520	27,261	320 i	1,795	6 i	88	17	58
Automobiles, bodies, trailers, and parts	3361–63	913	15,900	155 i	1,059	D	5 i	8	16
Other transportation	other 336	607	11,361	165 i	736	D	83	9	41
Miscellaneous manufacturing	339	2,477	12,230	472 i	1,149	141 i	754 i	60 i	189
Other manufacturing	312–16, 321–24, 331, 337	2,550	3,942	486 i	107 i	D	100	49 i	20 i
Nonmanufacturing industries	21–23, 42–81	26,552	90,409	13,687 i	69,502	745 i	1,473 i	253 i	1,837
Mining, extraction, and support activities	21	245	3,821	39 i	444	D	D	D	D
Utilities	22	88	258	37 i	83	D	1	3	1
Wholesale trade	42	2,601	329 i	784 i	63 i	0	0	D	3
Information	51	3,991	62,296	3,352 i	54,265	9	195	24 i	1,664
Publishing	511	1,899	34,869	1,682 i	30,608	4	125	D	1,663
Telecommunications	517	280	3,710	196 i	2,648 i	0	0	0	0
Data processing, hosting, and related services	518	1,244	8,926	1,179 i	7,965	5	71	D	*
Other information	other 51	569	14,791	296 i	13,045 i	0	0	0	0
Professional, scientific, and technical services	54	12,672	16,061 i	8,100 i	9,669 i	712 i	1,065 i	215 i	142 i
Architectural, engineering, and related services	5413	1,978	1,503 i	1,171 i	210 i	46 i	30 i	48	4

TABLE 25. Companies with domestic R&D paid for and performed by the company in selected technology focus areas, by industry and company size: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS codes	Domestic R&D		Software products and embedded software		Biotechnology		Nanotechnology	
		Companies ^a (number)	Amount	Companies ^b (number)	Amount	Companies ^b (number)	Amount	Companies ^b (number)	Amount
Scientific R&D services	5417	1,509	2,668	577 i	430 i	645 i	996 i	155 i	117 i
Biotechnology R&D	541711	473	692	80 i	14 i	382 i	547 i	41 i	26 i
Other scientific R&D	other 5417	1,036	1,976	497 i	415 i	263 i	449 i	114 i	91 i
Other professional, scientific, and technical services	other 54	9,187	11,890 i	6,352 i	9,029 i	21 i	39 i	12	21 i
Health care services	621-23	1,115	439 i	3	15 i	15	194 i	0	0
Other nonmanufacturing	23, 44-45, 48-49, 52-53, 55-56, 624, 71-72, 81	5,840	7,206	1,372 i	4,964	D	D	D	D
All companies (number of domestic employees)	-	50,062	282,570	20,187 i	94,826	2,353 i	32,938	1,462 i	16,564 i
Small companies ^c									
5-499	-	47,801	42,889	19,317 i	14,878 i	2,167 i	6,694	1,294 i	1,195 i
5-99	-	41,845	21,695 i	17,348 i	7,573 i	1,900 i	3,486	1,093 i	600 i
5-49	-	35,918	14,169 i	15,203 i	5,307 i	1,572 i	2,067	871 i	385 i
5-9	-	12,279	2,426 i	4,689 i	653 i	468 i	254 i	212 i	62 i
10-24	-	14,629	5,506 i	6,931 i	2,091 i	712 i	854	366 i	146 i
25-49	-	9,010	6,237 i	3,583 i	2,562 i	392 i	959	293 i	177 i
50-99	-	5,927	7,526	2,145 i	2,266 i	328 i	1,419	222 i	215 i
100-249	-	4,523	11,006	1,505 i	3,833	190 i	1,653	131 i	317 i
250-499	-	1,433	10,188	464	3,473	77	1,555 i	70	278 i
Medium and large companies									
500-999	-	883	11,736	315 i	3,801	48 i	953	49	345 i
1,000-4,999	-	899	47,807	340	15,935	75	7,631 i	69	3,318 i
5,000-9,999	-	178	30,680	87	11,450	23	2,850	18	3,850
10,000-24,999	-	192	46,904	73	7,719	26	11,209	23	3,114 i
25,000 or more	-	108	102,555	55	41,043	14	3,600	11	4,742 i

* = amount < \$500,000; 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 for the number of companies are based only on companies in the United States that reported to the survey. These statistics do not include an adjustment to the weight to account for unit nonresponse. A company having multiple reporting parts for data collection may contribute to the statistics for multiple industries, so the detail may not add to the total for the number of companies.

^b Statistics for the number of companies are based only on companies in the United States that reported to the survey. These statistics do not include an adjustment to the weight to account for unit nonresponse. Changes in data collection and imputation processes have affected the comparability of company count estimates in this table with estimates published for previous years. A company having multiple reporting parts for data collection may contribute to the statistics for multiple industries, so the detail may not add to the total for the number of companies.

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

NOTES: 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. Some R&D may be reported in more than one technology area. Some R&D is not classified in any technology area.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 26. Domestic R&D paid for and performed by the company as a percentage of domestic net sales, by industry and company size: 2014

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	282,570	2.9	3.0
Manufacturing industries	31–33	192,160	3.3	3.4
Food	311	5,071 i	0.8	0.8
Beverages and tobacco products	312	819	0.6	0.6
Textiles, apparel, and leather products	313–16	616	1.1	1.1
Wood products	321	351 i	0.7	0.7
Paper	322	711	0.9	0.9
Printing and related support activities	323	232	0.9	0.9
Petroleum and coal products	324	229	0.1	0.1
Chemicals	325	56,488	4.2	4.2
Basic chemicals	3251	2,554	0.5	0.5
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	1,136	0.7	0.7
Pesticides, fertilizers, and other agricultural chemicals	3253	1,327 i	2.6	2.6
Pharmaceuticals and medicines	3254	47,646	11.3	11.3
Soaps, cleaning compounds, and toilet preparations	3256	2,531	1.7	1.7
Paints, coatings, adhesives, and other chemicals	3255, 3259	1,294 i	2.2	2.2
Plastics and rubber products	326	3,416	2.1	2.1
Nonmetallic mineral products	327	1,420 i	3.2	3.4
Primary metals	331	615	0.6	0.6
Fabricated metal products	332	2,000	1.3	1.3
Machinery	333	11,458	D	3.4
Agricultural implements	33311	1,539	3.3	3.3
Semiconductor machinery	333295	2,821	25.6	25.6
Engines, turbines, and power transmission equipment	3336	2,285	D	4.5
Other machinery	other 333	4,813	2.1	2.1
Computer and electronic products	334	64,695	8.9	8.9
Communications equipment	3342	16,808	9.2	9.2
Semiconductors and other electronic components	3344	30,029	14.4	14.4
Navigational, measuring, electromedical, and control instruments	3345	10,576	5.9	5.9
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	3,697	9.2	9.2
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	2,984	3.9	3.9
Other measuring and controlling devices	other 3345	3,895	6.1	6.1
Other computer and electronic products	other 334	7,282	4.7	4.7
Electrical equipment, appliances, and components	335	4,178	2.7	2.7
Transportation equipment	336	27,261	2.4	2.5
Automobiles, bodies, trailers, and parts	3361–63	15,900	2.2	2.4
Aerospace products and parts	3364	10,300	2.8	2.8
Aircraft, aircraft engines, and aircraft parts	336411–13	10,011	2.8	2.8
Guided missiles, space vehicles, and related parts	336414–15, 336419	289	1.5	1.5
Military armored vehicles, tanks, and tank components	336992	10	1.4	1.4
Other transportation	other 336	1,051	1.8	1.8
Furniture and related products	337	369	D	1.0
Miscellaneous manufacturing	339	12,230	3.8	3.8
Medical equipment and supplies	3391	9,809	4.2	4.2
Other miscellaneous manufacturing	3399	2,421	2.7	2.7

TABLE 26. Domestic R&D paid for and performed by the company as a percentage of domestic net sales, by industry and company size: 2014

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
Nonmanufacturing industries	21–23, 42–81	90,409	2.3	2.4
Mining, extraction, and support activities	21	3,821	0.8	0.9
Utilities	22	258	0.1	0.1
Wholesale trade	42	329 i	0.2	0.2
Electronic shopping and electronic auctions	454111–12	1,388	2.2	2.2
Transportation and warehousing	48–49	675	0.4	0.4
Information	51	62,296	5.6	5.7
Publishing	511	34,869	D	9.3
Newspaper, periodical, book, and directory publishers	5111	88 i	1.7	1.7
Software publishers	5112	34,781	D	9.4
Telecommunications	517	3,710	0.7	0.7
Data processing, hosting, and related services	518	8,926	8.9	8.9
Other information	other 51	14,791	D	13.1
Finance and insurance	52	4,090	0.7	0.7
Real estate and rental and leasing	53	262	10.4	10.4
Lessors of nonfinancial intangible assets (except copyrighted works)	533	55	17.5	17.5
Other real estate and rental and leasing	other 53	207	9.4	9.4
Professional, scientific, and technical services	54	16,061 i	3.7	3.7
Architectural, engineering, and related services	5413	1,503 i	1.4	1.4
Computer systems design and related services	5415	8,644 i	7.2	7.4
Scientific R&D services	5417	2,668	4.7	4.8
Biotechnology R&D	541711	692	4.3	4.3
Physical, engineering, and life sciences (except biotechnology) R&D	541712	1,950	5.0	5.0
Social sciences and humanities R&D	541720	26	2.8	2.8
Other professional, scientific, and technical services	other 54	3,245 i	2.1	2.1
Health care services	621–23	439 i	0.8	0.8
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	791 i	0.1	0.1
All companies (number of domestic employees)	–	282,570	2.9	3.0
Small companies ^c				
5–499	–	42,889	3.9	4.0
5–99	–	21,695 i	4.9	4.9
5–49	–	14,169 i	5.5	5.6
5–9	–	2,426 i	7.4	7.7
10–24	–	5,506 i	6.7	6.7
25–49	–	6,237 i	4.4	4.4
50–99	–	7,526	4.0	4.0
100–249	–	11,006	3.0	3.0
250–499	–	10,188	3.5	3.6
Medium and large companies				
500–999	–	11,736	3.1	3.1
1,000–4,999	–	47,807	3.8	3.9

TABLE 26. Domestic R&D paid for and performed by the company as a percentage of domestic net sales, by industry and company size: 2014

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
5,000–9,999	–	30,680	3.4	3.6
10,000–24,999	–	46,904	2.3	2.4
25,000 or more	–	102,555	2.5	2.6

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

NOTES: 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: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 27. 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: 2014

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	319,589	3.3	3.4
Manufacturing industries	31–33	225,572	3.9	4.0
Food	311	5,580 i	0.9	0.9
Beverages and tobacco products	312	1,025	0.7	0.7
Textiles, apparel, and leather products	313–16	629	1.1	1.1
Wood products	321	364 i	0.8	0.8
Paper	322	735	1.0	1.0
Printing and related support activities	323	239	0.9	0.9
Petroleum and coal products	324	274	0.1	0.1
Chemicals	325	81,504	6.0	6.0
Basic chemicals	3251	2,741	0.5	0.5
Resins, synthetic rubber, and artificial synthetic	3252	1,209	0.7	0.7
Pesticides, fertilizers, and other agricultural chemicals	3253	1,468 i	2.9	2.9
Pharmaceuticals and medicines	3254	71,886	17.0	17.0
Soaps, cleaning compounds, and toilet preparations	3256	2,877	2.0	2.0
Paints, coatings, adhesives, and other chemicals	3255, 3259	1,323	2.3	2.3
Plastics and rubber products	326	3,579	2.2	2.2
Nonmetallic mineral products	327	1,590 i	3.6	3.5
Primary metals	331	664	0.7	0.7
Fabricated metal products	332	2,032	1.3	1.3
Machinery	333	12,047	D	3.6
Agricultural implements	33311	1,806	3.8	3.8
Semiconductor machinery	333295	2,825	25.7	25.7
Engines, turbines, and power transmission equipment	3336	2,333	D	4.6
Other machinery	other 333	5,083	2.2	2.2
Computer and electronic products	334	66,201	9.1	9.1
Communications equipment	3342	17,401	9.6	9.6
Semiconductors and other electronic components	3344	30,413	14.6	14.6
Navigational, measuring, electromedical, and	3345	10,969	6.1	6.1
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	3,853	9.5	9.5
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	3,107	4.0	4.0
Other measuring and controlling devices	other 3345	4,009	6.3	6.3
Other computer and electronic products	other 334	7,418	4.8	4.8
Electrical equipment, appliances, and components	335	4,417	2.8	2.8
Transportation equipment	336	31,362	2.7	2.9
Automobiles, bodies, trailers, and parts	3361–63	18,478	2.6	2.8
Aerospace products and parts	3364	11,805	3.2	3.2
Aircraft, aircraft engines, and aircraft parts	336411–13	D	D	D
Guided missiles, space vehicles, and related parts	336414–15, 336419	D	D	D
Military armored vehicles, tanks, and tank components	336992	10	1.4	1.4
Other transportation	other 336	1,070	1.8	1.8
Furniture and related products	337	395	D	1.1
Miscellaneous manufacturing	339	12,937	4.0	4.0
Medical equipment and supplies	3391	10,408	4.4	4.4
Other miscellaneous manufacturing	3399	2,529	2.8	2.8

TABLE 27. 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: 2014

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
Nonmanufacturing industries	21–23, 42–81	94,017	2.3	2.5
Mining, extraction, and support activities	21	4,173	0.9	1.0
Utilities	22	490	0.2	0.2
Wholesale trade	42	404 i	0.2	0.2
Electronic shopping and electronic auctions	454111–12	1,388	2.2	2.2
Transportation and warehousing	48–49	696	0.5	0.5
Information	51	64,057	5.8	5.8
Publishing	511	36,051	D	9.6
Newspaper, periodical, book, and directory	5111	98 i	1.9	1.9
Software publishers	5112	35,953	D	9.7
Telecommunications	517	3,984	0.8	0.8
Data processing, hosting, and related services	518	9,100	9.1	9.1
Other information	other 51	14,923	D	13.2
Finance and insurance	52	4,180	0.7	0.7
Real estate and rental and leasing	53	270	10.7	10.7
Lessors of nonfinancial intangible assets	533	55	17.5	17.5
Other real estate and rental and leasing	other 53	215	9.8	9.8
Professional, scientific, and technical services	54	17,018 i	3.9	3.9
Architectural, engineering, and related services	5413	1,553 i	1.5	1.5
Computer systems design and related services	5415	8,790 i	7.3	7.5
Scientific R&D services	5417	3,385	6.0	6.0
Biotechnology R&D	541711	1,042	6.5	6.5
Physical, engineering, and life sciences (except biotechnology) R&D	541712	2,296	5.8	5.9
Social sciences and humanities R&D	541720	47	4.9	4.9
Other professional, scientific, and technical services	other 54	3,290 i	2.2	2.2
Health care services	621–23	473 i	0.9	0.9
Other nonmanufacturing	454111–12), 55–56, 624, 71–72, 81	867 i	0.1	0.1
All companies (number of domestic employees)	–	319,589	3.3	3.4
Small companies ^c				
5–499	–	48,728	4.4	4.5
5–99	–	25,394 i	5.7	5.8
5–49	–	16,473 i	6.4	6.5
5–9	–	2,911 i	8.9	9.2
10–24	–	6,379 i	7.8	7.8
25–49	–	7,183 i	5.1	5.1
50–99	–	8,921	4.7	4.8
100–249	–	12,303	3.4	3.4
250–499	–	11,032	3.8	3.9
Medium and large companies				
500–999	–	12,846	3.4	3.4
1,000–4,999	–	54,197	4.3	4.4

TABLE 27. 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: 2014

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
5,000–9,999	–	33,081	3.7	3.8
10,000–24,999	–	57,875	2.8	3.0
25,000 or more	–	112,862	2.8	2.8

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

NOTES: 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: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 28. Domestic R&D paid for by others and performed by the company, by industry and company size: 2014
(Millions of U.S. dollars)

Industry	NAICS codes	Company size (domestic employees)											
		All companies	5–9 ^a	10–24	25–49	50–99	100–249	250–499	500–999	1,000–4,999	5,000–9,999	10,000–24,999	25,000 or more
All industries	21–23, 31–33, 42–81	58,158	868 i	1,671 i	2,191 i	2,652 i	2,486	2,015	1,525	9,744	7,522	7,542	19,941 i
Manufacturing industries	31–33	40,655	180 i	512 i	391	1,545 i	932	897	967	6,484	4,223	6,255	18,270 i
Food	311	220	3	* i	* i	3 i	64	11 i	8	124	1	0	6
Beverages and tobacco products	312	101	0	0	D	* i	D	D	0	0	D	0	0
Textiles, apparel, and leather products	313–16	15 i	5 i	* i	1 i	6	3 i	1 i	* i	0	0	0	0
Wood products	321	12 i	* i	* i	0	* i	* i	0	6 i	0	0	4 i	0
Paper	322	12	0	0	1 i	1 i	7	3	0	0	0	0	0
Printing and related support activities	323	2 i	0	* i	* i	* i	1 i	0	0	0	0	0	0
Petroleum and coal products	324	5	0	1 i	0	* i	0	0	*	0	0	3	0
Chemicals	325	9,813	58 i	259	175	1,164 i	284	183	335	3,563	1,829	1,554	408 i
Basic chemicals	3251	295 i	*	25	23	18	59 i	2	44 i	D	4 i	D	4
Resins, synthetic rubber, fibers, and artificial synthetic fibers and filaments	3252	15 i	* i	1 i	3 i	D	1 i	1	0	*	0	D	0
Pesticides, fertilizers, and other agricultural chemicals	3253	464	0	2 i	0	0	* i	0	0	D	0	D	0
Pharmaceuticals and medicines	3254	8,966	49 i	207	146	1,134 i	219	181	290	3,049	1,805	1,482	404 i
Soaps, cleaning compounds, and toilet preparations	3256	16 i	0	11 i	0	1 i	2 i	0	2 i	1	0	0	*
Paints, coatings, adhesives, and other chemicals	3255, 3259	56	8 i	12	3 i	D	3	*	0	3 i	19	D	*
Plastics and rubber products	326	158 i	1 i	3 i	29 i	15 i	18 i	8 i	35 i	49	0	1	0
Nonmetallic mineral products	327	24	* i	* i	5 i	* i	6	4	3 i	5	0	2	0
Primary metals	331	62	0	0	D	1 i	3 i	14 i	2	32	D	0	6
Fabricated metal products	332	130 i	2 i	5 i	16 i	26 i	16 i	8 i	2 i	18	37	0	0
Machinery	333	670	9 i	116 i	34 i	101 i	34	8	90 i	141	104	31	2
Agricultural implements	33311	39	D	* i	D	0	1 i	0	0	5	0	D	0
Semiconductor machinery	333295	120	0	0	0	D	D	0	D	D	0	0	0
Engines, turbines, and power transmission equipment	3336	62	1	3 i	5	9	1	4	D	0	D	0	D
Other machinery	other 333	448 i	D	113 i	D	D	D	4	D	D	D	D	D
Computer and electronic products	334	9,195	81 i	104 i	68	125	341	339	291	1,221	1,374	1,463	3,787
Communications equipment	3342	1,533 i	5 i	* i	* i	5	115	97	13	373 i	0	924 i	0
Semiconductors and other electronic components	3344	2,112	7 i	59 i	20	51	61	230	109	559	987	5	23
Navigational, measuring, electromedical, and control instruments	3345	5,387	64 i	42 i	43	63 i	148	11	86	263	387	516	3,764
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	220	57 i	9 i	7	1	96	3	23	12	10	1	0

TABLE 28. Domestic R&D paid for by others and performed by the company, by industry and company size: 2014
(Millions of U.S. dollars)

Industry	NAICS codes	Company size (domestic employees)											
		All companies	5–9 ^a	10–24	25–49	50–99	100–249	250–499	500–999	1,000–4,999	5,000–9,999	10,000–24,999	25,000 or more
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	4,876	5 i	19 i	13	32 i	41	1	2	219	265	515	3,764
Other measuring and controlling devices	other 3345	291	1 i	14 i	23	30	11	6	62	32	112	0	0
Other computer and electronic products	other 334	163 i	5 i	3 i	5	6 i	16 i	1	83 i	26 i	0	18	0
Electrical equipment, appliances, and components	335	187 i	2 i	6 i	15 i	13	15	8	2	40 i	0	86 i	0
Transportation equipment	336	19,485 i	4 i	3 i	22	75	11	156	145	1,233	873 i	2,910	14,053 i
Automobiles, bodies, trailers, and parts	3361–63	2,504	0	0	5	49	9	140	108 i	1,145	180	239	629 i
Aerospace products and parts	3364	15,881 i	D	3 i	D	19	1	3	D	87	D	2,670	12,360 i
Aircraft, aircraft engines, and aircraft parts	336411–13	14,881 i	D	3 i	D	D	1	3	D	D	D	D	12,360 i
Guided missiles, space vehicles, and related parts	336414–15, 336419	1,001 i	D	0	D	D	0	0	0	D	D	D	0
Military armored vehicles, tanks, and tank components	336992	8	*	* i	0	6	0	0	0	1	0	0	0
Other transportation	other 336	1,091 i	D	0	D	*	1	14	D	0	D	0	1,064 i
Furniture and related products	337	4 i	0	1 i	1 i	1 i	* i	* i	* i	0	0	0	0
Miscellaneous manufacturing	339	559	14 i	13 i	D	12	D	D	47	58	0	199	8
Medical equipment and supplies	3391	500	11 i	10	11 i	9	126 i	26 i	41	58	0	199	8
Other miscellaneous manufacturing	3399	60 i	3 i	3 i	D	3	D	D	6	* i	0	0	0
Nonmanufacturing industries	21–23, 42–81	17,504	688 i	1,159 i	1,800 i	1,108	1,554	1,118	559	3,260 i	3,299	1,287	1,671
Mining, extraction, and support activities	21	882	D	0	0	118	D	D	D	5	0	464	D
Utilities	22	52	0	0	3	0	* i	D	0	2	1	D	D
Wholesale trade	42	10 i	* i	6 i	2 i	* i	2 i	0	0	0	0	0	0
Electronic shopping and electronic auctions	454111–12	0	0	0	0	0	0	0	0	0	0	0	0
Transportation and warehousing	48–49	4	0	0	0	0	0	0	3	0	0	0	*
Information	51	1,477	D	45 i	46 i	61	123 i	64	D	47	0	D	710
Publishing	511	1,270	D	24 i	28	17 i	118 i	14	18	45	0	D	676
Newspaper, periodical, book, and directory publishers	5111	0	0	0	0	0	0	0	0	0	0	0	0
Software publishers	5112	1,270	D	24 i	28	17 i	118 i	14	18	45	0	D	676
Telecommunications	517	45	10 i	* i	13 i	18	0	3	0	0	0	0	0
Data processing, hosting, and related services	518	103	D	11 i	3 i	21	5 i	3	D	2	0	0	34
Other information	other 51	59	0	9 i	2 i	3	* i	44	0	0	0	0	0
Finance and insurance	52	32	0	0	0	0	1	0	0	0	0	0	32
Real estate and rental and leasing	53	* i	0	0	0	0	0	* i	0	0	0	0	0
Lessors of nonfinancial intangible assets (except copyrighted works)	533	0	0	0	0	0	0	0	0	0	0	0	0

TABLE 28. Domestic R&D paid for by others and performed by the company, by industry and company size: 2014
(Millions of U.S. dollars)

Industry	NAICS codes	Company size (domestic employees)											
		All companies	5–9 ^a	10–24	25–49	50–99	100–249	250–499	500–999	1,000–4,999	5,000–9,999	10,000–24,999	25,000 or more
Other real estate and rental and leasing	other 53	* i	0	0	0	0	0	* i	0	0	0	0	0
Professional, scientific, and technical services	54	14,914	658 i	1,094 i	1,745 i	913	1,345	1,023	406	3,183 i	3,298	477	771
Architectural, engineering, and related services	5413	1,871	141 i	69 i	161	126 i	173	44	21	184	135	66	751
Computer systems design and related services	5415	2,375 i	241 i	324 i	986 i	271 i	219	228	85 i	21	0	0	0
Scientific R&D services	5417	10,139	266 i	608	561	431	880	621	210	2,969 i	3,163	411	18 i
Biotechnology R&D	541711	2,767	D	171	D	34	D	0	0	D	1,531	0	18 i
Physical, engineering, and life sciences (except biotechnology) R&D	541712	6,720	208 i	429	470	389	760	621	210	1,591 i	1,632	411	0
Social sciences and humanities R&D	541720	651	D	9	D	8	D	0	0	D	0	0	0
Other professional, scientific, and technical services	other 54	529	9 i	93	36	86	72	131	91	10	0	0	2
Health care services	621–23	62 i	D	8	2 i	11 i	27	2 i	1 i	D	0	1 i	D
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	70	1 i	6	3	5	D	D	0	D	0	0	0

* = amount < \$500,000; 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 Upper bound is based on the U.S. Small Business Administration's definition of a small business; the Business R&D and Innovation Survey does not include companies with fewer than five domestic employees.

NOTES: 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.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 29. Domestic R&D paid for by others and performed by the company, by character of work, industry, and company size: 2014

(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	58,158	5,829	14,403	37,927 i
Manufacturing industries	31–33	40,655	4,772 i	7,193 i	28,690 i
Food	311	220	9	72	140
Beverages and tobacco products	312	101	D	D	D
Textiles, apparel, and leather products	313–16	15 i	* i	4 i	11 i
Wood products	321	12 i	* i	1 i	10 i
Printing and related support activities	323	2 i	* i	* i	1 i
Chemicals	325	9,813	2,092	1,643	6,078
Pharmaceuticals and medicines	3254	8,966	1,900	1,236	5,830
Other chemicals	other 325	847	192	407	248
Plastics and rubber products	326	158 i	*	7	151 i
Nonmetallic mineral products	327	24	3	10	12
Primary metals	331	62	9 i	11 i	41 i
Fabricated metal products	332	130 i	60 i	40 i	30 i
Machinery	333	670	8 i	86 i	575
Computer and electronic products	334	9,195	1,052	1,182	6,962
Semiconductors and other electronic components	3344	2,112	519	184	1,409
Navigational, measuring, electromedical, and control instruments	3345	5,387	216	655	4,515
Other computer and electronic products	other 334	1,696 i	317 i	342 i	1,037 i
Electrical equipment, appliances, and components	335	187 i	1 i	14 i	172 i
Transportation equipment	336	19,485 i	1,520 i	4,061 i	13,903 i
Aerospace products and parts	3364	15,881 i	1,454 i	2,510 i	11,917 i
Other transportation equipment	other 336	3,603	66 i	1,551	1,986 i
Furniture and related products	337	4 i	* i	1 i	3 i
Miscellaneous manufacturing	322, 324, 339	576	D	D	D
Nonmanufacturing industries	21–23, 42–81	17,504	1,057	7,210	9,237 i
Information	51	1,477	105	669	703
Publishing	511	1,270	86	632	552
Telecommunications	517	45	4	7	34
Data processing, hosting, and related services	518	103	14	26	62 i
Other information	other 51	59	1 i	3 i	55
Professional, scientific, and technical services	54	14,914	792 i	6,329	7,793 i
Architectural, engineering, and related services	5413	1,871	113	856	903 i
Computer systems design and related services	5415	2,375 i	37 i	264 i	2,074 i
Scientific R&D services	5417	10,139	610 i	5,040	4,488 i
Biotechnology R&D	541711	2,767	32 i	618	2,118 i
Physical, engineering, and life sciences (except biotechnology) R&D	541712	6,720	513 i	3,985	2,222 i
Social sciences and humanities R&D	541720	651	65 i	437 i	149 i
Other professional, scientific, and technical services	other 54	529	33	170	327
Other nonmanufacturing	21–23, 42–49, 52, 53, 55–81	1,113	160	212	741
All companies (number of domestic employees)	–	58,158	5,829	14,403	37,927 i
Small companies ^a					
5–499	–	11,884 i	1,175 i	2,489 i	8,221 i
5–99	–	7,383 i	668 i	1,443 i	5,272 i
5–49	–	4,730 i	371 i	1,025 i	3,334 i
5–9	–	868 i	56 i	207 i	605 i
10–24	–	1,671 i	188 i	404 i	1,079 i
25–49	–	2,191 i	127	414 i	1,650 i
50–99	–	2,652 i	296 i	418 i	1,938 i
100–249	–	2,486	250	601	1,635
250–499	–	2,015	257 i	445	1,314

TABLE 29. Domestic R&D paid for by others and performed by the company, by character of work, industry, and company size: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS code	Total	Basic research	Applied research	Development
Medium and large companies					
500–999	–	1,525	205	470	850
1,000–4,999	–	9,744	1,711	3,076	4,958
5,000–9,999	–	7,522	660	2,712	4,151
10,000–24,999	–	7,542	436 i	1,197	5,909
25,000 or more	–	19,941 i	1,642 i	4,460 i	13,839 i

* = amount < \$500,000; 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 Upper bound is based on the U.S. Small Business Administration's definition of a small business; the Business R&D and Innovation Survey does not include companies with fewer than five domestic employees.

NOTES: 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.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 30. Domestic R&D paid for by others and performed by the company, by type of cost, industry, and company size: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS code	Total	Salaries, wages, and fringe benefits	Stock-based compensation	Temporary staffing	Expensed equipment	Materials and supplies	Lease and rental payments	Depreciation	Other purchased services (except R&D)	Other
All industries	21-23, 31-33, 42-81	58,158	32,827	371	1,954	507 i	6,709	879	1,183	2,087 i	11,640
Manufacturing industries	31-33	40,655	21,958 i	315	1,208	353 i	5,454 i	570	854	1,553 i	8,391 i
Food	311	220	145	1	4	1	19	8	8	10	24
Beverages and tobacco products	312	101	64	* i	3	5	5	3	10	3	7
Textiles, apparel, and leather products	313-16	15 i	4 i	* i	* i	* i	4 i	* i	* i	* i	6 i
Wood products	321	12 i	6 i	* i	1 i	0	1 i	* i	* i	* i	3 i
Paper	322	12	7 i	* i	* i	* i	1 i	* i	* i	* i	2 i
Printing and related support activities	323	2 i	1 i	* i	* i	* i	* i	* i	* i	* i	* i
Petroleum and coal products	324	5	4	0	* i	* i	1 i	* i	*	*	* i
Chemicals	325	9,813	5,091	268	378	58	617	247	352	429	2,372
Basic chemicals	3251	295 i	184 i	4	9 i	9 i	31 i	6	18 i	2	31 i
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	15 i	11 i	0	*	*	2 i	* i	* i	1 i	1 i
Pesticides, fertilizers, and other agricultural chemicals	3253	464	221	0	79	1 i	32	21	33	0	77
Pharmaceuticals and medicines	3254	8,966	4,636	263	286	46	549	217	300	426	2,242
Soaps, cleaning compounds, and toilet preparations	3256	16 i	12 i	1 i	1 i	* i	* i	* i	1 i	1 i	1 i
Paints, coatings, adhesives, and other	3255, 3259	56	28	0	3	1 i	2	2 i	* i	0	20
Plastics and rubber products	326	158 i	34 i	0	1 i	15 i	101 i	* i	3 i	1 i	3 i
Nonmetallic mineral products	327	24	12	0	*	1	3	1	1	*	6
Primary metals	331	62	38	* i	2	*	16 i	* i	*	* i	5 i
Fabricated metal products	332	130 i	45 i	26 i	* i	* i	37 i	2 i	4 i	* i	17 i
Machinery	333	670	374	1 i	38 i	11 i	116 i	23 i	35 i	16 i	57
Agricultural implements	33311	39	26	* i	1	* i	6	1	4	* i	2
Semiconductor machinery	333295	120	63	1	3	1	10	10	15	2	14
Engines, turbines, and power transmission equipment	3336	62	27	0	*	*	7	*	1	*	25
Other machinery	other 333	448 i	257	* i	34 i	9 i	93 i	11 i	15 i	14 i	16 i
Computer and electronic products	334	9,195	6,034	19	485	96	854	93	289	160	1,163
Communications equipment	3342	1,533 i	1,085 i	1 i	157 i	16 i	39 i	29 i	74 i	38 i	94 i
Semiconductors and other electronic components	3344	2,112	1,545	8	88	32	100	38	109	12	182
Navigational, measuring, electromedical, and control instruments	3345	5,387	3,293	10	233	36	706	26	105	104	875
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	220	126	* i	16	12	41	6	* i	0	18
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	4,876	2,969	10	200	21	646	19	81	103	830
Other measuring and controlling devices	other 3345	291	198	1	17	4	19	1	24	1	27

TABLE 30. Domestic R&D paid for by others and performed by the company, by type of cost, industry, and company size: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS code	Total	Salaries, wages, and fringe benefits	Stock-based compensation	Temporary staffing	Expensed equipment	Materials and supplies	Lease and rental payments	Depreciation	Other purchased services (except R&D)	Other
Other computer and electronic products	other 334	163 i	112 i	* i	8 i	12 i	10	1 i	2 i	6	12
Electrical equipment, appliances, and components	335	187 i	107 i	* i	4 i	8 i	31 i	5 i	7 i	1 i	24 i
Transportation equipment	336	19,485 i	9,611 i	* i	265	142 i	3,602 i	186	138	924 i	4,616 i
Automobiles, bodies, trailers, and parts	3361-63	2,504	1,217	* i	163	11	580	125	88	36	284
Aerospace products and parts	3364	15,881 i	7,856 i	0	64 i	126 i	2,714 i	34	26	836 i	4,224 i
Aircraft, aircraft engines, and aircraft parts	336411-13	14,881 i	D	0	D	125 i	D	34	26	836 i	D
Guided missiles, space vehicles, and related parts	336414-15, 336419	1,001 i	D	0	D	1 i	D	* i	0	* i	D
Military armored vehicles, tanks, and tank components	336992	8	5	0	*	*	1	* i	*	*	1
Other transportation	other 336	1,091 i	534 i	* i	37 i	5 i	307 i	27 i	23 i	51 i	107 i
Furniture and related products	337	4 i	2 i	* i	* i	* i	1 i	* i	* i	* i	1 i
Miscellaneous	339	559	377	0	26 i	13 i	46 i	2 i	6 i	5 i	85
Medical equipment and supplies	3391	500	344	0	22 i	12 i	38 i	1 i	6 i	5 i	71
Other miscellaneous manufacturing	3399	60 i	33 i	0	4 i	1 i	8 i	* i	* i	0	14 i
Nonmanufacturing industries	21-23, 42-81	17,504	10,869	56	746	154 i	1,255	308	330	534	3,250
Mining, extraction, and support activities	21	882	425	2	36	103 i	46	18	7	19	226
Utilities	22	52	18	*	17	*	1	*	0	0	17
Wholesale trade	42	10 i	9 i	0	0	0	*	*	*	0	1
Electronic shopping and electronic auctions	454111-12	0	0	0	0	0	0	0	0	0	0
Transportation and warehousing	48-49	4	3	0	0	0	*	0	0	0	0
Information	51	1,477	926	3	19	3	32	11	12	10	461
Publishing	511	1,270	764	3	16	2	21	10	8	1	446
Newspaper, periodical, book, and directory publishers	5111	0	0	0	0	0	0	0	0	0	0
Software publishers	5112	1,270	764	3	16	2	21	10	8	1	446
Telecommunications	517	45	32	*	2	1	* i	1	* i	* i	9 i
Data processing, hosting, and related services	518	103	75	*	1	*	10	1	3	8 i	4
Other information	other 51	59	55	* i	1 i	* i	* i	*	*	*	3 i
Finance and insurance	52	32	32	0	0	0	0	0	0	0	0
Real estate and rental and leasing	53	* i	* i	0	0	0	0	0	0	0	0
Lessors of nonfinancial intangible assets (except copyrighted works)	533	0	0	0	0	0	0	0	0	0	0
Other real estate and rental and leasing	other 53	* i	* i	0	0	0	0	0	0	0	0
Professional, scientific, and technical services	54	14,914	9,347	51	671	48	1,172	277	309	505	2,534
Architectural, engineering, and related services	5413	1,871	1,149	0	26 i	5	58	17	4	27 i	585
Computer systems design and related services	5415	2,375 i	1,672 i	0	155 i	2 i	257 i	67 i	9 i	30 i	183 i

TABLE 30. Domestic R&D paid for by others and performed by the company, by type of cost, industry, and company size: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS code	Total	Salaries, wages, and fringe benefits	Stock-based compensation	Temporary staffing	Expensed equipment	Materials and supplies	Lease and rental payments	Depreciation	Other purchased services (except R&D)	Other
Scientific R&D services	5417	10,139	6,116	51	481	39	841	177	292	445	1,697
Biotechnology R&D	541711	2,767	1,690	D	98	6	251	45	78	342	D
Physical, engineering, and life sciences (except biotechnology) R&D	541712	6,720	3,965	33	371	28	589	116	207	103	1,308
Social sciences and humanities R&D	541720	651	462	D	12	5	1	15	7	*	D
Other professional, scientific, and technical services	other 54	529	410	* i	8	2	17	16	4	2	69
Health care services	621-23	62 i	49 i	0	3 i	* i	1 i	2 i	1 i	1 i	5 i
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	70	59	0	1	*	2	1	1	0	6
All companies (number of domestic employees)	-	58,158	32,827	371	1,954	507 i	6,709	879	1,183	2,087 i	11,640
Small companies ^a											
5-499	-	11,884 i	7,340 i	69 i	528 i	200 i	1,255 i	326	233 i	270 i	1,663 i
5-99	-	7,383 i	4,522 i	47 i	332 i	146 i	801 i	212 i	119 i	160 i	1,043 i
5-49	-	4,730 i	2,972 i	14 i	218 i	41 i	595 i	130 i	59 i	82 i	620 i
5-9	-	868 i	515 i	3 i	38 i	11 i	66 i	20 i	11 i	16 i	189 i
10-24	-	1,671 i	1,046 i	6 i	72 i	15 i	252	45 i	26 i	23 i	187 i
25-49	-	2,191 i	1,412 i	5 i	108 i	15 i	277 i	65 i	22 i	43 i	244 i
50-99	-	2,652 i	1,551 i	33 i	114 i	105 i	207 i	82 i	60 i	78 i	423 i
100-249	-	2,486	1,605	9 i	73	27	254	63	46	51	358
250-499	-	2,015	1,213	13	123	27	200	51	68	59	262
Medium and large companies											
500-999	-	1,525	858	31	32	23 i	223	25	44	36	253
1,000-4,999	-	9,744	5,595	215	421	66	885	250	318	489	1,505
5,000-9,999	-	7,522	4,385	43	366	28	506	111	331	201	1,552
10,000-24,999	-	7,542	4,306	4 i	338	35 i	1,348	80	117	248	1,065
25,000 or more	-	19,941 i	10,343 i	9 i	269	155 i	2,491 i	87 i	140	844 i	5,602 i

* = amount < \$500,000; 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 Upper bound is based on the U.S. Small Business Administration's definition of a small business; the Business R&D and Innovation Survey does not include companies with fewer than five domestic employees.

NOTES: 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.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 31. Domestic R&D paid for by others and performed by the company, by source of funds, industry, and company size: 2014

(Millions of U.S. dollars)

Industry and company size	NAICS code	Total	Companies	Companies outside the United States		U.S. federal government agencies	U.S. state government agencies	Foreign government agencies	All other	
			in the United States	Company's parent	Unaffiliated companies				In the United States	Outside the United States
All industries	21–23, 31–33, 42–81	58,158	13,227	13,407	3,839	26,554 i	138	415 i	523	55
Manufacturing industries	31–33	40,655	5,062	10,746	2,827	21,303 i	43	D	226	D
Food	311	220	14 i	194	* i	*	0	0	12 i	0
Beverages and tobacco products	312	101	* i	D	D	* i	0	0	D	0
Textiles, apparel, and leather products	313–16	15 i	3 i	2 i	0	9 i	0	0	2 i	0
Wood products	321	12 i	2 i	6 i	* i	2 i	* i	0	0	0
Paper	322	12	7 i	3	3	0	0	0	* i	0
Printing and related support activities	323	2 i	1 i	* i	1 i	* i	* i	0	* i	0
Petroleum and coal products	324	5	5	0	*	0	0	0	0	0
Chemicals	325	9,813	1,660	5,407	2,267	404	15	1	D	D
Basic chemicals	3251	295 i	26	D	D	79 i	0	0	* i	0
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	15 i	3	1 i	* i	10 i	0	0	1	* i
Pesticides, fertilizers, and other agricultural chemicals	3253	464	8 i	D	D	4 i	0	0	2 i	* i
Pharmaceuticals and medicines	3254	8,966	1,600	4,858	2,164	272	15	1	D	D
Soaps, cleaning compounds, and toilet preparations	3256	16 i	9 i	2 i	0	6 i	0	0	0	0
Paints, coatings, adhesives, and other	3255, 3259	56	13	9 i	1 i	33	0	0	*	* i
Plastics and rubber products	326	158 i	139 i	16 i	2 i	1 i	* i	0	0	0
Nonmetallic mineral products	327	24	4	13	4 i	4	* i	0	*	* i
Primary metals	331	62	36	2 i	1 i	22 i	0	* i	0	0
Fabricated metal products	332	130 i	21 i	5 i	* i	34 i	1 i	* i	69 i	0
Machinery	333	670	199 i	299 i	86	78	1	*	6 i	* i
Agricultural implements	33311	39	2 i	5	31	2 i	0	* i	* i	0
Semiconductor machinery	333295	120	1	90 i	28	1	* i	0	0	0
Engines, turbines, and power transmission equipment	3336	62	4	12	0	45	1	0	* i	0
Other machinery	other 333	448 i	192 i	192	27 i	30 i	* i	*	6 i	* i
Computer and electronic products	334	9,195	1,467	2,759	269	4,456	17	194	33 i	1
Communications equipment	3342	1,533 i	260 i	531	9	733 i	* i	* i	0	0
Semiconductors and other electronic components	3344	2,112	247	1,686	138	41	* i	* i	0	1
Navigational, measuring, electromedical, and control instruments	3345	5,387	875	522	110	3,638	17	193	32 i	0
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	220	30 i	124	9 i	27 i	0	0	30 i	0
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	4,876	799	209	93	3,565	17	193	1	0
Other measuring and controlling devices	other 3345	291	46	190	8	46	0	* i	1	0

TABLE 31. Domestic R&D paid for by others and performed by the company, by source of funds, industry, and company size: 2014

(Millions of U.S. dollars)

Industry and company size	NAICS code	Total	Companies	Companies outside the United States		U.S. federal government agencies	U.S. state government agencies	Foreign government agencies	All other	
			in the United States	Company's parent	Unaffiliated companies				In the United States	Outside the United States
Other computer and electronic products	other 334	163 i	85 i	19	13	44	0	* i	1	0
Electrical equipment, appliances, and components	335	187 i	15 i	100 i	17 i	48 i	*	0	*	7 i
Transportation equipment	336	19,485 i	1,398	1,532	134	16,153 i	7	D	D	*
Automobiles, bodies, trailers, and parts	3361-63	2,504	625	1,532	87 i	254 i	4	0	1 i	0
Aerospace products and parts	3364	15,881 i	747	0	47	14,826 i	3	D	D	*
Aircraft, aircraft engines, and aircraft parts	336411-13	14,881 i	734	0	47	D	3	D	D	*
Guided missiles, space vehicles, and related parts	336414-15, 336419	1,001 i	13 i	0	0	D	0	D	0	0
Military armored vehicles, tanks, and tank components	336992	8	D	0	* i	D	0	0	* i	0
Other transportation	other 336	1,091 i	D	*	* i	D	* i	0	* i	0
Furniture and related products	337	4 i	1 i	0	D	3 i	* i	* i	D	0
Miscellaneous	339	559	92 i	D	D	90 i	2 i	0	29 i	0
Medical equipment and supplies	3391	500	87 i	272	36	75 i	2 i	0	29 i	0
Other miscellaneous manufacturing	3399	60 i	5 i	D	D	15 i	1 i	0	0	0
Nonmanufacturing industries	21-23, 42-81	17,504	8,165	2,661 i	1,012	5,251	95	D	297	D
Mining, extraction, and support activities	21	882	393	D	D	2	*	0	D	1
Utilities	22	52	0	3	0	49	* i	0	1	0
Wholesale trade	42	10 i	* i	10 i	0	0	0	0	0	0
Electronic shopping and electronic auctions	454111-12	0	0	0	0	0	0	0	0	0
Transportation and warehousing	48-49	4	0	0	3	*	0	0	0	0
Information	51	1,477	517	734	41	162	*	0	22	0
Publishing	511	1,270	463	667	40	99	* i	0	1	0
Newspaper, periodical, book, and directory publishers	5111	0	0	0	0	0	0	0	0	0
Software publishers	5112	1,270	463	667	40	99	* i	0	1	0
Telecommunications	517	45	12 i	5	1 i	9	0	0	19	0
Data processing, hosting, and related services	518	103	39	8	0	53	*	0	2	0
Other information	other 51	59	4 i	53	* i	1 i	0	0	* i	0
Finance and insurance	52	32	D	0	0	0	0	0	D	0
Real estate and rental and leasing	53	* i	* i	0	0	0	0	0	0	0
Lessors of nonfinancial intangible assets (except copyrighted works)	533	0	0	0	0	0	0	0	0	0
Other real estate and rental and leasing	other 53	* i	* i	0	0	0	0	0	0	0
Professional, scientific, and technical services	54	14,914	7,189	1,781 i	610 i	5,016	74	D	223	D
Architectural, engineering, and related services	5413	1,871	327	138 i	51	1,298	20	0	37	0
Computer systems design and related services	5415	2,375 i	690 i	1,085 i	10 i	471 i	22	0	D	D

TABLE 31. Domestic R&D paid for by others and performed by the company, by source of funds, industry, and company size: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS code	Total	Companies	Companies outside the United States		U.S. federal government agencies	U.S. state government agencies	Foreign government agencies	All other	
			in the United States	Company's parent	Unaffiliated companies				In the United States	Outside the United States
Scientific R&D services	5417	10,139	6,105	417	524 i	2,954	32	D	D	1
Biotechnology R&D	541711	2,767	2,237	31 i	355 i	114	6	0	23	0
Physical, engineering, and life sciences (except biotechnology) R&D	541712	6,720	3,851	366	169	2,270	7	D	D	1
Social sciences and humanities R&D	541720	651	16	20	* i	569	18	*	28	*
Other professional, scientific, and technical services	other 54	529	67	141	25	293	1	*	2	0
Health care services	621-23	62 i	56 i	4	1 i	1 i	0	0	* i	0
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	70	D	D	D	21	21	0	0	0
All companies (number of domestic employees)	-	58,158	13,227	13,407	3,839	26,554 i	138	415 i	523	55
Small companies ^a										
5-499	-	11,884 i	3,547 i	3,749 i	743 i	3,399	70	10	320	46
5-99	-	7,383 i	2,252 i	2,462 i	468 i	1,942 i	39	9	186 i	23 i
5-49	-	4,730 i	1,500 i	1,431 i	160 i	1,463 i	22	8	130 i	16 i
5-9	-	868 i	353 i	66 i	37 i	318 i	4 i	2	87 i	1 i
10-24	-	1,671 i	752 i	180	64 i	617 i	13	3	28 i	13 i
25-49	-	2,191 i	394 i	1,185 i	59	528	5	3	15 i	2
50-99	-	2,652 i	753 i	1,031 i	308 i	480	17	1 i	56	6 i
100-249	-	2,486	726	599	100	950	5	* i	84 i	21
250-499	-	2,015	568	688	175	507	25	1	50	2
Medium and large companies										
500-999	-	1,525	364 i	769	118	247	1 i	* i	25	1 i
1,000-4,999	-	9,744	2,430 i	4,848	1,066	1,336	29	2 i	32	1 i
5,000-9,999	-	7,522	3,692	2,443	330	992 i	16	* i	48	1 i
10,000-24,999	-	7,542	1,187	1,283	1,310	3,724	20	2 i	13	4 i
25,000 or more	-	19,941 i	2,008	316	272 i	16,858 i	2	401 i	84	1

* = amount < \$500,000; 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 Upper bound is based on the U.S. Small Business Administration's definition of a small business; the Business R&D and Innovation Survey does not include companies with fewer than five domestic employees.

NOTES: 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.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 32. Companies with domestic R&D paid for by others and performed by the company in energy and environmental protection application areas, by industry and company size: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS codes	Domestic R&D		Energy		Environmental protection	
		Companies ^a (number)	Amount	Companies ^b (number)	Amount	Companies ^b (number)	Amount
All industries	21–23, 31–33, 42–81	10,005	58,158	1,777 i	2,984	1,060 i	2,275 i
Manufacturing industries	31–33	5,557	40,655	830 i	1,404	466 i	494
Food	311	250	220	D	2	12 i	18
Chemicals	325	877	9,813	51 i	187	25 i	139 i
Basic chemicals	3251	123	295 i	41 i	134 i	18 i	116 i
Pharmaceuticals and medicines	3254	545	8,966	3	16	3	21
Other chemicals	other 325	209	551	7	37	4	2
Plastics and rubber products	326	377	158 i	43 i	14 i	15 i	4 i
Nonmetallic mineral products	327	113	24	5	4	D	1
Fabricated metal products	332	663	130 i	178 i	57 i	190 i	6 i
Machinery	333	788	670	37	113	8	27
Agricultural implements	33311	43	39	0	0	0	0
Semiconductor machinery	333295	6	120	0	0	0	0
Engines, turbines, and power transmission equipment	3336	40	62	25 i	32	4	20
Other machinery	other 333	698	448 i	12	81	4	8
Computer and electronic products	334	769	9,195	160 i	651	98 i	85
Semiconductors and other electronic components	3344	161	2,112	63 i	407	36 i	41 i
Other electronic products	other 334	608	7,083	97 i	244	62 i	44
Electrical equipment, appliances, and components	335	357	187 i	275 i	85 i	47 i	8 i
Transportation equipment	336	301	19,485 i	51	243	38 i	168
Automobiles, bodies, trailers, and parts	3361–63	133	2,504	38 i	170	32 i	164
Other transportation	other 336	168	16,981 i	13	73 i	6	4
Miscellaneous manufacturing	339	563	559	16 i	24 i	25 i	19 i
Other manufacturing	312–16, 321–24, 331, 337	498	212	D	25 i	D	17 i
Nonmanufacturing industries	21–23, 42–81	4,449	17,504	948 i	1,580	594 i	1,780 i
Mining, extraction, and support activities	21	154	882	9	701	48	128
Utilities	22	9	52	8	52	3	30
Wholesale trade	42	332	10 i	0	0	0	0
Information	51	554	1,477	12 i	43	9 i	14
Publishing	511	185	1,270	8 i	37	D	13
Telecommunications	517	151	45	D	2	0	0
Data processing, hosting, and related services	518	119	103	D	5	D	1
Other information	other 51	99	59	0	0	0	0
Professional, scientific, and technical services	54	3,306	14,914	914 i	783 i	530 i	1,586 i
Architectural, engineering, and related services	5413	673	1,871	517 i	275	402 i	1,237 i
Scientific R&D services	5417	822	10,139	186 i	474 i	99 i	314 i
Biotechnology R&D	541711	156	2,767	6	37 i	D	5
Other scientific R&D	other 5417	666	7,371	180 i	438 i	D	309 i

TABLE 32. Companies with domestic R&D paid for by others and performed by the company in energy and environmental protection application areas, by industry and company size: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS codes	Domestic R&D		Energy		Environmental protection	
		Companies ^a (number)	Amount	Companies ^b (number)	Amount	Companies ^b (number)	Amount
Other professional, scientific, and technical services	other 54	1,812	2,904 i	211 i	33	28	35
Health care services	621-23	62	62 i	0	0	0	0
Other nonmanufacturing	23, 44-45, 48-49, 52-53, 55-56, 624, 71-72, 81	31	106	5	2	4	21
All companies (number of domestic employees)	-	10,005	58,158	1,777 i	2,984	1,060 i	2,275 i
Small companies ^c							
5-499	-	9,599	11,884 i	1,656 i	777	990 i	795 i
5-99	-	8,604	7,383 i	1,449 i	451 i	896 i	573 i
5-49	-	7,223	4,730 i	1,224 i	327 i	702 i	335 i
5-9	-	2,433	868 i	442 i	46 i	297 i	114 i
10-24	-	3,139	1,671 i	477 i	103 i	191 i	64 i
25-49	-	1,652	2,191 i	305 i	178	215 i	158 i
50-99	-	1,381	2,652 i	224 i	124 i	193 i	238 i
100-249	-	755	2,486	158 i	233	61 i	161 i
250-499	-	240	2,015	49	93	33 i	61
Medium and large companies							
500-999	-	131	1,525	21	232	17	66 i
1,000-4,999	-	142	9,744	43	324 i	24	174 i
5,000-9,999	-	43	7,522	15	558	7	223 i
10,000-24,999	-	51	7,542	26	648	10	154
25,000 or more	-	39	19,941 i	16	445	11	863

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 for the number of companies are based only on companies in the United States that reported to the survey. These statistics do not include an adjustment to the weight to account for unit nonresponse. A company having multiple reporting parts for data collection may contribute to the statistics for multiple industries, so the detail may not add to the total for the number of companies.

^b Statistics for the number of companies are based only on companies in the United States that reported to the survey. These statistics do not include an adjustment to the weight to account for unit nonresponse. Changes in data collection and imputation processes have affected the comparability of company count estimates in this table with estimates published for previous years. A company having multiple reporting parts for data collection may contribute to the statistics for multiple industries, so the detail may not add to the total for the number of companies.

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

NOTES: 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. Some R&D may be reported in more than one application area. Some R&D is not classified in any application area.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 33. Companies with domestic R&D paid for by others and performed by the company in health or medical, defense, and agricultural application areas, by industry and company size: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS codes	Domestic R&D		Health or medical		Defense		Agriculture	
		Companies ^a (number)	Amount	Companies ^b (number)	Amount	Companies ^b (number)	Amount	Companies ^b (number)	Amount
All industries	21–23, 31–33, 42–81	10,005	58,158	2,272 i	17,546	2,955 i	22,677 i	473 i	459
Manufacturing industries	31–33	5,557	40,655	1,114 i	9,721	766 i	17,680 i	369 i	319
Food	311	250	220	23 i	53	0	0	218 i	35
Chemicals	325	877	9,813	497 i	8,596	65	241 i	D	D
Basic chemicals	3251	123	295 i	3	*	17 i	12 i	D	*
Pharmaceuticals and medicines	3254	545	8,966	491 i	8,596	39	217 i	6	26
Other chemicals	other 325	209	551	3	*	9	12	D	D
Plastics and rubber products	326	377	158 i	61 i	6 i	3	1	30 i	7 i
Nonmetallic mineral products	327	113	24	D	*	5	4	0	0
Fabricated metal products	332	663	130 i	D	1	269 i	62 i	D	1
Machinery	333	788	670	4	2	5	1	3	32
Agricultural implements	33311	43	39	0	0	0	0	D	31
Semiconductor machinery	333295	6	120	0	0	0	0	0	0
Engines, turbines, and power transmission equipment	3336	40	62	0	0	D	1	0	0
Other machinery	other 333	698	448 i	4	2	D	* i	D	1
Computer and electronic products	334	769	9,195	285 i	566	194 i	4,126	75 i	14
Semiconductors and other electronic components	3344	161	2,112	54 i	426	67 i	61 i	D	1
Other electronic products	other 334	608	7,083	231 i	139	126 i	4,065	D	13 i
Electrical equipment, appliances, and components	335	357	187 i	68 i	6 i	151 i	45 i	D	D
Transportation equipment	336	301	19,485 i	4	16 i	39	13,127 i	D	*
Automobiles, bodies, trailers, and parts	3361–63	133	2,504	D	D	6 i	17 i	0	0
Other transportation	other 336	168	16,981 i	D	D	33	13,109 i	D	*
Miscellaneous manufacturing	339	563	559	167 i	474	29 i	68 i	D	* i
Other manufacturing	312–16, 321–24, 331, 337	498	212	D	2	7	5	D	D
Nonmanufacturing industries	21–23, 42–81	4,449	17,504	1,157 i	7,825	2,189 i	4,997 i	104	140 i
Mining, extraction, and support activities	21	154	882	0	0	D	1	0	0
Utilities	22	9	52	D	*	0	0	0	0
Wholesale trade	42	332	10 i	0	0	0	0	0	0
Information	51	554	1,477	42 i	102	17	41	D	1
Publishing	511	185	1,270	37 i	96	D	5	0	0
Telecommunications	517	151	45	D	1	D	5	0	0
Data processing, hosting, and related services	518	119	103	D	4	7	32	D	1
Other information	other 51	99	59	D	1	0	0	0	0
Professional, scientific, and technical services	54	3,306	14,914	1,099 i	7,690	2,167 i	4,944 i	D	139 i
Architectural, engineering, and related services	5413	673	1,871	512 i	63 i	548 i	397	D	1
Scientific R&D services	5417	822	10,139	458	7,481	403	3,086 i	78	131 i
Biotechnology R&D	541711	156	2,767	133	2,636	16	30 i	11	5
Other scientific R&D	other 5417	666	7,371	325 i	4,845	388 i	3,056 i	68 i	127 i

TABLE 33. Companies with domestic R&D paid for by others and performed by the company in health or medical, defense, and agricultural application areas, by industry and company size: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS codes	Domestic R&D		Health or medical		Defense		Agriculture	
		Companies ^a (number)	Amount	Companies ^b (number)	Amount	Companies ^b (number)	Amount	Companies ^b (number)	Amount
Other professional, scientific, and technical services	other 54	1,812	2,904 i	129 i	146 i	1,215 i	1,461 i	23	7
Health care services	621-23	62	62 i	13	31	0	0	0	0
Other nonmanufacturing	23, 44-45, 48-49, 52-53, 55-56, 624, 71-72, 81	31	106	D	2	D	11	0	0
All companies (number of domestic employees)	-	10,005	58,158	2,272 i	17,546	2,955 i	22,677 i	473 i	459
Small companies ^c									
5-499	-	9,599	11,884 i	2,155 i	3,968 i	2,845 i	3,568 i	445 i	92 i
5-99	-	8,604	7,383 i	1,944 i	2,575 i	2,606 i	2,254 i	364 i	63
5-49	-	7,223	4,730 i	1,648 i	1,352 i	2,290 i	1,812 i	270 i	51
5-9	-	2,433	868 i	606 i	253 i	888 i	250 i	110	9
10-24	-	3,139	1,671 i	739 i	598 i	933 i	590	74 i	18
25-49	-	1,652	2,191 i	303 i	500 i	470 i	972 i	86 i	24
50-99	-	1,381	2,652 i	296 i	1,223 i	315 i	442 i	93 i	12
100-249	-	755	2,486	157	765	185 i	816	70 i	25 i
250-499	-	240	2,015	54	628	54	497	12 i	4 i
Medium and large companies									
500-999	-	131	1,525	31	535 i	32	198	5	24
1,000-4,999	-	142	9,744	47	5,399	41	997 i	14	242
5,000-9,999	-	43	7,522	16	5,239	14	1,616 i	4	39 i
10,000-24,999	-	51	7,542	14	1,928 i	11	2,987	D	60
25,000 or more	-	39	19,941 i	9	477 i	12	13,311 i	D	1

* = amount < \$500,000; 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 for the number of companies are based only on companies in the United States that reported to the survey. These statistics do not include an adjustment to the weight to account for unit nonresponse. A company having multiple reporting parts for data collection may contribute to the statistics for multiple industries, so the detail may not add to the total for the number of companies.

^b Statistics for the number of companies are based only on companies in the United States that reported to the survey. These statistics do not include an adjustment to the weight to account for unit nonresponse. Changes in data collection and imputation processes have affected the comparability of company count estimates in this table with estimates published for previous years. A company having multiple reporting parts for data collection may contribute to the statistics for multiple industries, so the detail may not add to the total for the number of companies.

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

NOTES: 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. Some R&D may be reported in more than one application area. Some R&D is not classified in any application area.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 34. Companies with domestic R&D paid for by others and performed by the company in selected technology focus areas, by industry and company size: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS codes	Software products and embedded software									
		Domestic R&D		Total		Federally funded		Biotechnology		Nanotechnology	
		Companies ^a (number)	Amount	Companies ^b (number)	Amount	Companies ^b (number)	Amount	Companies ^b (number)	Amount	Companies ^b (number)	Amount
All industries	21–23, 31–33, 42–81	10,005	58,158	3,193 i	10,160 i	488	4,719 i	898 i	5,627	341	1,075
Manufacturing industries	31–33	5,557	40,655	579 i	5,349	128 i	3,480 i	642 i	4,568	174 i	763
Food	311	250	220	9 i	6 i	0	0	12 i	31	0	0
Chemicals	325	877	9,813	12	24	7	3	432 i	4,001	31	47
Basic chemicals	3251	123	295 i	D	*	D	*	74 i	225 i	8 i	2 i
Pharmaceuticals and medicines	3254	545	8,966	D	D	4	3	354 i	3,637	16	35
Other chemicals	other 325	209	551	D	D	D	*	4	139	7	10
Plastics and rubber products	326	377	158 i	0	0	0	0	D	*	D	*
Nonmetallic mineral products	327	113	24	0	0	0	0	0	0	D	*
Fabricated metal products	332	663	130 i	3 i	1 i	D	1 i	0	0	D	*
Machinery	333	788	670	14	66	4	*	D	*	3	27
Agricultural implements	33311	43	39	D	*	0	0	0	0	0	0
Semiconductor machinery	333295	6	120	D	D	0	0	0	0	D	26
Engines, turbines, and power transmission equipment	3336	40	62	3	1	D	*	0	0	0	0
Other machinery	other 333	698	448 i	D	D	D	*	D	*	D	1
Computer and electronic products	334	769	9,195	291 i	3,660	91 i	2,185	138 i	280	123 i	633
Semiconductors and other electronic components	3344	161	2,112	42 i	474	4	6	35 i	157	56 i	595
Other electronic products	other 334	608	7,083	249 i	3,186	87 i	2,179	103 i	124	68 i	38
Electrical equipment, appliances, and components	335	357	187 i	109 i	12 i	3 i	1 i	0	0	D	* i
Transportation equipment	336	301	19,485 i	56 i	1,464 i	15	1,287 i	D	37 i	4	53 i
Automobiles, bodies, trailers, and parts	3361–63	133	2,504	40 i	129 i	3	19 i	0	0	0	0
Other transportation	other 336	168	16,981 i	16	1,336 i	12	1,268 i	D	37 i	4	53 i
Miscellaneous manufacturing	339	563	559	85 i	115 i	D	3	53 i	190 i	3	*
Other manufacturing	312–16, 321–24, 331, 337	498	212	0	0	0	0	D	28 i	D	3
Nonmanufacturing industries	21–23, 42–81	4,449	17,504	2,615 i	4,811 i	359	1,239	256 i	1,059 i	167	312 i
Mining, extraction, and support activities	21	154	882	3	101	D	1 i	D	D	D	D
Utilities	22	9	52	D	2	D	2	D	1	0	0
Wholesale trade	42	332	10 i	D	3	0	0	0	0	0	0
Information	51	554	1,477	167 i	881	21	56	D	5 i	11 i	40
Publishing	511	185	1,270	148 i	779	D	26	0	0	D	33
Telecommunications	517	151	45	D	22	D	*	0	0	D	3
Data processing, hosting, and related services	518	119	103	15	36	8	29	D	5 i	D	4
Other information	other 51	99	59	D	44	0	0	0	0	0	0
Professional, scientific, and technical services	54	3,306	14,914	2,436 i	3,817 i	335	1,180	249 i	1,039 i	150	262 i
Architectural, engineering, and related services	5413	673	1,871	580 i	236 i	55 i	157 i	5	4 i	48	3
Scientific R&D services	5417	822	10,139	311 i	1,810 i	137	735	212 i	1,012 i	95 i	252 i

TABLE 34. Companies with domestic R&D paid for by others and performed by the company in selected technology focus areas, by industry and company size: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS codes	Domestic R&D		Software products and embedded software				Biotechnology		Nanotechnology	
		Companies ^a (number)	Amount	Total		Federally funded		Companies ^b (number)	Amount	Companies ^b (number)	Amount
				Companies ^b (number)	Amount	Companies ^b (number)	Amount				
Biotechnology R&D	541711	156	2,767	9	99 i	7	2	110 i	317 i	10	13
Other scientific R&D	other 5417	666	7,371	302 i	1,711 i	130	732	102 i	695 i	86 i	239 i
Other professional, scientific, and technical services	other 54	1,812	2,904 i	1,546 i	1,771 i	143	288	32 i	23	8	7 i
Health care services	621-23	62	62 i	0	0	0	0	D	4 i	0	0
Other nonmanufacturing	23, 44-45, 48-49, 52-53, 55-56, 624, 71-72, 81	31	106	4	6	0	0	D	D	D	D
All companies (number of domestic employees)	-	10,005	58,158	3,193 i	10,160 i	488	4,719 i	898 i	5,627	341	1,075
Small companies ^c											
5-499	-	9,599	11,884 i	3,067 i	3,025 i	445	727	836 i	1,718 i	310 i	238
5-99	-	8,604	7,383 i	2,799 i	2,008 i	390	342	734 i	1,028 i	287 i	193
5-49	-	7,223	4,730 i	2,480 i	1,486 i	356	214	582 i	566 i	248 i	130
5-9	-	2,433	868 i	992 i	265 i	95	23 i	161 i	90 i	56 i	15 i
10-24	-	3,139	1,671 i	1,063 i	332 i	119	60	322 i	263 i	101 i	77
25-49	-	1,652	2,191 i	425 i	889 i	142	132	100	213	92	39
50-99	-	1,381	2,652 i	318 i	522	34	128	152 i	461 i	39	63
100-249	-	755	2,486	208 i	541 i	43	228	82	462	14	22 i
250-499	-	240	2,015	60	476	12	157	20	229	10	22 i
Medium and large companies											
500-999	-	131	1,525	34	237 i	4	17 i	13	200	5	10 i
1,000-4,999	-	142	9,744	45	1,237 i	9	360	23	1,334	11	251 i
5,000-9,999	-	43	7,522	12 i	896 i	5 i	79 i	9	1,396	4	447
10,000-24,999	-	51	7,542	21	1,354	12	639 i	12	831 i	5	33 i
25,000 or more	-	39	19,941 i	14	3,412	12	2,898	4	148 i	6	98 i

* = amount < \$500,000; 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 for the number of companies are based only on companies in the United States that reported to the survey. These statistics do not include an adjustment to the weight to account for unit nonresponse. A company having multiple reporting parts for data collection may contribute to the statistics for multiple industries, so the detail may not add to the total for the number of companies.

^b Statistics for the number of companies are based only on companies in the United States that reported to the survey. These statistics do not include an adjustment to the weight to account for unit nonresponse. Changes in data collection and imputation processes have affected the comparability of company count estimates in this table with estimates published for previous years. A company having multiple reporting parts for data collection may contribute to the statistics for multiple industries, so the detail may not add to the total for the number of companies.

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

NOTES: 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. Some R&D may be reported in more than one technology area. Some R&D is not classified in any technology area.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 35. Domestic R&D paid for by others and performed by the company as a percentage of domestic net sales, by industry and company size: 2014
(Millions of U.S. dollars)

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	58,158	0.6	0.6
Manufacturing industries	31–33	40,655	0.7	0.7
Food	311	220	*	*
Beverages and tobacco products	312	101	0.1	0.1
Textiles, apparel, and leather products	313–16	15 i	*	*
Wood products	321	12 i	*	*
Paper	322	12	*	*
Printing and related support activities	323	2 i	*	*
Petroleum and coal products	324	5	*	*
Chemicals	325	9,813	0.7	0.7
Basic chemicals	3251	295 i	0.1	0.1
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	15 i	*	*
Pesticides, fertilizers, and other agricultural chemicals	3253	464	0.9	0.9
Pharmaceuticals and medicines	3254	8,966	2.1	2.1
Soaps, cleaning compounds, and toilet preparations	3256	16 i	*	*
Paints, coatings, adhesives, and other chemicals	3255, 3259	56	0.1	0.1
Plastics and rubber products	326	158 i	0.1	0.1
Nonmetallic mineral products	327	24	0.1	0.1
Primary metals	331	62	0.1	0.1
Fabricated metal products	332	130 i	0.1	0.1
Machinery	333	670	D	0.2
Agricultural implements	33311	39	0.1	0.1
Semiconductor machinery	333295	120	1.1	1.1
Engines, turbines, and power transmission equipment	3336	62	D	0.1
Other machinery	other 333	448 i	0.2	0.2
Computer and electronic products	334	9,195	1.3	1.3
Communications equipment	3342	1,533 i	0.8	0.8
Semiconductors and other electronic components	3344	2,112	1.0	1.0
Navigational, measuring, electromedical, and control instruments	3345	5,387	3.0	3.0
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	220	0.5	0.5
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	4,876	6.4	6.4
Other measuring and controlling devices	other 3345	291	0.5	0.5
Other computer and electronic products	other 334	163 i	0.1	0.1
Electrical equipment, appliances, and components	335	187 i	0.1	0.1
Transportation equipment	336	19,485 i	1.7	1.8
Automobiles, bodies, trailers, and parts	3361–63	2,504	0.4	0.4
Aerospace products and parts	3364	15,881 i	4.3	4.3
Aircraft, aircraft engines, and aircraft parts	336411–13	14,881 i	4.2	4.2
Guided missiles, space vehicles, and related parts	336414–15, 336419	1,001 i	5.3	5.3
Military armored vehicles, tanks, and tank components	336992	8	1.1	1.1
Other transportation	other 336	1,091 i	1.8	1.9
Furniture and related products	337	4 i	D	*
Miscellaneous manufacturing	339	559	0.2	0.2
Medical equipment and supplies	3391	500	0.2	0.2
Other miscellaneous manufacturing	3399	60 i	0.1	0.1

TABLE 35. Domestic R&D paid for by others and performed by the company as a percentage of domestic net sales, by industry and company size: 2014
(Millions of U.S. dollars)

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
Nonmanufacturing industries	21–23, 42–81	17,504	0.4	0.5
Mining, extraction, and support activities	21	882	0.2	0.2
Utilities	22	52	*	*
Wholesale trade	42	10 i	*	*
Electronic shopping and electronic auctions	454111–12	0	0.0	0.0
Transportation and warehousing	48–49	4	*	*
Information	51	1,477	0.1	0.1
Publishing	511	1,270	D	0.3
Newspaper, periodical, book, and directory publishers	5111	0	0.0	0.0
Software publishers	5112	1,270	D	0.3
Telecommunications	517	45	*	*
Data processing, hosting, and related services	518	103	0.1	0.1
Other information	other 51	59	D	0.1
Finance and insurance	52	32	*	*
Real estate and rental and leasing	53	* i	*	*
Lessors of nonfinancial intangible assets (except copyrighted works)	533	0	0.0	0.0
Other real estate and rental and leasing	other 53	* i	*	*
Professional, scientific, and technical services	54	14,914	3.4	3.5
Architectural, engineering, and related services	5413	1,871	1.8	1.8
Computer systems design and related services	5415	2,375 i	2.0	2.0
Scientific R&D services	5417	10,139	18.0	18.0
Biotechnology R&D	541711	2,767	17.2	17.2
Physical, engineering, and life sciences (except biotechnology) R&D	541712	6,720	17.1	17.2
Social sciences and humanities R&D	541720	651	68.1	68.4
Other professional, scientific, and technical services	other 54	529	0.3	0.3
Health care services	621–23	62 i	0.1	0.1
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	70	*	*
All companies (number of domestic employees)	–	58,158	0.6	0.6
Small companies ^c				
5–499	–	11,884 i	1.1	1.1
5–99	–	7,383 i	1.7	1.7
5–49	–	4,730 i	1.8	1.9
5–9	–	868 i	2.7	2.7
10–24	–	1,671 i	2.0	2.0
25–49	–	2,191 i	1.5	1.6
50–99	–	2,652 i	1.4	1.4
100–249	–	2,486	0.7	0.7
250–499	–	2,015	0.7	0.7
Medium and large companies				
500–999	–	1,525	0.4	0.4
1,000–4,999	–	9,744	0.8	0.8

TABLE 35. Domestic R&D paid for by others and performed by the company as a percentage of domestic net sales, by industry and company size: 2014
(Millions of U.S. dollars)

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
5,000–9,999	–	7,522	0.8	0.9
10,000–24,999	–	7,542	0.4	0.4
25,000 or more	–	19,941 i	0.5	0.5

* = amount < \$500,000 or less than 0.05%; 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 Upper bound is based on the U.S. Small Business Administration's definition of a small business; the Business R&D and Innovation Survey does not include companies with fewer than five domestic employees.

NOTES: 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: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 36. Domestic R&D paid for by others and performed by the company and others as a percentage of domestic net sales, by industry and company size: 2014

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	67,114	0.7	0.7
Manufacturing industries	31–33	47,444 i	0.8	0.8
Food	311	266	*	*
Beverages and tobacco products	312	101	0.1	0.1
Textiles, apparel, and leather products	313–16	15 i	*	*
Wood products	321	13 i	*	*
Paper	322	12	*	*
Printing and related support activities	323	3 i	*	*
Petroleum and coal products	324	6	*	*
Chemicals	325	13,658	1.0	1.0
Basic chemicals	3251	303	0.1	0.1
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	18 i	*	*
Pesticides, fertilizers, and other agricultural chemicals	3253	464	0.9	0.9
Pharmaceuticals and medicines	3254	12,791	3.0	3.0
Soaps, cleaning compounds, and toilet preparations	3256	18	*	*
Paints, coatings, adhesives, and other chemicals	3255, 3259	64	0.1	0.1
Plastics and rubber products	326	162 i	0.1	0.1
Nonmetallic mineral products	327	26	0.1	0.1
Primary metals	331	62	0.1	0.1
Fabricated metal products	332	136 i	0.1	0.1
Machinery	333	751	D	0.2
Agricultural implements	33311	51	0.1	0.1
Semiconductor machinery	333295	121	1.1	1.1
Engines, turbines, and power transmission equipment	3336	73	D	0.1
Other machinery	other 333	506 i	0.2	0.2
Computer and electronic products	334	9,754	1.3	1.3
Communications equipment	3342	1,565 i	0.9	0.9
Semiconductors and other electronic components	3344	2,290	1.1	1.1
Navigational, measuring, electromedical, and control instruments	3345	5,719	3.2	3.2
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	225	0.6	0.6
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	5,181	6.7	6.7
Other measuring and controlling devices	other 3345	313	0.5	0.5
Other computer and electronic products	other 334	180 i	0.1	0.1
Electrical equipment, appliances, and components	335	201 i	0.1	0.1
Transportation equipment	336	21,687 i	1.9	2.0
Automobiles, bodies, trailers, and parts	3361–63	2,647	0.4	0.4
Aerospace products and parts	3364	17,940 i	4.8	4.8
Aircraft, aircraft engines, and aircraft parts	336411–13	D	D	D
Guided missiles, space vehicles, and related parts	336414–15, 336419	D	D	D
Military armored vehicle, tank, and tank component	336992	8	1.1	1.1
Other transportation	other 336	1,092 i	1.8	1.9
Furniture and related products	337	5 i	D	*
Miscellaneous manufacturing	339	585	0.2	0.2
Medical equipment and supplies	3391	516	0.2	0.2
Other miscellaneous manufacturing	3399	69 i	0.1	0.1

TABLE 36. Domestic R&D paid for by others and performed by the company and others as a percentage of domestic net sales, by industry and company size: 2014

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
Nonmanufacturing industries	21–23, 42–81	19,670	0.5	0.5
Mining, extraction, and support activities	21	1,015	0.2	0.2
Utilities	22	84	*	*
Wholesale trade	42	20 i	*	*
Electronic shopping and electronic auctions	454111–12	0	0.0	0.0
Transportation and warehousing	48–49	4	*	*
Information	51	1,531	0.1	0.1
Publishing	511	1,318	D	0.4
Newspaper, periodical, book, and directory publishers	5111	0	0.0	0.0
Software publishers	5112	1,318	D	0.4
Telecommunications	517	45	*	*
Data processing, hosting, and related services	518	106	0.1	0.1
Other information	other 51	62	D	0.1
Finance and insurance	52	32	*	*
Real estate and rental and leasing	53	* j	*	*
Lessors of nonfinancial intangible assets (except copyrighted works)	533	0	0.0	0.0
Other real estate and rental and leasing	other 53	* j	*	*
Professional, scientific, and technical services	54	16,828	3.9	3.9
Architectural, engineering, and related services	5413	2,029	1.9	1.9
Computer systems design and related services	5415	2,431 i	2.0	2.1
Scientific R&D services	5417	11,764	20.9	20.7
Biotechnology R&D	541711	2,834	17.6	17.6
Physical, engineering, and life sciences (except biotechnology) R&D	541712	8,148	20.7	20.6
Social sciences and humanities R&Dt	541720	782	81.7	82.1
Other professional, scientific, and technical services	other 54	604	0.4	0.4
Health care services	621–23	69 i	0.1	0.1
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	85	*	*
All companies (number of domestic employees)	–	67,114	0.7	0.7
Small companies ^c				
5–499	–	13,870 i	1.3	1.3
5–99	–	8,762 i	2.0	2.0
5–49	–	5,505 i	2.1	2.1
5–9	–	1,009 i	3.1	3.2
10–24	–	1,905 i	2.3	2.3
25–49	–	2,591 i	1.8	1.8
50–99	–	3,257 i	1.7	1.7
100–249	–	2,861	0.8	0.8
250–499	–	2,247	0.8	0.8
Medium and large companies				
500–999	–	1,674	0.4	0.4
1,000–4,999	–	11,835	0.9	0.9

TABLE 36. Domestic R&D paid for by others and performed by the company and others as a percentage of domestic net sales, by industry and company size: 2014

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
5,000–9,999	–	8,935	1.0	1.0
10,000–24,999	–	8,416	0.4	0.4
25,000 or more	–	22,384 i	0.6	0.6

* = amount < \$500,000, or less than 0.05%; 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 Upper bound is based on the U.S. Small Business Administration's definition of a small business; the Business R&D and Innovation Survey does not include companies with fewer than five domestic employees.

