

TABLE 28-B

## Companies with domestic R&amp;D paid for and performed by the company, by industry, company size, and state (N-Z): 2016

(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	29,999	317,731	491	412	767	12,902	323	13,454	7,226	237	6,366	642	6,316	11,161	822	1,146	135	1,383	14,913	2,876	230	2,240	19,001	157	4,387	164	5,664
Manufacturing industries	31-33	18,634	211,660	188	304	491	9,432	266	7,732	4,206	128	5,622	428	5,465	9,696	775	812	109	1,131	8,829	1,187	154	1,196	6,526	142	3,198	148	3,639
Food	311	1,153	4,611	62	1 e	9 i	379	2 i	36	14	2 e	136	13	16 i	48	2 i	5	5	44	31 i	9 i	4	11	64	* e	84	* e	71
Beverages and tobacco products	312	88	987	* e	* e	* e	* e	* e	269	49	* e	* e	* e	2 e	1 e	* e	* e	* e	4	168	* i	* e	93	D	* e	1 e	* e	D
Textiles, apparel, and leather products	313-16	419	1,156	i 1 e	1 e	2 e	15 e	* e	68 i	203	* e	87	2 e	27	15 e	6 e	75	* e	11 e	22 e	4 i	* e	7 e	D	* e	12 i	* e	D
Wood products	321	153	181	* e	* e	* e	2	* e	1 i	7 i	9	1 i	1	14	2 i	2	8	* e	3	1 e	1 i	* i	5	D	*	5	* e	D
Paper	322	242	851	1	* e	2	14	* e	9 i	20	* e	24	* e	1 i	46	2	41	* e	24	5	1 i	1	7	D	* e	412	* e	D
Printing and related support activities	323	309	219	i * e	* e	* e	2 e	* e	7 i	16	* e	8	* e	2	6	* e	* e	* e	5	2 e	1 i	* e	6	* e	* e	19	* e	24
Petroleum and coal products	324	126	367	* e	1 e	1 e	53	* e	10 e	6 e	* e	15 e	67	2	12 e	* e	2 e	1 e	1 e	25	1 e	0	3 e	D	* e	3	* e	D
Chemicals	325	2,640	64,165	35	23 i	72	7,552	21 i	2,979	1,727	4	2,455	52	98	6,740	i 61	143	7 e	342	957	279	37	403	1,073	104	427	95	574
Basic chemicals	3251	284	2,284	1 e	1	27	170	i 3 e	247	125	* e	268	10	6	95	12	8	1 e	266	134	8	* e	112	58	D	9	87	D
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	213	693	* e	* e	13	D	0	58 i	6 i	* e	326	* e	12	34	4	13	0	11	85	2	* e	2 i	2	* e	19	0	D
Pesticides, fertilizers, and other agricultural chemicals	3253	57	1,061	i 1	D	*	D	* e	1	30 i	1 i	5 i	2 e	* e	1 e	0	2 i	3 i	2 i	7 i	1 i	* e	9	3 i	* e	54	0	D
Pharmaceuticals and medicines	3254	960	55,983	33	D	27 i	6,954	18	2,435	1,496	3	435	35	67	6,448	i 43	39	3 e	51	639	266	33	273	1,006	D	182	8	359
Soaps, cleaning compounds, and toilet preparations	3256	432	2,660	* e	* e	1 e	272 i	* e	198 i	22	* e	1,225	* e	1 e	10 e	1 e	3 e	* e	7 i	49	* e	4	3	2 i	1 e	128	*	17
Paints, coatings, adhesives, and other chemicals	3255, 3259	696	1,484	* e	2 i	4	68	* e	40	49	0	196	4 i	11	152	2	77	* e	5 e	44 i	2 e	* e	4 e	2 e	5	34	* e	99
Plastics and rubber products	326	1,201	3,584	6	3 e	6 i	25	* e	77	82	D	291	36	7	183	13	18	9	22	336	5 i	* e	30	D	10	104	* e	D
