



Business R&D Performed in the United States Cost \$291 Billion in 2008 and \$282 Billion in 2009

by Raymond M. Wolfe¹

Companies spent \$282 billion on research and development performed in the United States during 2009 and \$291 billion during 2008 (table 1), according to estimates from the Business R&D and Innovation Survey (BRDIS).² Funding from the companies' own sources declined from \$233 billion to \$225 billion during this period; funding from other sources remained about the same during the 2 years, \$58 billion in 2008 and \$57 billion in 2009 (table 2).

The 2008 figures in this InfoBrief update preliminary estimates released earlier. The 2009 figures are the initial release of the final statistics from the new BRDIS and are the focus of the remainder of this InfoBrief.³

R&D Performance by Industrial Sector and Source of Funding

During 2009, companies in manufacturing industries performed \$195 billion of domestic R&D (69%) (table 2).⁴ Eighty-one percent of funding was from companies' own funds, and the remaining 19% was from sources outside of the company. Companies

TABLE 1. Funds spent for business R&D performed in the United States, by source of funds and size of company: 2008 and 2009

(Millions of U.S. dollars)

Selected characteristic	2008	2009
Domestic R&D performance ^a	290,680	282,393
Source of funds		
Paid for by the company	232,505	224,920
Paid for by others	58,176	57,473
Federal	36,360	39,573
Other ^b	21,816	17,900
Size of company (number of domestic employees)		
5–24 ^c	14,280	11,794
25–49	9,626	9,692
50–99	9,351	13,282
100–249	14,662	12,747
250–499	10,219	11,204
500–999	11,886	10,119
1,000–4,999	46,336	44,008
5,000–9,999	24,764	21,864
10,000–24,999	48,737	51,037
25,000 or more	100,820	96,645

^a For companies that reported worldwide R&D expense or worldwide R&D costs funded by others; see "Survey Information and Data Availability" for more information.

^b Includes companies located inside and outside the United States, U.S. state government agencies and laboratories, foreign government agencies and laboratories, and all other organizations located inside and outside the United States.

^c After the 2008 BRDIS sample was selected and surveyed, an error was identified that resulted in the exclusion of 226,884 single-establishment companies with 5 paid employees from the sample frame. Most of the excluded establishments were classified in industries with low R&D intensities, such as construction, retail trade, and the service sectors. Based on the available information for these small single-establishment companies, their contribution to the 2008 R&D estimates is estimated to be negligible.

NOTES: Detail may not add to total because of rounding. Excludes data for federally funded research and development centers.

SOURCE: National Science Foundation/National Center for Science and Engineering Statistics, Business R&D and Innovation Survey: 2008 and 2009.

TABLE 2. Funds spent for business R&D performed in the United States, by source of funds and selected industry: 2008 and 2009
(Millions of U.S. dollars)

