

Table A-27. Funds for performance of and number of companies that performed industrial basic research, applied research, and development in the U.S., by industry and size of company, by source of funds: 2001

Industry and size of company	NAICS codes	Total				Basic research			
		Number of companies ¹	Total ²	Federal ²	Company	Number of companies ¹	Total ²	Federal ²	Company
			[In millions of dollars]				[In millions of dollars]		
Distribution by industry:									
All industries	21-23, 31-33, 42, 44-81	33,263	198,505	16,899	181,606	5,606	7,911	754	7,157
Manufacturing	31-33	16,817	120,705	11,484	109,221	2,744	4,191	249	3,942
Food	311	969	1,819	0	1,818	256	111	0	111
Beverage and tobacco products	312	12	152	0	152	1	(D)	0	(D)
Textiles, apparel, and leather	313-16	514	(D)	(D)	255	62	26	0	26
Wood products	321	177	182	0	181	5	2	0	2
Paper, printing and support activities	322, 323	495	(D)	(D)	2,664	155	42	3	39
Petroleum and coal products	324	27	(D)	(D)	1,057	16	15	0	15
Chemicals	325	1,877	17,892	180	17,713	369	(D)	(D)	1,639
Basic chemicals	3251	523	1,876	42	1,835	226	(D)	(D)	191
Resin, synthetic rubber, fibers, and filament	3252	66	(D)	(D)	2,745	12	215	0	215
Pharmaceuticals and medicines	3254	347	10,137	0	10,137	9	1,068	0	1,068
Other chemicals	325 minus (3251-52, 3254)	941	(D)	(D)	2,996	122	(D)	(D)	166
Plastics and rubber products	326	811	(D)	(D)	2,245	38	64	0	64
Nonmetallic mineral products	327	464	990	11	978	98	196	(D)	(D)
Primary metals	331	427	485	6	479	110	20	0	20
Fabricated metal products	332	1,393	1,599	54	1,545	201	35	0	35
Machinery	333	2,489	6,404	67	6,337	390	90	0	90
Computer and electronic products	334	3,230	47,079	5,848	41,232	308	(D)	(D)	860
Computers and peripheral equipment	3341	238	(D)	(D)	3,165	3	4	0	4
Communications equipment	3342	580	15,507	298	15,209	22	(D)	(D)	201 (S)
Semiconductor and other electronic components	3344	735	14,358	148	14,210	159	283	0	283
Navigational, measuring, electromedical, and control instruments	3345	1,538	12,947	5,382	7,565	119	(D)	(D)	357
Other computer and electronic products	334 minus (3341-42, 3344-45)	139	(D)	(D)	1,083	4	14	0	14
Electrical equipment, appliances, and components	335	1,012	4,980	301 (S)	4,680	61	79	24	56 (S)
Transportation equipment	336	1,015	25,965	4,961	21,004	413	(D)	(D)	710
Motor vehicles, trailers, and parts	3361-63	648	(D)	(D)	16,089	358	(D)	(D)	398
Aerospace products and parts	3364	115	7,868	3,785	4,083	51	(D)	(D)	301
Other transportation equipment	336 minus (3361-64)	252	(D)	(D)	832 (S)	5	11	0	11
Furniture and related products	337	324	301	0	301	30	4	0	4
Miscellaneous manufacturing	339	1,580	6,606	25	6,581	232	78	1	77
Medical equipment and supplies	3391	737	(D)	(D)	5,903	120	64	1	63
Other miscellaneous manufacturing	339 minus (3391)	843	(D)	(D)	678	112	14	0	14
Other manufacturing	31-33 minus (311-16, 321-27, 331-37, 339)	--	--	--	--	--	--	--	--

See explanatory information and SOURCE at end of table.

