

TABLE 28-B

## Companies with domestic R&amp;D paid for and performed by the company, by industry, company size, and state (N-Z): 2017

(Millions of U.S. dollars)

Industry and company size	NAICS code	Companies, U.S. total <sup>a</sup> (number)	United States	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	Undistributed <sup>b</sup>											
All industries	21-23, 31-33, 42-81	19,514	339,036	470	439	754	13,228	298	13,430	7,502	276	6,697	775	7,426	9,576	657	1,212	189	1,172	17,752	2,171	241	2,659	20,820	182	4,777	82	i	1,561										
Manufacturing industries	31-33	11,581	216,155	188	304	517	9,971	213	6,953	4,897	142	5,641	469	6,392	8,127	619	873	161	970	10,999	1,204	166	1,474	5,046	139	3,412	65	i	898										
Food	311	554	4,453	i 60	1 e	* e	278	* e	37	115	1 e	156	14	11	70	2	1 e	4	28	25	4	5	10	33	* e	98	* e	29											
Beverage and tobacco products	312	70	968	* e	* e	* e	* e	* e	245	46	* e	* e	* e	1 e	* e	* e	* e	* e	5	135	* e	* e	105	29	* e	1 i	* e	47											
Textile, apparel, and leather products	313-16	219	919	* e	* e	* e	13	* e	30	68	i	56	i	* e	78	* e	* e	4	4	68	* e	2	7	i	3	1	1 e	16	* e	21	* e	15							
Wood products	321	75	170	* e	* e	* e	2	* e	1	i	3	10	* e	* e	4	1	i	3	7	* e	2	12	1	* i	9	13	* e	3	* e	7									
Paper	322	89	1,292	3	* e	1	14	* e	9	27	0	27	6	*	44	3	40	* e	38	16	1	2	17	6	* e	392	0		8										
Printing and related support activities	323	156	218	*	* e	1	1	i	* i	11	28	* e	14	* e	3	6	* e	1	i	* i	9	1	e	1	i	* e	* e	4	* e	29	* e	12							
Petroleum and coal products	324	64	301	* e	1	* e	42	* e	* e	* e	0	6	16-75	16	17	* e	1	0	* e	15	* e	0	* e	* e	* e	2	0		0-37										
Chemicals	325	1,730	63,285	28	14	i	16	7,787	17	2,842	1,984	10	2,270	46	66	5,163	58	65	64	313	i	774	157	28	465	1,230	111	373	7		142								
Basic chemicals	3251	253	2,393	4	* e	2	188	i	3	e	256	i	112	i	* e	271	12	7	132	2	12	54	239	i	122	6	0	129	16	8	11	* e	22						