Industry and NAICS code	All R&D	Paid for by the company	Paid for by others				
			Total	Companies		All other organizations ^a	
				Federal	Domestic		Foreign
2008							
All industries, 21–33, 42–81 ^b	290,680	232,505	58,176	36,360	12,181	8,877	758
Manufacturing industries, 31–33	203,755	164,386	39,368	31,102	3,444	4,712	D
Chemicals, 325	58,250	55,042	3,207	197	814	2,182	15
Pharmaceuticals/medicines, 3254	48,131	45,169	2,962	137	796	2,017	11
Other 325	10,119	9,873	245	60	18	165	4
Machinery, 333	10,104	9,846	258	62	95	97	3
Computer/electronic products, 334	60,464	42,912	7,551	4,646	1,520	1,338	47
Electrical equipment/appliance/components, 335	3,143	2,947	196	91	34	66	5 i
Transportation equipment, 336	50,552	23,039	27,513	25,941	774	768	D
Motor vehicles/parts, 3361–3363	13,140	12,234	906	D	D	D	D
Aerospace products/parts, 3364	36,941	10,371	26,570	25,805 i	649	D	D
Other 336	471	434	37	D	D	D	D
Manufacturing nec, other 31–33	21,242	30,600	643	165	207	261	D
Nonmanufacturing industries, 21–23, 42–81	86,926	68,118	18,807	5,258	8,737	4,166	D
Information, 51	37,695	36,922	772	229	217	D	D
Software publishers, 5112	28,221	27,665	556	176	117	D	D
Other 51	9,473	9,257	216	53	100	D	D
Finance/insurance, 52	1,092	1,084	8	0	7	* i	0
Professional/scientific/technical services, 54	37,954	20,539	17,415	4,844	8,221	3,753	D
Computer systems design/related services, 5415	12,146	8,569	3,577	784	1,183	1,490	120
Scientific R&D services, 5417	17,913	8,708	9,205	2,115	4,726	2,008	D
Other 54	7,895	3,262	4,633	1,945	2,312	255	D
Nonmanufacturing nec, other 21–23, 42–81	10,185	9,573	612	185	292	D	D
2009							
All industries, 21–33, 42–81 ^b	282,393	224,920	57,473	39,573	9,567	7,647	685
Manufacturing industries, 31–33	195,144	158,225	36,920	28,825	3,345	4,532	218
Chemicals, 325	53,328	49,876	3,452	207	1,263	1,961	D
Pharmaceuticals/medicines, 3254	44,936	41,751	3,185	113	1,247	1,813	11
Other 325	8,392	8,125	267	94	16	148	D
Machinery, 333	9,138	8,782	356	150	133	67	D
Computer/electronic products, 334	60,464	48,865	7,571	5,210 i	738	1,578	D
Electrical equipment/appliance/components, 335	3,334	3,105	228	70	55	66	D i
Transportation equipment, 336	48,337	24,223	24,114 i	23,023 i	757	251	D
Motor vehicles/trailers/parts, 3361–3363	D	10,853	D	D	D	D	D
Aerospace products/parts, 3364	34,554	12,384	22,170 i	21,524 i	596	D	D
Other 336	D	986	D	D	D	D	D
Manufacturing nec, other 31–33	20,543	23,374	1,199	165	399	609	D
Nonmanufacturing industries, 21–23, 42–81	87,248	66,695	20,553	10,749	6,223	3,115	467
Information, 51	33,806	32,995	811	194	349	233	34
Software publishers, 5112	26,395	25,729	666	176	267	191	32
Other 51	7,411	7,266	145	18	82	42	2
Finance/insurance, 52	1,912	1,904	8	1 i	6	0	0
Professional/scientific/technical services, 54	44,946	26,031	18,915	10,461	5,531	2,505	168
Computer systems design/related services, 5415	12,560	10,742	1,818	1,240	449	122	7
Scientific R&D services, 5417	17,270	7,981	9,289	2,657	4,397	2,110	125
Other 54	15,116	7,308	7,808	6,564	685	273	36
Nonmanufacturing nec, other 21–23, 42–81	6,584	5,765	819	93	337	377	265

D = suppressed to avoid disclosure of confidential information; i = >50% of value imputed; * = < \$500,000.

NAICS = North American Industry Classification System; nec = not elsewhere classified.

^a Includes U.S. state government agencies and laboratories, foreign government agencies and laboratories, and all other organizations located inside and outside the United States.

^b Includes companies that reported worldwide R&D expense or worldwide R&D costs funded by others; see "Survey Information and Data Availability" for more information.

NOTES: Detail may not add to total because of rounding. Industry classification was based on dominant business code for domestic R&D performance where available. For companies that did not report business codes, classification used for sampling was assigned. Excludes data for federally funded research and development centers.

SOURCE: National Science Foundation/National Center for Science and Engineering Statistics, Business R&D and Innovation Survey: 2008 and 2009.

in nonmanufacturing industries performed \$87 billion of domestic R&D (31%), 76% paid for from companies' own funds and 24% funded from sources outside of the company. Chief among the sources of outside funding for R&D across all industries (also referred to as R&D paid for by others) was the U.S. federal government. Of the \$57 billion paid for by others, the federal government contributed \$40 billion. Most of the funds came from the Department of Defense; aerospace products and parts (NAICS 3364) and professional, scientific, and technical services (NAICS 54) received the lion's share of government R&D funding. Next among contributors were other U.S. companies (\$10 billion) and foreign companies (\$8 billion), including foreign parents of U.S. subsidiaries. Detail for these aggregates and other R&D costs paid for by sources outside of the company by selected industry is given in table 2 (see "Survey Information and Data Availability" for information on industry classification).