NOTES: 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: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 37. Domestic R&D paid for by other companies and performed by the company, by funders' business activity: 2014

Funders' business activity ^a	Business code ^b	Amount
All business activities	21100–81000	30,473
Oil and gas extraction	21100	402
Mining	21200	0
Support activities for mining, including oil and gas	21300	394
Utilities	22100	158
Construction	23000	1 i
Food manufacturing	31100	199
Beverage manufacturing	31210	110
Tobacco manufacturing	31220	4
Textile, apparel, and leather products manufacturing	31990	5 i
Wood products manufacturing	32100	9 i
Paper manufacturing	32200	8 i
Printing and related support activities	32300	17
Petroleum refineries	32401	9
Asphalt paving, roofing, and saturated materials manufacturing	32402	5
Other petroleum and coal products manufacturing, including motor oil, hydraulic fluid, and charcoal	32403	9
Basic chemicals manufacturing	32510	277
Resin, synthetic rubber, and artificial synthetic fibers and filaments manufacturing	32520	6
Pesticide, fertilizer, and other agricultural chemical manufacturing	32530	D
Pharmaceutical, medicinal, botanical, and biological products (except diagnostic) manufacturing	32541	11,254
In vitro diagnostic substances manufacturing	32542	9
Biotechnology-based pharmaceutical and biological products (except diagnostics)	32543	1,572 i
Soap, cleaning compound, and toilet preparations manufacturing	32591	40
Paint, adhesive, and other chemical manufacturing	32592	15 i
Plastics and rubber products manufacturing	32600	158 i
Clay and glass products manufacturing	32710	5 i
Cement, concrete, lime, gypsum, and other nonmetallic mineral products manufacturing	32790	14
Primary metal manufacturing	33100	22
Fabricated metal products manufacturing	33200	148
Agricultural machinery and equipment manufacturing	33311	39
Construction machinery manufacturing	33312	10
Mining, oil, and gas field machinery and equipment manufacturing	33319	50
Semiconductor machinery manufacturing	33321	137
Industrial machinery manufacturing (except semiconductor machinery)	33322	139 i
Photographic and photocopying equipment manufacturing	33331	48
Commercial, service industry, temperature control, and air-flow control machinery manufacturing	33332	310 i
Digital cameras manufacturing	33333	0
Engine, turbine, and power transmission equipment manufacturing	33360	81
Metalworking and other general purpose machinery manufacturing	33390	60 i
Computers and peripheral equipment manufacturing and magnetic and optical media ^c	33412	45
Telephone apparatus manufacturing, including routers, modems, and gateways	33421	2 i
Radio, television, and wireless communication equipment manufacturing	33422	729
Other communication equipment manufacturing, (except radio, television, and wireless communication equipment)	33429	54
Audio and video equipment manufacturing	33430	29 i

TABLE 37. Domestic R&D paid for by other companies and performed by the company, by funders' business activity: 2014

Funders' business activity ^a	Business code ^b	Amount
Semiconductor and other electronic components manufacturing	33440	1,046
Electromedical, electrotherapeutic, and irradiation apparatus manufacturing	33451	152
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments manufacturing	33452	665
Measuring and control instruments manufacturing (not listed elsewhere)	33459	128
Electrical equipment, appliances, and components manufacturing	33500	1,010
Motor vehicles manufacturing	33610	1,511
Motor vehicle body and trailer manufacturing	33620	11
Motor vehicle parts manufacturing	33630	410
Aircraft manufacturing	33641	195 i
Aircraft engine and engine parts manufacturing	33642	225
Other aircraft parts and auxiliary equipment manufacturing	33643	491
Guided missiles, space vehicles, and related parts manufacturing	33644	394
Railroad rolling stock manufacturing	33651	1
Ship and boat building	33660	12
Motorcycle, bicycle, and parts manufacturing	33691	6
Military armored vehicle, tank, and tank components manufacturing	33692	3
All other transportation equipment manufacturing	33699	97
Furniture and related products manufacturing	33700	1 i
Medical equipment and supplies manufacturing	33910	584
Miscellaneous manufacturing not listed elsewhere (games, office supplies, slot machines, etc.)	33990	62 i
Merchant wholesalers, durable goods	42300	12 i
Merchant wholesalers, nondurable goods	42400	*
Wholesale electronic markets and agents and brokers (business to business)	42500	0
Retail trade (except electronic shopping and electronic auctions)	44000	1 i
Electronic shopping and electronic auctions	45411	0
Transportation	48000	4
Couriers, messengers, and express delivery services	49200	*
Warehousing and storage	49300	*
Newspaper, periodical, book, and directory publishers (except Internet)	51110	0
Software publishers (except Internet)	51120	1,225
Motion picture and sound recording (except Internet)	51200	4 i
Broadcasting (except Internet)	51500	0
Wired telecommunications carriers	51710	2 i
Wireless telecommunications carriers (except satellite)	51720	25
Satellite telecommunications	51740	* i
Other telecommunications (not listed elsewhere)	51790	15 i
Data processing, hosting, and related services	51800	14 i
Cloud computing applications and Internet-based software services	51801	15 i
Other information services, including Internet publishing, broadcasting, and Web search portals	51910	88
Finance: banking and credit intermediation	52200	1
Securities, commodity contracts, and other financial investments and related activities, including funds and trusts	52310	0
Insurance carriers and related activities	52400	1
Real estate	53100	0
Rental and leasing services	53200	1
Lessors of nonfinancial intangible assets, including patent licensing	53300	0

TABLE 37. Domestic R&D paid for by other companies and performed by the company, by funders' business activity: 2014

Funders' business activity ^a	Business code ^b	Amount
Legal, accounting, tax preparation, bookkeeping, and payroll services	54111	* i
Architectural, engineering, and related services	54130	217 i
Specialized design services	54140	90
Computer systems design and related services	54150	1,534 i
Management, scientific, and technical consulting services	54160	96
R&D services in social sciences and humanities	54172	7
R&D services in biotechnology	54173	1,490
R&D services in physical, engineering, and life sciences (except biotechnology)	54174	706
Advertising and related services	54180	* i
Professional, scientific, and technical services (not listed elsewhere)	54190	463
Management of companies and enterprises	55100	0
Administrative and support services	56100	3
Waste management and remediation services	56200	4
Offices of physicians	62110	19 i
Medical and diagnostic laboratories	62150	589
Other ambulatory health care services (ambulance, dental, home health care)	62199	2 i
Hospitals and nursing care facilities	62200	20
Social assistance services	62400	0
Arts, entertainment, and recreation	71000	D
Accommodation and food services	72000	*
Other services (not listed elsewhere)	81000	88
Undistributed	–	0

* = amount < \$500,000; 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 Data tabulated independent of the industry classification and business activities of the company that performs R&D.

^b Business codes and descriptions are based on NAICS industry definitions.

^c Estimates for this business code may not be comparable to those from prior years due to the introduction of a related business code for survey year 2014: 33333, Digital cameras manufacturing.

NOTES: Detail may not add to total because of rounding. Statistics are representative of companies located in the United States that performed or funded R&D. For an R&D performer that did not report the R&D funders' business activities, no systematic imputation of these business activities was conducted. The business activities of the R&D funders may not be assumed to be the same as those of the R&D performer.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 38. Domestic R&D paid for by the U.S. federal government and performed by the company, by character of work, industry, and company size: 2014
(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	26,554 i	2,044 i	6,445 i	18,065 i
Manufacturing industries	31–33	21,303 i	1,718 i	3,566 i	16,019 i
Food	311	*	*	*	*
Beverages and tobacco products	312	* i	* i	* i	* i
Textiles, apparel, and leather products	313–16	9 i	* i	1 i	7 i
Wood products	321	2 i	* i	* i	2 i
Printing and related support activities	323	* i	* i	* i	* i
Chemicals	325	404	22 i	114	268
Pharmaceuticals and medicines	3254	272	12 i	91	168
Other chemicals	other 325	132 i	10 i	22 i	100
Plastics and rubber products	326	1 i	* i	* i	1 i
Nonmetallic mineral products	327	4	* i	1	2
Primary metals	331	22 i	1 i	3 i	18 i
Fabricated metal products	332	34 i	12 i	11 i	11 i
Machinery	333	78	*	6	71
Computer and electronic products	334	4,456	220 i	637 i	3,599
Semiconductors and other electronic components	3344	41	3 i	2	36
Navigational, measuring, electromedical, and control instruments	3345	3,638	64	471	3,103
Other computer and electronic products	other 334	777 i	153 i	163 i	460 i
Electrical equipment, appliances, and components	335	48 i	* i	5 i	42 i
Transportation equipment	336	16,153 i	1,459 i	2,773 i	11,921 i
Aerospace products and parts	3364	14,826 i	1,430 i	2,404 i	10,991 i
Other transportation equipment	other 336	1,327 i	29 i	369 i	929 i
Furniture and related products	337	3 i	* i	1 i	2 i
Miscellaneous manufacturing	322, 324, 339	90 i	3	13	75 i
Nonmanufacturing industries	21–23, 42–81	5,251	327	2,879	2,045
Information	51	162	10	96	56
Publishing	511	99	2	79	17
Telecommunications	517	9	1	2	6
Data processing, hosting, and related services	518	53	7	14	32 i
Other information	other 51	1 i	* i	1 i	* i
Professional, scientific, and technical services	54	5,016	309	2,776	1,931
Architectural, engineering, and related services	5413	1,298	76	822	399 i
Computer systems design and related services	5415	471 i	13	98	360 i
Scientific R&D services	5417	2,954	207 i	1,729 i	1,018
Biotechnology R&D	541711	114	1	80 i	34 i
Physical, engineering, and life sciences (except biotechnology) R&D	541712	2,270	167	1,261	843
Social sciences and humanities R&D	541720	569	39 i	388 i	142 i

TABLE 38. Domestic R&D paid for by the U.S. federal government and performed by the company, by character of work, industry, and company size: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS code	Total	Basic research	Applied research	Development
Other professional, scientific, and technical services	other 54	293	13	127	153
Other nonmanufacturing	21-23, 42-49, 52, 53, 55-81	73	7	8	58
All companies (number of domestic employees)	-	26,554 i	2,044 i	6,445 i	18,065 i
Small companies ^a					
5-499	-	3,399	237	1,031	2,131
5-99	-	1,942 i	120 i	520 i	1,302 i
5-49	-	1,463 i	97 i	410 i	956 i
5-9	-	318 i	20 i	65 i	233 i
10-24	-	617 i	37 i	217 i	363 i
25-49	-	528	41	127	359
50-99	-	480	23 i	110	346
100-249	-	950	92	269	589
250-499	-	507	25	242	240
Medium and large companies					
500-999	-	247	25	96	126
1,000-4,999	-	1,336 i	109 i	756 i	471 i
5,000-9,999	-	992 i	1	57 i	934 i
10,000-24,999	-	3,724	228 i	755 i	2,740
25,000 or more	-	16,858 i	1,445 i	3,750 i	11,662 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 Upper bound is based on the U.S. Small Business Administration's definition of a small business; the Business R&D and Innovation Survey does not include companies with fewer than five domestic employees.

NOTES: 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.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 39. Domestic R&D paid for by the U.S. federal government and performed by the company, by funding agency, industry, and company size: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS code	Total	DOD	DOE	NASA	NIH	DHS	DOT	EPA	NSF	All other agencies
All industries	21-23, 31-33, 42-81	26,554 i	19,265 i	1,219 i	4,496 i	770	83	24	9	14	674
Manufacturing industries	31-33	21,303 i	15,945 i	637 i	4,234 i	215 i	41	11	*	2	219
Food	311	*	0	0	0	0	0	0	0	0	*
Beverages and tobacco products	312	* i	* i	0	* i	0	0	0	0	0	0
Textiles, apparel, and leather products	313-16	9 i	4	0	4 i	0	0	0	0	0	0
Wood products	321	2 i	* i	1 i	0	* i	0	0	0	0	1 i
Paper	322	0	0	0	0	0	0	0	0	0	0
Printing and related support activities	323	* i	0	* i	0	* i	0	0	0	0	0
Petroleum and coal products	324	0	0	0	0	0	0	0	0	0	0
Chemicals	325	404	64	115 i	3 i	125	2	0	0	1	94
Basic chemicals	3251	79 i	4	73 i	0	*	0	0	0	1	1
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	10 i	7	1 i	0	2 i	0	0	0	0	0
Pesticides, fertilizers, and other agricultural chemicals	3253	4 i	3 i	0	0	0	0	0	0	0	*
Pharmaceuticals and medicines	3254	272	49	6 i	3 i	119	2	0	0	0	93
Soaps, cleaning compounds, and toilet preparations	3256	6 i	1	2 i	0	3 i	0	0	0	0	0
Paints, coatings, adhesives, and other chemicals	3255, 3259	33	*	33	0	0	0	0	0	0	0
Plastics and rubber products	326	1 i	*	*	0	* i	0	0	0	0	0
Nonmetallic mineral products	327	4	3	* i	0	* i	0	0	0	0	0
Primary metals	331	22 i	7	15 i	0	0	0	0	0	0	0
Fabricated metal products	332	34 i	4 i	1 i	28 i	0	0	0	0	*	0
Machinery	333	78	1	76	*	0	0	*	0	0	0
Agricultural implements	33311	2 i	0	2 i	0	0	0	0	0	0	0
Semiconductor machinery	333295	1	*	1	0	0	0	0	0	0	0
Engines, turbines, and power transmission equipment	3336	45	1	44	0	0	0	*	0	0	0
Other machinery	other 333	30 i	*	30 i	*	0	0	0	0	0	0
Computer and electronic products	334	4,456	3,827	51 i	383 i	45 i	26	D	0	*	D
Communications equipment	3342	733 i	533 i	8 i	186 i	5 i	0	0	0	0	0
Semiconductors and other electronic components	3344	41	17	22	0	0	0	0	0	0	2
Navigational, measuring, electromedical, and control instruments	3345	3,638	3,236	21	196	40 i	26	D	0	*	D
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	27 i	1	* i	0	26 i	0	0	0	*	0
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	3,565	3,225	7	192	0	26	D	0	0	D
Other measuring and controlling devices	other 3345	46	11	14	5 i	14 i	0	0	0	0	3
Other computer and electronic products	other 334	44	41	0	* i	0	0	0	0	0	3

TABLE 39. Domestic R&D paid for by the U.S. federal government and performed by the company, by funding agency, industry, and company size: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS code	Total	DOD	DOE	NASA	NIH	DHS	DOT	EPA	NSF	All other agencies
Electrical equipment, appliances, and components	335	48 i	12	26 i	0	10 i	0	0	0	0	0
Transportation equipment	336	16,153 i	12,002 i	316 i	3,813 i	D	13	D	0	*	1
Automobiles, bodies, trailers, and parts	3361-63	254 i	D	D	1 i	0	D	D	0	0	*
Aerospace products and parts	3364	14,826 i	10,928 i	D	D	D	D	0	0	0	1
Aircraft, aircraft engines, and aircraft	336411-13	D	D	D	D	D	D	0	0	0	1
Guided missiles, space vehicles, and related parts	336414-15, 336419	D	D	D	D	0	0	0	0	0	0
Military armored vehicles, tanks, and tank components	336992	D	*	D	* i	0	0	0	0	0	0
Other transportation	other 336	D	D	D	D	* i	0	0	0	*	0
Furniture and related products	337	3 i	* i	* i	2 i	* i	0	0	0	0	0
Miscellaneous	339	90 i	19	34 i	0	D	1	0	*	*	D
Medical equipment and supplies	3391	75 i	D	34 i	0	23 i	1	0	*	0	D
Other miscellaneous manufacturing	3399	15 i	D	0	0	D	0	0	0	*	0
Nonmanufacturing industries	21-23, 42-81	5,251	3,320	582 i	263	555	42	14	9	12	455
Mining, extraction, and support activities	21	2	0	2	0	0	0	0	0	0	0
Utilities	22	49	0	49	0	0	0	0	0	0	0
Wholesale trade	42	0	0	0	0	0	0	0	0	0	0
Electronic shopping and electronic auctions	454111-12	0	0	0	0	0	0	0	0	0	0
Transportation and warehousing	48-49	*	0	0	0	0	0	*	0	0	0
Information	51	162	114	40 i	1	5 i	1	0	0	1	*
Publishing	511	99	76	21	0	1	1	0	0	0	*
Newspaper, periodical, book, and directory publishers	5111	0	0	0	0	0	0	0	0	0	0
Software publishers	5112	99	76	21	0	1	1	0	0	0	*
Telecommunications	517	9	5	3 i	*	* i	0	0	0	0	0
Data processing, hosting, and related services	518	53	33	15 i	* i	4 i	0	0	0	1	*
Other information	other 51	1 i	* i	1 i	0	* i	0	0	0	0	0
Finance and insurance	52	0	0	0	0	0	0	0	0	0	0
Real estate and rental and leasing	53	0	0	0	0	0	0	0	0	0	0
Lessors of nonfinancial intangible assets (except copyrighted works)	533	0	0	0	0	0	0	0	0	0	0
Other real estate and rental and leasing	other 53	0	0	0	0	0	0	0	0	0	0
Professional, scientific, and technical services	54	5,016	3,203	482 i	255	549	39	13	9	11	455
Architectural, engineering, and related services	5413	1,298	997	275 i	12 i	0	*	5	2	0	8
Computer systems design and related services	5415	471 i	339	37 i	0	77 i	*	2	0	*	16
Scientific R&D services	5417	2,954	1,765	147	139	426	39	7	7	10	414
Biotechnology R&D	541711	114	D	D	0	89	0	0	0	D	D

TABLE 39. Domestic R&D paid for by the U.S. federal government and performed by the company, by funding agency, industry, and company size: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS code	Total	DOD	DOE	NASA	NIH	DHS	DOT	EPA	NSF	All other agencies
Physical, engineering, and life sciences (except biotechnology) R&D	541712	2,270	1,727	137	139	163 i	38	D	D	D	D
Social sciences and humanities R&D	541720	569	D	D	0	174	1	D	D	D	D
Other professional, scientific, and technical services	other 54	293	101	23	104	46	*	0	1	*	17
Health care services	621-23	1 i	0	0	0	1 i	0	0	0	* i	0
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	21	3	9	7	0	2	0	0	0	0
All companies (number of domestic employees)	-	26,554 i	19,265 i	1,219 i	4,496 i	770	83	24	9	14	674
Small companies ^a											
5-499	-	3,399	1,883	529 i	272 i	529 i	23	7	4	11	141
5-99	-	1,942 i	862	419 i	146 i	394 i	6	7	3	11	95
5-49	-	1,463 i	597	333 i	99 i	330 i	5	4	3	7	85
5-9	-	318 i	73	137 i	34 i	69 i	*	0	*	*	5
10-24	-	617 i	220	105 i	35 i	202 i	3	1	*	6	47
25-49	-	528	304	92 i	30 i	59 i	2	3	2	1	33
50-99	-	480	265	85 i	47 i	65	1	3	*	4	10
100-249	-	950	664	94 i	40 i	94 i	14	*	*	1	42
250-499	-	507	356	17 i	86	40	3	0	1	0	4
Medium and large companies											
500-999	-	247	120	52 i	11	53	*	0	0	0	10
1,000-4,999	-	1,336	583	55	127 i	174	2	D	1	1	D
5,000-9,999	-	992 i	784 i	133 i	67	6 i	0	D	0	0	D
10,000-24,999	-	3,724	2,605	80	963 i	4 i	20	D	4	*	D
25,000 or more	-	16,858 i	13,291 i	369 i	3,056 i	5	38	8	0	1	90

* = amount < \$500,000; 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.

DHS = Department of Homeland Security, DOD = Department of Defense, DOE = Department of Energy, DOT = Department of Transportation, EPA = Environmental Protection Agency, NAICS = 2012 North American Industry Classification System, NASA = National Aeronautics and Space Administration, NIH = National Institutes of Health, NSF = National Science Foundation.

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

NOTES: 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.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 40. Domestic R&D paid for by sources located outside the United States and performed by the company, by source of funds, industry, and company size: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS code	Total	Foreign companies			Foreign governments	All other
			Subsidiaries	Company's parent	Unaffiliated companies		
All industries	21–23, 31–33, 42–81	23,013	5,298	13,407	3,839	415 i	55
Manufacturing industries	31–33	17,845	3,824	10,746	2,827	D	D
Food	311	252	58	194	* i	0	0
Beverages and tobacco products	312	D	*	D	D	0	0
Textiles, apparel, and leather products	313–16	30	28	2 i	0	0	0
Wood products	321	8 i	1 i	6 i	* i	0	0
Paper	322	6	*	3	3	0	0
Printing and related support activities	323	3 i	2	* i	1 i	0	0
Petroleum and coal products	324	*	0	0	*	0	0
Chemicals	325	D	1,305	5,407	2,267	1	D
Basic chemicals	3251	291	101	D	D	0	0
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	33	32	1 i	* i	0	* i
Pesticides, fertilizers, and other agricultural chemicals	3253	450	*	D	D	0	* i
Pharmaceuticals and medicines	3254	D	1,153	4,858	2,164	1	D
Soaps, cleaning compounds, and toilet preparations	3256	21	*	2 i	0	0	0
Paints, coatings, adhesives, and other chemicals	3255, 3259	10 i	0	9 i	1 i	0	* i
Plastics and rubber products	326	25	6	16 i	2 i	0	0
Nonmetallic mineral products	327	19	3	13	4 i	0	* i
Primary metals	331	4 i	1	2 i	1 i	* i	0
Fabricated metal products	332	44	38	5 i	* i	* i	0
Machinery	333	474	88	299 i	86	*	* i
Agricultural implements	33311	67	31	5	31	* i	0
Semiconductor machinery	333295	119 i	0	90 i	28	0	0
Engines, turbines, and power transmission equipment	3336	12	0	12	0	0	0
Other machinery	other 333	276	57	192	27 i	*	* i
Computer and electronic products	334	5,163	1,941	2,759	269	194	1
Communications equipment	3342	546	6	531	9	* i	0
Semiconductors and other electronic components	3344	3,490	1,665	1,686	138	* i	1
Navigational, measuring, electromedical, and control instruments	3345	960	134	522	110	193	0
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	236	104	124	9 i	0	0
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	505	10	209	93	193	0
Other measuring and controlling devices	other 3345	218	20	190	8	* i	0
Other computer and electronic products	other 334	167	136	19	13	* i	0
Electrical equipment, appliances, and components	335	193 i	70	100 i	17 i	0	7 i
Transportation equipment	336	D	69	1,532	134	D	*
Automobiles, bodies, trailers, and parts	3361–63	1,687	68	1,532	87 i	0	0
Aerospace products and parts	3364	D	1	0	47	D	*
Aircraft, aircraft engines, and aircraft parts	336411–13	D	1	0	47	D	*
Guided missiles, space vehicles, and related parts	336414–15, 336419	D	0	0	0	D	0

TABLE 40. Domestic R&D paid for by sources located outside the United States and performed by the company, by source of funds, industry, and company size: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS code	Total	Foreign companies			Foreign governments	All other
			Subsidiaries	Company's parent	Unaffiliated companies		
Military armored vehicles, tanks, and tank components	336992	* i	0	0	* i	0	0
Other transportation	other 336	1	0	*	* i	0	0
Furniture and related products	337	D	7	0	D	* i	0
Miscellaneous	339	553	207	D	D	0	0
Medical equipment and supplies	3391	513	206	272	36	0	0
Other miscellaneous manufacturing	3399	39 i	1	D	D	0	0
Nonmanufacturing industries	21–23, 42–81	5,169	1,474	2,661 i	1,012	D	D
Mining, extraction, and support activities	21	D	449	D	D	0	1
Utilities	22	3	0	3	0	0	0
Wholesale trade	42	13 i	3 i	10 i	0	0	0
Electronic shopping and electronic auctions	454111–12	0	0	0	0	0	0
Transportation and warehousing	48–49	3	0	0	3	0	0
Information	51	1,501	726	734	41	0	0
Publishing	511	1,143	435	667	40	0	0
Newspaper, periodical, book, and directory publishers	5111	0	0	0	0	0	0
Software publishers	5112	1,143	435	667	40	0	0
Telecommunications	517	6 i	0	5	1 i	0	0
Data processing, hosting, and related services	518	D	D	8	0	0	0
Other information	other 51	D	D	53	* i	0	0
Finance and insurance	52	54	54	0	0	0	0
Real estate and rental and leasing	53	1	1	0	0	0	0
Lessors of nonfinancial intangible assets (except copyrighted works)	533	0	0	0	0	0	0
Other real estate and rental and leasing	other 53	1	1	0	0	0	0
Professional, scientific, and technical services	54	2,653 i	241	1,781 i	610 i	D	D
Architectural, engineering, and related services	5413	202 i	13	138 i	51	0	0
Computer systems design and related services	5415	D	147	1,085 i	10 i	0	D
Scientific R&D services	5417	D	15	417	524 i	D	1
Biotechnology R&D	541711	394 i	8	31 i	355 i	0	0
Physical, engineering, and life sciences (except biotechnology) R&D	541712	D	7	366	169	D	1
Social sciences and humanities R&D	541720	20	0	20	* i	*	*
Other professional, scientific, and technical services	other 54	232	66	141	25	*	0
Health care services	621–23	5	0	4	1 i	0	0
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	D	*	D	D	0	0
All companies (number of domestic employees)	–	23,013	5,298	13,407	3,839	415 i	55
Small companies ^a							
5–499	–	5,288 i	739	3,749 i	743 i	10	46
5–99	–	3,090 i	127	2,462 i	468 i	9	23 i
5–49	–	1,701 i	85	1,431 i	160 i	8	16 i

TABLE 40. Domestic R&D paid for by sources located outside the United States and performed by the company, by source of funds, industry, and company size: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS code	Total	Foreign companies			Foreign governments	All other
			Subsidiaries	Company's parent	Unaffiliated companies		
5-9	-	114 i	8	66 i	37 i	2	1 i
10-24	-	272 i	11	180	64 i	3	13 i
25-49	-	1,315 i	66	1,185 i	59	3	2
50-99	-	1,389 i	42	1,031 i	308 i	1 i	6 i
100-249	-	1,067	346	599	100	* i	21
250-499	-	1,131	266	688	175	1	2
Medium and large companies							
500-999	-	1,342	453	769	118	* i	1 i
1,000-4,999	-	7,427	1,511	4,848	1,066	2 i	1 i
5,000-9,999	-	3,901	1,127	2,443	330	* i	1 i
10,000-24,999	-	3,196	598	1,283	1,310	2 i	4 i
25,000 or more	-	1,859	869	316	272 i	401 i	1

* = amount < \$500,000; 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 Upper bound is based on the U.S. Small Business Administration's definition of a small business; the Business R&D and Innovation Survey does not include companies with fewer than five domestic employees.

NOTES: 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. In all other tables, R&D costs of foreign company subsidiaries of U.S. companies are included in company-funded U.S. domestic R&D totals. Only in this table are such R&D costs classified as being part of R&D paid for by sources located outside of the United States.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 41. Domestic R&D paid for by the company and performed by others, by type of performer, industry, and company size: 2014

(Millions of U.S. dollars)

Industry and company size	NAICS code	Total	Companies	Companies outside the		U.S. federal government agencies	U.S. state government agencies	Foreign government agencies	All other		Undistributed ^a
			in the United States	Company's parent	Other				In the United States	Outside the United States	
All industries	21-23, 31-33, 42-81	37,019	29,080	675	4,021	77 i	8	1	463	98	2,597 i
Manufacturing industries	31-33	33,412	26,650	620	3,673	45 i	5	*	371	70	1,978 i
Food	311	509 i	442 i	2	20 i	*	*	*	16	1	29 i
Beverages and tobacco products	312	206	198	* i	2	0	* i	* i	4	0	2 i
Textiles, apparel, and leather products	313-16	13	9	1	0	0	*	0	0	0	2 i
Wood products	321	14 i	12 i	0	0	*	*	0	*	1 i	1 i
Paper	322	25	10	11	*	0	0	0	1	0	2 i
Printing and related support activities	323	7	5	0	1	0	0	0	0	0	2 i
Petroleum and coal products	324	45	31	0	2	0	0	0	8	2	3 i
Chemicals	325	25,016	19,963	28	3,229	15 i	3	*	205	44	1,529 i
Basic chemicals	3251	187	102	5	D	* i	*	*	62	2	D
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	73	66	0	D	0	*	0	1	0	D
Pesticides, fertilizers, and other agricultural chemicals	3253	141 i	107 i	D	D	* i	* i	* i	1	*	D
Pharmaceuticals and medicines	3254	24,240	19,355	15	3,188	15 i	2	*	132	38	1,494 i
Soaps, cleaning compounds, and toilet preparations	3256	346	312	D	9	0	0	0	9	3	D
Paints, coatings, adhesives, and other chemicals	3255, 3259	29	20	*	*	* i	* i	*	1	1	7 i
Plastics and rubber products	326	163	62	6	36	*	*	0	29	7	22 i
Nonmetallic mineral products	327	170 i	24	141 i	0	0	*	0	2	1	3 i
Primary metals	331	49	9	* i	*	* i	* i	0	33	*	6 i
Fabricated metal products	332	31 i	18	0	1	0	*	0	1	0	12 i
Machinery	333	588	447	7	56	3 i	*	0	6	10	60 i
Agricultural implements	33311	267	222	0	30	0	0	0	0	10	5 i
Semiconductor machinery	333295	3	2	0	0	0	0	0	0	0	1 i
Engines, turbines, and power transmission equipment	3336	47	41	0	2	* i	0	0	4	* i	1 i
Other machinery	other 333	271	181	7	24	3 i	*	0	2 i	* i	54 i
Computer and electronic products	334	1,505	1,201	5	178 i	*	*	0	22	*	99 i
Communications equipment	3342	593	466 i	* i	90 i	*	* i	0	* i	*	37 i
Semiconductors and other electronic components	3344	383	332	3	33	0	0	0	5	*	11 i
Navigational, measuring, electromedical, and control instruments	3345	392	308	1	42	*	*	0	17	0	24 i
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	156	114	1	29 i	0	0	0	8	0	5 i
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	123	112	*	8	0	0	0	1	0	2 i

TABLE 41. Domestic R&D paid for by the company and performed by others, by type of performer, industry, and company size: 2014

(Millions of U.S. dollars)

Industry and company size	NAICS code	Total	Companies	Companies outside the		U.S. federal government agencies	U.S. state government agencies	Foreign government agencies	All other		Undistributed ^a
			in the United States	Company's parent	Other				In the United States	Outside the United States	
Other measuring and controlling devices	other 3345	114	82	0	6	*	*	0	8	0	18 i
Other computer and electronic products	other 334	136	96	*	13	0	0	0	0	*	27 i
Electrical equipment, appliances, and components	335	239	169	2	20	* i	* i	0	2	1	44 i
Transportation equipment	336	4,101	3,416	407	111	25 i	2	0	22	1	118 i
Automobiles, bodies, trailers, and parts	3361-63	2,578	1,980	406	77	D	2	0	7	1	D
Aerospace products and parts	3364	1,505	1,420	1 i	33	D	* i	0	D	*	13 i
Aircraft, aircraft engines, and aircraft parts	336411-13	D	D	1 i	D	D	* i	0	D	*	D
Guided missiles, space vehicles, and related parts	336414-15, 336419	D	D	0	D	0	0	0	*	0	D
Military armored vehicles, tanks, and tank components	336992	*	*	0	0	0	0	0	0	0	* i
Other transportation	other 336	19	16	*	1	0	0	0	D	0	D
Furniture and related products	337	26	18	0	0	0	0	0	0	0	8 i
Miscellaneous manufacturing	339	707	616	10	18	2	*	0	21	3	38 i
Medical equipment and supplies	3391	599	523	10	16	2	*	0	20	3	25 i
Other miscellaneous manufacturing	3399	107	94	*	1	*	0	0	*	0	12 i
Nonmanufacturing industries	21-23, 42-81	3,607	2,430	55	348	31	3	1	92	28	620 i
Mining, extraction, and support activities	21	352	279	D	6	D	*	1	23	1	D
Utilities	22	232	167	0	1	*	1	0	44	0	19 i
Wholesale trade	42	75 i	13 i	*	3	0	0	0	0	0	58 i
Electronic shopping and electronic auctions	454111-12	0	0	0	0	0	0	0	0	0	0
Transportation and warehousing	48-49	21 i	18	0	0	0	0	0	0	0	3 i
Information	51	1,761	1,247	*	213	* i	* i	0	17	27	257 i
Publishing	511	1,181	886	*	180	0	0	0	13	22	80 i
Newspaper, periodical, book, and directory publishers	5111	10 i	6	0	* i	0	0	0	0	0	3 i
Software publishers	5112	1,172	879	*	179	0	0	0	13	22	77 i
Telecommunications	517	274 i	107	0	16	0	0	0	0	0	151 i
Data processing, hosting, and related services	518	174	128	0	16	* i	* i	0	1	5	23 i
Other information	other 51	132	126	0	1	0	0	0	3	0	3 i
Finance and insurance	52	90	49	16	24 i	0	0	0	0	0	1 i
Real estate and rental and leasing	53	8 i	6 i	0	*	0	0	0	0	0	1 i
Lessors of nonfinancial intangible assets (except copyrighted works)	533	*	0	0	*	0	0	0	0	0	* i
Other real estate and rental and leasing	other 53	8 i	6 i	0	0	0	0	0	0	0	1 i
Professional, scientific, and technical services	54	957	588	D	95	D	2	0	7	1	D
Architectural, engineering, and related services	5413	50 i	26	* i	2	* i	*	0	*	0	20 i

TABLE 41. Domestic R&D paid for by the company and performed by others, by type of performer, industry, and company size: 2014

(Millions of U.S. dollars)

Industry and company size	NAICS code	Total	Companies	Companies outside the		U.S. federal government agencies	U.S. state government agencies	Foreign government agencies	All other		Undistributed ^a
			in the United States	Company's parent	Other				In the United States	Outside the United States	
Computer systems design and related services	5415	146 i	57	0	17	* i	* i	0	*	*	71 i
Scientific R&D services	5417	717	488	0	65	D	2	0	6	1	D
Biotechnology R&D	541711	350	247	0	D	*	1	0	3	*	D
Physical, engineering, and life sciences (except biotechnology) R&D	541712	346	237	0	28	D	*	0	3	*	D
Social sciences and humanities R&D	541720	21	4	0	D	0	0	0	0	0	D
Other professional, scientific, and technical services	other 54	45	16	D	10	* i	* i	0	1	*	D
Health care services	621-23	35 i	15	0	5	0	0	0	*	0	15 i
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	76 i	48	0	1	*	0	0	0	0	27 i
All companies (number of domestic employees)	-	37,019	29,080	675	4,021	77 i	8	1	463	98	2,597 i
Small companies ^b											
5-499	-	5,839	4,225	37	440	15	4	*	90	7	1,021 i
5-99	-	3,698	2,732	6	259	14	2	* i	38	4	644 i
5-49	-	2,303	1,634	2	160	1 i	1	0	26	1	477 i
5-9	-	485 i	347	* i	16	*	0	0	4	1	118 i
10-24	-	873	599	0	51	1 i	1	0	4	1	215 i
25-49	-	946	688	2	93	* i	* i	0	18	* i	144 i
50-99	-	1,395	1,098	4	99	13	*	* i	11 i	3	167 i
100-249	-	1,296	903	2	117	1	2	0	42	2	228 i
250-499	-	845	590	29	64	*	*	*	11	* i	150 i
Medium and large companies											
500-999	-	1,110	822	30	61	1	1	* i	12	27	156 i
1,000-4,999	-	6,390	5,666	210 i	84	5	*	* i	22	2	399 i
5,000-9,999	-	2,401	2,094	1 i	73	10 i	D	*	84	2	D
10,000-24,999	-	10,971	8,651	D	1,955	3 i	*	*	161	45	D
25,000 or more	-	10,308	7,622	D	1,407	42 i	D	1	92	15	D

* = amount < \$500,000; 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 Detailed data were not collected on the BRDI-1(S) questionnaire.

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

NOTES: 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.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 42. Domestic R&D performance by performer and source of funds, by industry and company size: 2014

(Millions of U.S. dollars)

Industry and company size	NAICS code	Performed by the company			Performed by others		
		Total	Paid for by the company	Paid for by others	Total	Paid for by the company	Paid for by others
All industries	21–23, 31–33, 42–81	340,728	282,570	58,158	45,975	37,019	8,956
Manufacturing industries	31–33	232,815	192,160	40,655	40,202	33,412	6,790
Food	311	5,292 i	5,071 i	220	555 i	509 i	46
Beverages and tobacco products	312	920	819	101	206	206	* i
Textiles, apparel, and leather products	313–16	631	616	15 i	13	13	* i
Wood products	321	362 i	351 i	12 i	15 i	14 i	1 i
Paper	322	723	711	12	25	25	0
Printing and related support activities	323	234	232	2 i	8	7	1 i
Petroleum and coal products	324	234	229	5	46	45	2 i
Chemicals	325	66,301	56,488	9,813	28,861	25,016	3,845
Basic chemicals	3251	2,849	2,554	295 i	195	187	8
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	1,152	1,136	15 i	75	73	2
Pesticides, fertilizers, and other agricultural chemicals	3253	1,790 i	1,327 i	464	141 i	141 i	*
Pharmaceuticals and medicines	3254	56,612	47,646	8,966	28,065	24,240	3,825
Soaps, cleaning compounds, and toilet preparations	3256	2,547	2,531	16 i	348	346	2 i
Paints, coatings, adhesives, and other chemicals	3255, 3259	1,350 i	1,294 i	56	37	29	8
Plastics and rubber products	326	3,574	3,416	158 i	167	163	4
Nonmetallic mineral products	327	1,445 i	1,420 i	24	171 i	170 i	2
Primary metals	331	677	615	62	49	49	1 i
Fabricated metal products	332	2,131 i	2,000	130 i	37 i	31 i	5 i
Machinery	333	12,128	11,458	670	670	588	82
Agricultural implements	33311	1,578	1,539	39	278	267	11
Semiconductor machinery	333295	2,941	2,821	120	4	3	1
Engines, turbines, and power transmission equipment	3336	2,347	2,285	62	59	47	12
Other machinery	other 333	5,261	4,813	448 i	328	271	57 i
Computer and electronic products	334	73,891	64,695	9,195	2,064	1,505	559
Communications equipment	3342	18,342	16,808	1,533 i	625	593	32 i
Semiconductors and other electronic components	3344	32,142	30,029	2,112	561	383	178
Navigational, measuring, electromedical, and control instruments	3345	15,963	10,576	5,387	724	392	332
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	3,917	3,697	220	162	156	5
aeronautical, and nautical systems and instruments	334511	7,861	2,984	4,876	427	123	304
Other measuring and controlling devices	other 3345	4,186	3,895	291	136	114	22 i
Other computer and electronic products	other 334	7,444	7,282	163 i	154	136	17
Electrical equipment, appliances, and components	335	4,365	4,178	187 i	254	239	15 i
Transportation equipment	336	46,746	27,261	19,485 i	6,303	4,101	2,202 i
Automobiles, bodies, trailers, and parts	3361–63	18,404	15,900	2,504	2,720	2,578	143
Aerospace products and parts	3364	26,181 i	10,300	15,881 i	3,563	1,505	2,058 i
Aircraft, aircraft engines, and aircraft parts	336411–13	24,892 i	10,011	14,881 i	D	D	D

TABLE 42. Domestic R&D performance by performer and source of funds, by industry and company size: 2014

(Millions of U.S. dollars)

Industry and company size	NAICS code	Performed by the company			Performed by others		
		Total	Paid for by the company	Paid for by others	Total	Paid for by the company	Paid for by others
Guided missiles, space vehicles, and related parts	336414–15, 336419	1,290 i	289	1,001 i	D	D	D
Military armored vehicles, tanks, and tank components	336992	18	10	8	*	*	* i
Other transportation	other 336	2,142 i	1,051	1,091 i	20	19	1 i
Furniture and related products	337	373	369	4 i	26	26	* i
Miscellaneous manufacturing	339	12,789	12,230	559	733	707	26
Medical equipment and supplies	3391	10,309	9,809	500	616	599	17
Other miscellaneous manufacturing	3399	2,481	2,421	60 i	117	107	9 i
Nonmanufacturing industries	21–23, 42–81	107,913	90,409	17,504	5,773	3,607	2,166
Mining, extraction, and support activities	21	4,703	3,821	882	485	352	133
Utilities	22	310	258	52	264	232	32
Wholesale trade	42	339 i	329 i	10 i	85 i	75 i	9 i
Electronic shopping and electronic auctions	454111–12	1,388	1,388	0	0	0	0
Transportation and warehousing	48–49	679	675	4	21 i	21 i	*
Information	51	63,773	62,296	1,477	1,816	1,761	55
Publishing	511	36,140	34,869	1,270	1,229	1,181	48
Newspaper, periodical, book, and directory publishers	5111	88 i	88 i	0	10 i	10 i	0
Software publishers	5112	36,052	34,781	1,270	1,220	1,172	48
Telecommunications	517	3,755	3,710	45	274 i	274 i	0
Data processing, hosting, and related services	518	9,029	8,926	103	177	174	4
Other information	other 51	14,849	14,791	59	135	132	3
Finance and insurance	52	4,122	4,090	32	90	90	0
Real estate and rental and leasing	53	262	262	* i	8 i	8 i	0
Lessors of nonfinancial intangible assets (except copyrighted works)	533	55	55	0	*	*	0
Other real estate and rental and leasing	other 53	207	207	* i	8 i	8 i	0
Professional, scientific, and technical services	54	30,975 i	16,061 i	14,914	2,871	957	1,914
Architectural, engineering, and related services	5413	3,375	1,503 i	1,871	208	50 i	158
Computer systems design and related services	5415	11,019 i	8,644 i	2,375 i	202 i	146 i	56 i
Scientific R&D services	5417	12,807	2,668	10,139	2,342	717	1,625
Biotechnology R&D	541711	3,459	692	2,767	416	350	66
Physical, engineering, and life sciences (except biotechnology) R&D	541712	8,670	1,950	6,720	1,775	346	1,429
Social sciences and humanities R&D	541720	678	26	651	151	21	130
Other professional, scientific, and technical services	other 54	3,775	3,245 i	529	120	45	75
Health care services	621–23	501 i	439 i	62 i	42 i	35 i	7 i
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	861 i	791 i	70	91	76 i	15
All companies (number of domestic employees)	–	340,728	282,570	58,158	45,975	37,019	8,956
Small companies ^a							
5–499	–	54,773	42,889	11,884 i	7,825	5,839	1,985

TABLE 42. Domestic R&D performance by performer and source of funds, by industry and company size: 2014

(Millions of U.S. dollars)

Industry and company size	NAICS code	Performed by the company			Performed by others		
		Total	Paid for by the company	Paid for by others	Total	Paid for by the company	Paid for by others
5-99	-	29,078 i	21,695 i	7,383 i	5,077	3,698	1,379 i
5-49	-	18,900 i	14,169 i	4,730 i	3,078	2,303	775
5-9	-	3,295 i	2,426 i	868 i	625 i	485 i	141 i
10-24	-	7,177 i	5,506 i	1,671 i	1,107	873	234
25-49	-	8,428 i	6,237 i	2,191 i	1,346	946	400
50-99	-	10,178 i	7,526	2,652 i	1,999	1,395	604 i
100-249	-	13,492	11,006	2,486	1,671	1,296	375
250-499	-	12,203	10,188	2,015	1,077	845	232
Medium and large companies							
500-999	-	13,262	11,736	1,525	1,258	1,110	148
1,000-4,999	-	57,551	47,807	9,744	8,481	6,390	2,091
5,000-9,999	-	38,202	30,680	7,522	3,814	2,401	1,413
10,000-24,999	-	54,445	46,904	7,542	11,846	10,971	874
25,000 or more	-	122,495	102,555	19,941 i	12,751	10,308	2,443 i

* = amount < \$500,000; 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 Upper bound is based on the U.S. Small Business Administration's definition of a small business; the Business R&D and Innovation Survey does not include companies with fewer than five domestic

NOTES: 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.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 43. Domestic R&D performance by source of funds and performer, by industry and company size: 2014

(Millions of U.S. dollars)

Industry and company size	NAICS code	Paid for by the company			Paid for by others					
		Total	R&D performed by others (purchased and collaborative R&D)	R&D performed by the company	Total	R&D performed by others (subcontracted or passed through R&D costs)	R&D performed by the company			Paid for by non-U.S. government sources
							Total	Paid for by the U.S. government		
All industries	21-23, 31-33, 42-81	319,589	37,019	282,570	67,114	8,956	58,158	26,554 i	31,604	
Manufacturing industries	31-33	225,572	33,412	192,160	47,444 i	6,790	40,655	21,303 i	19,351	
Food	311	5,580 i	509 i	5,071 i	266	46	220	*	220	
Beverages and tobacco products	312	1,025	206	819	101	* i	101	* i	101	
Textiles, apparel, and leather products	313-16	629	13	616	15 i	* i	15 i	9 i	7 i	
Wood products	321	364 i	14 i	351 i	13 i	1 i	12 i	2 i	9 i	
Paper	322	735	25	711	12	0	12	0	12	
Printing and related support activities	323	239	7	232	3 i	1 i	2 i	* i	2 i	
Petroleum and coal products	324	274	45	229	6	2 i	5	0	5	
Chemicals	325	81,504	25,016	56,488	13,658	3,845	9,813	404	9,409	
Basic chemicals	3251	2,741	187	2,554	303	8	295 i	79 i	216	
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	1,209	73	1,136	18 i	2	15 i	10 i	5 i	
Pesticides, fertilizers, and other agricultural chemicals	3253	1,468 i	141 i	1,327 i	464	*	464	4 i	460	
Pharmaceuticals and medicines	3254	71,886	24,240	47,646	12,791	3,825	8,966	272	8,694	
Soaps, cleaning compounds, and toilet preparations	3256	2,877	346	2,531	18	2 i	16 i	6 i	11 i	
Paints, coatings, adhesives, and other chemicals	3255, 3259	1,323	29	1,294 i	64	8	56	33	23 i	
Plastics and rubber products	326	3,579	163	3,416	162 i	4	158 i	1 i	158 i	
Nonmetallic mineral products	327	1,590 i	170 i	1,420 i	26	2	24	4	21	
Primary metals	331	664	49	615	62	1 i	62	22 i	40	
Fabricated metal products	332	2,032	31 i	2,000	136 i	5 i	130 i	34 i	96 i	
Machinery	333	12,047	588	11,458	751	82	670	78	592 i	
Agricultural implements	33311	1,806	267	1,539	51	11	39	2 i	38	
Semiconductor machinery	333295	2,825	3	2,821	121	1	120	1	119 i	
Engines, turbines, and power transmission equipment	3336	2,333	47	2,285	73	12	62	45	17	
Other machinery	other 333	5,083	271	4,813	506 i	57 i	448 i	30 i	418 i	
Computer and electronic products	334	66,201	1,505	64,695	9,754	559	9,195	4,456	4,739	
Communications equipment	3342	17,401	593	16,808	1,565 i	32 i	1,533 i	733 i	801	
Semiconductors and other electronic components	3344	30,413	383	30,029	2,290	178	2,112	41	2,071	
Navigational, measuring, electromedical, and control instruments	3345	10,969	392	10,576	5,719	332	5,387	3,638	1,749	
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	3,853	156	3,697	225	5	220	27 i	193	
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	3,107	123	2,984	5,181	304	4,876	3,565	1,311	
Other measuring and controlling devices	other 3345	4,009	114	3,895	313	22 i	291	46	245	

TABLE 43. Domestic R&D performance by source of funds and performer, by industry and company size: 2014

(Millions of U.S. dollars)

Industry and company size	NAICS code	Paid for by the company			Paid for by others				
		Total	R&D performed by others (purchased and collaborative R&D)	R&D performed by the company	R&D performed by the company				
					Total	R&D performed by others (subcontracted or passed through R&D costs)	Total	Paid for by the U.S. government	Paid for by non-U.S. government sources
Other computer and electronic products	other 334	7,418	136	7,282	180 i	17	163 i	44	118 i
Electrical equipment, appliances, and components	335	4,417	239	4,178	201 i	15 i	187 i	48 i	139 i
Transportation equipment	336	31,362	4,101	27,261	21,687 i	2,202 i	19,485 i	16,153 i	3,332
Automobiles, bodies, trailers, and parts	3361-63	18,478	2,578	15,900	2,647	143	2,504	254 i	2,250
Aerospace products and parts	3364	11,805	1,505	10,300	17,940 i	2,058 i	15,881 i	14,826 i	1,056
Aircraft, aircraft engines, and aircraft parts	336411-13	D	D	10,011	D	D	14,881 i	D	D
Guided missiles, space vehicles, and related parts	336414-15, 336419	D	D	289	D	D	1,001 i	D	D
Military armored vehicles, tanks, and tank components	336992	10	*	10	8	* i	8	D	D
Other transportation	other 336	1,070	19	1,051	1,092 i	1 i	1,091 i	D	D
Furniture and related products	337	395	26	369	5 i	* i	4 i	3 i	1 i
Miscellaneous manufacturing	339	12,937	707	12,230	585	26	559	90 i	469
Medical equipment and supplies	3391	10,408	599	9,809	516	17	500	75 i	425
Other miscellaneous manufacturing	3399	2,529	107	2,421	69 i	9 i	60 i	15 i	45 i
Nonmanufacturing industries	21-23, 42-81	94,017	3,607	90,409	19,670	2,166	17,504	5,251	12,253
Mining, extraction, and support activities	21	4,173	352	3,821	1,015	133	882	2	880
Utilities	22	490	232	258	84	32	52	49	4
Wholesale trade	42	404 i	75 i	329 i	20 i	9 i	10 i	0	10 i
Electronic shopping and electronic auctions	454111-12	1,388	0	1,388	0	0	0	0	0
Transportation and warehousing	48-49	696	21 i	675	4	*	4	*	3
Information	51	64,057	1,761	62,296	1,531	55	1,477	162	1,315
Publishing	511	36,051	1,181	34,869	1,318	48	1,270	99	1,171
Newspaper, periodical, book, and directory publishers	5111	98 i	10 i	88 i	0	0	0	0	0
Software publishers	5112	35,953	1,172	34,781	1,318	48	1,270	99	1,171
Telecommunications	517	3,984	274 i	3,710	45	0	45	9	36
Data processing, hosting, and related services	518	9,100	174	8,926	106	4	103	53	49
Other information	other 51	14,923	132	14,791	62	3	59	1 i	58
Finance and insurance	52	4,180	90	4,090	32	0	32	0	32
Real estate and rental and leasing	53	270	8 i	262	* i	0	* i	0	* i
Lessors of nonfinancial intangible assets (except copyrighted works)	533	55	*	55	0	0	0	0	0
Other real estate and rental and leasing	other 53	215	8 i	207	* i	0	* i	0	* i
Professional, scientific, and technical services	54	17,018 i	957	16,061 i	16,828	1,914	14,914	5,016	9,898 i
Architectural, engineering, and related services	5413	1,553 i	50 i	1,503 i	2,029	158	1,871	1,298	573

TABLE 43. Domestic R&D performance by source of funds and performer, by industry and company size: 2014

(Millions of U.S. dollars)

Industry and company size	NAICS code	Paid for by the company			Paid for by others				
		Total	R&D performed by others (purchased and collaborative R&D)	R&D performed by the company	Total	R&D performed by others (subcontracted or passed through R&D costs)	Total	Paid for by the U.S. government	Paid for by non-U.S. government sources
Computer systems design and related services	5415	8,790 i	146 i	8,644 i	2,431 i	56 i	2,375 i	471 i	1,904 i
Scientific R&D services	5417	3,385	717	2,668	11,764	1,625	10,139	2,954	7,185
Biotechnology R&D	541711	1,042	350	692	2,834	66	2,767	114	2,653
Physical, engineering, and life sciences (except biotechnology) R&D	541712	2,296	346	1,950	8,148	1,429	6,720	2,270	4,450
Social sciences and humanities R&D	541720	47	21	26	782	130	651	569	82
Other professional, scientific, and technical services	other 54	3,290 i	45	3,245 i	604	75	529	293	236
Health care services	621–23	473 i	35 i	439 i	69 i	7 i	62 i	1 i	61 i
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	867 i	76 i	791 i	85	15	70	21	49
All companies (number of domestic employees)	–	319,589	37,019	282,570	67,114	8,956	58,158	26,554 i	31,604
Small companies ^a									
5–499	–	48,728	5,839	42,889	13,870 i	1,985	11,884 i	3,399	8,485 i
5–99	–	25,394 i	3,698	21,695 i	8,762 i	1,379 i	7,383 i	1,942 i	5,440 i
5–49	–	16,473 i	2,303	14,169 i	5,505 i	775	4,730 i	1,463 i	3,268 i
5–9	–	2,911 i	485 i	2,426 i	1,009 i	141 i	868 i	318 i	550 i
10–24	–	6,379 i	873	5,506 i	1,905 i	234	1,671 i	617 i	1,054 i
25–49	–	7,183 i	946	6,237 i	2,591 i	400	2,191 i	528	1,663 i
50–99	–	8,921	1,395	7,526	3,257 i	604 i	2,652 i	480	2,173 i
100–249	–	12,303	1,296	11,006	2,861	375	2,486	950	1,536
250–499	–	11,032	845	10,188	2,247	232	2,015	507	1,509
Medium and large companies									
500–999	–	12,846	1,110	11,736	1,674	148	1,525	247	1,279
1,000–4,999	–	54,197	6,390	47,807	11,835	2,091	9,744	1,336	8,408
5,000–9,999	–	33,081	2,401	30,680	8,935	1,413	7,522	992 i	6,531
10,000–24,999	–	57,875	10,971	46,904	8,416	874	7,542	3,724	3,818
25,000 or more	–	112,862	10,308	102,555	22,384 i	2,443 i	19,941 i	16,858 i	3,083

* = amount < \$500,000; 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 Upper bound is based on the U.S. Small Business Administration's definition of a small business; the Business R&D and Innovation Survey does not include companies with fewer than five domestic employees.

NOTES: 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.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 44. R&D paid for by the company and others and performed by the company outside of the United States, by selected location: 2014
(Millions of U.S. dollars)

Location	Total	Paid for by the company	Paid for by others
Total	75,310	69,356	5,955
Puerto Rico	75	63	13
Canada	4,603	4,405	198
Latin America and Other Western Hemisphere	3,869	3,552	317
Argentina	695	626	69
Brazil	1,692	1,566	126 i
Chile	53	38	15
Mexico	798	752	46
Other Latin American and Western Hemisphere locations	631	569	61
Africa	231	161	70
South Africa	155	91	64
Other African locations	76	71	5
Asia and Pacific	23,027	21,828	1,200
Australia	1,920	1,810	110
China	5,831	5,609	222
Hong Kong	209	185	24 i
India	5,659	5,505	154
Indonesia	35	34	2
Japan	2,937	2,583	355
Malaysia	1,203 i	1,191 i	12
New Zealand	122	96	26
Singapore	1,662	1,514	149
South Korea	1,283	1,193	90
Taiwan	818	788	30
Thailand	462 i	450 i	12
Other Asian/Pacific locations	884	871	13
Europe	36,840	33,246	3,594
Austria	674	646	28
Belgium	1,745	1,583	161
Czech Republic	342	277	65
Denmark	612	593	19
Finland	763	746	17
France	2,906	2,618	289
Germany	8,926	8,509	417
Hungary	135	95	40
Ireland	1,400	1,356	45
Italy	1,189	1,068	122
Luxembourg	27	27	0
Netherlands	1,194	1,054	141 i
Norway	374	364	10
Poland	497	405	92
Russia	470	393	78
Spain	597	436	161 i
Sweden	851	802	49
Switzerland	2,773	2,367	406
Turkey	97	83	14
United Kingdom	8,749	7,707	1,042
Other European locations	2,517	2,119	399 i

TABLE 44. R&D paid for by the company and others and performed by the company outside of the United States, by selected location: 2014
(Millions of U.S. dollars)

Location	Total	Paid for by the company	Paid for by others
Middle East	4,483	4,415	68
Israel	3,959	3,897	62
Other Middle Eastern locations	524	518	6
Undistributed	2,181 i	1,686 i	496 i

i = > 50% of the estimate is a combination of imputation and reweighting to account for nonresponse.

NOTES: Detail may not add to total because of rounding. Country detail was not asked for on Form BRDI-1(S). Statistics are representative of companies located in the 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, 2014.

TABLE 45. R&D paid for by the company and others and performed by the company outside of the United States, by selected location, industry, and company size: 2014

(Millions of U.S. dollars)

Industry and company size	NAICS code	Total	Puerto Rico	Canada	Austria	Belgium	Czech Republic	Denmark
All industries	21-23, 31-33, 42-81	75,310	75	4,603	674	1,745	342	612
Manufacturing industries	31-33	53,661	72	2,667	598	1,544	166	475 i
Food	311	1,240	* i	67	1	14 i	2	165 i
Chemicals	325	13,167	46	639	48	1,180	38	115
Pharmaceuticals and medicines	3254	10,125	D	557	45	954	34	107
Other chemicals	other 325	3,042	D	82	4	226	3	9
Plastics and rubber products	326	883	14	24	1	16	1	6
Nonmetallic mineral products	327	155 i	0	3	0	0	*	0
Fabricated metal products	332	222	0	8	7	3	*	*
Machinery	333	2,810	* i	33	6	35	15	9
Computer and electronic products	334	21,019	0	1,416	477	92	63	144
Electrical equipment, appliances, and components	335	1,385	0	130	21	33	3	1
Transportation equipment	336	9,613	*	224	18	101	42	1
Miscellaneous manufacturing	339	2,194	12	100	18	47	3	30
Other manufacturing	312-16, 321-24, 331, 337	974	0	24	1 i	23	0	4
Nonmanufacturing industries	21-23, 42-81	21,649	3 i	1,935	76	201	176	137
Wholesale trade	42	D	0	0	0	0	0	0
Information	51	13,569	2	1,462	37 i	D	89	101
Telecommunications	517	61	*	3	0	0	0	0
Data processing, hosting, and related services	518	1,294	1	196	2	0	0	11
Other information	other 51	12,214	*	1,263	35 i	D	89	90
Professional, scientific, and technical services	54	6,501	1 i	301 i	39	104	86	25 i
Architectural, engineering, and related services	5413	65	0	17	0	*	*	0
Scientific R&D services	5417	4,522	1 i	107 i	24	96	36	18
Biotechnology R&D	541711	1,438	0	10	*	28	4	5
Other scientific R&D	other 5417	3,083	1 i	96 i	23	68	31	13
Other professional, scientific, and technical services	other 54	1,914 i	0	178 i	15 i	7 i	51	7 i
Other nonmanufacturing	21-23, 44-45, 48-49, 52-53, 55-56, 621-24, 71-72, 81	D	0	172	0	D	1	11
All companies (number of domestic employees)	-	75,310	75	4,603	674	1,745	342	612
Small companies ^a								
5-499	-	4,194	2	302	16	16	D	21
5-99	-	1,255	1	51	* i	2	D	*

TABLE 45. R&D paid for by the company and others and performed by the company outside of the United States, by selected location, industry, and company size: 2014

(Millions of U.S. dollars)

Industry and company size	NAICS code	Total	Puerto Rico	Canada	Austria	Belgium	Czech Republic	Denmark
5-49	-	707 i	*	20	* i	1	0	*
5-9	-	95 i	0	1	0	*	0	*
10-24	-	273 i	*	6	0	*	0	0
25-49	-	339	0	13	* i	1	0	0
50-99	-	547	1	30	0	1	D	*
100-249	-	1,492	1	76	* i	5	0	9
250-499	-	1,447	*	175 i	16	8	D	12
Medium and large companies								
500-999	-	2,264	0	199	23	16	D	9
1,000-4,999	-	14,185	25	1,556	36 i	214	116	128
5,000-9,999	-	12,818	11	515	70	142	83	102
10,000-24,999	-	9,194	32	565	20	246	20	40
25,000 or more	-	32,655	5	1,465	509	1,111	114	312 i
Industry and company size	NAICS code	Finland	France	Germany	Hungary	Ireland	Italy	Luxembourg
All industries	21-23, 31-33, 42-81	763	2,906	8,926	135	1,400	1,189	27
Manufacturing industries	31-33	398	2,106	7,839	93	904	999	9
Food	311	D	55	81	*	0	6	0
Chemicals	325	39	569	1,303	20	278	296	*
Pharmaceuticals and medicines	3254	30	424	793	19	271	250	D
Other chemicals	other 325	9	145	510	1	7	46	D
Plastics and rubber products	326	2	28	97	4	2	41 i	5
Nonmetallic mineral products	327	0	7	27 i	0	0	0	0
Fabricated metal products	332	*	3	73	0	*	4	0
Machinery	333	82	203	642	2	5 i	71	* i
Computer and electronic products	334	232	705	1,868 i	12	390	253	4
Electrical equipment, appliances, and	335	4	51	203	3	2	13	0
Transportation equipment	336	D	320	3,212	51	5	278	*
Miscellaneous manufacturing	339	3	125	277	*	222	23	0
Other manufacturing	312-16, 321-24, 331, 337	D	41	55	1	*	15	*
Nonmanufacturing industries	21-23, 42-81	365	801	1,088	42	497	190	17
Wholesale trade	42	0	0	D	0	0	0	0
Information	51	338	441	583	6	437	66	D
Telecommunications	517	0	0	5	0	0	0	0
Data processing, hosting, and related services	518	3	56	14	*	44	1 i	0
Other information	other 51	335	386	564	6	393	65	D
Professional, scientific, and technical services	54	27	345 i	379 i	36	53	121	0
Architectural, engineering, and related services	5413	6	1	8	0	0	0	0

TABLE 45. R&D paid for by the company and others and performed by the company outside of the United States, by selected location, industry, and company size: 2014

(Millions of U.S. dollars)

Industry and company size	NAICS code	Finland	France	Germany	Hungary	Ireland	Italy	Luxembourg
Scientific R&D services	5417	13	207	283	36	40	100	0
Biotechnology R&D	541711	4	52	79	4	3	16	0
Other scientific R&D	other 5417	10	155	205 i	32 i	37	84	0
Other professional, scientific, and technical services	other 54	7 i	137 i	88 i	0	13	21 i	0
Other nonmanufacturing	21–23, 44–45, 48–49, 52–53, 55–56, 621–24, 71–72, 81	0	14	D	0	6	3	D
All companies (number of domestic employees)	–	763	2,906	8,926	135	1,400	1,189	27
Small companies ^a								
5–499	–	10	144	307	11	51	41	D
5–99	–	D	70	49	5	8	10	*
5–49	–	D	65	16	1	2	2	0
5–9	–	0	1	4	1	0	*	0
10–24	–	0	8	4	*	*	*	0
25–49	–	D	57	9	0	2	2	0
50–99	–	D	5	33	5	6	8	*
100–249	–	D	31	58	4	24	22	D
250–499	–	9	43	200	1	20	8	D
Medium and large companies								
500–999	–	61	38	201	6	11	9	D
1,000–4,999	–	120	776	1,486	20	331	151	7
5,000–9,999	–	53	436	876	46	241	310	4
10,000–24,999	–	60	494	1,298	10	238	161	2
25,000 or more	–	460	1,018	4,758	42	529	518	8
Industry and company size	NAICS code	Netherlands	Norway	Poland	Russia	Spain	Sweden	Switzerland
All industries	21–23, 31–33, 42–81	1,194	374	497	470	597	851	2,773
Manufacturing industries	31–33	819	271	350	241	476	572	1,834
Food	311	4	D	4	4	4	7 i	70 i
Chemicals	325	291	26	81	104	216	161	933
Pharmaceuticals and medicines	3254	181	22	73	101	197	150	854
Other chemicals	other 325	110	4	8	3	19	11	79
Plastics and rubber products	326	49	0	1	1	24	4	81
Nonmetallic mineral products	327	*	0	0	1	0	0	*
Fabricated metal products	332	4	*	*	1	2	*	16
Machinery	333	91	57	6	1	35	90	100
Computer and electronic products	334	127	136	119 i	95 i	60	131	212
Electrical equipment, appliances, and components	335	48	7	*	0	4	9	28
Transportation equipment	336	134	D	134	7	119 i	122	8

TABLE 45. R&D paid for by the company and others and performed by the company outside of the United States, by selected location, industry, and company size: 2014

(Millions of U.S. dollars)

Industry and company size	NAICS code	Netherlands	Norway	Poland	Russia	Spain	Sweden	Switzerland
Miscellaneous manufacturing	339	63	D	D	18	6	42	122
Other manufacturing	312–16, 321–24, 331, 337	10	*	D	10	4	6	263
Nonmanufacturing industries	21–23, 42–81	375	103	147	230	121	278	940
Wholesale trade	42	D	0	0	0	0	0	0
Information	51	128	90	57	97	24	214	482
Telecommunications	517	0	0	0	*	0	0	0
Data processing, hosting, and related services	518	21	1	3	15	2	18	7
Other information	other 51	108	89	54	81	22	196	475
Professional, scientific, and technical services	54	162 i	D	79	128	91 i	62 i	D
Architectural, engineering, and related services	5413	*	0	*	*	*	5	0
Scientific R&D services	5417	125 i	6	72	75	75 i	37	406
Biotechnology R&D	541711	7	4	12	10	0	7	367
Other scientific R&D	other 5417	117 i	1 i	60 i	65 i	75 i	30	39
Other professional, scientific, and technical services	other 54	37 i	D	7	53	16 i	20 i	D
Other nonmanufacturing	21–23, 44–45, 48–49, 52–53, 55–56, 621–24, 71–72, 81	D	D	12 i	5	6	2	D
All companies (number of domestic employees)	–	1,194	374	497	470	597	851	2,773
Small companies ^a								
5–499	–	32	7	3	35	14	70	330
5–99	–	10	1	*	8	6	4	43
5–49	–	1	0	D	2	2	2	9
5–9	–	*	0	0	0	0	1	9
10–24	–	*	0	0	*	*	*	0
25–49	–	*	0	D	2	1	1	*
50–99	–	9	1	D	6	5	2	33
100–249	–	18	*	0	8	3	7	262
250–499	–	4	5	3	19	5	59	25
Medium and large companies								
500–999	–	73	16	10 i	62	16 i	30	24
1,000–4,999	–	375	11	94 i	64 i	88	260	725
5,000–9,999	–	275	58	111	77	139	107	650
10,000–24,999	–	150	38	50	28	116	112	241
25,000 or more	–	288	244	229	204	224	271	803

TABLE 45. R&D paid for by the company and others and performed by the company outside of the United States, by selected location, industry, and company size: 2014

(Millions of U.S. dollars)

Industry and company size	NAICS code	Turkey	United Kingdom	Other European				
				locations	Argentina	Brazil	Chile	Mexico
All industries	21-23, 31-33, 42-81	97	8,749	2,517	695	1,692	53	798
Manufacturing industries	31-33	72	5,232	1,567	612	1,464	28	669
Food	311	2	122	87	6	82 i	1 i	21
Chemicals	325	40	2,216	625	114	297	14	142
Pharmaceuticals and medicines	3254	37	1,883	365	84	177	11	86
Other chemicals	other 325	3	333	260	30 i	120 i	3 i	56 i
Plastics and rubber products	326	1 i	35	7	30	74	3	19
Nonmetallic mineral products	327	0	7 i	0	0	0	*	1
Fabricated metal products	332	0	42	4	1	2	*	3
Machinery	333	1	304	11	1	97	5	11
Computer and electronic products	334	10	1,043	262	441	52	*	114 i
Electrical equipment, appliances, and components	335	*	114	130	*	120	1	14
Transportation equipment	336	D	1,157	246 i	9	695	*	304
Miscellaneous manufacturing	339	2	96	130 i	5	22	2	8
Other manufacturing	312-16, 321-24, 331, 337	D	96	65	4	23	1	32
Nonmanufacturing industries	21-23, 42-81	25	3,518	951	83	228	26	129
Wholesale trade	42	0	0	0	0	0	0	0
Information	51	D	1,993	659	17	87	7	68
Telecommunications	517	0	6	0	0	0	0	0
Data processing, hosting, and related services	518	0	254	95	1	*	*	*
Other information	other 51	D	1,732	564	16	86	7	68
Professional, scientific, and technical services	54	14	1,131	228 i	64	118 i	15	41 i
Architectural, engineering, and related services	5413	0	16	1	0	0	0	0
Scientific R&D services	5417	14	882	207 i	64	90 i	15	37 i
Biotechnology R&D	541711	2	266	20	5	8	3	6
Other scientific R&D	other 5417	12	616	187 i	59	82 i	12 i	31 i
Other professional, scientific, and technical services	other 54	0	233 i	20	* i	28 i	0	4
Other nonmanufacturing	21-23, 44-45, 48-49, 52-53, 55-56, 621-24, 71-72, 81	D	394	64	2	23	4	20

TABLE 45. R&D paid for by the company and others and performed by the company outside of the United States, by selected location, industry, and company size: 2014

(Millions of U.S. dollars)

Industry and company size	NAICS code	Turkey	United Kingdom	Other European				
				locations	Argentina	Brazil	Chile	Mexico
All companies (number of domestic employees)	–	97	8,749	2,517	695	1,692	53	798
Small companies ^a								
5–499	–	3	260	100	13	25	2	14
5–99	–	*	69	15	5	1	1	4
5–49	–	*	34	5	0	1	1	*
5–9	–	0	*	*	0	0	0	*
10–24	–	*	*	2	0	0	0	0
25–49	–	0	34	3	0	1	1	*
50–99	–	0	35	10	5	*	0	4
100–249	–	*	78	55	8	15	1	2
250–499	–	3	113	30	1	9	0	8
Medium and large companies								
500–999	–	0	225	35	7	13	0	6
1,000–4,999	–	13	1,394	470	28	143	14	73
5,000–9,999	–	26	1,877	419	57	174	12	88
10,000–24,999	–	19	936	659	110	372	10	131
25,000 or more	–	35	4,057	834	480	965	16	486

Industry and company size	NAICS code	Other Latin American locations	Australia	China	Hong Kong	India	Indonesia	Japan
Manufacturing industries	31–33	388	1,468	4,205	149	3,059	27	2,274
Food	311	30	65	55	7 i	13	5	43 i
Chemicals	325	147	292	710	28	276	4	1,135
Pharmaceuticals and medicines	3254	96	277	396	21	228	D	953
Other chemicals	other 325	50	14	314	8	47 i	D	182
Plastics and rubber products	326	5	9	94	8	7	1	49
Nonmetallic mineral products	327	0	*	11 i	0	*	0	2
Fabricated metal products	332	*	1	17	*	3	*	1
Machinery	333	*	43	279	2	120	*	80
Computer and electronic products	334	85	504	2,035	66	2,272	2	606
Electrical equipment, appliances, and components	335	15	7	212	6	18	*	54
Transportation equipment	336	26	417	486	13 i	331	1	140
Miscellaneous manufacturing	339	18	127	243	12	12	2	133
Other manufacturing	312–16, 321–24, 331, 337	60	2	63	6 i	7	12	32
Nonmanufacturing industries	21–23, 42–81	243	452	1,627	60	2,601	8	663
Wholesale trade	42	0	0	0	0	0	0	0
Information	51	163	273	1,286	16	2,215	1	293
Telecommunications	517	*	1	5	*	14	0	0

TABLE 45. R&D paid for by the company and others and performed by the company outside of the United States, by selected location, industry, and company size: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS code	Other Latin American locations	Australia	China	Hong Kong	India	Indonesia	Japan
Data processing, hosting, and related services	518	19	25	32	1	211	0	10
Other information	other 51	144	248	1,249	15	1,990	1	284
Professional, scientific, and technical services	54	78	130	272	36	212	7	299
Architectural, engineering, and related services	5413	*	1	3	*	*	0	3
Scientific R&D services	5417	24	86	176	12	108	2	293
Biotechnology R&D	541711	6	22	66	2	2	0	11
Other scientific R&D	other 5417	17	64	110	10	106	2	282
Other professional, scientific, and technical services	other 54	54	43	93 i	25 i	104	5	3
Other nonmanufacturing	21-23, 44-45, 48-49, 52-53, 55-56, 621-24, 71-72, 81	3	49	69	7	174	*	71
All companies (number of domestic employees)	-	631	1,920	5,831	209	5,659	35	2,937
Small companies ^a								
5-499	-	81	41	397	51	350	17	61
5-99	-	*	13	97	1	124	0	8
5-49	-	*	12	69	1	58	0	3
5-9	-	0	8	3	0	1	0	*
10-24	-	*	1	8	*	16	0	2
25-49	-	*	3	58	1	41	0	1
50-99	-	*	1	28	1	66	0	5
100-249	-	80	7	167	15	164	17	32
250-499	-	*	21	132	35	62	0	22
Medium and large companies								
500-999	-	2	139	213	16	106	1	30
1,000-4,999	-	234	154	1,041	31	1,001	3	352
5,000-9,999	-	50	250	792	34	1,379	4	761
10,000-24,999	-	106	182	705	15	390	5	597
25,000 or more	-	159	1,154	2,682	61 i	2,432	6	1,135
Industry and company size	NAICS code	Malaysia	New Zealand	Singapore	South Korea	Taiwan	Thailand	Other Asian or Pacific locations
All industries	21-23, 31-33, 42-81	1,203 i	122	1,662	1,283	818	462 i	884
Manufacturing industries	31-33	1,170 i	75	1,331	1,153	632	444 i	576
Food	311	2	5	9	4	7 i	5	31
Chemicals	325	5	14	226	105	65	12	60
Pharmaceuticals and medicines	3254	4	4	94	59	45	6	30
Other chemicals	other 325	1	10	132	46	20	6	30
Plastics and rubber products	326	6	5	4	56	19	4	8
Nonmetallic mineral products	327	0	0	0	0	0	0	*

TABLE 45. R&D paid for by the company and others and performed by the company outside of the United States, by selected location, industry, and company size: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS code	Malaysia	New Zealand	Singapore	South Korea	Taiwan	Thailand	Other Asian or Pacific locations
Fabricated metal products	332	1	*	1	*	4	0	1
Machinery	333	1	7	60	11	21	3	9
Computer and electronic products	334	1,146 i	30	876	214	460	399 i	382
Electrical equipment, appliances, and components	335	*	*	42	24	7	*	*
Transportation equipment	336	2 i	*	8	694	26	14	23
Miscellaneous manufacturing	339	7	14	79	25	22	5	29
Other manufacturing	312-16, 321-24, 331, 337	* i	0	27	20	1	2	33
Nonmanufacturing industries	21-23, 42-81	33	47	331	130	187	18 i	308
Wholesale trade	42	0	0	0	0	0	0	0
Information	51	6	38	112	D	125	2	206
Telecommunications	517	0	0	*	3	2	0	0
Data processing, hosting, and related services	518	1	23	8	5	5	0	40
Other information	other 51	5	14	104	D	118	2	166
Professional, scientific, and technical services	54	9	9	142	66	61	11	97
Architectural, engineering, and related services	5413	0	*	0	*	1	0	0
Scientific R&D services	5417	7	9	133	64	39	11	10
Biotechnology R&D	541711	1	2	12	11	14	1	0
Other scientific R&D	other 5417	6	7	121	53	25	10	10
Other professional, scientific, and technical services	other 54	2	*	9	2 i	21	*	87
Other nonmanufacturing	21-23, 44-45, 48-49, 52-53, 55-56, 621-24, 71-72, 81	18	*	78	D	1	5 i	4
All companies (number of domestic employees)	-	1,203 i	122	1,662	1,283	818	462 i	884
Small companies ^a								
5-499	-	78	42	124	54	136	1	108
5-99	-	2	9	25	39	59	0	9
5-49	-	*	9	18	25	31	0	6
5-9	-	*	0	16	0	4	0	0
10-24	-	*	0	1	19	4	0	5
25-49	-	0	9	*	6	23	0	1
50-99	-	2	*	7	14	28	0	3
100-249	-	*	8	53	5	40	1	40
250-499	-	76	25	46	11	38	1	59
Medium and large companies								

TABLE 45. R&D paid for by the company and others and performed by the company outside of the United States, by selected location, industry, and company size: 2014

(Millions of U.S. dollars)

Industry and company size	NAICS code	Malaysia	New Zealand	Singapore	South Korea	Taiwan	Thailand	Other Asian or Pacific locations
500–999	–	151 i	5 i	24	19	36	4	45
1,000–4,999	–	124	32	314	158	154	21	314
5,000–9,999	–	525 i	17	545	179	186	399 i	192
10,000–24,999	–	14	7	259	135	51	16	120
25,000 or more	–	311 i	18	396	737	255	21	104
Industry and company size	NAICS code	Israel	Other Middle Eastern locations	South Africa	Other African locations	Undistributed		
All industries	21–23, 31–33, 42–81	3,959	524	155	76	2,181 i		
Manufacturing industries	31–33	2,911 i	468	72	44	1,141 i		
Food	311	*	2	6	2	143 i		
Chemicals	325	118	25	41	29	44 i		
Pharmaceuticals and medicines	3254	82	22	28	26	21 i		
Other chemicals	other 325	35	3	13 i	3 i	22 i		
Plastics and rubber products	326	* i	9	1	*	28 i		
Nonmetallic mineral products	327	*	0	0	0	95 i		
Fabricated metal products	332	0	1	1	0	18		
Machinery	333	200	3	7	*	50 i		
Computer and electronic products	334	2,482 i	418	5	8	571 i		
Electrical equipment, appliances, and components	335	1	2	*	0	58 i		
Transportation equipment	336	41	2	7	4	99 i		
Miscellaneous manufacturing	339	68	4	2	0	12 i		
Other manufacturing	312–16, 321–24, 331, 337	0	0	2	0	23 i		
Nonmanufacturing industries	21–23, 42–81	1,048	57	83	32	1,041 i		
Wholesale trade	42	0	0	0	0	D		
Information	51	871	18	19	27 i	282 i		
Telecommunications	517	0	0	0	0	22		
Data processing, hosting, and related services	518	116	1	15	0	38 i		
Other information	other 51	755	18	4	27 i	222 i		
Professional, scientific, and technical services	54	163	9	65	4	740 i		
Architectural, engineering, and related services	5413	0	0	*	0	3 i		
Scientific R&D services	5417	58	5	63	4	354 i		
Biotechnology R&D	541711	15	0	2	0	346 i		
Other scientific R&D	other 5417	43	5	61	4	7 i		

TABLE 45. R&D paid for by the company and others and performed by the company outside of the United States, by selected location, industry, and company size: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS code	Israel	Other Middle Eastern locations	South Africa	Other African locations	Undistributed
Other professional, scientific, and technical services	other 54	104	4 i	1 i	0	384 i
Other nonmanufacturing	21-23, 44-45, 48-49, 52-53, 55-56, 621-24, 71-72, 81	15	29	*	1	D
All companies (number of domestic employees)	-	3,959	524	155	76	2,181 i
Small companies ^a						
5-499	-	165	4	2	1	648 i
5-99	-	61	1	1	0	439 i
5-49	-	52	0	0	0	257 i
5-9	-	11	0	0	0	33 i
10-24	-	7	0	0	0	191 i
25-49	-	34	0	0	0	33 i
50-99	-	9	1	1	0	182 i
100-249	-	37	4	*	0	137 i
250-499	-	67	0	1	1	72 i
Medium and large companies						
500-999	-	108	1	3	2	257 i
1,000-4,999	-	484	16 i	27	20 i	983 i
5,000-9,999	-	436	21	65	5	20 i
10,000-24,999	-	86	31	34	8	274 i
25,000 or more	-	2,680	452	24	41	0

* = amount < \$500,000; 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 Upper bound is based on the U.S. Small Business Administration's definition of a small business; the Business R&D and Innovation Survey does not include companies with fewer than five domestic employees.