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	125	612	* e	* e	2	i	5	0	43	7	0	280	*	7	34	2	16	0	14	61	* i	* e	1	i	2	8	6	0		0-27								
Pesticide, fertilizer, and other agricultural chemicals	3253	60	1,092	2	6	i	*	0-115	* e	1	26	i	1	i	9	i	1	e	1	i	9	i	0	1	i	6	2	i	7	i	2	* e	10	6	i	* e	66	0	1
Pharmaceuticals and medicines	3254	755	55,229	21	7	8	7,154	13	2,302	1,783	9	293	29	45	4,866	50	19	3	51	517	148	0-29	324	1,203	0-97	151	7		0-61										
Soap, cleaning compound, and toilet preparation	3256	223	2,488	* e	* e	1	328	i	* e	186	i	26	0	1,144	* e	* e	6	1	e	3	* e	5	37	* e	0-29	*	1	e	* e	127	0		0-61						
Paint, coating, adhesive, and other chemicals	3255, 3259	315	1,471	* e	1	3	0-115	* e	55	30	0	273	3	6	116	3	13	* e	4	31	1	0-29	e	2	1	e	0-97	11	* e	60									
Plastics and rubber products	326	624	3,637	11	3	4	e	27	* e	83	66	2	312	43	10	247	12	176	4	32	366	5	* e	28	8	e	10	120	* e	71									
Nonmetallic mineral products	327	175	1,303	* e	* e	* e	31	* e	792	i	50	i	* e	25	1	e	3	182	i	* e	5	* e	4	10	1	* e	1	e	6	* e	5	* e	12						
Primary metals	331	176	741	* e	*	5	1	* e	4	15	* e	37	*	13	114	* e	10	* e	5	16	2	1	i	11	2	1	190	* e	11										
Fabricated metal products	332	1,168	2,099	11	2	e	12	67	1	e	48	43	8	178	18	37	93	3	27	4	21	142	15	* e	18	78	1	e	118	* e	54								
Machinery	333	1,662	12,257	31	13	41	288	1	e	262	338	77	296	145	455	227	13	59	14	40	845	23	15	38	134	5	e	655	2	i	225								
Agricultural implement	33311	181	1,511	27	0	* e	* e	* e	1	e	62	21	11	1	e	5	e	2	e	0	1	7	3	7	e	1	i	* e	* e	1	e	1	i	45	* e	0-226			
Semiconductor machinery	333242	33	3,228	0	0	* i	10	0	0-229	0	0	6	0	0	0-451	14	0	0	0	*	0-680	0	0	* i	0	0	0	0	0	0	0	0	0	0	0-226				
Engine, turbine, and power transmission equipment	3336	97	1,921	*	0-14	* e	* e	* e	34	0-277	0-57	e	0-281	0-145	0-451	e	11	* e	21	* e	0-38	67	* e	1	i	8	0-134	* e	110	0	0	0-226							