Sales, R&D Intensity, and Employment of R&D Performers

Domestic net sales for companies that performed domestic R&D were \$7.4 trillion in 2009 (table 3).⁵ For all industries, the R&D intensity ratio was 3.8%; for manufacturers, the ratio was 4.5%; and for nonmanufacturers, the ratio was 2.8%.⁶ Two manufacturing industries with high R&D intensity ratios in 2009 were pharmaceuticals and medicines (NAICS 3254), 13.2%, and aerospace products and parts (NAICS 3364), 10.4%.⁷ Among the nonmanufacturing industries, two with high ratios were scientific R&D services (NAICS 5417), 18.1%, and software publishers (NAICS 5112), 10.1%.

Domestic employment for R&D-performing companies was 17.8 million

during 2009. Of these employees, 1.4 million (8.0%) worked on R&D.⁸ Not surprisingly, two manufacturing industries with high numbers of R&D workers in 2009 were pharmaceuticals and medicines (110,000 R&D workers) and aerospace products and parts (89,000 R&D workers), and two nonmanufacturing industries with high numbers of R&D workers were software publishers (137,000) and computer systems design and related services (117,000). Other sales and employment estimates by selected industry are given in table 3.

R&D Performance by State

During 2009, companies reported \$225 billion of aggregate domestic R&D paid for by the company. Businesses in California alone accounted for over 23% of the nation's business R&D in both 2008 (table 4) and 2009 (table 5). Other states with large amounts of company-funded business R&D and the percentages they accounted for in 2009 were New Jersey (7.1%), Washington (7.1%), Massachusetts (5.4%), Texas (5.3%), Michigan (4.7%), Connecticut (4.1%), Pennsylvania (4.0%), Illinois (3.7%), and New York (3.6%). When domestic R&D paid for by others is added to the analysis, the total R&D increases by \$57 billion and the state distribution becomes California (23.0%), New Jersey (6.5%), Washington (5.8%), Massachusetts (5.1%), Texas (5.4%), Michigan (4.2%), Connecticut (3.8%), Pennsylvania (3.5%), Illinois (3.3%), and New York (3.9%).

R&D Performance by Size of Company

R&D performance, sales, and employment statistics by size of company are given in table 6. Small companies (5 to 499 employees⁹) performed about one-fifth (21%) of the nation's total business R&D in 2009, accounted for 12% of sales, and employed 17% of those who worked for R&D-performing or R&D-funding companies. Of the 1.4 million

scientists and engineers and their managers, technicians, technologists, and support staff members who worked on business R&D in the United States, about one-third (32%) worked for small companies.

Survey Information and Data Availability

The sample for BRDIS was selected to represent all for-profit, nonfarm companies that have 5 or more domestic employees, that are publicly or privately held, and that perform or fund R&D or engage in innovative activities in the United States. Because the statistics from the survey are based on a sample, they are subject to both sampling and nonsampling errors.

For 2008, a total of 39,553 companies, representing 1,926,012 companies in the population, were selected for the sample; for 2009, a total of 43,002 companies were sampled, representing 2,090,181 companies. The actual numbers of companies that remained within the scope of the survey between sample selection and tabulation were 38,551 for 2008 and 40,300 for 2009. These lower counts represent the number of companies that were determined to be within the scope of the survey after all data collected were processed. Reasons these counts were lower than those originally selected for the sample include mergers, acquisitions, and instances where companies have gone out of business in the interim. Of these in-scope companies, 74.0% were considered to have met the criteria for a complete response to the 2008 survey; 73.1% met the 2009 survey response criteria.

Industry classification was based on the dominant business activity for domestic R&D performance where available. For reporting units that did not report business activity codes for R&D, the classification used for sampling was assigned.

TABLE 3. Sales and employment for companies that performed or funded business R&D, by selected industry: 2008 and 2009

