

TABLE 28-A

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

(Millions of U.S. dollars)

Industry and company size	NAICS code	Companies, U.S. total <sup>a</sup> (number)	United States	Alabama	Alaska	Arizona	Arkansas	California	Colorado	Connecticut	Delaware	District of Columbia	Florida	Georgia	Hawaii	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana	Maine	Maryland	Massachusetts	Michigan	Minnesota	Mississippi	Missouri	Montana	
All industries	21-23, 31-33, 42-81	24,698	377,806	1,284	20	e 4,673	423	129,656	4,286	6,193	1,432	i 278	4,498	4,094	89	2,376	12,239	6,004	2,556	1,645	1,178	359	266	4,227	22,581	20,323	7,021	250	3,976	157	
Manufacturing industries	31-33	14,727	234,682	889	5	e 3,731	267	66,968	2,792	5,499	1,289	i 51	2,463	2,348	41	i 2,312	9,636	5,676	2,256	1,238	990	202	217	2,832	17,696	19,265	5,799	211	3,114	99	
Food	311	802	4,412	6	2	e 5	44	182	33	39	695	i *	e 21	33	1	e 51	774	i 27	733	i 36	27	5	e 1	e 58	103	155	385	2	e 27	3	
Beverage and tobacco products	312	195	1,004	*	e *	e 2	i *	e 66	8	*	e *	e *	e 14	98	*	e *	e 91	1	e *	i *	e 28	*	e 1	e *	e 7	1	e 1	e *	e 3	*	
Textile, apparel, and leather products	313-16	236	986	6	*	e 1	e 3	352	11	2	i *	e 0	17	97	*	e *	e 9	4	1	e 2	3	1	e 1	e 1	e 78	17	2	e 1	e 1	e *	
Wood products	321	181	199	1	e *	e *	e 2	23	*	e *	e *	e 0	1	e 7	*	e *	e 2	2	e 14	*	e 1	e *	e *	e *	e *	e 2	46	1	e 1	e *	
Paper	322	154	932	51	0	*	e 31	9	*	e 5	*	e 0	15	46	0	*	e 18	1	1	4	18	8	12	10	16	17	11	1	1	e *	
Printing and related support activities	323	172	238	*	e *	e 1	i *	93	i 8	*	e *	e *	1	2	i *	e *	e 5	*	e 2	i *	e 4	*	e *	e *	e 5	6	7	*	e 6	2	
Petroleum and coal products	324	94	1,246	*	e *	e *	e 2	20	*	e *	e *	e 0	3	1	0	*	e 31	26	0	5	16	*	e *	e 6	*	e 2	i *	e 7	3	0	
Chemicals	325	2,631	73,584	93	i *	e 123	24	15,941	277	4,316	487	26	659	204	29	i 28	4,088	i 3,161	203	160	216	i 50	11	1,310	10,858	882	393	34	2,018	7	
Basic chemicals	3251	321	2,251	1	0	2	8	92	10	66	96	i 0	11	29	*	e 1	e 62	14	52	4	12	20	*	e 71	98	23	2	6	i 18	1	
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	174	1,568	0-8	e 0	0-6	e *	18	*	e 0-138	e 4	*	0-17	e 21	4	*	12	0-337	5	0-68	e 19	19	3	*	e 51	9-375	20	2	0-35	i 0	