Nonmetallic mineral products	327	409	1,274	1 e	* e	5	33	* e	687	42	* e	63	1 e	D	74	* e	7	* e	3 i	13	2	4	2 e	D	3	8	* e	D
Primary metals	331	337	583	* e	1 i	6	6	* e	12	10	* e	66	1 e	13	144	1 e	11	* e	25 i	38 i	3	1 i	2 e	D	2	18	* e	D
Fabricated metal products	332	2,229	2,127	7	5	11	41	1 e	42 i	45	3 i	155	17 i	26	74	i 3 e	30	4	17 i	170	15	1 e	13	42	2 e	256	1	175
Machinery	333	2,648	11,699	32	11	39	61	7	233	203	75	298	153	D	329	15	67	12	76	726	21	17	27	143	5 e	301	5	D
Agricultural implements	33311	190	1,552	D	0	0	* e	D	D	D	26	4	D	D	1 e	0	4	1	7	D	* i	* e	* e	7	1	D	* e	D
Semiconductor machinery	333242	48	3,028	0	0	D	24	0	D	0	0	6	0	D	10	0	0	0	*	D	* i	* i	* i	0	0	0	0	D
Engines, turbines, and power transmission equipment	3336	125	1,901	D	2	D	1 e	D	26	D	1	8 i	D	D	8	* e	22	* e	14 i	68	* e	1 i	7	3	* e	D	* e	13
Other machinery	other 333	2,285	5,218	9	9	39	36	7	186	99	48	281	152	85	311	15	41	11	54	396	20	16	19	133	4 e	218	5	D
Computer and electronic products	334	2,980	68,515	26	29	267	685	224	1,208	1,093	D	532	i 40	4,547	857	65	148	61	64	5,610	i 243	41	234	771	3 e	224	2 e	D
Communications equipment	3342	502	11,293	D	6	66	396	14	200	i 414	* e	83	4	55	330	1 e	9	*	5	504	71	2	124	i 149	* e	7	0	D
Semiconductors and other electronic components	3344	822	29,176	7	2 e	129	116	164	481	356	i 0	79 i	7	4,267	213	20	83	29	20	1,750	83	8	24	169	* e	77	1 i	326
Navigational, measuring, electromedical, and control instruments	3345	1,258	10,131	D	16	49	157	39	256	157	D	310	i 27	137	209	37	53	24	36	378	87	31	68	259	1 i	117	1 e	D
Electromedical, electrotherapeutic, and irradiation apparatuses	334510, 334517	250	2,466	*	D	6 i	29 i	0	83 i	22 i	0	59 i	1	13 i	115	1 e	12 i	*	27	44 i	D	D	22 i	46 i	1	47 i	*	D
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	171	3,121	D	D	21	36	27	82	39	D	45	20	95	31	16	9	11	1 e	147	D	D	32	42	0	6	* e	D
Other measuring and controlling devices	other 3345	837	4,544	11	2 e	22	92	12	91	96	* e	206	i 6 i	30	63	21	32	13	8 i	187 i	41	6	14	171	1 e	63	* e	176
Other computer and electronic products	other 334	399	17,914	1 e	5	23	16	7	270	166	* e	60	1	89	105	7	2 i	8	3 e	2,977 i	3	*	19	194	1 e	23	* e	121
Electrical equipment, appliances, and components	335	719	4,302	1	18	7	73	* e	66	171	* e	64	7	101	346	3	124	2	55 i	88	3	2	25	D	* e	532	44	D
Transportation equipment	336	1,114	32,905	14	40	29	108	6	1,305	254	15	1,098	32	205	309	1 e	109	7	205	397	382	32	258	i D	10	695	* e	D