TABLE 28-B

## Companies with domestic R&amp;D paid for and performed by the company, by industry, company size, and state (N-Z): 2017

(Millions of U.S. dollars)

Industry and company size	NAICS code	Companies, U.S. total <sup>a</sup> (number)	United States	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	Undistributed <sup>b</sup>
Other machinery	other 333	1,352	5,596	4 e	0-14	40	278	1 e	0-229	0-277	0-57	0-281	0-145	0-451	200	13	36	7	0-38	89-773	22	15	29	0-134	4 e	500	2 i	0-226
Computer and electronic products	334	1,726	69,942	27	51	316	709	182	1,165	1,411	18 i	552	37	5,371	959	67	122	61	95	7,682 i	195	62	361	739	3 e	558	2	195
Communications equipment	3342	254	10,972	7	13	98	443	5	298	640	0-19	101	7	52	343	3	20	1	32	581	52	0-4	228	158	1	32	0-2	5-79
Semiconductor and other electronic components	3344	422	27,859	8	2 e	147	97 i	138	405 i	373	0	78	1 e	4,994	230	35	48	33	11	1,929	44	25	10	101	* e	31	* e	1
Navigational, measuring, electromedical, and control instruments	3345	774	10,089	11	23	47	139	33 i	256	244	0-19 i	321 i	29	212	268	23	52	24	49	403	92	35 i	115	261	* e	406	1 e	0-190
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	109	2,545	0	7 i	7 i	24 i	0	92 i	24 i	0	55 i	1	12 i	140	2	10 i	3	39	37 i	10 i	3 i	24 i	5 i	0	35 i	0	0-24
Search, detection, navigation, guidance, aeronautical, and nautical system and instrument	334511	118	3,214	6	5	20	34	27 i	93 i	79	0-19 i	33 i	21	98	39 i	0-22	0-43 i	6 i	1 e	191	43	0-33 i	57	39	0	10	* e	0-190
Other measuring and controlling device	other 3345	547	4,329	5	11	19	82	6	70	140	0-19 e	233	7	102	89	0-22 i	0-43	14	10	175 i	39	0-33	33	217	* e	361	1	0-190
Other computer and electronic products	other 334	275	21,022	1 e	13	25	30	6	206	154	0-19 e	52	* e	113	119	6	1 e	3	3 e	4,768 i	7	0-4	8 e	219	1 e	89 i	0-2 e	0-190
Electrical equipment, appliances, and components	335	709	4,110	1 e	7	26	45	2	78	186	* e	95	9	72	372	5 i	73	3	35	143	16	3	29	48	1 e	171	52 i	13
Transportation equipment	336	807	34,629	15	42	37	119	5	1,006	263	16 i	1,186	73	250	221	2 i	196	6	141	516	450	36 i	297	2,353	6 i	532	* e	13
Automobiles, bodies, trailers, and parts	3361-63	367	21,137	4 e	1 e	14	6	1	309	179	2 e	427	9 e	219	86	* e	120	3 e	128	100	282	* e	0-157	71	1 e	111	* e	0-12
Aerospace products and parts	3364	306	11,903	10	42	18	99	4	696	76	13 i	755	63	30	127	1 i	63	*	7	391	168	35 i	65	2,279	6 i	197-422	* e	2
Aircraft, aircraft engine, and aircraft parts	336411-13	290	11,473	10	42	18	98	4 e	696	76	13 i	751	63	30	127	1 i	63	*	7	390	93	35 i	61	2,278	6 i	197-422	* e	1
Guided missile, space vehicle, and related parts	336414-15, 336419	16	430	0	* i	0	* i	*	0	*	0	4	0	0	0	0	0	0	*	1	75	0	4	1	0	0	0	1
Military armored vehicle, tank, and tank component	336992	7	4	0	0	0	0	0	0	0	0	* i	0	0	0	0	1 i	0	0	0	0	0	0	0	0	0	0	0
Other transportation	other 336	128	1,585	2	* e	5	14	0	1 e	9	1	4	* e	1 e	8	1 i	12	3	7	25	* e	*	74-233	3 e	* e	0-225	* e	0-12
Furniture and related products	337	202	419	* e	* e	* e	5	* e	6	29	* e	4 i	* e	4	11	* e	5	* e	9	6	10	3	11	1	* e	14	* e	11
Miscellaneous	339	1,386	15,410	1 e	169	45	525 i	4 e	296	235	1 e	405	7-53	77	397	447 i	19	1 e	188	288	320	9	73	343	1 e	131	*	4-42