NOTES: Detail may not add to total because of rounding. Country detail was not asked on Form BRDI-1(S). 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.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 46. Capital expenditures in the United States and for domestic R&D, by type of expenditure, industry, and company size: 2014
(Millions of U.S. dollars)

Industry and company size	NAICS code	Total	Domestic R&D					
			Total	Structures	Equipment	Capitalized software	All other	Undistributed
All industries	21-23, 31-33, 42-81	638,268	27,775	2,599	11,564	6,094	3,036	4,481 i
Manufacturing industries	31-33	261,798	17,465	2,049	8,833	1,602	2,232	2,749 i
Food	311	19,080 i	1,284 i	89 i	739 i	22	6	428 i
Beverages and tobacco products	312	4,919	65	8	52	2	2	1 i
Textiles, apparel, and leather products	313-16	1,851	40 i	6	20	1	1	13 i
Wood products	321	1,479 i	19 i	* i	15 i	*	*	3 i
Paper	322	4,497	91 i	1 i	30	* i	18 i	42 i
Printing and related support activities	323	1,055	30 i	1	1	22 i	2	4 i
Petroleum and coal products	324	4,458	41	D	15	0	5	D
Chemicals	325	68,086	3,840	837	1,998	308	147	550 i
Basic chemicals	3251	33,906	402	39	273	54	26	10 i
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	6,787	100	17	52	2	23	6 i
Pesticides, fertilizers, and other agricultural chemicals	3253	1,522 i	46	23	19	*	*	4 i
Pharmaceuticals and medicines	3254	16,560	2,801	700	1,371	247	79	404 i
Soaps, cleaning compounds, and toilet preparations	3256	6,082	214	47	103	5	18	40 i
Paints, coatings, adhesives, and other chemicals	3255, 3259	3,228	278	11	181	*	1	85 i
Plastics and rubber products	326	21,180 i	350	55	173	6	33	84 i
Nonmetallic mineral products	327	2,912	355	173 i	62 i	2	97	21 i
Primary metals	331	3,714	125	9	74	3	13	26 i
Fabricated metal products	332	17,122 i	216 i	2	91	6	19	99 i
Machinery	333	11,796	912 i	54	499	43	47	269 i
Agricultural implements	33311	1,194	46	9	22	1	12	2 i
Semiconductor machinery	333295	616 i	306 i	2	158	2	11	133 i
Engines, turbines, and power transmission equipment	3336	1,475	116	8	88	7	9	4 i
Other machinery	other 333	8,512 i	444 i	35 i	231	33	15	130 i
Computer and electronic products	334	28,435 i	6,261 i	346	3,057 i	875 i	1,438	545 i
Communications equipment	3342	7,196 i	1,097 i	205	469	63	292 i	67 i
Semiconductors and other electronic components	3344	13,632 i	3,461 i	75 i	1,914 i	353 i	923	195 i

TABLE 46. Capital expenditures in the United States and for domestic R&D, by type of expenditure, industry, and company size: 2014

(Millions of U.S. dollars)

Industry and company size	NAICS code	Total	Domestic R&D					
			Total	Structures	Equipment	Capitalized software	All other	Undistributed
Navigational, measuring, electromedical, and control instruments	3345	5,541	979	22	376	368	143 i	70 i
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	1,286	461 i	11	130	272 i	38 i	9 i
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	1,883	207	7	161	34	3	2 i
Other measuring and controlling devices	other 3345	2,372	311 i	3 i	85 i	62 i	102 i	60 i
Other computer and electronic products	other 334	2,065	724 i	43	298	90	80	212 i
Electrical equipment, appliances, and components	335	5,652 i	473	13	374	8 i	18	61 i
Transportation equipment	336	56,331	2,664	415	1,235	212	353	449 i
Automobiles, bodies, trailers, and parts	3361-63	34,055 i	1,192	112	452	173	234	222 i
Aerospace products and parts	3364	19,912	1,181	297	765	37	68	14 i
Aircraft, aircraft engines, and aircraft parts	336411-13	19,471	1,142	297	754	37	41	14 i
Guided missiles, space vehicles, and related parts	336414-15, 336419	441 i	39 i	* i	11 i	* i	27 i	* i
Military armored vehicles, tanks, and tank components	336992	36	1	*	1	*	0	* i
Other transportation	other 336	2,328	290 i	7	17	2	52	213 i
Furniture and related products	337	979 i	24 i	*	12	*	*	11 i
Miscellaneous	339	8,251	675	D	386	91	33	D
Medical equipment and supplies	3391	5,961	566	21	341	66	17	122 i
Other miscellaneous manufacturing	3399	2,290	108 i	D	45	25	16	D
Nonmanufacturing industries	21-23, 42-81	376,470	10,310	550	2,731	4,492	804	1,733 i
Mining, extraction, and support activities	21	81,768	272	41	134	74	16	6 i
Utilities	22	68,460	164	10	67	34	45	7 i
Wholesale trade	42	3,228 i	39 i	*	5	*	*	33 i
Electronic shopping and electronic auctions	454111-12	D	175 i	0	0	D	0	D
Transportation and warehousing	48-49	15,992 i	52 i	11	19	2	8	13 i
Information	51	106,554	4,791	374	1,927	1,768	323	399 i
Publishing	511	11,512	1,816	250	1,098	210	126	132 i
Newspaper, periodical, book, and directory publishers	5111	186 i	22 i	* i	* i	* i	2 i	20 i
Software publishers	5112	11,327	1,794	250	1,098	210	124	112 i
Telecommunications	517	73,536	1,508	*	390 i	843	82	192 i
Data processing, hosting, and related services	518	6,786	869	34	201	554	51	29 i
Other information	other 51	14,720	598	90	238	160	64	46 i

TABLE 46. Capital expenditures in the United States and for domestic R&D, by type of expenditure, industry, and company size: 2014

(Millions of U.S. dollars)

Industry and company size	NAICS code	Total	Domestic R&D					All other	Undistributed
			Total	Structures	Equipment	Capitalized software			
Finance and insurance	52	11,539	2,507	28	205	2,060	192	21 i	
Real estate and rental and leasing	53	271 i	68	*	5	32	17	14 i	
Lessors of nonfinancial intangible assets (except copyrighted works)	533	11 i	1 i	*	*	0	0	* i	
Other real estate and rental and leasing	other 53	260 i	68	*	5	32	17	14 i	
Professional, scientific, and technical services	54	21,163 i	2,055 i	77	344	485	202	947 i	
Architectural, engineering, and related services	5413	2,055 i	40 i	2	16	8	3	10 i	
Computer systems design and related services	5415	7,773 i	1,227 i	10	128	302	36 i	751 i	
Scientific R&D services	5417	4,978 i	503	60	164	47	144	89 i	
Biotechnology R&D	541711	493 i	155 i	42	29	D	35 i	D	
Physical, engineering, and life sciences (except biotechnology) R&D	541712	4,468 i	332	15	131	44	101	41 i	
Social sciences and humanities R&D	541720	18	16	2	4	D	7 i	D	
Other professional, scientific, and technical services	other 54	6,357	285 i	6	37	128	19	96 i	
Health care services	621-23	2,036 i	40 i	5	17	*	*	17 i	
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	D	148 i	3	7	D	1	D	
All companies (number of domestic employees)	-	638,268	27,775	2,599	11,564	6,094	3,036	4,481 i	
Small companies ^a									
5-499	-	78,069 i	5,396 i	329	1,642	449	463	2,514 i	
5-99	-	37,733 i	3,034 i	146	866	96	262	1,664 i	
5-49	-	22,537 i	1,839 i	87	669	37	196	850 i	
5-9	-	4,087 i	603	20	325	14	84	159 i	
10-24	-	7,845 i	627 i	44	209	7 i	88	280 i	
25-49	-	10,605 i	609 i	23	135	15	24	411 i	
50-99	-	15,196 i	1,195 i	59	196	59	66	814 i	
100-249	-	23,385 i	1,254 i	54	350	156	103	591 i	
250-499	-	16,951 i	1,109	128	426	197	99	259 i	
Medium and large companies									
500-999	-	16,090	1,097	70	451	193	125	258 i	
1,000-4,999	-	77,535 i	4,254	588	1,658	1,034	392	582 i	

TABLE 46. Capital expenditures in the United States and for domestic R&D, by type of expenditure, industry, and company size: 2014

(Millions of U.S. dollars)

Industry and company size	NAICS code	Total	Domestic R&D					
			Total	Structures	Equipment	Capitalized software	All other	Undistributed
5,000–9,999	–	56,588	2,839	354	1,472	486	392	135 i
10,000–24,999	–	166,934 i	4,875	495	1,518	1,372	932	558 i
25,000 or more	–	243,052	9,313	764	4,823	2,559	732 i	435 i

* = amount < \$500,000; 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 Upper bound is based on the U.S. Small Business Administration's definition of a small business; the Business R&D and Innovation Survey does not include companies with fewer than five domestic employees.

NOTES: 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 R&D.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 47. Worldwide, domestic, and foreign total and R&D employment, by industry and company size: 2014

(Thousands)

Industry and company size	NAICS code	Worldwide employees			Domestic employees			Foreign employees		
		Total	R&D	% R&D employees	Total	R&D	% R&D employees	Total	R&D	% R&D employees
All industries	21-23, 31-33, 42-81	31,881	2,167	6.8	21,540	1,514	7.0	10,341	653	6.3
Manufacturing industries	31-33	18,351	1,317	7.2	10,645	914	8.6	7,706	403	5.2
Food	311	1,624	36	2.2	1,125	25	2.2	499	11	2.3
Beverages and tobacco products	312	933	6	0.7	401	4	0.9	532	3	0.5
Textiles, apparel, and leather products	313-16	316	8	2.4	179	7	3.7	136	1	0.6
Wood products	321	179 i	4 i	2.2	146 i	4 i	2.6	33 i	* i	0.4
Paper	322	268	9	3.3	168	8	4.6	100	1	1.1
Printing and related support activities	323	118	4	3.2	102	4	3.4	15	*	1.2
Petroleum and coal products	324	47	2	4.9	39	2	4.3	7	1	8.0
Chemicals	325	2,874	234	8.1	1,753	172	9.8	1,121	61	5.5
Basic chemicals	3251	663	22	3.3	499	15	3.1	164	7	4.0
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	276	12	4.2	147	6	4.2	129	5	4.2
Pesticides, fertilizers, and other agricultural chemicals	3253	81	8 i	10.1	57	6 i	10.8	25	2 i	8.6
Pharmaceuticals and medicines	3254	975	158	16.2	543	122	22.5	432	36	8.2
Soaps, cleaning compounds, and toilet preparations	3256	630	17	2.7	362	12	3.3	268	5	2.0
Paints, coatings, adhesives, and other chemicals	3255, 3259	249	17	6.8	145	11	7.5	104	6	5.9
Plastics and rubber products	326	610	31	5.2	419	26	6.1	191	6	3.1
Nonmetallic mineral products	327	196	10	5.3	141	9	6.2	55	2	2.9
Primary metals	331	296	8	2.7	210	7	3.5	86	1	1.0
Fabricated metal products	332	737	34	4.7	524	32	6.0	213	3	1.3
Machinery	333	1,557	103	6.6	899	75	8.4	658	28	4.2
Agricultural implements	33311	144	14	10.1	86	10	11.3	58	5	8.3
Semiconductor machinery	333295	66	11	16.9	27	8	28.4	40 i	4	9.1
Engines, turbines, and power transmission equipment	3336	228	18	7.8	115	12	10.2	112	6	5.2
Other machinery	other 333	1,119	60	5.3	671	46	6.9	448	13	3.0
Computer and electronic products	334	3,282	445	13.6	1,488	273	18.4	1,795	172	9.6
Communications equipment	3342	382	94	24.8	229	59	25.9	153	35	23.0
Semiconductors and other electronic components	3344	1,064	181	17.0	396	107	26.9	668	74	11.1
Navigational, measuring, electromedical, and control instruments	3345	987	101	10.2	555	74	13.3	432	27	6.2
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	167	21	12.5	101	14	14.3	66	6	9.8
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	347	36	10.4	251	33	13.2	96	3	3.2
Other measuring and controlling devices	other 3345	473	44	9.3	203	26	13.0	270	17	6.4

TABLE 47. Worldwide, domestic, and foreign total and R&D employment, by industry and company size: 2014
(Thousands)

Industry and company size	NAICS code	Worldwide employees			Domestic employees			Foreign employees		
		Total	R&D	% R&D employees	Total	R&D	% R&D employees	Total	R&D	% R&D employees
Other computer and electronic products	other 334	850	69	8.1	308	33	10.8	542	36	6.6
Electrical equipment, appliances, and components	335	814	54	6.6	369	33	8.8	445	21	4.7
Transportation equipment	336	3,190	239	7.5	1,858	167	9.0	1,332	72	5.4
Automobiles, bodies, trailers, and parts	3361-63	1,967	142	7.2	933	94	10.1	1,034	47	4.6
Aerospace products and parts	3364	1,001	84	8.4	753	61	8.1	248	23	9.3
Aircraft, aircraft engines, and aircraft parts	336411-13	952	79	8.3	712	56	7.9	240	23	9.5
Guided missiles, space vehicles, and related parts	336414-15, 336419	48	5 i	10.3	41	5 i	12.0	8	*	1.3
Military armored vehicles, tanks, and tank components	336992	4	* i	3.0	3	*	3.1	1	* i	2.7
Other transportation	other 336	218	13 i	6.2	169 i	12 i	7.2	49	1	2.7
Furniture and related products	337	202	6	2.8	176	5	3.0	26	*	1.9
Miscellaneous manufacturing	339	1,111	84	7.6	648	64	9.8	462	21	4.5
Medical equipment and supplies	3391	706	58	8.2	398	43	10.8	308	14	4.7
Other miscellaneous manufacturing	3399	405	27	6.6	251	20	8.2	154	6	4.1
Nonmanufacturing industries	21-23, 42-81	13,530	850	6.3	10,896	600	5.5	2,634	250	9.5
Mining, extraction, and support activities	21	555	19	3.5	284	16	5.7	271	3	1.2
Utilities	22	370	2	0.6	361	2	0.6	9	*	1.1
Wholesale trade	42	275	8	2.8	244	7	2.9	32	*	1.5
Electronic shopping and electronic auctions	454111-12	D	D	5.2	118 i	7	6.3	D	D	3.7
Transportation and warehousing	48-49	1,026	3 i	0.3	933	3 i	0.3	93 i	*	0.1
Information	51	3,213	438	13.6	2,236	296	13.2	976	142	14.6
Publishing	511	1,354	276	20.4	649	164	25.2	705	113	16.0
Newspaper, periodical, book, and directory publishers	5111	49	1	2.0	35	1	2.6	14 i	* i	0.4
Software publishers	5112	1,305	275	21.1	613	163	26.5	691	113	16.3
Telecommunications	517	895	31	3.4	863	30	3.4	32	1	3.3
Data processing, hosting, and related services	518	519	74	14.3	357	57	15.9	162	17	10.7
Other information	other 51	445	57	12.8	367	46	12.5	78	11	14.3
Finance and insurance	52	1,495	28	1.9	1,216	24	1.9	279	4	1.6
Real estate and rental and leasing	53	10	2	18.0	10	2	18.1	*	*	16.3
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1	*	23.4	1	*	22.3	*	*	43.5
Other real estate and rental and leasing	other 53	9	2	17.3	9	2	17.5	*	*	9.9
Professional, scientific, and technical services	54	2,357	318	13.5	1,713	223	13.0	644	95	14.8
Architectural, engineering, and related services	5413	446	51	11.5	308	45	14.5	138	7	5.0
Computer systems design and related services	5415	730	113	15.5	441	77	17.4	290	36	12.5

TABLE 47. Worldwide, domestic, and foreign total and R&D employment, by industry and company size: 2014
(Thousands)

Industry and company size	NAICS code	Worldwide employees			Domestic employees			Foreign employees		
		Total	R&D	% R&D employees	Total	R&D	% R&D employees	Total	R&D	% R&D employees
Scientific R&D services	5417	285	112	39.1	225	71	31.6	60	40	67.0
Biotechnology R&D	541711	87	25	28.3	73	15	21.0	14	9	67.6
Physical, engineering, and life sciences (except biotechnology) R&D	541712	190	81	42.7	144	50	34.9	47	31	66.9
Social sciences and humanities R&D	541720	8	6	70.4	8	6	70.9	* i	*	36.6
Other professional, scientific, and technical services	other 54	896	42	4.7	740	30	4.1	156	12 i	7.7
Health care services	621-23	320	6	1.7	319	5	1.7	1	*	10.8
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	D	D	0.4	3,461	15	0.4	D	D	0.5
All companies (number of domestic employees)	-	31,881	2,167	6.8	21,540	1,514	7.0	10,341	653	6.3
Small companies ^a										
5-499	-	3,791	486	12.8	3,095	419	13.5	696	67	9.6
5-99	-	1,647	274	16.6	1,431	242	16.9	216	32	14.7
5-49	-	969	182	18.8	858	161	18.8	111	21	19.3
5-9	-	156	33	21.0	118	27	22.6	38	6	15.8
10-24	-	347	73	20.9	309	66	21.2	38	7	17.9
25-49	-	466	77	16.6	431	69	15.9	34	9	24.9
50-99	-	678	92	13.5	573	81	14.2	105	10	9.8
100-249	-	1,197	119	10.0	953	100	10.5	244	19	7.9
250-499	-	946	92	9.8	710	76	10.8	235	16	6.8
Medium and large companies										
500-999	-	1,198	97	8.1	822	70	8.6	376	27	7.1
1,000-4,999	-	4,266	386	9.1	2,593	254	9.8	1,673	133	7.9
5,000-9,999	-	3,136	259	8.3	1,524	150	9.8	1,612	110	6.8
10,000-24,999	-	5,830	301	5.2	3,848	219	5.7	1,982	82	4.2
25,000 or more	-	13,659	638	4.7	9,659	403	4.2	4,001	235	5.9

* = amount < 500 employees; 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 Upper bound is based on the U.S. Small Business Administration's definition of a small business; the Business R&D and Innovation Survey does not include companies with fewer than five domestic employees.

NOTES: 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.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 48. Worldwide, domestic, and foreign R&D paid for by the company and others and performed by the company, R&D employment, and R&D cost per R&D employee, by industry and company size: 2014

Industry and company size	NAICS code	Company-performed R&D (US\$millions)			R&D employment (thousands)			Company-performed R&D per R&D employee (US\$thousands per employee)		
		Worldwide	Domestic	Foreign	Worldwide	Domestic	Foreign	Worldwide	Domestic	Foreign
All industries	21-23, 31-33, 42-81	416,038	340,728	75,310	2,167	1,514	653	192.0	225.0	115.3
Manufacturing industries	31-33	286,476	232,815	53,661	1,317	914	403	217.5	254.7	133.1
Food	311	6,532	5,292 i	1,240	36	25	11	181.6	215.0	109.3
Beverages and tobacco products	312	1,423	920	503	6	4	3	223.1	246.2	190.3
Textiles, apparel, and leather products	313-16	734	631	103	8	7	1	97.8	94.3	127.1
Wood products	321	368 i	362 i	5 i	4 i	4 i	* i	93.4	95.5	36.9
Paper	322	880	723	158	9	8	1	100.2	94.0	143.9
Printing and related support activities	323	238	234	3	4	4	*	64.1	66.5	19.0
Petroleum and coal products	324	298	234	64	2	2	1	130.4	138.9	106.4
Chemicals	325	79,468	66,301	13,167	234	172	61	340.3	385.0	214.8
Basic chemicals	3251	3,633	2,849	784	22	15	7	166.4	186.2	120.1
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	1,842	1,152	690	12	6	5	159.3	186.6	128.0
Pesticides, fertilizers, and other agricultural chemicals	3253	2,086 i	1,790 i	295 i	8 i	6 i	2 i	253.6	293.1	139.5
Pharmaceuticals and medicines	3254	66,737	56,612	10,125	158	122	36	423.7	464.3	284.4
Soaps, cleaning compounds, and toilet preparations	3256	3,499	2,547	952	17	12	5	202.5	215.8	173.7
Paints, coatings, adhesives, and other chemicals	3255, 3259	1,670 i	1,350 i	320 i	17	11	6	97.8	124.0	51.7
Plastics and rubber products	326	4,457	3,574	883	31	26	6	141.6	139.4	151.3
Nonmetallic mineral products	327	1,599	1,445 i	155 i	10	9	2	154.5	165.2	96.2
Primary metals	331	770	677	94	8	7	1	95.1	93.4	109.8
Fabricated metal products	332	2,353	2,131 i	222	34	32	3	68.5	67.5	79.0
Machinery	333	14,937	12,128	2,810	103	75	28	145.2	161.3	101.5
Agricultural implements	33311	D	1,578	D	14	10	5	D	164.1	D
Semiconductor machinery	333295	3,434	2,941	493	11	8	4	306.3	387.6	136.1
Engines, turbines, and power transmission equipment	3336	2,883	2,347	535	18	12	6	163.2	199.5	90.8
Other machinery	other 333	D	5,261	D	60	46	13	D	113.8	D
Computer and electronic products	334	94,910	73,891	21,019	445	273	172	213.3	270.6	122.2
Communications equipment	3342	22,044	18,342	3,702	94	59	35	233.3	309.3	105.2
Semiconductors and other electronic components	3344	42,722	32,142	10,581	181	107	74	236.2	301.7	142.2
Navigational, measuring, electromedical, and control instruments	3345	19,030	15,963	3,067	101	74	27	188.7	215.8	114.0
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	4,982	3,917	1,066	21	14	6	237.8	270.3	164.8
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	8,486	7,861	625	36	33	3	234.6	237.7	201.5

TABLE 48. Worldwide, domestic, and foreign R&D paid for by the company and others and performed by the company, R&D employment, and R&D cost per R&D employee, by industry and company size: 2014

Industry and company size	NAICS code	Company-performed R&D (US\$millions)			R&D employment (thousands)			Company-performed R&D per R&D employee (US\$thousands per employee)		
		Worldwide	Domestic	Foreign	Worldwide	Domestic	Foreign	Worldwide	Domestic	Foreign
Other measuring and controlling devices	other 3345	5,561	4,186	1,375	44	26	17	127.2	158.5	79.4
Other computer and electronic products	other 334	11,114	7,444	3,670	69	33	36	161.5	223.9	103.2
Electrical equipment, appliances, and components	335	5,750	4,365	1,385	54	33	21	107.1	134.0	65.6
Transportation equipment	336	56,359	46,746	9,613	239	167	72	235.7	279.1	134.2
Automobiles, bodies, trailers, and parts	3361-63	D	18,404	D	142	94	47	D	195.2	D
Aerospace products and parts	3364	D	26,181 i	D	84	61	23	D	429.2	D
Aircraft, aircraft engines, and aircraft parts	336411-13	D	24,892 i	D	79	56	23	D	443.5	D
Guided missiles, space vehicles, and related parts	336414-15, 336419	D	1,290 i	D	5 i	5 i	*	D	264.0	D
Military armored vehicles, tanks, and tank components	336992	D	18	D	* i	*	* i	D	191.0	D
Other transportation	other 336	D	2,142 i	D	13 i	12 i	1	D	176.9	D
Furniture and related products	337	418	373	45	6	5	*	73.3	71.5	92.4
Miscellaneous manufacturing	339	14,983	12,789	2,194	84	64	21	177.4	201.1	105.2
Medical equipment and supplies	3391	12,091	10,309	1,782	58	43	14	209.9	239.0	123.1
Other miscellaneous manufacturing	3399	2,892	2,481	412	27	20	6	107.7	121.2	64.5
Nonmanufacturing industries	21-23, 42-81	129,562	107,913	21,649	850	600	250	152.5	179.9	86.6
Mining, extraction, and support activities	21	D	4,703	D	19	16	3	D	290.1	D
Utilities	22	311	310	1	2	2	*	147.9	154.7	10.1
Wholesale trade	42	D	339 i	D	8	7	*	D	47.6	D
Electronic shopping and electronic auctions	454111-12	D	1,388	D	D	7	D	D	186.7	D
Transportation and warehousing	48-49	692	679	13	3 i	3 i	*	250.2	251.5	197.9
Information	51	77,341	63,773	13,569	438	296	142	176.6	215.7	95.4
Publishing	511	46,157	36,140	10,017	276	164	113	167.0	220.9	88.9
Newspaper, periodical, book, and directory publishers	5111	92 i	88 i	4 i	1	1	* i	94.0	95.2	75.3
Software publishers	5112	46,065	36,052	10,013	275	163	113	167.3	221.6	88.9
Telecommunications	517	3,816	3,755	61	31	30	1	124.0	126.3	58.4
Data processing, hosting, and related services	518	10,322	9,029	1,294	74	57	17	139.5	159.5	74.5
Other information	other 51	17,046	14,849	2,196	57	46	11	299.9	324.6	198.1
Finance and insurance	52	4,748	4,122	625	28	24	4	169.5	174.1	144.1
Real estate and rental and leasing	53	268	262	6	2	2	*	144.7	146.0	102.3
Lessors of nonfinancial intangible assets (except copyrighted works)	533	58	55	3	*	*	*	200.8	212.3	95.8
Other real estate and rental and leasing	other 53	210	207	3	2	2	*	134.4	134.8	109.0
Professional, scientific, and technical services	54	37,476 i	30,975 i	6,501	318	223	95	117.9	139.2	68.1
Architectural, engineering, and related services	5413	3,440	3,375	65	51	45	7	66.9	75.8	9.5

TABLE 48. Worldwide, domestic, and foreign R&D paid for by the company and others and performed by the company, R&D employment, and R&D cost per R&D employee, by industry and company size: 2014

Industry and company size	NAICS code	Company-performed R&D (US\$millions)			R&D employment (thousands)			Company-performed R&D per R&D employee (US\$thousands per employee)		
		Worldwide	Domestic	Foreign	Worldwide	Domestic	Foreign	Worldwide	Domestic	Foreign
Computer systems design and related services	5415	12,536 i	11,019 i	1,517 i	113	77	36	111.0	143.5	42.0
Scientific R&D services	5417	17,329	12,807	4,522	112	71	40	155.4	180.2	111.7
Biotechnology R&D	541711	4,898	3,459	1,438	25	15	9	198.7	225.0	155.0
Physical, engineering, and life sciences (except biotechnology) R&D	541712	11,749	8,670	3,079	81	50	31	144.6	173.0	98.8
Social sciences and humanities R&D	541720	682	678	4 i	6	6	*	121.5	121.5	112.3
Other professional, scientific, and technical services	other 54	4,172 i	3,775	398 i	42	30	12 i	99.0	125.0	33.3
Health care services	621–23	501 i	501 i	*	6	5	*	90.9	92.5	4.0
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	D	861 i	D	D	15	D	D	56.8	D
All companies (number of domestic employees)	–	416,038	340,728	75,310	2,167	1,514	653	192.0	225.0	115.3
Small companies ^a										
5–499	–	58,967	54,773	4,194	486	419	67	121.4	130.7	62.7
5–99	–	30,333 i	29,078 i	1,255	274	242	32	110.7	120.0	39.6
5–49	–	19,607 i	18,900 i	707 i	182	161	21	107.5	117.4	33.1
5–9	–	3,390 i	3,295 i	95 i	33	27	6	103.7	123.6	15.8
10–24	–	7,450 i	7,177 i	273 i	73	66	7	102.7	109.2	40.1
25–49	–	8,767 i	8,428 i	339	77	69	9	113.5	122.7	39.7
50–99	–	10,726	10,178 i	547	92	81	10	117.0	125.2	53.1
100–249	–	14,984	13,492	1,492	119	100	19	125.5	134.6	77.7
250–499	–	13,650	12,203	1,447	92	76	16	147.7	159.6	90.7
Medium and large companies										
500–999	–	15,526	13,262	2,264	97	70	27	160.2	188.6	85.2
1,000–4,999	–	71,736	57,551	14,185	386	254	133	185.7	227.0	106.8
5,000–9,999	–	51,020	38,202	12,818	259	150	110	197.0	255.5	117.0
10,000–24,999	–	63,639	54,445	9,194	301	219	82	211.4	249.1	111.5
25,000 or more	–	155,150	122,495	32,655	638	403	235	243.2	303.9	139.0

* = amount < \$500,000 or 500 employees; 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 Upper bound is based on the U.S. Small Business Administration's definition of a small business; the Business R&D and Innovation Survey does not include companies with fewer than five domestic employees.

NOTES: Detail may not add to total because of rounding. Ratios were calculated using unrounded data. 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.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 49. Worldwide, domestic, and foreign R&D employment, by sex, industry, and company size: 2014
(Thousands)

Industry and company size	NAICS code	Worldwide			Domestic			Foreign		
		Total	Male	Female	Total	Male	Female	Total	Male	Female
All industries	21-23, 31-33, 42-81	2,167	1,607	560	1,514	1,138	376	653	470	184
Manufacturing industries	31-33	1,317	994	323	914	696	218	403	298	105
Food	311	36	21 i	15	25	14 i	10	11	6 i	5
Beverages and tobacco products	312	6	3	3	4	2	2	3	1	1
Textiles, apparel, and leather products	313-16	8	5	3	7	4	2	1	*	*
Wood products	321	4 i	3 i	1 i	4 i	3 i	1 i	* i	* i	* i
Paper	322	9	7 i	2	8	7 i	1	1	1	1 i
Printing and related support activities	323	4	3	1	4	3	1	*	*	* i
Petroleum and coal products	324	2	2	1	2	1	*	1	*	*
Chemicals	325	234	129	105	172	96	76	61	33	28
Basic chemicals	3251	22	16	6	15	11	4	7	5	2
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	12	9	2	6	5	1	5	4	1
Pesticides, fertilizers, and other agricultural chemicals	3253	8 i	5 i	3 i	6 i	4 i	2 i	2 i	1 i	1 i
Pharmaceuticals and medicines	3254	158	77	81	122	61	61	36	16	20
Soaps, cleaning compounds, and toilet preparations	3256	17	9	8	12	6	5	5	3	3
Paints, coatings, adhesives, and other chemicals	3255, 3259	17	13	4	11	8	3	6	5	2
Plastics and rubber products	326	31	24 i	7	26	20 i	5	6	4	2
Nonmetallic mineral products	327	10	8	3 i	9	7	2 i	2	1 i	1 i
Primary metals	331	8	7	1	7	7	1	1	1	*
Fabricated metal products	332	34	30 i	4 i	32	28 i	4 i	3	2	* i
Machinery	333	103	91	12	75	67	8	28	24	4
Agricultural implements	33311	14	13	1	10	9	1	5	4	*
Semiconductor machinery	333295	11	10	1	8	7	1	4	3	*
Engines, turbines, and power transmission equipment	3336	18	16	2	12	11	1	6	5	1
Other machinery	other 333	60	52 i	8 i	46	41 i	5 i	13	11	2 i
Computer and electronic products	334	445	354	91 i	273	220	53	172	134	38 i
Communications equipment	3342	94	75	19	59	48 i	12	35	27	8
Semiconductors and other electronic components	3344	181	142	39 i	107	85	22 i	74	57 i	17 i
Navigational, measuring, electromedical, and control instruments	3345	101	81	20	74	60	14	27	21 i	6 i
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	21	15 i	6 i	14	11	4 i	6	4 i	2 i
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	36	30	6	33	28	5	3	3	*
Other measuring and controlling devices	other 3345	44	36 i	8 i	26	22 i	5	17	14 i	4 i
Other computer and electronic products	other 334	69	56	13	33	28	6	36	28	8

TABLE 49. Worldwide, domestic, and foreign R&D employment, by sex, industry, and company size: 2014
(Thousands)

Industry and company size	NAICS code	Worldwide			Domestic			Foreign		
		Total	Male	Female	Total	Male	Female	Total	Male	Female
Electrical equipment, appliances, and components	335	54	46	8	33	28	4	21	18	4
Transportation equipment	336	239	197	42	167	140	28	72	58	14
Automobiles, bodies, trailers, and parts	3361-63	142	120	21	94	80	14	47	40	8
Aerospace products and parts	3364	84	66	18	61	49	12	23	17	6
Aircraft, aircraft engines, and aircraft parts	336411-13	79	61	18	56	44	12	23	17	6
Guided missiles, space vehicles, and related parts	336414-15, 336419	5 i	4 i	1 i	5 i	4 i	1 i	*	*	*
Military armored vehicles, tanks, and tank components	336992	* i	* i	* i	*	* i	* i	* i	* i	* i
Other transportation	other 336	13 i	12 i	2 i	12 i	10 i	2 i	1	1	* i
Furniture and related products	337	6	4 i	1 i	5	4 i	1 i	*	*	*
Miscellaneous manufacturing	339	84	60	24	64	45	18	21	15	6
Medical equipment and supplies	3391	58	40	17	43	30	13	14	10	4
Other miscellaneous manufacturing	3399	27	20 i	7	20	15 i	5 i	6	5	2
Nonmanufacturing industries	21-23, 42-81	850	613	237	600	441	158	250	171	79
Mining, extraction, and support activities	21	19	15	4	16	13	3	3	2	1
Utilities	22	2	2	*	2	2	*	*	*	*
Wholesale trade	42	8	6 i	1 i	7	6 i	1 i	*	* i	* i
Electronic shopping and electronic auctions	454111-12	D	D	D	7	4	3	D	D	D
Transportation and warehousing	48-49	3 i	2 i	1 i	3 i	2 i	1 i	*	*	*
Information	51	438	336	102	296	227	69	142	109	33
Publishing	511	276	212	64	164	126	38	113	86	26
Newspaper, periodical, book, and directory publishers	5111	1	* i	1 i	1	* i	* i	* i	* i	* i
Software publishers	5112	275	212	64	163	126	37	113	86	26
Telecommunications	517	31	23 i	8 i	30	22 i	8 i	1	1	* i
Data processing, hosting, and related services	518	74	56	18	57	43	13	17	13	5
Other information	other 51	57	45	12	46	36	10	11	9	2
Finance and insurance	52	28	15	13	24	13	10	4	2	2
Real estate and rental and leasing	53	2	1 i	*	2	1 i	*	*	*	*
Lessors of nonfinancial intangible assets (except copyrighted works)	533	*	*	*	*	*	*	*	*	*
Other real estate and rental and leasing	other 53	2	1 i	*	2	1 i	*	*	*	0
Professional, scientific, and technical services	54	318	213 i	105 i	223	157 i	65 i	95	55 i	40
Architectural, engineering, and related services	5413	51	40 i	11 i	45	35 i	10 i	7	5	2
Computer systems design and related services	5415	113	89 i	24 i	77	61 i	16 i	36	28 i	8 i
Scientific R&D services	5417	112	52	59	71	39	32	40	14	27
Biotechnology R&D	541711	25	10	15	15	7	9	9	3	6

TABLE 49. Worldwide, domestic, and foreign R&D employment, by sex, industry, and company size: 2014
(Thousands)

Industry and company size	NAICS code	Worldwide			Domestic			Foreign		
		Total	Male	Female	Total	Male	Female	Total	Male	Female
Physical, engineering, and life sciences (except biotechnology) R&D	541712	81	40	41	50	29	21	31	11	20
Social sciences and humanities R&D	541720	6	3 i	3 i	6	3 i	3 i	*	* i	* i
Other professional, scientific, and technical services	other 54	42	31 i	11 i	30	22 i	8 i	12 i	9 i	3 i
Health care services	621-23	6	3	2 i	5	3	2 i	*	* i	* i
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	D	D	D	15	13 i	3 i	D	D	D
All companies (number of domestic employees)	-	2,167	1,607	560	1,514	1,138	376	653	470	184
Small companies ^a										
5-499	-	486	381 i	105 i	419	331 i	88 i	67	49	17 i
5-99	-	274	214 i	60 i	242	191 i	51 i	32	23 i	9 i
5-49	-	182	143 i	39 i	161	128 i	33 i	21	15 i	6 i
5-9	-	33	25 i	8 i	27	21 i	6 i	6	4 i	2 i
10-24	-	73	57 i	16 i	66	52 i	14 i	7	5 i	2 i
25-49	-	77	61 i	16 i	69	55 i	14 i	9	7 i	2 i
50-99	-	92	71 i	21 i	81	63 i	18 i	10	7	3 i
100-249	-	119	94	25	100	80 i	21 i	19	14	5
250-499	-	92	73	20	76	60	16	16	12	4
Medium and large companies										
500-999	-	97	75	22	70	55	15	27	20	7 i
1,000-4,999	-	386	286	100	254	188	66	133	98	35
5,000-9,999	-	259	176	83	150	106	44	110	70	39
10,000-24,999	-	301	212	89	219	155	64	82	57	26
25,000 or more	-	638	478	160	403	303	100	235	175	60

* = amount < 500; 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 Upper bound is based on the U.S. Small Business Administration's definition of a small business; the Business R&D and Innovation Survey does not include companies with fewer than five domestic employees.

NOTES: 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.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 50. Worldwide R&D employment, by occupation, industry, and company size: 2014

(Thousands)

Industry and company size	NAICS code	Total	R&D scientists and engineers and their managers	R&D technicians and technologists	R&D support staff (clerical and others)
All industries	21–23, 31–33, 42–81	2,167	1,535	410	222
Manufacturing industries	31–33	1,317	962	215	140
Food	311	36	22 i	8	6
Beverages and tobacco products	312	6	3	3	1
Textiles, apparel, and leather products	313–16	8	4	3	1 i
Wood products	321	4 i	2 i	1 i	1 i
Paper	322	9	4	4 i	*
Printing and related support activities	323	4	2	1	1 i
Petroleum and coal products	324	2	1	1	* i
Chemicals	325	234	158	39	36
Basic chemicals	3251	22	12	7	3
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	12	8	3	1
Pesticides, fertilizers, and other agricultural chemicals	3253	8 i	5 i	2 i	1 i
Pharmaceuticals and medicines	3254	158	108	21	28
Soaps, cleaning compounds, and toilet preparations	3256	17	14	2	1
Paints, coatings, adhesives, and other chemicals	3255, 3259	17	11	4	2
Plastics and rubber products	326	31	18	9 i	4
Nonmetallic mineral products	327	10	5 i	3 i	2 i
Primary metals	331	8	3	3	2
Fabricated metal products	332	34	16 i	10 i	8 i
Machinery	333	103	75	20	8
Agricultural implements	33311	14	11	3	1
Semiconductor machinery	333295	11	9	1 i	*
Engines, turbines, and power transmission equipment	3336	18	15	2	2
Other machinery	other 333	60	40 i	14 i	5 i
Computer and electronic products	334	445	360	50 i	35 i
Communications equipment	3342	94	80	9	5
Semiconductor and other electronic components	3344	181	154	14 i	13 i
Navigational, measuring, electromedical, and control instruments	3345	101	74	19	8
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	21	14 i	5 i	2 i
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	36	28	6	3
Other measuring and controlling devices	other 3345	44	32 i	8	3 i
Other computer and electronic products	other 334	69	52 i	8 i	9 i
Electrical equipment, appliances, and components	335	54	37	13 i	3
Transportation equipment	336	239	188	29	22
Automobiles, bodies, trailers, and parts	3361–63	142	112	18	12
Aerospace products and parts	3364	84	69	8	7

TABLE 50. Worldwide R&D employment, by occupation, industry, and company size: 2014

(Thousands)

Industry and company size	NAICS code	Total	R&D scientists and engineers and their managers	R&D technicians and technologists	R&D support staff (clerical and others)
Aircraft, aircraft engines, and aircraft parts	336411-13	79	65	8	7
Guided missiles, space vehicles, and related parts	336414-15, 336419	5 i	4 i	1	*
Military armored vehicles, tanks, and tank components	336992	* i	* i	* i	*
Other transportation	other 336	13 i	8 i	3 i	3 i
Furniture and related products	337	6	3 i	2 i	1 i
Miscellaneous manufacturing	339	84	59	16	10
Medical equipment and supplies	3391	58	41	11	6
Other miscellaneous manufacturing	3399	27	18 i	5	4
Nonmanufacturing industries	21-23, 42-81	850	574	194	82
Mining, extraction, and support activities	21	19	12	5 i	3
Utilities	22	2	1	1	*
Wholesale trade	42	8	4 i	D	D
Electronic shopping and electronic auctions	454111-12	D	5	D	D
Transportation and warehousing	48-49	3 i	1 i	* i	1 i
Information	51	438	327	75	37
Publishing	511	276	221	27	29
Newspaper, periodical, book, and directory publishers	5111	1	* i	1 i	* i
Software publishers	5112	275	221	26	29
Telecommunications	517	31	21 i	9 i	1
Data processing, hosting, and related services	518	74	43	25	6 i
Other information	other 51	57	42	14	1
Finance and insurance	52	28	7	16	5
Real estate and rental and leasing	53	2	1	* i	* i
Lessors of nonfinancial intangible assets (except copyrighted works)	533	*	*	* i	*
Other real estate and rental and leasing	other 53	2	1	* i	* i
Professional, scientific, and technical services	54	318	205 i	85 i	28 i
Architectural, engineering, and related services	5413	51	36 i	10 i	6 i
Computer systems design and related services	5415	113	83 i	23 i	7 i
Scientific R&D services	5417	112	59	42	11 i
Biotechnology R&D	541711	25	19	5	1 i
Physical, engineering, and life sciences (except biotechnology) R&D	541712	81	39	34	8
Social sciences and humanities R&D	541720	6	* i	3 i	2 i
Other professional, scientific, and technical services	other 54	42	27 i	11 i	4 i
Health care services	621-23	6	2 i	3 i	*
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	D	8 i	D	4 i

TABLE 50. Worldwide R&D employment, by occupation, industry, and company size: 2014
(Thousands)

Industry and company size	NAICS code	Total	R&D scientists and engineers and their managers	R&D technicians and technologists	R&D support staff (clerical and others)
All companies (number of domestic employees)	-	2,167	1,535	410	222
Small companies ^a					
5-499	-	486	319 i	113 i	53 i
5-99	-	274	183 i	62 i	30 i
5-49	-	182	125 i	38 i	20 i
5-9	-	33	23 i	6 i	4 i
10-24	-	73	50 i	15 i	8 i
25-49	-	77	52 i	17 i	8 i
50-99	-	92	58 i	24 i	10 i
100-249	-	119	77	29	13 i
250-499	-	92	59	23	10
Medium and large companies					
500-999	-	97	64	25	8
1,000-4,999	-	386	274	74	38
5,000-9,999	-	259	173	60	26
10,000-24,999	-	301	207	60	34
25,000 or more	-	638	498	77	63

* = amount < 500; 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 Upper bound is based on the U.S. Small Business Administration's definition of a small business; the Business R&D and Innovation Survey does not include companies with fewer than five domestic employees.

NOTES: 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.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 51. Domestic R&D employment, by occupation, industry, and company size: 2014

(Thousands)

Industry and company size	NAICS code	Total	R&D scientists and engineers and their managers	R&D technicians and technologists	R&D support staff (clerical and others)
All industries	21–23, 31–33, 42–81	1,514	1,060	295	158
Manufacturing industries	31–33	914	653	161	101
Food	311	25	15 i	5	4
Beverages and tobacco products	312	4	2	1	1
Textiles, apparel, and leather products	313–16	7	3	3	1 i
Wood products	321	4 i	2 i	1 i	1 i
Paper	322	8	4	3 i	*
Printing and related support activities	323	4	2	1	1 i
Petroleum and coal products	324	2	1	1	* i
Chemicals	325	172	118	31	24
Basic chemicals	3251	15	9	5	2
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	6	4	2	1
Pesticides, fertilizers, and other agricultural chemicals	3253	6 i	4 i	2 i	* i
Pharmaceuticals and medicines	3254	122	85	19	19
Soaps, cleaning compounds, and toilet preparations	3256	12	10	1	1
Paints, coatings, adhesives, and other chemicals	3255, 3259	11	7	3	1
Plastics and rubber products	326	26	15	8 i	3 i
Nonmetallic mineral products	327	9	5 i	3 i	1
Primary metals	331	7	3	2 i	2
Fabricated metal products	332	32	14 i	10 i	8 i
Machinery	333	75	52	17	6
Agricultural implements	33311	10	7	2	1
Semiconductor machinery	333295	8	6	1 i	*
Engines, turbines, and power transmission equipment	3336	12	10	1	1
Other machinery	other 333	46	29 i	13 i	4 i
Computer and electronic products	334	273	221	32	20 i
Communications equipment	3342	59	50 i	6	3
Semiconductors and other electronic components	3344	107	90	8 i	9 i
Navigational, measuring, electromedical, and control instruments	3345	74	55	13	6
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	14	10	3 i	1
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	33	25	5	2
Other measuring and controlling devices	other 3345	26	19	5	2 i
Other computer and electronic products	other 334	33	26 i	4 i	3 i
Electrical equipment, appliances, and components	335	33	22	8 i	2
Transportation equipment	336	167	129	22	17
Automobiles, bodies, trailers, and parts	3361–63	94	72	13	9
Aerospace products and parts	3364	61	49	6	6
Aircraft, aircraft engines, and aircraft parts	336411–13	56	45	6	5

TABLE 51. Domestic R&D employment, by occupation, industry, and company size: 2014

(Thousands)

Industry and company size	NAICS code	Total	R&D scientists and engineers and their managers	R&D technicians and technologists	R&D support staff (clerical and others)
Guided missiles, space vehicles, and related parts	336414–15, 336419	5 i	4 i	*	*
Military armored vehicles, tanks, and tank components	336992	*	* i	* i	*
Other transportation	other 336	12 i	7 i	2 i	3 i
Furniture and related products	337	5	3 i	2 i	1 i
Miscellaneous manufacturing	339	64	44	12	8
Medical equipment and supplies	3391	43	31	8	4
Other miscellaneous manufacturing	3399	20	13 i	4 i	4 i
Nonmanufacturing industries	21–23, 42–81	600	407	135	58
Mining, extraction, and support activities	21	16	9	5 i	2
Utilities	22	2	1	1	*
Wholesale trade	42	7	4 i	1 i	2 i
Electronic shopping and electronic auctions	454111–12	7	4	2	2
Transportation and warehousing	48–49	3 i	1 i	* i	1 i
Information	51	296	220	54	22
Publishing	511	164	131	17	15
Newspaper, periodical, book, and directory publishers	5111	1	* i	1 i	* i
Software publishers	5112	163	131	16	15
Telecommunications	517	30	21 i	8 i	1
Data processing, hosting, and related services	518	57	34	18	5 i
Other information	other 51	46	34	11	1
Finance and insurance	52	24	7	13	3
Real estate and rental and leasing	53	2	1	* i	* i
Lessors of nonfinancial intangible assets (except copyrighted works)	533	*	*	* j	*
Other real estate and rental and leasing	other 53	2	1	* i	* i
Professional, scientific, and technical services	54	223	150 i	51 i	22 i
Architectural, engineering, and related services	5413	45	29 i	9 i	6 i
Computer systems design and related services	5415	77	59 i	12 i	6 i
Scientific R&D services	5417	71	41	22	8 i
Biotechnology R&D	541711	15	12	3	1 i
Physical, engineering, and life sciences (except biotechnology) R&D	541712	50	29	16	5
Social sciences and humanities R&D	541720	6	* i	3 i	2 i
Other professional, scientific, and technical services	other 54	30	20 i	8 i	2 i
Health care services	621–23	5	2 i	3 i	*
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	15	7 i	4 i	4 i

TABLE 51. Domestic R&D employment, by occupation, industry, and company size: 2014
(Thousands)

Industry and company size	NAICS code	Total	R&D scientists and engineers and their managers	R&D technicians and technologists	R&D support staff (clerical and others)
All companies (number of domestic employees)	-	1,514	1,060	295	158
Small companies ^a					
5-499	-	419	272 i	99 i	48 i
5-99	-	242	162 i	54 i	27 i
5-49	-	161	110 i	33 i	18 i
5-9	-	27	19 i	5 i	3 i
10-24	-	66	45 i	13 i	7 i
25-49	-	69	46 i	15 i	8 i
50-99	-	81	52 i	20 i	9 i
100-249	-	100	62 i	26 i	13 i
250-499	-	76	48	19	9
Medium and large companies					
500-999	-	70	47	17	7
1,000-4,999	-	254	174	52	28
5,000-9,999	-	150	104	30	16
10,000-24,999	-	219	152	43	23
25,000 or more	-	403	312	55	37

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

NAICS = 2012 North American Industry Classification System.

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

NOTES: 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.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 52. Foreign R&D employment, by occupation, industry, and company size: 2014

(Thousands)

Industry and company size	NAICS code	Total	R&D scientists and engineers and their managers	R&D technicians and technologists	R&D support staff (clerical and others)
All industries	21–23, 31–33, 42–81	653	475	114	64
Manufacturing industries	31–33	403	309	55	40
Food	311	11	7 i	3	2 i
Beverages and tobacco products	312	3	1	1	*
Textiles, apparel, and leather products	313–16	1	*	*	* i
Wood products	321	* i	* i	* i	* i
Paper	322	1	1	* i	*
Printing and related support activities	323	*	* i	*	0
Petroleum and coal products	324	1	*	*	*
Chemicals	325	61	40	9	12
Basic chemicals	3251	7	4	2	1
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	5	4	1	1
Pesticides, fertilizers, and other agricultural chemicals	3253	2 i	1 i	1 i	* i
Pharmaceuticals and medicines	3254	36	23	3	10
Soaps, cleaning compounds, and toilet preparations	3256	5	5	*	*
Paints, coatings, adhesives, and other chemicals	3255, 3259	6	4	2	1
Plastics and rubber products	326	6	4	1	1
Nonmetallic mineral products	327	2	1 i	1 i	* i
Primary metals	331	1	*	*	*
Fabricated metal products	332	3	2	*	*
Machinery	333	28	23	3	2
Agricultural implements	33311	5	4	1	*
Semiconductor machinery	333295	4	3	* i	*
Engines, turbines, and power transmission equipment	3336	6	5	*	1
Other machinery	other 333	13	11	2 i	1 i
Computer and electronic products	334	172	139 i	18 i	15 i
Communications equipment	3342	35	30	3	2
Semiconductors and other electronic components	3344	74	64 i	6 i	4 i
Navigational, measuring, electromedical, and control instruments	3345	27	19 i	6 i	2 i
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	6	4 i	2 i	1 i
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	3	2	*	*
Other measuring and controlling devices	other 3345	17	13 i	3	1 i
Other computer and electronic products	other 334	36	26 i	4 i	6 i
Electrical equipment, appliances, and components	335	21	15	5 i	1
Transportation equipment	336	72	60	7	5
Automobiles, bodies, trailers, and parts	3361, 3362, 3363	47	39	5	3
Aerospace products and parts	3364	23	20	2	1
Aircraft, aircraft engines, and aircraft parts	336411–13	23	20	2	1

TABLE 52. Foreign R&D employment, by occupation, industry, and company size: 2014

(Thousands)

Industry and company size	NAICS code	Total	R&D scientists and engineers and their managers	R&D technicians and technologists	R&D support staff (clerical and others)
Guided missiles, space vehicles, and related parts	336414–15, 336419	*	*	*	*
Military armored vehicles, tanks, and tank components	336992	* i	* i	* i	0
Other transportation	other 336	1	1	*	* i
Furniture and related products	337	*	*	*	*
Miscellaneous manufacturing	339	21	15	4	2
Medical equipment and supplies	3391	14	10	3	1
Other miscellaneous manufacturing	3399	6	5	1	*
Nonmanufacturing industries	21–23, 42–81	250	166	59	24
Mining, extraction, and support activities	21	3	2	* i	1
Utilities	22	*	*	*	*
Wholesale trade	42	*	* i	D	D
Electronic shopping and electronic auctions	454111–12	D	1	D	D
Transportation and warehousing	48–49	*	*	0	0
Information	51	142	107	21	15
Publishing	511	113	90	10	13
Newspaper, periodical, book, and directory publishers	5111	* i	* i	* i	* i
Software publishers	5112	113	90	10	13
Telecommunications	517	1	1	*	* i
Data processing, hosting, and related services	518	17	9	7	1
Other information	other 51	11	8	3	*
Finance and insurance	52	4	*	3	1
Real estate and rental and leasing	53	*	*	0	*
Lessors of nonfinancial intangible assets (except copyrighted works)	533	*	*	0	*
Other real estate and rental and leasing	other 53	*	*	0	0
Professional, scientific, and technical services	54	95	55 i	34 i	6 i
Architectural, engineering, and related services	5413	7	7	*	* i
Computer systems design and related services	5415	36	24 i	11 i	1 i
Scientific R&D services	5417	40	18	20	3
Biotechnology R&D	541711	9	8	1	* i
Physical, engineering, and life sciences (except biotechnology) R&D	541712	31	10	19	3
Social sciences and humanities R&D	541720	*	* i	* i	* i
Other professional, scientific, and technical services	other 54	12 i	7 i	3 i	2 i
Health care services	621–23	*	* i	* i	0
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	D	* i	D	* i

TABLE 52. Foreign R&D employment, by occupation, industry, and company size: 2014
(Thousands)

Industry and company size	NAICS code	Total	R&D scientists and engineers and their managers	R&D technicians and technologists	R&D support staff (clerical and others)
All companies (number of domestic employees)	-	653	475	114	64
Small companies ^a					
5-499	-	67	48	14 i	5 i
5-99	-	32	21 i	8 i	3 i
5-49	-	21	15 i	4 i	2 i
5-9	-	6	4 i	1 i	1 i
10-24	-	7	5 i	1 i	1 i
25-49	-	9	6 i	2 i	* i
50-99	-	10	6 i	4 i	1
100-249	-	19	16	3	1 i
250-499	-	16	11	3	1
Medium and large companies					
500-999	-	27	17	8	1
1,000-4,999	-	133	100	22	11
5,000-9,999	-	110	69	31	10
10,000-24,999	-	82	55	17	10
25,000 or more	-	235	186	22	26

* = amount < 500; 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 Upper bound is based on the U.S. Small Business Administration's definition of a small business; the Business R&D and Innovation Survey does not include companies with fewer than five domestic employees.

NOTES: 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.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 53. Domestic full-time equivalent R&D employees and R&D scientists and engineers, by work status, industry, and company size: 2014

(Thousands)

Industry and company size	NAICS code	Total	FTE R&D employees ^a			FTE R&D scientists and engineers ^b			
			Full-time R&D employees	Full-time employees working on R&D part-time	Part-time employees working on R&D	Total	Full-time R&D employees	Full-time employees working on R&D part-time	Part-time employees working on R&D
All industries	21–23, 31–33, 42–81	1,366	1,197	152	16	960	864	88 i	8 i
Manufacturing industries	31–33	828	734	86	8	592	537	51 i	5 i
Food	311	22	21 i	1	*	14 i	13 i	* i	* i
Beverages and tobacco products	312	3	3	* i	*	2	2	* i	*
Textiles, apparel, and leather products	313–16	6	5	1	*	3	2	*	*
Wood products	321	3 i	3 i	* i	* i	2 i	2 i	* i	* i
Paper	322	7 i	6 i	1 i	* i	3 i	3	* i	*
Printing and related support activities	323	3	2	1 i	*	2	1	*	*
Petroleum and coal products	324	1	1	*	*	1	1	*	*
Chemicals	325	168	163	4	1	114	112	2	*
Basic chemicals	3251	15	14	1	*	8	8	1	*
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	6	5	*	*	4	3 i	*	* i
Pesticides, fertilizers, and other agricultural chemicals	3253	6 i	5 i	* i	*	4 i	4 i	* i	* i
Pharmaceuticals and medicines	3254	120	118	2	1	84	82	1	*
Soaps, cleaning compounds, and toilet	3256	11	11	*	*	9	9	*	*
Paints, coatings, adhesives, and other chemicals	3255, 3259	10	9	*	*	6	6	* i	*
Plastics and rubber products	326	21	16 i	4	*	12 i	11 i	2 i	*
Nonmetallic mineral products	327	7	6 i	1 i	* i	4 i	3 i	1 i	* i
Primary metals	331	5	2	3	*	2	1	1	*
Fabricated metal products	332	23	13 i	10 i	* i	11 i	7 i	3 i	* i
Machinery	333	65	56	9	*	46	41	5	* i
Agricultural implements	33311	8	8	*	*	6	6	*	*
Semiconductor machinery	333295	8	7	* i	*	6	6	* i	*
Engines, turbines, and power transmission equipment	3336	11	11	1	*	9	9	*	*
Other machinery	other 333	38	29 i	8 i	* i	25 i	21 i	4 i	* i
Computer and electronic products	334	264	238	23	3	205	185	17	2 i
Communications equipment	3342	58	50 i	8	* i	49 i	44 i	5 i	* i
Semiconductors and other electronic components	3344	104	101	2 i	2	87	84 i	1 i	2 i
Navigational, measuring, electromedical, and control instruments	3345	69	55	13	1	51	39	11	1
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	14	13	*	*	10	9	*	* i
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	30	19	11	*	23	14	9	*
Other measuring and controlling devices	other 3345	25	23 i	1 i	*	18 i	16 i	1 i	*

TABLE 53. Domestic full-time equivalent R&D employees and R&D scientists and engineers, by work status, industry, and company size: 2014
(Thousands)

Industry and company size	NAICS code	FTE R&D employees ^a				FTE R&D scientists and engineers ^b			
		Total	Full-time R&D employees	Full-time employees working on R&D part-time	Part-time employees working on R&D	Total	Full-time R&D employees	Full-time employees working on R&D part-time	Part-time employees working on R&D
Other computer and electronic products	other 334	33	32	* i	*	19 i	18 i	* i	* i
Electrical equipment, appliances, and components	335	30	26	3	*	21	19	2	*
Transportation equipment	336	140	118	21	1	108	94	13 i	1
Automobiles, bodies, trailers, and parts	3361-63	84	77	6	*	66	62	3 i	*
Aerospace products and parts	3364	46	36	9	1	37	29	7	1
Aircraft, aircraft engines, and aircraft parts	336411-13	43	34	9	1	34	27	6	*
Guided missiles, space vehicles, and related parts	336414-15, 336419	3 i	2 i	1	*	3 i	2 i	*	*
Military armored vehicles, tanks, and tank components	336992	* i	* i	*	0	* i	* i	*	0
Other transportation	other 336	11 i	5 i	6 i	*	6 i	3 i	3 i	* i
Furniture and related products	337	4	4 i	1 i	*	2 i	2 i	* i	* i
Miscellaneous manufacturing	339	56	51	5	1	40	36	3	*
Medical equipment and supplies	3391	41	37	4	1	30	27	2	*
Other miscellaneous manufacturing	3399	15	14	1	*	10	9 i	1	* i
Nonmanufacturing industries	21-23, 42-81	537	463	66 i	8	368	327	38 i	3
Mining, extraction, and support activities	21	16	15	1	*	9	8	1	*
Utilities	22	1	1	*	0	1	1	*	0
Wholesale trade	42	6	3 i	3 i	*	4 i	1 i	2 i	* i
Electronic shopping and electronic auctions	454111-12	1	1 i	* i	* i	1 i	* i	* i	* i
Transportation and warehousing	48-49	2 i	2 i	* i	*	1 i	1 i	* i	*
Information	51	281	255	23	3	208	195	12 i	1
Publishing	511	160	154	4	2	128	124	3 i	1
Newspaper, periodical, book, and directory publishers	5111	1	1 i	*	0	* i	* i	0	0
Software publishers	5112	159	153	4	2	128	123	3 i	1
Telecommunications	517	24	12	13	*	16 i	10	6 i	*
Data processing, hosting, and related services	518	52	45	5	2 i	31	28	2	* i
Other information	other 51	45	44	1	*	33	33	*	*
Finance and insurance	52	14	12	2	*	5 i	5 i	*	*
Real estate and rental and leasing	53	2	1	* i	*	1 i	1 i	* i	* i
Lessors of nonfinancial intangible assets (except copyrighted works)	533	*	*	0	*	* i	* i	0	* i
Other real estate and rental and leasing	other 53	1	1	* i	0	1	1	* i	0
Professional, scientific, and technical services	54	198	163 i	30 i	4	131 i	110 i	20 i	1 i
Architectural, engineering, and related services	5413	35	24 i	10 i	1 i	24 i	18 i	6 i	* i
Computer systems design and related services	5415	68	56 i	12 i	* i	53 i	43 i	10 i	* i
Scientific R&D services	5417	67	61	4	2	37	35	2	1
Biotechnology R&D	541711	15	14	1 i	*	9	9	* i	*

TABLE 53. Domestic full-time equivalent R&D employees and R&D scientists and engineers, by work status, industry, and company size: 2014
(Thousands)

Industry and company size	NAICS code	FTE R&D employees ^a				FTE R&D scientists and engineers ^b			
		Total	Full-time R&D employees	Full-time employees working on R&D part-time	Part-time employees working on R&D	Total	Full-time R&D employees	Full-time employees working on R&D part-time	Part-time employees working on R&D
Physical, engineering, and life sciences (except biotechnology) R&D	541712	48	43	3	1	28	25	2	1
Social sciences and humanities R&D	541720	5 i	4 i	* i	* i	* i	* i	* i	* i
Other professional, scientific, and technical services	other 54	27	22 i	4	1	18 i	15 i	3 i	* i
Health care services	621-23	5	2 i	3	*	2 i	1 i	1 i	* i
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	11	9 i	2 i	* i	5 i	4 i	1 i	*
All companies (number of domestic employees)	-	1,366	1,197	152	16	960	864	88 i	8 i
Small companies ^c									
5-499	-	348	285 i	60 i	3	233 i	198 i	34 i	2 i
5-99	-	201	167 i	32 i	2	138 i	117 i	20 i	1 i
5-49	-	137	114 i	22 i	1 i	95 i	80 i	15 i	1 i
5-9	-	23	20 i	3 i	*	17 i	15 i	2 i	*
10-24	-	55	47 i	8 i	1	38 i	32 i	6 i	*
25-49	-	59	47 i	10 i	1 i	40 i	33 i	7 i	* i
50-99	-	64	53 i	10 i	1	43 i	37 i	6 i	*
100-249	-	81	65	14 i	1	52	45	7 i	* i
250-499	-	67	52	13	1	43	36	6	*
Medium and large companies									
500-999	-	63	54	9	*	43	38	5	* i
1,000-4,999	-	235	209	22	4	161	147	13	1
5,000-9,999	-	143	125	16	1 i	95	87	7 i	1 i
10,000-24,999	-	194	178	13 i	3	136	125	9 i	2 i
25,000 or more	-	383	346	33	3	291	268	21 i	2

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

FTE = full-time equivalent; NAICS = 2012 North American Industry Classification System.

^a Includes scientists, engineers, and their managers and also technicians, technologists, and support staff.

^b Includes scientists, engineers, and their managers.

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

NOTES: 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.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 54. U.S. patent applications and patents issued to companies located in the United States that performed or funded R&D, by industry and company size: 2014
(Number)

Industry and company size	NAICS code	Applications			Patents issued ^c
		Total	To foreign jurisdictions ^a	From within organized R&D activity ^b	
All industries	21–23, 31–33, 42–81	125,892	60,352	103,542	98,237
Manufacturing industries	31–33	85,729	49,084	72,742	65,645
Food	311	2,632 i	383	578	835 i
Beverages and tobacco products	312	625	524	D	287
Textiles, apparel, and leather products	313–16	588	292	D	515
Wood products	321	36	13	36	51
Paper	322	377	271	320	288
Printing and related support activities	323	108	66	108	97
Petroleum and coal products	324	115	82	D	69
Chemicals	325	14,010	10,157	13,379	10,206
Basic chemicals	3251	1,835	1,409	1,794	1,125
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	910	754	861	497
Pesticides, fertilizers, and other agricultural chemicals	3253	1,134 i	395	1,102 i	791 i
Pharmaceuticals and medicines	3254	7,585	5,790	7,251	5,982
Soaps, cleaning compounds, and toilet preparations	3256	1,627	1,228	1,460	1,243
Paints, coatings, adhesives, and other chemicals	3255, 3259	919	581	912	569
Plastics and rubber products	326	2,706	1,955	2,576	1,200
Nonmetallic mineral products	327	1,309 i	864 i	1,293 i	529 i
Primary metals	331	254	162	209	121
Fabricated metal products	332	1,499	1,023	1,386	979
Machinery	333	6,828	3,603	6,322	4,245
Agricultural implements	33311	809	426	D	453
Semiconductor machinery	333295	1,661	720	D	1,015
Engines, turbines, and power transmission equipment	3336	1,647	878	1,524	1,007
Other machinery	other 333	2,711	1,579	D	1,770
Computer and electronic products	334	28,958	12,197	25,198	26,980
Communications equipment	3342	7,293	1,857	5,984	6,156 i
Semiconductors and other electronic components	3344	13,665	6,586	12,172	14,110
Navigational, measuring, electromedical, and control instruments	3345	5,480	2,905	4,581	3,912
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	1,030	762	1,022	590
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	2,147	966	2,017	1,951
Other measuring and controlling devices	other 3345	2,302	1,177	1,542	1,371
Other computer and electronic products	other 334	2,521	849	2,462	2,802
Electrical equipment, appliances, and components	335	3,667	2,103	3,059	2,352
Transportation equipment	336	12,020	8,868	7,934	8,848
Automobiles, bodies, trailers, and parts	3361–63	5,634	4,485	3,840	3,866

TABLE 54. U.S. patent applications and patents issued to companies located in the United States that performed or funded R&D, by industry and company size: 2014
(Number)

Industry and company size	NAICS code	Applications			Patents issued ^c
		Total	To foreign jurisdictions ^a	From within organized R&D activity ^b	
Aerospace products and parts	3364	6,145	4,255	3,885	4,841
Aircraft, aircraft engines, and aircraft parts	336411-13	6,124	D	D	4,836
Guided missiles, space vehicles, and related parts	336414-15, 336419	21	D	D	5
Military armored vehicles, tanks, and tank components	336992	14	D	D	6
Other transportation	other 336	226	D	D	136
Furniture and related products	337	330	133	D	183
Miscellaneous manufacturing	339	9,668	6,389	D	7,861
Medical equipment and supplies	3391	7,474	5,064	6,967	6,051
Other miscellaneous manufacturing	3399	2,194	1,325	D	1,810
Nonmanufacturing industries	21-23, 42-81	40,163	11,268	30,800	32,592
Mining, extraction, and support activities	21	2,811	1,988	2,738	2,815
Utilities	22	45	12	29	50
Wholesale trade	42	92	35	65	73
Electronic shopping and electronic auctions	454111-12	D	D	D	D
Transportation and warehousing	48-49	D	37	D	62
Information	51	28,487	6,344	20,130	25,299
Publishing	511	16,336	5,178	12,174	15,441
Newspaper, periodical, book, and directory publishers	5111	D	0	D	D
Software publishers	5112	D	5,178	D	D
Telecommunications	517	2,892	156	2,080	3,555
Data processing, hosting, and related services	518	2,979	658	1,967	2,072
Other information	other 51	6,280	352	3,910	4,231
Finance and insurance	52	1,330	37	727	600
Real estate and rental and leasing	53	37	D	37	26
Lessors of nonfinancial intangible assets (except copyrighted works)	533	D	D	D	D
Other real estate and rental and leasing	other 53	D	D	D	D
Professional, scientific, and technical services	54	4,655	2,375	4,387	2,625
Architectural, engineering, and related services	5413	751	498	686	383
Computer systems design and related services	5415	844	251	828	681
Scientific R&D services	5417	2,493	1,439	2,405	1,207
Biotechnology R&D	541711	525	373	D	234
Physical, engineering, and life sciences (except biotechnology) R&D	541712	1,940	1,047	1,877	949
Social sciences and humanities R&D	541720	27	19	D	23
Other professional, scientific, and technical services	other 54	567	187	467	355
Health care services	621-23	137	94	129	44

TABLE 54. U.S. patent applications and patents issued to companies located in the United States that performed or funded R&D, by industry and company size: 2014
(Number)

Industry and company size	NAICS code	Applications			Patents issued ^c
		Total	To foreign jurisdictions ^a	From within organized R&D activity ^b	
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	D	D	D	D
All companies (number of domestic employees)	–	125,892	60,352	103,542	98,237
Small companies ^d					
5–499	–	17,861	8,978	16,413	10,680
5–99	–	8,178	4,264	7,509	4,453
5–49	–	5,519	2,981	5,005	2,918
5–9	–	950	464	771	268
10–24	–	2,004	1,159	1,830	929
25–49	–	2,565	1,358	2,404	1,721
50–99	–	2,659	1,283	2,504	1,535
100–249	–	5,345	2,445	4,858	3,151
250–499	–	4,338	2,269	4,047	3,076
Medium and large companies					
500–999	–	5,068	2,557	4,540	3,280
1,000–4,999	–	17,663	8,841	15,840	14,385
5,000–9,999	–	13,724	5,134	9,915	11,179
10,000–24,999	–	22,448	15,139	20,566	16,794
25,000 or more	–	49,127	19,703	36,267	41,919

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 Also includes patent applications that the company *planned* to apply for in foreign jurisdictions.

^b Includes patent applications in which the named inventor(s) were R&D employees.

^c For a small number of companies issued more than 100 patents by the U.S. Patent and Trademark Office (USPTO), counts from USPTO.gov were used to supplement survey data.

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

NOTES: 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. Statistics are based on companies in the United States that reported to the survey. These statistics do not include an adjustment to the weight to account for unit nonresponse.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 55. Total patent licensing revenue to companies located in the United States that performed or funded R&D, by industry and company size: 2014

Industry and company size	NAICS code	Revenue ^a (US\$millions)
All industries	21–23, 31–33, 42–81	25,489
Manufacturing industries	31–33	23,184
Food	311	335 i
Beverages and tobacco products	312	D
Textiles, apparel, and leather products	313–16	99
Wood products	321	D
Paper	322	50
Printing and related support activities	323	1
Petroleum and coal products	324	7
Chemicals	325	7,601
Basic chemicals	3251	201
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	D
Pesticides, fertilizers, and other agricultural chemicals	3253	D
Pharmaceuticals and medicines	3254	5,187
Soaps, cleaning compounds, and toilet preparations	3256	D
Paints, coatings, adhesives, and other chemicals	3255, 3259	D
Plastics and rubber products	326	579
Nonmetallic mineral products	327	105 i
Primary metals	331	1
Fabricated metal products	332	5
Machinery	333	667
Agricultural implements	33311	D
Semiconductor machinery	333295	59
Engines, turbines, and power transmission equipment	3336	D
Other machinery	other 333	590
Computer and electronic products	334	10,319
Communications equipment	3342	290 i
Semiconductor and other electronic components	3344	9,288
Navigational, measuring, electromedical, and control instruments	3345	403
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	22
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	101
Other measuring and controlling devices	other 3345	280
Other computer and electronic products	other 334	338
Electrical equipment, appliances, and components	335	720
Transportation equipment	336	1,079
Automobiles, bodies, trailers, and parts	3361–63	1,071
Aerospace products and parts	3364	5
Aircraft, aircraft engines, and aircraft parts	336411–13	4
Guided missiles, space vehicles, and related parts	336414–15, 336419	*
Military armored vehicles, tanks, and tank components	336992	0
Other transportation	other 336	3
Furniture and related products	337	24
Miscellaneous manufacturing	339	1,328
Medical equipment and supplies	3391	1,201
Other miscellaneous manufacturing	3399	127
Nonmanufacturing industries	21–23, 42–81	2,305
Mining, extraction, and support activities	21	231 i
Utilities	22	1
Wholesale trade	42	5
Electronic shopping and electronic auctions	454111–12	0
Transportation and warehousing	48–49	*
Information	51	1,403
Publishing	511	747
Newspaper, periodical, book, and directory publishers	5111	0

TABLE 55. Total patent licensing revenue to companies located in the United States that performed or funded R&D, by industry and company size: 2014

Industry and company size	NAICS code	Revenue ^a (US\$millions)
Software publishers	5112	747
Telecommunications	517	D
Data processing, hosting, and related services	518	246
Other information	other 51	D
Finance and insurance	52	133
Real estate and rental and leasing	53	0
Lessors of nonfinancial intangible assets (except copyrighted works)	533	0
Other real estate and rental and leasing	other 53	0
Professional, scientific, and technical services	54	513
Architectural, engineering, and related services	5413	228
Computer systems design and related services	5415	43
Scientific R&D services	5417	160
Biotechnology R&D	541711	51
Physical, engineering, and life sciences (except biotechnology) R&D	541712	108
Social sciences and humanities R&D	541720	0
Other professional, scientific, and technical services	other 54	82
Health care services	621–23	6
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	15
All companies (number of domestic employees)	–	25,489
Small companies ^b		
5–499	–	1,821
5–99	–	512
5–49	–	225
5–9	–	5
10–24	–	116
25–49	–	104
50–99	–	287
100–249	–	661
250–499	–	648
Medium and large companies		
500–999	–	218
1,000–4,999	–	3,805
5,000–9,999	–	1,494
10,000–24,999	–	13,761
25,000 or more	–	4,390

* = amount < \$500,000; 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 Amounts received from all patent licensing activities during 2014.