Pesticide, fertilizer, and other agricultural chemicals	3253	78	1,135	i 2	*	e 7	2	i 42	5	i *	e 66	i *	i 7	14	23	i 3	27	i 3	i 32	i 7	*	3	e *	e 1	i 4	i 16	42	8	i 347	i 1	
Pharmaceuticals and medicines	3254	1,285	64,800	84	i *	109	12	15,532	257	4,049	320	26	616	119	1	e 16	3,781	i 2,807	112	77	26	7	8	1,238	10,598	470	i 172	17	1,611	4	
Soap, cleaning compound, and toilet preparation	3256	278	2,573	*	e 0	2	2	179	2	e 65	i *	e 0	11	12	*	e 8	100	3	e 1	e 6-74	i *	e 1	i 0	*	78	1	e 126	*	e 10	*	
Paint, coating, adhesive, and other chemicals	3255, 3259	496	1,257	0-8	0	0-6	*	e 77	2	0-138	*	e 0	0-17	8	i 0	*	106	i 0-337	2	e 0-68	i 159	i 1	e *	e 1	e 29	0-360	31	*	e 0-35	1	
Plastics and rubber products	326	899	2,667	18	*	e 274	6	133	69	40	8	0	54	19	*	e 2	i 95	98	20	9	38	37	1	e 105	34	256	83	20	16	*	
Nonmetallic mineral products	327	227	1,361	3	*	e *	e *	54	37	*	e *	e *	3	8	*	e *	e 73	12	*	e 2	2	*	e *	e *	e 6	3	6	16	1	e *	
Primary metals	331	226	817	8	0	16	3	4	i 4	1	i 1	0	2	i 8	0	*	e 25	84	26	1	2	*	e *	e 16	1	e 39	27	22	4	*	
Fabricated metal products	332	1,427	2,222	35	*	e 58	9	230	42	94	1	*	e 33	22	*	e 3	175	97	14	i 27	25	9	1	e 16	43	104	63	3	55	*	
Machinery	333	2,020	13,765	23	*	e 80	45	3,186	35	241	*	e 0	189	392	*	e 37	i 1,527	326	863	154	80	43	3	e 176	i 591	471	510	18	100	4-70	i
Agricultural implement	33311	237	1,862	*	e 0	21	4	e 82	3	1	e 0	0	1	e 44	0	1	e 340	7	830	55	1	e 14	*	e *	e 0	6	i 116	i 1	e 1	e *	
Semiconductor machinery	333242	44	3,623	*	e 0	15	i 0	2,358	1	i 2	i 0	0	12	0	0	0-37	i *	e *	e 0	0	0	0	0	1	i 282	i 0	0-355	0	0	0-70	i
Engine, turbine, and power transmission equipment	3336	70	2,310	1	0	1	*	e 134	2	0-240	0	0	32	0-349	0	0	0-1,188	138	2	4	*	e 0-30	*	e 0-176	24	52	i 41	*	e 4	*	
Other machinery	other 333	1,672	5,970	21	*	e 42	41	613	29	0-240	*	e 0	143	0-349	*	e 0-37	0-1,188	181	32	94	78	0-30	3	e 0-176	i 284	413	0-355	17	95	0-70	e
Computer and electronic products	334	2,218	73,922	188	2	2,722	57	36,292	1,501	265	68	24	642	699	i 7	2,172	1,305	108	287	499	25	17	42	290	3,298	341	999	18	62	10	
Communications equipment	3342	266	11,822	98	1	80	6	5,333	284	35	3	20	336	501	i 5	39	681	37	19	45	10	5	4	161	462	97	85	5	29	3	