Industry and NAICS code	Domestic net sales ^a (US\$millions)	R&D intensity ^b (%)	Domestic employment ^c (thousands)	
			Total	R&D ^d
	2008			
All industries, 21–33, 42–81 ^e	7,796,340	3.73	18,515	1,425
Manufacturing industries, 31–33	4,681,443	4.35	10,173	850
Chemicals, 325	902,410	6.45	1,396	175
Pharmaceuticals/medicines, 3254	371,760	12.95	654	123
Other 325	530,650	1.91	742	52
Machinery, 333	278,700	3.63	831	60
Computer/electronic products, 334	522,717	11.57	1,292	276
Electrical equipment/appliance/components, 335	108,730	2.89	282	20
Transportation equipment, 336	888,777	5.69	1,807	165
Motor vehicles/parts, 3361–3363	491,483	2.67	757	57
Aerospace products/parts, 3364	372,438	9.92	984	103
Other 336	24,856	1.89	66	5
Manufacturing nec, other 31–33	1,980,109	1.07	4,565	154
Nonmanufacturing industries, 21–23, 42–81	3,114,898	2.79	8,342	575
Information, 51	776,062	4.86	2,662	224
Software publishers, 5112	261,451	10.79	1,317	151
Other 51	514,611	1.84	1,345	73
Finance/insurance, 52	377,279	0.29	497	7
Professional/scientific/technical services, 54	453,444	8.37	1,177	267
Computer systems design/related services, 5415	204,868	5.93	457	100
Scientific R&D services, 5417	136,105	13.16	259	94
Other 54	112,471	7.02	461	73
Nonmanufacturing nec, other 21–23, 42–81	1,508,113	0.68	4,006	77
	2009			
All industries, 21–33, 42–81 ^e	7,407,583	3.81	17,788	1,424
Manufacturing industries, 31–33	4,295,464	4.54	9,882	850
Chemicals, 325	812,609	6.56	1,287	157
Pharmaceuticals/medicines, 3254	339,730	13.23	538	110
Other 325	472,879	1.77	749	47
Machinery, 333	226,828	4.03	799	65
Computer/electronic products, 334	531,674	11.37	1,268	260
Electrical equipment/appliance/components, 335	98,048	3.40	320	25
Transportation equipment, 336	813,827	5.94	1,748	167
Motor vehicles/trailers/parts, 3361–3363	442,988	D	753	55
Aerospace products/parts, 3364	331,630	10.42	862	89
Other 336	39,209	D	133	23
Manufacturing nec, other 31–33	1,812,478	1.13	4,460	176
Nonmanufacturing industries, 21–23, 42–81	3,112,119	2.80	7,906	574
Information, 51	742,392	4.55	1,795	206
Software publishers, 5112	262,131	10.07	493	137
Other 51	480,261	1.54	1,302	69
Finance/insurance, 52	746,432	0.26	1,115	22
Professional/scientific/technical services, 54	455,129	9.88	1,721	307
Computer systems design/related services, 5415	185,287 i	6.78 i	756	117
Scientific R&D services, 5417	95,430	18.10	234	85
Other 54	174,412	8.67	731	105
Nonmanufacturing nec, other 21–23, 42–81	1,168,166	0.56	3,275	39

D = suppressed to avoid disclosure of confidential information; i = >50% of value imputed.

NAICS = North American Industry Classification System; nec = not elsewhere classified.

^a Dollar values for goods sold or services rendered by companies to customers outside the company, including the federal government, less such items as returns, allowances, freight charges, and excise taxes. Excludes intracompany transfers and sales by foreign subsidiaries, but includes transfers to foreign subsidiaries and export sales to foreign companies.

^b R&D intensity = domestic R&D/domestic net sales.

^c Data recorded on March 12 represent employment figures for the year.

^d Includes scientists and engineers and their managers, as well as technicians, technologists, and support staff.

^e Includes companies that reported worldwide R&D expense or worldwide R&D costs funded by others; see "Survey Information and Data Availability" for more information.

NOTES: Detail may not add to total because of rounding. Industry classification was based on dominant business code for domestic R&D performance where available. For companies that did not report business codes, classification used for sampling was assigned. Excludes data for federally funded research and development centers.

SOURCE: National Science Foundation/National Center for Science and Engineering Statistics, Business R&D and Innovation Survey: 2008 and 2009.