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

NOTES: Statistics are representative of companies in the United States that were eligible to receive Form BRDI-1 and performed or funded R&D. 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.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 56. Importance of utility patent, design patent, and trademark intellectual property protections to companies located in the United States that performed or funded R&D, by industry and company size: 2014
(Percent)

Industry and company size	NAICS code	Utility patents			Design patents			Trademarks		
		Very important	Somewhat important	Not important	Very important	Somewhat important	Not important	Very important	Somewhat important	Not important
All industries	21-23, 31-33, 42-81	45.8	17.6	36.6	21.0	24.5	54.6	44.5	31.0	24.5
Manufacturing industries	31-33	54.4	16.8	28.8	27.7	28.3	43.9	52.1	27.9	19.9
Food	311	45.2	12.8	42.0	17.2	34.8	48.0	68.4	18.9	12.7
Beverages and tobacco products	312	29.0	46.1	24.9	20.7	50.3	29.0	79.3	D	D
Textiles, apparel, and leather products	313-16	46.9	22.4	30.6	38.8	30.6	30.6	67.3	26.5	6.1
Wood products	321	37.5	37.5	25.0	25.0	37.5	37.5	68.7	D	D
Paper	322	39.4	24.2	36.4	21.2	18.2	60.6	50.0	34.4	15.6
Printing and related support activities	323	27.7	25.2	47.0	15.1	32.7	52.2	32.7	30.3	37.1
Petroleum and coal products	324	63.2	D	D	21.1	26.3	52.6	68.4	15.8	15.8
Chemicals	325	66.5	12.9	20.5	17.3	23.8	58.9	50.6	27.5	21.9
Basic chemicals	3251	67.1	18.4	14.5	12.1	17.8	70.1	53.8	31.7	14.5
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	58.5	21.3	20.2	18.1	31.9	50.0	60.6	23.4	16.0
Pesticides, fertilizers, and other agricultural chemicals	3253	82.4	D	D	72.4	D	D	D	D	0.0
Pharmaceuticals and medicines	3254	71.2	11.9	16.9	11.7	27.3	61.0	44.1	29.3	26.7
Soaps, cleaning compounds, and toilet preparations	3256	S	8.2	22.8	S	26.8	17.6	S	S	S
Paints, coatings, adhesives, and other chemicals	3255, 3259	34.8	13.1	52.0	10.1	9.1	80.8	42.5	34.3	23.2
Plastics and rubber products	326	44.8	16.1	39.1	28.0	26.8	45.3	47.0	22.9	30.1
Nonmetallic mineral products	327	66.5	19.1	14.4	26.6	22.3	51.1	68.4	24.4	7.2
Primary metals	331	41.7	29.7	28.6	17.4	36.1	46.5	51.7	32.6	15.6
Fabricated metal products	332	30.9	26.4	42.7	21.0	36.4	42.7	30.5	34.0	35.5
Machinery	333	42.6	20.1	37.3	27.4	26.8	45.8	52.6	25.9	21.5
Agricultural implements	33311	44.2	36.3	19.5	33.9	47.0	19.1	48.8	31.1	20.1
Semiconductor machinery	333295	81.6	D	D	31.6	32.7	35.8	54.0	D	D
Engines, turbines, and power transmission equipment	3336	50.0	23.7	26.3	43.4	21.8	34.9	48.6	28.1	23.3
Other machinery	other 333	39.2	19.7	41.0	25.4	25.3	49.4	53.2	24.8	22.1
Computer and electronic products	334	60.3	16.4	23.3	26.9	33.0	40.1	52.5	29.2	18.3
Communications equipment	3342	52.1	11.4	36.6	37.9	28.7	33.3	52.3	13.4	34.3
Semiconductors and other electronic components	3344	64.9	18.1	17.0	21.8	25.9	52.3	40.6	40.8	18.7
Navigational, measuring, electromedical, and control instruments	3345	68.5	14.8	16.6	25.1	34.6	40.3	55.8	32.3	11.9
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	85.1	6.9	8.0	28.0	38.1	33.9	60.3	34.4	5.2
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	60.0	10.6	29.4	30.4	28.3	41.3	62.0	15.2	22.8
Other measuring and controlling devices	other 3345	62.2	19.6	18.2	22.6	34.2	43.2	52.3	34.8	12.9
Other computer and electronic products	other 334	40.4	26.2	33.4	23.6	49.0	27.5	66.2	24.0	9.8
Electrical equipment, appliances, and components	335	59.1	18.0	22.9	47.1	24.2	28.7	51.9	32.0	16.1

TABLE 56. Importance of utility patent, design patent, and trademark intellectual property protections to companies located in the United States that performed or funded R&D, by industry and company size: 2014
(Percent)

Industry and company size	NAICS code	Utility patents			Design patents			Trademarks		
		Very important	Somewhat important	Not important	Very important	Somewhat important	Not important	Very important	Somewhat important	Not important
Transportation equipment	336	46.4	20.0	33.7	38.6	26.1	35.2	46.0	29.0	25.0
Automobiles, bodies, trailers, and parts	3361-63	53.2	17.8	29.0	41.1	28.4	30.6	52.8	24.6	22.6
Aerospace products and parts	3364	31.2	23.2	45.6	32.7	17.4	49.9	29.8	37.9	32.3
Aircraft, aircraft engines, and aircraft parts	336411-13	32.6	23.6	43.8	34.2	17.1	48.6	32.2	40.2	27.6
Guided missiles, space vehicles, and related parts	336414-15, 336419	D	D	60.1	D	D	60.1	D	D	70.0
Military armored vehicles, tanks, and tank components	336992	42.9	D	D	D	42.9	D	D	D	42.9
Other transportation	other 336	48.1	22.1	29.8	41.6	33.1	25.4	52.4	29.8	17.7
Furniture and related products	337	41.4	13.8	44.8	48.3	27.6	24.1	55.2	27.6	17.2
Miscellaneous manufacturing	339	63.3	10.2	26.5	40.1	27.7	32.2	60.2	30.5	9.3
Medical equipment and supplies	3391	65.9	8.0	26.2	39.9	27.3	32.9	56.9	34.5	8.6
Other miscellaneous manufacturing	3399	56.9	15.9	27.2	40.5	28.9	30.6	68.6	20.5	10.9
Nonmanufacturing industries	21-23, 42-81	35.3	18.5	46.2	12.7	19.7	67.6	35.2	34.8	30.0
Mining, extraction, and support activities	21	46.8	6.7	46.5	8.8	33.2	58.0	18.4	18.7	62.9
Utilities	22	33.3	36.4	30.3	9.1	39.4	51.5	45.5	39.4	15.2
Wholesale trade	42	S	S	S	S	S	S	S	S	S
Electronic shopping and electronic auctions	454111-12	S	S	S	D	D	D	D	S	D
Transportation and warehousing	48-49	30.0	D	D	D	D	60.0	30.0	40.0	30.0
Information	51	33.4	21.0	45.7	12.9	23.0	64.1	48.6	37.6	13.7
Publishing	511	29.4	16.6	54.1	8.4	17.2	74.3	46.7	39.5	13.8
Newspaper, periodical, book, and directory publishers	5111	D	S	D	D	D	D	D	D	D
Software publishers	5112	29.4	16.8	53.7	8.1	17.1	74.8	46.2	40.0	13.9
Telecommunications	517	52.5	20.6	26.9	22.5	23.2	54.3	61.2	25.3	13.5
Data processing, hosting, and related services	518	36.0	27.2	36.8	16.4	29.9	53.7	46.8	39.2	14.0
Other information	other 51	32.7	16.4	50.9	17.5	23.5	58.9	63.3	24.3	12.4
Finance and insurance	52	22.2	23.7	54.1	D	D	85.8	49.1	16.6	34.3
Real estate and rental and leasing	53	D	0.0	D	62.5	D	D	37.5	D	D
Lessors of nonfinancial intangible assets (except copyrighted works)	533	D	D	D	D	D	D	D	D	D
Other real estate and rental and leasing	other 53	D	0.0	D	D	D	D	50.0	D	D
Professional, scientific, and technical services	54	35.4	17.6	47.0	11.3	17.0	71.7	26.9	35.8	37.3
Architectural, engineering, and related services	5413	22.0	24.3	53.6	13.9	13.2	72.9	17.0	33.0	50.0
Computer systems design and related services	5415	13.1	25.2	61.7	4.7	16.8	78.5	26.5	40.5	33.0
Scientific R&D services	5417	60.7	12.0	27.3	15.1	20.5	64.4	26.8	39.5	33.7
Biotechnology R&D	541711	75.5	5.3	19.2	18.7	10.0	71.3	28.4	40.1	31.5
Physical, engineering, and life sciences (except biotechnology) R&D	541712	56.9	14.3	28.9	14.1	24.2	61.6	26.6	39.8	33.6
Social sciences and humanities R&D	541720	24.2	12.1	63.6	D	D	76.1	16.2	24.2	59.6
Other professional, scientific, and technical services	other 54	21.7	11.6	66.7	12.6	9.9	77.4	36.0	17.0	47.0

TABLE 56. Importance of utility patent, design patent, and trademark intellectual property protections to companies located in the United States that performed or funded R&D, by industry and company size: 2014
(Percent)

Industry and company size	NAICS code	Utility patents			Design patents			Trademarks		
		Very important	Somewhat important	Not important	Very important	Somewhat important	Not important	Very important	Somewhat important	Not important
Health care services	621–23	58.0	8.6	33.4	D	D	48.9	52.8	20.1	27.0
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	24.6	24.7	50.7	10.8	32.0	57.2	38.1	25.7	36.3
All companies (number of domestic employees)	–	45.8	17.6	36.6	21.0	24.5	54.6	44.5	31.0	24.5
Small companies ^a										
5–499	–	42.7	16.9	40.3	19.8	22.1	58.1	39.7	32.7	27.6
5–99	–	43.2	16.2	40.6	17.9	20.0	62.2	36.3	33.8	29.9
5–49	–	46.7	14.9	38.4	17.1	20.4	62.5	34.2	34.5	31.3
5–9	–	62.3	11.0	26.6	11.1	30.6	58.3	29.3	41.5	29.2
10–24	–	47.4	16.9	35.7	21.4	17.4	61.2	35.4	34.4	30.2
25–49	–	38.4	14.5	47.1	14.9	19.0	66.1	35.2	31.2	33.6
50–99	–	35.0	19.3	45.7	19.7	18.9	61.3	41.1	32.3	26.6
100–249	–	38.5	18.1	43.4	21.0	26.0	53.0	42.3	31.2	26.5
250–499	–	47.5	18.6	33.8	27.7	26.3	46.0	52.5	29.3	18.2
Medium and large companies										
500–999	–	49.2	24.9	25.9	23.2	32.7	44.1	54.4	29.8	15.8
1,000–4,999	–	57.8	18.7	23.6	24.9	34.2	40.9	63.5	25.1	11.4
5,000–9,999	–	66.7	17.4	15.9	32.6	27.5	39.9	72.0	16.4	11.5
10,000–24,999	–	77.2	8.5	14.4	24.9	44.1	30.9	78.6	17.6	3.8
25,000 or more	–	70.2	18.5	11.2	30.6	31.8	37.6	82.0	11.7	6.3

D = data withheld to avoid disclosing operations of individual companies; S = data withheld as more than 50% of the estimate is a combination of imputation and reweighting to account for nonresponse.

NAICS = 2012 North American Industry Classification System.

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

NOTES: Statistics are representative of companies in the United States that were eligible to receive Form BRDI-1 and performed or funded R&D. These statistics are not comparable to estimates prior to 2012 because those estimates are representative of all companies in the United States. 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.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 57. Importance of copyright, trade secret, and mask work intellectual property protections to companies located in the United States that performed or funded R&D, by industry and company size: 2014

(Percent)

Industry and company size	NAICS code	Copyrights			Trade secrets			Mask works		
		Very important	Somewhat important	Not important	Very important	Somewhat important	Not important	Very important	Somewhat important	Not important
All industries	21-23, 31-33, 42-81	28.4	31.5	40.2	58.8	22.8	18.4	5.5	8.8	85.7
Manufacturing industries	31-33	29.8	33.8	36.4	64.4	21.2	14.5	7.2	10.2	82.5
Food	311	39.9	28.3	31.8	77.9	12.4	9.8	D	D	96.8
Beverages and tobacco products	312	42.0	29.0	29.0	75.1	D	D	0.0	13.6	86.4
Textiles, apparel, and leather products	313-16	38.8	36.7	24.5	58.7	23.9	17.4	D	0.0	D
Wood products	321	D	D	31.3	62.5	18.8	18.8	0.0	0.0	100.0
Paper	322	18.2	33.3	48.5	69.7	18.2	12.1	D	0.0	D
Printing and related support activities	323	32.7	22.7	44.6	69.7	15.1	15.1	0.0	12.5	87.5
Petroleum and coal products	324	26.3	52.6	21.1	73.7	D	D	0.0	0.0	100.0
Chemicals	325	22.1	36.7	41.2	69.4	17.6	13.0	3.1	5.5	91.4
Basic chemicals	3251	25.5	39.3	35.2	81.8	10.4	7.8	3.7	4.4	92.0
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	25.0	32.6	42.4	76.8	11.1	12.1	D	D	85.1
Pesticides, fertilizers, and other agricultural chemicals	3253	63.5	23.0	13.5	D	D	0.0	0.0	0.0	100.0
Pharmaceuticals and medicines	3254	16.6	37.2	46.2	63.1	22.3	14.6	3.1	5.9	90.9
Soaps, cleaning compounds, and toilet preparations	3256	S	S	S	S	S	S	D	S	D
Paints, coatings, adhesives, and other chemicals	3255, 3259	10.1	48.5	41.4	75.7	5.9	18.3	D	D	89.9
Plastics and rubber products	326	20.1	27.6	52.2	56.9	23.1	20.0	2.6	4.8	92.7
Nonmetallic mineral products	327	15.4	21.5	63.1	64.8	D	D	6.1	6.1	87.7
Primary metals	331	27.4	36.9	35.7	60.8	28.4	10.8	7.0	9.1	83.9
Fabricated metal products	332	14.4	36.0	49.7	42.2	33.4	24.4	2.5	13.9	83.6
Machinery	333	34.2	30.6	35.2	60.8	22.1	17.1	4.1	8.5	87.5
Agricultural implements	33311	30.7	35.8	33.5	41.9	35.4	22.7	D	D	79.8
Semiconductor machinery	333295	34.4	29.0	36.6	82.3	D	D	27.9	12.0	60.1
Engines, turbines, and power transmission equipment	3336	23.7	47.5	28.8	64.7	24.6	10.7	D	D	D
Other machinery	other 333	35.3	28.9	35.8	60.4	21.9	17.7	2.6	7.8	89.6
Computer and electronic products	334	37.2	32.2	30.5	70.1	19.8	10.1	18.1	16.3	65.6
Communications equipment	3342	40.7	16.9	42.4	53.0	27.4	19.6	16.1	10.7	73.2
Semiconductors and other electronic components	3344	26.3	43.4	30.3	72.6	22.8	4.6	35.2	27.4	37.3
Navigational, measuring, electromedical, and control instruments	3345	34.9	36.7	28.4	76.5	14.6	8.9	12.6	12.3	75.2
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	37.5	31.8	30.7	79.5	14.2	6.3	13.8	16.9	69.4
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	41.5	29.1	29.4	88.1	D	D	13.2	10.6	76.2
Other measuring and controlling devices	other 3345	32.3	40.7	27.0	72.7	16.7	10.7	11.8	10.4	77.8
Other computer and electronic products	other 334	59.6	22.9	17.5	74.3	17.0	8.7	5.0	16.1	78.9
Electrical equipment, appliances, and components	335	35.9	35.0	29.1	64.9	18.3	16.8	6.9	27.6	65.5

TABLE 57. Importance of copyright, trade secret, and mask work intellectual property protections to companies located in the United States that performed or funded R&D, by industry and company size: 2014
(Percent)

Industry and company size	NAICS code	Copyrights			Trade secrets			Mask works		
		Very important	Somewhat important	Not important	Very important	Somewhat important	Not important	Very important	Somewhat important	Not important
Transportation equipment	336	30.5	23.4	46.0	60.4	16.6	23.1	4.4	11.9	83.8
Automobiles, bodies, trailers, and parts	3361-63	40.3	22.7	37.0	60.5	19.5	20.1	6.3	8.0	85.6
Aerospace products and parts	3364	12.6	22.0	65.4	62.4	8.0	29.6	0.0	20.9	79.1
Aircraft, aircraft engines, and aircraft parts	336411-13	14.2	21.0	64.8	62.8	7.7	29.5	0.0	22.3	77.7
Guided missiles, space vehicles, and related parts	336414-15, 336419	0.0	30.0	70.0	59.9	D	D	0.0	D	D
Military armored vehicles, tanks, and tank components	336992	D	D	57.1	42.9	D	D	0.0	D	D
Other transportation	other 336	25.3	29.8	44.9	57.5	22.2	20.2	D	D	87.0
Furniture and related products	337	37.9	44.8	17.2	37.9	31.0	31.0	D	D	89.7
Miscellaneous manufacturing	339	32.7	45.5	21.8	61.4	29.2	9.3	12.4	6.7	80.9
Medical equipment and supplies	3391	32.6	45.4	22.0	59.1	31.5	9.4	16.2	6.7	77.1
Other miscellaneous manufacturing	3399	33.0	45.5	21.4	67.3	23.4	9.2	3.0	6.7	90.3
Nonmanufacturing industries	21-23, 42-81	26.6	28.6	44.8	52.0	24.8	23.2	3.3	7.1	89.6
Mining, extraction, and support activities	21	8.1	20.1	71.8	51.9	42.9	5.2	D	D	92.9
Utilities	22	24.2	63.6	12.1	45.5	30.3	24.2	D	D	72.7
Wholesale trade	42	S	S	S	S	S	S	S	D	D
Electronic shopping and electronic auctions	454111-12	D	D	D	S	D	D	S	D	D
Transportation and warehousing	48-49	D	D	40.0	30.0	D	D	0.0	0.0	100.0
Information	51	42.6	30.2	27.2	52.7	31.2	16.1	2.7	9.0	88.3
Publishing	511	43.1	23.8	33.1	54.9	33.5	11.6	1.4	5.3	93.2
Newspaper, periodical, book, and directory publishers	5111	D	D	D	D	D	D	S	S	S
Software publishers	5112	42.5	24.0	33.5	55.4	33.9	10.8	1.4	5.4	93.1
Telecommunications	517	50.4	22.2	27.4	52.5	23.9	23.6	14.7	18.6	66.7
Data processing, hosting, and related services	518	38.5	40.4	21.1	52.0	30.6	17.4	1.9	12.2	85.8
Other information	other 51	56.3	22.8	20.9	41.2	24.3	34.4	7.5	9.9	82.6
Finance and insurance	52	16.6	44.6	38.8	42.7	23.2	34.0	0.0	0.0	100.0
Real estate and rental and leasing	53	37.5	D	D	50.0	D	D	0.0	D	D
Lessors of nonfinancial intangible assets (except copyrighted works)	533	D	D	D	D	D	D	D	D	D
Other real estate and rental and leasing	other 53	50.0	D	D	D	50.0	D	0.0	D	D
Professional, scientific, and technical services	54	19.3	26.3	54.4	51.9	20.5	27.7	3.7	5.8	90.5
Architectural, engineering, and related services	5413	18.4	15.0	66.6	46.9	11.8	41.3	2.7	7.0	90.3
Computer systems design and related services	5415	24.7	38.2	37.1	41.7	20.4	37.9	2.2	3.9	93.9
Scientific R&D services	5417	15.5	23.9	60.6	57.8	24.2	18.0	5.9	7.7	86.3
Biotechnology R&D	541711	22.5	27.8	49.7	63.0	26.9	10.1	9.0	3.3	87.7
Physical, engineering, and life sciences (except biotechnology) R&D	541712	13.1	22.5	64.4	56.8	23.6	19.6	4.9	9.2	85.8
Social sciences and humanities R&D	541720	16.2	28.3	55.6	36.0	16.2	47.8	D	D	87.9
Other professional, scientific, and technical services	other 54	19.1	16.2	64.7	60.9	16.5	22.6	1.4	3.6	95.0

TABLE 57. Importance of copyright, trade secret, and mask work intellectual property protections to companies located in the United States that performed or funded R&D, by industry and company size: 2014
(Percent)

Industry and company size	NAICS code	Copyrights			Trade secrets			Mask works		
		Very important	Somewhat important	Not important	Very important	Somewhat important	Not important	Very important	Somewhat important	Not important
Health care services	621–23	14.0	52.0	34.0	69.4	8.8	21.9	0.0	D	D
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	28.2	28.4	43.4	46.6	28.0	25.3	4.9	12.8	82.3
All companies (number of domestic employees)	–	28.4	31.5	40.2	58.8	22.8	18.4	5.5	8.8	85.7
Small companies ^a										
5–499	–	27.3	28.7	44.0	57.1	23.1	19.8	5.8	7.9	86.4
5–99	–	26.2	26.9	47.0	56.8	22.1	21.1	6.5	7.9	85.7
5–49	–	23.2	25.9	50.9	57.5	20.3	22.3	6.3	8.1	85.6
5–9	–	15.5	34.1	50.4	56.5	24.4	19.1	5.4	4.6	89.9
10–24	–	25.1	20.6	54.3	61.3	19.3	19.4	7.7	10.9	81.4
25–49	–	24.7	28.1	47.1	53.6	19.5	27.0	5.2	6.6	88.2
50–99	–	32.9	29.0	38.1	55.4	26.1	18.5	6.8	7.4	85.8
100–249	–	29.3	30.0	40.8	56.9	25.2	17.9	3.9	7.4	88.7
250–499	–	29.7	36.0	34.3	59.0	24.7	16.4	5.4	8.6	86.0
Medium and large companies										
500–999	–	27.6	42.4	30.0	56.9	26.4	16.7	5.8	13.9	80.3
1,000–4,999	–	31.5	40.8	27.7	67.3	20.9	11.8	3.1	12.0	84.9
5,000–9,999	–	33.5	49.3	17.2	67.2	19.9	13.0	5.3	11.7	83.0
10,000–24,999	–	45.7	42.3	12.0	78.7	13.0	8.3	2.7	10.3	86.9
25,000 or more	–	50.5	37.1	12.4	77.5	13.4	9.1	6.9	9.1	84.0

D = data withheld to avoid disclosing operations of individual companies; S = data withheld as more than 50% of the estimate is a combination of imputation and reweighting to account for nonresponse.

NAICS = 2012 North American Industry Classification System.

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

NOTES: Statistics are representative of companies in the United States that were eligible to receive Form BRDI-1 and performed or funded R&D. These statistics are not comparable to estimates prior to 2012 because those estimates are representative of all companies in the United States. 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.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 58. Companies located in the United States that performed or funded R&D and engaged in intellectual property transfer activities, by type of activity and industrial sector: 2014

(Number)

Type of intellectual property (IP) transfer activity	Industrial sector		
	All	Manufacturing	Nonmanufacturing
Transferred IP to others not owned by your company through participation in technical assistance or "know-how" agreements	662	382	280
Received IP from others not owned by your company through participation in technical assistance or "know-how" agreements	797	518	279
Transferred IP to a spin-off or spin-out of your company	170	104	66
Received IP from a parent company as part of a spin-off or spin-out	49	37	12
Acquired more than 50% ownership in another company for the primary purpose of acquiring that company's IP	175	108	67
Acquired any financial interest in another company in to gain access to that company's IP	174	104	70
Participated in cross-licensing agreements—the agreements in which two or more parties grant a license to each other for the use of the subject matter claimed in one or more of the patents owned by each party	561	351	210
Allowed free use of patents or other IP owned by your company (e.g., allowing free use of software patents by the open-source community)	211	114	97
Made use of open-source patents or other freely available IP not owned by your company	1,598	578	1,021

NOTES: Statistics are representative of companies in the United States that were eligible to receive Form BRDI-1 and performed or funded R&D. Industrial sector 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.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 59. R&D costs paid for by the company and others projected for 2015, by industry and company size: 2014

(Millions of U.S. dollars)

Industry and company size	NAICS code	Projected worldwide R&D cost		Projected domestic R&D cost						Projected foreign R&D cost paid for by the company
		Paid for by the company	Paid for by others	Paid for by the company			Paid for by others			
				Total	Purchased and collaborative R&D	R&D performed by the company	Total	U.S. government	Non-U.S. government sources	
All industries	21-23, 31-33, 42-81	424,439	63,796	344,818	31,644	313,174	53,534	23,091 i	30,443	79,621
Manufacturing industries	31-33	295,629	41,487	235,364	27,190	208,174	36,785	16,657 i	20,127	60,265
Food	311	7,083 i	237	5,834 i	569 i	5,265 i	237	*	236	1,250
Beverages and tobacco products	312	1,688	D	1,028	181	846	D	* i	D	660
Textiles, apparel, and leather products	313-16	766	16 i	680	20	660	16 i	12 i	4 i	85
Wood products	321	394 i	9 i	385 i	9 i	376 i	8 i	* i	8 i	9 i
Paper	322	1,358 i	10	1,179 i	9 i	1,170 i	9	6	3 i	179
Printing and related support activities	323	262	3 i	257	8 i	249 i	2 i	* i	2 i	5
Petroleum and coal products	324	352	5	250	42	208	4	1 i	4	102
Chemicals	325	103,330	13,516	83,373	18,844	64,529	11,014	726 i	10,289 i	19,956
Basic chemicals	3251	3,709	356 i	2,754	238	2,516	348 i	79 i	269 i	955
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	2,106	27	1,339	112	1,227	19 i	15 i	5	766
Pesticides, fertilizers, and other agricultural chemicals	3253	1,807 i	466	1,518 i	29 i	1,489 i	461	8 i	453	289 i
Pharmaceuticals and medicines	3254	89,790	12,597	73,311	18,135	55,177	10,121	583	9,538 i	16,478
Soaps, cleaning compounds, and toilet preparations	3256	4,135	20 i	2,998	313	2,685	20 i	15 i	5 i	1,137
Paints, coatings, adhesives, and other chemicals	3255, 3259	1,783 i	50	1,452 i	17	1,435 i	45	26	19 i	331 i
Plastics and rubber products	326	4,848	175	3,786	151	3,635	154 i	3 i	151 i	1,062
Nonmetallic mineral products	327	921	26	878	150 i	728	25	8 i	18	43
Primary metals	331	761 i	123 i	702 i	59 i	643 i	72 i	32 i	40 i	59
Fabricated metal products	332	2,208	118 i	1,986 i	155 i	1,831 i	89 i	24 i	65 i	222
Machinery	333	15,775	794 i	13,012	536	12,477	719 i	82 i	637 i	2,763
Agricultural implements	33311	2,368	52	1,913	276	1,637	38	* i	37	455
Semiconductor machinery	333295	3,467	127 i	2,940	1 i	2,939	113 i	5 i	108 i	527
Engines, turbines, and power transmission equipment	3336	3,392	69	2,800	25	2,775	55 i	37 i	18	592
Other machinery	other 333	6,548	547 i	5,359	234 i	5,125	513 i	40 i	474 i	1,189
Computer and electronic products	334	92,190 i	9,931	72,574 i	2,306 i	70,268 i	9,410	4,812	4,597	19,615
Communications equipment	3342	23,790 i	1,170 i	19,825 i	943 i	18,882 i	1,132 i	786 i	345 i	3,965
Semiconductors and other electronic components	3344	42,309	2,730	31,363	565	30,798 i	2,625	219	2,406	10,946

TABLE 59. R&D costs paid for by the company and others projected for 2015, by industry and company size: 2014

(Millions of U.S. dollars)

Industry and company size	NAICS code	Projected worldwide R&D cost		Projected domestic R&D cost						Projected foreign R&D cost paid for by the company
		Paid for by the company	Paid for by others	Paid for by the company			Paid for by others			
				Total	Purchased and collaborative R&D	R&D performed by the company	Total	U.S. government	Non-U.S. government sources	
Navigational, measuring, electromedical, and control instruments	3345	13,955	5,698	11,445	602	10,843	5,408	3,683	1,725	2,510
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	4,996 i	243	4,215 i	303	3,912 i	221	65	156	781 i
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	3,713	5,088	3,219	221	2,998	4,891	3,563	1,328	494
Other measuring and controlling devices	other 3345	5,246 i	367	4,011 i	77 i	3,933 i	296	55 i	241	1,235 i
Other computer and electronic products	other 334	12,136 i	333 i	9,941 i	196	9,745 i	245 i	124 i	121 i	2,195 i
Electrical equipment, appliances, and components	335	6,294	215 i	4,763	184	4,579	194 i	68 i	126 i	1,531
Transportation equipment	336	41,096	15,877 i	30,484	3,304	27,180	14,432 i	10,805 i	3,628	10,612
Automobiles, bodies, trailers, and parts	3361-63	26,878	3,127	17,943	2,515	15,428	2,494	159 i	2,335	8,934
Aerospace products and parts	3364	12,925	11,562 i	11,335	762	10,573	10,939 i	9,941 i	998	1,589
Aircraft, aircraft engines, and aircraft	336411-13	12,508	D	10,920	693	10,228	D	D	D	1,587
Guided missiles, space vehicles, and related parts	336414-15, 336419	417	D	415	70	345	D	D	D	2 i
Military armored vehicles, tanks, and tank components	336992	17	11	11	*	11	11	6	5	6
Other transportation	other 336	1,277	1,177 i	1,195	27	1,168	988 i	699 i	289 i	83
Furniture and related products	337	460	4 i	415	11	404	4 i	2 i	2 i	45
Miscellaneous manufacturing	339	15,843	D	13,778	652	13,126	D	78 i	D	2,065
Medical equipment and supplies	3391	12,469	259	10,839	414	10,425	237	57 i	180 i	1,630
Other miscellaneous manufacturing	3399	3,374	D	2,939	238	2,701	D	21 i	D	435
Nonmanufacturing industries	21-23, 42-81	128,810	22,309	109,454	4,454	105,000 i	16,749	6,433	10,316	19,356
Mining, extraction, and support activities	21	3,873	825	3,492	305	3,187	677	1	675	381
Utilities	22	524	52	522	169	353	42	37	5	3
Wholesale trade	42	465 i	23 i	431 i	56 i	374 i	14 i	*	13 i	35 i
Electronic shopping and electronic auctions	454111-12	D	0	D	0	D	0	0	0	D
Transportation and warehousing	48-49	422 i	1	404 i	21 i	383 i	1	0	1	18
Information	51	81,482	1,518	67,163	1,840	65,324	1,434	174	1,260	14,319
Publishing	511	45,832	1,341	34,897	1,355	33,542	1,267	111	1,156	10,935
Newspaper, periodical, book, and directory publishers	5111	110 i	0	105 i	8 i	97 i	0	0	0	5 i
Software publishers	5112	45,722	1,341	34,792	1,347	33,445	1,267	111	1,156	10,930
Telecommunications	517	4,386	12	4,338	300 i	4,037	11	8	4 i	49

TABLE 59. R&D costs paid for by the company and others projected for 2015, by industry and company size: 2014

(Millions of U.S. dollars)

Industry and company size	NAICS code	Projected worldwide R&D cost		Projected domestic R&D cost						Projected foreign R&D cost paid for by the company
		Paid for by the company	Paid for by others	Paid for by the company			Paid for by others			
				Total	Purchased and collaborative R&D	R&D performed by the company	Total	U.S. government	Non-U.S. government sources	
Data processing, hosting, and related services	518	11,211	103	9,878	165	9,713	96	55	42	1,333
Other information	other 51	20,052 i	63	18,050 i	20 i	18,031 i	60	1 i	59	2,002 i
Finance and insurance	52	4,676	49	4,061	441	3,620	1	0	1	615
Real estate and rental and leasing	53	429	0	424	1	423	0	0	0	5
Lessors of nonfinancial intangible assets (except copyrighted works)	533	8	0	8	* i	8 i	0	0	0	*
Other real estate and rental and leasing	other 53	421	0	416	1	416	0	0	0	4
Professional, scientific, and technical services	54	24,211 i	19,685	21,801 i	1,586 i	20,215 i	14,444	6,199	8,245	2,411 i
Architectural, engineering, and related services	5413	1,598 i	2,339	1,566 i	45 i	1,521 i	2,302	1,879	423	32
Computer systems design and related services	5415	12,137 i	2,441 i	10,455 i	186 i	10,269 i	2,282 i	580 i	1,702 i	1,682 i
Scientific R&D services	5417	6,591 i	14,277	6,332 i	1,299 i	5,033 i	9,265	3,396	5,869	259
Biotechnology R&D	541711	1,685	3,910	1,547 i	397 i	1,150 i	D	246 i	D	139
Physical, engineering, and life sciences (except biotechnology) R&D	541712	4,839 i	9,568	4,723 i	881 i	3,841 i	6,233	2,545	3,688	117
Social sciences and humanities R&D	541720	66	799	62	21	41	D	604	D	4 i
Other professional, scientific, and technical services	other 54	3,886 i	628	3,448 i	56	3,392 i	595	345	250	438 i
Health care services	621–23	549 i	77 i	546 i	16 i	530 i	77 i	5 i	72 i	2
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	D	80	D	19 i	D	60	17	42	D
All companies (number of domestic employees)	–	424,439	63,796	344,818	31,644	313,174	53,534	23,091 i	30,443	79,621
Small companies ^a										
5–499	–	69,426 i	13,890 i	64,213 i	6,728	57,485 i	12,250 i	4,212	8,038 i	5,213
5–99	–	39,319 i	8,630 i	37,345 i	4,420	32,924 i	7,584 i	2,400 i	5,183 i	1,975
5–49	–	26,365 i	5,546 i	25,302 i	2,794 i	22,508 i	4,888 i	1,760 i	3,128 i	1,064
5–9	–	6,256 i	956 i	6,081 i	637 i	5,443 i	787 i	369 i	419 i	175
10–24	–	9,668 i	1,876 i	9,239 i	1,149	8,090 i	1,694 i	742 i	952 i	429 i
25–49	–	10,442 i	2,713 i	9,982 i	1,007	8,975 i	2,406 i	649	1,757 i	459
50–99	–	12,954 i	3,085 i	12,043 i	1,627	10,416 i	2,696 i	640 i	2,055 i	911
100–249	–	16,304	2,964	14,517	1,325 i	13,192	2,637	1,177	1,459	1,786
250–499	–	13,803	2,296	12,350	982	11,368	2,029	634	1,395	1,452
Medium and large companies										
500–999	–	17,878	1,838	15,433	888	14,545	1,707	341 i	1,366	2,446
1,000–4,999	–	74,491	11,162	59,342	4,541	54,801	9,311	1,875	7,437	15,149

TABLE 59. R&D costs paid for by the company and others projected for 2015, by industry and company size: 2014

(Millions of U.S. dollars)

Industry and company size	NAICS code	Projected worldwide R&D cost		Projected domestic R&D cost						Projected foreign R&D cost paid for by the company
		Paid for by the company	Paid for by others	Paid for by the company			Paid for by others			
				Total	Purchased and collaborative R&D	R&D performed by the company	Total	U.S. government	Non-U.S. government sources	
5,000–9,999	–	44,571	12,921	34,099	2,444	31,654	8,249	1,332 i	6,917	10,472
10,000–24,999	–	66,080	7,705	53,329	6,689	46,640	7,309	3,794	3,514	12,751
25,000 or more	–	151,993	16,280 i	118,403	10,354	108,049 i	14,708 i	11,537 i	3,171	33,591

* = amount < \$500,000; 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 Upper bound is based on the U.S. Small Business Administration's definition of a small business; the Business R&D and Innovation Survey does not include companies with fewer than five domestic employees.

NOTES: 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.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 60. Companies that introduced new or significantly improved products, by industry, industry proportions, and company size: 2012–14
(Number and percent)

Industry and NAICS code	Companies (number) ^a	New or significantly improved products or		New or significantly improved products							
		processes		Companies (number) ^b	Any good or service		New goods		New services		
		Yes	No		Yes ^c	No ^d	Yes	No	Yes	No	
All industries	21–23, 31–33, 42–81	1,273,330	196,623	1,076,707	1,266,982	118,894	1,148,088	70,709	1,197,353	89,115	1,177,993
Manufacturing industries	31–33	104,217	33,391	70,826	103,517	23,793	79,724	21,341	82,169	10,795	92,393
Food	311	9,148	2,717	6,431	9,116	1,717	7,398	1,637	7,504	664	8,430
Beverages and tobacco products	312	1,809	665	1,144	1,797	435	1,362	431	1,378	206	1,590
Textiles, apparel, and leather products	313–316	4,006	1,064	2,943	3,954	607	3,347	512	3,446	303	3,639
Wood products	321	4,848	752	4,096	4,797	482	4,315	400	4,398	247	4,585
Paper	322	1,163	326	836	1,162	211	951	199	963	87	1,058
Printing and related support activities	323	8,080	1,846	6,234	8,024	1,066	6,957	722	7,279	929	7,086
Petroleum and coal products	324	393	144	249	393	110	283	110	283	17	368
Chemicals	325	5,022	2,043	2,979	5,012	1,700	3,312	1,639	3,366	753	4,249
Basic chemicals	3251	595	270	325	595	210	385	210	385	111	482
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	472	160	312	472	148	323	145	327	58	408
Pesticides, fertilizers, and other agricultural chemicals	3253	264	82	183	264	67	197	66	198	39	226
Pharmaceuticals and medicines	3254	1,336	586	750	1,333	503	830	473	851	278	1,057
Soaps, cleaning compounds, and toilet preparations	3256	851	391	460	848	358	490	346	505	141	705
Paints, coatings, adhesives, and other chemicals	3255, 3259	1,504	555	950	1,500	413	1,087	400	1,100	127	1,371
Plastics and rubber products	326	5,082	1,717	3,365	5,073	1,235	3,838	1,095	3,981	622	4,430
Nonmetallic mineral products	327	4,476	1,057	3,420	4,455	656	3,799	527	3,943	297	4,085
Primary metals	331	1,715	400	1,315	1,709	217	1,492	185	1,529	93	1,606
Fabricated metal products	332	22,080	5,942	16,139	21,800	3,611	18,189	3,106	18,644	1,701	20,231
Machinery	333	10,759	4,427	6,332	10,667	3,525	7,142	3,130	7,536	1,404	9,193
Agricultural implements	33311	463	204	258	463	193	270	193	270	96	354
Semiconductor machinery	333295	96	83	13	96	82	14	81	15	16	78
Engines, turbines, and power transmission equipment	3336	346	91	255	344	72	272	66	277	17	310
Other machinery	other 333	9,854	4,049	5,805	9,764	3,178	6,586	2,789	6,974	1,275	8,452
Computer and electronic products	334	5,146	2,823	2,323	5,121	2,406	2,715	2,251	2,890	882	4,168
Communications equipment	3342	616	367	249	615	346	269	336	279	114	500
Semiconductors and other electronic components	3344	1,707	785	922	1,706	525	1,181	484	1,219	173	1,489
Navigational, measuring, electromedical, and control instruments	3345	2,021	1,125	896	2,015	1,012	1,003	960	1,060	303	1,695
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	434	154	280	432	120	312	117	318	36	391
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	209	59	149	209	46	163	40	168	18	191
Other measuring and controlling devices	other 3345	1,378	911	467	1,374	846	528	803	574	250	1,114
Other computer and electronic products	other 334	803	546	257	786	524	262	471	332	293	484
Electrical equipment, appliances, and components	335	2,884	1,485	1,399	2,880	1,348	1,533	1,315	1,548	533	2,320
Transportation equipment	336	4,018	1,637	2,380	4,016	1,287	2,729	1,180	2,836	516	3,488
Automobiles, bodies, trailers, and parts	3361–63	2,525	1,017	1,508	2,525	816	1,710	718	1,807	311	2,211
Aerospace products and parts	3364	739	288	451	739	184	555	180	559	75	661
Aircraft, aircraft engines, and aircraft parts	336411–13	714	274	440	714	172	542	168	546	71	641

TABLE 60. Companies that introduced new or significantly improved products, by industry, industry proportions, and company size: 2012–14
(Number and percent)

Industry and NAICS code	Companies (number) ^a	New or significantly improved products or processes		Companies (number) ^b	New or significantly improved products						
		Yes	No		Any good or service		New goods		New services		
					Yes ^c	No ^d	Yes	No	Yes	No	
Guided missiles, space vehicles, and related parts	336414–15, 336419	25	14	11	25	12	13	12	13	4	20
Military armored vehicles, tanks, and tank components	336992	64	11	53	64	6	58	6	58	D	D
Other transportation	other 336	689	321	368	687	281	407	275	412	D	D
Furniture and related products	337	5,341	1,373	3,969	5,318	888	4,429	777	4,556	454	4,812
Miscellaneous manufacturing	339	8,247	2,974	5,272	8,225	2,292	5,933	2,128	6,089	1,088	7,055
Medical equipment and supplies	3391	2,649	1,149	1,501	2,632	908	1,724	829	1,794	496	2,123
Other miscellaneous manufacturing	3399	5,597	1,826	3,771	5,593	1,384	4,209	1,298	4,295	592	4,932
Nonmanufacturing industries	21–23, 42–81	1,169,113	163,232	1,005,881	1,163,466	95,102	1,068,364	49,368	1,115,184	78,319	1,085,601
Mining, extraction, and support activities	21	6,884	682	6,202	6,884	434	6,450	339	6,544	388	6,497
Utilities	22	865	129	736	865	104	761	91	774	100	764
Wholesale trade	42	87,724	18,365	69,358	87,298	11,753	75,545	9,810	77,512	6,843	80,097
Electronic shopping and electronic auctions	454111–12	3,182	718	2,464	3,148	406	2,742	330	2,840	193	2,967
Transportation and warehousing	48–49	36,759	4,636	32,123	36,507	1,574	34,932	319	36,439	1,518	34,989
Information	51	18,082	5,974	12,108	18,061	4,655	13,406	2,636	15,416	3,743	14,317
Publishing	511	6,559	2,160	4,399	6,541	1,741	4,800	1,401	5,146	1,150	5,391
Newspaper, periodical, book, and directory publishers	5111	4,170	564	3,606	4,155	284	3,871	132	4,028	225	3,929
Software publishers	5112	2,389	1,596	793	2,386	1,458	929	1,269	1,117	925	1,462
Telecommunications	517	2,980	1,058	1,922	2,980	839	2,141	245	2,735	762	2,219
Data processing, hosting, and related services	518	2,884	1,347	1,537	2,883	1,189	1,694	666	2,206	1,110	1,771
Other information	other 51	5,659	1,408	4,251	5,657	886	4,771	323	5,329	722	4,936
Finance and insurance	52	40,875	6,080	34,795	40,324	3,477	36,847	528	39,848	3,474	37,099
Real estate and rental and leasing	53	37,481	3,133	34,349	37,481	1,766	35,716	527	36,955	1,509	35,971
Lessors of nonfinancial intangible assets (except copyrighted works)	533	296	249	47	296	242	54	9	287	238	58
Other real estate and rental and leasing	other 53	37,185	2,884	34,302	37,185	1,524	35,662	518	36,668	1,271	35,913
Professional, scientific, and technical services	54	142,038	26,143	115,895	140,599	17,699	122,900	8,216	133,036	15,263	125,373
Architectural, engineering, and related services	5413	23,451	4,699	18,752	23,448	3,597	19,852	1,482	21,945	3,042	20,402
Computer systems design and related services	5415	19,947	7,349	12,598	19,902	6,186	13,716	4,081	15,854	5,443	14,445
Scientific R&D services	5417	2,650	1,161	1,489	2,639	998	1,641	816	1,820	551	2,075
Biotechnology R&D	541711	612	334	278	611	295	316	215	391	215	390
Physical, engineering, and life sciences (except biotechnology) R&D	541712	1,846	782	1,064	1,836	666	1,170	585	1,257	302	1,527
Social sciences and humanities R&D	541720	192	46	146	192	37	155	17	173	34	158
Other professional, scientific, and technical services	other 54	95,989	12,933	83,056	94,610	6,919	87,691	1,836	93,416	6,227	88,451
Health care services	621–23	158,299	27,427	130,873	157,545	14,073	143,472	1,787	155,507	13,572	143,976
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	636,924	69,947	566,977	634,752	39,160	595,593	24,785	610,314	31,716	603,552
All companies (number of domestic employees)	–	1,273,330	196,623	1,076,707	1,266,982	118,894	1,148,088	70,709	1,197,353	89,115	1,177,993
Small companies ^e 5–499	–	1,263,029	194,201	1,068,828	1,256,691	117,212	1,139,479	69,318	1,188,456	88,218	1,168,607

TABLE 60. Companies that introduced new or significantly improved products, by industry, industry proportions, and company size: 2012–14
(Number and percent)

Industry and NAICS code	Companies (number) ^a	New or significantly improved products or processes		Companies (number) ^b	New or significantly improved products						
		Yes	No		Any good or service		New goods		New services		
					Yes ^c	No ^d	Yes	No	Yes	No	
5–99	– 1,210,710	184,337	1,026,373	1,204,639	111,059	1,093,580	64,964	1,140,906	84,787	1,120,024	
5–49	– 1,133,128	169,508	963,619	1,127,700	101,811	1,025,889	58,029	1,070,832	79,018	1,048,955	
5–9	– 495,222	66,263	428,959	492,237	39,019	453,218	18,011	474,422	31,749	460,661	
10–24	– 463,289	72,785	390,503	461,310	43,223	418,087	27,390	434,625	32,900	428,589	
25–49	– 174,616	30,460	144,156	174,153	19,569	154,583	12,627	161,785	14,369	159,704	
50–99	– 77,583	14,829	62,754	76,939	9,248	67,691	6,935	70,075	5,769	71,069	
100–249	– 41,903	7,412	34,491	41,655	4,142	37,513	3,104	38,648	2,168	39,463	
250–499	– 10,415	2,452	7,963	10,396	2,011	8,385	1,250	8,901	1,264	9,121	
Medium and large companies											
500–999	– 4,995	1,057	3,937	4,992	649	4,343	578	4,411	300	4,688	
1,000–4,999	– 4,218	934	3,285	4,212	646	3,567	518	3,695	350	3,860	
5,000–9,999	– 380	136	244	379	119	260	106	273	62	316	
10,000–24,999	– 522	226	295	522	206	315	137	384	128	392	
25,000 or more	– 186	68	118	186	62	124	51	134	56	130	

Industry and NAICS code	Companies (number) ^a	New or significantly improved products or processes (percent)		Companies (number) ^b	New or significantly improved products (percent) ^f						
		Yes	No		Any good or service		New goods		New services		
					Yes	No	Yes	No	Yes	No	
All industries	21–23, 31–33, 42–81	1,273,330	15.4	84.6	1,266,982	9.4	90.6	5.6	94.5	7.0	93.0
Manufacturing industries	31–33	104,217	32.0	68.0	103,517	23.0	77.0	20.6	79.4	10.4	89.3
Food	311	9,148	29.7	70.3	9,116	18.8	81.2	18.0	82.3	7.3	92.5
Beverages and tobacco products	312	1,809	36.8	63.2	1,797	24.2	75.8	24.0	76.7	11.5	88.5
Textiles, apparel, and leather products	313–16	4,006	26.6	73.4	3,954	15.4	84.6	12.9	87.2	7.7	92.0
Wood products	321	4,848	15.5	84.5	4,797	10.0	90.0	8.3	91.7	5.2	95.6
Paper	322	1,163	28.1	71.9	1,162	18.1	81.9	17.1	82.9	7.5	91.1
Printing and related support activities	323	8,080	22.8	77.2	8,024	13.3	86.7	9.0	90.7	11.6	88.3
Petroleum and coal products	324	393	36.7	63.3	393	27.9	72.1	27.9	72.1	4.4	93.5
Chemicals	325	5,022	40.7	59.3	5,012	33.9	66.1	32.7	67.2	15.0	84.8
Basic chemicals	3251	595	45.4	54.6	595	35.3	64.7	35.3	64.7	18.6	81.0
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	472	33.9	66.1	472	31.5	68.5	30.7	69.3	12.2	86.6
Pesticides, fertilizers, and other agricultural chemicals	3253	264	30.9	69.1	264	25.4	74.6	25.0	75.0	14.6	85.4
Pharmaceuticals and medicines	3254	1,336	43.9	56.1	1,333	37.7	62.3	35.4	63.9	20.9	79.3
Soaps, cleaning compounds, and toilet preparations	3256	851	45.9	54.1	848	42.2	57.8	40.8	59.5	16.6	83.1
Paints, coatings, adhesives, and other chemicals	3255, 3259	1,504	36.9	63.1	1,500	27.5	72.5	26.6	73.4	8.4	91.5
Plastics and rubber products	326	5,082	33.8	66.2	5,073	24.3	75.7	21.6	78.5	12.3	87.3
Nonmetallic mineral products	327	4,476	23.6	76.4	4,455	14.7	85.3	11.8	88.5	6.7	91.7
Primary metals	331	1,715	23.3	76.7	1,709	12.7	87.3	10.8	89.4	5.4	93.9
Fabricated metal products	332	22,080	26.9	73.1	21,800	16.6	83.4	14.2	85.5	7.8	92.8
Machinery	333	10,759	41.2	58.8	10,667	33.0	67.0	29.3	70.6	13.2	86.2
Agricultural implements	33311	463	44.2	55.8	463	41.7	58.3	41.7	58.3	20.7	76.4

TABLE 60. Companies that introduced new or significantly improved products, by industry, industry proportions, and company size: 2012–14
(Number and percent)

Industry and NAICS code	Companies (number) ^a	Industry proportions									
		New or significantly improved products or processes (percent)		New or significantly improved products (percent) ¹							
		Yes	No	Companies (number) ^b	Any good or service		New goods		New services		
			Yes	No	Yes	No	Yes	No	Yes	No	
Semiconductor machinery	333295	96	86.5	13.5	96	85.4	14.6	84.4	15.6	16.5	80.8
Engines, turbines, and power transmission equipment	3336	346	26.2	73.8	344	20.9	79.1	19.3	80.7	4.9	90.4
Other machinery	other 333	9,854	41.1	58.9	9,764	32.5	67.5	28.6	71.4	13.1	86.6
Computer and electronic products	334	5,146	54.9	45.1	5,121	47.0	53.0	43.9	56.4	17.2	81.4
Communications equipment	3342	616	59.6	40.4	615	56.3	43.7	54.6	45.4	18.6	81.3
Semiconductors and other electronic components	3344	1,707	46.0	54.0	1,706	30.8	69.2	28.4	71.5	10.1	87.3
Navigational, measuring, electromedical, and control instruments	3345	2,021	55.7	44.3	2,015	50.2	49.8	47.6	52.6	15.0	84.1
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	434	35.6	64.4	432	27.8	72.2	27.0	73.5	8.2	90.4
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	209	28.3	71.7	209	22.0	78.0	19.3	80.7	8.5	91.5
Other measuring and controlling device	other 3345	1,378	66.1	33.9	1,374	61.5	38.5	58.5	41.8	18.2	81.0
Other computer and electronic products	other 334	803	68.1	31.9	786	66.6	33.4	59.9	42.2	37.2	61.5
Electrical equipment, appliances, and components	335	2,884	51.5	48.5	2,880	46.8	53.2	45.6	53.7	18.5	80.6
Transportation equipment	336	4,018	40.8	59.2	4,016	32.0	68.0	29.4	70.6	12.8	86.9
Automobiles, bodies, trailers, and parts	3361–63	2,525	40.3	59.7	2,525	32.3	67.7	28.4	71.6	12.3	87.5
Aerospace products and parts	3364	739	39.0	61.0	739	24.9	75.1	24.4	75.6	10.1	89.4
Aircraft, aircraft engines, and aircraft parts	336411–13	714	38.4	61.6	714	24.1	75.9	23.6	76.4	9.9	89.7
Guided missiles, space vehicles, and related parts	336414–15, 336419	25	56.0	44.0	25	48.0	52.0	48.0	52.0	16.0	80.0
Military armored vehicles, tanks, and tank components	336992	64	17.4	82.6	64	9.4	90.6	9.4	90.6	D	D
Other transportation	other 336	689	46.6	53.4	687	40.8	59.2	40.0	60.0	D	D
Furniture and related products	337	5,341	25.7	74.3	5,318	16.7	83.3	14.6	85.7	8.5	90.5
Miscellaneous manufacturing	339	8,247	36.1	63.9	8,225	27.9	72.1	25.9	74.0	13.2	85.8
Medical equipment and supplies	3391	2,649	43.4	56.6	2,632	34.5	65.5	31.5	68.2	18.9	80.7
Other miscellaneous manufacturing	3399	5,597	32.6	67.4	5,593	24.7	75.3	23.2	76.8	10.6	88.2
Nonmanufacturing industries	21–23, 42–81	1,169,113	14.0	86.0	1,163,466	8.2	91.8	4.2	95.9	6.7	93.3
Mining, extraction, and support activities	21	6,884	9.9	90.1	6,884	6.3	93.7	4.9	95.1	5.6	94.4
Utilities	22	865	14.9	85.1	865	12.1	87.9	10.5	89.5	11.6	88.3
Wholesale trade	42	87,724	20.9	79.1	87,298	13.5	86.5	11.2	88.8	7.8	91.8
Electronic shopping and electronic auctions	454111–12	3,182	22.6	77.4	3,148	12.9	87.1	10.5	90.2	6.1	94.3
Transportation and warehousing	48–49	36,759	12.6	87.4	36,507	4.3	95.7	0.9	99.8	4.2	95.8
Information	51	18,082	33.0	67.0	18,061	25.8	74.2	14.6	85.4	20.7	79.3
Publishing	511	6,559	32.9	67.1	6,541	26.6	73.4	21.4	78.7	17.6	82.4
Newspaper, periodical, book, and directory publishers	5111	4,170	13.5	86.5	4,155	6.8	93.2	3.2	97.0	5.4	94.6
Software publishers	5112	2,389	66.8	33.2	2,386	61.1	38.9	53.2	46.8	38.8	61.2
Telecommunications	517	2,980	35.5	64.5	2,980	28.2	71.8	8.2	91.8	25.6	74.4
Data processing, hosting, and related services	518	2,884	46.7	53.3	2,883	41.2	58.8	23.1	76.5	38.5	61.4
Other information	other 51	5,659	24.9	75.1	5,657	15.7	84.3	5.7	94.2	12.8	87.3
Finance and insurance	52	40,875	14.9	85.1	40,324	8.6	91.4	1.3	98.8	8.6	92.0
Real estate and rental and leasing	53	37,481	8.4	91.6	37,481	4.7	95.3	1.4	98.6	4.0	96.0

TABLE 60. Companies that introduced new or significantly improved products, by industry, industry proportions, and company size: 2012–14
(Number and percent)

Industry and NAICS code	Companies (number) ^a	Industry proportions									
		New or significantly improved products or processes (percent)		Companies (number) ^b	New or significantly improved products (percent) ¹						
		Yes	No		Any good or service		New goods		New services		
					Yes	No	Yes	No	Yes	No	
Lessors of nonfinancial intangible assets (except copyrighted works)	533	296	84.1	15.9	296	81.8	18.2	3.0	97.0	80.4	19.6
Other real estate and rental and leasing	other 53	37,185	7.8	92.2	37,185	4.1	95.9	1.4	98.6	3.4	96.6
Professional, scientific, and technical services	54	142,038	18.4	81.6	140,599	12.6	87.4	5.8	94.6	10.9	89.2
Architectural, engineering, and related services	5413	23,451	20.0	80.0	23,448	15.3	84.7	6.3	93.6	13.0	87.0
Computer systems design and related services	5415	19,947	36.8	63.2	19,902	31.1	68.9	20.5	79.7	27.3	72.6
Scientific R&D services	5417	2,650	43.8	56.2	2,639	37.8	62.2	30.9	69.0	20.9	78.6
Biotechnology R&D	541711	612	54.5	45.5	611	48.3	51.7	35.2	63.9	35.2	63.8
Physical, engineering, and life sciences (except biotechnology) R&D	541712	1,846	42.4	57.6	1,836	36.3	63.7	31.8	68.5	16.4	83.2
Social sciences and humanities R&D	541720	192	23.8	76.2	192	19.4	80.6	8.7	90.1	17.8	82.2
Other professional, scientific, and technical services	other 54	95,989	13.5	86.5	94,610	7.3	92.7	1.9	98.7	6.6	93.5
Health care services	621–23	158,299	17.3	82.7	157,545	8.9	91.1	1.1	98.7	8.6	91.4
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	636,924	11.0	89.0	634,752	6.2	93.8	3.9	96.1	5.0	95.1
All companies (number of domestic employees)	–	1,273,330	15.4	84.6	1,266,982	9.4	90.6	5.6	94.5	7.0	93.0
Small companies ^e											
5–499	–	1,263,029	15.4	84.6	1,256,691	9.3	90.7	5.5	94.6	7.0	93.0
5–99	–	1,210,710	15.2	84.8	1,204,639	9.2	90.8	5.4	94.7	7.0	93.0
5–49	–	1,133,128	15.0	85.0	1,127,700	9.0	91.0	5.1	95.0	7.0	93.0
5–9	–	495,222	13.4	86.6	492,237	7.9	92.1	3.7	96.4	6.4	93.6
10–24	–	463,289	15.7	84.3	461,310	9.4	90.6	5.9	94.2	7.1	92.9
25–49	–	174,616	17.4	82.6	174,153	11.2	88.8	7.3	92.9	8.3	91.7
50–99	–	77,583	19.1	80.9	76,939	12.0	88.0	9.0	91.1	7.5	92.4
100–249	–	41,903	17.7	82.3	41,655	9.9	90.1	7.5	92.8	5.2	94.7
250–499	–	10,415	23.5	76.5	10,396	19.3	80.7	12.0	85.6	12.2	87.7
Medium and large companies											
500–999	–	4,995	21.2	78.8	4,992	13.0	87.0	11.6	88.4	6.0	93.9
1,000–4,999	–	4,218	22.1	77.9	4,212	15.3	84.7	12.3	87.7	8.3	91.6

TABLE 60. Companies that introduced new or significantly improved products, by industry, industry proportions, and company size: 2012–14
(Number and percent)

5,000–9,999	–	380	35.9	64.1	379	31.5	68.5	28.0	72.0	16.5	83.3
10,000–24,999	–	522	43.4	56.6	522	39.5	60.5	26.3	73.7	24.6	75.2
25,000 or more	–	186	36.6	63.4	186	33.3	66.7	27.4	72.0	30.1	69.9

D = data withheld to avoid disclosing operations of individual companies.

NAICS = 2012 North American Industry Classification System.

^a Statistics for the number of companies are based only on companies in the United States that reported data for at least one of the items on the survey relating to new or significantly improved products or processes, regardless of whether the company performed or funded R&D. These statistics do not include an adjustment to the weight to account for unit nonresponse.

^b Statistics for the number of companies are based only on companies in the United States responding either "Yes" to at least one of the items or "No" to both of the items on the survey relating to new or significantly improved products, regardless of whether the company performed or funded R&D. These statistics do not include an adjustment to the weight to account for unit nonresponse.

^c Includes companies responding "Yes" to at least one of the items on the survey relating to new or significantly improved products.

^d Includes companies responding "No" to both of the items on the survey relating to new or significantly improved products.

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

^f Statistics used for the denominator in the calculation of these percentages include companies in the United States responding either "Yes" to at least one of the items or "No" to both of the items on the survey relating to new or significantly improved products, regardless of whether the company performed or funded R&D. These statistics do not include an adjustment to the weight to account for unit nonresponse.

NOTES: 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. The sum of "Yes" and "No" responses may not add to the total number of companies or, for the percentages, to 100% due to item nonresponse to some items relating to new or significantly improved products or processes.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 61. Companies that introduced new or significantly improved processes, by industry, industry proportions, and company size: 2012–14
(Number and percent)

Industry and NAICS code	Companies (number) ^a	New or significantly improved products or processes		Companies (number) ^b	New or significantly improved processes								
		Yes	No		Any processes		Manufacturing or production methods		Logistics, delivery, or distribution methods		Support activities		
					Yes ^c	No ^d	Yes	No	Yes	No	Yes	No	
All industries	21–23, 31–33, 42–81	1,273,330	196,623	1,076,707	1,259,264	146,910	1,112,354	58,191	1,208,952	52,427	1,209,842	110,692	1,154,109
Manufacturing industries	31–33	104,217	33,391	70,826	103,367	24,985	78,382	18,914	84,906	7,241	96,251	14,919	88,614
Food	311	9,148	2,717	6,431	9,136	2,147	6,989	1,383	7,764	691	8,416	1,349	7,797
Beverages and tobacco products	312	1,809	665	1,144	1,799	476	1,323	311	1,498	198	1,605	346	1,459
Textiles, apparel, and leather products	313–316	4,006	1,064	2,943	3,988	904	3,084	546	3,457	381	3,615	542	3,440
Wood products	321	4,848	752	4,096	4,826	691	4,134	580	4,258	267	4,548	361	4,443
Paper	322	1,163	326	836	1,150	268	882	193	957	82	1,069	171	980
Printing and related support activities	323	8,080	1,846	6,234	8,070	1,627	6,443	1,155	6,924	410	7,641	940	7,132
Petroleum and coal products	324	393	144	249	393	81	312	77	316	21	373	38	356
Chemicals	325	5,022	2,043	2,979	4,965	1,333	3,631	978	4,036	391	4,608	945	4,029
Basic chemicals	3251	595	270	325	594	221	373	199	396	46	549	151	443
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	472	160	312	471	131	340	93	378	30	441	73	398
Pesticides, fertilizers, and other agricultural chemicals	3253	264	82	183	249	69	180	50	214	13	252	48	201
Pharmaceuticals and medicines	3254	1,336	586	750	1,320	366	953	244	1,089	155	1,164	323	1,008
Soaps, cleaning compounds, and toilet preparations	3256	851	391	460	848	202	646	159	689	58	789	151	696
Paints, coatings, adhesives, and other chemicals	3255, 3259	1,504	555	950	1,484	345	1,139	233	1,270	90	1,414	200	1,283
Plastics and rubber products	326	5,082	1,717	3,365	5,056	1,385	3,672	1,153	3,923	347	4,730	777	4,284
Nonmetallic mineral products	327	4,476	1,057	3,420	4,431	860	3,570	565	3,855	174	4,252	455	3,978
Primary metals	331	1,715	400	1,315	1,692	331	1,362	239	1,454	92	1,599	217	1,476
Fabricated metal products	332	22,080	5,942	16,139	21,761	5,137	16,624	4,158	17,821	1,291	20,633	2,905	19,003
Machinery	333	10,759	4,427	6,332	10,701	2,771	7,930	2,319	8,419	563	10,076	1,463	9,178
Agricultural implements	33311	463	204	258	450	120	330	106	356	29	368	40	369
Semiconductor machinery	333295	96	83	13	96	17	79	16	80	10	86	6	90
Engines, turbines, and power transmission equipment	3336	346	91	255	345	65	280	57	289	27	317	46	298
Other machinery	other 333	9,854	4,049	5,805	9,810	2,569	7,241	2,141	7,693	498	9,305	1,371	8,421
Computer and electronic products	334	5,146	2,823	2,323	5,060	1,735	3,325	1,159	3,908	453	4,627	1,100	4,019
Communications equipment	3342	616	367	249	614	190	424	102	512	90	524	104	510
Semiconductors and other electronic components	3344	1,707	785	922	1,638	595	1,042	458	1,184	169	1,527	328	1,370
Navigational, measuring, electromedical, and control instruments	3345	2,021	1,125	896	2,011	654	1,357	435	1,578	120	1,854	461	1,550
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	434	154	280	431	103	328	89	343	25	401	58	375
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	209	59	149	209	39	169	36	172	19	188	22	186
Other measuring and controlling devices	other 3345	1,378	911	467	1,371	511	860	310	1,063	75	1,264	381	989
Other computer and electronic products	other 334	803	546	257	798	297	501	164	634	74	722	207	590
Electrical equipment, appliances, and components	335	2,884	1,485	1,399	2,861	1,019	1,841	861	2,015	417	2,456	693	2,171
Transportation equipment	336	4,018	1,637	2,380	4,001	1,259	2,741	1,069	2,939	364	3,628	695	3,291
Automobiles, bodies, trailers, and parts	3361–63	2,525	1,017	1,508	2,523	802	1,721	653	1,871	134	2,374	391	2,118
Aerospace products and parts	3364	739	288	451	726	228	499	220	513	124	608	185	541
Aircraft, aircraft engines, and aircraft parts	336411–13	714	274	440	701	218	484	213	495	D	D	180	521

TABLE 61. Companies that introduced new or significantly improved processes, by industry, industry proportions, and company size: 2012–14
(Number and percent)

Industry and NAICS code	Companies (number) ^a	New or significantly improved products or processes			Companies (number) ^b	New or significantly improved processes								
		Yes	No	Yes ^c		No ^d	Any processes		Manufacturing or production methods		Logistics, delivery, or distribution methods		Support activities	
							Yes	No	Yes	No	Yes	No	Yes	No
Guided missiles, space vehicles, and related parts	336414–15, 336419	25	14	11	25	10	15	7	18	D	D	5	20	
Military armored vehicles, tanks, and tank components	336992	64	11	53	64	8	56	6	58	D	D	6	58	
Other transportation	other 336	689	321	368	687	221	466	190	497	D	D	113	574	
Furniture and related products	337	5,341	1,373	3,969	5,291	1,058	4,234	763	4,546	389	4,895	701	4,598	
Miscellaneous manufacturing	339	8,247	2,974	5,272	8,186	1,901	6,285	1,405	6,818	709	7,481	1,222	6,980	
Medical equipment and supplies	3391	2,649	1,149	1,501	2,619	820	1,799	607	2,018	355	2,266	537	2,083	
Other miscellaneous manufacturing	3399	5,597	1,826	3,771	5,567	1,081	4,486	798	4,800	354	5,215	685	4,897	
Nonmanufacturing industries	21–23, 42–81	1,169,113	163,232	1,005,881	1,155,897	121,925	1,033,972	39,277	1,124,046	45,186	1,113,591	95,772	1,065,496	
Mining, extraction, and support activities	21	6,884	682	6,202	6,776	533	6,243	351	6,530	278	6,596	349	6,437	
Utilities	22	865	129	736	824	121	704	45	780	9	814	118	708	
Wholesale trade	42	87,724	18,365	69,358	86,800	13,354	73,446	5,735	81,528	6,411	80,724	9,817	76,980	
Electronic shopping and electronic auctions	454111–12	3,182	718	2,464	3,128	570	2,558	326	2,796	419	2,763	393	2,786	
Transportation and warehousing	48–49	36,759	4,636	32,123	36,754	4,329	32,425	268	36,238	3,266	33,242	2,328	34,179	
Information	51	18,082	5,974	12,108	17,955	3,786	14,169	1,505	16,507	2,106	15,864	2,391	15,651	
Publishing	511	6,559	2,160	4,399	6,474	1,368	5,106	737	5,755	735	5,743	904	5,650	
Newspaper, periodical, book, and directory publishers	5111	4,170	564	3,606	4,105	367	3,738	202	3,902	168	3,937	153	4,017	
Software publishers	5112	2,389	1,596	793	2,369	1,001	1,368	535	1,853	567	1,805	751	1,633	
Telecommunications	517	2,980	1,058	1,922	2,979	591	2,388	184	2,796	446	2,532	315	2,664	
Data processing, hosting, and related services	518	2,884	1,347	1,537	2,881	893	1,988	376	2,507	399	2,482	724	2,158	
Other information	other 51	5,659	1,408	4,251	5,621	933	4,687	207	5,449	527	5,107	447	5,179	
Finance and insurance	52	40,875	6,080	34,795	40,821	5,506	35,315	1,783	39,089	2,095	38,726	4,740	36,132	
Real estate and rental and leasing	53	37,481	3,133	34,349	37,230	2,372	34,858	494	36,738	1,251	36,230	2,103	35,376	
Lessors of nonfinancial intangible assets (except copyrighted works)	533	296	249	47	295	247	48	237	59	235	61	244	51	
Other real estate and rental and leasing	other 53	37,185	2,884	34,302	36,935	2,125	34,810	257	36,679	1,016	36,169	1,859	35,325	
Professional, scientific, and technical services	54	142,038	26,143	115,895	141,000	18,214	122,786	6,492	134,906	5,070	135,701	13,858	127,563	
Architectural, engineering, and related services	5413	23,451	4,699	18,752	23,260	3,107	20,153	1,706	21,738	938	22,305	1,999	21,324	
Computer systems design and related services	5415	19,947	7,349	12,598	19,737	4,446	15,291	1,786	18,100	1,623	18,097	3,540	16,294	
Scientific R&D services	5417	2,650	1,161	1,489	2,633	652	1,982	491	2,150	182	2,455	373	2,263	
Biotechnology R&D	541711	612	334	278	610	156	454	124	486	53	557	97	514	
Physical, engineering, and life sciences (except biotechnology) R&D	541712	1,846	782	1,064	1,833	459	1,373	347	1,491	112	1,723	252	1,582	
Social sciences and humanities R&D	541720	192	46	146	191	37	154	19	173	17	175	24	167	
Other professional, scientific, and technical services	other 54	95,989	12,933	83,056	95,369	10,009	85,359	2,508	92,918	2,327	92,844	7,946	87,681	
Health care services	621–23	158,299	27,427	130,873	155,996	21,252	134,744	5,699	151,843	7,738	148,558	18,665	138,575	
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	636,924	69,947	566,977	628,615	51,889	576,726	16,578	617,091	16,543	614,373	41,010	591,110	
All companies (number of domestic employees)	–	1,273,330	196,623	1,076,707	1,259,264	146,910	1,112,354	58,191	1,208,952	52,427	1,209,842	110,692	1,154,109	
Small companies ^e 5–499	–	1,263,029	194,201	1,068,828	1,249,247	145,001	1,104,246	57,138	1,199,977	51,581	1,200,672	109,324	1,145,466	

TABLE 61. Companies that introduced new or significantly improved processes, by industry, industry proportions, and company size: 2012–14
(Number and percent)

Industry and NAICS code	Companies (number) ^a	New or significantly improved products or processes		Companies (number) ^b	New or significantly improved processes								
		Yes	No		Any processes		Manufacturing or production methods		Logistics, delivery, or distribution methods		Support activities		
					Yes ^c	No ^d	Yes	No	Yes	No	Yes	No	
5–99	– 1,210,710	184,337	1,026,373	1,197,394	137,875	1,059,519	53,788	1,151,114	49,094	1,151,228	103,907	1,098,654	
5–49	– 1,133,128	169,508	963,619	1,120,633	126,315	994,318	48,073	1,079,530	44,200	1,079,919	95,392	1,029,930	
5–9	– 495,222	66,263	428,959	489,658	50,248	439,410	17,100	475,199	17,291	473,269	38,582	453,305	
10–24	– 463,289	72,785	390,503	458,372	54,520	403,852	22,605	438,587	19,725	440,475	40,348	419,525	
25–49	– 174,616	30,460	144,156	172,603	21,547	151,056	8,369	165,745	7,185	166,174	16,461	157,100	
50–99	– 77,583	14,829	62,754	76,761	11,560	65,201	5,715	71,584	4,893	71,309	8,515	68,724	
100–249	– 41,903	7,412	34,491	41,482	5,541	35,941	2,489	39,347	1,990	39,576	4,267	37,590	
250–499	– 10,415	2,452	7,963	10,371	1,585	8,786	862	9,516	498	9,868	1,150	9,222	
Medium and large companies													
500–999	– 4,995	1,057	3,937	4,738	871	3,867	429	4,311	272	4,460	598	4,137	
1,000–4,999	– 4,218	934	3,285	4,200	726	3,474	379	3,829	351	3,852	513	3,685	
5,000–9,999	– 380	136	244	378	108	270	82	297	63	316	81	296	
10,000–24,999	– 522	226	295	517	145	372	111	406	113	405	126	392	
25,000 or more	– 186	68	118	183	58	125	52	132	46	137	49	133	

Industry and NAICS code	Companies (number) ^a	New or significantly improved products or processes (percent)		Companies (number) ^b	New or significantly improved processes (percent) ^f								
		Yes	No		Any processes		Manufacturing or production methods		Logistics, delivery, or distribution methods		Support activities		
					Yes	No	Yes	No	Yes	No	Yes	No	
All industries	21–23, 31–33, 42–81	1,273,330	15.4	84.6	1,259,264	11.7	88.3	4.6	96.0	4.2	96.1	8.8	91.6
Manufacturing industries	31–33	104,217	32.0	68	103,367	24.2	75.8	18.3	82.1	7.0	93.1	14.4	85.7
Food	311	9,148	29.7	70.3	9,136	23.5	76.5	15.1	85.0	7.6	92.1	14.8	85.3
Beverages and tobacco products	312	1,809	36.8	63.2	1,799	26.5	73.5	17.3	83.3	11.0	89.2	19.2	81.1
Textiles, apparel, and leather products	313–16	4,006	26.6	73.4	3,988	22.7	77.3	13.7	86.7	9.6	90.7	13.6	86.3
Wood products	321	4,848	15.5	84.5	4,826	14.3	85.7	12.0	88.2	5.5	94.2	7.5	92.1
Paper	322	1,163	28.1	71.9	1,150	23.3	76.7	16.8	83.2	7.1	92.9	14.8	85.2
Printing and related support activities	323	8,080	22.8	77.2	8,070	20.2	79.8	14.3	85.8	5.1	94.7	11.7	88.4
Petroleum and coal products	324	393	36.7	63.3	393	20.7	79.3	19.6	80.4	5.3	94.7	9.6	90.4
Chemicals	325	5,022	40.7	59.3	4,965	26.9	73.1	19.7	81.3	7.9	92.8	19.0	81.2
Basic chemicals	3251	595	45.4	54.6	594	37.2	62.8	33.5	66.7	7.7	92.5	25.4	74.6
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	472	33.9	66.1	471	27.9	72.1	19.7	80.3	6.5	93.7	15.5	84.5
Pesticides, fertilizers, and other agricultural chemicals	3253	264	30.9	69.1	249	27.6	72.4	20.1	86.1	5.1	101.1	19.4	80.6
Pharmaceuticals and medicines	3254	1,336	43.9	56.1	1,320	27.7	72.3	18.5	82.5	11.7	88.2	24.5	76.4
Soaps, cleaning compounds, and toilet preparations	3256	851	45.9	54.1	848	23.8	76.2	18.8	81.3	6.8	93.0	17.8	82.1
Paints, coatings, adhesives, and other chemicals	3255, 3259	1,504	36.9	63.1	1,484	23.2	76.8	15.7	85.6	6.0	95.3	13.4	86.5
Plastics and rubber products	326	5,082	33.8	66.2	5,056	27.4	72.6	22.8	77.6	6.9	93.5	15.4	84.7
Nonmetallic mineral products	327	4,476	23.6	76.4	4,431	19.4	80.6	12.8	87.0	3.9	96.0	10.3	89.8
Primary metals	331	1,715	23.3	76.7	1,692	19.6	80.4	14.1	85.9	5.4	94.5	12.8	87.2
Fabricated metal products	332	22,080	26.9	73.1	21,761	23.6	76.4	19.1	81.9	5.9	94.8	13.4	87.3
Machinery	333	10,759	41.2	58.8	10,701	25.9	74.1	21.7	78.7	5.3	94.2	13.7	85.8

TABLE 61. Companies that introduced new or significantly improved processes, by industry, industry proportions, and company size: 2012–14
(Number and percent)

Industry and NAICS code	Companies (number) ^a	Industry proportions											
		New or significantly improved products or processes (percent)		Companies (number) ^b	New or significantly improved processes (percent) ^f								
		Yes	No		Any processes		Manufacturing or production methods		Logistics, delivery, or distribution methods		Support activities		
				Yes	No	Yes	No	Yes	No	Yes	No		
Agricultural implements	33311	463	44.2	55.8	450	26.8	73.2	23.5	79.2	6.4	81.7	8.8	81.9
Semiconductor machinery	333295	96	86.5	13.5	96	17.5	82.5	16.4	83.6	10.6	89.4	6.2	93.8
Engines, turbines, and power transmission equipment	3336	346	26.2	73.8	345	18.8	81.2	16.5	83.8	7.7	92.1	13.2	86.3
Other machinery	other 333	9,854	41.1	58.9	9,810	26.2	73.8	21.8	78.4	5.1	94.9	14.0	85.8
Computer and electronic products	334	5,146	54.9	45.1	5,060	34.3	65.7	22.9	77.2	9.0	91.4	21.7	79.4
Communications equipment	3342	616	59.6	40.4	614	30.9	69.1	16.6	83.4	14.6	85.4	16.9	83.1
Semiconductors and other electronic components	3344	1,707	46.0	54.0	1,638	36.3	63.7	28.0	72.3	10.3	93.3	20.0	83.6
Navigational, measuring, electromedical, and control instruments	3345	2,021	55.7	44.3	2,011	32.5	67.5	21.6	78.5	6.0	92.2	22.9	77.1
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	434	35.6	64.4	431	23.9	76.1	20.6	79.6	5.8	93.1	13.3	86.9
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	209	28.3	71.7	209	18.9	81.1	17.5	82.5	9.2	90.3	10.7	89.3
Other measuring and controlling devices	other 3345	1,378	66.1	33.9	1,371	37.3	62.7	22.6	77.5	5.5	92.2	27.8	72.1
Other computer and electronic products	other 334	803	68.1	31.9	798	37.2	62.8	20.6	79.5	9.3	90.5	25.9	74.0
Electrical equipment, appliances, and components	335	2,884	51.5	48.5	2,861	35.6	64.4	30.1	70.4	14.6	85.8	24.2	75.9
Transportation equipment	336	4,018	40.8	59.2	4,001	31.5	68.5	26.7	73.5	9.1	90.7	17.4	82.3
Automobiles, bodies, trailers, and parts	3361–63	2,525	40.3	59.7	2,523	31.8	68.2	25.9	74.2	5.3	94.1	15.5	83.9
Aerospace products and parts	3364	739	39.0	61.0	726	31.3	68.7	30.2	70.6	17.1	83.7	25.4	74.6
Aircraft, aircraft engines, and aircraft parts	336411–13	714	38.4	61.6	701	31.0	69.0	30.3	70.5	D	D	25.6	74.4
Guided missiles, space vehicles, and related parts	336414–15, 336419	25	56.0	44.0	25	40.0	60.0	28.0	72.0	D	D	20.0	80.0
Military armored vehicles, tanks, and tank components	336992	64	17.4	82.6	64	12.7	87.3	9.6	90.4	D	D	9.6	90.4
Other transportation	other 336	689	46.6	53.4	687	32.2	67.8	27.7	72.3	D	D	16.5	83.5
Furniture and related products	337	5,341	25.7	74.3	5,291	20.0	80.0	14.4	85.9	7.4	92.5	13.3	86.9
Miscellaneous manufacturing	339	8,247	36.1	63.9	8,186	23.2	76.8	17.2	83.3	8.7	91.4	14.9	85.3
Medical equipment and supplies	3391	2,649	43.4	56.6	2,619	31.3	68.7	23.2	77.1	13.6	86.5	20.5	79.5
Other miscellaneous manufacturing	3399	5,597	32.6	67.4	5,567	19.4	80.6	14.3	86.2	6.4	93.7	12.3	88.0
Nonmanufacturing industries	21–23, 42–81	1,169,113	14.0	86.0	1,155,897	10.5	89.5	3.4	97.2	3.9	96.3	8.3	92.2
Mining, extraction, and support activities	21	6,884	9.9	90.1	6,776	7.9	92.1	5.2	96.4	4.1	97.3	5.1	95.0
Utilities	22	865	14.9	85.1	824	14.6	85.4	5.5	94.7	1.1	98.8	14.3	85.9
Wholesale trade	42	87,724	20.9	79.1	86,800	15.4	84.6	6.6	93.9	7.4	93.0	11.3	88.7
Electronic shopping and electronic auctions	454111–12	3,182	22.6	77.4	3,128	18.2	81.8	10.4	89.4	13.4	88.3	12.6	89.1
Transportation and warehousing	48–49	36,759	12.6	87.4	36,754	11.8	88.2	0.7	98.6	8.9	90.4	6.3	93.0
Information	51	18,082	33.0	67.0	17,955	21.1	78.9	8.4	91.9	11.7	88.4	13.3	87.2
Publishing	511	6,559	32.9	67.1	6,474	21.1	78.9	11.4	88.9	11.4	88.7	14.0	87.3
Newspaper, periodical, book, and directory publishers	5111	4,170	13.5	86.5	4,105	8.9	91.1	4.9	95.1	4.1	95.9	3.7	97.9
Software publishers	5112	2,389	66.8	33.2	2,369	42.3	57.7	22.6	78.2	24.0	76.2	31.7	68.9
Telecommunications	517	2,980	35.5	64.5	2,979	19.8	80.2	6.2	93.8	15.0	85.0	10.6	89.4
Data processing, hosting, and related services	518	2,884	46.7	53.3	2,881	31.0	69.0	13.1	87.0	13.8	86.2	25.1	74.9
Other information	other 51	5,659	24.9	75.1	5,621	16.6	83.4	3.7	96.9	9.4	90.9	8.0	92.1
Finance and insurance	52	40,875	14.9	85.1	40,821	13.5	86.5	4.4	95.8	5.1	94.9	11.6	88.5

TABLE 61. Companies that introduced new or significantly improved processes, by industry, industry proportions, and company size: 2012–14
(Number and percent)

Industry and NAICS code	Industry proportions												
	New or significantly improved products or processes (percent)		New or significantly improved processes (percent) ^f										
	Companies (number) ^a	Yes	No	Companies (number) ^b	Any processes		Manufacturing or production methods		Logistics, delivery, or distribution methods		Support activities		
					Yes	No	Yes	No	Yes	No	Yes	No	
Real estate and rental and leasing	53	37,481	8.4	91.6	37,230	6.4	93.6	1.3	98.7	3.4	97.3	5.6	95.0
Lessors of nonfinancial intangible assets (except copyrighted works)	533	296	84.1	15.9	295	83.7	16.3	80.3	20.0	79.7	20.7	82.7	17.3
Other real estate and rental and leasing	other 53	37,185	7.8	92.2	36,935	5.8	94.2	0.7	99.3	2.8	97.9	5.0	95.6
Professional, scientific, and technical services	54	142,038	18.4	81.6	141,000	12.9	87.1	4.6	95.7	3.6	96.2	9.8	90.5
Architectural, engineering, and related services	5413	23,451	20.0	80.0	23,260	13.4	86.6	7.3	93.5	4.0	95.9	8.6	91.7
Computer systems design and related services	5415	19,947	36.8	63.2	19,737	22.5	77.5	9.1	91.7	8.2	91.7	17.9	82.6
Scientific R&D services	5417	2,650	43.8	56.2	2,633	24.7	75.3	18.6	81.7	6.9	93.2	14.2	85.9
Biotechnology R&D	541711	612	54.5	45.5	610	25.5	74.5	20.4	79.8	8.7	91.3	15.9	84.3
Physical, engineering, and life sciences (except biotechnology) R&D	541712	1,846	42.4	57.6	1,833	25.1	74.9	19.0	81.4	6.1	94.0	13.8	86.3
Social sciences and humanities R&D	541720	192	23.8	76.2	191	19.2	80.8	10.1	90.4	8.9	91.6	12.5	87.5
Other professional, scientific, and technical services	other 54	95,989	13.5	86.5	95,369	10.5	89.5	2.6	97.4	2.4	97.4	8.3	91.9
Health care services	621–23	158,299	17.3	82.7	155,996	13.6	86.4	3.7	97.3	5.0	95.2	12.0	88.8
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	636,924	11.0	89.0	628,615	8.3	91.7	2.6	98.2	2.6	97.7	6.5	94.0
All companies (number of domestic employees)	–	1,273,330	15.4	84.6	1,259,264	11.7	88.3	4.6	96.0	4.2	96.1	8.8	91.6
Small companies ^e													
5–499	–	1,263,029	15.4	84.6	1,249,247	11.6	88.4	4.6	96.1	4.1	96.1	8.8	91.7
5–99	–	1,210,710	15.2	84.8	1,197,394	11.5	88.5	4.5	96.1	4.1	96.1	8.7	91.8
5–49	–	1,133,128	15.0	85.0	1,120,633	11.3	88.7	4.3	96.3	3.9	96.4	8.5	91.9
5–9	–	495,222	13.4	86.6	489,658	10.3	89.7	3.5	97.0	3.5	96.7	7.9	92.6
10–24	–	463,289	15.7	84.3	458,372	11.9	88.1	4.9	95.7	4.3	96.1	8.8	91.5
25–49	–	174,616	17.4	82.6	172,603	12.5	87.5	4.8	96.0	4.2	96.3	9.5	91.0
50–99	–	77,583	19.1	80.9	76,761	15.1	84.9	7.4	93.3	6.4	92.9	11.1	89.5
100–249	–	41,903	17.7	82.3	41,482	13.4	86.6	6.0	94.9	4.8	95.4	10.3	90.6
250–499	–	10,415	23.5	76.5	10,371	15.3	84.7	8.3	91.8	4.8	95.2	11.1	88.9
Medium and large companies													
500–999	–	4,995	21.2	78.8	4,738	18.4	81.6	9.1	91.0	5.7	94.1	12.6	87.3
1,000–4,999	–	4,218	22.1	77.9	4,200	17.3	82.7	9.0	91.2	8.3	91.7	12.2	87.7

TABLE 61. Companies that introduced new or significantly improved processes, by industry, industry proportions, and company size: 2012–14
(Number and percent)

Industry and NAICS code	Companies (number) ^a	New or significantly improved products or processes (percent)		Companies (number) ^b	Industry proportions							
		Yes	No		New or significantly improved processes (percent) ^f				Support activities			
					Any processes		Manufacturing or production methods		Logistics, delivery, or distribution methods		Support activities	
					Yes	No	Yes	No	Yes	No	Yes	No
5,000–9,999	– 380	35.9	64.1	378	28.6	71.4	21.7	78.6	16.8	83.5	21.4	78.3
10,000–24,999	– 522	43.4	56.6	517	28.1	71.9	21.4	78.6	21.9	78.3	24.4	75.8
25,000 or more	– 186	36.6	63.4	183	31.8	68.2	28.5	72.0	25.1	74.9	26.8	72.7

D = data withheld to avoid disclosing operations of individual companies.