TABLE 28-A

## Companies with domestic R&amp;D paid for and performed by the company, by industry, company size, and state (A–M): 2018

(Millions of U.S. dollars)

Industry and company size	NAICS code	Companies, U.S. total <sup>a</sup> (number)	United States	Alabama	Alaska	Arizona	Arkansas	California	Colorado	Connecticut	Delaware	District of Columbia	Florida	Georgia	Hawaii	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana	Maine	Maryland	Massachusetts	Michigan	Minnesota	Mississippi	Missouri	Montana																								
Semiconductor and other electronic components	3344	595	28,642	33	1	1,795	29	12,691	336	31	11	2	85	61	*	2,032	201	11	e	52	i	0-44	2	1	26	52	1,238	i	125	179	2	14	1	i																				
Navigational, measuring, electromedical, and control instruments	3345	1,101	10,864	45	*	e	823	22	i	3,235	370	198	52	1	i	146	128	1	i	0-103	i	269	44	213	187-408	12	i	10	12	62	977	104	388	3	18	i	5																	
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	260	3,046	*	e	0	62	i	18	i	1,333	56	106	i	1	*	20	i	24	i	*	*	104	i	8	i	5	i	3	7	i	*	e	1	e	12	i	429	19	i	95	*	3	*										
Search, detection, navigation, guidance, aeronautical, and nautical system and instrument	334511	105	3,388	11	0	398-762	0	371	54	10	0	0	85	33	1	i	1	e	0-166	21	0-209	179-402	1	9	11	26	223	20	133	1	e	2	1																					
Other measuring and controlling device	other 3345	737	4,430	34	*	e	0-362	i	4	1,532	260	83	51	*	i	41	71	0	0-102	i	0-166	14	0-209	i	4	4	i	1	e	*	e	24	325	65	161	2	13	i	4															
Other computer and electronic products	other 334	255	22,594	12	0	23	0	15,032	511	1	1	1	74	10	*	0-102	154	16	3	42-244	2	*	1	14	621	15	347	9	1	*																								
Electrical equipment, appliances, and components	335	750	4,222	5	e	*	51	4	e	761	20	77	1	e	*	57	89	*	2	e	264	47	25	7	4	4	e	2	33	462	i	432	77	10	49	5																		
Transportation equipment	336	1,065	35,894	421	1	e	236	30	4,898	477	275	2	e	*	524	463	2	6	e	624	1,232	24	316	493	24	14	595	245	16,189	338	37	742	5																					
Motor vehicles, bodies, trailers, and parts	3361-63	636	23,080	77	*	e	23	9	2,491	i	14	19	*	e	0	10	84	0	3	439	1,042	14	11	488	*	e	1	e	42	76	15,838	71	19	25	1	e																		
Aerospace products and parts	3364	243	11,160	309	*	e	198	19	2,326	452	238	2	e	*	460	94	2	2	e	144	179	9	299	5	e	18	7	520	161	165	58	15	704	4																				
Aircraft, aircraft engine, and aircraft parts	336411-13	207	10,746	269	*	e	198	19	2,266	266	224	2	e	*	445	94	2	2	e	144	179	9	299	*	e	18	*	e	520	159	124	58	11	699	4																			
Guided missile, space vehicle, and related parts	336414-15, 336419	36	414	40	i	*	0	0	60	186	14	0	0	15	i	0	*	0	0	0	0	0	0	0	5	e	0	7	0	2	41	0	4	i	6	0																		
Military armored vehicle, tank, and tank component	336992	6	6	0	0	2	0	*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	i	0	0	0	0	0	0	0	0	0																				
Other transportation	other 336	182	1,649	35	*	e	13	2	e	82	12	17	*	e	0	54	285	*	e	1	i	40	10	e	1	e	5	1	e	6	e	6	33	8	186	209	3	e	12	0														
Furniture and related products	337	231	404	2	*	e	4	*	e	23	27	*	e	29	*	e	7	27	28	*	e	1	*	*	e	*	*	e	82	23	11	*	e	*	e																			
Miscellaneous	339	1,220	16,807	29	*	e	159	7	i	4,700	244	142	26	i	0	229	129	1	e	11	i	523	424	14	16	7	e	3	e	128	215	1,947	266	i	2,830	9	27	0-55																
Medical equipment and supplies	3391	684	14,267	26	*	e	112	3	i	4,186	196	87	23	0	208	96	*	e	1	e	419	404	2	e	3	e	3	e	1	e	127	209	1,835	241	i	2,801	3	20	1	e														
Other miscellaneous manufacturing	3399	537	2,540	3	e	*	e	46	4	i	514	48	55	i	3	i	0	20	33	i	*	e	11	i	104	20	13	13	3	e	3	e	1	e	6	112	24	29	6	8	0-54													
Nonmanufacturing industries	21-23, 42-81	9,978	143,123	394	15	e	943	156	62,688	1,494	694	i	143	227	2,035	1,747	49	64	2,603	328	300	407	188	157	49	1,395	4,885	1,058	1,222	39	862	57																						
Mining, quarrying, oil and gas extraction, and support activities	21	149	1,775	*	e	*	e	39	*	e	112	17	3	*	e	0	*	e	3	*	e	4	3	1	e	*	e	*	e	1	e	19	*	e	*	e	*	e	1	3	*	e	*	e										
Utilities	22	61	224	21	*	e	*	e	*	e	47	*	e	3	2	22	1	*	e	10	*	e	*	e	*	e	15	*	e	8	2	*	e	*	e	3	2	*	e															
Wholesale trade	42	768	881	i	3	e	*	e	9	2	i	161	i	9	4	i	*	e	*	e	8	14	i	*	e	1	i	23	i	9	13	i	8	i	38	i	4	*	e	2	e	3	e	33	i	73	i	1	e	10	i	2	i	
Electronic shopping and electronic auctions	454111-12	84	11,557	i	0-10	i	*	e	0-80	i	0-9	635-2,508	i	0-71	i	0-82	i	0-7	i	0-24	i	0-42	i	0-103	i	0-3	e	0-5	e	0-104	i	0-42	i	0-18	0-11	i	18	i	0-24	0-4	0-27	i	0-495	i	53	i	24	i	0-5	e	0-21	i	0-3	i
Transportation and warehousing	48-49	87	935	1	e	1	e	1	e	12	148	5	1	e	*	e	*	e	23	4	e	11	*	e	72	6	2	e	6	2	e	2	e	2	e	2	e	268	58	6	e	2	e	1	e	2	e	*	e					