TABLE 4. Funds spent for business R&D performed in the United States, by source of funds and state: 2008
(Millions of U.S. dollars)

State	All R&D	Paid for by the company	Paid for by others	State	All R&D	Paid for by the company	Paid for by others
United States ^a	290,680	232,505	58,176	Montana	148	125	23 e
Alabama	3,099	922	2,177	Nebraska	561	464	97
Alaska	69	52 e	17 e	Nevada	677	612	65 e
Arizona	5,232	3,268	1,964 i	New Hampshire	2,169	876	1,293
Arkansas	443	399	44 e	New Jersey	19,054	17,331	1,723
California	67,532	54,231	13,301	New Mexico	735	326	409
Colorado	4,019	3,396	623	New York	11,455	9,061	2,394 i
Connecticut	10,518	8,938	1,580	North Carolina	6,246	4,903	1,343
Delaware	D	1,441	D	North Dakota	303	218	85
District of Columbia	571	155	416 i	Ohio	7,405	5,367	2,038
Florida	4,178	3,009	1,169	Oklahoma	595	521	74 e
Georgia	3,344	2,501	843 i	Oregon	4,074	3,913	161 e
Hawaii	269	176	93	Pennsylvania	9,735	8,783	952
Idaho	961	786	175	Rhode Island	538	489	49
Illinois	8,900	7,984	916	South Carolina	1,221	1,125	96 e
Indiana	4,991	4,375	616	South Dakota	133	98	35
Iowa	1,509	1,041	468	Tennessee	1,608	1,451	157 e
Kansas	1,600	1,111	489	Texas	16,166	12,830	3,336
Kentucky	933	879	54 e	Utah	1,945	1,326	619
Louisiana	411	303 e	108 e	Vermont	422	380	42
Maine	308	253	55	Virginia	6,142	2,856	3,286 i
Maryland	4,333	2,327	2,006	Washington	13,876	12,724	1,152
Massachusetts	15,028	12,625	2,403	West Virginia	334	272	62
Michigan	13,742	12,105	1,637	Wisconsin	3,798	3,277	521
Minnesota	5,728	5,327	401	Wyoming	63	52 e	11 e
Mississippi	252	179	73	Undistributed funds ^b	15,349	12,482	2,867 i
Missouri	D	2,857	D				

D = data withheld to avoid disclosing operations of individual companies; e = more than 50% of the cell value is imputed due to raking of state data; i = more than 50% of the cell value is imputed due to reasons other than raking of state data.

^a Includes companies that reported worldwide R&D expense or worldwide R&D costs funded by others; see "Survey Information and Data Availability" for more information.

^b Includes data reported on Form BRDI-1 not allocated to a specific state. Data reported on Form BRDI-1A, the questionnaire sent to small companies or companies new to the survey, were allocated to the state in the address on the company's survey form, which is usually the company's headquarters.

NOTES: Detail may not add to totals because of rounding. Excludes data for federally funded research and development centers.

SOURCE: National Science Foundation/National Center for Science and Engineering Statistics, Business R&D and Innovation Survey: 2008.

In addition to the information and statistics on domestic R&D performance presented herein, BRDIS offers a wealth of data on other aspects of R&D performance and funding, intellectual property (IP), and innovation. Indicated in table 7 are the areas covered by the 2008 and 2009 cycles of BRDIS.

Detailed information about the BRDIS samples and methodology will be available in the forthcoming survey description at <http://www.nsf.gov/statistics/survey.cfm>. Copies of the BRDIS questionnaires and comparisons of BRDIS with its predecessor, the Survey of Industrial Research and Development, are available at <http://www.nsf.gov/statistics/srvyindustry/about/brdis/>.

www.nsf.gov/statistics/srvyindustry/about/brdis/. The full set of detailed statistical tables, relative standard errors, and imputation rates from the 2008 and 2009 cycles of BRDIS will be available in the report *Business R&D and Innovation: 2008–09*. Individual detailed tables from these surveys may be available in advance

TABLE 5. Funds spent for business R&D performed in the United States, by source of funds and state: 2009
(Millions of U.S. dollars)