TABLE 28-B

## Companies with domestic R&amp;D paid for and performed by the company, by industry, company size, and state (N-Z): 2016

(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>
Automobiles, bodies, trailers, and parts	3361-63	738	19,293	8 e	2	8	25	1 e	189	171	D	379	13 e	190	148	1 e	74	4 e	171	103	246	* e	28	86	2 e	D	* e	D
Aerospace products and parts	3364	168	12,272	4	38	19	74	5	1,116	72	D	716	15	13	149	1	25	*	6	276	136	32	78	D	8	D	* i	D
Aircraft, aircraft engines, and aircraft parts	336411-13	151	11,930	4	38	19	74	5	1,116	72	D	715	15	12	149	1	25	*	5	276	62	32	73	D	8	D	* i	D
Guided missiles, space vehicles, and related parts	336414-15, 336419	17	342	0	* i	0	*	*	0	0	0	1	0	1 i	0	0	0	0	* i	*	74	0	6 i	1 i	0	0	0	*
Military armored vehicles, tanks, and tank components	336992	6	3	0	0	0	0	0	0	0	0	*	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
Other transportation	other 336	202	1,337	1 i	* e	3	9	0	1 e	10	1	3	3	2 i	12	* e	8	3	27	18	* e	* e	151 i	5	* e	228	0	D
Furniture and related products	337	275	366	* e	* e	* e	2 i	* e	6 i	25	* e	18	1 i	2 i	14 i	* e	3 i	* e	1 e	4 i	5 i	3	9	D	* e	14	* e	D
Miscellaneous	339	1,603	13,768	2 e	169	34	381	3 e	715 i	239	1 e	311	6	53	497	598 i	21	1 e	230	237	213	9	62 i	358	1 e	84	* e	47
Medical equipment and supplies	3391	928	11,474	1 e	1 e	27	364	2 e	570 i	194	1 e	223	4	45	440	38	13	* e	226	212	175	1 e	20	217	1 e	59	* e	31
Other miscellaneous manufacturing	3399	675	2,294 i	1 e	168	7	16 i	1 e	146 i	45 i	* e	87 i	2 e	8 i	58 i	561 i	8	1 e	4 e	25 i	38	8	42 i	141	1 e	25 i	* e	15
Nonmanufacturing industries	21-23, 42-81	11,366	106,071	303 i	108 i	277	3,471 i	57	5,722 i	3,020	109	744	214	851	1,465	46	334	26	253	6,084	1,688	76	1,045	12,475	16 e	1,189	16	2,025
Mining, extraction, and support activities	21	62	2,897	*	2	* e	325	* e	* i	* e	1	*	57	* e	1 i	* e	* e	* e	* e	2,232	D	* e	* e	1 i	* e	* e	3	D
Utilities	22	34	325	0	0	0	D	*	7	*	D	22	*	*	13	0	*	*	0	1	D	0	D	*	*	*	D	D
Wholesale trade	42	1,642	442 i	2 e	2 e	2 i	17 e	1 e	26 e	5 e	D	22 i	3 e	3 e	10 e	1 i	2 e	1 e	10 i	22 e	D	1 i	6 e	6 e	* e	7 e	D	D
Electronic shopping and electronic auctions	454111-12	241	1,569 i	* e	1 i	* e	2 e	* e	7 e	1 e	D	1 e	* e	1 e	2 e	* i	2 i	* e	* e	4 i	D	* e	D	10 i	* e	1 e	* e	D
Transportation and warehousing	48-49	32	486	* e	* e	* e	*	* e	* e	*	* e	4	* e	* e	22	* e	* e	* e	56	21	* e	*	6	6	* e	1	* e	8
Information	51	2,327	70,075	222 i	58 i	186	1,851 i	15	2,838	1,161	80	296	65	605	725	10 e	245	15	70 e	1,450	574	22	573	11,644	4	796	5 e	586
Publishing	511	1,341	33,174	11 e	49 i	98	441	9 e	1,071 i	939	76	237	16 e	379	317	4 e	48	7	36	538	376	14	215	9,532	2	691	3	215