NAICS = 2012 North American Industry Classification System.

^a Statistics for the number of companies are based only on companies in the United States that reported data for at least one of the items on the survey relating to new or significantly improved products or processes, regardless of whether the company performed or funded R&D. These statistics do not include an adjustment to the weight to account for unit nonresponse.

^b Statistics for the number of companies are based only on companies in the United States responding either "Yes" to at least one of the items or "No" to all of the items on the survey relating to new or significantly improved processes, regardless of whether the company performed or funded R&D. These statistics do not include an adjustment to the weight to account for unit nonresponse.

^c Includes companies responding "Yes" to at least one of the items on the survey relating to new or significantly improved processes.

^d Includes companies responding "No" to all of the items on the survey relating to new or significantly improved processes.

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

^f Statistics used for the denominator in the calculation of these percentages include companies in the United States responding either "Yes" to at least one of the items or "No" to all of the items on the survey relating to new or significantly improved processes, regardless of whether the company performed or funded R&D. These statistics do not include an adjustment to the weight to account for unit nonresponse.

NOTES: 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. The sum of "Yes" and "No" responses may not add to the total number of companies or, for the percentages, to 100% due to item nonresponse to some items relating to new or significantly improved products or processes.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 62. Companies with and without R&D activity that introduced new or significantly improved products, by size of R&D program and the proportion of companies in each R&D program size classification: 2012–14
(Number and percent)

Company type	New or significantly improved products or processes (number)			New or significantly improved products (number)						
	Companies ^a	Yes	No	Companies ^b	Any good or service		New goods		New services	
					Yes ^c	No ^d	Yes	No	Yes	No
All companies	1,273,330	196,623	1,076,707	1,266,982	118,894	1,148,088	70,709	1,197,353	89,115	1,177,993
R&D activity ^e	53,473	37,149	16,324	53,048	30,891	22,157	24,519	28,323	17,624	34,994
< \$10 million	51,461	35,915	15,546	51,042	29,756	21,286	23,513	27,324	16,976	33,645
≥ \$10 million but < \$50 million	1,366	797	569	1,361	719	641	632	727	408	947
≥ \$50 million but < \$100 million	261	175	86	260	168	92	147	113	92	167
≥ \$100 million	386	263	123	386	248	138	227	159	148	235
No R&D activity	1,219,857	159,474	1,060,383	1,213,934	88,003	1,125,931	46,190	1,169,031	71,491	1,142,999

Company type	New or significantly improved products or processes			New or significantly improved products ^f						
	Companies (number) ^a	Yes (percent)	No (percent)	Companies (number) ^b	Any good or service (percent)		New goods (percent)		New services (percent)	
					Yes	No	Yes	No	Yes	No
All companies	1,273,330	15.4	84.6	1,266,982	9.4	90.6	5.6	94.5	7.0	93.0
R&D activity ^e	53,473	69.5	30.5	53,048	58.2	41.8	46.2	53.4	33.2	66.0
< \$10 million	51,461	69.8	30.2	51,042	58.3	41.7	46.1	53.5	33.3	65.9
≥ \$10 million but < \$50 million	1,366	58.4	41.6	1,361	52.9	47.1	46.5	53.5	30.0	69.6
≥ \$50 million but < \$100 million	261	67.0	33.0	260	64.6	35.4	56.6	43.4	35.3	64.3
≥ \$100 million	386	68.1	31.9	386	64.2	35.8	58.8	41.2	38.3	60.9
No R&D activity	1,219,857	13.1	86.9	1,213,934	7.2	92.8	3.8	96.3	5.9	94.2

^a Statistics for the number of companies are based on companies in the United States that reported data for at least one of the items on the survey relating to new or significantly improved products or processes, regardless of whether the company performed or funded R&D. These statistics do not include an adjustment to the weight to account for unit nonresponse.

^b Statistics for the number of companies are based on companies in the United States responding either "Yes" to at least one of the items or "No" to both of the items on the survey relating to new or significantly improved products, regardless of whether the company performed or funded R&D. These statistics do not include an adjustment to the weight to account for unit nonresponse.

^c Includes companies responding "Yes" to at least one of the items on the survey relating to new or significantly improved products.

^d Includes companies responding "No" to both of the items on the survey relating to new or significantly improved products.

^e Statistics are representative of companies located in the United States that performed or funded R&D. These statistics do not include an adjustment to the weight to account for unit nonresponse.

^f Statistics used for the denominator in the calculation of these percentages include companies in the United States responding either "Yes" to at least one of the items or "No" to both of the items on the survey relating to new or significantly improved products, regardless of whether the company performed or funded R&D. These statistics do not include an adjustment to the weight to account for unit nonresponse.

NOTES: Detail may not add to total because of rounding. The sum of "Yes" and "No" responses may not add to the total number of companies or, for the percentages, to 100% due to item nonresponse to some items relating to new or significantly improved products or processes.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 63. Companies with and without R&D activity that introduced new or significantly improved processes, by size of R&D program and the proportion of companies in each R&D program size classification: 2012–14
(Number and percent)

Company type	New or significantly improved products or processes (number)			New or significantly improved processes (number)								
	Companies ^a	Yes		Companies ^b	Any process		Manufacturing or production methods		Logistics, delivery, or distribution methods		Support activities	
		Yes	No		Yes ^c	No ^d	Yes	No	Yes	No	Yes	No
All companies	1,273,330	196,623	1,076,707	1,259,264	146,910	1,112,354	58,191	1,208,952	52,427	1,209,842	110,692	1,154,109
R&D activity ^e	53,473	37,149	16,324	53,225	25,869	27,356	16,237	37,069	9,566	43,244	17,832	35,286
< \$10 million	51,461	35,915	15,546	51,243	25,123	26,119	15,665	35,650	9,187	41,642	17,280	33,855
≥ \$10 million but < \$50 million	1,366	797	569	1,353	461	892	334	1,023	197	1,154	320	1,032
≥ \$50 million but < \$100 million	261	175	86	259	127	132	107	153	73	184	98	161
≥ \$100 million	386	263	123	371	158	213	131	243	109	265	134	238
No R&D activity	1,219,857	159,474	1,060,383	1,206,039	121,042	1,084,997	41,954	1,171,883	42,861	1,166,598	92,860	1,118,823

Company type	New or significantly improved products or processes			R&D program size proportions New or significantly improved processes ^f								
	Companies (number) ^a	Yes (percent)		Companies (number) ^b	Any process (percent)		Manufacturing or production methods (percent)		Logistics, delivery, or distribution methods (percent)		Support activities (percent)	
		Yes (percent)	No (percent)		Yes	No	Yes	No	Yes	No	Yes	No
All companies	1,273,330	15.4	84.6	1,259,264	11.7	88.3	4.6	96.0	4.2	96.1	8.8	91.6
R&D activity ^e	53,473	69.5	30.5	53,225	48.6	51.4	30.5	69.6	18.0	81.2	33.5	66.3
< \$10 million	51,461	69.8	30.2	51,243	49.0	51.0	30.6	69.6	17.9	81.3	33.7	66.1
≥ \$10 million but < \$50 million	1,366	58.4	41.6	1,353	34.1	65.9	24.7	75.6	14.6	85.3	23.7	76.3
≥ \$50 million but < \$100 million	261	67.0	33.0	259	49.0	51.0	41.2	59.1	28.1	71.2	37.8	62.2
≥ \$100 million	386	68.1	31.9	371	42.6	57.4	35.3	65.5	29.4	71.4	36.1	64.2
No R&D activity	1,219,857	13.1	86.9	1,206,039	10.0	90.0	3.5	97.2	3.6	96.7	7.7	92.8

^a Statistics for the number of companies are based on companies in the United States that reported data for at least one of the items on the survey relating to new or significantly improved products or processes, regardless of whether the company performed or funded R&D. These statistics do not include an adjustment to the weight to account for unit nonresponse.

^b Statistics for the number of companies are based on companies in the United States responding either "Yes" to at least one of the items or "No" to all of the items on the survey relating to new or significantly improved processes, regardless of whether the company performed or funded R&D. These statistics do not include an adjustment to the weight to account for unit nonresponse.

^c Includes companies responding "Yes" to at least one of the items on the survey relating to new or significantly improved processes.

^d Includes companies responding "No" to all of the items on the survey relating to new or significantly improved processes.

^e Statistics are representative of companies located in the United States that performed or funded R&D. These statistics do not include an adjustment to the weight to account for unit nonresponse.

^f Statistics used for the denominator in the calculation of these percentages include companies in the United States responding either "Yes" to at least one of the items or "No" to all of the items on the survey relating to new or significantly improved processes, regardless of whether the company performed or funded R&D. These statistics do not include an adjustment to the weight to account for unit nonresponse.

NOTES: Detail may not add to total because of rounding. The sum of "Yes" and "No" responses may not add to the total number of companies or, for the percentages, to 100% due to item nonresponse to some items relating to new or significantly improved products or processes.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 64. Companies that introduced new or significantly improved products new to the company's market or new only to the company, by industry, industry proportions, and company size: 2012–14
(Number and percent)

Industry and company size	NAICS code	New or significantly improved products (number)			New or significantly improved products (number)					
		Companies ^a	Yes ^b	No ^c	New to company's market			New only to company		
					Companies ^d	Yes	No	Companies ^d	Yes	No
All industries	21–23, 31–33, 42–81	1,266,982	118,894	1,148,088	118,894	69,109	49,791	118,894	77,763	41,136
Manufacturing industries	31–33	103,517	23,793	79,724	23,793	15,716	8,080	23,793	16,581	7,214
Food	311	9,116	1,717	7,398	1,717	1,037	680	1,717	1,109	608
Beverages and tobacco products	312	1,797	435	1,362	435	254	181	435	286	149
Textiles, apparel, and leather products	313–16	3,954	607	3,347	607	471	136	607	376	231
Wood products	321	4,797	482	4,315	482	351	131	482	262	220
Paper	322	1,162	211	951	211	165	46	211	145	66
Printing and related support activities	323	8,024	1,066	6,957	1,066	526	540	1,066	862	206
Petroleum and coal products	324	393	110	283	110	87	23	110	43	67
Chemicals	325	5,012	1,700	3,312	1,700	1,185	516	1,700	1,187	513
Basic chemicals	3251	595	210	385	210	175	35	210	157	53
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	472	148	323	148	107	41	148	97	51
Pesticides, fertilizers, and other agricultural chemicals	3253	264	67	197	67	50	17	67	60	7
Pharmaceuticals and medicines	3254	1,333	503	830	503	337	166	503	347	156
Soaps, cleaning compounds, and toilet preparations	3256	848	358	490	358	278	80	358	223	135
Paints, coatings, adhesives, and other chemicals	3255, 3259	1,500	413	1,087	413	238	176	413	302	111
Plastics and rubber products	326	5,073	1,235	3,838	1,235	780	455	1,235	808	427
Nonmetallic mineral products	327	4,455	656	3,799	656	352	303	656	428	228
Primary metals	331	1,709	217	1,492	217	163	54	217	155	62
Fabricated metal products	332	21,800	3,611	18,189	3,611	2,235	1,376	3,611	2,536	1,075
Machinery	333	10,667	3,525	7,142	3,525	2,265	1,260	3,525	2,472	1,053
Agricultural implements	33311	463	193	270	193	140	53	193	162	31
Semiconductor machinery	333295	96	82	14	82	23	60	82	30	53
Engines, turbines, and power transmission equipment	3336	344	72	272	72	45	26	72	57	14
Other machinery	other 333	9,764	3,178	6,586	3,178	2,058	1,120	3,178	2,222	956
Computer and electronic products	334	5,121	2,406	2,715	2,406	1,677	731	2,406	1,733	673
Communications equipment	3342	615	346	269	346	243	103	346	266	80
Semiconductors and other electronic components	3344	1,706	525	1,181	525	372	155	525	441	84
Navigational, measuring, electromedical, and control instruments	3345	2,015	1,012	1,003	1,012	714	297	1,012	709	303
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	432	120	312	120	89	31	120	78	42
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	209	46	163	46	25	21	46	32	14
Other measuring and controlling devices	other 3345	1,374	846	528	846	601	245	846	598	247
Other computer and electronic products	other 334	786	524	262	524	348	176	524	318	206
Electrical equipment, appliances, and components	335	2,880	1,348	1,533	1,348	1,093	255	1,348	1,039	309
Transportation equipment	336	4,016	1,287	2,729	1,287	885	402	1,287	937	350
Automobiles, bodies, trailers, and parts	3361–63	2,525	816	1,710	816	500	316	816	631	185
Aerospace products and parts	3364	739	184	555	184	148	36	184	139	45
Aircraft, aircraft engines, and aircraft parts	336411–13	714	172	542	172	139	33	172	131	41

TABLE 64. Companies that introduced new or significantly improved products new to the company's market or new only to the company, by industry, industry proportions, and company size: 2012–14 (Number and percent)

Industry and company size	NAICS code	New or significantly improved products			New or significantly improved products					
					New to company's market			New only to company		
		Companies (number) ^a	Yes ^b	No ^c	Companies (number) ^d	Yes	No	Companies (number) ^d	Yes	No
Guided missiles, space vehicles, and related parts	336414–15, 336419	25	12	13	12	9	3	12	8	4
Military armored vehicles, tanks, and tank components	336992	64	6	58	6	6	0	6	D	D
Other transportation	other 336	687	281	407	281	231	50	281	D	D
Furniture and related products	337	5,318	888	4,429	888	615	273	888	628	260
Miscellaneous manufacturing	339	8,225	2,292	5,933	2,292	1,574	718	2,292	1,576	718
Medical equipment and supplies	3391	2,632	908	1,724	908	658	250	908	534	376
Other miscellaneous manufacturing	3399	5,593	1,384	4,209	1,384	916	468	1,384	1,042	342
Nonmanufacturing industries	21–23, 42–81	1,163,466	95,102	1,068,364	95,102	53,393	41,711	95,102	61,181	33,922
Mining, extraction, and support activities	21	6,884	434	6,450	434	312	122	434	234	200
Utilities	22	865	104	761	104	88	16	104	62	42
Wholesale trade	42	87,298	11,753	75,545	11,753	8,113	3,640	11,753	7,729	4,024
Electronic shopping and electronic auctions	454111–12	3,148	406	2,742	406	185	221	406	304	102
Transportation and warehousing	48–49	36,507	1,574	34,932	1,574	770	805	1,574	813	761
Information	51	18,061	4,655	13,406	4,655	2,739	1,916	4,655	3,115	1,541
Publishing	511	6,541	1,741	4,800	1,741	1,181	560	1,741	1,249	492
Newspaper, periodical, book, and directory publishers	5111	4,155	284	3,871	284	59	224	284	204	79
Software publishers	5112	2,386	1,458	929	1,458	1,122	336	1,458	1,044	413
Telecommunications	517	2,980	839	2,141	839	373	466	839	643	196
Data processing, hosting, and related services	518	2,883	1,189	1,694	1,189	776	413	1,189	813	376
Other information	other 51	5,657	886	4,771	886	408	477	886	410	476
Finance and insurance	52	40,324	3,477	36,847	3,477	1,294	2,184	3,477	1,405	2,073
Real estate and rental and leasing	53	37,481	1,766	35,716	1,766	1,016	750	1,766	1,257	509
Lessors of nonfinancial intangible assets (except copyrighted works)	533	296	242	54	242	7	235	242	237	5
Other real estate and rental and leasing	other 53	37,185	1,524	35,662	1,524	1,009	515	1,524	1,020	504
Professional, scientific, and technical services	54	140,599	17,699	122,900	17,699	10,378	7,322	17,699	11,926	5,774
Architectural, engineering, and related services	5413	23,448	3,597	19,852	3,597	2,138	1,460	3,597	1,943	1,654
Computer systems design and related services	5415	19,902	6,186	13,716	6,186	3,984	2,202	6,186	4,150	2,036
Scientific R&D services	5417	2,639	998	1,641	998	695	303	998	577	421
Biotechnology R&D	541711	611	295	316	295	185	110	295	179	116
Physical, engineering, and life sciences (except biotechnology) R&D	541712	1,836	666	1,170	666	485	181	666	376	290
Social sciences and humanities R&D	541720	192	37	155	37	25	12	37	22	15
Other professional, scientific, and technical services	other 54	94,610	6,919	87,691	6,919	3,561	3,358	6,919	5,256	1,663
Health care services	621–23	157,545	14,073	143,472	14,073	5,495	8,579	14,073	9,952	4,122
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	634,752	39,160	595,593	39,160	23,005	16,155	39,160	24,386	14,774
All companies (number of domestic employees)	–	1,266,982	118,894	1,148,088	118,894	69,109	49,791	118,894	77,763	41,136
Small companies ^e										
5–499	–	1,256,691	117,212	1,139,479	117,212	68,013	49,203	117,212	76,492	40,723

TABLE 64. Companies that introduced new or significantly improved products new to the company's market or new only to the company, by industry, industry proportions, and company size: 2012–14
(Number and percent)

Industry and company size	NAICS code	New or significantly improved products			New or significantly improved products					
		Companies			New to company's market			New only to company		
		(number) ^a	Yes ^b	No ^c	(number) ^d	Yes	No	(number) ^d	Yes	No
5–99	–	1,204,639	111,059	1,093,580	111,059	64,484	46,579	111,059	71,954	39,106
5–49	–	1,127,700	101,811	1,025,889	101,811	58,692	43,120	101,811	65,462	36,349
5–9	–	492,237	39,019	453,218	39,019	20,498	18,521	39,019	24,050	14,969
10–24	–	461,310	43,223	418,087	43,223	26,507	16,716	43,223	28,294	14,929
25–49	–	174,153	19,569	154,583	19,569	11,687	7,884	19,569	13,118	6,451
50–99	–	76,939	9,248	67,691	9,248	5,792	3,458	9,248	6,492	2,757
100–249	–	41,655	4,142	37,513	4,142	2,552	1,590	4,142	2,962	1,182
250–499	–	10,396	2,011	8,385	2,011	977	1,034	2,011	1,576	435
Medium and large companies										
500–999	–	4,992	649	4,343	649	454	195	649	514	136
1,000–4,999	–	4,212	646	3,567	646	432	215	646	482	164
5,000–9,999	–	379	119	260	119	85	34	119	88	31
10,000–24,999	–	522	206	315	206	75	132	206	136	70
25,000 or more	–	186	62	124	62	50	12	62	50	13
Industry proportions										
Industry and company size	NAICS code	New or significantly improved products ^f			New or significantly improved products					
		Companies			New to company's market			New only to company		
		(number) ^a	Yes (percent)	No (percent)	(number) ^d	Yes (percent)	No (percent)	(number) ^d	Yes (percent)	No (percent)
All industries	21–23, 31–33, 42–81	1,266,982	9.4	90.6	118,894	58.1	41.9	118,894	65.4	34.6
Manufacturing industries	31–33	103,517	23.0	77.0	23,793	66.1	34.0	23,793	69.7	30.3
Food	311	9,116	18.8	81.2	1,717	60.4	39.6	1,717	64.6	35.4
Beverages and tobacco products	312	1,797	24.2	75.8	435	58.4	41.6	435	65.8	34.2
Textiles, apparel, and leather products	313–16	3,954	15.4	84.6	607	77.6	22.4	607	62.0	38.0
Wood products	321	4,797	10.0	90.0	482	72.8	27.2	482	54.4	45.6
Paper	322	1,162	18.1	81.9	211	78.2	21.8	211	68.8	31.2
Printing and related support activities	323	8,024	13.3	86.7	1,066	49.3	50.7	1,066	80.9	19.3
Petroleum and coal products	324	393	27.9	72.1	110	79.2	20.8	110	39.3	60.7
Chemicals	325	5,012	33.9	66.1	1,700	69.7	30.3	1,700	69.8	30.2
Basic chemicals	3251	595	35.3	64.7	210	83.5	16.5	210	74.7	25.3
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	472	31.5	68.5	148	72.2	27.8	148	65.4	34.6
Pesticides, fertilizers, and other agricultural chemicals	3253	264	25.4	74.6	67	74.5	25.5	67	89.7	10.3
Pharmaceuticals and medicines	3254	1,333	37.7	62.3	503	67.0	33.0	503	69.1	30.9
Soaps, cleaning compounds, and toilet preparations	3256	848	42.2	57.8	358	77.5	22.5	358	62.4	37.6
Paints, coatings, adhesives, and other chemicals	3255, 3259	1,500	27.5	72.5	413	57.6	42.7	413	73.1	26.9
Plastics and rubber products	326	5,073	24.3	75.7	1,235	63.1	36.9	1,235	65.4	34.6
Nonmetallic mineral products	327	4,455	14.7	85.3	656	53.7	46.3	656	65.2	34.8
Primary metals	331	1,709	12.7	87.3	217	75.2	24.8	217	71.6	28.4
Fabricated metal products	332	21,800	16.6	83.4	3,611	61.9	38.1	3,611	70.2	29.8
Machinery	333	10,667	33.0	67.0	3,525	64.3	35.7	3,525	70.1	29.9

TABLE 64. Companies that introduced new or significantly improved products new to the company's market or new only to the company, by industry, industry proportions, and company size: 2012–14
(Number and percent)

Industry and company size	NAICS code	Industry proportions								
		New or significantly improved products ^f			New or significantly improved products					
		Companies (number) ^a	Yes (percent)	No (percent)	New to company's market			New only to company		
					Companies (number) ^d	Yes (percent)	No (percent)	Companies (number) ^d	Yes (percent)	No (percent)
Agricultural implements	33311	463	41.7	58.3	193	72.4	27.6	193	84.1	15.9
Semiconductor machinery	333295	96	85.4	14.6	82	27.4	72.6	82	36.2	63.8
Engines, turbines, and power transmission equipment	3336	344	20.9	79.1	72	63.4	36.6	72	80.0	20.0
Other machinery	other 333	9,764	32.5	67.5	3,178	64.7	35.3	3,178	69.9	30.1
Computer and electronic products	334	5,121	47.0	53.0	2,406	69.7	30.4	2,406	72.0	28.0
Communications equipment	3342	615	56.3	43.7	346	70.2	29.8	346	76.8	23.2
Semiconductor and other electronic components	3344	1,706	30.8	69.2	525	70.8	29.5	525	84.0	16.0
Navigational, measuring, electromedical, and control instruments	3345	2,015	50.2	49.8	1,012	70.6	29.4	1,012	70.0	30.0
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	432	27.8	72.2	120	74.0	26.0	120	65.0	35.0
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	209	22.0	78.0	46	54.3	45.7	46	70.2	29.8
Other measuring and controlling devices	other 3345	1,374	61.5	38.5	846	71.0	29.0	846	70.7	29.3
Other computer and electronic products	other 334	786	66.6	33.4	524	66.5	33.5	524	60.6	39.4
Electrical equipment, appliances, and components	335	2,880	46.8	53.2	1,348	81.1	18.9	1,348	77.1	22.9
Transportation equipment	336	4,016	32.0	68.0	1,287	68.8	31.2	1,287	72.8	27.2
Automobiles, bodies, trailers, and parts	3361–63	2,525	32.3	67.7	816	61.2	38.8	816	77.3	22.7
Aerospace products and parts	3364	739	24.9	75.1	184	80.3	19.7	184	75.6	24.4
Aircraft, aircraft engines, and aircraft parts	336411–13	714	24.1	75.9	172	80.7	19.3	172	76.2	23.8
Guided missiles, space vehicles, and related parts	336414–15, 336419	25	48.0	52.0	12	75.0	25.0	12	66.7	33.3
Military armored vehicles, tanks, and tank components	336992	64	9.4	90.6	6	100.0	0.0	6	D	D
Other transportation	other 336	687	40.8	59.2	281	82.3	17.7	281	D	D
Furniture and related products	337	5,318	16.7	83.3	888	69.3	30.7	888	70.7	29.3
Miscellaneous manufacturing	339	8,225	27.9	72.1	2,292	68.7	31.3	2,292	68.7	31.3
Medical equipment and supplies	3391	2,632	34.5	65.5	908	72.5	27.5	908	58.7	41.4
Other miscellaneous manufacturing	3399	5,593	24.7	75.3	1,384	66.2	33.8	1,384	75.3	24.7
Nonmanufacturing industries	21–23, 42–81	1,163,466	8.2	91.8	95,102	56.1	43.9	95,102	64.3	35.7
Mining, extraction, and support activities	21	6,884	6.3	93.7	434	71.9	28.1	434	53.9	46.1
Utilities	22	865	12.1	87.9	104	84.3	15.7	104	59.8	40.2
Wholesale trade	42	87,298	13.5	86.5	11,753	69.0	31.0	11,753	65.8	34.2
Electronic shopping and electronic auctions	454111–12	3,148	12.9	87.1	406	45.5	54.5	406	74.9	25.1
Transportation and warehousing	48–49	36,507	4.3	95.7	1,574	48.9	51.1	1,574	51.7	48.3
Information	51	18,061	25.8	74.2	4,655	58.8	41.2	4,655	66.9	33.1
Publishing	511	6,541	26.6	73.4	1,741	67.8	32.2	1,741	71.7	28.3
Newspaper, periodical, book, and directory publishers	5111	4,155	6.8	93.2	284	21.0	79.0	284	72.1	27.9
Software publishers	5112	2,386	61.1	38.9	1,458	77.0	23.0	1,458	71.7	28.3
Telecommunications	517	2,980	28.2	71.8	839	44.5	55.5	839	76.6	23.4
Data processing, hosting, and related services	518	2,883	41.2	58.8	1,189	65.3	34.7	1,189	68.3	31.7
Other information	other 51	5,657	15.7	84.3	886	46.1	53.9	886	46.3	53.8
Finance and insurance	52	40,324	8.6	91.4	3,477	37.2	62.8	3,477	40.4	59.6

TABLE 64. Companies that introduced new or significantly improved products new to the company's market or new only to the company, by industry, industry proportions, and company size: 2012–14
(Number and percent)

Industry and NAICS code	Industry proportions										
	New or significantly improved products ^f			New or significantly improved products							
				New to company's market				New only to company			
	Companies (number) ^a	Yes (percent)	No (percent)	Companies (number) ^d	Yes (percent)	No (percent)	Companies (number) ^d	Yes (percent)	No (percent)		
Real estate and rental and leasing	53	37,481	4.7	95.3	1,766	57.5	42.5	1,766	71.2	28.8	
Lessors of nonfinancial intangible assets (except copyrighted works)	533	296	81.8	18.2	242	2.9	97.1	242	97.9	2.1	
Other real estate and rental and leasing	other 53	37,185	4.1	95.9	1,524	66.2	33.8	1,524	66.9	33.1	
Professional, scientific, and technical services	54	140,599	12.6	87.4	17,699	58.6	41.4	17,699	67.4	32.6	
Architectural, engineering, and related services	5413	23,448	15.3	84.7	3,597	59.4	40.6	3,597	54.0	46.0	
Computer systems design and related services	5415	19,902	31.1	68.9	6,186	64.4	35.6	6,186	67.1	32.9	
Scientific R&D services	5417	2,639	37.8	62.2	998	69.7	30.3	998	57.8	42.2	
Biotechnology R&D	541711	611	48.3	51.7	295	62.7	37.3	295	60.8	39.2	
Physical, engineering, and life sciences (except biotechnology) R&D	541712	1,836	36.3	63.7	666	72.8	27.2	666	56.5	43.5	
Social sciences and humanities R&D	541720	192	19.4	80.6	37	68.2	31.8	37	58.5	41.5	
Other professional, scientific, and technical services	other 54	94,610	7.3	92.7	6,919	51.5	48.5	6,919	76.0	24.0	
Health care services	621–23	157,545	8.9	91.1	14,073	39.0	61.0	14,073	70.7	29.3	
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	634,752	6.2	93.8	39,160	58.7	41.3	39,160	62.3	37.7	
All companies (number of domestic employees)	–	1,266,982	9.4	90.6	118,894	58.1	41.9	118,894	65.4	34.6	
Small companies ^e											
5–499	–	1,256,691	9.3	90.7	117,212	58.0	42.0	117,212	65.3	34.7	
5–99	–	1,204,639	9.2	90.8	111,059	58.1	41.9	111,059	64.8	35.2	
5–49	–	1,127,700	9.0	91.0	101,811	57.6	42.4	101,811	64.3	35.7	
5–9	–	492,237	7.9	92.1	39,019	52.5	47.5	39,019	61.6	38.4	
10–24	–	461,310	9.4	90.6	43,223	61.3	38.7	43,223	65.5	34.5	
25–49	–	174,153	11.2	88.8	19,569	59.7	40.3	19,569	67.0	33.0	
50–99	–	76,939	12.0	88.0	9,248	62.6	37.4	9,248	70.2	29.8	
100–249	–	41,655	9.9	90.1	4,142	61.6	38.4	4,142	71.5	28.5	
250–499	–	10,396	19.3	80.7	2,011	48.6	51.4	2,011	78.4	21.6	
Medium and large companies											
500–999	–	4,992	13.0	87.0	649	70.0	30.0	649	79.1	20.9	
1,000–4,999	–	4,212	15.3	84.7	646	66.9	33.3	646	74.7	25.3	

TABLE 64. Companies that introduced new or significantly improved products new to the company's market or new only to the company, by industry, industry proportions, and company size: 2012–14 (Number and percent)

Industry and NAICS code	Industry proportions									
	New or significantly improved products ^f			New or significantly improved products						
	Companies (number) ^a	Yes (percent)	No (percent)	New to company's market			New only to company			
Companies (number) ^d				Yes (percent)	No (percent)	Companies (number) ^d	Yes (percent)	No (percent)		
5,000–9,999	–	379	31.5	68.5	119	71.2	28.8	119	74.0	26.0
10,000–24,999	–	522	39.5	60.5	206	36.2	63.8	206	66.1	33.9
25,000 or more	–	186	33.3	66.7	62	80.7	19.3	62	80.7	20.9

D = data withheld to avoid disclosing operations of individual companies.

NAICS = 2012 North American Industry Classification System.

^a Statistics for the number of companies are based only on companies in the United States responding either "Yes" to at least one of the items or "No" to both of the items on the survey relating to new or significantly improved products, regardless of whether the company performed or funded R&D. These statistics do not include an adjustment to the weight to account for unit nonresponse.

^b Includes companies responding "Yes" to at least one of the items on the survey relating to new or significantly improved products.

^c Includes companies responding "No" to both of the items on the survey relating to new or significantly improved products.

^d Statistics for the number of companies are based only on companies in the United States that reported data for this survey item, regardless of whether the company performed or funded R&D. These statistics do not include an adjustment to the weight to account for unit nonresponse.

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

^f Statistics used for the denominator in the calculation of these percentages include companies in the United States responding either "Yes" to at least one of the items or "No" to both of the items on the survey relating to new or significantly improved products, regardless of whether the company performed or funded R&D. These statistics do not include an adjustment to the weight to account for unit nonresponse.

NOTES: 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. The sum of "Yes" and "No" responses may not add to the total number of companies or, for the percentages, to 100% due to item nonresponse to some items.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE 65. Companies that performed or funded R&D and introduced new or significantly improved products and sales from products, by industry, industry proportions, and company size: 2012–14
(Number and percent)

Industry and company size	NAICS code	New or significantly improved products (number)			New or significantly improved products				Sales of products unchanged or marginally modified (US\$millions)
		Companies ^a	Yes ^b	No ^c	New to company's market		New only to company		
					Companies (number) ^d	Sales (US\$millions)	Companies (number) ^d	Sales (US\$millions)	
All industries	21–23, 31–33, 42–81	53,048	30,891	22,157	21,338	777,638	21,324	825,655	11,764,192
Manufacturing industries	31–33	24,589	15,110	9,478	10,664	514,982	10,634	688,489	7,029,286
Food	311	1,424	792	632	551	25,976	557	82,156	778,186
Beverages and tobacco products	312	120	68	52	53	316	22	635	D
Textiles, apparel, and leather products	313–16	560	281	280	210	6,356	192	4,931	59,102
Wood products	321	282	138	144	88	3,943 i	86	1,676 i	48,295 i
Paper	322	271	167	105	140	5,939	117	11,131	88,783
Printing and related support activities	323	317	190	127	115	1,122	164	2,430	25,641
Petroleum and coal products	324	109	47	62	36	125	39	285	273,209
Chemicals	325	2,804	1,554	1,250	1,116	176,598	1,044	93,504	1,583,086
Basic chemicals	3251	312	208	104	168	12,836	149	14,352	570,191
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	258	139	118	98	12,897	92	14,405	198,081
Pesticides, fertilizers, and other agricultural chemicals	3253	148	55	94	43	1,601	49	7,196	49,647
Pharmaceuticals and medicines	3254	1,111	502	609	322	55,780	332	43,828	519,463
Soaps, cleaning compounds, and toilet preparations	3256	391	309	82	255	86,110	190	7,039	164,140
Paints, coatings, adhesives, and other chemicals	3255, 3259	584	342	242	230	7,375	232	6,685	81,564
Plastics and rubber products	326	1,519	889	630	624	24,653	589	18,632	207,034
Nonmetallic mineral products	327	509	335	174	231	1,075	241	2,662	58,475
Primary metals	331	279	145	133	105	2,128	99	9,725	118,852
Fabricated metal products	332	3,244	1,906	1,338	1,297	10,906	1,459	13,932	177,228
Machinery	333	3,827	2,565	1,263	1,700	27,844	1,829	51,102	D
Agricultural implements	33311	216	157	59	116	9,004	130	16,668	52,291
Semiconductor machinery	333295	88	79	9	20	3,157	26	384	22,988
Engine, turbine, and power transmission equipment	3336	104	63	41	39	913	51	17,419	D
Other machinery	other 333	3,419	2,266	1,153	1,525	14,771	1,621	16,632	298,472
Computer and electronic products	334	3,008	2,057	952	1,450	86,981	1,497	167,160	1,021,229
Communications equipment	3342	516	345	171	240	8,371	243	12,301	325,182
Semiconductors and other electronic components	3344	678	449	228	319	35,684	350	25,035	323,298
Navigational, measuring, electromedical, and control instruments	3345	1,383	923	460	627	34,523	655	7,424	234,784
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	299	117	182	80	5,702	70	366	50,599
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	85	45	40	22	24,770	27	2,034	78,228
Other measuring and controlling device	other 3345	1,000	761	239	525	4,052	558	5,024	105,957
Other computer and electronic products	other 334	431	339	92	265	8,403	249	122,400	137,965
Electrical equipment, appliances, and components	335	1,476	1,145	331	933	10,629	847	16,802	216,017
Transportation equipment	336	1,585	895	691	664	106,616	606	182,202	1,257,752
Automobiles, bodies, trailers, and parts	3361–63	934	516	418	348	55,785	369	149,836	808,006
Aerospace products and parts	3364	346	166	179	128	46,024	136	30,239	383,138
Aircraft, aircraft engines, and aircraft parts	336411–13	325	154	170	D	D	128	29,732	D

TABLE 65. Companies that performed or funded R&D and introduced new or significantly improved products and sales from products, by industry, industry proportions, and company size: 2012–14
(Number and percent)

Industry and company size	NAICS code	New or significantly improved products (number)			New or significantly improved products				Sales of products unchanged or marginally modified (US\$millions)
		Companies ^a	Yes ^b	No ^c	New to company's market		New only to company		
					Companies (number) ^d	Sales (US\$millions)	Companies (number) ^d	Sales (US\$millions)	
Guided missiles, space vehicles, and related parts	336414–15, 336419	21	12	9	D	D	8	507	D
Military armored vehicles, tanks, and tank components	336992	12	6	6	5	32	D	13	D
Other transportation	other 336	293	206	87	183	4,775	D	2,114	D
Furniture and related products	337	691	354	337	198	3,755	201	3,402	D
Miscellaneous manufacturing	339	2,562	1,583	979	1,153	20,019	1,045	26,122	395,519
Medical equipment and supplies	3391	863	537	327	416	14,790	269	21,014	269,633
Other miscellaneous manufacturing	3399	1,699	1,046	652	737	5,229	776	5,109	125,886
Nonmanufacturing industries	21–23, 42–81	28,459	15,781	12,679	10,674	262,655	10,690	137,167	4,734,906
Mining, extraction, and support activities	21	360	167	194	93	14,432	155	7,464	D
Utilities	22	97	45	52	39	1,555	5	364	322,966
Wholesale trade	42	2,711	1,570	1,140	1,104	7,009	839	2,826	201,508
Electronic shopping and electronic auctions	454111–12	172	92	80	63	55	50	1,460	D
Transportation and warehousing	48–49	291	14	277	13	765	8	354	185,990
Information	51	4,166	2,605	1,561	1,802	157,318	1,638	59,659	1,186,585
Publishing	511	1,987	1,285	702	1,000	84,366	845	25,575	476,618
Newspaper, periodical, book, and directory publishers	5111	169	23	146	16	13	15	126	6,763
Software publishers	5112	1,818	1,262	556	984	84,353	830	25,449	469,855
Telecommunications	517	294	199	95	94	66,518	150	22,904	419,298
Data processing, hosting, and related services	518	1,260	848	413	571	5,113	505	7,982	D
Other information	other 51	625	274	351	136	1,322	139	3,197	D
Finance and insurance	52	821	539	282	18	45,456	518	11,050	628,958
Real estate and rental and leasing	53	46	16	30	10	352	12	220	1,996
Lessors of nonfinancial intangible assets (except copyrighted works)	533	13	6	7	3	42	5	10	268
Other real estate and rental and leasing	other 53	33	10	23	7	310	7	210	1,727
Professional, scientific, and technical services	54	14,112	7,901	6,211	5,338	24,287	5,506	26,673	519,312
Architectural, engineering, and related services	5413	2,341	1,517	824	1,199	3,842	862	3,086	166,851
Computer systems design and related services	5415	6,209	3,886	2,322	2,483	10,386	2,801	10,632	125,221
Scientific R&D services	5417	1,875	844	1,031	534	6,799	486	6,835	51,833
Biotechnology R&D	541711	523	263	261	151	223	161	374	17,578
Physical, engineering, and life sciences (except biotechnology) R&D	541712	1,303	558	745	363	6,558	314	6,457	33,306
Social sciences and humanities R&D	541720	49	24	25	19	18	12	4	949
Other professional, scientific, and technical services	other 54	3,686	1,653	2,033	1,123	3,260	1,356	6,120	175,406
Health care services	621–23	1,167	304	863	36	328	291	717	53,594
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	4,517	2,527	1,989	2,157	11,097	1,668	26,378	D
All companies (number of domestic employees)	–	53,048	30,891	22,157	21,338	777,638	21,324	825,655	11,764,192
Small companies ^e	–	50,783	29,582	21,201	20,513	78,926	20,438	81,006	1,078,468

TABLE 65. Companies that performed or funded R&D and introduced new or significantly improved products and sales from products, by industry, industry proportions, and company size: 2012–14
(Number and percent)

Industry and company size	NAICS code	New or significantly improved products (number)			New or significantly improved products				Sales of products unchanged or marginally modified (US\$millions)
		Companies ^a	Yes ^b	No ^c	New to company's market		New only to company		
					Companies (number) ^d	Sales (US\$millions)	Companies (number) ^d	Sales (US\$millions)	
5–99	–	44,594	26,133	18,461	18,155	37,878	17,948	31,995	D
5–49	–	38,289	22,111	16,178	15,803	23,337	15,168	18,931	228,279
5–9	–	13,169	7,210	5,958	5,323	3,580	4,789	2,067	33,914
10–24	–	15,556	9,343	6,213	6,982	10,074	6,753	7,202	66,308
25–49	–	9,564	5,557	4,007	3,498	9,682	3,626	9,662	128,058
50–99	–	6,305	4,022	2,283	2,352	14,541	2,780	13,064	D
100–249	–	4,694	2,502	2,192	1,737	20,567	1,806	26,041	D
250–499	–	1,495	947	548	621	20,482	684	22,970	303,685
Medium and large companies									
500–999	–	905	472	433	307	23,839	319	26,387	D
1,000–4,999	–	901	525	376	360	89,333	397	109,681	1,546,223
5,000–9,999	–	168	108	60	65	50,769	70	52,029	1,179,397
10,000–24,999	–	188	148	40	57	150,866	68	153,953	D
25,000 or more	–	102	56	46	36	383,904	31	402,599	5,146,393

Industry and company size	NAICS code	New or significantly improved products ^f			New or significantly improved products				Sales of products unchanged or marginally modified (percent)
		Companies (number) ^a	Yes (percent)	No (percent)	New to company's market		New only to company		
					Companies (number) ^d	Sales (percent)	Companies (number) ^d	Sales (percent)	
All industries	21–23, 31–33, 42–81	53,048	58.2	41.8	21,338	5.8	21,324	6.2	88.0
Manufacturing industries	31–33	24,589	61.5	38.5	10,664	6.3	10,634	8.4	85.4
Food	311	1,424	55.6	44.4	551	2.9	557	9.3	87.8
Beverages and tobacco products	312	120	56.7	43.3	53	D	22	D	D
Textiles, apparel, and leather products	313–16	560	50.1	49.9	210	9.0	192	7.0	84.0
Wood products	321	282	49.0	51.0	88	7.3	86	3.1	89.6
Paper	322	271	61.4	38.6	140	5.6	117	10.5	83.9
Printing and related support activities	323	317	60.0	40.0	115	3.8	164	8.3	87.8
Petroleum and coal products	324	109	43.3	56.7	36	0.0	39	0.1	99.9
Chemicals	325	2,804	55.4	44.6	1,116	9.5	1,044	5.0	85.4
Basic chemicals	3251	312	66.6	33.4	168	2.1	149	2.4	95.4
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	258	54.1	45.9	98	5.7	92	6.4	87.9
Pesticides, fertilizers, and other agricultural chemicals	3253	148	36.8	63.2	43	2.7	49	12.3	84.9
Pharmaceuticals and medicines	3254	1,111	45.2	54.8	322	9.0	332	7.1	83.9
Soaps, cleaning compounds, and toilet preparations	3256	391	79.0	21.0	255	33.5	190	2.7	63.8
Paints, coatings, adhesives, and other chemicals	3255, 3259	584	58.6	41.4	230	7.7	232	7.0	85.3
Plastics and rubber products	326	1,519	58.5	41.5	624	9.8	589	7.4	82.7
Nonmetallic mineral products	327	509	65.8	34.2	231	1.7	241	4.3	94.0
Primary metals	331	279	52.1	47.9	105	1.6	99	7.4	90.9
Fabricated metal products	332	3,244	58.8	41.2	1,297	5.4	1,459	6.9	87.7
Machinery	333	3,827	67.0	33.0	1,700	D	1,829	D	D

TABLE 65. Companies that performed or funded R&D and introduced new or significantly improved products and sales from products, by industry, industry proportions, and company size: 2012–14
(Number and percent)

Industry and company size	NAICS code	Industry proportions								Sales of products unchanged or marginally modified (percent)
		New or significantly improved products ^f			New or significantly improved products					
		Companies (number) ^a	Yes (percent)	No (percent)	New to company's market		New only to company			
					Companies (number) ^d	Sales (percent)	Companies (number) ^d	Sales (percent)		
Agricultural implements	33311	216	72.8	27.2	116	11.5	130	21.4	67.1	
Semiconductor machinery	333295	88	89.8	10.2	20	11.9	26	1.4	86.7	
Engines, turbines, and power transmission equipment	3336	104	60.2	39.8	39	D	51	D	D	
Other machinery	other 333	3,419	66.3	33.7	1,525	4.5	1,621	5.0	90.5	
Computer and electronic products	334	3,008	68.4	31.6	1,450	6.8	1,497	13.1	80.1	
Communications equipment	3342	516	66.8	33.2	240	2.4	243	3.6	94.0	
Semiconductors and other electronic components	3344	678	66.3	33.7	319	9.3	350	6.5	84.2	
Navigational, measuring, electromedical, and control instruments	3345	1,383	66.8	33.2	627	12.5	655	2.7	84.8	
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	299	39.2	60.8	80	10.1	70	0.6	89.3	
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	85	53.2	46.8	22	23.6	27	1.9	74.5	
Other measuring and controlling devices	other 3345	1,000	76.1	23.9	525	3.5	558	4.4	92.1	
Other computer and electronic products	other 334	431	78.7	21.3	265	3.1	249	45.5	51.3	
Electrical equipment, appliances, and components	335	1,476	77.6	22.4	933	4.4	847	6.9	88.7	
Transportation equipment	336	1,585	56.4	43.6	664	6.9	606	11.8	81.3	
Automobiles, bodies, trailers, and parts	3361–63	934	55.3	44.7	348	5.5	369	14.8	79.7	
Aerospace products and parts	3364	346	48.1	51.9	128	10.0	136	6.6	83.4	
Aircraft, aircraft engines, and aircraft parts	336411–13	325	47.5	52.5	D	D	128	6.8	D	
Guided missiles, space vehicles, and related parts	336414–15, 336419	21	57.1	42.9	D	D	8	2.2	D	
Military armored vehicles, tanks, and tank components	336992	12	49.3	50.7	5	D	D	D	D	
Other transportation	other 336	293	70.3	29.7	183	D	D	D	D	
Furniture and related products	337	691	51.2	48.8	198	D	201	D	D	
Miscellaneous manufacturing	339	2,562	61.8	38.2	1,153	4.5	1,045	5.9	89.6	
Medical equipment and supplies	3391	863	62.2	37.8	416	4.8	269	6.9	88.3	
Other miscellaneous manufacturing	3399	1,699	61.6	38.4	737	3.8	776	3.8	92.4	
Nonmanufacturing industries	21–23, 42–81	28,459	55.5	44.5	10,674	5.1	10,690	2.7	92.2	
Mining, extraction, and support activities	21	360	46.3	53.7	93	D	155	D	D	
Utilities	22	97	46.5	53.5	39	0.5	5	0.1	99.4	
Wholesale trade	42	2,711	57.9	42.1	1,104	3.3	839	1.3	95.3	
Electronic shopping and electronic auctions	454111–12	172	53.8	46.2	63	D	50	D	D	
Transportation and warehousing	48–49	291	4.8	95.2	13	0.4	8	0.2	99.4	
Information	51	4,166	62.5	37.5	1,802	11.2	1,638	4.3	84.5	
Publishing	511	1,987	64.7	35.3	1,000	14.4	845	4.4	81.3	
Newspaper, periodical, book, and directory publishers	5111	169	13.8	86.2	16	0.2	15	1.8	98.0	
Software publishers	5112	1,818	69.4	30.6	984	14.6	830	4.4	81.1	
Telecommunications	517	294	67.6	32.4	94	13.1	150	4.5	82.4	
Data processing, hosting, and related services	518	1,260	67.2	32.8	571	D	505	D	D	
Other information	other 51	625	43.8	56.2	136	D	139	D	D	
Finance and insurance	52	821	65.7	34.3	18	6.6	518	1.6	91.8	

TABLE 65. Companies that performed or funded R&D and introduced new or significantly improved products and sales from products, by industry, industry proportions, and company size: 2012–14
(Number and percent)

Industry and company size	NAICS code	Industry proportions								Sales of products unchanged or marginally modified (percent)
		New or significantly improved products ^f			New or significantly improved products					
		Companies (number) ^a	Yes (percent)	No (percent)	New to company's market		New only to company			
					Companies (number) ^d	Sales (percent)	Companies (number) ^d	Sales (percent)		
Real estate and rental and leasing	53	46	34.2	65.8	10	13.7	12	8.6	77.7	
Lessors of nonfinancial intangible assets (except copyrighted works)	533	13	46.2	53.8	3	13.1	5	3.2	83.7	
Other real estate and rental and leasing	other 53	33	29.5	70.5	7	13.8	7	9.3	76.9	
Professional, scientific, and technical services	54	14,112	56.0	44.0	5,338	4.3	5,506	4.7	91.1	
Architectural, engineering, and related services	5413	2,341	64.8	35.2	1,199	2.2	862	1.8	96.0	
Computer systems design and related services	5415	6,209	62.6	37.4	2,483	7.1	2,801	7.3	85.6	
Scientific R&D services	5417	1,875	45.0	55.0	534	10.4	486	10.4	79.2	
Biotechnology R&D	541711	523	50.2	49.8	151	1.2	161	2.1	96.7	
Physical, engineering, and life sciences (except biotechnology) R&D	541712	1,303	42.8	57.2	363	14.2	314	13.9	71.9	
Social sciences and humanities R&D	541720	49	48.6	51.4	19	1.8	12	0.4	97.8	
Other professional, scientific, and technical services	other 54	3,686	44.9	55.1	1,123	1.8	1,356	3.3	94.9	
Health care services	621–23	1,167	26.0	74.0	36	0.6	291	1.3	98.1	
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	4,517	56.0	44.0	2,157	D	1,668	D	D	
All companies (number of domestic employees)	–	53,048	58.2	41.8	21,338	5.8	21,324	6.2	88.0	
Small companies ^e										
5–499	–	50,783	58.3	41.7	20,513	6.4	20,438	6.5	87.1	
5–99	–	44,594	58.6	41.4	18,155	D	17,948	D	D	
5–49	–	38,289	57.7	42.3	15,803	8.6	15,168	7.0	84.4	
5–9	–	13,169	54.8	45.2	5,323	9.1	4,789	5.2	85.7	
10–24	–	15,556	60.1	39.9	6,982	12.1	6,753	8.6	79.3	
25–49	–	9,564	58.1	41.9	3,498	6.6	3,626	6.6	86.9	
50–99	–	6,305	63.8	36.2	2,352	D	2,780	D	D	
100–249	–	4,694	53.3	46.7	1,737	D	1,806	D	D	
250–499	–	1,495	63.3	36.7	621	5.9	684	6.6	87.5	
Medium and large companies										
500–999	–	905	52.1	47.9	307	D	319	D	D	
1,000–4,999	–	901	58.2	41.8	360	5.1	397	6.3	88.6	

TABLE 65. Companies that performed or funded R&D and introduced new or significantly improved products and sales from products, by industry, industry proportions, and company size: 2012–14
(Number and percent)

Industry and company size	NAICS code	Industry proportions							
		New or significantly improved products ^f			New or significantly improved products				Sales of products unchanged or marginally modified (percent)
		Companies (number) ^a	Yes (percent)	No (percent)	New to company's market		New only to company		
Companies (number) ^d	Sales (percent)				Companies (number) ^d	Sales (percent)			
5,000–9,999	–	168	64.4	35.6	65	4.0	70	4.1	92.0
10,000–24,999	–	188	78.8	21.2	57	D	68	D	D
25,000 or more	–	102	55.0	45.0	36	6.5	31	6.8	86.7

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 for the number of companies are based only on companies in the United States that performed or funded R&D and responded either "Yes" to at least one of the items or "No" to both of the items on the survey relating to new or significantly improved products. These statistics do not include an adjustment to the weight to account for unit nonresponse.

^b Includes companies that performed or funded R&D and responded "Yes" to at least one of the items on the survey relating to new or significantly improved products.

^c Includes companies that performed or funded R&D and responded "No" to both of the items on the survey relating to new or significantly improved products.

^d Statistics for the number of companies are based only on companies in the United States that performed or funded R&D and reported data for this survey item. These statistics do not include an adjustment to the weight to account for unit nonresponse.

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

^f Statistics used for the denominator in the calculation of these percentages include companies in the United States that performed or funded R&D and responded either "Yes" to at least one of the items or "No" to both of the items on the survey relating to new or significantly improved products. These statistics do not include an adjustment to the weight to account for unit nonresponse.

NOTES: 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. Sum of "Yes" and "No" responses may not add to the total number of companies or, for the percentages, to 100% due to item nonresponse to some items.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

Appendix A. Technical Notes

Survey Description

The Business R&D and Innovation Survey (BRDIS), successor to the Survey of Industrial Research and Development (SIRD), is the primary source of information on research and development expenditures and the R&D workforce of businesses operating in the 50 U.S. states and the District of Columbia. The survey is conducted annually by the U.S. Census Bureau in accordance with an interagency agreement with the National Science Foundation's (NSF's) National Center for Science and Engineering Statistics (NCSES).

The survey is administered both to companies known to have performed R&D and to companies with no known history of R&D activity. BRDIS has been designed to provide detailed statistics on global and domestic R&D expenditures of companies located in the United States and also statistics on their R&D employees, intellectual property, technology transfer, and innovation activities.

The survey is sent to a single coordinator within each company, but it is organized into sections that help the coordinator collect specific types of information from different experts (human resources, accounting, R&D managers, etc.) in the company. Foreign-owned companies are instructed to report only for company operations owned by the U.S. subsidiary and, for purposes of the survey, to treat the U.S. subsidiary's foreign owners as if they were unrelated third parties. Response to this annual survey is mandatory and confidential under Title 13 of the United States Code.

Coverage

Target Population

The target population for BRDIS consists of all for-profit companies that have five or more paid employees in the United States, that have at least one establishment that is in business during the survey year and is located in the United States, and that are classified in certain industries based on the 2012 North American Industry Classification System (NAICS), with a particular focus on those companies that perform R&D in the United States.

The Business Register, a Census Bureau compilation that contains information on more than 3 million establishments with paid employees, serves as the primary input to the sample frame from which the sample is selected. For a given company with more than one establishment, the prior year's annual payroll and employment data for its active establishments are summed to the company level. Companies are excluded from the frame if they are classified in a NAICS industry that is outside the scope of BRDIS or if they have fewer than five employees, based on their prior year's aggregated annual payroll and employment data.

Sample Frame

The scope of the 2014 BRDIS is limited to companies that (1) are in business primarily to make a profit; (2) are classified within a specific set of NAICS industries; (3) have five or more paid employees in the United States, based on employment on 12 March 2013; (4) have at least one establishment that is physically located in the United States and is in business at the end of calendar year 2014 (the time at which the Census Bureau finished the 2013 Business Register processing); and (5) are not federally funded research and development centers.

Single-unit company records were extracted from the 2013 Business Register if the company's 2013 payroll was greater than or equal to \$250,000 or if the company had at least five paid employees in 2013. Companies were removed from the sample frame if their NAICS codes were designated as Crop

Production (NAICS 111), Animal Production (NAICS 112), Postal Service (NAICS 491), Educational Services (NAICS 61), Private Households (NAICS 814), or Public Administration (NAICS 92) or if they were no longer in business or were nonprofits. Companies were also removed from the sample frame if they were not located in the 50 states or the District of Columbia.

Records for active establishments from multiunit companies were extracted from the 2013 Business Register if the given establishment's 2013 payroll was greater than \$0 or if the establishment employed at least one person in 2013. Prior to creating records for multiunit companies from these establishments, establishments classified as Postal Service (NAICS 491), Private Households (NAICS 814), or Public Administration (NAICS 92) were removed, as were those that were not physically located in the 50 U.S. states or the District of Columbia. Unlike single-unit companies, establishments classified as Crop Production (NAICS 111), Animal Production (NAICS 112), or Educational Services (NAICS 61) were not removed during the construction of multiunit company records. From the resulting set of multiunit companies, companies were removed from the sample frame if their payroll was less than \$250,000 and they had fewer than five paid employees or if the payroll associated with their nonprofit establishments was greater than the payroll of their for-profit establishments.

For each company on the sample frame, a measure of size was assigned. The measure of size for a given company was based on R&D, if R&D data from the last 5 years were available from (1) BRDIS, (2) online financial databases, (3) the Bureau of Economic Analysis's Benchmark Survey of U.S. Direct Investment Abroad or Annual Survey of Foreign Direct Investment in the United States, (4) the Report of Organization conducted as part of the Company Organization Survey (in years not ending in "2" or "7") or as a supplement to the Economic Census (in years ending in "2" or "7"), or (5) qualified R&D expenses from the Internal Revenue Service (IRS). For all other companies, the measure of size was based on total annual payroll for 2013 from the Business Register.

Industry Classification for Sampling

Each company was assigned to 1 of 62 industry sampling strata based on the reported business segment in which the company performed the largest amount of total domestic R&D as reported in the prior period (2010–13 BRDIS), if available. If these business segment data were not reported for a given company, assignment is based on the NAICS codes of its establishments in the Census Bureau's Business Register using the following method, with some adjustments made to take into account vertical integration of related business activities within the company. The company was first assigned to the economic sector, defined by a 2-digit NAICS code that accounted for the highest percentage of its aggregated annual payroll. Then the company was assigned to a subsector, defined by a 3-digit NAICS code that accounted for the highest percentage of its annual payroll within the economic sector. Then the company was assigned a 4-digit NAICS code within the subsector, again based on the highest percentage of its aggregated annual payroll within the subsector. Finally, the company was assigned a 6-digit NAICS code within the 4-digit NAICS, based on the highest percentage of its aggregated annual payroll within the 4-digit NAICS. The industry used for sampling purposes was not necessarily the same code used for publication; see the following section "Post-Sampling Industry Classification."

Stratification of the Sample Frame

Each company in an industry sampling stratum was further assigned to one of three R&D groups based on information about its prior domestic R&D activity: (1) companies with a positive value for the measure of size based on R&D (known positive R&D group), (2) companies with a zero value for the measure of size based on R&D (known zero R&D group), and (3) companies with unknown R&D activity (unknown R&D group). For 2014, there were 35,532 companies in the first group,

79,343 companies in the second group, and 1,883,983 companies in the third group, for a total of 1,998,858 companies (appendix table A-1).

Sample Selection

In the known positive R&D group, Pareto probability-proportional-to-size (PPS) sampling was used within each noncertainty industry stratum, where the probability of selection was proportional to the company's measure of size. In the unknown R&D group, Pareto PPS sampling was typically used within each industry stratum, though simple random sampling was used for industries in which the number of companies in the sample frame was high and the likelihood of R&D was low. In the known zero R&D group, a single simple random sample was selected across all industry strata. Each sample by group had a certainty and noncertainty portion (appendix table A-2). Companies that exhibited characteristics of large R&D companies, including those with the largest amounts of R&D or annual payroll, were selected for the sample with certainty (i.e., the probability of selection was equal to 1). The probability of selection for other companies in the known positive R&D and unknown R&D groups depended on their size, the number of companies selected, and the total size or number of companies in their industry strata. The number of companies selected was based on a coefficient of variation constraint on the estimated sample total for the industry stratum and was increased, if necessary, to ensure that the minimum probability of selection is 0.05 for the known positive R&D group and one of three values for the unknown R&D group—0.004 or 0.01 for Nonmanufacturing industries (NAICS other than 31–33) and Incomplete manufacturers (Incomplete NAICS beginning with 3), depending on the population size and likelihood of R&D, and 0.02 for Manufacturing (NAICS 31–33); Computer systems design and related services (NAICS 5415); Management, scientific, and technical consulting services (NAICS 5416); and Scientific research and development services (NAICS 5417). Once selected, each company was assigned a sampling weight equal to the reciprocal of its probability of selection for the sample. Companies that were selected for the sample with certainty were assigned sampling weights equal to 1, and companies that were selected using random or Pareto PPS sampling were assigned weights ranging from 1 to 250. A complete and detailed description of the sample design and estimation methodology is given in the annual BRDIS methodology report available from the NCSES project officer.

Sampling and Nonsampling Error

The estimates produced from BRDIS are subject to both sampling and nonsampling errors. Potential nonsampling errors include coverage error and various response and operational errors, such as errors during data collection, reporting errors, transcription errors, and bias due to nonresponse. These are all types of errors that could also occur if a complete enumeration of the sample frame had been conducted under the same conditions as the sample survey. Most of the important operational errors were detected and corrected during the course of the reviewing data for reasonableness and consistency. Though nonsampling error is not measured directly, quality control procedures were employed throughout the survey process to minimize this type of error.

Sampling error is the difference between estimates obtained from the sample and results theoretically obtainable from a comparable complete enumeration of the sample frame. This error results because only a subset of the sample frame is measured in a sample survey. For published estimates from BRDIS, standard errors are produced for estimated percentages, while relative standard errors (RSEs) are produced for all other estimates. Tables of the estimated measures of sampling variability corresponding to each data table are available from the NCSES project officer.

Standard errors may be used to define confidence intervals about the corresponding estimates with a desired level of confidence. If a confidence interval were constructed for each possible sample that could be selected, then it would be expected that the percentage of confidence intervals containing the result of

a complete enumeration of the sample frame would equal the percentage of the level of confidence. For example, the interval defined by a margin of error of two standard errors yields a confidence interval of approximately 95%.

Because relatively few companies perform R&D in the United States and because the amount of R&D they perform is quite variable, it is difficult to achieve control over the sampling error of survey estimates produced from BRDIS. This depends on the correlation between the measure of size on the sample frame that was used to assign the selection probabilities and the actual data that are collected in BRDIS, which cannot be predicted accurately for all companies when the sample is designed. However, the largest companies known to perform R&D are included in the sample with certainty so that these companies will not contribute to the sampling error of the resulting estimates produced from BRDIS.

The sample size is sufficiently large that estimates based on the total sample are subject to low sampling error. However, because priority in designing the sample was given to industries that were identified in previous surveys as conducting large amounts of R&D expenditures, the sampling error may be larger for estimates for the lower-priority industries. The RSE for the estimate of total domestic R&D performed by the company was 0.48% in 2014.

Sample Size

With the above sample design parameters, a total of 44,162 companies were selected, of which 16,959 companies were in the known positive R&D group, 3,861 companies were in the known zero R&D group, and 23,342 companies were in the unknown R&D group (appendix tables A-3 and A-4).

During the survey's annual contact update procedures, 37 large R&D performers from the 2013 sample were found that were not included on the 2014 sample frame. To follow up, records for these companies were added to the 2014 sample with certainty. Because it was expected that many of these records would not contribute to 2014 BRDIS tabulations due to changes in company structure, these companies are not included in sample frame counts or sample sizes (appendix table A-5).

Methodology

Questionnaires

For the 2014 cycle of BRDIS, two questionnaires were used to collect data for the survey. Companies with domestic R&D performance greater than or equal to \$1 million in 2012 or 2013 were sent the standard survey form, BRDI-1. All other companies were sent an abbreviated form, BRDI-1(S) (appendix tables A-6 and A-7). A small number of companies with a history of chronic delinquency were sent the abbreviated form instead of the standard questionnaire. Some companies requested multiple forms to facilitate subcompany reporting (appendix table A-8).

Because of the potential compartmentalization of organizational knowledge within companies (particularly in larger companies), the BRDIS questionnaire was organized into sections based on the subject matter of the questions. These sections included the following:

Section 1. Company Information. Includes basic questions about company ownership, lines of business, sales data, and measures of innovation.

Section 2. Financial Schedule A. Includes accounting questions about the company's R&D expenses and capital expenditures for R&D.

Section 3. Financial Schedule B. Includes accounting questions about R&D paid for by others, such as the company's customers or grant-giving organizations.

Section 4. Management and Strategy of R&D. Includes questions related to the nature of the company's R&D and how the R&D is being performed. This section was targeted toward company employees responsible for managing R&D departments or programs.

Section 5. Human Resources. Includes questions related to the human resources involved in the company's R&D activities.

Section 6. Intellectual Property and Technology Transfer. Includes questions on the company's production, use, acquisition, and disposition of intellectual property related to science and technology, with a focus on patents.

For specific differences among the BRDIS questionnaires, see the "Comparability" section. In addition to paper questionnaires, an electronic mode of data reporting via the U.S. Census Bureau's Centurion data collection instrument was available to all BRDIS respondents. Respondents were made aware of Centurion in BRDIS-related correspondence and transmittals from the Census Bureau. For paper versus electronic response rates, see the "Response by Mode" section.

Response Rates

Unit Response Rates

Of the companies surveyed for the 2014 survey, 26.7% did not submit any response, and an additional 0.8% did not provide enough information to be treated as responses. Nonresponse studies are conducted periodically to assess reasons for nonresponse and possible nonresponse bias. Three metrics used by NSF and the Census Bureau to measure unit response to BRDIS were check-in rates, unit response rates, and coverage rates.

Check-in rate. The check-in rate is defined as the unweighted number of surveys that were either mailed in or submitted online by in-scope companies, divided by the unweighted total number of all in-scope companies in the sample. Response to individual questions did not factor into this metric.

Coverage rate. BRDIS managers track a coverage rate that is a weighted measure of survey response based on the measure of size at the time of sample selection. The coverage rate measures how much of the weighted measure of size for in-scope companies in the sample is accounted for by respondents to the survey.

Unit response rate (URR). The URR is the unweighted number of responding companies with positive data for at least one of the survey's key items (i.e., worldwide R&D expense or R&D costs funded by others, worldwide or domestic sales, or worldwide or domestic employees), divided by the unweighted total number of in-scope companies in the sample.

For the 2014 BRDIS, the check-in rate was 73.3%, and the URR was 72.5%. The coverage rate for the 2013 BRDIS was 91.0% for the known positive R&D group, 78.1% for the unknown R&D group, and 80.4% for the known zero R&D group (appendix tables A-9 and A-10).

Item Response Rates

BRDIS collects data for over 500 variables, and the distribution of values reported by sample companies is highly skewed. Thus, rather than report unweighted item response rates, total quantity response rates are calculated, which are based on weighted data.

Total quantity response rate (TQRR). For a given published estimate other than count or ratio estimates, TQRR is the percentage of the weighted estimate based on data that were reported by units in

the sample or data that were obtained from other sources and were determined to be equivalent in quality to reported data. The TQRR for total R&D performed in the United States in 2014 was 70%.

Total quantity nonresponse rate (TQNR). For a given published estimate, TQNR, defined as 100% minus TQRR, is calculated for each tabulation cell from BRDIS, except for cells that contain count or ratio estimates. TQNR measures the combined effect of the procedures used to handle unit and item nonresponse on the weighted BRDIS estimate. TQNR tables corresponding to each data table are available from the NCSES project officer.

Response by Mode

Overall, 14% of checked-in cases responded to BRDIS by mailing in the paper form, and 86% responded using the online version of the survey. However, companies receiving Form BRDI-1 were much more likely to respond online; 95% of all checked-in BRDI-1 forms were submitted online as opposed to only 83% of all checked-in BRDI-1(S) forms. Lastly, 95% of checked in companies with account managers responded via the Internet.

Editing

Given the size and complexity of BRDIS, many survey responses included errors that required correction or unusual patterns that required validation. Several hundred automated edit checks were programmed to improve the efficiency of analyst data review and correction (appendix table A-11).

Approximately two-thirds of these edit checks were designed to catch arithmetic errors and logically inconsistent responses (balance edits). The remaining edit checks were designed to flag outliers for further analyst review (analytical edits). Descriptions of the data edits and edit failure rates are in annual methodology reports available from the NCSES project officer.

During the editing and review process, several cases were identified where companies reported zero R&D or a relatively small amount of R&D, even though subject-matter experts expected large amounts of R&D to be reported. Some of these companies were contract research organizations or federal contractors that did not account for the costs they incurred conducting customer-sponsored research as R&D; instead, they accounted for these as cost of sales. The largest of these companies were contacted by analysts and asked to resubmit their surveys. In rare cases, if no response could be elicited from the company and public information was available related to costs for customer-sponsored R&D, those data were used to impute an R&D estimate for the company.

Techniques for Handling Unit and Item Nonresponse

For various reasons, many firms chose to return the survey questionnaire with one or more blank items. For some firms, internal accounting systems and procedures may not have allowed quantification of specific expenditures. Others may have refused to answer any questions as a matter of company policy. Weighted estimates produced from BRDIS include adjustments to account for companies that did not respond to the survey (unit nonresponse) and for companies that did respond but left some questions blank (item nonresponse).

Unit Nonresponse

Except for estimates of counts, patents, patent licensing agreements, product or process innovation, and intellectual property protection, unit nonresponse is handled by adjusting weighted reported data and imputed data as follows. Each company's sampling weight is multiplied by a nonresponse adjustment factor. To calculate the adjustment factors, each company in the sample that is eligible for tabulation is assigned to one and only one adjustment cell. The adjustment cells are based on the three R&D groups,

which are subdivided based on R&D size and certainty status, and the industry sampling strata described in the "Stratification of the Sample Frame" section, which are updated using information on industry classification reported in BRDIS. For a given adjustment cell, the nonresponse adjustment factor is the ratio of the sum of the weighted measure of size for all companies in the cell to the sum of the weighted measure of size for all companies in the cell with reported or imputed data. The measure of size used to select the sample for the 2014 BRDIS (see the "Sample Frame" section) was also used to adjust for unit nonresponse. For companies in the known positive R&D stratum, the measure of size was based on R&D in the United States. For companies in the unknown R&D stratum, the measure of size was based on total annual payroll in the United States. For companies in the known zero R&D stratum, an arbitrary value of 1 was assigned as the measure of size so that the records would be subjected to further examination.

For estimates of counts, patents, patent licensing agreements, and product or process innovation, the nonresponse adjustment described above is not performed. For count estimates for the BRDIS checkbox items that involve intellectual property protection, both unit and item nonresponse are handled using a nonresponse weight adjustment that is different from the one described above. The adjustment cells for tabulating the item are based on the three R&D groups, industry sampling strata, and presence or absence of R&D activity. For a given adjustment cell and item, the nonresponse adjustment factor is a ratio. The numerator of the ratio is the sum of two components: the sum of the weights for the companies in the cell that reported the item, inflated to account for unit nonresponse, and the sum of the weights for the companies in the cell that reported to BRDIS but not the item. The denominator of the ratio is the sum of the weights for the companies in the cell that reported the item.

Item Nonresponse

Item nonresponse for a given company is handled by item imputation. For account manager companies, large companies, and special cases, analysts impute these data using direct substitution of available company data (i.e., data from the company's website, annual Form 10-K report, or administrative sources) or ad hoc methods, which are approved by NSF and Census Bureau subject-matter experts (e.g., donor imputation for missing data on federally funded R&D). For all other cases, including cases where analysts were unable to provide a superior estimate, these data are imputed by programmed item imputation procedures. Depending on the particular item being imputed for a company, these procedures are based on a combination of (1) direct substitution of available company data; (2) ratio imputation using the company's survey data for both current and prior year; and (3) ratio imputation using survey data from both the company and other similar companies, which reported both the survey item being imputed for the company and the other survey item used in the ratio. Tables of imputation rates corresponding to each data table are available from the NCSES project officer.

Estimation

The general methodology used to produce estimates from BRDIS involves sums of weighted data (reported or imputed) in which the weights are the product of the sampling weight and the nonresponse adjustment factor. However, there are some exceptions, which are described below.

Weighting

Estimates published for BRDIS are computed as sums of weighted data for sample companies that reported to the survey or sample companies for which data could be reliably imputed based on prior reports or other information. Two types of weights are used for estimates of R&D: sampling weights and nonresponse adjustment factors. The sampling weight for a given company is calculated as the reciprocal of the company's probability of inclusion in the sample. Nonresponse adjustment factors are used to represent companies in the sample that did not provide sufficient response data to be directly tabulated

and whose data could not be imputed. For information on the calculation of the nonresponse adjustment factors, see the "Unit Nonresponse" section.

Except for estimates of counts, patents, patent licensing agreements, and product or process innovation, each value that contributes to a given BRDIS estimate is multiplied by both its sampling weight and its nonresponse adjustment factor, and these weighted values are then summed to create the estimate. For estimates of counts, patents, patent licensing agreements, and product or process innovation, each value that contributes to a given BRDIS estimate is weighted only by its sampling weight.

Postsampling Industry Classification

As mentioned in the "Industry Classification for Sampling" section, the industry classification assigned to companies for sampling was based on either reported BRDIS business segment data from prior years or annual payroll. To produce more accurate estimates for the current survey year, a company's reported business code data, if available for the current survey year, were used to assign an updated industry code for tabulations. The company's response to the domestic R&D performance questions from the current survey year was used to classify each company into the business code that accounted for the largest amount of total domestic R&D performance. The business codes reported by companies with large amounts of R&D were validated, and in some cases corrected, by survey staff. If no business code data were available for a company's domestic R&D performance, the industry code used for sampling was also used for tabulations.

R&D, by State

The estimation methodology for state estimates takes the form of a hybrid estimator, combining the unweighted reported amount, by state, with a weighted amount apportioned (or raked) across states with relevant industrial activity. The hybrid estimator smooths the estimate over states with R&D activity, by industry, and accounts for real observed change within a state. However, as described in the "Weighting" section, the weighted estimator described above is not used to produce estimates of counts, such as estimates of the number of R&D performers, by state.

Innovation

As described in the "Weighting" section, estimates of innovation activity are sums of weighted data (reported or imputed), where the weights are based on only the sampling weight. For these estimates, the weighted data were not adjusted to account for nonresponse to the survey.

R&D, by Business Segment Code

To provide increased granularity on R&D activities, BRDIS includes questions asking companies to report data for business units below the company level. To support subcompany reporting, a list of business codes based on NAICS was provided in BRDIS for companies to use to categorize their business operations. The list of business codes for the 2014 cycle of BRDIS was based on the 2012 NAICS. To assist companies in selecting appropriate business codes, likely business codes were provided to respondents by printing them on the forms mailed to companies and by pre-populating them on the online version of the survey. For companies that reported to the 2012 or 2013 BRDIS, the most recent business codes reported by the company were used to provide the business codes. For companies that did not report to the 2012 or 2013 BRDIS, establishment payroll data from the Business Register were used to provide the business codes.

Company Counts

The company count estimates for 2014 are not comparable with estimates published for previous years. Previously, all companies that met the response criteria and reported R&D were included in the company

counts. For 2014, several hundred companies reporting less than \$10,000 of R&D and no R&D employees were reviewed, and the R&D was edited to zero because it was determined to most likely be response error. Because companies meeting these criteria contributed negligible amounts to BRDIS R&D estimates, they had not been similarly reviewed on a consistent basis in prior years. These companies tended to have high sample weights, so zeroing their R&D had a large impact on the estimate of R&D-active companies compared to prior years when similar corrections were not made.

Sampling Variability

See the "Sampling and Nonsampling Error" section for information on the sampling variability of estimates produced from BRDIS.

Measurement Error

Variations in respondent interpretations of the definitions of R&D activities and variations in accounting procedures are of particular concern—specifically, the characterization and reporting of R&D activities by large defense contractors funded by the U.S. federal government; the reporting of R&D activities by companies classified in the R&D services industry (NAICS 5417); and the method used by companies, in general, to count and report numbers of employees in various categories, such as the number of employees who work full time versus part time on R&D. The sophistication and comprehensiveness of a company's accounting and personnel tracking systems often depend on its size and activities and on its willingness to accommodate government-sponsored surveys. While no measure of measurement error is produced, ongoing efforts to minimize measurement error include questionnaire pretesting, improvement of questionnaire wording and format, inclusion of more cues and examples in the questionnaire instructions, in-person and telephone interviews and consultations with respondents, and postsurvey evaluations.

Survey Definitions

Capital expenditure. Capital expenditures are payments by a business for assets that usually have a useful life of more than 1 year, like buildings, equipment, or software. The value of assets acquired or improved through capital expenditures is recorded on a company's balance sheet. Expenditures for long-lived assets used in a company's R&D operations are not included in its R&D expense, but any depreciation recorded for those assets would be included in its R&D expense. Data are collected in BRDIS for capital expenditures for R&D operations for structures, equipment, capitalized software, and other items.

Employment, total and R&D. Involves the number of people employed by R&D-performing or R&D-funding companies in all locations, both foreign and domestic, during the pay period that included 12 March of the survey year. (The date 12 March is what most employers use when paying first-quarter employment taxes to IRS.) R&D employees are those who provide direct support to R&D, such as researchers, R&D managers, technicians, clerical staff, and others assigned to R&D groups. Those not included are employees who provide indirect support to R&D, such as corporate personnel, security guards, and cafeteria workers. In addition to headcounts of total and R&D employees, estimates of full-time equivalent (FTE) domestic R&D employment are produced from BRDIS. This is the number of persons employed who were assigned full time to R&D, plus a prorated number of employees who worked on R&D only part of the time.

Expense and R&D expense. Involves money spent or cost incurred in an organization's efforts to generate revenue, representing the cost of doing business. Expenses may be in the form of actual cash payments (such as wages and salaries), a computed expired portion (depreciation) of an asset, or an amount taken out of earnings (such as bad debts). Expenses are summarized and charged in the income

statement as deductions from the income before assessing income tax. Whereas all expenses are costs, not all costs are expenses (e.g., costs incurred in acquisition of income generating assets—see the definition of "Capital expenditure" above). R&D expense is the cost of R&D funded by the company itself and performed within the respondent company's facilities, both foreign and domestic, or performed by others outside of the company under contract, subcontract, grant, or other funding arrangement.

Innovation. BRDIS questions on innovation activities refer only to product and process innovation. A product innovation is the market introduction of a new or significantly improved good or service with respect to its capabilities, user friendliness, components, or subsystems. A process innovation is the implementation of a new or significantly improved production process, distribution method, or support activity for the company's goods or services. Product and process innovations (new or improved) must be new to the respondent company, but they do not need to be new to the company's market, and the innovations could have been originally developed by the respondent company or by other companies. Purely organizational innovations (i.e., those of benefit only to the company) are excluded.