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		Number of companies ¹	Total ²	Federal ²	Company	Number of companies ¹	Total ²	Federal ²	Company
			[In millions of dollars]				[In millions of dollars]		
Distribution by industry:									
Nonmanufacturing	21-23, 42, 44-81	16,446	77,799	5,415	72,384	2,862	3,721	506	3,215
Mining, extraction, and support activities	21	68	(D)	(D)	846	6	15	0	15
Utilities	22	85	133	19	114	3	0	0	0
Construction	23	399	320	1	320	100	29	0	29
Trade	42, 44, 45	4,735	24,372	88	24,284	1,117	(D)	(D)	703
Transportation and warehousing	48, 49	362	1,848	72	1,776	2	(D)	0	(D)
Information	51	1,850	(D)	(D)	17,259	517	(D)	(D)	280
Publishing	511	1,279	13,760	44	13,716	262	(D)	(D)	187
Newspaper, periodical, book, and database	5111	152	649	0	649	0	0	0	0
Software	5112	1,127	13,111	44	13,067	262	(D)	(D)	187
Broadcasting and telecommunications	513	361	(D)	(D)	1,270	252	(D)	0	(D)
Radio and television broadcasting	5131	51	(D)	0	(D)	0	0	0	0
Telecommunications	5133	310	(D)	(D)	1,101	252	(D)	0	(D)
Other broadcasting and telecommunications	513 minus (5131, 5133)	1	(D)	0	(D)	0	0	0	0
Other information	51 minus (511, 513)	209	(D)	(D)	2,273	3	(D)	0	(D)
Finance, insurance, and real estate	52, 53	338	(D)	(D)	2,424	11	(D)	(D)	9
Professional, scientific, and technical services	54	5,840	27,704	5,065	22,640	781	1,588	440	1,148
Architectural, engineering, and related services	5413	938	3,386	1,021	2,365	47	(D)	(D)	49
Computer systems design and related services	5415	2,516	9,154	498	8,656	200	(D)	(D)	181
Scientific R&D services	5417	1,576	14,244	3,352	10,893	438	1,246	382	864
Other professional, scientific, and technical services	54 minus (5413, 5415, 5417)	811	920	194	726	97	54	0	54
Management of companies and enterprises	55	375	381	0	381	1	(D)	0	(D)
Health care services	621-23	1,294	1,149	29	1,120	53	(D)	(D)	659
Other nonmanufacturing	56, 61, 624, 71, 72, 81	1,099	1,259	38	1,221	271	74	21	53

See explanatory information and SOURCE at end of table.

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Industry and size of company		Total				Basic research			
		Number of companies ¹	Total ²	Federal ²	Company	Number of companies ¹	Total ²	Federal ²	Company
			[In millions of dollars]				[In millions of dollars]		
Distribution by size of company: [Number of employees]									
Total		33,263	198,505	16,899	181,606	5,606	7,911	754	7,157
5 to 24		14,681	4,828	653	4,175	3,063	259	27	232
25 to 49		5,036	3,750	201	3,548	919	230	21	209
50 to 99		5,030	8,202	548	7,654	468	787	51	736
100 to 249		4,261	12,916	903	12,012	559	515	148	367
250 to 499		1,504	8,702	560	8,143	150	522	52	470
500 to 999		1,194	10,564	627	9,936	224	(D)	(D)	569
1,000 to 4,999		1,039	26,748	608	26,140	135	(D)	(D)	1,037
5,000 to 9,999		244	17,487	1,651	15,836	38	379	14	365
10,000 to 24,999		156	27,065	904	26,161	25	(D)	(D)	1,138
25,000 or more		118	78,244	10,243	68,001	26	2,321	288	2,033

See explanatory information and SOURCE at end of table.

Table A-27. Funds for performance of and number of companies that performed industrial basic research, applied research, and development in the U.S., by industry and size of company, by source of funds: 2001