Newspaper, periodical, book, and directory publishers	5111	103	77 i	* e	* e	* e	1 e	* e	3 e	1 i	* e	1 e	* e	* e	1 e	* e	* e	* e	* e	8	* e	* e	* e	1 e	* e	1 e	* e	8
Software publishers	5112	1,238	33,098	11 e	49 i	98	440	9 e	1,068 i	938	76	236	16 e	379	316	4 e	48	7	36	530	376	14	215	9,532	2	691	3	207
Telecommunications	517	121	3,530 i	1 e	1 e	1 e	1,259 i	* e	260	12	1 e	4 e	D	9	52	* e	D	1 e	3	211 i	7	1 e	111	184 i	* e	18	* e	D
Data processing, hosting, and related services	518	744	11,776	197 i	7 e	86	122	4	541	164	3 e	51 e	9 e	189	286	5	151	7	27 e	608	183	8 e	232	564	1	76	1 e	351
Other information	other 51	121	21,594	13	1 e	1	29	2	965	46	* e	3	D	28	69	*	D	* e	4	93	8 i	* e	15	1,363 i	* e	10	* e	D
Finance and insurance	52	70	7,237	14	3	1	289	1	1,016	657	* e	95	8	*	211	19	27	*	1	290	5	*	16	16	*	227	* e	626
Real estate and rental and leasing	53	48	475	5	* i	* e	D	* e	19	*	* e	4	* e	3	2	* e	* e	* e	1 i	* e	* e	* e	D	129	* e	*	* i	D
Lessors of nonfinancial intangible assets (except copyrighted works)	533	11	27	* i	0	0	0	0	*	*	0	* i	0	3	1 i	0	0	0	0	0	0	0	D	*	0	0	0	D
Other real estate and rental and leasing	other 53	37	449	4	* i	* e	D	* e	19	* e	* e	4	* e	* e	2	* e	* e	* e	1 i	* e	* e	* e	* e	129	* e	*	* i	D
Professional, scientific, and technical services	54	6,385	20,845	51 i	39	84	963 i	40	1,768	1,176	10 e	265	77	225	457	15 e	52 i	9 i	96	1,957 i	676	52	426 e	604	10 e	99	4 e	408
Architectural, engineering, and related services	5413	1,354	1,816	11 i	12	11	28 e	5 e	71 e	32	3 e	28 e	11 e	104	118	3 e	10 e	2 e	16 e	222	17	2 e	60 i	61	3 e	29	1 e	80
Computer systems design and related services	5415	2,543	13,255	19	16	29	204 e	14 i	1,507	1,035	2 e	143	25	81	157 i	8 e	30	5 i	30 e	1,497 i	26 e	48	276 e	382	6	32 e	1 e	238
Scientific research and development services	5417	1,480	2,811	11	7	34	98	9 i	78 i	76	4	48	4 i	22	128 i	3 i	6 i	2 i	14	121	24	* i	25	97 i	* e	14	* i	23
Biotechnology research and development	541711	315	750 i	11	* e	1	20	3 i	29 i	34 i	* e	15 i	1 i	1 i	10 i	1 i	4 i	1	4 i	18	4 i	*	5 i	19	* e	9	0	4
Physical, engineering, and life sciences (except biotechnology) research and development	541712	1,134	2,029	*	7	33	76	6 i	43	42	4	33	1 i	21	117 i	3 i	2 i	* i	10	103	14 i	* i	20	77 i	* e	4	* i	20
Social sciences and humanities research and development	541720	31	32	* e	* e	*	1	* e	5 i	* e	* e	* e	2 i	* i	1 i	* e	* e	0	* e	* e	6	0	* e	1 i	* e	* e	0	0
Other professional, scientific, and technical services	other 54	1,008	2,962	9	5 e	11	632 i	12	112 e	33 i	1 e	45	36	17	54 e	2 e	6 e	* e	36	116 e	609	2 e	65 e	64	1 e	25	1	67