R&D and business R&D. R&D is planned, creative work aimed at discovering new knowledge or developing new or significantly improved goods and services. This includes (1) activities aimed at acquiring new knowledge or understanding without specific immediate commercial applications or uses (basic research), (2) activities aimed at solving a specific problem or meeting a specific commercial objective (applied research), and (3) systematic use of research and practical experience to produce new or significantly improved goods, services, or processes (development). R&D includes both direct costs, such as salaries of researchers, and administrative and overhead costs clearly associated with the company's R&D. However, R&D does not include expenditures for routine product testing, quality control, and technical services unless they are an integral part of an R&D project. R&D also does not include market research; efficiency surveys or management studies; literary, artistic, or historical projects, such as films, music, or books and other publications; and prospecting or exploration for natural resources.

R&D, biotechnology. R&D activity in biotechnology refers to activities involving the use of cellular and biomolecular processes to solve problems or make useful products. The following list provides examples of areas of biotechnology in which R&D may be performed.

- DNA or RNA: genomics; pharmacogenomics; gene probes; genetic engineering; DNA or RNA sequencing, synthesis, or amplification; gene expression profiling; and use of antisense technology.
- Proteins and other molecules: sequencing, synthesis, or engineering of proteins and peptides (including large molecule hormones); improved delivery methods for large molecule drugs; proteomics; protein isolation and purification; signaling; and identification of cell receptors.
- Cell and tissue culture and engineering: cell or tissue culture, tissue engineering (including tissue scaffolds and biomedical engineering), cellular fusion, vaccine or immune stimulants, and embryo manipulation.
- Process biotechnology techniques: fermentation using bioreactors, bioprocessing, bioleaching, biopulping, biobleaching, biodesulfurization, bioremediation, biofiltration, and phytoremediation.
- Gene and RNA vectors: gene therapy and viral vectors.

- Bioinformatics: construction of databases on genomes, protein sequences, and modeling complex biological processes, including systems biology.
- Nanobiotechnology: applies the tools and processes of nano- or microfabrication to build devices for studying biosystems and applications in, for example, drug delivery or diagnostics.

R&D, nanotechnology. R&D activity in nanotechnology refers to activities involving science and technology involved in the study, creation, or use of objects at the nanoscale, which is generally considered to be 100 nanometers or smaller. Many technologies related to conventional solid-state semiconductor manufacturing are capable of creating features smaller than 100 nanometers, and R&D involving these technologies is included in the BRDIS data collection.

R&D paid for by others, worldwide and domestic. The cost of R&D funded by others outside of the company, including the U.S. federal government, and performed within the respondent company's facilities, both foreign and domestic.

R&D paid for by the company and others, worldwide and domestic. Involves the cost of R&D funded by the company itself or by others outside of the company and performed within the respondent company's facilities, both foreign and domestic, or performed by others outside of the company under contract, subcontract, grant, or other funding arrangement.

R&D performed by the company, worldwide and domestic. The cost of R&D performed within the respondent company's facilities, both foreign and domestic, funded by the company itself or by others outside of the company.

R&D performed by the company and others, worldwide and domestic. The cost of R&D performed within the respondent company's facilities, both foreign and domestic, or performed by others outside of the company under contract, subcontract, grant, or other funding arrangement.

R&D performed by others, worldwide and domestic. Involves the cost of R&D funded by the company itself or by others outside of the company and performed by others outside of the company under contract, subcontract, grant, or other funding arrangement.

R&D, software and Internet. R&D activity in software and Internet applications refers only to activities with an element of uncertainty and that are intended to close knowledge gaps and meet scientific and technological needs. This item is reported in this survey regardless of the eventual user (internal or external). R&D activity in software includes software development or improvement activities that expand scientific or technological knowledge and construction of new theories and algorithms in the field of computer science. R&D activity in software excludes software development that does not depend on a scientific or technological advance, such as supporting or adapting existing systems, adding functionality to existing application programs, routine debugging of existing systems and software, creating new software based on known methods and applications, converting or translating existing software and software languages, and adapting a product to a specific client, unless knowledge that significantly improved the base program was added in that process.

Sales, worldwide and domestic. Involves dollar values for goods sold or services rendered by R&D-performing or R&D-funding companies to customers outside the company, including the U.S. federal government, less such items as returns, allowances, freight, charges, and excise taxes. Included are worldwide sales by a company's foreign operations and subsidiaries and also revenues from domestic operations located in the 50 United States and the District of Columbia; intracompany transfers are

excluded. If a respondent company is owned by a foreign parent company, sales to the parent company and to affiliates not owned by the respondent companies are included.

Comparability

Differences between the 2014 and 2013 BRDIS Questionnaires

The following changes were made to the 2014 BRDIS from the 2013 BRDIS:

- A question on monetary gifts to universities or colleges restricted to supporting R&D was added to Form BRDI-1.
- A question on revenue received from patent licensing was added to Form BRDI-1.
- A question on purchasing patents from others was added to Form BRDI-1.
- A question on licensing patents from others was added to Form BRDI-1.
- One business code was added to the list of business codes collected on the survey: 33333, Digital cameras manufacturing. In prior years, this line of business was included in the business code 33412, Computers and peripheral equipment manufacturing and magnetic and optical media.
- Questions related to patenting were removed from Form BRDI-1(S).
- Questions related to innovation were added to Form BRDI-1(S).

Differences between the 2012 and 2013 BRDIS Questionnaires

The following changes were made to the 2013 BRDIS from the 2012 BRDIS:

- The list of countries for which foreign R&D performance data were collected was expanded by three: Hungary, Luxembourg, and Norway.
- A question was restored asking the amount of R&D the company plans to recoup through indirect charges on U.S. federal government contracts (Independent R&D). This question was last asked on the 2010 BRDIS.
- Questions on R&D for software products and R&D for embedded software were combined.
- A question on R&D for software products and embedded software paid for by the federal government was added.
- A question was restored related to educational attainment of scientists and engineers. This question was last asked on the 2010 BRDIS.
- Two business codes were added to the list of business codes collected on the survey: 32542, Biotechnology-based pharmaceutical and biological products (except diagnostics), and 51801, Cloud computing applications and Internet-based software services.
- Delinquent companies in the known positive R&D stratum for the past two survey cycles were sent a BRD-1S form to see if they report at least the high-level numbers.

Differences between the 2011 and 2012 BRDIS Questionnaires

For 2012, a much shorter (8-page) version of the short form (BRD-1(S)) was implemented. The form included 19 high-level detail items on worldwide sales; domestic sales; R&D expense funded both by company and by others; employment both worldwide and domestic, including R&D employment; and patents applied for and issued. Companies that reported \$1 million or more of domestic R&D performance were then sent the long form (BRDI-1) for additional details. The BRD-1S form was sent to companies in the unknown and known zero R&D strata. In section 2, the questionnaire collected the additional detail categories for capital expenditures. In section 3, four agencies were added to the type of agency question in an attempt to reduce the amount reported in the "All other" category. In section 4, the percentage of R&D that was directed toward business areas or product lines new to the respondent's company as well as percentages that pertain to defense applications, health or medical applications, or agricultural applications were added for R&D funded by the company and R&D funded by others.

Differences between the 2010 and 2011 BRDIS Questionnaires

For the 2011 data collection, the innovation questions and instructions in section 1 were changed based on the results of the 2010 experiment. Cycling continued for data items not needed every year. The survey was expanded in several ways to address data gaps: the list of countries in which companies could report foreign R&D performance was expanded, a question was added to collect intracompany R&D transactions, and questions were added about companies' second-largest R&D location. In addition, questions pertaining to FTE R&D scientists and engineers were revised in an attempt to improve respondent understanding of survey concepts.

Differences between the 2009 and 2010 BRDIS Questionnaires

For the 2010 data collection, the most notable changes made to the questionnaire were the inclusion of a one-time section (section 7) on R&D time frame and R&D product life, the inclusion of an experiment testing the impact of different innovation questions and instructions, and the addition of a survey supplement to collect detailed information from companies reporting R&D paid for by others. In addition, questions and instructions about company ownership were expanded to clarify, especially for foreign-owned companies, the information that should be reported on the survey. Cycling began for data items not needed every year from every company. These items will be returned to the questionnaire cyclically, depending on the demand for and quality of the collected data. Finally, data items poorly reported during the first two cycles of BRDIS were deleted.

The section entitled "R&D Time Frame and R&D Product Life" was added to the questionnaire for the 2010 cycle to aid in estimating the depreciation of R&D when it is treated as an investment in the U.S. System of National Accounts.

The experiment testing the impact of different innovation questions and instructions used two versions of the BRDIS short form. The innovation questions on the 2010 Form BRDI-1A were identical to questions used on the 2009 Form BRDI-1A, and the 2010 Form BRDI-1B altered the questions and instructions to replicate innovation questions on the European Union's Community Innovation Survey. The experiment did not produce statistically significant differences in measured rates of innovation.

Differences between the 2008 and 2009 BRDIS Questionnaires

Several changes were made to the 2009 BRDIS questionnaire—in part, to address reporting errors observed during the 2008 survey cycle. Briefly, these changes included the following:

- Removing a screening question at the beginning of the form asking companies whether they had R&D activity during the reporting period.

- Replacing exclusion instructions in the main R&D expense question with a series of targeted questions. This approach was based on the premise that the economic concepts requested by BRDIS do not always conform to the R&D measures tracked by companies. Rather than directly ask for concepts that may diverge from respondent preconceptions about R&D, the approach in 2009 guided respondents to derive amounts that conformed to the BRDIS definition of R&D.
- Replacing inclusion instructions in the main R&D paid for by others question with a series of targeted questions.
- Deriving R&D performed by others rather than asking for the concept directly. For the 2009 cycle of BRDIS, the concept of R&D performed by others was derived from the sum of two R&D costs known to be tracked by companies: payments to business partners for collaborative R&D and purchased R&D services.
- Switching the order of the "Management and Strategy of R&D" and "Financial Schedule B" (R&D paid for by others) sections.

Data Availability

Publications

The data from BRDIS can be found online at <https://www.nsf.gov/statistics/industry/>. Detailed historical statistics from the predecessor survey, SIRD, can be obtained from NSF's Industrial Research and Development Information System (IRIS) at <https://www.nsf.gov/statistics/iris/>. Information from BRDIS is also included in *Science and Engineering Indicators* and in *National Patterns of R&D Resources*.

Electronic Access

BRDIS contains confidential data that are protected under Title 13 and Title 26 of the United States Code. Two types of data are currently available: public-use tabular statistics and restricted microdata. Detailed tabular statistics can be obtained by contacting the BRDIS project officer. Microdata for the SIRD and BRDIS can only be accessed at the Census Bureau's secure Research Data Centers (RDCs). To learn more about RDCs and for instruction on how to apply for data use, please visit the Center for Economic Studies page on research opportunities (<http://www.census.gov/ces/rcresearch/index.html>).

Table Table Title

Target population

A-1 counts, by frame partition: 2008–14

A-2 companies in and selected for the sample, by industry and company size: 2014

Sample

A-3 size, by frame partition: 2008–14

A-4 companies, by sampling stratum: 2014

A-5 companies included that were not in the original sampling frame: 2008–14

Survey forms

A-6 number and type mailed: 2008–14

by sampling stratum

A-7 mailed: 2014

A-8 mailed for companies with subcompany reporting units: 2014

Table	Table Title
	Response
A-9	measures: 2008–14
A-10	unit rates, by industry and survey form type: 2014
	Companies that required an analyst action
A-11	by sampling stratum: 2014

TABLE A-1. Target population counts, by frame partition: 2008–14
(Number of companies)

Year	Total ^a	Known positive R&D	Known zero R&D	Unknown R&D
2008	1,926,012	16,059	75,923	1,834,030
2009	2,090,181	22,181	79,031	1,988,969
2010	2,013,399	24,723	67,281	1,921,395
2011	1,964,757	27,049	73,930	1,863,778
2012	1,971,731	29,512	73,004	1,869,215
2013	1,971,959	34,482	70,032	1,867,445
2014	1,998,858	35,532	79,343	1,883,983

^a For each year, the estimate of the number of companies in the total target population is based on the original sampling frame that was created to select the sample. The target population estimates in this table do not include R&D performers from the previous year's sample, which were not on the original sampling frame, but were found during the survey's annual contact update procedures. See appendix table A-5 for the counts of companies that were added to each year's sample.

NOTES: Companies were said to be known to conduct R&D (known positive R&D) if they reported positive R&D in any of the previous 5 survey years. Companies were said to have known zero R&D if they reported zero R&D in at least 1 of the previous 5 survey years and no positive R&D in any of the 5 years. Companies were said to be unknown if no R&D information was available.

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

TABLE A-2. Companies in the target population and selected for the sample, by industry and company size: 2014

Industry and company size	NAICS code	Companies in target	Companies selected for the sample		
		population ^a	All companies	Noncertainties	Certainties
All industries	21–23, 31–33, 42–81	1,998,858	44,162	24,601	19,561
Manufacturing industries	31–33	145,735	18,903	9,801	9,102
Food	311	12,589	1,063	689	374
Beverages and tobacco products	312	2,563	401	271	130
Textiles, apparel, and leather products	313–16	7,023	738	450	288
Wood products	321	6,902	626	422	204
Paper	322	1,996	426	223	203
Printing and related support activities	323	11,622	809	542	267
Petroleum and coal products ^b	324	515	167	28	139
Chemicals	325	6,227	1,904	666	1,238
Basic chemicals	3251	914	319	103	216
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	626	225	70	155
Pesticides, fertilizers, and other agricultural chemicals	3253	373	119	38	81
Pharmaceuticals and medicines	3254	1,421	467	59	408
Soaps, cleaning compounds, and toilet preparations	3256	1,135	305	171	134
Paints, coatings, adhesives, and other chemicals	3255, 3259	1,758	469	225	244
Plastics and rubber products	326	6,638	1,051	536	515
Nonmetallic mineral products	327	5,668	653	410	243
Primary metals	331	2,528	541	266	275
Fabricated metal products	332	31,055	2,135	1,203	932
Machinery	333	13,734	2,134	1,050	1,084
Agricultural implements	33311	760	206	86	120
Semiconductor machinery	333295	137	69	14	55
Engines, turbines, and power transmission equipment	3336	546	158	60	98
Other machinery	other 333	12,291	1,701	890	811
Computer and electronic products	334	7,321	2,023	840	1,183
Communications equipment	3342	879	240	41	199
Semiconductors and other electronic components	3344	2,592	561	245	316
Navigational, measuring, electromedical, and control instruments	3345	2,704	881	382	499
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	423	194	72	122
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	333	119	22	97
Other measuring and controlling devices	other 3345	1,948	568	288	280
Other computer and electronic products	other 334	1,146	341	172	169
Electrical equipment, appliances, and components	335	3,224	740	370	370
Transportation equipment	336	6,205	1,084	416	668
Motor vehicles, bodies, trailers, and parts	3361–63	3,921	551	207	344
Aerospace products and parts	3364	968	263	87	176
Aircraft, aircraft engines, and aircraft parts	336411–13	916	229	87	142
Guided missiles, space vehicles, and related parts	336414, 336415, 336419	52	34	0	34
Military armored vehicles, tanks, and tank components	336992	42	25	D	D
Other transportation equipment	other 336	1,274	245	D	D
Furniture and related products	337	7,282	725	464	261

TABLE A-2. Companies in the target population and selected for the sample, by industry and company size: 2014

Industry and company size	NAICS code	Companies in target	Companies selected for the sample		
		population ^a	All companies	Noncertainties	Certainties
Miscellaneous manufacturing	339	11,843	1,497	848	649
Medical equipment and supplies	3391	4,311	712	397	315
Other miscellaneous	3399	7,532	785	451	334
Unclassified	–	800	186	107	79
Nonmanufacturing industries	21–23, 42–81	1,853,123	25,259	14,800	10,459
Mining, extraction, and support activities ^b	21	9,740	850	505	345
Utilities	22	1,285	211	47	164
Wholesale trade	42	129,648	2,651	1,809	842
Electronic shopping and electronic auctions	454111–12	5,178	401	299	102
Transportation and warehousing	48–49	56,283	656	276	380
Information	51	26,192	2,636	1,318	1,318
Publishing	511	8,733	975	394	581
Newspaper, periodical, book, and directory publishers	5111	5,672	348	176	172
Software publishers	5112	3,061	627	218	409
Telecommunications	517	3,688	345	187	158
Data processing, hosting, and related services	518	3,703	723	359	364
Other information	other 51	10,068	593	378	215
Finance and insurance	52	66,013	1,007	442	565
Real estate and rental and leasing	53	57,799	619	283	336
Lessors of nonfinancial intangible assets (except copyrighted works)	533	866	94	4	90
Other real estate and rental and leasing	other 53	56,933	525	279	246
Professional, scientific, and technical services	54	223,014	8,798	3,785	5,013
Architectural, engineering, and related services	5413	32,579	1,488	750	738
Computer systems design and related services	5415	30,953	2,336	1,210	1,126
Scientific R&D services	5417	4,764	2,762	500	2,262
Biotechnology R&D	541711	1,368	889	179	710
Physical, engineering, and life sciences (except biotechnology) R&D	541712	3,077	1,613	294	1,319
Social sciences and humanities R&D	541720	319	260	27	233
Other professional, scientific, and technical services	other 54	154,718	2,212	1,325	887
Health care services	621–23	246,134	1,789	1,174	615
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	1,031,193	5,455	4,778	677
Unclassified	–	644	186	84	102
Company size (number of domestic employees)	–	–	–	–	–
All companies	–	1,998,858	44,162	24,601	19,561
< 5 ^c	–	125,349	2,178	1,395	783
5–9	–	847,791	7,124	6,335	789
10–24	–	627,382	8,194	6,788	1,406
25–49	–	217,337	5,988	4,182	1,806
50–99	–	99,124	5,807	2,946	2,861
100–249	–	52,660	6,239	1,896	4,343
250–499	–	14,971	3,221	546	2,675
500–999	–	7,113	2,091	260	1,831
1,000–4,999	–	5,542	2,307	200	2,107

TABLE A-2. Companies in the target population and selected for the sample, by industry and company size: 2014

Industry and company size	NAICS code	Companies in target population ^a	Companies selected for the sample		
			All companies	Noncertainties	Certainties
5,000–9,999	–	773	455	21	434
10,000–24,999	–	503	331	20	311
25,000 or more	–	313	227	12	215

D = data withheld to avoid disclosing operations of individual companies.

NAICS = 2012 North American Industry Classification System.

^a Estimates of the number of companies in the target population are based on the original sampling frame that was created to select the 2014 Business R&D and Innovation Survey (BRDIS) sample. These estimates do not include 37 R&D performers from the previous year's sample, which were not on the original sampling frame but were found during the survey's annual contact update procedures. These companies were added to the 2014 sample with certainty but are not reflected in the number of certainties selected for the sample.

^b Because of the widespread practice of the larger petroleum extraction and refining companies vertically integrating their activities, petroleum refineries (NAICS 32411) and oil and gas extraction (NAICS 211) were combined during sampling.

^c This category includes companies that are represented on the sampling frame as having missing or fewer than five paid employees, but these companies are in scope to BRDIS because they have at least \$250,000 for annual payroll.

NOTES: Certainties are companies whose probability of selection is one based on prior-year R&D expenditures equal to or greater than \$3 million and also others included in the sample for analytical purposes (analytical certainties). Noncertainties are companies whose probability of selection is less than one. Companies that were missing or had an incomplete NAICS code at the time of sampling were assigned to an unclassified industry category temporarily. If an unclassified company reported R&D expenditures, its primary industrial activity was investigated, and a NAICS code was assigned during statistical processing. The total sample size reflects the time between sample selection and survey mailout; that is, the sample was updated before the actual mailout took place.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014

TABLE A-3. Sample size, by frame partition: 2008–14
(Number of companies)

Year	Total	Known positive R&D	Known zero R&D	Unknown R&D
2008	39,553	11,103	3,156	25,294
2009	43,002	14,343	3,443	25,216
2010	42,965	14,399	3,150	25,416
2011	43,108	14,941	3,385	24,782
2012	43,655	16,188	3,527	23,940
2013	45,089	17,690	3,531	23,868
2014	44,162	16,959	3,861	23,342

NOTES: Companies were said to be known to conduct R&D (known positive R&D) if they reported positive R&D in any of the previous 5 survey years. Companies were said to have known zero R&D if they reported zero R&D in at least 1 of the previous 5 survey years and no positive R&D in any of the 5 years. Companies were said to be unknown if no R&D information was available.

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

TABLE A-4. Companies sampled, by sampling stratum: 2014

(Number of companies)

Stratum	Total
Total	44,162
Known positive R&D	16,959
Certainties	11,178
Noncertainties	5,781
Known zero R&D	3,861
Certainties	2,297
Noncertainties	1,564
Unknown R&D	23,342
Certainties	6,086
Noncertainties	17,256

NOTES: Companies were said to be known to conduct R&D (known positive R&D) if they reported positive R&D in any of the previous 5 survey years. Companies were said to have known zero R&D if they reported zero R&D in at least 1 of the previous 5 survey years and no positive R&D in any of the 5 years. Companies were said to be unknown if no R&D information was available.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE A-5. Companies included in the sample that were not in the original sampling frame: 2008–14

(Number of companies)

Year	Known positive R&D
2008	336
2009	18
2010	49
2011	42
2012	54
2013	44
2014	37

NOTES: This table shows the counts of companies that were found during the update procedures and were added to each year's sample. These company counts are not in appendix table A-2.

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

TABLE A-6. Number and type of survey forms mailed: 2008–14
(Number of forms)

Year	Total forms mailed ^a	BRDI-1	BRDI-1A/B or BRDI-1(S)	BRDI-1 forms mailed due to reported data from BRDI-1(S) forms	Total BRDI-1 forms mailed
2008	39,593	4,875	34,718	na	na
2009	42,826	2,501	40,325	na	na
2010	42,314	2,572	19,871 (19,871)	na	na
2011	42,389	2,708	39,681	na	na
2012	42,869	6,946	35,923	1,972	8,918
2013	44,769	6,655	38,114	1,924	8,579
2014	43,697	6,823	36,874	1,530	8,353

na = not applicable.

^a For each year, the total forms mailed is smaller than the sum of the total sample size in appendix table A-3 plus the number of known positive R&D companies added to the sample in appendix table A-5 because some companies selected for the sample went out of business or were merged with other companies between sample selection and survey mailout—that is, the sample was updated before actual mailout of the survey questionnaires.

NOTES: Companies were sent the detailed survey form (BRDI-1) if their R&D spending was at least \$1.8 million in 2007 for the 2008 survey; at least \$7.0 million in 2009 for the 2010 and 2011 surveys; at least \$7.0 million in 2010 for the 2012 survey; or at least \$1.0 million in 2011 or 2012 for the 2013 survey (except companies that did not respond in these prior 2 years) and at least \$1.0 million in 2012 or 2013 for the 2014 survey (except companies that did not respond in these prior 2 years). All other companies received an abbreviated form (BRDI-1A for 2008-11; BRDI-1(S) for 2012–14). For 2010, some companies received BRDI-1B, an abbreviated form that tested questions on innovation. In 2012, we switched from the BRDI-1A to the BRDI-1(S) form.

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

TABLE A-7. Survey forms mailed, by sampling stratum: 2014
(Number of forms)

Stratum	Total forms mailed initially			BRDI-1 forms mailed due to reported data from BRDI-1(S) forms	Total BRDI-1 forms mailed
	Total	BRDI-1	BRDI-1(S)		
Total	43,697	6,823	36,874	1,530	8,353
Known positive R&D	16,749	6,797	9,952	866	7,663
Certainties	11,017	6,124	4,893	475	6,599
Noncertainties	5,732	673	5,059	391	1,064
Known zero R&D	3,824	22	3,802	53	75
Certainties	2,266	21	2,245	47	68
Noncertainties	1,558	1	1,557	6	7
Unknown R&D	23,087	4	23,083	588	592
Certainties	5,883	3	5,880	407	410
Noncertainties	17,204	1	17,203	181	182
Cases not in the frame	37	0	37	23	23

NOTES: Companies were sent the detailed survey form (BRDI-1) if their R&D spending was at least \$1.0 million in 2012 or 2013 (except companies that did not respond in these prior 2 years). All other companies received an abbreviated form (BRDI-1(S)). Companies were said to be known to conduct R&D (known positive R&D) if they reported positive R&D in any of the previous 5 survey years. Companies were said to have known zero R&D if they reported zero R&D in at least 1 of the previous 5 survey years and no positive R&D in any of the 5 years. Companies were said to be unknown if no R&D information were available.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE A-8. Survey forms mailed for companies with subcompany reporting units, by sampling stratum: 2014
(Number of forms and number of companies)

Stratum	Sent one form		Sent multiple forms ^a		
	BRDI-1	BRDI-1(S)	Number of companies	BRDI-1	BRDI-1(S)
Total	6,779	36,869	16	44	5
Known positive R&D	6,753	9,949	15	44	3
Certainties	6,080	4,890	15	44	3
Noncertainties	673	5,059	0	0	0
Known zero R&D	22	3,802	0	0	0
Certainties	21	2,245	0	0	0
Noncertainties	1	1,557	0	0	0
Unknown R&D	4	23,081	1	0	2
Certainties	3	5,880	0	0	0
Noncertainties	1	17,201	1	0	2
Cases not in the frame	0	37	0	0	0

^a Under special arrangement with the U.S. Census Bureau, to facilitate reporting, portions of some companies are surveyed separately using multiple survey forms.

NOTES: Companies were sent the detailed survey form (BRDI-1) if their R&D spending was at least \$1.0 million in 2012 or 2013 (except companies that did not respond in these prior 2 years). All other companies received an abbreviated form (BRDI-1(S)). Companies were said to be known to conduct R&D (known positive R&D) if they reported positive R&D in any of the previous 5 survey years. Companies were said to have known zero R&D if they reported zero R&D in at least 1 of the previous 5 survey years and no positive R&D in any of the 5 years. Companies were said to be unknown if no R&D information were available.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE A-9. Response measures for companies: 2008–14
(Percent)

Measure	2008	2009	2010	2011	2012	2013	2014
Check-in rate ^a	79.5	74.9	75.1	73.7	78.6	74.3	73.3
Response rate (unweighted) ^b	74.2	73.1	71.4	71.1	77.1	73.6	72.5
Coverage rate for known positive sampling strata (using weighted R&D) ^c	91.4	91.5	87.7	86.0	91.4	90.4	91.0
Coverage rate for unknown sampling strata (using weighted payroll) ^c	79.9	75.0	76.2	76.7	84.2	77.7	78.1
Coverage rate for known zero sampling strata (using unweighted counts) ^c	77.2	78.7	74.5	76.0	82.7	80.7	80.4

^a The number of survey responses from in-scope companies divided by the total number of in-scope companies in the sample.

^b The number of responding companies with worldwide R&D expenses or costs funded by others or the number of responding companies with worldwide or domestic sales or worldwide or domestic employees (if R&D was nonzero) divided by the total number of in-scope companies in the sample.

^c Based on the same numerator and denominator as the response rate, but each company's measure of size at the time of sample selection is taken into account.

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

TABLE A-10. Unit response rates, by industry and survey form type: 2014

Industry	NAICS code	Active reporting units ^a	Reporting units that met the response criteria ^b	% of reporting units that met the response criteria
All companies				
All industries	21–23, 31–33, 42–81	40,953	29,672	72.5
Manufacturing industries	31–33	18,392	13,421	73.0
Food	311	1,053	752	71.4
Beverages and tobacco products	312	388	297	76.5
Textiles, apparel, and leather products	313–16	717	472	65.8
Wood products	321	621	460	74.1
Paper	322	417	299	71.7
Printing and related support activities	323	785	580	73.9
Petroleum and coal products	324	161	109	67.7
Chemicals	325	2,065	1,563	75.7
Basic chemicals	3251	298	220	73.8
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	206	150	72.8
Pesticides, fertilizers, and other agricultural chemicals	3253	112	80	71.4
Pharmaceuticals and medicines	3254	722	575	79.6
Soaps, cleaning compounds, and toilet preparations	3256	288	204	70.8
Paints, coatings, adhesives, and other chemicals	3255, 3259	439	334	76.1
Plastics and rubber products	326	1,020	757	74.2
Nonmetallic mineral products	327	623	454	72.9
Primary metals	331	508	371	73.0
Fabricated metal products	332	2,077	1,544	74.3
Machinery	333	2,106	1,588	75.4
Agricultural implements	33311	188	128	68.1
Semiconductor machinery	333295	63	43	68.3
Engines, turbines, and power transmission equipment	3336	154	119	77.3
Other machinery	other 333	1,701	1,298	76.3
Computer and electronic products	334	1,957	1,333	68.1
Communications equipment	3342	232	158	68.1
Semiconductors and other electronic components	3344	570	389	68.2
Navigational, measuring, electromedical, and control instruments	3345	853	575	67.4
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	212	146	68.9
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	98	56	57.1
Other measuring and controlling devices	other 3345	543	373	68.7
Other computer and electronic products	other 334	302	211	69.9
Electrical equipment, appliances, and components	335	719	527	73.3
Transportation equipment	336	1,050	760	72.4

TABLE A-10. Unit response rates, by industry and survey form type: 2014

Industry	NAICS code	Active reporting units ^a	Reporting units that met the response criteria ^b	% of reporting units that met the response criteria
Motor vehicles, bodies, trailers, and parts	3361-63	543	406	74.8
Aerospace products and parts	3364	252	184	73.0
Aircraft, aircraft engines, and aircraft parts	336411-13	219	158	72.1
Guided missiles, space vehicles, and related parts	336414-15, 336419	33	26	78.8
Military armored vehicles, tanks, and tank components	336992	21	15	71.4
Other transportation equipment	other 336	234	155	66.2
Furniture and related products	337	702	507	72.2
Miscellaneous manufacturing	339	1,423	1,048	73.6
Medical equipment and supplies	3391	700	509	72.7
Other miscellaneous	3399	723	539	74.6
Nonmanufacturing industries	21-23, 42-81	22,561	16,251	72.0
Mining, extraction, and support activities	21	804	606	75.4
Utilities	22	183	148	80.9
Wholesale trade	42	2,573	1,817	70.6
Electronic shopping and electronic auctions	454111-12	366	267	73.0
Transportation and warehousing	48-49	615	457	74.3
Information	51	2,666	1,960	73.5
Publishing	511	953	704	73.9
Newspaper, periodical, book, and directory publishers	5111	332	236	71.1
Software publishers	5112	621	468	75.4
Telecommunications	517	340	246	72.4
Data processing, hosting, and related services	518	865	663	76.6
Other information	other 51	508	347	68.3
Finance and insurance	52	926	723	78.1
Real estate and rental and leasing	53	570	411	72.1
Lessors of nonfinancial intangible assets (except copyrighted works)	533	85	56	65.9
Other real estate and rental and leasing	other 53	485	355	73.2
Professional, scientific, and technical services	54	7,228	5,062	70.0
Architectural, engineering, and related services	5413	1,407	1,098	78.0
Computer systems design and related services	5415	1,953	1,286	65.8
Scientific R&D services	5417	2,039	1,295	63.5
Biotechnology R&D	541711	512	284	55.5
Physical, engineering, and life sciences (except biotechnology) R&D	541712	1,324	856	64.7
Social sciences and humanities R&D	541720	203	155	76.4
Other professional, scientific, and technical services	other 54	1,829	1,383	75.6
Health care services	621-23	1,612	1,225	76.0

TABLE A-10. Unit response rates, by industry and survey form type: 2014

Industry	NAICS code	Active reporting units ^a	Reporting units that met the response criteria ^b	% of reporting units that met the response criteria
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	5,018	3,575	71.2
Form BRDI-1 companies				
All industries	21–23, 31–33, 42–81	6,714	5,175	77.1
Manufacturing industries	31–33	4,043	3,253	80.5
Food	311	179	143	79.9
Beverages and tobacco products	312	28	26	92.9
Textiles, apparel, and leather products	313–16	66	54	81.8
Wood products	321	23	17	73.9
Paper	322	52	41	78.8
Printing and related support activities	323	38	28	73.7
Petroleum and coal products	324	20	16	80.0
Chemicals	325	841	708	84.2
Basic chemicals	3251	127	111	87.4
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	56	42	75.0
Pesticides, fertilizers, and other agricultural chemicals	3253	22	17	77.3
Pharmaceuticals and medicines	3254	494	416	84.2
Soaps, cleaning compounds, and toilet preparations	3256	52	44	84.6
Paints, coatings, adhesives, and other chemicals	3255, 3259	90	78	86.7
Plastics and rubber products	326	232	176	75.9
Nonmetallic mineral products	327	57	49	86.0
Primary metals	331	72	55	76.4
Fabricated metal products	332	258	213	82.6
Machinery	333	489	398	81.4
Agricultural implements	33311	41	37	90.2
Semiconductor machinery	333295	27	21	77.8
Engines, turbines, and power transmission equipment	3336	40	35	87.5
Other machinery	other 333	381	305	80.1
Computer and electronic products	334	720	555	77.1
Communications equipment	3342	110	83	75.5
Semiconductors and other electronic components	3344	205	169	82.4
Navigational, measuring, electromedical, and control instruments	3345	310	231	74.5
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	84	59	70.2
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	33	25	75.8

TABLE A-10. Unit response rates, by industry and survey form type: 2014

Industry	NAICS code	Active reporting units ^a	Reporting units that met the response criteria ^b	% of reporting units that met the response criteria
Other measuring and controlling devices	other 3345	193	147	76.2
Other computer and electronic products	other 334	95	72	75.8
Electrical equipment, appliances, and components	335	233	179	76.8
Transportation equipment	336	318	261	82.1
Motor vehicles, bodies, trailers, and parts	3361-63	186	148	79.6
Aerospace products and parts	3364	80	69	86.3
Aircraft, aircraft engines, and aircraft parts	336411-13	67	56	83.6
Guided missiles, space vehicles, and related parts	336414-15, 336419	13	13	100.0
Military armored vehicles, tanks, and tank components	336992	7	6	85.7
Other transportation equipment	other 336	45	38	84.4
Furniture and related products	337	45	34	75.6
Miscellaneous manufacturing	339	372	300	80.6
Medical equipment and supplies	3391	230	183	79.6
Other miscellaneous	3399	142	117	82.4
Nonmanufacturing industries	21-23, 42-81	2,671	1,922	72.0
Mining, extraction, and support activities	21	53	44	83.0
Utilities	22	46	38	82.6
Wholesale trade	42	115	45	39.1
Electronic shopping and electronic auctions	454111-12	9	6	66.7
Transportation and warehousing	48-49	16	12	75.0
Information	51	826	651	78.8
Publishing	511	297	228	76.8
Newspaper, periodical, book, and directory publishers	5111	11	5	45.5
Software publishers	5112	286	223	78.0
Telecommunications	517	56	41	73.2
Data processing, hosting, and related services	518	384	317	82.6
Other information	other 51	89	65	73.0
Finance and insurance	52	69	53	76.8
Real estate and rental and leasing	53	11	6	54.5
Lessors of nonfinancial intangible assets (except copyrighted works)	533	D	D	D
Other real estate and rental and leasing	other 53	D	D	D
Professional, scientific, and technical services	54	1,352	939	69.5
Architectural, engineering, and related services	5413	204	160	78.4
Computer systems design and related services	5415	321	178	55.5
Scientific R&D services	5417	650	465	71.5
Biotechnology R&D	541711	173	102	59.0

TABLE A-10. Unit response rates, by industry and survey form type: 2014

Industry	NAICS code	Active reporting units ^a	Reporting units that met the response criteria ^b	% of reporting units that met the response criteria
Physical, engineering, and life sciences (except biotechnology) R&D	541712	453	341	75.3
Social sciences and humanities R&D	541720	24	22	91.7
Other professional, scientific, and technical services	other 54	177	136	76.8
Health care services	621-23	49	39	79.6
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	125	89	71.2
Form BRDI-1(S) companies				
All industries	21-23, 31-33, 42-81	34,239	24,497	71.5
Manufacturing industries	31-33	14,349	10,168	70.9
Food	311	874	609	69.7
Beverages and tobacco products	312	360	271	75.3
Textiles, apparel, and leather products	313-16	651	418	64.2
Wood products	321	598	443	74.1
Paper	322	365	258	70.7
Printing and related support activities	323	747	552	73.9
Petroleum and coal products	324	141	93	66.0
Chemicals	325	1,224	855	69.9
Basic chemicals	3251	171	109	63.7
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	150	108	72.0
Pesticides, fertilizers, and other agricultural chemicals	3253	90	63	70.0
Pharmaceuticals and medicines	3254	228	159	69.7
Soaps, cleaning compounds, and toilet preparations	3256	236	160	67.8
Paints, coating, adhesives, and other chemicals	3255, 3259	349	256	73.4
Plastics and rubber products	326	788	581	73.7
Nonmetallic mineral products	327	566	405	71.6
Primary metals	331	436	316	72.5
Fabricated metal products	332	1,819	1,331	73.2
Machinery	333	1,617	1,190	73.6
Agricultural implements	33311	147	91	61.9
Semiconductor machinery	333295	36	22	61.1
Engines, turbines, and power transmission equipment	3336	114	84	73.7
Other machinery	other 333	1,320	993	75.2
Computer and electronic products	334	1,237	778	62.9
Communications equipment	3342	122	75	61.5
Semiconductor and other electronic components	3344	365	220	60.3
Navigational, measuring, electromedical, and control instruments	3345	543	344	63.4

TABLE A-10. Unit response rates, by industry and survey form type: 2014

Industry	NAICS code	Active reporting units ^a	Reporting units that met the response criteria ^b	% of reporting units that met the response criteria
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	128	87	68.0
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	65	31	47.7
Other measuring and controlling devices	other 3345	350	226	64.6
Other computer and electronic products	other 334	207	139	67.1
Electrical equipment, appliances, and components	335	486	348	71.6
Transportation equipment	336	732	499	68.2
Motor vehicles, bodies, trailers, and parts	3361-63	357	258	72.3
Aerospace products and parts	3364	172	115	66.9
Aircraft, aircraft engines, and aircraft parts	336411-13	152	102	67.1
Guided missiles, space vehicles, and related parts	336414-15, 336419	20	13	65.0
Military armored vehicles, tanks, and tank components	336992	14	9	64.3
Other transportation equipment	other 336	189	117	61.9
Furniture and related products	337	657	473	72.0
Miscellaneous manufacturing	339	1,051	748	71.2
Medical equipment and supplies	3391	470	326	69.4
Other miscellaneous	3399	581	422	72.6
Nonmanufacturing industries	21-23, 42-81	19,890	14,329	72.0
Mining, extraction, and support activities	21	751	562	74.8
Utilities	22	137	110	80.3
Wholesale trade	42	2,458	1,772	72.1
Electronic shopping and electronic auctions	454111-12	357	261	73.1
Transportation and warehousing	48-49	599	445	74.3
Information	51	1,840	1,309	71.1
Publishing	511	656	476	72.6
Newspaper, periodical, book, and directory publishers	5111	321	231	72.0
Software publishers	5112	335	245	73.1
Telecommunications	517	284	205	72.2
Data processing, hosting, and related services	518	481	346	71.9
Other information	other 51	419	282	67.3
Finance and insurance	52	857	670	78.2
Real estate and rental and leasing	53	559	405	72.5
Lessors of nonfinancial intangible assets (except copyrighted works)	533	D	D	D
Other real estate and rental and leasing	other 53	D	D	D
Professional, scientific, and technical services	54	5,876	4,123	70.2

TABLE A-10. Unit response rates, by industry and survey form type: 2014

Industry	NAICS code	Active reporting units ^a	Reporting units that met the response criteria ^b	% of reporting units that met the response criteria
Architectural, engineering, and related services	5413	1,203	938	78.0
Computer systems design and related services	5415	1,632	1,108	67.9
Scientific R&D services	5417	1,389	830	59.8
Biotechnology R&D	541711	339	182	53.7
Physical, engineering, and life sciences (except biotechnology) R&D	541712	871	515	59.1
Social sciences and humanities R&D	541720	179	133	74.3
Other professional, scientific, and technical services	other 54	1,652	1,247	75.5
Health care services	621-23	1,563	1,186	75.9
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	4,893	3,486	71.2

D = data withheld to avoid disclosing operations of individual companies.

NAICS = 2012 North American Industry Classification System.

^a Active reporting units are defined as reporting units of active companies that are in scope of the survey (for-profit companies with locations in the United States, five or more employees, business activities in the survey year, and primary business activities in the NAICS codes listed above) after all of the data have been processed. Because of special handling requests made by company respondents, some sampled companies were mailed more than one form. For the calculation of the unit response rates, these reporting units remained disaggregated.

^b Reporting units were considered to have fulfilled the response criteria if they reported that they performed or funded R&D. If not, a reporting unit fulfilled the response criteria if they reported a value for worldwide sales or domestic sales, or if they reported a positive value for paid worldwide employees or paid domestic employees. Form type breakout is based on the status at the time of the initial mailout.

NOTES: Companies were sent the detailed survey form (BRDI-1) if their R&D spending was at least \$1.0 million in 2012 or 2013 (except companies that did not respond in these prior 2 years). All other companies received an abbreviated form (BRDI-1(S)).

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

TABLE A-11. Companies that required an analyst action, by sampling stratum: 2014
(Number)

Stratum	Total	Companies deleted ^a	Companies requiring action due to merger or acquisition ^b	Companies requiring action due to analyst review ^c
Total	3,015	2,808	63	144
Known positive R&D	474	419	13	42
Certainties	270	237	5	28
Noncertainties	204	182	8	14
Known zero R&D	133	130	3	0
Certainties	89	88	1	0
Noncertainties	44	42	2	0
Unknown R&D	2,387	2,255	47	85
Certainties	631	535	20	76
Noncertainties	1,756	1,720	27	9
Cases not in the frame	21	4	0	17

^a Companies are deleted when they are found to be out of business or out of scope for the survey during the reporting period.

^b Information regarding mergers and acquisitions comes from several sources. The information is collected on the form, and there is a presurvey letter that requests the information from top R&D performing companies. Information may also come from the company profiles that are maintained by survey staff.

^c These companies are added based on R&D reported to the Business R&D and Innovation Survey for previous years and public information on the companies' R&D expenses.

NOTES: Companies were said to be known to conduct R&D (known positive R&D) if they reported positive R&D in any of the previous 5 survey years. Companies were said to have known zero R&D if they reported zero R&D in at least 1 of the previous 5 survey years and no positive R&D in any of the 5 years. Companies were said to be unknown if no R&D information was available.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2014.

Appendix B. Survey Instruments

- BRDI-1
- BRD-1(S)



U.S. DEPARTMENT OF COMMERCE
Economics and Statistics Administration
U.S. CENSUS BUREAU

FORM
BRDI-1 (11-24-2014)

2014 BUSINESS R&D AND INNOVATION SURVEY

OMB No. 0607-0912: Approval Expires 07/31/2015

DUE DATE:

Report electronically:

<https://econhelp.census.gov/brdis>

User ID:

Password:

Reporting electronically allows you to save your work as you go through the form and could save you time.

Report by mail:

If you report online, please do **not** mail in the paper form.

U.S. CENSUS BUREAU
1201 East 10th Street
Jeffersonville, IN
47132-0001

For information or assistance:

- <https://econhelp.census.gov/brdis>
- Call 1-800-772-7851, option "5" (8 a.m.–5 p.m. EST, M-F)
- Write to the address above. Include your 11-digit ID printed on the mailing label.

**INFORMATION COPY
DO NOT USE TO REPORT**

(Please correct any errors in this mailing address)

Your Response is Required by Law

Title 13, United States Code, requires businesses and other organizations that receive this questionnaire to answer the questions and return the report to the U.S. Census Bureau.

Respondents are not required to respond to any information collection unless it displays a valid approval number from the Office of Management and Budget (OMB). The OMB number appears at the top of this page.

Your Response is Confidential by Law

Title 13, United States Code, requires that your response be seen only by persons sworn to uphold the confidentiality of Census Bureau information and may be used only for statistical purposes. The law also provides that copies retained in your company's files are immune from legal process.

About the Business R&D and Innovation Survey

The Business R&D and Innovation Survey is a national survey that collects critical information about research and development (R&D) and innovation at businesses operating in the U.S. Policy makers and data users in industry and academia make use of this information for short- and long-term planning.

Better information about R&D and innovation in the U.S. business sector will help leaders make better decisions to strengthen American competitiveness.

Thank You – Your Response is Important

Accurate and timely statistical information could not be produced without your continued cooperation and goodwill. Thank you.

~ This survey is jointly conducted by the U.S. Census Bureau and the National Science Foundation ~



Table of Contents

Survey Overview and Table of Contents

The survey is divided into six sections. Each section asks questions about different aspects of R&D or innovation at your company. Due to the specialized nature of each section, it may be necessary to collaborate with colleagues in different departments to answer the questions. The sections are color coded and cover the following topical areas:

Section 1: Company Information p.4

Topics: company ownership, business(es), revenues, and innovation
Requires: knowledge of the company's sales and revenues

Section 2: Financial Schedule A p.10

Topics: R&D expenses and capital expenditures for R&D
Requires: knowledge of your company's accounting concepts and access to financial records

Section 3: Financial Schedule B p.21

Topics: costs for work that was funded, paid for, or reimbursed by others
Requires: knowledge of your company's financial records related to R&D activities

Section 4: Management and Strategy of R&D p.35

Topics: characteristics of R&D reported in Sections 2 and 3
Requires: familiarity with the technical and strategic aspects of your company's R&D

Section 5: Human Resources p.40

Topics: your company's employees, focusing on those who work on R&D activities
Requires: familiarity with human resources (HR) concepts and access to HR records

Section 6: Intellectual Property and Technology Transfer p.44

Topics: intellectual property and technology transfer
Requires: knowledge of your company's general business strategy, patenting, and licensing

Changes from the 2013 survey

On the basis of extensive conversations with many of the 2013 survey respondents, the 2014 survey has been improved. Sections and questions have been modified to make the concepts presented easier to understand. For a list of specific changes, go to <https://econhelp.census.gov/brdis>.

Filing electronically

You may submit your survey online via a secure website. Online submission allows you to save the data on secure Census Bureau servers as you go, so you can save, exit, and resume later without losing any of your data. It also allows you to save a paper or electronic copy of your completed survey. To submit online, follow the instructions at <https://econhelp.census.gov/brdis>.

Electronic materials

Electronic versions of the questionnaire and related documents are available to print or share with others in your company via e-mail. They can be found at <https://econhelp.census.gov/brdis>.

You can:

- Print and download copies of the questionnaire in PDF format
- Download Excel worksheets for each section
- Get question-by-question instructions, definitions, and examples that provide clarification
- Get answers to frequently asked questions, including how the data will be used



What is Research and Development (R&D)?

R&D is planned, creative work aimed at discovering new knowledge or developing new or significantly improved goods and services. This includes a) activities aimed at acquiring new knowledge or understanding without specific immediate commercial applications or uses (basic research); b) activities aimed at solving a specific problem or meeting a specific commercial objective (applied research); and c) systematic use of research and practical experience to produce new or significantly improved goods, services, or processes (development).

The term R&D does NOT include expenditures for:

- Costs for routine product testing, quality control, and technical services unless they are an integral part of an R&D project
- Market research
- Efficiency surveys or management studies
- Literary, artistic, or historical projects, such as films, music, or books and other publications
- Prospecting or exploration for natural resources

Does R&D include development of software and Internet applications?

Research and development activity in software and Internet applications refers only to activities with an element of uncertainty and that are intended to close knowledge gaps and meet scientific and technological needs. Report in this survey all software R&D as defined here regardless of the eventual user (internal or external).

R&D activity in software includes:

- Software development or improvement activities that expand scientific or technological knowledge
- Construction of new theories and algorithms in the field of computer science

R&D activity in software EXCLUDES:

- Software development that does not depend on a scientific or technological advance, such as
 - supporting or adapting existing systems
 - adding functionality to existing application programs, and
 - routine debugging of existing systems and software
- Creation of new software based on known methods and applications
- Conversion or translation of existing software and software languages
- Adaptation of a product to a specific client, unless knowledge that significantly improved the base program was added in that process

Reporting unit

The reporting unit is your company, including all subsidiaries and divisions regardless of location. Include only subsidiary companies where there is more than 50 percent ownership. If you are owned by a foreign parent, the reporting unit for the survey is your U.S.-located company, including all your majority-owned subsidiaries and divisions regardless of location. For reporting purposes, your foreign parent and any foreign affiliates your company does not own should be treated the same as any business partner, customer, or supplier you do not own.

Reporting period

Report data for the calendar year 2014, if possible, or for your company's fiscal year ending between April 2014 and March 2015.

Estimates are acceptable

Please report all items to the best of your ability.

To speak with a survey specialist, call 1-800-772-7851, option '1' for English, then option '5'.

Survey specialists are available 8 a.m. to 5 p.m. EST, M-F to help with any questions you may have.



1-3 Did your company own more than 50 percent of any company operations or subsidiaries outside the 50 United States and D.C. during 2014?

- Yes → **Include data for these operations/subsidiaries in your survey responses**
- No

1-4 Has your company ceased operations?

- Yes → **Please provide the following information:**

(MM) (DD) (YYYY)

Date your company ceased operations

REPORTING INSTRUCTIONS:

If your company ceased operations between April 1, 2014 and December 31, 2014, report only for the period January 1, 2014 to the date your company ceased operations. If your company ceased operations before April 1, 2014, complete Question 1-6 and return this form to the Census Bureau – you are not required to complete the rest of this survey.

- No

1-5 Did your company have discontinued operations in 2014?

- Yes → **Include data for these operations in your survey responses**
- No

1-6 Who is the survey coordinator?

The survey coordinator is the person at your company responsible for gathering all requested information, ensuring instructions are followed, and submitting the completed survey. The survey coordinator may not be able to personally complete the entire survey and may need to request information from other knowledgeable resources concerning your company's R&D, accounting, human resources, and legal matters.

Name

Title

Telephone

Area code Number

Extension

Fax

Area code Number

E-mail address



1-8 What was the amount of your company's worldwide sales and revenues during 2014?

Include:

- Sales and operating revenues from discontinued operations

\$Bil.	Mil.	Thou.
<input type="text"/>	<input type="text"/>	<input type="text"/>

1-9 How much of the amount reported in Question 1-8 was attributable to or originated from domestic operations?

Include:

- Sales and operating revenues to foreign customers, including foreign subsidiaries

Example: U.S. Manufacturing Corporation sells parts to customers around the world. However, because all its operations are located inside the United States it reports 100% of its sales in this question.

\$Bil.	Mil.	Thou.
<input type="text"/>	<input type="text"/>	<input type="text"/>

1-10 How much of the 2014 sales and operating revenue amounts was for each business code listed or amended in Question 1-7:

- (1) Worldwide sales and operating revenues reported in Question 1-8
- (2) Domestic sales and operating revenues reported in Question 1-9

Business code (see page 6)	(1) Worldwide sales and operating revenues			(2) Domestic sales and operating revenues		
	\$Bil.	Mil.	Thou.	\$Bil.	Mil.	Thou.
a. <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
b. <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
c. <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
d. <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
e. <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
f. <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
g. <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
h. <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
i. Less eliminations – the sales and revenues that are eliminated in order to consolidate the business codes. . . .	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
j. Total	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Total equals Question 1-8

Total equals Question 1-9



Product (good or service) innovation

A product innovation is the market introduction of a **new** or **significantly** improved good or service with respect to its capabilities, user friendliness, components, or sub-systems.

- Product innovations (new or improved) must be new to your company, but they do not need to be new to your market.
- Product innovations could have been originally developed by your company or by other companies.

1-11 During the three years 2012 to 2014, did your company introduce:

- a. New or significantly improved goods (Exclude the simple resale of new goods purchased from other companies and changes of a solely aesthetic nature)? Yes No
- b. New or significantly improved services? Yes No

1-12 If you answered "yes" to either 1-11, line a, or 1-11, line b, were any of your product innovations during the three years 2012 to 2014:

- a. New to your market? Yes No
- Your company introduced a new or significantly improved good or service to your market before your competitors. (It may have been available in other markets.)
- b. New only to your company? Yes No
- Your company introduced a new or significantly improved good or service that was already available from your competitors in your market.

1-13 Using the definitions above, please give the percentage of your total sales in 2014 from:

- a. New or significantly improved goods and services introduced during 2012 to 2014 that were **new to your market** %
- b. New or significantly improved goods and services introduced during 2012 to 2014 that were **new only to your company**. %
- c. Goods and services that were **unchanged or only marginally modified** during 2012 to 2014 (include the resale of new goods or services purchased from other companies) %
- d. **Total sales in 2014** %



Process innovation

A process innovation is the implementation of a **new** or **significantly** improved production process, distribution method, or support activity for your goods or services.

- Process innovations must be new to your company, but they do not need to be new to your market.
- The innovation could have been originally developed by your company or by other companies.
- Exclude purely organizational innovations.

1-14 During the three years 2012 to 2014, did your company introduce:

- | | | | | |
|--|--------------------------|-----|--------------------------|----|
| a. New or significantly improved methods of manufacturing or producing goods or services? | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No |
| b. New or significantly improved logistics, delivery or distribution methods for your inputs, goods, or services? | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No |
| c. New or significantly improved supporting activities for your processes, such as maintenance systems or operations for purchasing, accounting, or computing? | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No |



SECTION 2

Financial Schedule A

Who should answer this section?

Persons familiar with accounting concepts and with access to financial records related to your company's R&D activities should complete this section.

What does this section cover?

This section requests financial information about your company's R&D expenses and capital expenditures for R&D. This section requests information about your company's R&D at multiple levels of detail: for your worldwide consolidated enterprise, for units or parts of your company defined by geography (countries, states, specific location), and for parts of your company defined by business code.

2-1 What was the total worldwide R&D expense for your company in 2014?

If your company is publicly traded, this amount is equivalent to that disclosed on SEC Form 10-K as defined in FASB ASC Topic 730, Research and Development (FASB Statement No. 2, "Accounting for Research and Development Costs.")

If your company is foreign-owned, refer to the instructions on page 4. Additional guidance, such as for **privately owned companies**, is available online at <https://econhelp.census.gov/brdis>.

NOTE: Report your company's R&D expense even if the amount is not considered material for your company's financial statements.

\$Bil.	Mil.	Thou.
<input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/>	<input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/>	<input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/>

2-2 Does the amount reported in Question 2-1 include any of the following costs?

- | | | | | |
|---|--------------------------|-----|--------------------------|----|
| a. Collaborative R&D that was reimbursed by business partners, such as through cost-sharing agreements | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No |
| b. R&D paid for by government or private foundation grants | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No |
| c. Technical services not an integral part of an R&D project (such as product support provided by R&D employees) | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No |
| d. Bid and proposal costs | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No |
| e. Expense your company claimed resulting from the acquisition of another company with unfinished R&D projects (in-process R&D) | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No |

2-3 If you answered "Yes" to any of the costs in Question 2-2, what was the amount of these costs that was included in your response to Question 2-1?

\$Bil.	Mil.	Thou.
<input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/>	<input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/>	<input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/>

2-4 Subtract Question 2-3 from Question 2-1 and enter the result here. This is the total R&D paid for by your company in 2014.

\$Bil.	Mil.	Thou.
<input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/>	<input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/>	<input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/>

2-5 Is the amount entered in Question 2-4 greater than zero?

- Yes → **Continue with Question 2-6**
- No → **Skip to Question 2-31 on page 20**



R&D paid for by your company

2-6 Of the amount reported in Question 2-4, what were the costs for each business code listed or amended on page 6 of this form?

Allocate R&D that is applicable to more than one business code on a reasonable basis. Allocation in proportion to operating revenues is acceptable unless some alternative allocation basis is more appropriate.

Business code (see page 6)	\$Bil.	Mil.	Thou.
a. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
b. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
c. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
d. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
e. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
f. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
g. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
h. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
i. Total (equals Question 2-4)	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>

2-7 Of the amount reported in Question 2-4, what costs were incurred by your company in the following locations?

	\$Bil.	Mil.	Thou.
a. Domestic United States (50 states and D.C.) [Include R&D performed by domestic operations that is paid for by foreign subsidiaries]	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
b. All other countries (also, Puerto Rico) [Include R&D performed by foreign subsidiaries that is paid for by domestic operations]	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
c. Total (equals Question 2-4).	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>

2-8 Copy the amount from Question 2-7, line a. This is the total domestic R&D paid for by your company in 2014.

\$Bil.	Mil.	Thou.
<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>

2-9 Copy the amount from Question 2-7, line b. This is the total foreign R&D paid for by your company in 2014.

\$Bil.	Mil.	Thou.
<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>

SECTION 2



2-10 How much of the (1) domestic, (2) foreign, and (3) total worldwide R&D paid for by your company in 2014 was for each of the following types of costs?

SECTION 2

	(1) Domestic			(2) Foreign			(3) Total worldwide		
	\$Bil.	Mil.	Thou.	\$Bil.	Mil.	Thou.	\$Bil.	Mil.	Thou.
a. Salaries, wages, and fringe benefits	<input type="text"/>								
b. Stock-based compensation	<input type="text"/>								
c. Temporary staffing, including on-site consultants	<input type="text"/>								
d. Expensed equipment	<input type="text"/>								
e. Materials and supplies	<input type="text"/>								
f. Leased facilities and equipment	<input type="text"/>								
g. Depreciation and amortization on R&D property and equipment	<input type="text"/>								
h. Payments to business partners for collaborative R&D	<input type="text"/>								
i. Purchased R&D services (if your company is foreign-owned, include payments to your foreign owner for R&D)	<input type="text"/>								
j. All other purchased services except R&D	<input type="text"/>								
k. All other costs	<input type="text"/>								
l. Total	<input type="text"/>								

Total equals Question 2-8

Total equals Question 2-9

Total equals Question 2-4



2-11 Add 2-10, lines h and i for each column, and enter the result here.
 This is **R&D performed by others**.

(1) Domestic			(2) Foreign			(3) Total worldwide		
\$Bil.	Mil.	Thou.	\$Bil.	Mil.	Thou.	\$Bil.	Mil.	Thou.
<input type="text"/>								

2-12 Subtract 2-11 from 2-10, line l, for each column and enter the result here.
 This is **R&D performed by your company**.

(1) Domestic			(2) Foreign			(3) Total worldwide		
\$Bil.	Mil.	Thou.	\$Bil.	Mil.	Thou.	\$Bil.	Mil.	Thou.
<input type="text"/>								

2-13 Copy the amount from Question 2-12, column 2.
 This is the **foreign R&D paid for and performed by your company in 2014**.

\$Bil.	Mil.	Thou.
<input type="text"/>	<input type="text"/>	<input type="text"/>

2-14 Of the amount reported in Question 2-13, how much R&D was performed in the following locations? For full list of countries in each region see Question by Question Guidance at <https://econhelp.census.gov/brdis>.

	\$Bil.	Mil.	Thou.		\$Bil.	Mil.	Thou.
a. Canada	<input type="text"/>	<input type="text"/>	<input type="text"/>	j. Italy	<input type="text"/>	<input type="text"/>	<input type="text"/>
b. Puerto Rico	<input type="text"/>	<input type="text"/>	<input type="text"/>	k. Luxembourg	<input type="text"/>	<input type="text"/>	<input type="text"/>
Europe	\$Bil.	Mil.	Thou.	l. Netherlands	<input type="text"/>	<input type="text"/>	<input type="text"/>
a. Austria	<input type="text"/>	<input type="text"/>	<input type="text"/>	m. Norway	<input type="text"/>	<input type="text"/>	<input type="text"/>
b. Belgium	<input type="text"/>	<input type="text"/>	<input type="text"/>	n. Poland	<input type="text"/>	<input type="text"/>	<input type="text"/>
c. Czech Rep.	<input type="text"/>	<input type="text"/>	<input type="text"/>	o. Russia	<input type="text"/>	<input type="text"/>	<input type="text"/>
d. Denmark	<input type="text"/>	<input type="text"/>	<input type="text"/>	p. Spain	<input type="text"/>	<input type="text"/>	<input type="text"/>
e. Finland	<input type="text"/>	<input type="text"/>	<input type="text"/>	q. Sweden	<input type="text"/>	<input type="text"/>	<input type="text"/>
f. France	<input type="text"/>	<input type="text"/>	<input type="text"/>	r. Switzerland	<input type="text"/>	<input type="text"/>	<input type="text"/>
g. Germany	<input type="text"/>	<input type="text"/>	<input type="text"/>	s. Turkey	<input type="text"/>	<input type="text"/>	<input type="text"/>
h. Hungary	<input type="text"/>	<input type="text"/>	<input type="text"/>	t. United Kingdom	<input type="text"/>	<input type="text"/>	<input type="text"/>
i. Ireland	<input type="text"/>	<input type="text"/>	<input type="text"/>				

Question continues on next page



2-16 How much of the amount reported in Question 2-15 was performed in each state (including D.C.) in 2014?

	\$Bil.	Mil.	Thou.		\$Bil.	Mil.	Thou.
Alabama	<input type="text"/>	<input type="text"/>	<input type="text"/>	Maine	<input type="text"/>	<input type="text"/>	<input type="text"/>
Alaska	<input type="text"/>	<input type="text"/>	<input type="text"/>	Maryland	<input type="text"/>	<input type="text"/>	<input type="text"/>
Arizona	<input type="text"/>	<input type="text"/>	<input type="text"/>	Massachusetts	<input type="text"/>	<input type="text"/>	<input type="text"/>
Arkansas	<input type="text"/>	<input type="text"/>	<input type="text"/>	Michigan	<input type="text"/>	<input type="text"/>	<input type="text"/>
California	<input type="text"/>	<input type="text"/>	<input type="text"/>	Minnesota	<input type="text"/>	<input type="text"/>	<input type="text"/>
Colorado	<input type="text"/>	<input type="text"/>	<input type="text"/>	Mississippi	<input type="text"/>	<input type="text"/>	<input type="text"/>
Connecticut	<input type="text"/>	<input type="text"/>	<input type="text"/>	Missouri	<input type="text"/>	<input type="text"/>	<input type="text"/>
Delaware	<input type="text"/>	<input type="text"/>	<input type="text"/>	Montana	<input type="text"/>	<input type="text"/>	<input type="text"/>
District of Columbia	<input type="text"/>	<input type="text"/>	<input type="text"/>	Nebraska	<input type="text"/>	<input type="text"/>	<input type="text"/>
Florida	<input type="text"/>	<input type="text"/>	<input type="text"/>	Nevada	<input type="text"/>	<input type="text"/>	<input type="text"/>
Georgia	<input type="text"/>	<input type="text"/>	<input type="text"/>	New Hampshire	<input type="text"/>	<input type="text"/>	<input type="text"/>
Hawaii	<input type="text"/>	<input type="text"/>	<input type="text"/>	New Jersey	<input type="text"/>	<input type="text"/>	<input type="text"/>
Idaho	<input type="text"/>	<input type="text"/>	<input type="text"/>	New Mexico	<input type="text"/>	<input type="text"/>	<input type="text"/>
Illinois	<input type="text"/>	<input type="text"/>	<input type="text"/>	New York	<input type="text"/>	<input type="text"/>	<input type="text"/>
Indiana	<input type="text"/>	<input type="text"/>	<input type="text"/>	North Carolina	<input type="text"/>	<input type="text"/>	<input type="text"/>
Iowa	<input type="text"/>	<input type="text"/>	<input type="text"/>	North Dakota	<input type="text"/>	<input type="text"/>	<input type="text"/>
Kansas	<input type="text"/>	<input type="text"/>	<input type="text"/>	Ohio	<input type="text"/>	<input type="text"/>	<input type="text"/>
Kentucky	<input type="text"/>	<input type="text"/>	<input type="text"/>	Oklahoma	<input type="text"/>	<input type="text"/>	<input type="text"/>
Louisiana	<input type="text"/>	<input type="text"/>	<input type="text"/>	Oregon	<input type="text"/>	<input type="text"/>	<input type="text"/>

Question continues on next page

SECTION 2



2-16 (Continued)

	\$Bil.	Mil.	Thou.		\$Bil.	Mil.	Thou.
Pennsylvania . . .	<input type="text"/>	<input type="text"/>	<input type="text"/>	Vermont	<input type="text"/>	<input type="text"/>	<input type="text"/>
Rhode Island . . .	<input type="text"/>	<input type="text"/>	<input type="text"/>	Virginia	<input type="text"/>	<input type="text"/>	<input type="text"/>
South Carolina . .	<input type="text"/>	<input type="text"/>	<input type="text"/>	Washington	<input type="text"/>	<input type="text"/>	<input type="text"/>
South Dakota . . .	<input type="text"/>	<input type="text"/>	<input type="text"/>	West Virginia	<input type="text"/>	<input type="text"/>	<input type="text"/>
Tennessee	<input type="text"/>	<input type="text"/>	<input type="text"/>	Wisconsin	<input type="text"/>	<input type="text"/>	<input type="text"/>
Texas	<input type="text"/>	<input type="text"/>	<input type="text"/>	Wyoming	<input type="text"/>	<input type="text"/>	<input type="text"/>
Utah	<input type="text"/>	<input type="text"/>	<input type="text"/>	Total (equals Question 2-15) . . .	<input type="text"/>	<input type="text"/>	<input type="text"/>

2-17 At what domestic location did your company perform the largest dollar amount of R&D in 2014?

Address 1

Address 2

City

State

ZIP

2-18 How much of the amount reported in Question 2-15 was from the location identified in Question 2-17?

\$Bil.	Mil.	Thou.
<input type="text"/>	<input type="text"/>	<input type="text"/>



R&D transactions between legal entities under common ownership

2-22 How much of the amount reported in Question 2-15 (domestic R&D performance) was paid for by your company's foreign subsidiaries through inter-company transactions?

Example: Company Y owns a subsidiary in France. In order to complete the development of a product in 2014, the French subsidiary paid for R&D performed at Company Y's U.S. R&D center. The cost of the U.S. R&D that was paid for by the French subsidiary would be included in this item.

\$Bil.	Mil.	Thou.
<input type="text"/>	<input type="text"/>	<input type="text"/>

2-23 How much of the amount reported in Question 2-13 (foreign R&D performance) was paid for by your company's domestic operations through inter-company transactions?

Example: Company Z owns a subsidiary in France. In order to complete the development of a product in 2014, the domestic operations paid for R&D performed at its subsidiary's R&D center in France. The cost of the French subsidiary's R&D that was paid for by the domestic operations would be included in this item.

\$Bil.	Mil.	Thou.
<input type="text"/>	<input type="text"/>	<input type="text"/>

R&D performed by others

2-24 Copy the amount from Question 2-11, column 1. This is the domestic R&D paid for by your company in 2014 that was performed by others.

\$Bil.	Mil.	Thou.
<input type="text"/>	<input type="text"/>	<input type="text"/>

2-25 How much of the amount reported in Question 2-24, was performed by the following types of organizations?

- a. Companies located inside the United States
- b. Your company's foreign parent (if you are owned by a foreign parent).
- c. Other companies located outside the United States
- d. U.S. federal government agencies or laboratories.
- e. U.S. state and local government agencies or laboratories.
- f. Foreign government agencies or laboratories
- g. All other organizations inside the United States
- h. All other organizations outside the United States
- i. **Total domestic R&D paid for by your company that was performed by others** (equals Question 2-24)

\$Bil.	Mil.	Thou.
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>

SECTION 2



Activities with academia

2-26 In addition to the amount reported in Question 2-24, did your company make monetary gifts to U.S. universities or colleges in 2014 that included support for R&D?

Yes → Continue with Question 2-27

No → Skip to Question 2-28

2-27 What was the amount of monetary gifts made by your company to U.S. universities or colleges in 2014 that was for R&D?

\$Bil.		Mil.			Thou.		
<input type="text"/>							

Indirect R&D charges

2-28 How much of the amount reported in Question 2-4 was for R&D costs your company plans to recoup through indirect charges on U.S. federal government contracts (IR&D or independent R&D)?

\$Bil.		Mil.			Thou.		
<input type="text"/>							

Projected R&D for 2015

2-29 What are your company's projected 2015 costs for (1) domestic, (2) foreign, and (3) total worldwide R&D paid for by your company?

NOTE: These amounts are the 2015 projections for the amounts reported in Question 2-10, line I.

(1) Domestic			(2) Foreign			(3) Total worldwide		
\$Bil.	Mil.	Thou.	\$Bil.	Mil.	Thou.	\$Bil.	Mil.	Thou.
<input type="text"/>								

2-30 How much of the amount reported in Question 2-29, column 1, is for projected purchased R&D services and projected payments to business partners for collaborative R&D?

Domestic		
\$Bil.	Mil.	Thou.
<input type="text"/>	<input type="text"/>	<input type="text"/>

SECTION 2



Capital expenditures

2-31 What was the amount of your company's capital expenditures in the domestic United States in 2014?

\$Bil.	Mil.	Thou.
<input type="text"/>	<input type="text"/>	<input type="text"/>

2-32 How much of the amount reported in Question 2-31 was for R&D operations?

\$Bil.	Mil.	Thou.
<input type="text"/>	<input type="text"/>	<input type="text"/>

2-33 How much of the amount reported in Question 2-32 was for the following?

- a. Structures
- b. Equipment
- c. Capitalized software
- d. All other capital expenditures for R&D operations
- e. **Total domestic capital expenditures for R&D**
(equals Question 2-32)

\$Bil.	Mil.	Thou.
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>

Reporting information

2-34 Is the information in this section reported for the 2014 calendar year?

Yes

No → Enter time period covered below:

From (MM) (YYYY) to (MM) (YYYY)



SECTION 3

Financial Schedule B

Who should answer this section?

Persons familiar with accounting concepts and with access to financial records related to your company's R&D activities should complete this section.

What does this section cover?

This section requests financial information about your company's costs for work that was funded, paid for, or reimbursed by others. This section requests information about these costs at multiple levels of detail: for your worldwide consolidated enterprise, for units or parts of your company defined by geography (countries, states), and for parts of your company defined by business code.

3-1 What were your company's total worldwide costs (both direct and indirect) in 2014 for the following that were funded, paid for, or reimbursed by others not owned by your company?

Exclude:

- Costs that were paid for by your company, such as those reported in Question 2-4
- Payments in excess of the actual cost of the work performed (such as profit or fees)

	\$Bil.	Mil.	Thou.
a. R&D that was reimbursed by your company's foreign parent (if you are owned by a foreign parent)	□ □	□ □ □	□ □ □
b. Collaborative R&D that was reimbursed by business partners, such as through cost-sharing agreements.	□ □	□ □ □	□ □ □
c. R&D paid for by government or private foundation grants	□ □	□ □ □	□ □ □
d. Defense RDT&E goods or services (including DOD 6.1 through 6.7 funding), provided as a prime or as a sub, to the government and/or government contractors	□ □	□ □ □	□ □ □
e. Medical nonclinical R&D services provided to others not owned by your company.	□ □	□ □ □	□ □ □
f. Medical clinical trial Phase I-III services provided to others not owned by your company (include pass-through costs)	□ □	□ □ □	□ □ □
g. Nondefense custom software development and/or computer systems designed for others not owned by your company.	□ □	□ □ □	□ □ □
<p>Exclude:</p> <ul style="list-style-type: none"> • Software development that does not depend on a scientific or technological advance, such as adding functionality to existing application programs, debugging systems, and adapting existing software 			
h. Prototype development, production, and testing for customer's products prior to their introduction to the market (excluding defense-related prototyping reported in line d)	□ □	□ □ □	□ □ □
i. All other R&D services, not included above, provided to the Federal Government or to others not owned by your company.	□ □	□ □ □	□ □ □
j. Total	□ □	□ □ □	□ □ □

SECTION 3



3-2 Copy the amount from Question 3-1, line j. This is the total R&D paid for by others in 2014.

\$Bil.	Mil.	Thou.
<input type="text"/>	<input type="text"/>	<input type="text"/>

3-3 Is the amount entered in Question 3-2 greater than zero?

- Yes → Continue with Question 3-4
- No → Skip to Section 4 on page 35

R&D paid for by others

3-4 Of the amount reported in Question 3-2, what costs were incurred by your company in the following locations?

	\$Bil.	Mil.	Thou.
a. Domestic United States (50 states and D.C.)	<input type="text"/>	<input type="text"/>	<input type="text"/>
b. All other countries (also, Puerto Rico)	<input type="text"/>	<input type="text"/>	<input type="text"/>
c. Total (equals Question 3-2).	<input type="text"/>	<input type="text"/>	<input type="text"/>

3-5 Copy the amount from Question 3-4, line a. This is the total domestic R&D paid for by others in 2014.

\$Bil.	Mil.	Thou.
<input type="text"/>	<input type="text"/>	<input type="text"/>

3-6 Copy the amount from Question 3-4, line b. This is the total foreign R&D paid for by others in 2014.

\$Bil.	Mil.	Thou.
<input type="text"/>	<input type="text"/>	<input type="text"/>



3-7 How much of the (1) domestic, (2) foreign, and (3) total worldwide R&D paid for by others in 2014 was for each of the following types of costs?

	(1) Domestic			(2) Foreign			(3) Total worldwide		
	\$Bil.	Mil.	Thou.	\$Bil.	Mil.	Thou.	\$Bil.	Mil.	Thou.
a. Salaries, wages, and fringe benefits	<input type="text"/>	<input type="text"/>	<input type="text"/>						
b. Stock-based compensation	<input type="text"/>	<input type="text"/>	<input type="text"/>						
c. Temporary staffing, including on-site consultants	<input type="text"/>	<input type="text"/>	<input type="text"/>						
d. Expensed equipment	<input type="text"/>	<input type="text"/>	<input type="text"/>						
e. Materials and supplies	<input type="text"/>	<input type="text"/>	<input type="text"/>						
f. Leased facilities and equipment	<input type="text"/>	<input type="text"/>	<input type="text"/>						
g. Depreciation and amortization on R&D property and equipment	<input type="text"/>	<input type="text"/>	<input type="text"/>						
h. Payments to business partners for collaborative R&D	<input type="text"/>	<input type="text"/>	<input type="text"/>						
i. Purchased R&D services (if your company is foreign-owned, include payments to your foreign owner for R&D)	<input type="text"/>	<input type="text"/>	<input type="text"/>						
j. All other purchased services except R&D	<input type="text"/>	<input type="text"/>	<input type="text"/>						
k. All other costs	<input type="text"/>	<input type="text"/>	<input type="text"/>						
l. Total	<input type="text"/>	<input type="text"/>	<input type="text"/>						

Total equals Question 3-5

Total equals Question 3-6

Total equals Question 3-2



3-8 Add 3-7, lines h and i for each column, and enter the result here. This is R&D performed by others (e.g., subcontracted/passed-through R&D costs).

(1) Domestic			(2) Foreign			(3) Total worldwide		
\$Bil.	Mil.	Thou.	\$Bil.	Mil.	Thou.	\$Bil.	Mil.	Thou.
<input type="text"/>								

3-9 Subtract 3-8 from 3-7, line l, for each column and enter the result here. This is R&D performed by your company that was paid for by others.

(1) Domestic			(2) Foreign			(3) Total worldwide		
\$Bil.	Mil.	Thou.	\$Bil.	Mil.	Thou.	\$Bil.	Mil.	Thou.
<input type="text"/>								

3-10 Copy the amount from Question 3-9, column 2. This is the foreign R&D performed by your company that was paid for by others.

\$Bil.	Mil.	Thou.
<input type="text"/>	<input type="text"/>	<input type="text"/>

3-11 Of the amount reported in Question 3-10, how much R&D was performed in the following locations? For full list of countries in each region see Question by Question Guidance at <https://econhelp.census.gov/brdis>.

	\$Bil.	Mil.	Thou.		\$Bil.	Mil.	Thou.
a. Canada	<input type="text"/>	<input type="text"/>	<input type="text"/>	j. Italy	<input type="text"/>	<input type="text"/>	<input type="text"/>
b. Puerto Rico	<input type="text"/>	<input type="text"/>	<input type="text"/>	k. Luxembourg	<input type="text"/>	<input type="text"/>	<input type="text"/>
Europe	\$Bil.	Mil.	Thou.	l. Netherlands	<input type="text"/>	<input type="text"/>	<input type="text"/>
a. Austria	<input type="text"/>	<input type="text"/>	<input type="text"/>	m. Norway	<input type="text"/>	<input type="text"/>	<input type="text"/>
b. Belgium	<input type="text"/>	<input type="text"/>	<input type="text"/>	n. Poland	<input type="text"/>	<input type="text"/>	<input type="text"/>
c. Czech Rep.	<input type="text"/>	<input type="text"/>	<input type="text"/>	o. Russia	<input type="text"/>	<input type="text"/>	<input type="text"/>
d. Denmark	<input type="text"/>	<input type="text"/>	<input type="text"/>	p. Spain	<input type="text"/>	<input type="text"/>	<input type="text"/>
e. Finland	<input type="text"/>	<input type="text"/>	<input type="text"/>	q. Sweden	<input type="text"/>	<input type="text"/>	<input type="text"/>
f. France	<input type="text"/>	<input type="text"/>	<input type="text"/>	r. Switzerland	<input type="text"/>	<input type="text"/>	<input type="text"/>
g. Germany	<input type="text"/>	<input type="text"/>	<input type="text"/>	s. Turkey	<input type="text"/>	<input type="text"/>	<input type="text"/>
h. Hungary	<input type="text"/>	<input type="text"/>	<input type="text"/>	t. United Kingdom	<input type="text"/>	<input type="text"/>	<input type="text"/>
i. Ireland	<input type="text"/>	<input type="text"/>	<input type="text"/>				

Question continues on next page



3-11 (Continued)

	\$Bil.	Mil.	Thou.		\$Bil.	Mil.	Thou.
u. Other Europe	<input type="text"/>	<input type="text"/>	<input type="text"/>	h. New Zealand	<input type="text"/>	<input type="text"/>	<input type="text"/>
Latin America/ Other Western Hemisphere	\$Bil.	Mil.	Thou.	i. Singapore	<input type="text"/>	<input type="text"/>	<input type="text"/>
a. Argentina	<input type="text"/>	<input type="text"/>	<input type="text"/>	j. South Korea	<input type="text"/>	<input type="text"/>	<input type="text"/>
b. Brazil	<input type="text"/>	<input type="text"/>	<input type="text"/>	k. Taiwan	<input type="text"/>	<input type="text"/>	<input type="text"/>
c. Chile	<input type="text"/>	<input type="text"/>	<input type="text"/>	l. Thailand	<input type="text"/>	<input type="text"/>	<input type="text"/>
d. Mexico	<input type="text"/>	<input type="text"/>	<input type="text"/>	m. Other Asia/ Pacific	<input type="text"/>	<input type="text"/>	<input type="text"/>
e. Other Latin America/OWH	<input type="text"/>	<input type="text"/>	<input type="text"/>	Middle East	\$Bil.	Mil.	Thou.
Asia and Pacific	\$Bil.	Mil.	Thou.	a. Israel	<input type="text"/>	<input type="text"/>	<input type="text"/>
a. Australia	<input type="text"/>	<input type="text"/>	<input type="text"/>	b. Other Middle East	<input type="text"/>	<input type="text"/>	<input type="text"/>
b. China	<input type="text"/>	<input type="text"/>	<input type="text"/>	Africa	\$Bil.	Mil.	Thou.
c. Hong Kong	<input type="text"/>	<input type="text"/>	<input type="text"/>	a. South Africa	<input type="text"/>	<input type="text"/>	<input type="text"/>
d. India	<input type="text"/>	<input type="text"/>	<input type="text"/>	b. Other Africa	<input type="text"/>	<input type="text"/>	<input type="text"/>
e. Indonesia	<input type="text"/>	<input type="text"/>	<input type="text"/>	Total (equals Question 3-10)	<input type="text"/>	<input type="text"/>	<input type="text"/>
f. Japan	<input type="text"/>	<input type="text"/>	<input type="text"/>				
g. Malaysia	<input type="text"/>	<input type="text"/>	<input type="text"/>				

Domestic R&D performed by your company that was paid for by others

3-12 Copy the amount from Question 3-9, column 1. This is the domestic R&D performed by your company that was paid for by others.