State	All R&D	Paid for by the company	Paid for by others	State	All R&D	Paid for by the company	Paid for by others
United States ^a	282,393	224,920	57,473	Montana	144	123	21 e
Alabama	1,562	609	953 e	Nebraska	602	493	109
Alaska	71	47	24	Nevada	619	510	109 e
Arizona	4,682	2,830	1,852 i	New Hampshire	D	772	D
Arkansas	709	217	492	New Jersey	18,404	16,069	2,335
California	64,939	53,569	11,370	New Mexico	623	257	366 i
Colorado	3,960	3,370	590	New York	10,919	8,036	2,883
Connecticut	10,638	9,128	1,510	North Carolina	5,531	4,672	859
Delaware	2,046	1,343	703	North Dakota	231	216	15 e
District of Columbia	672	207 e	465 e	Ohio	6,811	5,215	1,596
Florida	4,329	2,923	1,406	Oklahoma	509	429	80 e
Georgia	3,905	3,065	840 i	Oregon	4,080	3,890	190
Hawaii	240	180	60	Pennsylvania	9,989	8,951	1,038
Idaho	1,015	746	269	Rhode Island	460	397	63
Illinois	9,188	8,363	825 e	South Carolina	1,254	1,075	179
Indiana	5,220	4,449	771	South Dakota	143	104	39
Iowa	1,943	1,525	418	Tennessee	1,487	1,274	213
Kansas	1,616	1,258	358	Texas	15,307	12,020	3,287
Kentucky	986	886	100 e	Utah	2,083	1,250	833
Louisiana	416	291	125 e	Vermont	418	391	27 e
Maine	530	494	36 e	Virginia	6,159	3,093	3,066 i
Maryland	4,492	2,488	2,004	Washington	16,471	15,968	503
Massachusetts	14,422	12,215	2,207	West Virginia	349	247	102
Michigan	11,999	10,607	1,392	Wisconsin	3,616	3,063	553
Minnesota	6,880	6,133	747 i	Wyoming	47	35 e	12 e
Mississippi	260	180	80	Undistributed funds ^b	7,970	6,111	1,859 i
Missouri	D	3,136	D				

D = data withheld to avoid disclosing operations of individual companies; e = more than 50% of the cell value is imputed due to raking of state data; i = more than 50% of the cell value is imputed due to reasons other than raking of state data.

^a Includes companies that reported worldwide R&D expense or worldwide R&D costs funded by others; see "Survey Information and Data Availability" for more information.

^b Includes data reported on Form BRDI-1 not allocated to a specific state. Data reported on Form BRDI-1A, the questionnaire sent to small companies or companies new to the survey, were allocated to the state in the address on the company's survey form, which is usually the company's headquarters.

NOTES: Detail may not add to totals because of rounding. Excludes data for federally funded research and development centers.

SOURCE: National Science Foundation/National Center for Science and Engineering Statistics, Business R&D and Innovation Survey: 2009.

of the full report. For further information, please contact the author.

Notes

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2. *Company* is defined as a business organization located in the United States, either U.S. owned or a U.S. affiliate of a foreign parent, of one or more establishments under common ownership or

control that performs or funds R&D. All estimates from the survey are subject to both sampling and nonsampling errors (see technical notes in the annual reports at <http://www.nsf.gov/statistics/industry/>). Money amounts in this InfoBrief are expressed in current U.S. dollars and are not adjusted for inflation.

TABLE 6. Funds spent for R&D performed in the United States, sales, and employment, by company size: 2008 and 2009

Company size (domestic employees)	US\$millions				Domestic employment ^f		
	Source of funds				(thousands)		
	All R&D	Paid for by the company	Federal	Other ^a	Domestic net sales ^b	Total	R&D
2008							
All companies ^d	290,680	232,505	36,360	21,815	7,796,340	18,515	1,425
5-24 ^e	14,280	10,333	1,086	2,861	73,151	354	109
25-49	9,626	7,309	886	1,431	74,442	299	64
50-99	9,351	7,248	695	1,408	122,414	462	70
100-249	14,662	12,933	718	1,011	242,803	1,039	106
250-499	10,219	8,572	732	915	225,081	710	61
500-999	11,886	9,673	747	1,466	328,990	669	63
1,000-4,999	46,336	39,010	2,162 i	5,164	1,076,460	2,587	224
5,000-9,999	24,764	20,358	1,168	3,238	902,756	1,464	125
10,000-24,999	48,737	43,049	3,024	2,664	1,542,122	3,903	191
25,000 or more	100,820	74,020	25,142 i	1,658	3,208,120	7,029	411
2009							
All companies ^d	282,393	224,920	39,573 i	17,900	7,407,583	17,788	1,424
5-24	11,794	9,257	1,281	1,256	114,141	429	116
25-49	9,692	7,877	1,032	783	121,182	440	81
50-99	13,282	8,292	4,155	835	138,641	602	99
100-249	12,747	10,459	691	1,597	230,213	853	91
250-499	11,204	8,372	1,677 i	1,155	264,054	721	72
500-999	10,119	8,577	473	1,069	266,201	795	64
1,000-4,999	44,008	38,383	1,612	4,013	984,010	2,349	204
5,000-9,999	21,864	17,585	1,005 i	3,274	636,559	1,603	112
10,000-24,999	51,037	42,191	5,889 i	2,957	1,637,652	2,679	212
25,000 or more	96,645	73,927	21,759 i	959	3,014,931	7,316	374

i = more than 50% of the cell value is imputed.