Industry and size of company	NAICS codes	Applied research				Development			
		Number of companies ¹	Total ²	Federal ²	Company	Number of companies ¹	Total ²	Federal ²	Company
			[In millions of dollars]				[In millions of dollars]		
Distribution by industry:									
All Industries	21-23, 31-33, 42, 44-81	10,138	43,486	3,603	39,883	21,397	147,108	12,542	134,566
Manufacturing	31-33	4,946	26,438	1,065	25,373	12,191	90,076	10,169	79,907
Food	311	326	415	0	415	660	1,293	0	1,293
Beverage and tobacco products	312	5	30	0	30	9	(D)	0	(D)
Textiles, apparel, and leather	313-16	76	36	0	36	333	(D)	(D)	193
Wood products	321	69	57	0	57	70	123	0	123
Paper, printing and support activities	322, 323	111	761	14	747	368	(D)	(D)	1,878
Petroleum and coal products	324	21	493	1	492	17	(D)	(D)	550
Chemicals	325	873	(D)	(D)	4,814	1,470	11,378	119	11,259
Basic chemicals	3251	244	(D)	(D)	552	391	(D)	(D)	1,091
Resin, synthetic rubber, fibers, and filament	3252	61	(D)	(D)	1,149	63	(D)	(D)	1,381
Pharmaceuticals and medicines	3254	133	2,329	0	2,329	240	6,740	0	6,740
Other chemicals	325 minus (3251-52, 3254)	434	(D)	(D)	784	776	(D)	(D)	2,047
Plastics and rubber products	326	135	(D)	(D)	174	453	2,006	0	2,006
Nonmetallic mineral products	327	413	556	6	550	360	238	(D)	(D)
Primary metals	331	230	(D)	(D)	194	218	(D)	(D)	265
Fabricated metal products	332	268	265	0	265	1,129	1,299	54	1,245
Machinery	333	620	(D)	(D)	1,121	1,811	(D)	(D)	5,125
Computer and electronic products	334	1,006	10,284	160	10,124	2,682	(D)	(D)	30,250
Computers and peripheral equipment	3341	33	(D)	(D)	877 (S)	195	(D)	(D)	2,284
Communications equipment	3342	168	(D)	(D)	2,617	427	12,630	239	12,391
Semiconductor and other electronic components	3344	280	5,157	0	5,157	664	8,918	148	8,770
Navigational, measuring, electromedical, and control instruments	3345	515	1,505	111	1,394	1,313	(D)	(D)	5,815
Other computer and electronic products	334 minus (3341-42, 3344-45)	10	79	0	79	83	(D)	(D)	990
Electrical equipment, appliances, and components	335	123	(D)	(D)	703	383	(D)	(D)	3,920 (S)
Transportation equipment	336	214	5,855	748	5,107	940	(D)	(D)	15,187
Motor vehicles, trailers, and parts	3361-63	72	4,135	13	4,122	586	(D)	(D)	11,569
Aerospace products and parts	3364	103	1,639	735	904	106	(D)	(D)	2,877
Other transportation equipment	336 minus (3361-64)	40	80	0	80	248	(D)	(D)	741
Furniture and related products	337	20	9	0	9	312	289	0	289
Miscellaneous manufacturing	339	435	(D)	(D)	535	975	(D)	(D)	5,970
Medical equipment and supplies	3391	168	(D)	(D)	433	578	(D)	(D)	5,408
Other miscellaneous manufacturing	339 minus (3391)	267	(D)	(D)	103	397	(D)	(D)	562
Other manufacturing	31-33 minus (311-16, 321-27, 331-37, 339)	--	--	--	--	--	--	--	--

See explanatory information and SOURCE at end of table.

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			[In millions of dollars]				[In millions of dollars]		
Distribution by industry:									
Nonmanufacturing	21-23, 42, 44-81	5,193	17,048	2,536	14,512	9,207	57,032	2,373	54,659
Mining, extraction, and support activities	21	62	(D)	(D)	171	65	(D)	(D)	661
Utilities	22	63	(D)	(D)	22	32	(D)	(D)	92
Construction	23	66	129	0	129	191	162	0	162
Trade	42, 44, 45	1,548	2,890	35	2,854	2,326	(D)	(D)	20,726
Transportation and warehousing	48, 49	55	(D)	(D)	404	109	(D)	(D)	(D)
Information	51	677	(D)	(D)	2,356	1,567	14,709	85	14,624
Publishing	511	414	(D)	(D)	1,975	1,156	11,594	39	11,555
Newspaper, periodical, book, and database	5111	5	311	0	311	145	338	0	338
Software	5112	409	(D)	(D)	1,664	1,011	11,256	39	11,217
Broadcasting and telecommunications	513	255	120	0	120	309	(D)	(D)	(D)
Radio and television broadcasting	5131	0	0	0	0	1	(D)	0	(D)
Telecommunications	5133	255	120	0	120	307	(D)	(D)	(D)
Other broadcasting and telecommunications	513 minus (5131, 5133)	0	0	0	0	1	(D)	0	(D)
Other information	51 minus (511, 513)	8	261	0	261	102	(D)	(D)	(D)
Finance, insurance, and real estate	52, 53	15	72	6	66	321	2,356	7	2,349
Professional, scientific, and technical services	54	2,189	9,970	2,423	7,547	3,829	16,146	2,202	13,944
Architectural, engineering, and related services	5413	443	1,086	363	723	671	(D)	(D)	1,593
Computer systems design and related services	5415	641	2,839 (S)	92	2,746 (S)	1,833	(D)	(D)	5,729
Scientific R&D services	5417	745	5,716	1,773	3,943	979	7,282	1,197	6,085
Other professional, scientific, and technical services	54 minus (5413, 5415, 5417)	359	330	194	136	346	537	0	537
Management of companies and enterprises	55	50	89	0	89	73	(D)	0	(D)
Health care services	621-23	133	378	27	351	162	(D)	(D)	110
Other nonmanufacturing	56, 61, 624, 71, 72, 81	336	525	3	522	531	661	14	646