\$Bil.	Mil.	Thou.
<input type="text"/>	<input type="text"/>	<input type="text"/>



3-13 How much of the domestic R&D performed by your company that was paid for by others reported in Question 3-12 was for each business code listed or amended on page 6 of this form?

Allocate R&D that is applicable to more than one business code on a reasonable basis. Allocation in proportion to operating revenues is acceptable unless some alternative allocation basis is more appropriate.

Business code (see page 6)		\$Bil.	Mil.	Thou.
a.	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
b.	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
c.	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
d.	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
e.	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
f.	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
g.	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
h.	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
i.	Total (equals Question 3-12)	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>

3-14 How much of the amount reported in Question 3-12 was paid for by each of the following?

If your company is a subcontractor or subgrantee, report the original source of funds.

Example: Company Sub Inc. performs custom software development for a large defense company as a subcontractor on a contract with the U.S. Dept. of Defense. Even though Sub Inc. is working directly for the defense company, it reports the cost of this development in line d because the Dept. of Defense was the original source of funds.

	\$Bil.	Mil.	Thou.
a. Other companies located <u>inside</u> the United States	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
b. Your company's foreign parent (if you are owned by a foreign parent)	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
c. Other companies located <u>outside</u> the United States	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
d. U.S. federal government agencies or laboratories	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>

Question continues on next page



3-14 (Continued)

	\$Bil.	Mil.	Thou.
e. U.S. state government agencies or laboratories	<input type="text"/>	<input type="text"/>	<input type="text"/>
f. Foreign government agencies or laboratories	<input type="text"/>	<input type="text"/>	<input type="text"/>
g. All other organizations <u>inside</u> the United States	<input type="text"/>	<input type="text"/>	<input type="text"/>
h. All other organizations <u>outside</u> the United States	<input type="text"/>	<input type="text"/>	<input type="text"/>
i. Total (equals Question 3-12).	<input type="text"/>	<input type="text"/>	<input type="text"/>

3-15 Add Question 3-14, lines a, b, and c, and enter the result here. This is the R&D that was paid for by other companies.

\$Bil.	Mil.	Thou.
<input type="text"/>	<input type="text"/>	<input type="text"/>

3-16 Using the list of business codes printed below, allocate the amount reported in Question 3-15 based on the industries of the companies that paid for the R&D. As needed, enter additional codes from pages 46-47 in the spaces provided.

Business code	Description	\$Bil.	Mil.	Thou.
a. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	Pharmaceutical, medicinal, and botanical products manufacturing	<input type="text"/>	<input type="text"/>	<input type="text"/>
b. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	Medical equipment and supplies manufacturing	<input type="text"/>	<input type="text"/>	<input type="text"/>
c. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	Fabricated metal products manufacturing	<input type="text"/>	<input type="text"/>	<input type="text"/>
d. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	Plastics and rubber products manufacturing	<input type="text"/>	<input type="text"/>	<input type="text"/>
e. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	Electrical equipment, appliances, and components manufacturing	<input type="text"/>	<input type="text"/>	<input type="text"/>
f. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	Software publishers (except Internet).	<input type="text"/>	<input type="text"/>	<input type="text"/>
g. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
h. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
i. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
j. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Question continues on next page

SECTION 3



3-16 (Continued)

	Business code	Description	\$Bil.	Mil.	Thou.
k.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
l.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
m.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
n.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
o.	Total (equals Question 3-15)		<input type="text"/>	<input type="text"/>	<input type="text"/>

3-17 Copy the amount from Question 3-14, line d. This is domestic R&D performed by your company that was paid for by the U.S. federal government.

\$Bil.	Mil.	Thou.
<input type="text"/>	<input type="text"/>	<input type="text"/>

3-18 How much of the amount reported in Question 3-17 was paid for by the following agencies?

	\$Bil.	Mil.	Thou.
a. Department of Defense	<input type="text"/>	<input type="text"/>	<input type="text"/>
b. Department of Energy	<input type="text"/>	<input type="text"/>	<input type="text"/>
c. National Aeronautics and Space Administration	<input type="text"/>	<input type="text"/>	<input type="text"/>
d. National Institutes of Health	<input type="text"/>	<input type="text"/>	<input type="text"/>
e. Department of Homeland Security	<input type="text"/>	<input type="text"/>	<input type="text"/>
f. Department of Transportation	<input type="text"/>	<input type="text"/>	<input type="text"/>
g. Environmental Protection Agency	<input type="text"/>	<input type="text"/>	<input type="text"/>
h. National Science Foundation	<input type="text"/>	<input type="text"/>	<input type="text"/>
i. All other, please specify: <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
j. Total (equals Question 3-17).	<input type="text"/>	<input type="text"/>	<input type="text"/>



3-19 How much of the amount reported in Question 3-17 was performed under the following types of agreements?

	\$Bil.	Mil.	Thou.
a. Contracts (include direct or prime contracts and subcontracts)	<input type="text"/>	<input type="text"/>	<input type="text"/>
b. Grants, reimbursements, and all other agreements	<input type="text"/>	<input type="text"/>	<input type="text"/>
c. Total (equals Question 3-17)	<input type="text"/>	<input type="text"/>	<input type="text"/>

3-20 Subtract Question 3-17 from Question 3-12 and enter the result here. This is the domestic R&D performed by your company that was paid for by nonfederal sources.

\$Bil.	Mil.	Thou.
<input type="text"/>	<input type="text"/>	<input type="text"/>

3-21 How much of the following three amounts was performed in each state (including D.C.):

- (1) Domestic R&D paid for by the U.S. federal government reported in Question 3-17
- (2) Domestic R&D paid for by nonfederal sources reported in Question 3-20
- (3) Total domestic R&D performed by your company that was paid for by others reported in Question 3-12

	(1) Federal			(2) Nonfederal			(3) Total		
	\$Bil.	Mil.	Thou.	\$Bil.	Mil.	Thou.	\$Bil.	Mil.	Thou.
Alabama	<input type="text"/>								
Alaska	<input type="text"/>								
Arizona	<input type="text"/>								
Arkansas	<input type="text"/>								
California	<input type="text"/>								
Colorado	<input type="text"/>								
Connecticut	<input type="text"/>								

Question continues on next page

SECTION 3



3-21 (Continued)

	(1) Federal			(2) Nonfederal			(3) Total		
	<u>\$Bil.</u>	<u>Mil.</u>	<u>Thou.</u>	<u>\$Bil.</u>	<u>Mil.</u>	<u>Thou.</u>	<u>\$Bil.</u>	<u>Mil.</u>	<u>Thou.</u>
Delaware	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
District of Columbia	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Florida	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Georgia	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Hawaii	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Idaho	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Illinois	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Indiana	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Iowa	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Kansas	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Kentucky	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Louisiana	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Maine	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Question continues on next page



3-21 (Continued)

	(1) Federal			(2) Nonfederal			(3) Total		
	<u>\$Bil.</u>	<u>Mil.</u>	<u>Thou.</u>	<u>\$Bil.</u>	<u>Mil.</u>	<u>Thou.</u>	<u>\$Bil.</u>	<u>Mil.</u>	<u>Thou.</u>
Maryland	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Massachusetts	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Michigan	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Minnesota	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Mississippi	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Missouri	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Montana	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Nebraska	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Nevada	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
New Hampshire	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
New Jersey	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
New Mexico	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
New York	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

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SECTION 3



3-21 (Continued)

	(1) Federal			(2) Nonfederal			(3) Total		
	<u>\$Bil.</u>	<u>Mil.</u>	<u>Thou.</u>	<u>\$Bil.</u>	<u>Mil.</u>	<u>Thou.</u>	<u>\$Bil.</u>	<u>Mil.</u>	<u>Thou.</u>
North Carolina	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
North Dakota	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Ohio	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Oklahoma	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Oregon	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Pennsylvania	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Rhode Island	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
South Carolina	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
South Dakota	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Tennessee	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Texas	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Utah	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Vermont	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

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SECTION 3



3-21 (Continued)

	(1) Federal			(2) Nonfederal			(3) Total		
	<u>\$Bil.</u>	<u>Mil.</u>	<u>Thou.</u>	<u>\$Bil.</u>	<u>Mil.</u>	<u>Thou.</u>	<u>\$Bil.</u>	<u>Mil.</u>	<u>Thou.</u>
Virginia	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Washington	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
West Virginia	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Wisconsin	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Wyoming	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Total	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	<i>Total equals Question 3-17</i>			<i>Total equals Question 3-20</i>			<i>Total equals Question 3-12</i>		

3-22 At what domestic location did your company perform the largest dollar amount of R&D that was paid for by others in 2014?

Address 1

Address 2

City

State

ZIP

3-23 How much of the amount reported in Question 3-12 was from the location identified in Question 3-22?

<u>\$Bil.</u>	<u>Mil.</u>	<u>Thou.</u>
<input type="text"/>	<input type="text"/>	<input type="text"/>

SECTION 3



3-24 At what domestic location did your company perform the second largest dollar amount of R&D that was paid for by others in 2014?

Address 1

Address 2

City

State

ZIP

3-25 How much of the amount reported in Question 3-12 was from the location identified in Question 3-24?

\$Bil.	Mil.	Thou.
<input type="text"/>	<input type="text"/>	<input type="text"/>

Projected R&D paid for by others in 2015

3-26 What are your company's projected 2015 costs for R&D that will be paid for by others?

NOTE: This amount is the 2015 projection for what is reported in Question 3-2.

\$Bil.	Mil.	Thou.
<input type="text"/>	<input type="text"/>	<input type="text"/>

3-27 How much of the projected costs in 2015 for R&D that will be paid for by others reported in Question 3-26 will be performed by your company in the United States?

NOTE: This amount is the 2015 projection for what is reported in Question 3-12.

\$Bil.	Mil.	Thou.
<input type="text"/>	<input type="text"/>	<input type="text"/>

3-28 How much of the projected costs in 2015 for domestic R&D performed by your company that will be paid for by others reported in Question 3-27 will be paid for by the U.S. federal government?

NOTE: This amount is the 2015 projection for what is reported in Question 3-17.

\$Bil.	Mil.	Thou.
<input type="text"/>	<input type="text"/>	<input type="text"/>



SECTION 4

Management and Strategy of R&D

Who should answer this section?

Persons familiar with the technical, managerial, and strategic aspects of your company's R&D should complete this section.

What does this section cover?

This section requests information about the characteristics of the R&D reported in Sections 2 and 3. This section requests information about your company's worldwide consolidated R&D and the R&D your company performs in the domestic United States.

4-1 Copy the amount from Question 2-4. This is the total R&D paid for by your company in 2014.

\$Bil.	Mil.	Thou.
<input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/>	<input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/>	<input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/>

4-2 Is the amount entered in Question 4-1 greater than zero?

- Yes → **Continue with Question 4-3**
- No → **Skip to Question 4-17 on page 37**

4-3 What percentage of the amount reported in Question 4-1 was directed toward business areas or product lines that are new to your company?

Example: Company A manufactures laptop computers. In 2014 Company A's management decided to attempt to enter the cellular phone market and used a portion of the company's R&D budget to develop cellular phones. Because this was a new line of business in 2014, Company A reports this R&D in this question.

<input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> %
--

Characteristics of domestic R&D paid for and performed by your company

4-4 Copy the amount from Question 2-15. This is the domestic R&D paid for and performed by your company.

\$Bil.	Mil.	Thou.
<input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/>	<input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/>	<input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/>

4-5 How much of the amount reported in Question 4-4 was for the following categories?

- a. Research—the planned, systematic pursuit of new knowledge or understanding.
- b. Development—the systematic use of research and practical experience to produce new or significantly improved goods, services, or processes
- c. **Total** (equals Question 4-4).

\$Bil.	Mil.	Thou.
<input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/>	<input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/>	<input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/>
<input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/>	<input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/>	<input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/>

SECTION 4



4-6 If you reported any research in Question 4-5, line a, how much of that research was for the following categories?

	\$Bil.	Mil.	Thou.
a. <u>Applied research</u> —the activity aimed at solving a specific problem or meeting a specific commercial objective.	<input type="text"/>	<input type="text"/>	<input type="text"/>
b. <u>Basic research</u> —the activity aimed at acquiring new knowledge or understanding without specific immediate commercial application or use.	<input type="text"/>	<input type="text"/>	<input type="text"/>
c. Total (equals Question 4-5, line a)	<input type="text"/>	<input type="text"/>	<input type="text"/>

Areas of application for domestic R&D paid for and performed by your company

NOTE: You may report the same R&D in multiple areas for Questions 4-7 to 4-11.

4-7 What percentage of the amount reported in Question 4-4 had energy applications, including energy production, distribution, storage, and efficiency (excluding exploration and prospecting)?

Example: Company B is a semiconductor manufacturer. Its products are not designed specifically for energy applications. In 2014, 10% of the domestic R&D performed by the company was focused on improving the energy efficiency of its products. Based on this, Company B reports "10%" for this question.

 %

4-8 What percentage of the amount reported in Question 4-4 had environmental protection applications, including pollution abatement?

 %

4-9 What percentage of the amount reported in Question 4-4 had defense applications, including military applications and general security-related R&D?

 %

4-10 What percentage of the amount reported in Question 4-4 had health or medical applications?

 %

4-11 What percentage of the amount reported in Question 4-4 had agricultural applications?

 %

Technology focus of domestic R&D paid for and performed by your company

NOTE: You may report the same R&D in multiple areas for Questions 4-12 to 4-16.

4-12 What percentage of the amount reported in Question 4-4 was for software products or software embedded in other projects or products?

 %

4-13 What percentage of the amount reported in Question 4-4 was for optics and photonics—science and technology involving the emission, processing, and detection of light, or of the information carried by light?

 %


4-14 What percentage of the amount reported in Question 4-4 was for other projects or products enabled by optics and photonics science and technology? %

4-15 What percentage of the amount reported in Question 4-4 was for biotechnology—the use of cellular and bio-molecular processes to solve problems or make useful products? %

4-16 What percentage of the amount reported in Question 4-4 was for nanotechnology—the science and technology involving work at the nanometer scale? %

Domestic R&D performed by your company that was paid for by others

4-17 Copy the amount from Question 3-12. This is the domestic R&D performed by your company that was paid for by others. \$Bil. Mil. Thou.

4-18 Is the amount entered in Question 4-17 greater than zero?
 Yes → **Continue with Question 4-19**
 No → **Skip to Section 5 on page 40**

4-19 How much of the amount reported in Question 4-17 was for the following categories?

	\$Bil.	Mil.	Thou.
a. <u>Research</u> —the planned, systematic pursuit of new knowledge or understanding.	<input type="text"/>	<input type="text"/>	<input type="text"/>
b. <u>Development</u> —the systematic use of research and practical experience to produce new or significantly improved goods, services, or processes	<input type="text"/>	<input type="text"/>	<input type="text"/>
c. Total (equals Question 4-17).	<input type="text"/>	<input type="text"/>	<input type="text"/>

4-20 If you reported any research in Question 4-19, line a, how much of that research was for the following categories?

	\$Bil.	Mil.	Thou.
a. <u>Applied research</u> —the activity aimed at solving a specific problem or meeting a specific commercial objective.	<input type="text"/>	<input type="text"/>	<input type="text"/>
b. <u>Basic research</u> —the activity aimed at acquiring new knowledge or understanding without specific immediate commercial application or use.	<input type="text"/>	<input type="text"/>	<input type="text"/>
c. Total (equals Question 4-19, line a).	<input type="text"/>	<input type="text"/>	<input type="text"/>

SECTION 4



NOTE: You may report the same R&D in multiple areas for Questions 4-21 to 4-25.

4-21 What percentage of the amount reported in Question 4-17 had energy applications, including energy production, distribution, storage, and efficiency (excluding exploration and prospecting)? %

4-22 What percentage of the amount reported in Question 4-17 had environmental protection applications, including pollution abatement? %

4-23 What percentage of the amount reported in Question 4-17 had defense applications, including military applications and general security-related R&D? %

4-24 What percentage of the amount reported in Question 4-17 had health or medical applications? %

4-25 What percentage of the amount reported in Question 4-17 had agricultural applications? %

Technology focus of domestic R&D performed by your company that was paid for by others

NOTE: You may report the same R&D in multiple areas for Questions 4-26 to 4-30.

4-26 What percentage of the amount reported in Question 4-17 was for software products or software embedded in other projects or products? %

4-27 What percentage of the amount reported in Question 4-17 was for optics and photonics—science and technology involving the emission, processing, and detection of light, or of the information carried by light? %

4-28 What percentage of the amount reported in Question 4-17 was for other projects or products enabled by optics and photonics science and technology? %

4-29 What percentage of the amount reported in Question 4-17 was for biotechnology—the use of cellular and bio-molecular processes to solve problems or make useful products? %

4-30 What percentage of the amount reported in Question 4-17 was for nanotechnology—the science and technology involving work at the nanometer scale? %



Domestic R&D performed by your company that was paid for by the U.S. federal government

4-31 Copy the amount from Question 3-17. This is domestic R&D performed by your company that was paid for by the U.S. federal government.

\$Bil.	Mil.	Thou.
<input type="text"/>	<input type="text"/>	<input type="text"/>

4-32 Is the amount entered in Question 4-31 greater than zero?

- Yes → Continue with Question 4-33
- No → Skip to Section 5 on page 40

4-33 How much of the amount reported in Question 4-31 was for the following categories?

	\$Bil.	Mil.	Thou.
a. <u>Research</u> —the planned, systematic pursuit of new knowledge or understanding.	<input type="text"/>	<input type="text"/>	<input type="text"/>
b. <u>Development</u> —the systematic use of research and practical experience to produce new or significantly improved goods, services, or processes.	<input type="text"/>	<input type="text"/>	<input type="text"/>
c. Total (equals Question 4-31).	<input type="text"/>	<input type="text"/>	<input type="text"/>

4-34 If you reported any research in Question 4-33, line a, how much of that research was for the following categories?

	\$Bil.	Mil.	Thou.
a. <u>Applied research</u> —the activity aimed at solving a specific problem or meeting a specific commercial objective.	<input type="text"/>	<input type="text"/>	<input type="text"/>
b. <u>Basic research</u> —the activity aimed at acquiring new knowledge or understanding without specific immediate commercial application or use.	<input type="text"/>	<input type="text"/>	<input type="text"/>
c. Total (equals Question 4-33, line a).	<input type="text"/>	<input type="text"/>	<input type="text"/>

4-35 What percentage of the amount reported in Question 4-31 was for software products or software embedded in other projects or products? %

SECTION 4



SECTION 5

Human Resources

Who should answer this section?

Persons familiar with human resources concepts and with access to records related to your company's employees should complete this section.

What does this section cover?

This section requests information about your company's employees, focusing on those who worked on R&D activities either full-time or part-time. Include employment data for operations or subsidiaries for which your company owned more than 50 percent.

5-1 What was the total number of worldwide employees working at your company for the pay period that included March 12, 2014?

Include:

- Full- and part-time employees

Exclude:

- Leased or temporary employees and consultants

Number

--	--	--	--	--	--

5-2 How many of the employees reported in Question 5-1 were employees of your company's domestic operations and foreign operations?

Domestic operations employees include all employees whose payroll was reported on the first quarter filing of IRS Form 941, Employer's Quarterly Tax Return.

	(1) Domestic operations	(2) Foreign operations	(3) Total employees																		
Employees	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> </tr> </table>							<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> </tr> </table>							<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> </tr> </table>						

*Total equals
Question 5-1*

5-3 How many employees reported in Question 5-2 were R&D employees and how many were all other employees?

R&D employees include all employees who work on R&D or who provide direct support to R&D, such as researchers, R&D managers, technicians, clerical staff, and others assigned to R&D groups. **Exclude** employees who provide only indirect support to R&D, such as corporate personnel, security guards, and cafeteria workers.

	(1) Domestic operations	(2) Foreign operations	(3) Total employees																		
a. R&D employees	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> </tr> </table>							<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> </tr> </table>							<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> </tr> </table>						
b. All other employees . . .	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> </tr> </table>							<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> </tr> </table>							<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> </tr> </table>						
c. Total employees	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> </tr> </table>							<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> </tr> </table>							<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> <td style="border: 1px solid black; width: 25px; height: 25px;"></td> </tr> </table>						

Total line equals Question 5-2

SECTION 5



R&D employees

5-4 Copy the numbers from Question 5-3, line a. These are your company's R&D employees.

	(1) Domestic operations	(2) Foreign operations	(3) Total R&D employees
R&D employees	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>

5-5 How many of the R&D employees reported in Question 5-4 were female employees and male employees?

	(1) Domestic operations	(2) Foreign operations	(3) Total R&D employees
a. Female R&D employees	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
b. Male R&D employees . .	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
c. Total R&D employees	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>

Total line equals Question 5-4

5-6 How many of the R&D employees reported in Question 5-4 worked in the occupations listed below?

	(1) Domestic operations	(2) Foreign operations	(3) Total R&D employees
a. R&D scientists, engineers, and managers	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
b. R&D technicians and technologists.	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
c. R&D support staff (clerical and other)	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
d. Total R&D employees	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>

Total line equals Question 5-4

5-7 How many of the R&D scientists, engineers, and managers reported in Question 5-6, line a, had the following level of education?

	(1) Domestic Operations	(2) Foreign Operations	(3) Total
PhD (excluding MD, JD, and EdD)	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>

SECTION 5



Domestic full-time equivalents (FTEs)

5-8 Of the domestic R&D employees reported in Question 5-4, column 1, what was the number of full-time equivalents (FTEs) for R&D activity for full-time R&D employees, other full-time employees not working solely on R&D, and part-time employees?

a. FTEs for full-time R&D employees Number
 Count the number of full-time employees who work only on R&D.

Example:
 50 full-time R&D employees worked only on R&D = 50 FTEs

b. FTEs for other full-time employees not working solely on R&D
 Use the share of the time they work on R&D to calculate the number of FTEs.

Example:
 60 full-time employees averaged one-fourth of their time on R&D = 15 FTEs

c. FTEs for part-time employees working on R&D
 Use the share of a full-time week (such as 40 hours) that they work on R&D to calculate the FTEs.

Example:
 20 part-time employees averaged 20 hours a week on R&D activities = 10 FTEs

d. **Total FTEs**

Total FTEs should not exceed Question 5-4, column 1.

SECTION 5



5-9 Of the domestic R&D scientists, engineers, and managers reported in Question 5-6, row a, column 1, what was the number of full-time equivalents (FTEs) for R&D activity for full-time R&D employees, other full-time employees not working solely on R&D, and part-time employees?

a. FTEs for full-time R&D scientists, engineers, and managers Number
 Count the number of full-time employees who work only on R&D.

Example:
 50 full-time R&D scientists worked only on R&D = 50 FTEs

b. FTEs for other full-time scientists, engineers, and managers not working solely on R&D
 Use the share of the time they work on R&D to calculate the number of FTEs.

Example:
 60 full-time managers averaged one-fourth of their time on R&D = 15 FTEs

c. FTEs for part-time scientists, engineers, and managers working on R&D
 Use the share of a full-time week (such as 40 hours) that they work on R&D to calculate the FTEs.

Example:
 20 part-time employees averaged 20 hours a week on R&D activities = 10 FTEs

d. **Total FTEs**

Total FTEs should not exceed Question 5-6, line a, column 1.

5-10 How many of the R&D scientists, engineers, and managers reported in Question 5-6, line a, column 1, were non-U.S. citizens employed in the United States under a temporary visa, such as H-1B or L-1?

(1)
Domestic Operations

R&D scientists, engineers, and managers employed under a temporary visa.

SECTION 5



SECTION 6

Intellectual Property and Technology Transfer

Who should answer this section?

Persons with an understanding of your company's general business strategy and knowledge of its patenting, licensing, and other activities related to intellectual property should complete this section.

What does this section cover?

This section requests information about intellectual property and technology transfer activities such as:

- Patents
- Patent licensing
- Protection of intellectual property
- Transfer of intellectual property

Are responses to this survey confidential?

Yes. Your responses are completely confidential under Title 13, United States Code, and are seen only by persons sworn to uphold the confidentiality of Census Bureau information. Data provided will be used only to publish summary statistics that do not identify individual companies. Title 13 also provides that copies of reports retained in your files are immune from legal process. In addition, reported data are exempt from requests made under the Freedom of Information Act.

Patents

6-1 How many patents did your company apply for in 2014 from the U.S. Patent and Trademark Office (USPTO)?

Number

--	--	--	--

6-2 What percentage of the patent applications reported in Question 6-1 has your company applied for or plans to apply for in foreign jurisdictions?

				%
--	--	--	--	---

6-3 What percentage of the patent applications reported in Question 6-1 was for inventions that originated within your company's organized R&D activities?

				%
--	--	--	--	---

6-4 How many patents were issued to your company in 2014 by the USPTO?

Number

--	--	--	--

6-5 What percentage of your company's inventions considered for patenting in 2014 resulted in patent applications?

				%
--	--	--	--	---

Patent sales and licensing to others

6-6 How much revenue did your company receive in 2014 from the sale of patents?

\$Bil. Mil. Thou.

--	--	--	--	--	--	--	--	--	--

6-7 How much revenue did your company receive in 2014 from patent licensing?

\$Bil. Mil. Thou.

--	--	--	--	--	--	--	--	--	--



Patent purchases and licensing from others

6-8 How much did your company pay others in 2014 to purchase patents?

\$Bil.	Mil.	Thou.
<input type="text"/>	<input type="text"/>	<input type="text"/>

6-9 How much did your company pay others in 2014 to license patents?

\$Bil.	Mil.	Thou.
<input type="text"/>	<input type="text"/>	<input type="text"/>

Intellectual property transfer activities

6-10 Did your company perform the following activities in 2014?

- a. Transferred intellectual property (IP) to others not owned by your company through participation in technical assistance or "know how" agreements Yes No
- b. Received IP from others not owned by your company through participation in technical assistance or "know how" agreements Yes No
- c. Transferred IP to a spin-off or spin-out of your company. Yes No
- d. Received IP from a parent company as part of a spin-off or spin-out. . . Yes No
- e. Acquired more than 50% ownership in another company for the primary purpose of acquiring their IP. Yes No
- f. Acquired any financial interest in another company in order to gain access to their IP Yes No
- g. Participated in cross-licensing agreements—the agreements in which two or more parties grant a license to each other for the use of the subject matter claimed in one or more of the patents owned by each party. Yes No
- h. Allowed free use of patents or other IP owned by your company (for example, allowing free use of software patents by the open source community) Yes No
- i. Made use of open source patents or other freely available IP not owned by your company. Yes No

Intellectual property protection

6-11 During 2014, how important to your company were the following types of intellectual property protection?

- | | Very important | Somewhat important | Not important |
|---|--------------------------|--------------------------|--------------------------|
| a. Utility patents (patents for invention) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Design patents (patents for appearance). | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Trademarks. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Copyrights | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Trade secrets | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f. Mask works (copyright protection for semiconductor products) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |



Business codes

(used in Sections 1, 2, and 3)

Aerospace and Defense

- 33642 Aircraft engine and engine parts manufacturing
- 33641 Aircraft manufacturing
- 33644 Guided missiles, space vehicles, and parts manufacturing
- 33692 Military armored vehicle, tank, and tank components manufacturing
- 33452 Search, detection, navigation, guidance, aeronautical, and nautical system and instruments manufacturing
- 33660 Ship and boat building
- 33643 Other aircraft parts and auxiliary equipment manufacturing

Automobiles, Motorcycles, and Components

- 33620 Motor vehicle body and trailer manufacturing
- 33630 Motor vehicle parts manufacturing
- 33610 Motor vehicles manufacturing
- 33691 Motorcycle, bicycle, and parts manufacturing
- 33651 Railroad rolling stock manufacturing
- 33660 Ship and boat building
- 33699 All other transportation equipment manufacturing

Capital Equipment

- 33311 Agricultural machinery and equipment manufacturing
- 33332 Commercial, service industry, temperature control, and airflow control machinery manufacturing
- 33312 Construction machinery manufacturing
- 33500 Electrical equipment, appliances, and components manufacturing
- 33360 Engine, turbine, and power transmission equipment manufacturing
- 33322 Industrial machinery manufacturing, except semiconductor machinery
- 33390 Metalworking and other general purpose machinery manufacturing
- 33319 Mining, oil, and gas field machinery and equipment manufacturing
- 33331 Photographic and photocopying equipment manufacturing

Chemicals and Materials

- 32402 Asphalt paving, roofing, and saturated materials manufacturing
- 32510 Basic chemicals manufacturing
- 32790 Cement, concrete, lime, gypsum, and other nonmetallic mineral product manufacturing
- 32710 Clay and glass products manufacturing
- 21200 Mining
- 32592 Paint, adhesive, and other chemical manufacturing
- 32200 Paper manufacturing
- 32530 Pesticide, fertilizer, and other agricultural chemical manufacturing
- 32600 Plastics and rubber products manufacturing
- 33100 Primary metal manufacturing
- 32520 Resin, synthetic rubber, and artificial synthetic fibers and filaments manufacturing
- 32591 Soap, cleaning compound, and toilet preparations manufacturing
- 32100 Wood products manufacturing
- 32403 Other petroleum and coal products manufacturing, including motor oil, hydraulic fluid, and charcoal

Consumer Goods

- 33333 Digital cameras manufacturing
- 33430 Audio and video equipment manufacturing
- 31210 Beverage manufacturing
- 33200 Fabricated metal products manufacturing
- 31100 Food manufacturing
- 33700 Furniture and related products manufacturing
- 32300 Printing and related support activities
- 32591 Soap, cleaning compound, and toilet preparations manufacturing
- 31990 Textile, apparel, and leather products manufacturing
- 31220 Tobacco manufacturing
- 33990 Miscellaneous manufacturing not listed elsewhere (games, office supplies, slot machines, etc.)

Energy and Mining

- 33360 Engine, turbine, and power transmission equipment manufacturing
- 21200 Mining
- 33319 Mining, oil, and gas field machinery and equipment manufacturing
- 21100 Oil and gas extraction
- 32401 Petroleum refineries
- 21300 Support activities for mining, including oil and gas

Finance, Insurance, and Real Estate

- 52200 Finance: banking and credit intermediation
- 52400 Insurance carriers and related activities
- 53100 Real estate
- 52310 Securities, commodity contracts, and other financial investments and related activities (including funds and trusts)

Healthcare

- 32543 Biotechnology-based pharmaceutical and biological products (except diagnostics)
- 33451 Electromedical, electrotherapeutic, and irradiation apparatus manufacturing
- 62200 Hospitals and nursing care facilities
- 32542 In vitro diagnostic substances manufacturing
- 62150 Medical and diagnostic laboratories
- 33910 Medical equipment and supplies manufacturing
- 62110 Offices of physicians
- 32541 Pharmaceutical, medicinal, and botanical products manufacturing
- 54173 Research and development services in biotechnology
- 54174 Research and development services in physical, engineering, and life sciences (except biotechnology)
- 62199 Other ambulatory health care services (ambulance, dental, home health care)



Information Technology - Goods and Services

33333 Digital cameras manufacturing
 51801 Cloud computing applications and internet based software services
 54150 Computer systems design and related services
 33412 Computers and peripheral equipment manufacturing, including magnetic and optical media
 51800 Data processing, hosting, and related services
 33500 Electrical equipment, appliances, and components manufacturing
 45411 Electronic shopping and electronic auctions
 33459 Measuring and control instruments manufacturing (not listed elsewhere)
 33422 Radio, television, and wireless communication equipment manufacturing
 33440 Semiconductor and other electronic components manufacturing
 33321 Semiconductor machinery manufacturing
 51120 Software publishers (except Internet)
 33421 Telephone apparatus manufacturing including routers, modems, and gateways
 42500 Wholesale electronic markets and agents and brokers (business to business)
 33429 Other communication equipment manufacturing (except radio, television, and wireless communication equipment)
 51910 Other information services, including Internet publishing, broadcasting, and web search portals

Professional, Scientific, and Technical Services

54180 Advertising and related services
 54130 Architectural, engineering, and related services
 54150 Computer systems design and related services
 54111 Legal, accounting, tax preparation, bookkeeping and payroll services
 54160 Management, scientific, and technical consulting services
 54190 Professional, scientific, and technical services (not listed elsewhere)
 54173 Research and development services in biotechnology
 54174 Research and development services in physical, engineering, and life sciences (except biotechnology)
 54172 Research and development services in social sciences and humanities
 54140 Specialized design services

Telecommunications and Utilities

51500 Broadcasting (except Internet)
 51740 Satellite telecommunications
 22100 Utilities
 56200 Waste management and remediation services
 51710 Wired telecommunications carriers
 51720 Wireless telecommunications carriers (except satellite)
 51790 Other telecommunications (not listed elsewhere)

Other Services

72000 Accommodation and food services
 56100 Administrative and support services
 71000 Arts, entertainment, and recreation
 23000 Construction
 49200 Couriers, messengers, and express delivery services
 53300 Lessors of nonfinancial intangible assets (including patent licensing)
 55100 Management of companies and enterprises
 42300 Merchant wholesalers, durable goods
 42400 Merchant wholesalers, nondurable goods
 51200 Motion picture and sound recording (except Internet)
 51110 Newspaper, periodical, book, and directory publishers (except Internet)
 53200 Rental and leasing services
 44000 Retail trade, except electronic shopping and electronic auctions
 62400 Social assistance services
 21300 Support activities for mining, including oil and gas
 48000 Transportation
 49300 Warehousing and storage
 81000 Other services (not listed elsewhere)



Remarks (Please use the space below for any explanations that may help us understand your reported data.)

We estimate that it will take from .5 to 25 hours to complete this form, with 14.3 hours being the average. This includes time to read instructions, develop or assemble materials, conduct tests, organize and review the information, and maintain and report the information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to:

Paperwork Project 0607-0912
U.S. Census Bureau
4600 Silver Hill Road
AMSD-3K138
Washington, D.C. 20233

You may e-mail comments to Paperwork@census.gov; use "Paperwork Project 0607-0912" as the subject.

~ **Thank you for completing your 2014 Business R&D and Innovation Survey** ~

PLEASE MAKE A COPY OF THIS FORM FOR YOUR RECORDS AND RETURN THE ORIGINAL



2014 BRDI-1 - Guidelines

General guidelines for reporting inter-company transactions in this survey:

Reporting for “worldwide activities”- The reporting unit is your company, including all domestic and foreign subsidiaries that are more than 50% owned by your company for financial reporting purposes. All transactions between subdivisions within this reporting unit should be eliminated as inter-company transactions. For reporting purposes, your foreign parent (if you are foreign owned) and any foreign affiliates your company does not own by more than 50% should not be treated as part of ‘your company’ in your report. Transactions with these units should be treated the same as with any unrelated third parties such as business partners, customers, or suppliers you do not own.

Reporting for “domestic operations”- In this survey “domestic operations” refers to your company’s operations located in the 50 United States and D.C. When reporting for your domestic operations, include transactions with foreign subsidiaries. For example, Question 1.9 asks how much of your company’s total sales and revenues were from your company’s domestic operations. All revenue from the domestic operations, including sales to subsidiaries or affiliated companies overseas, should be reported in this question.

Section 1: Company Information

1.1 Was your company a majority-owned subsidiary of a foreign company in 2014?

Question 1.1 asks about the ownership of the company receiving the survey. Special reporting instructions apply to companies that were majority-owned by a foreign company. If your answer is “No” continue to Question 1.2. If your answer is “Yes”, enter the name of the parent company and skip to Question 1.3.

REPORTING INSTRUCTIONS FOR FOREIGN-OWNED COMPANIES:

If your company is foreign-owned, the reporting unit for the survey is your U.S.-located company, including all your majority-owned subsidiaries and divisions regardless of location. For reporting purposes, your foreign owner and any foreign affiliates your company does not own should be treated the same as any business partner, customer, or supplier you do not own.

If you pay your foreign owner for R&D services, those costs should be included in your responses in Section 2 as “costs for purchased R&D services.”

If your foreign owner pays or reimburses your company for R&D services, the costs for this R&D should be included in your responses in Section 3 as “costs funded, paid for, or reimbursed by others.”

Report your survey data using U.S. generally accepted accounting principles (U.S. GAAP) as recognized by the Financial Accounting Standard Board (FASB). If your company follows

International Financial Reporting Standards (IFRS), we request that you estimate any adjustments that would be required to conform to U.S. GAAP.

1.2 Did another U.S. company other than a holding company own more than 50 percent of the voting interest in your company during 2014?

Question 1.2 asks about the majority of the ownership of the voting interest of the company receiving the survey. Special reporting instructions apply to companies that have been acquired by another company. If your answer is “No”, continue to Question 1.3. If your answer is “Yes”, enter the name of the parent company, the EIN of the owner, and the date that your parent company purchased your company.

REPORTING INSTRUCTIONS FOR U.S.-OWNED COMPANIES:

If your company was purchased between April 1, 2014 and December 31, 2014, report only for the period January 1, 2014 to the date of purchase. If your company was purchased before April 1, 2014, complete Question 1.6 and return this form to the Census Bureau – you are not required to complete the rest of this survey.

Example 1: Company A was acquired by Company P (a U.S. company) on Feb. 1, 2014. Because Company A was acquired by a U.S. company prior to April 1, 2014, Company A is not required to complete this survey. Company A will answer Question 1.6 and return the form to the Census Bureau.

Example 2: Company B is acquired by Company P (a U.S. company) on July 1, 2014. Because Company B was acquired by a U.S. company on or after April 1, 2014, Company B must complete the survey, reporting data for the period January 1, 2014 through July 1, 2014.

Why April 1?

The Census Bureau has determined that for this survey the benefit of collecting data from a company for a period less than one quarter of a year does not outweigh the burden placed on the company to report the data.

Why is this important?

Companies are asked this question for three reasons: to eliminate double counting in cases where both parties in a business acquisition receive the survey; to guide foreign-owned companies to special instructions; and to reduce the burden on companies who would otherwise be reporting data for a period less than one quarter of the year.

1.3 Did your company own more than 50 percent of any company operations or subsidiaries outside the 50 United States and D.C. during 2014?

Companies are instructed to include/consolidate data for their foreign subsidiaries on this survey. The reporting unit is your company, including all domestic and foreign subsidiaries in which your company owns more than 50 percent of the voting interest.

Entities in which your company does not have more than 50% ownership stake should not be included in this report as part of ‘your company’. Transactions with entities in which your company does not have more than 50% ownership stake should be reported as if they were unrelated, third parties.

If your answer is “Yes”, include data for these operations/subsidiaries in your survey responses, and continue to Question 1.4. If your answer is “No”, continue to Question 1.4.

Why is this important? This information is needed in order to accurately measure the impact of globalization on R&D and innovation.

1.4 Has your company ceased operations?

If your answer is “Yes”, enter the date that your company ceased operations.

If your company ceased operations between April 1, 2014 and December 31, 2014, report only for the period January 1, 2014 to the date your company ceased operations. If your company ceased operations before April 1, 2014, complete Question 1.6 and return this form to the Census Bureau – you are not required to complete the rest of this survey.

Scenario 1: Your company ceased operations before April 1, 2014. Complete Questions 1.1 through 1.4 and Question 1.6 on page 5 and return the survey to the Census Bureau.

Scenario 2: Your company ceased operations between April 1, 2014 and December 31, 2014. You should complete the survey as instructed and report for the period from January 1, 2014 to the date your company ceased operations.

Why April 1?

The Census Bureau has determined that for this survey the benefit of collecting data from a company for a period less than one quarter of a year does not outweigh the burden placed on the company to report the data.

Why is this important?

Data from companies that have ceased operations during 2014 are needed in order to accurately measure the total activity of companies operating in the United States during 2014.

1.5 Did your company have discontinued operations in 2014?

Companies are instructed to include data for discontinued operations on this survey.

If your answer is “Yes”, include data for these operations in your survey responses, and continue to Question 1.6. If your answer is “No”, continue to Question 1.6.

Why is this important?

This information is needed in order to accurately measure the total activity of companies operating in the United States in 2014.

1.6 Who is the survey coordinator?

The survey coordinator is the person at your company responsible for gathering all requested information, ensuring instructions are followed, and submitting the completed survey. The survey coordinator may not be able to personally complete the entire survey and may need to request information from other knowledgeable resources concerning your company's R&D, accounting, human resources, and legal matters.

Enter the following contact information for the survey coordinator: name, title, telephone number, fax number, and email address.

Why is this important?

This information gives the Census Bureau a single point of contact at each company surveyed in case questions arise about survey responses. The point of contact for this survey may differ from that for other Census Bureau surveys.

Business codes

1.7 Do the business code(s) listed below reflect all applicable codes from the list on pages 46-47 in which your company operated worldwide during 2014?

Question 1.7 asks the company receiving the survey to identify all of its worldwide businesses in 2014 (Form BRDI-1). Most companies only have one business (such as making engine parts or providing tax preparation services) and so would only report one code for Question 1.7. Larger companies, however, sometimes operate in more than one business. These larger companies should pick the business codes from the list that best match how they define their various businesses.

If more than one of the company's businesses falls under one of the listed business codes, the company should group those businesses together on the survey. For example, a company may have an office software business and a video game software business. For the purpose of this survey the company would group those two businesses together and report using the code for "Software publishers (except Internet)" (51120).

If more than one of the listed business codes applies to one of the company's businesses the company should estimate what percentage of its business falls under each applicable codes. If this is not possible the company may pick the one code that is the closest match or that accounts for the largest share of its business. In either case, companies should note what action was taken in the space for "Remarks" at the end of the survey.

NOTE: These codes will be used to describe both business activities and R&D activities and may differ from industry codes used by other government surveys and reports.

If no business codes are printed below, please write in the codes from pages 46-47 that apply to your company.

If your answer is “Yes”, continue to Question 1.8. If your answer is “No”, draw a line through the code(s) that are incorrect, and, as needed, enter additional codes and descriptions from pages 46-47. Use the Remarks at the end of the survey to describe your business(es) if the provided codes do not accurately represent them.

Scenario 1: The business code(s) provided are incorrect. Check the “no” box, then find the correct code(s) on pages 46-47 and write the codes and descriptions in the boxes. Draw a line through the ones that are incorrect.

Scenario 2: No business code(s) are provided. Find the correct code(s) on pages 46-47 and write the codes and descriptions in the boxes.

For further assistance on identifying the appropriate business codes, visit the “Business Code Search Page” located on the Business Help Site at <https://econhelp.census.gov/brdis>

Why is this important?

This information is needed in order to tabulate more accurate and useful industry-level data.

1.8 What was the amount of your company’s worldwide sales and revenues during 2014?

Your company’s worldwide net sales and revenue would include sales by your foreign operations and subsidiaries, as well as, revenues from domestic operations. If your company is owned by a foreign parent, report sales to your parent and those affiliates not owned by your company.

Include sales and operating revenues for discontinued operations.

Exclude non-operating income such as dividends and interest as well as excise, sales, and other revenue-based taxes.

1.9 How much of the amount reported in Question 1.8 was attributable to or originated from domestic operations?

“Domestic sales” does not mean sales to customers located in the United States. If your company is owned by a foreign parent, then sales to your parent and those affiliates not owned by your company are included.

Include sales and operating revenues to foreign customers, including foreign subsidiaries.

Example: U.S. Manufacturing Corporation sells parts to customers around the world. However, because all its operations are located inside the United States, it reports 100% of its sales in this question.

1.10 How much of the 2014 sales and operating revenue amounts was for each business code listed or amended in Question 1.7:

- (1) Worldwide sales and operating revenues reported in Question 1.8
- (2) Domestic sales and operating revenues reported in Question 1.9

Transactions between one business code and another should be reported as would normally be reflected in segmental reporting. Use Line i to eliminate inter-company sales.

Product (good or service) innovation

A product innovation is the market introduction of a **new** or **significantly** improved good or service with respect to its capabilities, user friendliness, components, or sub-systems.

- Product innovations (new or improved) must be new to your company, but they do not need to be new to your market.
- Product innovations could have been originally developed by your company or by other companies.

1.11 During the three years 2012 to 2014, did your company introduce:

- a. New or significantly improved goods (Exclude the simple resale of new goods purchased from other companies and changes of a solely aesthetic nature)?
- b. New or significantly improved services?

For the purpose of this question, “new or significantly improved” is in reference to the company’s prior experience. For example, a computer manufacturer that introduced its first cell phone in 2012 would answer, “Yes” to line a, “New or significantly improved goods”.

1.12 If you answered “yes” to either 1.11, line a, or 1.11, line b, were any of your product innovations during the three years 2012 to 2014:

Question 1.12 asks whether any of the new or significantly improved good or service indicated in Question 1.11, lines a and b, were new or significantly improved to one of the company’s markets (i.e. first to market with a new or significantly improved product) or were only new to the company.

- a. New to your market?
Your company introduced a new or significantly improved good or service to your market before your competitors. (It may have been available in other markets).
- b. New only to your company?

Your company introduced a new or significantly improved good or service that was already available from your competitors in your market.

1.13 Using the definitions above, please give the percentage of your total sales in 2014 from:

Question 1.13 asks how much of the company's total worldwide sales in 2014 are attributable to different types of product innovations. Specifically, it asks what percent of the company's total worldwide sales in 2014 that were from:

- a. New or significantly improved goods and services introduced during 2012 to 2014 that were **new to your market**
- b. New or significantly improved goods and services introduced during 2012 to 2014 that were **new only to your company**
- c. Goods and services that were **unchanged or only marginally modified** during 2012 to 2014 (include the resale of new goods or services purchased from other companies).

Process innovation

A process innovation is the implementation of a new or significantly improved production process, distribution method, or support activity for your goods or services.

- Process innovations must be new to your company, but they do not need to be new to your market.
- The innovation could have been originally developed by your company or by other companies.
- Exclude purely organizational innovations.

1.14 During the three years 2012 to 2014, did your company introduce:

- a. New or significantly improved methods of manufacturing or producing goods or services?
- b. New or significantly improved logistics, delivery or distribution methods for your inputs, goods, or services?
- c. New or significantly improved supporting activities for your processes, such as maintenance systems or operations for purchasing, accounting, or computing?

Question 1.14 asks whether the company introduced any process innovations over the past three years. For the purpose of this question, “new or significantly improved” is in reference to the company's prior experience.

Section 2: Financial Schedule A

2.1 What was the total worldwide R&D expense for your company in 2014?

Question 2.1 requests total worldwide R&D expense. The reporting unit is your company, including all domestic and foreign subsidiaries that are more 50% owned by your company for financial reporting purposes. All transactions between subdivisions within this reporting unit should be eliminated as inter-company transactions. Total worldwide R&D expense also includes payments by your company for R&D services performed by (i) unrelated third parties, (ii) affiliates for which your company has less than a 50% ownership stake and/or (iii) your foreign parent, if your company is foreign owned.

Scenario 1: Your company is publicly traded. Report worldwide R&D expense as reported on SEC Form 10-K as defined in FASB ASC Topic 730, Research and Development (FASB Statement No. 2, Accounting for Research and Development Costs.)

Scenario 2: Your company is foreign-owned. Report the R&D expense figure of the U.S.-located company and domestic and foreign subsidiaries that are more than 50% owned by your U.S.-located company, if any. Do not include expenses by your foreign parent or by any foreign affiliate your U.S.-located company does not own. For reporting purposes, these entities should be treated the same as any unrelated third party such as a customer or supplier you do not own.

Scenario 3: Your company is privately owned. You should follow the same procedures as public companies when reporting R&D expense and follow the guidance in FASB ASC Topic 730, Research and Development (FASB Statement No. 2, Accounting for Research and Development Costs.). Privately held companies that cannot report on this basis should note reporting principles and difficulties in the space for "Remarks" at the end of the survey.

The following are examples of activities that typically would be **excluded** from research and development in accordance with FASB Statement No. 2, "Activities Constituting Research and Development" (<http://www.fasb.org/pdf/fas2.pdf>) :

- a. Engineering follow-through in an early phase of commercial production.
- b. Quality control during commercial production including routine testing of products.
- c. Trouble-shooting in connection with break-downs during commercial production.
- d. Routine, on-going efforts to refine, enrich, or otherwise improve upon the qualities of an existing product.
- e. Adaptation of an existing capability to a particular requirement or customer's need as part of a continuing commercial activity.
- f. Seasonal or other periodic design changes to existing products.
- g. Routine design of tools, jigs, molds, and dies.
- h. Activity, including design and construction engineering, related to the construction, relocation, rearrangement, or start-up of facilities or equipment other than (1) pilot plants (see paragraph 9(h)) and (2) facilities or equipment whose sole use is for a particular research and development project (see paragraph 11(a)).

- i. Legal work in connection with patent applications or litigation, and the sale or licensing of patents.

Exclude from worldwide R&D expense:

- Costs for R&D that was paid for by a third party such as R&D performed under contract.
- For medical products companies, exclude costs for phase IV clinical trials since these trials take place after products have achieved technical and market feasibility.

Research and development activity in software:

Does R&D include development of software and Internet applications?

- Yes, as long as the research and development activities include an element of uncertainty, are intended to close knowledge gaps, and meet scientific and technological needs.
- Report in this survey all software R&D as defined here regardless of the eventual user (internal or external).

R&D activity in software INCLUDES:

- Software development or improvement activities that expand scientific or technological knowledge
- Construction of new theories and algorithms in the field of computer science

R&D activity in software EXCLUDES:

- Software development that does not depend on a scientific or technological advance, such as:
 - supporting or adapting existing systems
 - adding functionality to existing application programs, and
 - routine debugging of existing systems and software
- Creation of new software based on known methods and applications
- Conversion or translation of existing software and software languages
- Adaptation of a product to a specific client, unless knowledge that significantly improved the base program was added in that process

For further guidance on accounting for software development costs see FASB Statement No. 86 (Accounting for the Costs of Computer Software to Be Sold, Leased); and FASB Interpretation No. 6 (Applicability of FASB Statement No. 2 to Computer Software).

2.2 Does the amount reported in Question 2.1 include any of the following costs?

Although most companies share a general framework for R&D, we request that certain items be excluded for the sake of consistency. Certain costs and expenses are to be reported in Section 3 reflecting your company's R&D activities that were paid for by others.

Question 2.2 asks whether the company's R&D expense figure reported in Question 2.1 included costs for five specific categories:

- a. Collaborative R&D that was reimbursed by business partners, such as through cost-sharing agreements
 - o These agreements are very common in the biotechnology and pharmaceutical industries, but less so in other industries.
- b. R&D paid for by government or private foundation grants
 - o Examples include Small Business Innovation and Research (SBIR) grants, Department of Energy demonstration grants, and Gates Foundation research grants.
- c. Technical services not an integral part of an R&D project (such as product support provided by R&D employees)
 - o This category most often applies to software and service companies where R&D staff also provide technical support and/or services to customers.
- d. Bid and proposal costs
 - o This category represents the costs a company incurs applying to win a contract. Some government contractors group these costs with their R&D spending.
- e. Expense your company claimed resulting from the acquisition of another company with unfinished R&D projects (in-process R&D).

Why is this important?

Not all companies treat the five cost categories listed in this question consistently with respect to their inclusion or exclusion from R&D expense figures. This question allows the survey to measure and correct for these inconsistencies.

2.3 If you answered “Yes” to any of the costs in Question 2.2, what was the amount of these costs that was included in your response to Question 2.1?

Question 2.3 asks the company to estimate the amount of its R&D expense figure reported in Question 2.1 that was from the categories listed in Question 2.2.

Why is this important?

The five cost categories listed in Question 2.2 are not treated consistently by all companies with respect to their inclusion or exclusion from R&D expense figures. This question allows the survey to measure and correct these inconsistencies.

2.4 Subtract Question 2.3 from Question 2.1 and enter the result here. This is the total R&D paid for by your company in 2014.

Question 2.4 asks the company to subtract the amount reported in Question 2.3 from the amount reported in Question 2.1. The resulting figure is the starting point for the subsequent questions in Section 2. This survey refers to this amount as “total R&D paid for by your company”.

Why is this important?

The five cost categories listed in Question 2.2 are not treated consistently by all companies with respect to their inclusion or exclusion from R&D expense figures. This question allows the survey to measure and correct for these inconsistencies.

2.5 Is the amount entered in Question 2.4 greater than zero?

Question 2.5 instructs the company to skip to Question 2.31 if its response to Question 2.4 is zero.

R&D paid for by your company

2.6 Of the amount reported in Question 2.4, what were the costs for each business code listed or amended on page 6 of this form?

If the company does not track its R&D costs by line of business or product line, it should make a reasonable estimate.

If the company has R&D that applies to more than one business code, such as basic or applied research conducted by a central R&D group, it should allocate this R&D to all applicable business codes on a reasonable basis. Examples of allocation methods include allocating in proportion to sales by business code and allocating in proportion to R&D employees working for each business code.

2.7 Of the amount reported in Question 2.4, what costs were incurred by your company in the following locations?

This question requires the company to report where R&D costs were incurred, even in the case of purchased R&D services where the R&D may be performed in a different location.

This survey defines the domestic United States as the 50 states and the District of Columbia only. Costs incurred in Puerto Rico, Guam, and other U.S. territories should be reported in the category for “All other countries”.

Report R&D performed by domestic operations that are paid for by foreign subsidiaries in line a (Domestic U.S.).

Report R&D performed by foreign subsidiaries that are paid for by domestic operations in line b (All other countries).

Scenario 1: Your company has R&D operations in Washington state and in your subsidiary in Canada. All of the R&D costs (such as salaries of R&D employees) from the Washington R&D operations should be reported in the line for “Domestic U.S.” even if a portion of this R&D is for the benefit of your Canadian subsidiary.

2.8 Copy the amount from Question 2.7, line a. This is the total domestic R&D paid for by your company in 2014.

Question 2.8 asks the company to copy the amount reported in Question 2.7 for R&D costs incurred in the domestic United States. This survey defines this amount as “total domestic R&D paid for by your company in 2014”.

2.9 Copy the amount from Question 2.7, line b. This is the total foreign R&D paid for by your company in 2014.

Question 2.9 asks the company to copy the amount reported in Question 2.7 for R&D costs incurred in countries outside the domestic United States. This survey defines this amount as “total foreign R&D paid for by your company in 2014”.

2.10 How much of the (1) domestic, (2) foreign, and (3) total worldwide R&D paid for by your company in 2014 was for each of the following types of costs?

Question 2.10 asks the company to report its domestic, foreign, and total worldwide R&D that it paid for in 2014 broken into 11 categories:

- a. Salaries, wages, and fringe benefits
 - Include costs for all compensation and benefits of R&D employees and officers that are included in the R&D paid for by the company.
 - Stock-based compensation should be reported in line b
 - Include payroll taxes such as Social Security and Medicare.
- b. Stock-based compensation
 - Include the cost of both stock options and stock grants.
- c. Temporary staffing including on-site consultants
 - Include costs paid to Professional Employer Organizations (PEOs), staffing agencies, and on-site consultants for personnel contributing to R&D.
- d. Expensed equipment
 - Include all equipment purchases for R&D that are beneath the company’s capitalization threshold.
- e. Materials and supplies
 - Costs for materials and supplies consumed for R&D
- f. Leased facilities and equipment
 - Costs for leased facilities and equipment used in the company’s R&D
- g. Depreciation and amortization on R&D property and equipment
 - Includes depreciation on tangible R&D assets such as buildings or equipment as well as the amortization of intangible assets such as patents and capitalized in-process R&D used only for the company’s R&D activities.
- h. Payments to business partners for collaborative R&D
 - Include milestone payments and payments made under cost sharing agreements for joint R&D projects.

- Payments made to contract research organizations or other parties performing R&D under contract for the company should be reported in line i, “Purchased R&D services”.
- i. Purchased R&D services
 - Include payments made to contract research organizations or other parties performing R&D under contract for the company.
- j. All other purchased services except R&D
 - Include payments for purchased services that support the company’s R&D, but are not themselves R&D.
 - Examples of costs to report in this category include hazardous waste disposal services at the company’s R&D lab and purchased computing time to run simulations for the company’s R&D.
- k. All other costs
 - Include all other costs supporting the R&D the company paid for.
 - Examples of costs to report in this category include: travel and training, journal subscriptions, royalties or licenses paid for patents or software used in the company’s R&D.

The domestic total should equal Question 2.8, foreign total should equal Question 2.9, and total worldwide should equal Question 2.4.

2.11 Add 2.10, lines h and i for each column, and enter the result here. This is R&D performed by others.

Question 2.11 asks the company to add the amounts reported in Question 2.10, lines h and i for each column. This survey defines this amount as “R&D performed by others”.

Why is this important?

The costs reported in lines h and i of Question 2.10 represent payments to third parties (outsourcing) for R&D. Because the reporting company is not directly involved in the conduct of this R&D, it may not be able to provide the same amount of information on these costs as it could for the R&D it performs itself. This question allows the survey to address this limitation as well as address an interest in the nature of collaborative and contract R&D.

2.12 Subtract 2.11 from 2.10, line l, for each column and enter the result here. This is R&D performed by your company.

Question 2.12 asks the company to subtract the amounts reported in Question 2.11 from those reported in Question 2.10, line l for each column. This survey defines this amount as “R&D performed by your company”.

Why is this important?

The costs reported in lines h and i of Question 2.10 represent payments to third parties (outsourcing) for R&D. Because the reporting company is not directly involved in the conduct of

this R&D, it may not be able to provide the same amount of information on these costs as it could for the R&D it performs itself. This question allows the survey to address this limitation as well as address an interest in the differences between R&D companies perform themselves versus R&D that is performed by collaborators and contractors.

2.13 Copy the amount from Question 2.12, column 2. This is the foreign R&D paid for and performed by your company in 2014.

Question 2.13 asks the company to copy the amount reported in Question 2.12 for foreign R&D costs paid for and performed by the company. This survey defines this amount as “foreign R&D paid for and performed by your company in 2014”.

2.14 Of the amount reported in Question 2.13, how much R&D was performed in the following locations?

Question 2.14 asks the company to report how much of the foreign R&D performed by the company in 2014 was performed in specific countries, including Puerto Rico.

Why is this important?

This information is needed in order to accurately measure the impact of globalization on R&D.

<u>Country/Territory Name</u>	<u>Region</u>
Afghanistan	Asia and Pacific
Albania	Europe
Algeria	Africa
American Samoa (U.S.)	Asia and Pacific
Andorra	Europe
Angola	Africa
Antigua and Barbuda	Latin America/OWH
Argentina	Latin America/OWH
Armenia	Asia and Pacific
Aruba (Neth.)	Latin America/OWH
Australia	Asia and Pacific
Austria	Europe
Azerbaijan	Asia and Pacific
Bahamas, The	Latin America/OWH
Bahrain	Middle East
Bangladesh	Asia and Pacific
Barbados	Latin America/OWH
Belarus	Europe
Belgium	Europe
Belize	Latin America/OWH
Benin	Africa
Bermuda (U.K.)	Latin America/OWH

Bhutan	Asia and Pacific
Bolivia	Latin America/OWH
Bosnia and Herzegovina	Europe
Botswana	Africa
Brazil	Latin America/OWH
Brunei	Asia and Pacific
Bulgaria	Europe
Burkina Faso	Africa
Burma	Asia and Pacific
Burundi	Africa
Cambodia	Asia and Pacific
Cameroon	Africa
Canada	Not assigned to a region in this survey.
Cape Verde	Africa
Cayman Islands (U.K.)	Latin America/OWH
Central African Republic	Africa
Chad	Africa
Chile	Latin America/OWH
China	Asia and Pacific
Colombia	Latin America/OWH
Comoros	Africa
Congo (Brazzaville)	Africa
Democratic Republic of the Congo	Africa
Costa Rica	Latin America/OWH
Côte d'Ivoire/Ivory Coast	Africa
Croatia	Europe
Cuba	Latin America/OWH
Cyprus	Europe
Czech Republic	Europe
Denmark	Europe
Djibouti	Africa
Dominica	Latin America/OWH
Dominican Republic	Latin America/OWH
Ecuador	Latin America/OWH
Egypt	Africa
El Salvador	Latin America/OWH
Equatorial Guinea	Africa
Eritrea	Africa
Estonia	Europe
Ethiopia	Africa
Fiji	Asia and Pacific
Finland	Europe
France	Europe
Gabon	Africa
Gambia, The	Africa
Georgia	Europe

Germany	Europe
Ghana	Africa
Greece	Europe
Greenland (Denmark)	Europe
Grenada	Latin America/OWH
Guam (U.S.)	Asia and Pacific
Guatemala	Latin America/OWH
Guinea	Africa
Guinea-Bissau	Africa
Guyana	Latin America/OWH
Haiti	Latin America/OWH
Holy See	Europe
Honduras	Latin America/OWH
Hong Kong	Asia and Pacific
Hungary	Europe
Iceland	Europe
India	Asia and Pacific
Indonesia	Asia and Pacific
Iran	Middle East
Iraq	Middle East
Ireland	Europe
Israel	Middle East
Italy	Europe
Jamaica	Latin America/OWH
Japan	Asia and Pacific
Jordan	Middle East
Kazakhstan	Asia and Pacific
Kenya	Africa
Kiribati	Asia and Pacific
Kosovo	Europe
Kuwait	Middle East
Kyrgyzstan	Asia and Pacific
Laos	Asia and Pacific
Latvia	Europe
Lebanon	Middle East
Lesotho	Africa
Liberia	Africa
Libya	Africa
Liechtenstein	Europe
Lithuania	Europe
Luxembourg	Europe
Macau	Asia and Pacific
Macedonia	Europe
Madagascar	Africa
Malawi	Africa
Malaysia	Asia and Pacific

Maldives	Asia and Pacific
Mali	Africa
Malta	Europe
Marshall Islands	Asia and Pacific
Mauritania	Africa
Mauritius	Africa
Mexico	Latin America/OWH
Micronesia, Federated States of	Asia and Pacific
Moldova	Europe
Monaco	Europe
Mongolia	Asia and Pacific
Montenegro	Europe
Morocco	Africa
Mozambique	Africa
Namibia	Africa
Nauru	Asia and Pacific
Nepal	Asia and Pacific
Netherlands	Europe
New Zealand	Asia and Pacific
Nicaragua	Latin America/OWH
Niger	Africa
Nigeria	Africa
North Korea	Asia and Pacific
Norway	Europe
Oman	Middle East
Pakistan	Asia and Pacific
Palau	Asia and Pacific
Panama	Latin America/OWH
Papua New Guinea	Asia and Pacific
Paraguay	Latin America/OWH
Peru	Latin America/OWH
Philippines	Asia and Pacific
Poland	Europe
Portugal	Europe
Puerto Rico (U.S.)	Not assigned to a region in this survey.
Qatar	Middle East
Romania	Europe
Russia	Europe
Rwanda	Africa
Saint Kitts and Nevis	Latin America/OWH
Saint Lucia	Latin America/OWH
Saint Vincent and the Grenadines	Latin America/OWH
Samoa	Asia and Pacific
San Marino	Europe
Sao Tome and Principe	Africa
Saudi Arabia	Middle East

Senegal	Africa
Serbia	Europe
Seychelles	Africa
Sierra Leone	Africa
Singapore	Asia and Pacific
Slovakia	Europe
Slovenia	Europe
Solomon Islands	Asia and Pacific
Somalia	Africa
South Africa	Africa
South Korea	Asia and Pacific
South Sudan	Africa
Spain	Europe
Sri Lanka	Asia and Pacific
Sudan	Africa
Suriname	Latin America/OWH
Swaziland	Africa
Sweden	Europe
Switzerland	Europe
Syria	Middle East
Taiwan	Asia and Pacific
Tajikistan	Asia and Pacific
Tanzania	Africa
Thailand	Asia and Pacific
Timor-Leste	Asia and Pacific
Togo	Africa
Tonga	Asia and Pacific
Trinidad and Tobago	Latin America/OWH
Tunisia	Africa
Turkey	Europe
Turkmenistan	Asia and Pacific
Turks and Caicos Islands (U.K.)	Latin America/OWH
Tuvalu	Asia and Pacific
Uganda	Africa
Ukraine	Europe
United Arab Emirates	Middle East
United Kingdom	Europe
Uruguay	Latin America/OWH
Uzbekistan	Asia and Pacific
Vanuatu	Asia and Pacific
Venezuela	Latin America/OWH
Vietnam	Asia and Pacific
Virgin Islands (U.K.)	Latin America/OWH
Virgin Islands (U.S.)	Latin America/OWH
Yemen	Middle East
Zambia	Africa

Note: OWH = Other Western Hemisphere. 'Latin America/OWH' includes Bermuda and the geographical regions of the Caribbean, Central America, and South America.

2.15 Copy the amount from Question 2.12, column 1. This is the domestic R&D paid for and performed by your company in 2014.

Question 2.15 asks the company to copy the amount reported in Question 2.12 for domestic R&D costs paid for and performed by the company. This survey defines this amount as "domestic R&D paid for and performed by your company in 2014".

"Domestic R&D paid for and performed by your company" is the portion of your company's total R&D expense associated with R&D performed by your company's full-time, part-time, and temporary employees in the domestic United States. This amount excludes R&D performed by others not owned by your company, such as contract research organizations and universities.

2.16 How much of the amount reported in Question 2.15 was performed in each state (including D.C.) in 2014?

If the company is unable to assign all its R&D costs to specific states, it should use a reasonable allocation method to report R&D by state. Companies should note their allocation method in the space for "Remarks" at the end of the survey.

Why is this important?

This information is very important to policy makers who are interested in the geographic distribution of R&D activity and its role in regional economic development.

2.17 At what domestic location did your company perform the largest dollar amount of R&D in 2014?

Question 2.17 asks the company to identify the location where the largest dollar value of the domestic R&D it performed in 2014 took place.

2.18 How much of the amount reported in Question 2.15 was from the location identified in Question 2.17?

If the company is unable to allocate its R&D costs to a specific location, it should provide a reasonable estimate. Companies should note their allocation method in the space for "Remarks" at the end of the survey.

2.19 At what domestic location did your company perform the second largest dollar amount of R&D in 2014?

Question 2.19 asks the company to identify the location where the second largest dollar value of the domestic R&D it performed in 2014 took place.

2.20 How much of the amount reported in Question 2.15 was from the location identified in Question 2.19?

If the company is unable to allocate its R&D costs to a specific location, it should provide a reasonable estimate. Companies should note their allocation method in the space for "Remarks" at the end of the survey.

2.21 Of the domestic R&D performed by your company reported in Question 2.15, how much was for each business code reported in Question 2.6?

If the company does not track its R&D costs by line of business or product line it should make a reasonable estimate.

If the company has R&D that applies to more than one business code, such as basic or applied research conducted by a central R&D group, it should allocate this R&D to all applicable business codes on a reasonable basis. Examples of allocation methods include allocating in proportion to sales by business code and allocating in proportion to R&D employees working for each business code.

R&D transactions between legal entities under common ownership

Questions 2.22 and 2.23 are intended only for companies that own more than 50 percent of any operations or subsidiaries located outside the 50 United States and D.C. during 2014 (that is, your company provided a "Yes" response to Question 1.3).

2.22 How much of the amount reported in Question 2.15 (domestic R&D performance) was paid for by your company's foreign subsidiaries through inter-company transactions?

Example: Company Y owns a subsidiary in France. In order to complete the development of a product in 2014, the French subsidiary paid for R&D performed at Company Y's U.S. R&D center. The cost of the U.S. R&D that was paid for by the French subsidiary would be included in this item.

Special Instruction for Foreign Owned Companies: Do not include payments from your company's foreign parent. R&D costs associated with these payments should be reported in Section 3.

2.23 How much of the amount reported in Question 2.13 (foreign R&D performance) was paid for by your company’s domestic operations through inter-company transactions?

Example: Company Z owns a subsidiary in France. In order to complete the development of a product in 2014, the domestic operations paid for R&D performed at its subsidiary’s R&D center in France. The cost of the French subsidiary’s R&D that was paid for by the domestic operations would be included in this item.

R&D performed by others

2.24 Copy the amount from Question 2.11, column 1. This is the domestic R&D paid for by your company in 2014 that was performed by others.

This survey defines this amount as “total R&D performed by others in 2014”. This amount represents the R&D that your company outsourced or paid to third parties during 2014.

2.25 How much of the amount reported in Question 2.24 was performed by the following types of organizations?

Question 2.25 asks the company to report how much of the domestic R&D paid for by your company in 2014 that was performed by eight specific types of organizations:

- a. Companies located inside the United States
 - o Include for-profit hospitals
- b. Your company’s foreign parent (if you are owned by a foreign parent)
- c. Other companies located outside the United States
- d. U.S. federal government agencies or laboratories
- e. U.S. state and local government agencies or laboratories
- f. Foreign government agencies or laboratories
- g. All other organizations inside the United States
- h. All other organizations outside the United States

The total domestic R&D paid for by your company that was performed by others should equal the amount reported in Question 2.24.

Activities with academia

2.26 In addition to the amount reported in Question 2.24, did your company make monetary gifts to U.S. universities or colleges in 2014 that included support for R&D?

If you answer “Yes”, continue to Question 2.27. If you answer “No”, skip to Question 2.28.

2.27 What was the amount of monetary gifts made by your company to U.S. universities or colleges in 2014 that was for R&D?

Indirect R&D charges

2.28 How much of the amount reported in Question 2.4 was for R&D costs your company plans to recoup through indirect charges on U.S. federal government contracts (IR&D or independent R&D)?

Question 2.28 asks how much of the amount reported in Question 2.4 was a special category of R&D costs tracked by government contractors. In order to encourage business R&D in certain areas of interest to the government, federal agencies such as the Department of Defense allow companies to recoup certain R&D costs through indirect charges on government contracts. These R&D costs, called IR&D or independent R&D should only apply to Federal government contractors.

Projected R&D for 2015

2.29 What are your company's projected 2015 costs for (1) domestic, (2) foreign, and (3) total worldwide R&D paid for by your company?

Question 2.29 asks the company to project its domestic, foreign, and total worldwide R&D costs for 2015.

2.30 How much of the amount reported in Question 2.29, column 1, is for projected purchased R&D services and projected payments to business partners for collaborative R&D?

Question 2.30 asks the company to project how much of the domestic R&D paid for by the company in 2015 will be for purchased R&D services and payments to business partners for collaborative R&D.

Capital expenditures

2.31 What was the amount of your company's capital expenditures in the domestic United States in 2014?

Exclude the cost of purchased land.

Assets acquired through merger and acquisition activities should not be included in your report.

2.32 How much of the amount reported in Question 2.31 was for R&D operations?

Companies should allocate capital expenditures that benefit both R&D operations and other company operations on a reasonable basis. Companies should note their allocation method in the space for "Remarks" at the end of the survey.

2.33 How much of the amount reported in Question 2.32 was for the following? Question 2.33 asks the company to report how much of the domestic capital expenditures for R&D operations may be classified in four specific types of capital expenditures:

- a. Structures
 - Include the costs of purchased or improved buildings and other facilities such as signal towers or windmills that are fixed to the land.
- b. Equipment
- c. Capitalized software
- d. All other capital expenditures for R&D operations
 - Include the costs of purchased patents or other intangible assets.

The total domestic capital expenditures for R&D should equal what was reported in Question 2.32.

Reporting Information

2.34 Is the information in this section reported for the 2014 calendar year?

If your company is reporting on a fiscal year that does not end Dec. 31, 2014, write what time period you are covering in the designated boxes.

Section 3: Financial Schedule B

3.1 What were your company's total worldwide costs (both direct and indirect) in 2014 for the following that were funded, paid for, or reimbursed by others not owned by your company?

Costs should be considered "funded, paid for, or reimbursed by others" if the company has been or expects to be paid for the costs by a customer, business partner, or grant-making organization.

Note: Foreign-owned companies should report costs that are funded, paid for, or reimbursed by their foreign parent in this question.

Exclude: payments in excess of the actual cost of the work performed (such as profits or fees), and costs that were paid for by your company, such as those reported in Question 2.4 should not be double counted in this question.

If your company administers a federally-funded research and development center (FFRDC) for an agency of the federal government, all such R&D costs should be excluded for reporting to this survey. For a complete list of FFRDCs, see <http://www.nsf.gov/statistics/ffrdclist/>.

The categories in this question, listed below, define the survey term, "R&D paid for by others":

- a. R&D that was reimbursed by your company's foreign parent (if you are owned by a foreign parent)

- b. Collaborative R&D that was reimbursed by business partners, such as through cost-sharing agreements
 - These agreements are very common in the biotechnology and pharmaceutical industries, but less so in other industries.
- c. R&D paid for by government or private foundation grants
 - Examples include Small Business Innovation and Research (SBIR) grants, Department of Energy demonstration grants, and Gates Foundation research grants.
- d. Defense RDT&E goods or services (including DOD 6.1 through 6.7 funding), provided as a prime or as a sub, to the government and/or government contractors
 - This category most often applies to defense contractors and subcontractors performing tasks such as designing, building, and testing prototypes of new military weapon systems and developing custom software for defense applications.
 - Include all defense R&D funded by the Department of Defense (DOD), the Department of Energy's weapons programs, the Department of Homeland Security, and other Federal agencies.
 - R&D funds from DOD include all funds for research, development, test, and evaluation (RDT&E) activities (6.1 through 6.7 budget appropriations).
 - Include defense R&D performed as a prime contractor and/or as a subcontractor.
- e. Medical nonclinical R&D services provided to others not owned by your company
 - Nonclinical (also known as preclinical) research and development involves research on potential medical products that does not involve human subjects. This R&D consists of both *in vitro* studies as well as studies using animal subjects.
- f. Medical clinical trial Phase I-III services provided to others not owned by your company (include pass-through costs)
 - This category involves the testing of potential medical products in human subjects. Phase I – III clinical trials must be successfully completed in order for a product to be approved for use in the general population.
 - Include pass-through/out-of-pocket costs paid to investigators and patients participating in clinical trials.
 - Exclude costs for Phase IV clinical trials because these trials take place after a product has been approved for sale.
 - Offices of physicians, dentists, and other health practitioners with employees acting as investigators for clinical trials generally should report 0 (zero) to this item. These companies should only report compensation for sponsored studies if the investigators' role in the study extends beyond monitoring his/her own patients to the development and management of overall study protocols.
- g. Nondefense custom software development and/or computer systems designed for others not owned by your company
 - See definitions in "Research and development activity in software" under guidance for Question 2.1.
 - This category includes the development of new or significantly improved software, both as an end product and for use embedded in other products.
 - Exclude: Software development that does not depend on a scientific or technological advance, such as adding functionality to existing application programs, debugging systems, and adapting existing software.

- Software development for defense-related applications should be reported in line d.
- h. Prototype development, production, and testing for customer's products prior to their introduction to the market (excluding defense-related prototyping reported in line d)
 - Exclude quality control testing and other testing services for products already on the market.
- i. All other R&D, not included above, provided to the Federal Government or to others not owned by your company

3.2 Copy the amount from 3.1, line j. This is the total R&D paid for by others in

2014. Question 3.2 asks the company to copy the amount reported in Question 3.1, line j. This survey defines this amount as “total R&D paid for by others” in 2014.

3.3 Is the amount entered in Question 3.2 greater than zero?

Question 3.3 instructs the company to skip to Section 4 if its response to Question 3.2 is zero.

R&D paid for by others

3.4 Of the amount reported in Question 3.2, what costs were incurred by your company in the following locations?

This question requires the company to report where R&D costs were incurred, even in the case of purchased R&D services where the R&D may be performed in a different location.

This survey defines the domestic United States as the 50 states and the District of Columbia only. Costs incurred in Puerto Rico, Guam, and other U.S. territories should be reported in the category for “All other countries”.

3.5 Copy the amount from Question 3.4, line a. This is the total domestic R&D paid for by others in 2014.

Question 3.5 asks the company to copy the amount reported in Question 3.4, line a, for R&D costs in the domestic United States. This survey defines this amount as “total domestic R&D paid for by others” in 2014.

3.6 Copy the amount from Question 3.4, line b. This is the total foreign R&D paid for by others in 2014.

Question 3.6 asks the company to copy the amount reported in Question 3.4, line b, for R&D costs in countries outside the domestic United States. This survey defines this amount as “total foreign R&D paid for by others” in 2013.

3.7 How much of the (1) domestic, (2) foreign, and (3) total worldwide R&D paid for by others in 2014 was for each of the following types of costs?

Question 3.7 asks the company to report its domestic, foreign, and total worldwide R&D paid for by others in 2014 broken into 11 categories:

- a. Salaries, wages, and fringe benefits
 - Include costs for all compensation and benefits of R&D employees and officers that are included in the R&D paid for by others.
 - Stock-based compensation should be reported in line b.
 - Include payroll taxes such as Social Security and Medicare.
- b. Stock-based compensation
 - Includes the cost of both stock options and stock grants.
- c. Temporary staffing, including on-site consultants
 - Include costs paid to Professional Employer Organizations (PEOs), staffing agencies, and on-site consultants for personnel contributing to R&D.
- d. Expensed equipment
 - Include all equipment purchases for R&D that are beneath the company’s capitalization threshold.
- e. Materials and supplies
 - Costs for materials and supplies consumed for R&D
- f. Leased facilities and equipment
 - Costs for leased facilities and equipment used in the R&D
- g. Depreciation and amortization on R&D property and equipment
 - Include depreciation on tangible R&D assets such as buildings or equipment as well as the amortization of intangible assets such as patents and capitalized in-process R&D used only for the company’s R&D activities.
- h. Payments to business partners for collaborative R&D
 - Include payments made to business partners for collaborative R&D, including milestone payments and payments made under cost sharing agreements for joint R&D projects.
 - Payments made to contract research organizations or other parties performing R&D under contract for the company should be reported in line i, “Purchased R&D services”.
- i. Purchased R&D services (if your company is foreign-owned, include payments to your foreign owner for R&D)
 - Include payments made to contract research organizations or other parties performing R&D under contract for the company.
 - If your company is a contract research organization managing clinical trials, do not include compensation of medical professionals, investigators, and human subjects participating in clinical trials or reimbursement of out-of-pocket costs in this category – please report these costs in line j (all other purchased services except R&D).

