

TABLE 28-B

Companies with domestic R&D paid for and performed by the company, by industry, company size, and state (N-Z): 2018

(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>c</sup>								
All industries	21-23, 31-33, 42-81	24,698	377,806	513	638	992	16,843	374	15,370	7,790	284	6,820	822	8,446	10,633	663	1,462	179	1,184	18,267	2,642	233	4,092	29,498	209	i	5,334	34	2,399							
Manufacturing industries	31-33	14,727	234,682	216	432	727	12,876	254	7,129	5,068	146	5,619	541	6,944	8,626	622	1,191	142	1,023	12,190	1,312	132	1,688	4,769	155	i	3,696	16	1,284							
Food	311	802	4,412	57	3	* e	270	2	i	38	19	5	114	15	12	1	e	4	5	30	27	7	4	133	32	* e	87	* e	33							
Beverage and tobacco products	312	195	1,004	* e	* e	* e	1	e	* i	233	80	* e	* e	2	2	e	1	e	* e	* e	* e	1	e	147	* e	* e	99	43	* e	65						
Textile, apparel, and leather products	313-16	236	986	* e	1	9	19	* e	38	57	* e	89	2	29	7	1	e	71	* e	4	e	4	e	6	1	3	e	7	* e	10						
Wood products	321	181	199	* e	* e	1	i	2	* e	1	e	5	9	1	e	* e	4	4	3	11	* e	2	13	1	i	* i	5	9	* e	12						
Paper	322	154	932	1	* e	2	19	* e	25	37	0	27	* e	*	43	4	45	* e	35	12	1	2	64	7	* e	326	0	* e	6							
Printing and related support activities	323	172	238	* e	* e	* e	1	1	2	i	26	* e	7	* e	2	11	* e	1	i	* e	10	* e	* i	* e	* e	7	5	12	* e	10						
Petroleum and coal products	324	94	1,246	* e	* e	* e	349	* e	* e	1	0	9	58	3	15	* e	2	* e	* e	663	* e	663	* e	0	*	* e	* e	3	* e	21						
Chemicals	325	2,631	73,584	37	11	27	10,457	13	3,136	1,955	6	2,394	42	84	5,702	60	81	37	283	1,164	195	34	i	349	986	118	i	436	9	370						
Basic chemicals	3251	321	2,251	4	* e	2	210	* e	130	72	* e	279	10	11	172	2	25	28	237	153	5	0	117	14	9	i	14	1	e	58						
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	174	1,568	0-5	2	0-8	i	26	0	0-84	i	10	i	* e	235	* e	6	131	2	14	0	5	245	* e	* e	0-15	e	0-5	26	12	0	0-68				
Pesticide, fertilizer, and other agricultural chemicals	3253	78	1,135	i	* e	3	i	* e	195	*	1	152	* i	56	1	e	1	1	e	0	1	i	1	i	2	i	6	i	2	* e	3	3	* e	40	0	4
Pharmaceuticals and medicines	3254	1,285	64,800	29	5	e	19	9,674	12	2,723	1,659	5	486	29	58	5,287	49	28	7	26	666	183	28	i	215	966	16-85	i	249	8	210-279					
Soap, cleaning compound, and toilet preparation	3256	278	2,573	1	i	* e	* e	280	i	* e	201	i	31	0	1,170	* e	1	e	* e	5	46	* e	5	2	e	1	e	0	108	0	16-85					
Paint, coating, adhesive, and other chemicals	3255, 3259	496	1,257	0-5	i	1	e	0-8	72	* e	0-84	31	0	167	2	6	105	7	12	* e	9	49	4	* e	0-15	i	0-5	e	0-68	13	* e	15				
Plastics and rubber products	326	899	2,667	2	e	3	20	i	41	* e	97	64	1	e	176	46	9	i	80	13	264	2	47	107	5	* e	57	i	8	1	e	117	* e	74		
Nonmetallic mineral products	327	227	1,361	* e	* e	* e	8	* e	961	10	* e	54	* e	4	55	* e	8	* e	4	5	1	* e	* e	4	* e	8	* e	8	* e	10						
Primary metals	331	226	817	* e	* i	6	4	* e	5	22	* e	40	* e	8	190	3	9	1	15	27	1	1	i	5	i	8	1	167	i	* e	11					
Fabricated metal products	332	1,427	2,222	8	2	9	131	* e	65	33	1	i	177	13	22	58	3	i	31	1	29	174	20	* e	14	91	1	e	126	2	51					
Machinery	333	2,020	13,765	35	i	12	56	52	2	e	494	316	105	413	231	517	271	30	105	12	47	964	60	i	16	62	99	5	e	673	3	4-72				
Agricultural implement	33311	237	1,862	30	i	*	* e	* e	* e	* e	59	38	90	1	e	7	1	e	0	3	5	6	7	e	1	e	0	1	e	1	e	1	i	75	* e	4
Semiconductor machinery	333242	44	3,623	0	0	* i	7	0	58	* e	0	* e	0	0-509	16	0	0	0	* i	0-358	i	0-60	i	2	* i	0	0	0	0	0	0	1				
Engine, turbine, and power transmission equipment	3336	70	2,310	* e	4	2	1	i	* e	0-437	71	1	13	2	3	3	* e	62	* e	* e	0-358	* e	* e	30	8	* e	110	0	0-68							
Other machinery	other 333	1,672	5,970	5	e	8	53	44	1	e	0-437	186	66	310	228	0-509	251	30	40	7	40	601	0-60	14	30	89	4	e	488	2	0-68					
Computer and electronic products	334	2,218	73,922	43	48	475	755	223	1,185	i	1,791	15	633	56	5,686	1,017	65	173	67	95	7,462	i	340	55	366	935	4	349	1	e	147					
Communications equipment	3342	266	11,822	6	19	113	391	21	268	i	685	0-16	88	9	46	436	i	4	0-57	1	46	692	50	1	248	235	2	25	0	0-56						
Semiconductor and other electronic components	3344	595	28,642	8	3	e	183	75	165	207	i	576	i	*	153	8	5,293	252	40	56	42	12	2,155	79	15	12	176	1	e	100	* e	0-44				
Navigational, measuring, electromedical, and control instruments	3345	1,101	10,864	29	13	i	151	247	31	223	360	0-16	343	i	36	237	242	21	62	24	33	563	186	i	37	102	280	* e	119	1	e	1-57				