TABLE 28-B

## Companies with domestic R&amp;D paid for and performed by the company, by industry, company size, and state (N-Z): 2017

(Millions of U.S. dollars)

Industry and company size	NAICS code	Companies, U.S. total <sup>a</sup> (number)	United States	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	Undistributed <sup>b</sup>
Medical equipment and supplies	3391	713	13,348	1 e 2	41	499 i 3 e	184	195	1 e 352	8	61	342	46	13	1 e 183	264	213	1 e 35	247	1 e 99	*	5						
Other miscellaneous manufacturing	3399	672	2,062	1 e 168	4	25	1 e 113	40 i * e	53	0-44 e 16	55	401 i 6	1 e 5	24	107	8	38 i 96	1 e 33	*	e 0-37								
Nonmanufacturing industries	21-23, 42-81	7,935	122,881	282	134	237	3,257	86	6,477	2,605	134	1,056	306	1,034	1,448	38	340	27	202	6,753	967	75	1,184	15,774	43	1,365	16	662
Mining, extraction, and support activities	21	104	2,841	* e 5	* e	135-302	4 e 1 e	* e 3 e	2 e 67 i * e	4 e * e	* e * e	1 e 2,190	11	* e 1 e	1 e 3 e	1 e 7 e	0-48											
Utilities	22	36	281	0	*	*	3	* i 10	1 i 17	34	*	2	13	0	6	0	0	1	*	0	2	6	6	*	1	2		
Wholesale trade	42	662	503	1 e 1 e	1 e	33 i * e	25	6 e 1 e	22 i 3 i 2 e	8 e * e	4 i * e	14 i 36 i	14 i * e	5	6 e * e	7 i * e	30											
Electronic shopping and electronic auctions	454111-12	64	9,318	* e 1 i	* e	0-167	* e 6	21	* e 1 e	* e 53	1 e * e	3 i * e	* e 210	69-233 i * e	* e 67	* e * e	* e *											
Transportation and warehousing	48-49	80	1,116	4	35	* i * e	* e 12	10	* e 22	* e 13	22	* e * e	* e 17	22	* e * e	10	522	* e * e	* e *	4								
Information	51	2,486	78,898	238	44 e 145	1,684 i 50	3,726	1,371	89	535	79	736	746	15	243	16	81 e 1,670	612	29	686	14,087	25	832	4 e 26				
Publishing	511	1,056	33,276	17	19	90	258	15	399	937	85	236	17	360	339	6 e 48	9	33	627	360	21	232	11,049	18	713	2	5	
Newspaper, periodical, book, and directory publishers	5111	36	74	* e * e	* e	1 e * e	2 e * e	* e * e	* e * e	3 i * e	* e * e	* e 9	* e * e	* e * e	* e * e	3	* e * e	* e 3	* e * e	2								
Software publishers	5112	1,020	33,201	17	19	89	258	15	397	936	85	235	17	360	336	6 e 48	9	33	618	360	21	232	11,049	18	710	2	4	
Telecommunications	517	101	3,643	* e * e	* e	1,156 i * e	334-465	8	* e 2	* 10	39	* e 8	* e 4	167 i 0-38	* e 84	408	* e 15	* e 0-20										
Data processing, hosting, and related services	518	1,114	16,037	201	21 e 50	220	0-36	597	332	4 e 290	12 e 253	272	8	136	7	37 e 709	216	7 e 250	795	6	85	1 e 0-20						
Other information	other 51	216	25,943	20	5	5	50	0-36	2,264-2,397	95	* e 7	50	113	96	1	52	1 e 6	167	0-38	* e 119	1,835	* e 18	* e 2					
Finance and insurance	52	86	7,565	12	1	1	282	1	1,082	385	* e 105	1 e 2	268	9	12	* e 5	400	12	* e 15	30	* e 261	* e 392						
Real estate and rental and leasing	53	90	708	5	2	* e 7 e	* e 15	3 e * e	9	1 e 3 i	4 e * e	2 i * e	4 e 14 e	1 e * e	7	109	* e 7	* e 1										
Lessors of nonfinancial intangible assets (except copyrighted works)	533	55	138 i	* e * e	0	6 e * e	3 e 3 e	* e 4 e	1 e 3 i	2 e * e	2 i * e	4 e 12 e	1 e * e	2 e * e	* e * e	1 e 0	*											
Other real estate and rental and leasing	other 53	35	570	5	2	* e 1	* e 12	1	* e 5	* e * e	2	* e * e	* e * e	* e 2 e	* e * e	5	109	* e 6	* e 1									
Professional, scientific, and technical services	54	3,679	18,972	15	28	87	937	30	1,556	754	23	288	149	192	313	8	52	9	68	1,917	84	45	373	498	8	133	2 e 77	
Architectural, engineering, and related services	5413	1,124	1,561	7	20	12	30	3 e 60	21	2 e 21	6 e 88	55	2 e 5 e	5	14	175	24	4	40	53	1 e 40	1 e 22						
Computer systems design and related services	5415	1,372	11,669	6	6	17	131	15	1,252	655	17	189	89	66	99	4	25	4	35	1,363	31	40	230	319	4	43	* e 17	
Scientific research and development services	5417	689	2,817	*	*	41	138	3 e 80	61	4	44	3	23	106	2 i 2 i	0	8	115	6 i 1 i	13	61	3	19	* i 8				

TABLE 28-B

## Companies with domestic R&amp;D paid for and performed by the company, by industry, company size, and state (N-Z): 2017

(Millions of U.S. dollars)