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Industry and size of company	Applied research				Development				
	Number of companies ¹	Total ²	Federal ²	Company	Number of companies ¹	Total ²	Federal ²	Company	
		[In millions of dollars]				[In millions of dollars]			
Distribution by size of company: [Number of employees]									
Total	10,138	43,486	3,603	39,883	21,397	147,108	12,542	134,566	
5 to 24	4,395	1,856	321	1,535	8,551	2,713	305	2,408	
25 to 49	1,746	(D)	(D)	979	3,683	(D)	(D)	2,360	
50 to 99	1,233	1,883	190	1,692	3,444	5,532	307	5,225	
100 to 249	1,293	3,165	167	2,998	2,884	9,236	588	8,648	
250 to 499	460	1,962	247	1,715	947	6,218	261	5,957	
500 to 999	405	2,387	229	2,158	829	(D)	(D)	7,210	
1,000 to 4,999	413	5,718	204	5,514	718	(D)	(D)	19,589	
5,000 to 9,999	83	5,236	1,233	4,003	158	11,872	403	11,469	
10,000 to 24,999	57	(D)	(D)	6,969	96	18,947	893	18,054	
25,000 or more	53	13,210	890 (S)	12,320	87	62,712	9,066	53,647	

¹ The estimates in the "number of companies" columns are the numbers of companies that actually distributed total R&D among the three character-of-work categories (basic research, applied research, and development) when responding to the survey. During subsequent statistical processing, when undistributed amounts of R&D were allocated among the three categories for this table, it was not possible to similarly allocate the associated number of companies among the three categories. For more information, see the technical notes in Survey of Industrial Research and Development Methodology: 2001 at <http://www.nsf.gov/sbe/srs/sird/start.htm> and Table B-7 for the amount of undistributed R&D and the number of companies that reported undistributed R&D.

² Beginning with 2001, statistics for total and Federally funded industrial R&D exclude data for Federally Funded Research and Development Centers (FFRDCs).

KEY: (D) = Data have been withheld to avoid disclosing operations of individual companies.
(S) = Indicates imputation of more than 50 percent.
(-) = Indicates data not collected.

NOTE: The company R&D in this table is the industrial R&D performed within company facilities funded from all sources except the Federal Government. The funds predominantly are the company's own, but also include funds from outside organizations such as other companies, research institutions, universities and colleges, nonprofit organizations, and State governments. Excluded from this table are company-funded R&D not performed within the company (e.g., R&D contracted out to other organizations) and company-funded R&D not performed within the 50 U.S. states or D.C. (e.g., R&D not performed on U.S. soil by foreign subsidiaries or other foreign organizations).

Starting in 1999, the frame from which the statistical samples were selected was divided into two partitions based on total company employment. In the manufacturing sector, companies with employment of 50 or more were included in the large company partition. In the nonmanufacturing sector, companies with employment of 15 or more were included in the large company partition. Companies in the respective sectors with employment below these values, but with at least 5 employees, were included in the small company partition. The purpose of partitioning the sample this way was to reduce the variability in industry estimates largely attributed to the random year-to-year selection of small companies by industry and the high sampling weights that sometimes were assigned to them. Because of this, in prior reports detailed industry statistics were published only from the large company partition; detailed industry statistics from the small company partition were not. Statistics from the small company partition were included in the manufacturing, nonmanufacturing, and all industries totals, but were aggregated into "small manufacturing" and "small nonmanufacturing" classifications instead of being included in their respective industry classifications. For this report, this practice was evaluated and discontinued because it was determined that the data for small companies are more useful if they are included in their respective industries even given the sampling concerns described above. Consequently, the "small manufacturing" and "small nonmanufacturing" stublines are no longer present. Statistics for the firms in the small company classifications are not shown separately in this table, but are included in the manufacturing, nonmanufacturing, and all industries totals. For more information, see the technical notes in Survey of Industrial Research and Development Methodology: 2001 at <http://www.nsf.gov/sbe/srs/sird/start.htm>.

SOURCE: National Science Foundation/Division of Science Resources Statistics, Survey of Industrial Research and Development: 2001