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(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>c</sup>
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	260	3,046	* e 8 i		22	34 i	* 92 i	90 i	0 63 i	4 13 i	109	2 12 i	* e 21	70 i	109 i	5 i	27 i	8 i	* 49 i	0	2						
Search, detection, navigation, guidance, aeronautical, and nautical system and instrument	334511	105	3,388	0-30 3	111	34	26	67	0-271	0-16 34	23 92	46 16	11 6	3 252	50 0-33	37 53	0 11	1 e 0-56										
Other measuring and controlling device	other 3345	737	4,430	0-30 2 i	18	179	5 64	0-271 0-16 e	246 i	9 131	87 3	38 18	10 241 i	26 0-33	38 219	* e 60	* e 0-56											
Other computer and electronic products	other 334	255	22,594	* e 12	28	42	6 488 i	170	* e 49	3 110	86 *	0-57 0	4 4,053 i	25 1	5 244	* e 105 i	* e 91											
Electrical equipment, appliances, and components	335	750	4,222	1 e 9	10	80	1 e 97	170	* e 92	5 57	303 10	38 3	37 122	2 e 2 e	35 45	1 e 491	* 123											
Transportation equipment	336	1,065	35,894	31 25	42	113	9 452	254 3 e	1,016 61	305 329	11 326	9 187	991 395	7 417	2,130 15	304 * e	249											
Motor vehicles, bodies, trailers, and parts	3361-63	636	23,080	4 e 12	16	13	1 211	185 1 e	308 10	247 55	2 140	3 e 172	162 249	* e 25	114 2 e	106 * e	244											
Aerospace products and parts	3364	243	11,160	25 13	25	94	8 239	51 * 704	51 56	192 7	175 * 6	805 145	7 122	2,006 14	21 * e	2												
Aircraft, aircraft engine, and aircraft parts	336411-13	207	10,746	25 13	25	85	8 234	51 * 698	51 56	192 7	175 * 6	804 145	7 119	1,997 14	20 * e	2												
Guided missile, space vehicle, and related parts	336414-15, 336419	36	414	0 0	0	9	* 4	0 0	7 0	0 * i	0 0	0 0	0 1 e	0 0	3 9	0 1 e	0											
Military armored vehicle, tank, and tank component	336992	6	6	0 0	0	0	0 0	0 0	1 0	0 0	0 * i	0 0	0 0	0 0	0 0	0 0	0 0	*										
Other transportation	other 336	182	1,649	2 * e	1 i	5 * 2 e	18 1	3 * e	2 e 82	1 e 11	6 6	9 24	* e 270	11 e	0	0	0											
Furniture and related products	337	231	404	* e * e	* i	3 * e	7 17	* e 5 i	* e 4	26 3 i	4 1 i	9 6	12 3	2 i	2 1	21 *	12											
Miscellaneous	339	1,220	16,807	1 e 318	70	572 i	3 e 293	211 1 e	372 11	197 i 451	417 i 18	1 e 188	301 267	5 74	355 1 e	542 * e	16-71											
Medical equipment and supplies	3391	684	14,267	* e 2	49	544 i	2 153	178 * e	316 7	56 402	23 9	* e 177	271 227	* e 49	266 1 e	509 * e	17											