Industry and company size	NAICS code	Companies, U.S. total <sup>a</sup> (number)	United States	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	Undistributed <sup>b</sup>			
Biotechnology research and development	541711	160	795	*	* e	5	15	* e	27	24	* e	4	0	* i	27	1 i	* i	0	3	6	2 i	* i	1 e	13	*	12	0	2			
Physical, engineering, and life sciences (except biotechnology) research and development	541712	520	1,936	* e	*	36	121	3 e	53	35	4	40	3	23	79	1 i	2 i	0	5	109	5 i	1 i	12	48	3	7	* i	5			
Social sciences and humanities research and development	541720	9	86	0	0	1	2	0	* i	2	0	0	0	0	0	0	0	0	0	0	0	0	0	*	0	0	0	*			
Other professional, scientific, and technical services	other 54	493	2,925	2 i	2 e	16	638	8	165	16	* e	34	51	14	53	1 e	21	* e	11	264	22	*	90	65	1 e	31	* e	30			
Health care services	621-23	108	958	* e	6	2	13	* e	2	3	* e	8	* e	14	27	i	* e	4	* e	* e	3 i	4	* e	7	51	* e	79	* e	87		
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	545	1,722	5	11	1	0-155	1 e	44	51	1 e	30	6	17	43	5	14	1	10	289	0-155 i	* e	78	398	1 e	44	2	0-48			
All companies (number of domestic employees)	-	19,514	339,036	470	439	754	13,228	298	13,430	7,502	276	6,697	775	7,426	9,576	657	1,212	189	1,172	17,752	2,171	241	2,659	20,820	182	4,777	82	i	1,561		
Small companies																															
10-19 <sup>c</sup>	-	3,283	2,402	7 e	12 e	11 e	135	9	142	40 e	3 e	51 e	11 e	44	82	0-54	13 e	2 e	19 e	125 e	33 e	2 e	56 e	78	4 e	41 e	1 e	0-54			
20-49	-	6,001	7,593	19 e	22 e	43	260	17 e	310 e	178	19	193 e	30 e	86	283	13 e	41 e	11 e	70 e	352 e	96 e	15	140 e	215	6 e	107 e	4 e	54			
Medium companies																															
50-99	-	3,569	8,070	17 e	28	68	325	15 e	335	203	8 e	151	26 e	106	272	17	28 e	12	54	327	77 e	19	148	263	10	127	5 e	97			
100-249	-	2,986	13,514	31	65	51	676	16	436	173	8	307	34	131	384	24	87	16	77	669	185	25	188	507	9	222	2 e	257			
Large companies																															
250-499	-	1,390	11,773	27	39	29	253	9	537	332	6	245	37	214	375	15	37	60	78	412	153	29	101	587	0-97 e	180	1	0-124			
500-999	-	887	16,295	26	24	157	387	2 e	445	437	21	272	28	137	320	13	120	24	60	902	109	9	292	1,454	0-97 e	424	10	82-528			
1,000-4,999	-	947	52,341	192	161	228	1,761	i	41 i	2,528	1,166	964	203	685	1,651	255	254	35	115	1,536	289	11	389	1,523	34	584	4	104			
5,000-9,999	-	198	32,701	32	4	40	785	11	813	i	1,421	* i	935	24	475	722	182 - 245	i	229	8	158	1,687	767	38	315	719	0-97	1,524	* i	0-449	
10,000-24,999	-	149	63,415	93	30	77	3,146	31	3,633	1,671	10	1,876	179	596	1,491	53	230	8	298	i	3,700	200	31	i	263	1,812	15	870	*	0-70	
25,000 or more	-	105	130,931	25	54	50	5,500	146	4,251	1,881	120	1,704	204	4,952	3,995	27	174	11	244	i	8,041	i	261	61	766	13,663	11	698	53	i	439

\* = amount < \$500,000. e = estimated; > 50% of the estimate is modeled—see 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.

<sup>a</sup> 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.

<sup>b</sup> Includes data reported that were not allocated to a specific state by multi-establishment companies. For single-establishment companies, data reported were allocated to the state in the address used to mail the survey form.

<sup>c</sup> Business Research and Development Survey does not include companies with fewer than 10 domestic employees.

**Note(s)**

Detail may not add to total because of rounding. Industry classification is based on the dominant business code for domestic R&D performance, where available. For companies that did not report business codes, the classification used for sampling was assigned. Statistics are representative of companies located in the United States that performed or funded R&D. 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. Changes in data collection and imputation processes have affected the comparability of company count estimates in this table with estimates published for previous years. An estimate range may be displayed in place of a single estimate to avoid disclosing operations of individual companies.

**Source(s)**

National Center for Science and Engineering Statistics and U.S. Census Bureau, Business Research and Development Survey, 2017.