- Include defense R&D funding that your company received as a prime that is subcontracted to others not owned by your company
- j. All other purchased services except R&D
 - Include payments for purchased services that support the company's R&D, but are not themselves R&D.
 - Examples of costs to report in this category include hazardous waste disposal services at the company's R&D lab and purchased computing time to run simulations for the company's R&D.
 - If your company is a contract research organization managing clinical trials, include compensation of medical professionals, investigators, and human subjects participating in clinical trials or reimbursement of out-of-pocket costs in this category.
- k. All other costs
 - Include all other costs supporting the R&D the company paid for.

Examples of costs to report in this category include: travel and training, journal subscriptions, royalties or licenses paid for patents or software used in the company's R&D.

3.8 Add 3.7, lines h and i for each column, and enter the result here. This is R&D performed by others (e.g., subcontracted/passed-through R&D costs).

Question 3.8 asks the company to add the amounts reported in Question 3.7, lines h and i for each column. This survey defines this amount as "R&D performed by others".

Why is this important?

The costs reported in lines h and i of Question 3.7 represent payments to third parties for R&D. Because the reporting company is not directly involved in the conduct of this R&D, it may not be able to provide the same amount of information on these costs as it could for the R&D it performs itself. This question allows the survey to address this limitation as well as address an interest in the nature of collaborative and contract R&D.

3.9 Subtract 3.8 from 3.7, line l, for each column and enter the result here. This is R&D performed by your company that was paid for by others.

Question 3.9 asks the company to subtract the amounts reported in Question 3.8 from those reported in Question 3.7, line l for each column. This survey defines this amount as "R&D performed by your company that was paid for by others".

Why is this important?

The costs reported in line l of Question 3.7 represent payments by third parties for R&D. Because the reporting company is directly involved in the conduct of this R&D, it may be able to provide accurate information on these costs.

3.10 Copy the amount from Question 3.9, column 2. This is the foreign R&D performed by your company that was paid for by others.

Question 3.10 asks the company to copy the amount reported in Question 3.9 for foreign R&D costs performed by the company. This survey defines this amount as “foreign R&D performed by your company that was paid for by others”.

3.11 Of the amount reported in Question 3.10, how much R&D was performed in the following locations?

Question 3.11 asks the company to report how much of the foreign R&D performed by the company that was paid for by others was performed in specific countries, including Puerto Rico.

Why is this important?

This information is needed in order to accurately measure the impact of globalization on R&D.

Countries and territories by region

As defined by the Business R&D and Innovation Survey

<u>Country/Territory Name</u>	<u>Region</u>
Afghanistan	Asia and Pacific
Albania	Europe
Algeria	Africa
American Samoa (U.S.)	Asia and Pacific
Andorra	Europe
Angola	Africa
Antigua and Barbuda	Latin America/OWH
Argentina	Latin America/OWH
Armenia	Asia and Pacific
Aruba (Neth.)	Latin America/OWH
Australia	Asia and Pacific
Austria	Europe
Azerbaijan	Asia and Pacific
Bahamas, The	Latin America/OWH
Bahrain	Middle East
Bangladesh	Asia and Pacific
Barbados	Latin America/OWH
Belarus	Europe
Belgium	Europe
Belize	Latin America/OWH
Benin	Africa
Bermuda (U.K.)	Latin America/OWH
Bhutan	Asia and Pacific
Bolivia	Latin America/OWH
Bosnia and Herzegovina	Europe

Botswana	Africa
Brazil	Latin America/OWH
Brunei	Asia and Pacific
Bulgaria	Europe
Burkina Faso	Africa
Burma	Asia and Pacific
Burundi	Africa
Cambodia	Asia and Pacific
Cameroon	Africa
Canada	Not assigned to a region in this survey.
Cape Verde	Africa
Cayman Islands (U.K.)	Latin America/OWH
Central African Republic	Africa
Chad	Africa
Chile	Latin America/OWH
China	Asia and Pacific
Colombia	Latin America/OWH
Comoros	Africa
Congo (Brazzaville)	Africa
Democratic Republic of the Congo	Africa
Costa Rica	Latin America/OWH
Côte d'Ivoire/Ivory Coast	Africa
Croatia	Europe
Cuba	Latin America/OWH
Cyprus	Europe
Czech Republic	Europe
Denmark	Europe
Djibouti	Africa
Dominica	Latin America/OWH
Dominican Republic	Latin America/OWH
Ecuador	Latin America/OWH
Egypt	Africa
El Salvador	Latin America/OWH
Equatorial Guinea	Africa
Eritrea	Africa
Estonia	Europe
Ethiopia	Africa
Fiji	Asia and Pacific
Finland	Europe
France	Europe
Gabon	Africa
Gambia, The	Africa
Georgia	Europe
Germany	Europe
Ghana	Africa
Greece	Europe

Greenland (Denmark)	Europe
Grenada	Latin America/OWH
Guam (U.S.)	Asia and Pacific
Guatemala	Latin America/OWH
Guinea	Africa
Guinea-Bissau	Africa
Guyana	Latin America/OWH
Haiti	Latin America/OWH
Holy See	Europe
Honduras	Latin America/OWH
Hong Kong	Asia and Pacific
Hungary	Europe
Iceland	Europe
India	Asia and Pacific
Indonesia	Asia and Pacific
Iran	Middle East
Iraq	Middle East
Ireland	Europe
Israel	Middle East
Italy	Europe
Jamaica	Latin America/OWH
Japan	Asia and Pacific
Jordan	Middle East
Kazakhstan	Asia and Pacific
Kenya	Africa
Kiribati	Asia and Pacific
Kosovo	Europe
Kuwait	Middle East
Kyrgyzstan	Asia and Pacific
Laos	Asia and Pacific
Latvia	Europe
Lebanon	Middle East
Lesotho	Africa
Liberia	Africa
Libya	Africa
Liechtenstein	Europe
Lithuania	Europe
Luxembourg	Europe
Macau	Asia and Pacific
Macedonia	Europe
Madagascar	Africa
Malawi	Africa
Malaysia	Asia and Pacific
Maldives	Asia and Pacific
Mali	Africa
Malta	Europe

Marshall Islands	Asia and Pacific
Mauritania	Africa
Mauritius	Africa
Mexico	Latin America/OWH
Micronesia, Federated States of	Asia and Pacific
Moldova	Europe
Monaco	Europe
Mongolia	Asia and Pacific
Montenegro	Europe
Morocco	Africa
Mozambique	Africa
Namibia	Africa
Nauru	Asia and Pacific
Nepal	Asia and Pacific
Netherlands	Europe
New Zealand	Asia and Pacific
Nicaragua	Latin America/OWH
Niger	Africa
Nigeria	Africa
North Korea	Asia and Pacific
Norway	Europe
Oman	Middle East
Pakistan	Asia and Pacific
Palau	Asia and Pacific
Panama	Latin America/OWH
Papua New Guinea	Asia and Pacific
Paraguay	Latin America/OWH
Peru	Latin America/OWH
Philippines	Asia and Pacific
Poland	Europe
Portugal	Europe
Puerto Rico (U.S.)	Not assigned to a region in this survey.
Qatar	Middle East
Romania	Europe
Russia	Europe
Rwanda	Africa
Saint Kitts and Nevis	Latin America/OWH
Saint Lucia	Latin America/OWH
Saint Vincent and the Grenadines	Latin America/OWH
Samoa	Asia and Pacific
San Marino	Europe
Sao Tome and Principe	Africa
Saudi Arabia	Middle East
Senegal	Africa
Serbia	Europe
Seychelles	Africa

Sierra Leone	Africa
Singapore	Asia and Pacific
Slovakia	Europe
Slovenia	Europe
Solomon Islands	Asia and Pacific
Somalia	Africa
South Africa	Africa
South Korea	Asia and Pacific
South Sudan	Africa
Spain	Europe
Sri Lanka	Asia and Pacific
Sudan	Africa
Suriname	Latin America/OWH
Swaziland	Africa
Sweden	Europe
Switzerland	Europe
Syria	Middle East
Taiwan	Asia and Pacific
Tajikistan	Asia and Pacific
Tanzania	Africa
Thailand	Asia and Pacific
Timor-Leste	Asia and Pacific
Togo	Africa
Tonga	Asia and Pacific
Trinidad and Tobago	Latin America/OWH
Tunisia	Africa
Turkey	Europe
Turkmenistan	Asia and Pacific
Turks and Caicos Islands (U.K.)	Latin America/OWH
Tuvalu	Asia and Pacific
Uganda	Africa
Ukraine	Europe
United Arab Emirates	Middle East
United Kingdom	Europe
Uruguay	Latin America/OWH
Uzbekistan	Asia and Pacific
Vanuatu	Asia and Pacific
Venezuela	Latin America/OWH
Vietnam	Asia and Pacific
Virgin Islands (U.K.)	Latin America/OWH
Virgin Islands (U.S.)	Latin America/OWH
Yemen	Middle East
Zambia	Africa
Zimbabwe	Africa

Note: OWH = Other Western Hemisphere. ‘Latin America/OWH’ includes Bermuda and the geographical regions of the Caribbean, Central America, and South America.

Domestic R&D performed by your company that was paid for by others

3.12 Copy the amount from Question 3.9, column 1. This is the domestic R&D performed by your company that was paid for by others.

Question 3.12 asks the company to copy the amount reported in Question 3.9 for domestic R&D costs performed by the company that was paid for by others. This survey defines this amount as “domestic R&D performed by your company that was paid for by others”.

3.13 How much of the domestic R&D performed by your company that was paid for by others reported in Question 3.12 was for each business code listed or amended on page 6 of this form?

If the company does not track its R&D costs by line of business or product line, it should make a reasonable estimate.

If the company has R&D that applies to more than one business code, such as basic or applied research conducted by a central R&D group, it should allocate this R&D to all applicable business codes on a reasonable basis. Examples of allocation methods include allocating in proportion to sales by business code and allocating in proportion to R&D employees working for each business code.

3.14 How much of the amount reported in Question 3.12, was paid for by each of the following?

Question 3.14 asks the company to report how much of the domestic R&D paid for by your company in 2014 that was performed by nine specific types of organizations:

Example: Company Sub Inc. performs custom software development for a large defense company as a subcontractor with the U.S. Dept. of Defense. Even though Sub Inc. is working directly for the defense company, it reports the cost of this development in line d because the Dept. of Defense was the original source of funds.

- a. Other companies located inside the United States
 - o Include for-profit hospitals
- b. Your company’s foreign parent (if you are owned by a foreign parent)
- c. Other companies located outside the United States
- d. U.S. federal government agencies or laboratories
- e. U.S. state government agencies or laboratories
- f. Foreign government agencies or laboratories
- g. All other organizations inside the United States
- h. All other organizations located outside the United States

3.15 Add Question 3.14, lines a, b, and c, and enter the result here. This is the R&D that was paid for by other companies.

Question 3.15 asks the company to enter the sum of Question 3.14, lines a, b, and c. This survey defines this amount as “R&D that was paid for by other companies”.

3.16 Using the list of business codes printed below, allocate the amount reported in Question 3.15 based on the industries of the companies that paid for the R&D. As needed, enter additional codes from pages 46-47 in the spaces provided.

These business codes should represent the industry of the company that is funding the R&D.

For example, if Company A specializes in R&D services in biotechnology (business code 54173) and is performing research and development for Company B, a pharmaceutical company (business code 32541), Company B’s business code (32541) should be listed here.

Enter the total, which should be equal to Question 3.15.

3.17 Copy the amount from Question 3.14, line d. This is domestic R&D performed by your company that was paid for by the U.S. federal government.

Question 3.17 asks the company to copy the amount reported in Question 3.14, line d. This survey defines this amount as “domestic R&D performed by your company that was paid for by the U.S. federal government”.

3.18 How much of the amount reported in Question 3.17 was paid for by the following agencies?

Question 3.18 asks the company to report the amount of R&D it performed in the domestic U.S. that was paid for by the U.S. Federal Government specific funding agencies.

3.19 How much of the amount reported in Question 3.17 was performed under the following types of agreements?

- a. Contracts (include direct or prime contracts and subcontracts)
- b. Grants, reimbursements, and all other agreements

Question 3.19 asks the company to identify the amounts by type of agreements used for the company’s domestic R&D paid for by the U.S. federal government.

3.20 Subtract Question 3.17 from Question 3.12 and enter the result here. This is the domestic R&D performed by your company that was paid for by nonfederal sources.

Question 3.20 asks the company to subtract the amount reported in Question 3.17 from that reported in Question 3.12. This survey defines this amount as “domestic R&D performed by your company that was paid for by nonfederal sources”.

3.21 How much of the following three amounts was performed in each state (including D.C.):

- (1) Domestic R&D paid for by the U.S. federal government reported in Question 3.17
- (2) Domestic R&D paid for by nonfederal sources reported in Question 3.20
- (3) Total domestic R&D performed by your company that was paid for by others reported in Question 3.12

Question 3.21 asks the company to report how much of the domestic R&D it performed that was paid for by others was performed in each state (including D.C.) in 2014. The question asks the company to report how much of the R&D in each state was paid for by the U.S. federal government as opposed to all other sources. If the company is unable to assign all its R&D costs to specific states, it should use a reasonable allocation method to report R&D by state. Companies should note their allocation method in the space for "Remarks" at the end of the survey.

Why is this important?

This information is very important to policy makers who are interested in the geographic distribution of R&D activity and its role in regional economic development.

3.22 At what domestic location did your company perform the largest dollar amount of R&D that was paid for by others in 2014?

Question 3.22 asks the company to identify the location where the largest dollar value of the domestic R&D it performed that was paid for by others in 2014 took place.

3.23 How much of the amount reported in Question 3.12 was from the location identified in Question 3.22?

If the company is unable to allocate its R&D costs to a specific location, it should provide a reasonable estimate. Companies should note their allocation method in the space for "Remarks" at the end of the survey.

3.24 At what domestic location did your company perform the second largest dollar amount of R&D that was paid for by others in 2014?

Question 3.24 asks the company to identify the location where the second largest dollar value of the domestic R&D it performed that was paid for by others in 2014 took place.

3.25 How much of the amount reported in Question 3.12 was from the location identified in Question 3.24?

If the company is unable to allocate its R&D costs to a specific location, it should provide a reasonable estimate. Companies should note their allocation method in the space for "Remarks" at the end of the survey.

Projected R&D paid for by others in 2015

3.26 What are your company's projected 2015 costs for R&D that will be paid for by others?

Question 3.26 asks the company to project its 2015 costs for R&D that will be paid for by others. This amount is the 2015 projection for what is reported in Question 3.2.

3.27 How much of the projected costs in 2015 for R&D that will be paid for by others reported in Question 3.26 will be performed by your company in the United States?

Question 3.27 asks the company to project its 2015 costs for R&D it will perform in the domestic U.S. that will be paid for by others. This amount is the 2015 projection for what is reported in Question 3.12.

3.28 How much of the projected costs in 2015 for domestic R&D performed by your company that will be paid for by others reported in Question 3.27 will be paid for by the U.S. federal government?

Question 3.28 asks the company to project its 2015 costs for R&D it will perform in the domestic U.S. that will be paid for by the U.S. federal government. This amount is the 2015 projection for what is reported in Question 3.17.

Section 4: Management and Strategy of R&D

4.1 Copy the amount from Question 2.4. This is the total R&D paid for by your company in 2014.

This number can be found on page 10 of Form BRDI-1.

4.2 Is the amount entered in Question 4.1 greater than zero?

If “No”, Questions 4.3 through 4.16 do not apply to your company. Skip to Question 4.17.

4.3 What percentage of the amount reported in Question 4.1 was directed toward business areas or product lines that are new to your company?

Question 4.3 asks what percent of the R&D the company paid for in 2014 was aimed at expanding the company’s areas of business or product lines outside of its existing areas of expertise. The characteristics that define a business area or product line as “new” may differ from company to company and industry to industry, but they generally involve technologies and customers that are new to the company.

Example: Company A manufactures laptop computers. In 2014, Company A’s management decided to attempt to enter the cellular phone market and used a portion of the company’s R&D budget to develop cellular phones. Because this was a new line of business in 2014, Company A reports this R&D in this question.

The following are examples of R&D projects that would be reported in this question:

- A pharmaceutical company that specializes in anti-viral medications invests in a research project to develop a cancer treatment.
- A computer manufacturer invests in a project to develop a smart phone.
- A software company that specializes in anti-virus software invests in an R&D project to develop office productivity software.
- A semiconductor company that specializes in central processing units for computers invests in an R&D project to develop graphics processors.
- A manufacturer and distributor of beer invests in an R&D project to develop an energy drink.

Characteristics of domestic R&D paid for and performed by your company

4.4 Copy the amount from Question 2.15. This is the domestic R&D paid for and performed by your company.

This number can be found on page 14 of Form BRDI-1.

4.5 How much of the amount reported in Question 4.4 was for the following categories?

Research is defined as experimental or theoretical work undertaken primarily to acquire new knowledge or understanding of phenomena and observable facts. Research may be either “basic”, where the goal is primarily to increase understanding of a given topic without a specific commercial application in mind, or “applied”, where the goal is to solve a specific problem or

achieve a specific commercial objective. It is the planned, systematic pursuit of new knowledge or understanding.

Development is defined as the systematic use of research and practical experience to produce new or significantly improved goods, services, or processes. In simple terms, the intended output of research is ideas and the intended output of development is products.

4.6 If you reported any research in Question 4.5, line a, how much of that research was for the following categories?

Research is defined as experimental or theoretical work undertaken primarily to acquire new knowledge or understanding of phenomena and observable facts. Applied research has the goal of solving a specific problem or achieving a specific commercial objective. Basic research has the goal of increasing understanding of a given topic without a specific commercial application in mind.

For example, a project that aims to investigate the influence of different materials on fuel cell efficiency would be classified as basic research. A project that aims to improve fuel cell efficiency using new materials would be classified as applied research.

Areas of application for domestic R&D paid for and performed by your company

NOTE: You may report the same R&D in multiple areas for Questions 4.7 to 4.11.

4.7 What percentage of the amount reported in Question 4.4 had energy applications, including energy production, distribution, storage, and efficiency (excluding exploration and prospecting)?

The intent of this question is to measure the amount of R&D companies are investing in energy-related applications.

Only include costs for R&D projects where energy was an intended area of application from its inception. Do not include costs for R&D projects where energy was not an intended area of application until after the project was completed.

Include the total cost of an R&D project with energy applications in the calculation for this question even if the project has other applications. This means that the percentages reported in Questions 4.7 through 4.11 could sum to more than 100%.

Example: Company B is a semiconductor manufacturer. Its products are not designed specifically for energy applications. In 2014, 10% of the domestic R&D performed by the company was focused on improving the energy efficiency of its products. Based on this, Company B reports “10%” for this question.

4.8 What percentage of the amount reported in Question 4.4 had environmental protection applications, including pollution abatement?

The intent of this question is to measure the amounts of R&D companies are investing in environmental protection applications.

Only include costs for R&D projects where environmental protection was an intended area of application from its inception. Do not include costs for R&D projects where environmental protection was not an intended area of application until after the project was completed.

Include the total cost of an R&D project with environmental protection applications in the calculation for this question even if the project has other applications. This means that the percentages reported in Questions 4.7 through 4.11 could sum to more than 100%.

4.9 What percentage of the amount reported in Question 4.4 had defense applications, including military applications and general security-related R&D?

The intent of this question is to measure the amount of R&D companies are investing in defense applications. Defense applications include military applications and other national security applications. Exclude R&D for computer security applications such as anti-virus software unless it is intended for military/national security use.

Only include costs for R&D projects where defense was an intended area of application from its inception. Do not include costs for R&D projects where defense was not an intended area of application until after the project was completed.

Include the total cost of an R&D project with defense applications in the calculation for this question even if the project has other applications. This means that the percentages reported in Questions 4.7 through 4.11 could sum to more than 100%.

4.10 What percentage of the amount reported in Question 4.4 had health or medical applications?

Question 4.10 asks the company to report what percent of the domestic R&D it performed in 2014 had health or medical applications. The intent of this question is to measure the amount of R&D companies are investing in health-related applications.

Only include costs for R&D projects where health was an intended area of application from its inception. Do not include costs for R&D projects where health was not an intended area of application until after the project was completed.

Include the total cost of an R&D project with health/medical applications in the calculation for this question even if the project has other applications. This means that the percentages reported in Questions 4.7 through 4.11 could sum to more than 100%.

Note: Include clinical trials.

4.11 What percentage of the amount reported in Question 4.4 had agricultural applications?

This includes R&D into new and significantly improved fertilizers, pesticides, farm equipment, and crop management techniques. The intent of this question is to measure the amount of R&D companies are investing in agricultural-related applications.

Only include costs for R&D projects where agriculture was an intended area of application from its inception. Do not include costs for R&D projects where agriculture was not an intended area of application until after the project was completed.

Include the total cost of an R&D project with agricultural applications in the calculation for this question even if the project has other applications. This means that the percentages reported in Questions 4.7 through 4.11 could sum to more than 100%.

Technology focus of domestic R&D paid for and performed by your company

NOTE: You may report the same R&D in multiple areas for Questions 4.12 to 4.16.

4.12 What percentage of the amount reported in Question 4.4 was for software products or software embedded in other projects or products?

See definitions in “Research and development activity in software” under guidance for Question 2.1. Include R&D in software for both packaged software that is sold/licensed to consumers as well as R&D in software for internet applications that generate revenue. This includes R&D in software developed specifically for an R&D project that has no alternative future use as well as R&D in software that is developed to be installed or run in other products sold by the company.

Include the total cost of an R&D project with software applications in the calculation for this question, even if the project has other applications. This means that the percentages reported in Questions 4.12 through 4.16 could sum to more than 100%.

4.13 What percentage of the amount reported in Question 4.4 was for optics and photonics-science and technology involving the emission, processing, and detection of light, or the information carried by light?

Optics and photonics can encompass any R&D project involved in the study of the emission, processing, and detection of light, or of the information carried by light. This includes the

spectrum ranging from the far infrared to x-rays. The R&D may be directed at the manufacturing of the optics and photonics product itself, or to any level of the application supply chain in which they are used (from materials studies to systems development or even the end-use application). The following list provides examples of optics and photonics technologies. The list is not intended to be exhaustive, but it is indicative of the types of activities included in the definition of optics and photonics.

- Optical semiconductor components, such as LEDs, laser diodes, image sensors, focal plane arrays, point detectors, and integrated photonics
- Solar (photovoltaic) cells and panels
- Displays, display components and subassemblies
- Lasers and laser systems
- LEDs, LED backlights, LED lamps, and LED lighting
- Optical fiber, cabled fiber, and optical fiber devices, such as fiber sensors
- Passive optics, such as lenses, mirrors, prisms, and crystals
- Coatings and coating services for optics and optical devices
- Optical assemblies, such as lens systems, sensor subsystems, and camera modules
- Hardware and software design of the above products

Include the total cost of an R&D project with optics and photonics applications in the calculation for this question, even if the project has other applications. This means that the percentages reported in Questions 4.12 through 4.16 could sum to more than 100%.

4.14 What percentage of the amount reported in Question 4.4 was for other projects or products enabled by optics and photonics science and technology?

This is meant to include any R&D investment that goes toward the design of photonics in a way that fundamentally enables a product or service. This definition is to be inclusive, not overly restrictive, and the product may be fundamentally dependent on other factors, too (such as electronics and software). It would not include R&D investment that adds no new value from the optics and photonics.

For example, it would include R&D invested to develop new LED lighting products, medical imaging systems based on new optical methods, or optical networking equipment. However, it would not include R&D for designing equipment that uses commodity LEDs as indicator lights, conventional displays that are used in conventional ways, or electronics and software development for IT systems that use optical transceivers only in a peripheral, conventional manner.

Include the total cost of an R&D project with optics and photonics enabled applications in the calculation for this question, even if the project has other applications. This means that the percentages reported in Questions 4.12 through 4.16 could sum to more than 100%.

4.15 What percentage of the amount reported in Question 4.4 was for biotechnology—the use of cellular and bio-molecular processes to solve problems or make useful products?

The following list provides examples of biotechnology techniques. The list is not intended to be exhaustive, but it is indicative of the types of activities included in the definition of biotechnology.

- **DNA/RNA:** Genomics, pharmacogenomics, gene probes, genetic engineering, DNA/RNA sequencing/synthesis/amplification, gene expression profiling, and use of antisense technology.
- **Proteins and other molecules:** Sequencing/synthesis/engineering of proteins and peptides (including large molecule hormones); improved delivery methods for large molecule drugs; proteomics, protein isolation and purification, signaling, identification of cell receptors.
- **Cell and tissue culture and engineering:** Cell/tissue culture, tissue engineering (including tissue scaffolds and biomedical engineering), cellular fusion, vaccine/immune stimulants, embryo manipulation.
- **Process biotechnology techniques:** Fermentation using bioreactors, bioprocessing, bioleaching, biopulping, biobleaching, biodesulphurisation, bioremediation, biofiltration and phytoremediation.
- **Gene and RNA vectors:** Gene therapy, viral vectors.
- **Bioinformatics:** Construction of databases on genomes, protein sequences; modeling complex biological processes, including systems biology.
- **Nanobiotechnology:** Applies the tools and processes of nano/microfabrication to build devices for studying biosystems and applications in drug delivery, diagnostics, etc.

Include the total cost of an R&D project with biotechnology applications in the calculation for this question, even if the project has other applications. This means that the percentages reported in Questions 4.12 through 4.16 could sum to more than 100%.

4.16 What percentage of the amount reported in Question 4.4 was for nanotechnology—the science and technology involving work at the nanometer scale?

Nanotechnology can encompass any R&D project involved in the study, creation, or use of objects at the nanoscale, which is generally considered to be 100 nanometers or smaller.

Many technologies related to conventional solid-state semiconductor manufacturing are capable of creating features smaller than 100 nanometers, so R&D involving these technologies should be included in this question.

Include the total cost of an R&D project with nanotechnology applications in the calculation for this question, even if the project has other applications. This means that the percentages reported in Questions 4.12 through 4.16 could sum to more than 100%.

Domestic R&D performed by your company that was paid for by others

4.17 Copy the amount from Question 3.12. This is the domestic R&D performed by your company that was paid for by others.

This number can be found on page 25 of your survey.

4.18 Is the amount entered in Question 4.17 greater than zero?

If “No”, the rest of Section 4 does not apply to your company. Please skip to Section 5 on page 40.

4.19 How much of the amount reported in Question 4.17 was for the following categories?

Research is defined as experimental or theoretical work undertaken primarily to acquire new knowledge or understanding of phenomena and observable facts. Research may be either “basic”, where the goal is primarily to increase understanding of a given topic without a specific commercial application in mind, or “applied”, where the goal is to solve a specific problem or achieve a specific commercial objective.

Development is defined as the systematic use of research and practical experience to produce new or significantly improved goods, services, or processes. In simple terms, the intended output of research is ideas and the intended output of development is products.

4.20 If you reported any research in Question 4.19, line a, how much of that research was for the following categories?

Research is defined as experimental or theoretical work undertaken primarily to acquire new knowledge or understanding of phenomena and observable facts. Applied research has the goal of solving a specific problem or achieving a specific commercial objective. Basic research has the goal of increasing understanding of a given topic without a specific commercial application in mind.

NOTE: You may report the same R&D in multiple areas for Questions 4.21 to 4.25.

4.21 What percentage of the amount reported in Question 4.17 had energy applications, including energy production, distribution, storage, and efficiency (excluding exploration and prospecting)?

The intent of this question is to measure the amount of R&D companies are investing in energy-related applications.

Only include costs for R&D projects where energy was an intended area of application from its inception. Do not include costs for R&D projects where energy was not an intended area of application until after the project was completed.

Include the total cost of an R&D project with energy applications in the calculation for this question even if the project has other applications. This means that the percentages reported in Questions 4.21 through 4.25 could sum to more than 100%.

4.22 What percentage of the amount reported in Question 4.17 had environmental protection applications, including pollution abatement?

Only include costs for R&D projects where environmental protection was an intended area of application from its inception. Do not include costs for R&D projects where environmental protection was not an intended area of application until after the project was completed.

Include the total cost of an R&D project with environmental protection applications in the calculation for this question even if the project has other applications. This means that the percentages reported in Questions 4.21 through 4.25 could sum to more than 100%.

4.23 What percentage of the amount reported in Question 4.17 had defense applications, including military applications and general security-related R&D?

Defense applications include military applications and other national security applications. Exclude R&D for computer security applications such as anti-virus software unless it is intended for military/national security use.

Only include costs for R&D projects where defense was an intended area of application from its inception. Do not include costs for R&D projects where defense was not an intended area of application until after the project was completed.

Include the total cost of an R&D project with defense applications in the calculation for this question even if the project has other applications. This means that the percentages reported in Questions 4.21 through 4.25 could sum to more than 100%.

4.24 What percentage of the amount reported in Question 4.17 had health or medical applications?

The intent of this question is to measure the amount of R&D companies are investing in health-related applications.

Only include costs for R&D projects where health was an intended area of application from its inception. Do not include costs for R&D projects where health was not an intended area of application until after the project was completed.

Include the total cost of an R&D project with health/medical applications in the calculation for this question even if the project has other applications. This means that the percentages reported in Questions 4.21 through 4.25 could sum to more than 100%.

Note: Include clinical trials.

4.25 What percentage of the amount reported in Question 4.17 had agricultural applications?

Question 4.25 asks the company to report what percent of the domestic R&D performed in 2014 that was paid for by others had agricultural applications. This includes R&D into new and significantly improved fertilizers, pesticides, farm equipment, and crop management techniques. The intent of this question is to measure the amount of R&D companies are investing in agricultural-related applications.

Only include costs for R&D projects where agriculture was an intended area of application from its inception. Do not include costs for R&D projects where agriculture was not an intended area of application until after the project was completed.

Include the total cost of an R&D project with agricultural applications in the calculation for this question even if the project has other applications. This means that the percentages reported in Questions 4.21 through 4.25 could sum to more than 100%.

Technology focus of domestic R&D performed by your company that was paid for by others

NOTE: You may report the same R&D in multiple areas for Questions 4.26 to 4.30.

4.26 What percentage of the amount reported in Question 4.17 was for software products or software embedded in other projects or products?

See definitions in “Research and development activity in software” under guidance for Question 2.1. Include R&D in software for both packaged software that is sold/licensed to consumers as well as R&D in software for internet applications that generate revenue. This includes R&D in software developed specifically for an R&D project that has no alternative future use as well as R&D in software that is developed to be installed or run in other products sold by the company.

Include the total cost of an R&D project with software applications in the calculation for this question even if the project has other applications. This means that the percentages reported in Questions 4.26 through 4.30 could sum to more than 100%.

4.27 What percentage of the amount reported in Question 4.17 was for optics and photonics-science and technology involving the emission, processing, and detection of light, or the information carried by light?

Optics and photonics can encompass any R&D project involved in the study of the emission, processing, and detection of light, or of the information carried by light. This includes the spectrum ranging from the far infrared to x-rays. The R&D may be directed at the manufacturing of the optics and photonics product itself, or to any level of the application supply chain in which they are used (from materials studies to systems development or even the end-use application). The following list provides examples of optics and photonics technologies. The list is not intended to be exhaustive, but it is indicative of the types of activities included in the definition of optics and photonics.

- Optical semiconductor components, such as LEDs, laser diodes, image sensors, focal plane arrays, point detectors, and integrated photonics
- Solar (photovoltaic) cells and panels
- Displays, display components and subassemblies
- Lasers and laser systems
- LEDs, LED backlights, LED lamps, and LED lighting
- Optical fiber, cabled fiber, and optical fiber devices, such as fiber sensors
- Passive optics, such as lenses, mirrors, prisms, and crystals
- Coatings and coating services for optics and optical devices
- Optical assemblies, such as lens systems, sensor subsystems, and camera modules
- Hardware and software design of the above products

Include the total cost of an R&D project with optics and photonics applications in the calculation for this question even if the project has other applications. This means that the percentages reported in Questions 4.26 through 4.30 could sum to more than 100%.

4.28 What percentage of the amount reported in Question 4.17 was for other projects or products enabled by optics and photonics science and technology?

This is meant to include any R&D investment that goes toward the design of photonics in a way that fundamentally enables a product or service. This definition is to be inclusive, not overly restrictive, and the product may be fundamentally dependent on other factors, too (such as electronics and software). It would not include R&D investment that adds no new value from the optics and photonics.

For example, it would include R&D invested to develop new LED lighting products, medical imaging systems based on new optical methods, or optical networking equipment. However, it would not include R&D for designing equipment that uses commodity LEDs as indicator lights, conventional displays that are used in conventional ways, or electronics and software development for IT systems that use optical transceivers only in a peripheral, conventional manner.

Include the total cost of an R&D project with optics and photonics applications in the calculation for this question even if the project has other applications. This means that the percentages reported in Questions 4.26 through 4.30 could sum to more than 100%.

4.29 What percentage of the amount reported in Question 4.17 was for biotechnology—the use of cellular and bio-molecular processes to solve problems or make useful products?

The following list provides examples of biotechnology techniques. The list is not intended to be exhaustive, but it is indicative of the types of activities included in the definition of biotechnology.

- **DNA/RNA:** Genomics, pharmacogenomics, gene probes, genetic engineering, DNA/RNA sequencing/synthesis/amplification, gene expression profiling, and use of antisense technology.
- **Proteins and other molecules:** Sequencing/synthesis/engineering of proteins and peptides (including large molecule hormones); improved delivery methods for large molecule drugs; proteomics, protein isolation and purification, signaling, identification of cell receptors.
- **Cell and tissue culture and engineering:** Cell/tissue culture, tissue engineering (including tissue scaffolds and biomedical engineering), cellular fusion, vaccine/immune stimulants, embryo manipulation.
- **Process biotechnology techniques:** Fermentation using bioreactors, bioprocessing, bioleaching, biopulping, biobleaching, biodesulphurisation, bioremediation, biofiltration and phytoremediation.
- **Gene and RNA vectors:** Gene therapy, viral vectors.
- **Bioinformatics:** Construction of databases on genomes, protein sequences; modeling complex biological processes, including systems biology.
- **Nanobiotechnology:** Applies the tools and processes of nano/microfabrication to build devices for studying biosystems and applications in drug delivery, diagnostics, etc.

Include the total cost of an R&D project with biotechnology applications in the calculation for this question even if the project has other applications. This means that the percentages reported in Questions 4.26 through 4.30 could sum to more than 100%.

4.30 What percentage of the amount reported in Question 4.17 was for nanotechnology—the science and technology involving work at the nanometer scale?

Nanotechnology can encompass any R&D project involved in the study, creation, or use of objects at the nanoscale, which is generally considered to be 100 nanometers or smaller.

Many technologies related to conventional solid-state semiconductor manufacturing are capable of creating features smaller than 100 nanometers, so R&D involving these technologies should be included in this question.

Include the total cost of an R&D project with nanotechnology applications in the calculation for this question even if the project has other applications. This means that the percentages reported in Questions 4.26 through 4.30 could sum to more than 100%.

Domestic R&D performed by your company that was paid for by the U.S. federal government

4.31 Copy the amount from Question 3.17. This is domestic R&D performed by your company that was paid for by the U.S. federal government.

This number can be found on page 28 of your survey.

4.32 Is the amount entered in Question 4.31 greater than zero?

If “No”, skip to Section 5 on page 40. The rest of section 4 does not apply to your company.

4.33 How much of the amount reported in Question 4.31 was for the following categories?

Research is defined as experimental or theoretical work undertaken primarily to acquire new knowledge or understanding of phenomena and observable facts. Research may be either “basic”, where the goal is primarily to increase understanding of a given topic without a specific commercial application in mind, or “applied”, where the goal is to solve a specific problem or achieve a specific commercial objective.

Development is defined as the systematic use of research and practical experience to produce new or significantly improved goods, services, or processes. In simple terms, the intended output of research is ideas and the intended output of development is products.

4.34 If you reported any research in Question 4.33, line a, how much of that research was for the following categories?

Research is defined as experimental or theoretical work undertaken primarily to acquire new knowledge or understanding of phenomena and observable facts. Applied research has the goal of solving a specific problem or achieving a specific commercial objective. Basic research has the goal of increasing understanding of a given topic without a specific commercial application in mind.

For example, a project that aims to investigate the influence of different materials on fuel cell efficiency would be classified as basic research. A project that aims to improve fuel cell efficiency using new materials would be classified as applied research.

4.35 What percentage of the amount reported in Question 4.31 was for software products or software embedded in other projects or products?

See definitions in “Research and development activity in software” under guidance for Question 2.1. Include R&D in software for both packaged software that is sold/licensed to consumers as well as R&D in software for internet applications that generate revenue. This includes R&D in software developed specifically for an R&D project that has no alternative future use as well as R&D in software that is developed to be installed or run in other products sold by the company.

Section 5: Human Resources

5.1 What was the total number of worldwide employees working at your company for the pay period that included March 12, 2014?

In order to collect consistent data from all companies, the employment figure reported should be for the pay period that included March 12, 2014. If this is not possible, companies should report employment for the date closest to March 12, 2014 possible.

Leased or temporary employees and consultants should be excluded from this question because this survey does not consider them employees of the reporting company.

5.2 How many of the employees reported in Question 5.1 were employees of your company’s domestic operations and foreign operations?

Question 5.2 asks the company to report, of the employees reported in Question 5.1, the number of employees employed by domestic operations and the number of employees that were employed by operations outside of the United States.

5.3 How many employees reported in Question 5.2 were R&D employees and how many were all other employees?

R&D employees include all employees who work on R&D or who provide direct support to R&D, such as researchers, R&D managers, technicians, clerical staff, and others assigned to R&D groups.

Exclude employees who provide indirect support to R&D, such as corporate personnel, security guards, and cafeteria workers.

The wages of the R&D employees reported in this question are included in the costs reported in Sections 2 and 3 of this survey.

R&D Employees

5.4 Copy the numbers from 5.3, line a. These are your company's R&D employees.

Copy the number from 5.3, line a on page 40.

5.5 How many of the R&D employees reported in Question 5.4 were female employees and male employees?

Question 5.5 asks the company to report its total R&D employees based on their sex and location.

5.6 How many of the R&D employees reported in Question 5.4 worked in the occupations listed below?

The distinction between the different occupation categories is defined primarily by the nature of the employee's work, not the employee's level of education. The occupation categories "R&D scientists, engineers, and [their] managers" can be grouped together under the more generic category "Researchers". Researchers are professionals engaged in the conception or creation of new knowledge, products, processes, methods and systems and also in the management of the projects concerned.

R&D technicians and technologists are persons whose main tasks require technical knowledge and experience in one or more fields of science or engineering, but who contribute to R&D by performing technical tasks under the supervision of researchers. Biostatisticians supporting clinical trials should be reported in this category even though they may hold PhDs in their field.

The main distinction between researchers and technicians is that researchers contribute more to the creative aspects of R&D whereas technicians provide technical support. For example, a researcher (scientist or engineer) would design an experiment and a technician would run the experiment and assist in analyzing results.

R&D support staff is not directly involved with the conduct of a research project, but support the researchers and technicians. These employees might include clerical staff, report writers, regulatory experts, quality assurance, safety trainers, and other related employees.

Many Contract Research Organizations provide largely technical, regulatory, and administrative support to their customers for clinical trials. Most of these companies' R&D employees should be reported as R&D technicians or R&D support staff.

5.7 How many of the R&D scientists, engineers, and managers reported in Question 5.6, line a, had the following level of education?

Question 5.7 asks the company to specify how many of the employed R&D scientists, engineers, and managers have a PhD.

Domestic full-time equivalents (FTEs)

5.8 Of the domestic R&D employees reported in Question 5.4, column 1, what was the number of full-time equivalents (FTEs) for R&D activity for full-time R&D employees, other full-time employees not working solely on R&D, and part-time employees?

The headcount of full-time equivalent R&D employees should be adjusted to account for employees who work part time as well as those employees who split their time between R&D and other activities. The purpose of this question is to accurately measure the amount of effort employees are devoting to R&D in the business sector.

5.9 Of the domestic R&D scientists, engineers, and their managers reported in Question 5.6, row a, column 1, what was the number of full-time equivalents (FTEs) for R&D activity for full-time R&D employees, other full-time employees not working solely on R&D, and part-time employees?

The headcount of scientists and engineers should be adjusted to account for employees who work part time as well as those employees who split their time between R&D and other activities. The purpose of this question is to accurately measure the amount of effort scientists, engineers, and their managers are devoting to R&D in the business sector.

5.10 How many of the R&D scientists, engineers, and managers reported in Question 5.6, line a, column 1, were non-U.S. citizens employed in the United States under a temporary visa, such as H-1B or L-1?

Question 5.10 asks how many domestic R&D employees are employed under a temporary visa.

Section 6: Intellectual Property and Technology Transfer

Patents

6.1 How many patents did your company apply for in 2014 from the U.S. Patent and Trademark Office (USPTO)?

The intent of this question is to gather information about the output of companies' patenting activities. It is recognized that companies do not attempt to patent every invention, and that not every patent application results from an organized R&D activity.

Exclude the following types of continuing patent applications that do not add subject matter claimed in the parent patent application: continuation applications, requests for continued examination, divisional patent applications, and reissue applications. These types of patent applications are excluded to avoid double counting applications for the same subject matter. Continuation-in-part applications should be included because they add subject matter not claimed in the parent patent application.

Exclude provisional patent applications.

Foreign-owned companies that apply for U.S. patents on behalf of their foreign parents should only report the patent applications originating from its own operations. Patents filed on behalf of others not owned by the company (such as a foreign parent) should be excluded.

6.2 What percentage of the patent applications reported in Question 6.1 has your company applied for or plans to apply for in foreign jurisdictions?

This information is useful as a measure of innovation both because it is an indicator of the potential global import of an invention and because it may indicate that the subject matter of the patent application is of high value.

6.3 What percentage of the patent applications reported in Question 6.1 was for inventions that originated within your company's organized R&D activities?

Exclude patent applications where none of the named inventors are R&D employees.

6.4 How many patents were issued to your company in 2014 by the USPTO?

The intent of this question is to gather information about the output of companies' patenting activities. It is recognized that companies do not attempt to patent every invention, and that not every patent application results from an organized R&D activity.

Foreign-owned companies that apply for U.S. patents on behalf of their foreign parents should only report the patent grants that originated from its own operations. Patents filed on behalf of others not owned by the company (such as a foreign parent) should be excluded. In general, the company should only report patents for which it (the reporting company including its subsidiaries) is an assignee.

6.5 What percentage of your company's inventions considered for patenting in 2014 resulted in patent applications?

Many companies track this information through formal invention disclosure reports. This information is important because it provides a means to evaluate how useful patent applications are as a measure of innovation when comparing industries.

Exclude provisional patent applications.

Patent sales and licensing to others

6.6 How much revenue did your company receive in 2014 from the sale of patents?

Question 6.6 asks the company to report the revenue it earned in 2014 from the sale of its patents. Companies should only report revenue from the licensing of patents it (the reporting company) owns. Exclude revenue from sub-licensing.

Companies should only report revenue from licensing of patents to companies/organizations not owned by the reporting company. If a reporting company is foreign-owned, it should report revenue generated from licensing patents to its foreign owner and to other affiliated companies it does not own.

6.7 How much revenue did your company receive in 2014 from patent licensing? Question 6.7 asks the company to report how much revenue it received in 2014 to license its patents to other parties.

Patent purchases and licensing from others

6.8 How much did your company pay others in 2014 to purchase patents?

Question 6.8 asks the company to report how much it paid to others to purchase patents in 2014.

6.9 How much did your company pay others in 2014 to license patents?

Question 6.9 asks the company to report how much it paid to others to license patents in 2014.

Intellectual property transfer activities

6.10 Did your company perform the following activities in 2014?

Question 6.10 asks the company to indicate whether or not it performed any of a specific list of technology transfer activities in 2014.

Intellectual property protection

6.11 During 2014, how important to your company were the following types of intellectual property protection?

Question 6.11 asks the company to indicate the importance of different methods of intellectual property protection to its business.



U.S. DEPARTMENT OF COMMERCE
Economics and Statistics Administration
U.S. CENSUS BUREAU

FORM
BRDI-1(S) (12-02-2014)

2014 Business R&D and Innovation Survey

OMB No. 0607-0912: Approval Expires 07/31/2015

DUE DATE:

Need help or have questions about filling out the form?

Visit

<https://econhelp.census.gov/brdscr>
Here, you can access helpful
tools, get question-by-question
detailed instructions and learn
more about the survey.

Call 1-800-772-7851, between
8:00 a.m. and 5:00 p.m. Eastern
time, Monday through Friday.
Choose option '1' for English,
then option '5' to speak with a
survey specialist.

Or write to the address below.
Include your 11-digit ID printed
on the mailing label.

**Please file your form
electronically** (see details
below).

Or mail your completed form to:

U.S. CENSUS BUREAU
1201 East 10th Street
Jeffersonville, IN 47132-0001

**INFORMATION COPY
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(Please correct any errors in this mailing address)

YOUR RESPONSE IS REQUIRED BY LAW. Title 13, United States Code, requires businesses and other organizations that receive this questionnaire to answer the questions and return the report to the U.S. Census Bureau. Respondents are not required to respond to any information collection unless it displays a valid approval number from the Office of Management and Budget (OMB). The OMB number appears at the top of this page.

YOUR RESPONSE IS CONFIDENTIAL BY LAW. Title 13, United States Code, requires that your response be seen only by persons sworn to uphold the confidentiality of Census Bureau information and may be used only for statistical purposes. Further, copies retained in respondents' files are immune from legal process.

Why did your company receive this survey?

The Census Bureau surveys a broad cross section of U.S. businesses to better identify which companies engage in R&D activities. Even companies that have no R&D activity are required to complete the survey. The data all companies provide are used to produce economic indicators related to sales, employment and innovation.

**INTERNET REPORTING OPTION AVAILABLE – We encourage you to complete
this survey online at: <https://econhelp.census.gov/brdscr>**

User ID:

Password:

You may submit your survey online via a secure website. Online submission allows you to save the data on secure Census Bureau servers as you go, so you can save, exit, and resume later without losing any of your data. It also allows you to save a paper or electronic copy of your completed survey.

~ This survey is jointly conducted by the U.S. Census Bureau and the National Science Foundation ~



What is Research and Development (R&D)?

R&D is planned, creative work aimed at discovering new knowledge or developing new or significantly improved goods and services. This includes a) activities aimed at acquiring new knowledge or understanding without specific immediate commercial applications or uses (basic research); b) activities aimed at solving a specific problem or meeting a specific commercial objective (applied research); and c) systematic use of research and practical experience to produce new or significantly improved goods, services, or processes (development).

The term R&D does NOT include expenditures for:

- Costs for routine product testing, quality control, and technical services unless they are an integral part of an R&D project
- Market research
- Efficiency surveys or management studies
- Literary, artistic, or historical projects, such as films, music, or books and other publications
- Prospecting or exploration for natural resources

Does R&D include development of software and Internet applications?

Only development of software and Internet applications that include an element of uncertainty and that are intended to close gaps and meet scientific and technological needs should be reported as R&D on this survey.

R&D activity in software includes:

- Development of new software
- Significant improvement of existing software based on new/novel methods and applications
- Construction of new theories and algorithms in the field of computer science

R&D activity in software does NOT include:

- Creation of new software based on known methods and applications
- Support for existing systems
- Conversion or translation of existing software and software languages
- Adaptation of a product to a specific client, unless knowledge that significantly improved the base program was added in that process
- Routine debugging of existing systems and software

Reporting unit

The reporting unit is your company, including all subsidiaries and divisions. Include subsidiary companies where there is more than 50 percent ownership.

Reporting period

Report data for the calendar year 2014, if possible, or for your company's fiscal year ending between April 2014 and March 2015.

Estimates are acceptable

Please report all items to the best of your ability.

For further instructions, please visit: <https://econhelp.census.gov/brdscr>



Company Information

1 Was your company a majority-owned subsidiary of a foreign company in 2014?

Yes → **Please provide the following information and then skip to Question 3:**

Name of parent company

REPORTING INSTRUCTIONS FOR FOREIGN-OWNED COMPANIES:

If your company is foreign-owned, the reporting unit for the survey is your U.S.-based company, including all its majority-owned subsidiaries and divisions regardless of location.

For reporting purposes, your foreign owner and any other foreign affiliates your company does not own should be treated the same as any other customer or business partner you do not own.

If you pay your foreign owner for R&D services, those costs should be included in your response to Question 11.

If your foreign owner pays or reimburses your company for R&D services, the costs for this R&D should be included in your response to Question 16, line a.

No

2 Did another U.S. company other than a holding company own more than 50 percent of your company during 2014?

Yes → **Please provide the following information:**

Name of parent company

EIN of parent company (9 digits)

Date parent company purchased your company

(MM) (DD) (YYYY)

REPORTING INSTRUCTIONS FOR U.S.-OWNED COMPANIES:

If your company was purchased between April 1, 2014 and December 31, 2014, report only for the period January 1, 2014 to the date of purchase. If your company was purchased before April 1, 2014, return this form to the Census Bureau – you are not required to complete the rest of this survey.

Disregard these instructions if your owner instructs you to complete this survey.

No

3 Has your company ceased operations?

Yes → **Please provide the following information:**

(MM) (DD) (YYYY)

Date your company ceased operations

REPORTING INSTRUCTIONS:

If your company ceased operations between April 1, 2014 and December 31, 2014, report only for the period January 1, 2014 to the date your company ceased operations. If your company ceased operations before April 1, 2014, return this form to the Census Bureau – you are not required to complete the rest of this survey.

No



4 Please provide the name and phone number of the person completing this survey.

Name

Telephone

Area code Number

Extension

E-mail address

5 Please describe your company's primary business activity during 2014.

6 What was the amount of your company's worldwide sales and revenues during 2014?

Include:

- Sales and operating revenues for discontinued operations

\$Bil.

Mil.

Thou.

7 How much of the amount reported in Question 6 was attributable to or originated from domestic operations?

Include:

- Sales and operating revenues to foreign customers, including foreign subsidiaries

Example: US Manufacturing Corporation sells parts to customers around the world. However, because all its operations are located inside the United States it reports 100% of its sales in this question.

\$Bil.

Mil.

Thou.

Product (good or service) innovation

A product innovation is the market introduction of a **new** or **significantly** improved good or service with respect to its capabilities, user friendliness, components, or sub-systems.

- Product innovations (new or improved) must be new to your company, but they do not need to be new to your market.
- Product innovations could have been originally developed by your company or by other companies.

8 During the three years 2012 to 2014, did your company introduce:

a. New or significantly improved goods (Exclude the simple resale of new goods purchased from other companies and changes of a solely aesthetic nature)?

Yes

No

b. New or significantly improved services?

Yes

No



9 Please give the percentage of your total sales in 2014 from:

- a. New or significantly improved goods and services introduced during 2012 to 2014 that were **new to your market** %
 Your company introduced a new or significantly improved good or service to your market before your competitors. (It may have been available in other markets.)
- b. New or significantly improved goods and services introduced during 2012 to 2014 that were **new only to your company** %
 Your company introduced a new or significantly improved good or service that was already available from your competitors in your market.
- c. Goods and services that were **unchanged or only marginally modified** during 2012 to 2014 (include the resale of new goods or services purchased from other companies) %
- d. **Total sales in 2014** %

Process innovation

A process innovation is the implementation of a **new** or **significantly** improved production process, distribution method, or support activity for your goods or services.

- Process innovations must be new to your company, but they do not need to be new to your market.
- The innovation could have been originally developed by your company or by other companies.
- Exclude purely organizational innovations.

10 During the three years 2012 to 2014, did your company introduce:

- a. New or significantly improved methods of manufacturing or producing goods or services? Yes No
- b. New or significantly improved logistics, delivery or distribution methods for your inputs, goods, or services? Yes No
- c. New or significantly improved supporting activities for your processes, such as maintenance systems or operations for purchasing, accounting, or computing? Yes No

R&D paid for by your company**11 What was the total worldwide R&D expense for your company in 2014?**

If your company is publicly traded, this amount is equivalent to that disclosed on SEC Form 10-K as defined in FASB ASC Topic 730, Research and Development (FASB Statement No. 2, "Accounting for Research and Development Costs.")

If your company is foreign-owned, refer to the instructions on page 3. Additional guidance, such as for **privately owned companies**, is available online at <https://econhelp.census.gov/brdscr>.

NOTE: Report your company's R&D expense even if the amount is not considered material for your company's financial statements.

\$Bil. Mil. Thou.

12 Is the amount entered in Question 11 greater than zero?

- Yes → **Continue with Question 13**
- No → **Skip to Question 16 on page 6**



13 Does the amount reported in Question 11 include any of the following costs?

- a. Collaborative research and development that was reimbursed by business partners, such as through cost-sharing agreements Yes No
- b. R&D paid for by government or private foundation grants Yes No
- c. Technical services not an integral part of an R&D project (such as product support provided by R&D employees) Yes No
- d. Bid and proposal costs Yes No
- e. Expense your company claimed resulting from the acquisition of another company with unfinished R&D projects (in-process R&D) Yes No

14 If you answered "Yes" to any of the costs in Question 13, what was the amount of these costs that was included in your response to Question 11?

\$Bil.	Mil.	Thou.
<input type="text"/>	<input type="text"/>	<input type="text"/>

15 Subtract Question 14 from Question 11 and enter the result here. This is the total R&D paid for by your company in 2014.

\$Bil.	Mil.	Thou.
<input type="text"/>	<input type="text"/>	<input type="text"/>

R&D paid for by others

16 What were your company's total worldwide costs (both direct and indirect) in 2014 for the following that were funded, paid for, or reimbursed by others not owned by your company?

Exclude:

- Costs that were paid for by your company, such as those reported in Question 15
- Payments in excess of the actual cost of the work performed (such as profit or fees)

- | | \$Bil. | Mil. | Thou. |
|--|----------------------|----------------------|----------------------|
| a. R&D that was reimbursed by your company's foreign parent (if you are owned by a foreign parent) | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| b. Collaborative R&D that was reimbursed by business partners, such as through cost-sharing agreements | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| c. R&D paid for by government or private foundation grants | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| d. Defense RDT&E goods or services (including DOD 6.1 through 6.7 funding), provided as a prime or as a sub, to the government and/or government contractors | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| e. Medical nonclinical R&D services provided to others not owned by your company | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| f. Medical clinical trial Phase I-III services provided to others not owned by your company (include pass-through costs) | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| g. Nondefense custom software development and/or computer systems designed for others not owned by your company | <input type="text"/> | <input type="text"/> | <input type="text"/> |

Exclude:

- Software development that does not depend on a scientific or technological advance, such as adding functionality to existing application programs, debugging systems, and adapting existing software

Question continues on next page



16 Continued

h. Prototype development, production, and testing for customer's products prior to their introduction to the market (excluding defense-related prototyping reported in line d)	□ □	□ □ □ □	□ □ □ □
i. All other R&D services, not included above, provided to the Federal Government or to others not owned by your company	□ □	□ □ □ □	□ □ □ □
j. Total	□ □	□ □ □ □	□ □ □ □

Employees

17 What was the total number of worldwide employees working at your company for the pay period that included March 12, 2014?

Include:

- Full- and part-time employees

Exclude:

- Leased or temporary employees and consultants

Number

□	□	□	□	□	□
---	---	---	---	---	---

18 How many of the employees reported in Question 17 were employees of your company's domestic operations and foreign operations?

Domestic operations employees include all employees whose payroll was reported on the first quarter filing of IRS Form 941, Employer's Quarterly Tax Return.

	(1) Domestic operations	(2) Foreign operations	(3) Total employees
Employees	□ □ □ □ □ □ □ □	□ □ □ □ □ □ □ □	□ □ □ □ □ □ □ □

Total equals Question 17

19 How many employees reported in Question 18 were R&D employees and how many were all other employees?

R&D employees include all employees who work on R&D or who provide direct support to R&D, such as researchers, R&D managers, technicians, clerical staff, and others assigned to R&D groups. **Exclude** employees who provide only indirect support to R&D, such as corporate personnel, security guards, and cafeteria workers.

	(1) Domestic operations	(2) Foreign operations	(3) Total employees
a. R&D employees	□ □ □ □ □ □ □ □	□ □ □ □ □ □ □ □	□ □ □ □ □ □ □ □
b. All other employees ...	□ □ □ □ □ □ □ □	□ □ □ □ □ □ □ □	□ □ □ □ □ □ □ □
c. Total employees	□ □ □ □ □ □ □ □	□ □ □ □ □ □ □ □	□ □ □ □ □ □ □ □

Total line equals Question 18



20 Of the domestic R&D employees reported in Question 19, line a, what was the number of full-time equivalent (FTE) R&D employees working at your company for the pay period that included March 12, 2014?

Full-time equivalent (FTE) R&D employees are an estimate of the manpower devoted to R&D activities. Count each full-time R&D employee as 1 FTE and all other employees based on the fraction of their time devoted to R&D. These amounts may be less than those reported in Question 19, line a.

(1)
Domestic
operations

FTE R&D employees. . . .

21 Approximately how long did it take to complete this survey?

Hours Minutes

:

Remarks (Please use the space below for any explanations that may help us understand your reported data.)

Thank You – Your Response is Important

Accurate and timely statistical information could not be produced without your continued cooperation and goodwill. Thank you.

We estimate that it will take from .5 to 6 hours to complete this form, with 1.5 hours being the average. This includes time to read instructions, develop or assemble materials, conduct tests, organize and review the information, and maintain and report the information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to:

Paperwork Project 0607-0912
U.S. Census Bureau
4600 Silver Hill Road
AMSD-3K138
Washington, D.C. 20233

You may e-mail comments to Paperwork@census.gov; use "Paperwork Project 0607-0912" as the subject.

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2014 BRDI-1(S) - Guidelines

General guidelines for reporting intercompany transactions in this survey:

Reporting for “worldwide activities”- The reporting unit is your company, including all domestic and foreign subsidiaries that are more than 50% owned by your company for financial reporting purposes. All transactions between subdivisions within this reporting unit should be eliminated as intercompany transactions. For reporting purposes, your foreign parent (if you are foreign owned) and any foreign affiliates your company does not own by more than 50% should not be treated as part of ‘your company’ in your report. Transactions with these units should be treated the same as with any unrelated third parties such as business partners, customers, or suppliers you do not own.

Reporting for “domestic operations”- In this survey “domestic operations” refers to your company’s operations located in the 50 United States and the District of Columbia. When reporting for your domestic operations, include transactions with foreign subsidiaries. For example, Question 7 asks how much of your company’s total sales and revenues were from your company’s domestic operations. All revenue from the domestic operations, including sales to subsidiaries or affiliated companies overseas, should be reported in this question.

Company Information

1 Was your company a majority-owned subsidiary of a foreign company in 2014?

Question 1 asks about the ownership of the company receiving the survey. Special reporting instructions apply to companies that were majority-owned by a foreign company. If your answer is “No”, continue to Question 2. If your answer is “Yes”, continue with Question 1 by entering the name of the company, then skipping to Question 3.

REPORTING INSTRUCTIONS FOR FOREIGN-OWNED COMPANIES: If your company is foreign-owned, the reporting unit for this survey is your U.S.-based company, including all its majority-owned subsidiaries and divisions regardless of location. For reporting purposes, your foreign owner and any other foreign affiliates your company does not own should be treated the same as any other customer or business partner you do not own.

If you pay your foreign owner for R&D services, those costs should be included in your response to Question 11.

If your foreign owner pays or reimburses your company for R&D services, the costs for this R&D should be included in your response to Question 16, line a.

Report your survey data using U.S. generally accepted accounting principles (U.S. GAAP) as recognized by the Financial Accounting Standard Board (FASB). If your company follows International Financial Reporting Standards (IFRS), we request that you make adjustments in order to conform to U.S. GAAP.

2 Did another U.S. company other than a holding company own more than 50 percent of your company during 2014?

Question 2 asks about the majority of the ownership of the company receiving the survey. Special reporting instructions apply to companies that have been acquired by another company. If your answer is “No”, skip to Question 3. If your answer is “Yes”, continue with Question 2 by entering the name of the parent company, the EIN of the owner, and the date the parent company purchased your company.

REPORTING INSTRUCTIONS FOR U.S.-OWNED COMPANIES:

If your company was purchased between April 1, 2014 and December 31, 2014, report only for the period January 1, 2014 to the date of purchase. If your company was purchased before April 1, 2014, return this form to the Census Bureau – you are not required to complete the rest of this survey unless your owner instructs you to complete it.

If your company is owned by a U.S. based company, check “No” and enter the owner’s EIN. If your company was purchased before April 1, 2014, stop here and return the survey to the Census Bureau. If your company was purchased between April 1, 2014 and December 31, 2014, report only for the period January 1, 2014 to the date of purchase.

Example 1: Company A was acquired by Company P (a US company) on Feb. 1, 2014. Because Company A was acquired by a US company prior to April 1, 2014, Company A is not required to complete this survey. Company A will stop here and return the form to the Census Bureau.

Example 2: Company B is acquired by Company P (a US company) on July 1, 2014. Because Company B was acquired by a US company on or after April 1, 2014, Company B must complete the survey, reporting data for the period January 1, 2014 through July 1, 2014.

Why April 1?

The Census Bureau has determined that for this survey the benefit of collecting data from a company for a period less than one quarter of a year does not outweigh the burden placed on the company to report the data.

Why is this important?

Companies are asked this question for three reasons: to eliminate double counting in cases where both parties in a business acquisition receive the survey; to guide foreign-owned companies to special instructions; and to reduce the burden on companies who would otherwise be reporting data for a period less than one quarter of the year.

3 Has your company ceased operations?

REPORTING INSTRUCTIONS:

If your company ceased operations between April 1, 2014 and December 31, 2014, report only for the period January 1, 2014 to the date your company ceased operations. If your company

ceased operations before April 1, 2014, return this form to the Census Bureau – you are not required to complete the rest of this survey.

Scenario 1: Your company ceased operations before April 1, 2014. Complete Questions 1 through 3 and return the survey to the Census Bureau.

Scenario 2: Your company ceased operations between April 1, 2014 and December 31, 2014. You should complete the survey as instructed and report for the period from January 1, 2014 to the date your company ceased operations.

Why April 1?

The Census Bureau has determined that for this survey the benefit of collecting data from a company for a period less than one quarter of a year does not outweigh the burden placed on the company to report the data.

Why is this important?

Data from companies that have ceased operations during 2014 are needed in order to accurately measure the total activity of companies operating in the United States during 2014.

4 Please provide the name and phone number of the person completing this survey.

Why is this important?

This information gives the Census Bureau a single point of contact at each company surveyed in case questions arise about survey responses. The point of contact for this survey may differ from that for other Census Bureau surveys.

5 Please describe your company's primary business activity during 2014.

This information is needed in order to tabulate more accurate and useful industry-level data.

6 What was the amount of your company's worldwide sales and revenues during 2014?

Your company's worldwide sales and revenue would include sales by your foreign operations and subsidiaries, as well as, revenues from domestic operations. If your company is owned by a foreign parent, report sales to your parent and those affiliates not owned by your company.

Include sales and operating revenues for discontinued operations.

Exclude non-operating income such as dividends and interest as well as excise, sales, and other revenue-based taxes.

7 How much of the amount reported in Question 6 was attributable to or originated from domestic operations?

Question 6 asks for the company's sales and revenues generated by domestic operations, regardless of where the customers are located. If your company is owned by a foreign parent, then sales to your parent and those affiliates not owned by your company are included.

Include sales and operating revenues to foreign customers, including foreign subsidiaries.

Example: US Manufacturing Corporation sells parts to customers around the world. However, because all its operations are located inside the United States, 100% of its sales attributable to its domestic operations.

Product (good or service) innovation

A product innovation is the mark introduction of a **new** or **significantly** improved good or service with respect to its capabilities, user friendliness, components, or sub-systems.

- Product innovations (new or improved) must be new to your company, but they do not need to be new to your market.
- Product innovations could have been originally developed by your company or by other companies.

8 During the three years 2012 to 2014, did your company introduce:

Question 8 asks whether the company introduced any new or significantly improved goods or services, which are divided into separate sub-questions:

- a. New or significantly improved goods (Exclude the simple resale of new goods purchased from other companies and changes of a solely aesthetic nature)?
- b. New or significantly improved services?

For the purpose of this question, "new or significantly improved" is in reference to the company's prior experience. For example, a computer manufacturer that introduced its first cell phone in 2012 would answer, "Yes" to line a, "New or significantly improved goods

9 Please give the percentage of your total sales in 2014 from:

Question 9 asks how much of the company's total worldwide sales in 2014 are attributable to different types of product innovations. Specifically, it asks what percentage of the company's total worldwide sales in 2014 that were from:

- a. New or significantly improved goods and services introduced during 2012 to 2014 that were **new to your market**. Your company introduced a new or significantly improved good or service to your market before your competitors. (It may have been available in other markets).

- b. New or significantly improved goods and services introduced during 2012 to 2014 that were **new only to your company**. Your company introduced a new or significantly improved good or service that was already available from your competitors in your market.
- c. Goods and services that were **unchanged or only marginally modified** during 2012 to 2014 (include the resale of new goods or services purchased from other companies)

Process innovation

A process innovation is the implementation of a **new** or **significantly** improved production process, distribution method, or support activity for your goods or services.

- Process innovations must be new to your company, but they do not need to be new to your market.
- The innovation could have been originally developed by your company or by other companies.
- Exclude purely organizational innovations.

10 During the three years 2012 to 2014, did your company introduce:

- a. New or significantly improved methods of manufacturing or producing goods or services?
- b. New or significantly improved logistics, delivery or distribution methods for your inputs, goods, or services?
- c. New or significantly improved supporting activities for your processes, such as maintenance systems or operations for purchasing, accounting, or computing?

For the purpose of this question, “new or significantly improved” is in reference to the company’s prior experience.

R&D paid for by your company

11 What was the total worldwide R&D expense for your company in 2014?

Question 11 requests total worldwide R&D expense. The reporting unit is your company, including all domestic and foreign subsidiaries that are more than 50% owned by your company for financial reporting purposes. All transactions between subdivisions within this reporting unit should be eliminated as intercompany transactions. Total worldwide R&D expense also includes payments by your company for R&D services performed by (i) unrelated third parties, (ii) affiliates for which your company has less than a 50% ownership stake and/or (iii) your foreign parent, if your company is foreign owned.

Scenario 1: Your company is publicly traded. Report worldwide R&D expense as reported on SEC Form 10-K as defined in FASB ASC Topic 730, Research and Development (FASB Statement No. 2, “Accounting for Research and Development Costs.”)

Scenario 2: Your company is foreign-owned. Report the R&D expense figure of the U.S.-located company and domestic and foreign subsidiaries that are more than 50% owned by your U.S.-located company, if any. Do not include expenses by your foreign parent or by any foreign affiliate your U.S.-located company does not own. For reporting purposes, these entities should be treated the same as any unrelated third party such as a customer or supplier you do not own.

Scenario 3: Your company is privately owned. You should follow the same procedures as public companies when reporting R&D expense and follow the guidance in FASB ASC Topic 730, Research and Development (FASB Statement No. 2, "Accounting for Research and Development Costs."). Privately held companies that cannot report on this basis should note reporting principles and difficulties in the space for "Remarks" at the end of the survey.

The following are examples of activities that typically would be **excluded** from research and development in accordance with [FASB Statement No. 2, "Activities Constituting Research and Development"](#):

- a. Engineering follow-through in an early phase of commercial production.
- b. Quality control during commercial production including routine testing of products.
- c. Troubleshooting in connection with breakdowns during commercial production.
- d. Routine, ongoing efforts to refine, enrich, or otherwise improve upon the qualities of an existing product.
- e. Adaptation of an existing capability to a particular requirement or customer's need as part of a continuing commercial activity.
- f. Seasonal or other periodic design changes to existing products.
- g. Routine design of tools, jigs, molds, and dies.
- h. Activity, including design and construction engineering, related to the construction, relocation, rearrangement, or start-up of facilities or equipment other than (1) pilot plants (see paragraph 9(h)) and (2) facilities or equipment whose sole use is for a particular research and development project (see paragraph 11(a)).
- i. Legal work in connection with patent applications or litigation, and the sale or licensing of patents.

Exclude from worldwide R&D expense:

- Costs for R&D that was paid for by a 3rd party such as R&D performed under contract.
- For medical products companies, exclude costs for phase IV clinical trials since these trials take place after products have achieved technical and market feasibility.

Research and development activity in software:

Does R&D include development of software and Internet applications?

- Yes, as long as the research and development activities include an element of uncertainty, are intended to close knowledge gaps, and meet scientific and technological needs.
- Report in this survey all software R&D as defined here regardless of the eventual user (internal or external).

R&D activity in software INCLUDES:

- Software development or improvement activities that expand scientific or technological knowledge
- Construction of new theories and algorithms in the field of computer science

R&D activity in software EXCLUDES:

- Software development that does not depend on a scientific or technological advance, such as:
 - supporting or adapting existing systems
 - adding functionality to existing application programs, and
 - routine debugging of existing systems and software
- Creation of new software based on known methods and applications
- Conversion or translation of existing software and software languages
- Adaptation of a product to a specific client, unless knowledge that significantly improved the base program was added in that process

For further guidance on accounting for software development costs see FASB Statement No. 86 (Accounting for the Costs of Computer Software to Be Sold, Leased); and FASB Interpretation No. 6 (Applicability of FASB Statement No. 2 to Computer Software).

12 Is the amount entered in Question 11 greater than zero?

Question 12 instructs the company to skip to Question 16 if its response to Question 11 is zero.

13 Does the amount reported in Question 11 include any of the following costs?

Although most companies share a general framework for R&D, we request that certain items be excluded for the sake of consistency. Certain costs and expenses are to be reported in Question 11 reflecting your company's R&D activities that were paid for by others.

Question 13 asks whether the company's R&D expense figure reported in Question 11 included costs for five specific categories:

- a. Collaborative research and development that was reimbursed by business partners, such as through cost-sharing agreements
 - These agreements are very common in the biotechnology and pharmaceutical industries, but less so in other industries.
- b. R&D paid for by government or private foundation grants

- Examples include Small Business Innovation and Research (SBIR) grants, Department of Energy demonstration grants, and Gates Foundation research grants.
- c. Technical services not an integral part of an R&D project (such as product support provided by R&D employees)
 - This category most often applies to software and service companies where R&D staff also provide technical support and/or services to customers.
- d. Bid and proposal costs
 - This category represents the costs a company incurs applying to win a contract. Some government contractors group these costs with their R&D spending.
- e. Expense your company claimed resulting from the acquisition of another company with unfinished R&D projects (in-process R&D).

Why is this important?

Not all companies treat the five cost categories listed in this question consistently with respect to their inclusion or exclusion from R&D expense figures. This question allows the survey to measure and correct for these inconsistencies.

14 If you answered “Yes” to any of the costs in Question 13, what was the amount of these costs that was included in your response to Question 11?

Question 14 asks the company to estimate the amount of its R&D expense figure reported in Question 11 that was from the categories listed in Question 13.

Why is this important?

The five cost categories listed in Question 13 are not treated consistently by all companies with respect to their inclusion or exclusion from R&D expense figures. This question allows the survey to measure and correct for these inconsistencies.

15 Subtract Question 14 from Question 11 and enter the result here. This is the total R&D paid for by your company in 2014.

Question 15 asks the company to subtract the amount reported in Question 14 from the amount reported in Question 11. This survey refers to this amount as “total R&D paid for by your company”.

Why is this important?

The five cost categories listed in Question 13 are not treated consistently by all companies with respect to their inclusion or exclusion from R&D expense figures. This question allows the survey to measure and correct for these inconsistencies.

R&D paid for by others

16 What were your company's total worldwide costs (both direct and indirect) in 2014 for the following that were funded, paid for, or reimbursed by others not owned by your company?

Costs should be considered "funded, paid for, or reimbursed by others" if the company has been or expects to be paid for the costs by a customer, business partner, or grant-making organization.

Note: Foreign-owned companies should report costs that are funded, paid for, or reimbursed by their foreign owner in this question.

Exclude payments in excess of the actual cost of the work performed (such as profits or fees). Also exclude costs that were reported in Question 15 as they should not be double counted in this question.

The categories in this question, listed below, define the survey term, "R&D paid for by others":

- a. R&D that was reimbursed by your company's foreign parent (if you are owned by a foreign parent)
- b. Collaborative R&D that was reimbursed by business partners, such as through cost-sharing agreements
 - o These agreements are very common in the biotechnology and pharmaceutical industries, but less so in other industries.
- c. R&D paid for by government or private foundation grants
 - o Examples include Small Business Innovation and Research (SBIR) grants, Department of Energy demonstration grants, and Gates Foundation research grants.
- d. Defense RDT&E goods or services (including DOD 6.1 through 6.7 funding), provided as a prime or as a sub, to the government and/or government contractors
 - o This category most often applies to defense contractors and subcontractors performing tasks such as designing, building, and testing prototypes of new military weapon systems and developing custom software for defense applications.
 - o Include all defense R&D funded by the Department of Defense (DOD), the Department of Energy's weapons programs, the Department of Homeland Security, and other Federal agencies.
 - o R&D funds from DOD include all funds for research, development, test, and evaluation (RDT&E) activities (6.1 through 6.7 budget appropriations).
 - o Include defense R&D performed as a prime contractor and/or as a subcontractor.
- e. Medical nonclinical R&D services provided to others not owned by your company
 - o Nonclinical (also known as preclinical) research and development involves research on potential medical products that does not involve human subjects. This R&D consists of both *in vitro* studies as well as studies using animal subjects.
- f. Medical clinical trial Phase I-III services provided to others not owned by your company (include pass-through costs)
 - o This category involves the testing of potential medical products in human subjects. Phase I-III clinical trials must be successfully completed in order for a product to be approved for use in the general population.

- Include pass-through/out-of-pocket costs paid to investigators and patients participating in clinical trials.
- Exclude costs for Phase IV clinical trials because these trials take place after a product has been approved for sale.
- g. Nondefense custom software development and/or computer systems designed for others not owned by your company
 - See definitions in “Research and development activity in software” under guidance for Question 10 and 11.
 - This category includes the development of new or significantly improved software, both as an end product and for use embedded in other products.
 - Exclude: Software development that does not depend on a scientific or technological advance such as adding functionality to existing application programs, debugging systems, and adapting existing software.
 - Software development for defense-related applications should be reported in line d.
- h. Prototype development, production, and testing for customer’s products prior to their introduction to the market (excluding defense-related prototyping reported in line d).
 - Exclude quality control testing and other testing services for products already on the market.
- i. All other R&D, not included above, provided to the Federal Government or to others not owned by your company

Employees

17 What was the total number of worldwide employees working at your company for the pay period that included March 12, 2014?

Question 17 asks the company to report its total number of employees (both R&D and non-R&D employees) for all locations, both foreign and domestic. In order to collect consistent data from all companies, the employment figure reported should be for the pay period that included March 12, 2014. If this is not possible, companies should report employment for the date closest to March 12, 2014 possible.

Include full and part-time employees.

Exclude leased or temporary employees and consultants from this question because this survey does not consider them employees of the reporting company.

18 How many of the employees reported in Question 17 were employees of your company’s domestic operations and foreign operations?

Question 18 asks the company to report, of the employees reported in Question 17, the number of employees employed by domestic operations and the number of employees that were employed by operations outside of the United States.

Counts of (1) Domestic operations, (2) Foreign operations, and (3) Total employees should be recorded.

Note: The total should equal Question 17.

19 How many employees reported in Question 18 were R&D employees and how many were all other employees?

Question 19 asks the company to report how many of its employees were R&D employees.

R&D employees include employees who work on R&D or who provide direct support to R&D, such as researchers, R&D managers, technicians, clerical staff, and others assigned to R&D groups.

Exclude employees who provide indirect support to R&D, such as corporate personnel, security guards, and cafeteria workers.

Counts of (1) Domestic operations, (2) Foreign operations, and (3) Total employees should be recorded for:

- a. R&D employees
- b. All other employees
- c. Total employees

Note: The total employees line should equal the total for Question 18.

20 Of the domestic R&D employees reported in Question 19, line a, what was the number of full-time equivalent (FTE) R&D employees working at your company for the pay period that included March 12, 2014?

Question 20 asks the company to report the number of full-time equivalent employees engaged in R&D using the same reference period as the earlier employee questions. The headcount of full-time equivalent R&D employees should be adjusted to account for employees who work part-time as well as those employees who split their time between R&D and other activities. The purpose of this question is to accurately measure the amount of effort employees are devoting to R&D in the business sector.

21 Approximately how long did it take to complete this survey?

Question 21 asks you to estimate the time in hours and minutes that it took to complete this survey. This helps us understand the amount of burden the survey averages for companies.

Suggested Citation, Acknowledgments

National Science Foundation, National Center for Science and Engineering Statistics. 2018. Business R&D and Innovation: 2014. Detailed Statistical Tables NSF 18-302. Alexandria, VA. Available at <https://www.nsf.gov/statistics/2018/nsf18302/>.

The U.S. Census Bureau, under National Science Foundation interagency agreement number NCSES-0219101, collected and tabulated the data. This work was performed by Aronda Stovall, Terence Strait, Vicki Mills, Yvette Moore, Jeffrey Kellner, Steven Wilkinson, Ebenezer Amoako, David Garrow, Deena Grover, Lucia Chavez, Melvin Dangan, Peter Shieh, Philip Leclerc, and Adam Lauer, under the direction of Richard Hough and Michael Flaherty. Under the same interagency agreement, mathematical statistician support was provided by Bill Ricciardi, Ana Rodriguez, John Slanta, Dan Tulp, and Lucas Streng, under the direction of David Kinyon and Colt Viehdorfer, and business accounting and subject matter support was provided by Brandon Shackelford. RTI International composed this report for publication under NSF contract number NSFDACS17T1045. RTI staff members Roxanne Snaauw and Catherine Boykin performed the composition; August Gering performed quality control and coordinated the work.

National Center for Science and Engineering Statistics

John R. Gawalt Emilda B. Rivers
Director *Deputy Director*

Samson A. Adeshiyan John E. Jankowski
Chief Statistician *Program Director, Research and Development Statistics*



National Center for Science and Engineering Statistics (NCSES)

The National Science Foundation, 2415 Eisenhower Avenue, Suite W14200, Alexandria, VA 22314
Tel: (703) 292-8780, FIRS: (800) 877-8339 | TDD: (800) 281-8749