Other miscellaneous manufacturing	3399	537	2,540	1 e 316	22	28 i	1 e 140	33 i * e	56 4	141 i 49	394 i 8	1 e 11	30 39	5 25 i	90 1 e	32 * e	0-54											
Nonmanufacturing industries	21-23, 42-81	9,978	143,123	297 206 i	265	3,967	120 8,241	2,722 139	1,201 280	1,503 2,007	41 271	37 161	6,077 1,330	101 2,404	24,730 54	1,638 17	1,115											
Mining, quarrying, oil and gas extraction, and support activities	21	149	1,775	* e 5	* e *	* e 2 e	* e * e	1 e 1 e	57 * e	19 * e	* e * e	* e * e	* e 1,425	8 i * e	* e * e	3 e 1 e	3 6	37										
Utilities	22	61	224	* e * e	* e *	* e * e	* e 12	1 i 12	9 * e	* 9	* e * *	* e 26	* * e	4 6	4 *	1	1											
Wholesale trade	42	768	881 i	2 i 1 e	1 12	1 i 156 i	40 i 1 i	8 e 2 e	4 12 i	1 6	9 i 5	83 i 2 i	* e 7 i	8 i 2 i	23 i *	e 61												
Electronic shopping and electronic auctions	454111-12	84	11,557 i	0-7 e 0-110 i	0-8 i	0-212 i	0-10 i	0-294 i	0-69 i	0-6 i	0-102 i	0-12 i	0-254 i	0-66 i	0-8 i	9 i 0-4 i	0-10 i	0-635 i	0-247 i	0-13 e	0-592 i	5,151-7,063 i	1 i	0-98 i	0-4 e	0-9		
Transportation and warehousing	48-49	87	935	4 2	* e 4 e	* e 6 e	13 1 e	27 1 e	12 24	* e 1 e	* e 21	33 4	* e 5	137 * e	2 e *	e 2	2											
Information	51	2,626	93,487	235 55	205	2,171	59 5,443	1,498 94	504 79	771 967	11 165	13 60 e	1,665 828	27 889	16,663 18	912 6	44											
Publishing	511	975	32,281	14 26	96	239	17 1,063	881 90	250 13 e	353 283	3 e 17	6 18 e	616 314	21 319	12,582 11	739 4	2											
Newspaper, periodical, book, and directory publishers	5111	33	131	* e * e	* e *	* e * e	* e 5	* e * e	* e * e	* e * i	* e * i	* e * e	* e * e	* i * e	* e * e	* e * e	* e *	* e *	* e *	* e *	* e *	* e *	* e *	* e *	* e *	* e *	* e *	* e *
Software publishers	5112	941	32,150	14 26	96	238	17 1,058	881 90	250 13 e	353 283	3 e 17	6 18 e	616 314	21 319	12,582 11	739 4	1											
Telecommunications	517	177	3,631	1 e 4	34	1,607	1 e 547	49 1 e	8 3 e	11 11	* e 7	2 e 2 e	60 4 e	* e 63	337 * e	18 1 e	2											
Data processing, hosting, and related services	518	1,192	23,115	176 14 e	51	194	11 607	511 2 e	205 5 e	271 269	7 i 86	3 26	737 332	5 e 334	1,037 6	130 1 e	0-42											
Other information	other 51	284	34,459	43 12	24	132	30 3,226	57 1 e	40 59	135 404	* e 56	2 e 14 e	252 179	1 e 172	2,707 1 e	25 1 e	0-42											
Finance and insurance	52	209	7,426	2 5	2	475	15 i 532	288 * e	189 4	13 i 321 i	8 13	3 i 5	291 23	1 9 i	42 6 i	449 * e	605											