^a Includes companies located inside and outside the United States, U.S. state government agencies or laboratories, foreign government agencies and laboratories, and all other organizations located inside and outside the United States.

^b Dollar values for goods sold or services rendered by companies to customers outside the company, including the federal government, less such items as returns, allowances, freight charges, and excise taxes. Excludes intracompany transfers and sales by foreign subsidiaries but includes transfers to foreign subsidiaries and export sales to foreign companies.

^c Data recorded on March 12 represent employment figures for the year.

^d Includes companies that reported worldwide R&D expense or worldwide R&D costs funded by others; see "Survey Information and Data Availability" for more information.

^e After the 2008 BRDIS sample was selected and surveyed, an error was identified that resulted in the exclusion of 226,884 single-establishment companies with 5 paid employees from the sample frame. Most of the excluded establishments were classified in industries with low R&D intensities, such as construction, retail trade, and the service sectors. Based on the available information for these small single-establishment companies, their contribution to the 2008 R&D estimates is estimated to be negligible.

NOTES: Detail may not add to total because of rounding. Excludes data for federally funded research and development centers.

SOURCE: National Science Foundation/National Center for Science and Engineering Statistics, Business R&D and Innovation Survey: 2008 and 2009.

3. For information about BRDIS, which was developed and is co-sponsored by the National Science Foundation (NSF) and the U.S. Census Bureau, see NRC 2006, NSB 2010, and NSF 2008. For the preliminary 2008 BRDIS statistics, see NSF 2010a, 2010b, and 2010c.

4. Throughout the text and tables in this InfoBrief, *domestic R&D* refers to busi-

ness R&D performed in the 50 United States and Washington, D.C.

5. *Domestic net sales* is defined as the dollar values for goods sold or services rendered by companies to customers outside the company, including the federal government, less such items as returns, allowances, freight charges, and excise taxes. These values exclude

intracompany transfers and sales by foreign subsidiaries but include transfers to foreign subsidiaries and export sales to foreign companies.

6. *R&D intensity* is a measure of R&D expenditures relative to size, production, financial, or other characteristic for a given R&D-performing unit (e.g., industry, sector, state). For this Info-

TABLE 7. Areas covered by the 2008 and 2009 cycles of the Business R&D and Innovation Survey

Company information
Ownership
Business activities
Measures of R&D activity paid for by the company
Domestic and worldwide sales, revenue, and R&D activity
Company-funded R&D by business activity, type of costs, and location
Projected R&D costs
Capital expenditures for R&D (buildings, software, and equipment)
Measures related to R&D management and strategy
Character of work (basic research, applied research, and development)
R&D applications and R&D in new business areas
R&D relationships with others outside the company
Measures of company R&D activity funded by others
Funds for worldwide and domestic R&D activity
R&D funded by others by business activity, type of organization, type of cost, state, and location (domestic vs. foreign)
Measures of R&D employment
R&D headcount (domestic and worldwide) by occupation and sex
Number of U.S. R&D employees working under a visa (H-1B, L-1, etc.)
R&D full-time equivalent counts
Measures of intellectual property (IP), technology transfer, and innovation
Participation in activities to introduce new or significantly improve existing goods, services, methods of production and distribution, or support systems
Selected patenting and licensing information
Participation in specific technology transfer activities, and importance of types of IP protection

SOURCE: National Science Foundation/National Center for Science and Engineering Statistics, Business R&D and Innovation Survey: 2008 and 2009.

Brief and in the BRDIS detailed statistical tables, R&D intensity is calculated by dividing the cost of the domestic R&D performed by the company by the domestic sales of the company.

7. This InfoBrief focuses on selected industries. Statistics for a fuller array of 4-digit NAICS industries are available in the detailed statistical tables.

8. This figure includes R&D scientists and engineers and their managers, as well as technicians, technologists, and support staff. Employment statistics in this InfoBrief are head counts. Full-time equivalent statistics are available in the detailed statistical tables.

9. BRDIS does not include companies with fewer than 5 employees.

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