TABLE 28-B

## Companies with domestic R&amp;D paid for and performed by the company, by industry, company size, and state (N-Z): 2016

(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>	
Health care services	621-23	241	782	* e	* e	1	13 i	* e	5 e	3	* e	10	* e	6	3 e	* e	1 e	* e	1 e	11	D	* e	3	40	* e	48	* e	D	
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	286	939 i	9	4 e	2	8 e	1 e	36	15	1	25	4 i	7	20	1 e	6 i	2 i	16	97	7 i	* e	7 e	20	1 e	10	1 i	141	
All companies (number of domestic employees)		-	29,999	317,731	491	412	767	12,902	323	13,454	7,226	237	6,366	642	6,316	11,161	822 i	1,146	135	1,383	14,913	2,876	230	2,240	19,001	157	4,387	164	5,664
Micro companies <sup>b</sup>																													
5 - 9		-	3,507	1,044 i	3 e	4 e	4 e	36 i	2 e	46 e	19 e	1 e	29 e	8 i	14 i	34 e	2 e	8 i	1 e	9 e	57 e	12 e	1 e	30 e	24 e	1 e	15 e	* e	4
Small companies																													
10 - 19		-	6,390	3,887 i	17 e	19 e	22 e	201 e	11 e	197 e	89 e	4 e	106 e	18 e	43 e	153 e	11 e	28 e	4 e	33 e	195 e	83 e	5 e	105 e	117 e	3 e	66 e	2 e	D
20 - 49		-	7,873	7,473 i	18 e	41	36 e	265 e	24	402 e	181	11 e	198 e	33 e	75 e	304 i	24 i	33 e	7 e	64 e	419 e	87 e	17 i	225 e	192 e	7 e	84 e	4 e	71
Medium companies																													
50 - 99		-	4,519	7,728	26 e	23 e	51	344	31	266 e	225 i	9 e	171 e	39 e	83	275	20	43 e	9 e	45 e	344	95	15	142 e	195	6 e	110 i	4 e	230
100 - 249		-	3,909	11,722	32 i	56 i	62	605	13	409	221	10	243	32 e	133	509	20 i	72	26	78	503	110	19	200	450	14	262	2 e	400
Large companies																													
250 - 499		-	1,567	11,438	37	34	94	226	8	362	220	3 e	283	26	138	371	8	49	10	102	454	163	19	74	757	2 e	170	3	551
500 - 999		-	840	13,525	25	9	141	295	1 e	826	251	2	156	30	147	276	17	104	19	29	736	160	D	132	633	* e	266	14	D
1,000 - 4,999		-	926	53,305	212 i	170	181	2,068	18	2,118	1,179	75	1,007	184	995	1,493	296	306	39	195	1,496	247	14	359	1,179	10	749	91	1,853
5,000 - 9,999		-	226	35,887	33	6	55	783	2 i	1,635	1,417	2	749	33	54	982	340 i	258	6	215	1,153	900	D	227	1,295 i	93	1,239	1 i	D
10,000 - 24,999		-	146	53,384	31	26 i	46	2,322	23	2,267	1,517	11	1,942	174	376	2,831	55	108	5 i	328	3,061	186	33	166 i	472	20	942	0	384
25,000 or more		-	98	118,339	56	25	77	5,757 i	190	4,927	1,906	110	1,482	66	4,258	3,933 i	28	136	10	284	6,495 i	833	68	580	13,688	1	485	44	795

\* = amount &lt; \$500,000. D = data withheld to avoid disclosing operations of individual companies. e = estimated; more than 50% of the estimate is modeled—see Technical Notes. i = &gt; 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 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> Business R&D and Innovation Survey does not include companies with fewer than five domestic employees.<sup>c</sup> Includes data reported on Form BRDI-1 that were not allocated to a specific state as well as data reported on Form BRDI-1(S) by multiestablishment 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.**Note(s)**

Detail may not add to total because of rounding. Industry classification is based on the dominant business code for domestic R&amp;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&amp;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.

**Source(s)**

National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&amp;D and Innovation Survey, 2016.