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(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>c</sup>																
Real estate and rental and leasing	53	30	1,022	12	3	i	*	i	*	* e	13	* e	* e	7	* e	* e	1	i	* e	1	* e	* e	47	1	* e	* e	134-176	* e	6	* e	0-9													
Lessors of nonfinancial intangible assets (except copyrighted works)	533	5	6	6	0		0	0	0	0	0	* i	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*													
Other real estate and rental and leasing	other 53	25	1,016	6	3	i	*	i	*	* e	13	* e	* e	6	* e	* e	1	i	* e	1	* e	* e	47	1	* e	* e	134-176	* e	6	* e	0-9													
Professional, scientific, and technical services	54	5,204	22,374	39	29	e	52		1,075	36	1,786	815	27	347	129	444	546	16	e	62	11	62	e	1,874	208	62	895	676	19	143	3	e	301											
Architectural, engineering, and related services	5413	1,150	2,277	11	7		11	5	51	5	101	38	3	e	31	12	114	110	3	e	16	5	15	207	24	4	70	62	1	e	29	1	e	48										
Computer systems design and related services	5415	2,410	13,633	13	e	16	e	18	241	e	17	1,423	619	20	189	35	312	i	188	9	e	37	5	30	e	1,240	126	44	584	e	432	11	76	1	e	215								
Scientific research and development services	5417	785	2,424	9	1		18	i	107	10	42	78	3	45	1	i	7	139	2	i	1	1	4	101	22	1	i	22	i	84	4	8	0	9										
Research and development in biotechnology	541711	202	820	9	* e	2	6	8	7	i	56	* e	3	* e	1	i	63	* e	* e	1	* e	7	2	i	1	i	10	i	24	* e	1	e	0	1										
Research and development in the physical, engineering, and life sciences (except biotechnology)	541712	573	1,577	* e	1	15	i	99	2	e	34	22	3	38	1	i	6	76	2	i	1	* i	3	94	20	1	i	12	60	4	8	0	8											
Research and development in the social sciences and humanities	541720	10	27	0	0	*	1	0	2	0	0	4	0	* i	0	0	0	0	0	0	0	0	0	0	0	0	0	*	0	0	0	0	0											
Other professional, scientific, and technical services	other 54	859	4,041	7	5	e	4	676	4	e	220	80	1	e	83	81	12	e	109	2	e	9	e	1	e	13	e	327	36	14	i	219	98	3	e	29	1	e	30					
Health care services	621-23	178	1,401	* e	* e	* e	* e	22	* e	4	2	* e	12	* e	8	i	47	i	* e	12	i	* e	2	3	14	i	* e	7	4	* e	7	* e	21											
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	592	2,041	0-7	0-110	0-8	0-212	0-10	0-294	0-69	0-6	0-102	0-12	0-254	0-66	0-8	2	0-4	0-10	0-635	0-247	0-13	0-592	0-1,863	2	0-98	0-4	39																
All companies (number of domestic employees)	-	24,698	377,806	513	638	992	16,843	374	15,370	7,790	284	6,820	822	8,446	10,633	663	1,462	179	1,184	18,267	2,642	233	4,092	29,498	209	i	5,334	34	2,399															
Small companies																																												
10-19 <sup>b</sup>	-	3,948	3,340	7	e	12	e	20	413	13	180	e	92	3	e	62	e	13	e	37	101	14	13	e	4	e	24	e	178	e	31	e	3	e	81	e	125	3	e	38	e	2	e	28
20-49	-	6,950	9,556	18	e	24	e	48	343	13	e	377	e	149	e	12	e	235	e	42	e	102	292	28	54	e	12	e	56	e	511	e	105	24	314	e	240	8	e	117	e	3	e	110
Medium companies																																												
50-99	-	4,406	10,446	26	38	69	340	30	411	393	10	211	30	e	102	393	19	39	e	15	i	56	e	411	150	22	i	202	e	303	10	160	7	141										
100-249	-	4,562	14,626	39	35	62	677	34	437	202	13	338	48	151	471	23	48	18	66	723	191	16	209	539	17	337	6	197																
Large companies																																												
250-499	-	1,967	16,604	37	115	41	531	10	652	294	6	392	29	170	566	16	54	7	78	622	142	32	226	595	1	e	188	3	148															
500-999	-	1,098	15,561	26	22	130	454	4	623	774	2	207	18	72	197	13	121	9	54	955	162	4	277	446	12	289	3	i	283-393															
1,000-4,999	-	1,221	58,509	170	225	350	1,293	24	1,722	1,479	94	1,420	252	963	1,742	248	321	90	168	1,943	614	22	613	2,234	20	741	10	414																
5,000-9,999	-	231	36,274	21	3	29	1,546	i	6	2,215	1,325	9	547	13	607	599	211	i	174	2	167	i	1,412	i	651	17	i	215	436	i	11	i	1,680	0-4	49-166									
10,000-24,999	-	201	74,423	132	34	113	6,514	43	4,236	1,534	2	1,939	226	660	3,536	51	333	6	278	4,166	322	32	i	443	2,996	106	i	1,272	0-4	e	223-282													
25,000 or more	-	114	138,465	38	130	i	131	4,732	199	4,519	1,549	133	1,469	151	5,583	2,735	40	305	14	238	7,347	i	275	61	1,513	21,584	21	511	*	654	**													

\* = 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> Beginning in survey year 2018, these statistics 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> Business Research and Development Survey does not include companies with fewer than 10 domestic employees.

<sup>c</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.

**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. Beginning in survey year 2018, statistics are representative of companies located in the United States that performed or funded \$50,000 or more of R&D. This change has affected the comparability these estimates with estimates published for years prior to 2018. 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, 2018.