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Information	51	2,626	93,487	201	4	e 297	91	50,138	1,007	405	i 30	140	1,146	843	14	i 27	e 812	151	184	56	54	30	18	296	2,976	444	537	12	148	40	
Publishing	511	975	32,281	77	1	140	3	e 9,819	276	128	i 8	e 29	484	198	4	17	354	104	30	16	7	8	e 13	144	1,726	267	358	6	80	6	
Newspaper, periodical, book, and directory publishers	5111	33	131	*	e *	e *	e *	24	*	*	e *	e 15	i 3	1	i *	e *	e 2	*	e *	e *	e *	e *	e *	e *	e 26	i 2	51	i *	e *	e *	
Software publishers	5112	941	32,150	77	1	140	3	e 9,795	276	128	i 8	e 15	481	198	4	17	352	104	30	16	7	7	e 13	144	1,700	265	308	6	80	6	
Telecommunications	517	177	3,631	4	2	e 23	1	e 249	52	1	e *	e 1	e 335	38	*	e 1	e 25	4	2	e 15	1	e 1	e 1	e 16	73	4	e 3	e 1	e 4	1	e 1
Data processing, hosting, and related services	518	1,192	23,115	111	1	e 123	86	14,759	404	65 - 154	18	50	280	411	9	i 6	e 296	37	79	24	37	19	3	119	732	116	158	2	e 55	32	
Other information	other 51	284	34,459	9	1	e 11	e 2	e 25,311	276	121 - 209	i 4	59	47	196	1	e 3	e 137	6	e 72	2	e 8	3	e 2	e 17	445	58	18	3	9	e 2	e 2
Finance and insurance	52	209	7,426	23	i *	e 119	15	i 2,017	33	49	95	*	e 313	76	i *	e 1	741	16	38	5	3	3	i *	363	108	68	18	1	e 23	*	e *
Real estate and rental and leasing	53	30	1,022	*	e *	e *	*	751	4	*	e *	e *	*	2	*	e *	e 3	*	e 2	*	e *	i *	e *	e *	*	e *	1	i *	e *	e *	e *
Lessors of nonfinancial intangible assets (except copyrighted works)	533	5	6	0	0	0	0	0	0	0	0	0	0	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	*	e *	e *	e *	751	4	*	e *	e *	*	2	*	e *	e 3	*	e 2	*	e *	i *	e *	e *	*	e *	1	i *	e *	e *	e *
Professional, scientific, and technical services	54	5,204	22,374	137	9	e 388	29	5,805	336	154	13	e 62	e 501	684	22	29	835	107	47	324	42	e 64	29	429	1,174	309	498	17	660	14	
Architectural, engineering, and related services	5413	1,150	2,277	44	3	e 19	4	249	66	36	2	9	70	205	9	11	81	25	8	31	15	28	4	107	55	79	37	12	83	8	
Computer systems design and related services	5415	2,410	13,633	73	3	e 135	14	3,785	174	57	9	e 35	e 263	353	10	10	439	44	e 31	283	20	e 16	e 22	233	e 632	169	356	4	e 563	2	e 2
Scientific research and development services	5417	785	2,424	12	e 0	216	8	870	35	26	1	1	i 54	18	2	2	i 27	28	3	3	2	1	1	50	281	35	24	*	1	i 3	i 3
Research and development in biotechnology	541711	202	820	2	e 0	192	*	e 302	1	e 4	*	0	8	8	*	0	8	2	i 2	*	1	*	*	15	i 61	2	i 5	*	e 1	i 1	1
Research and development in the physical, engineering, and life sciences (except biotechnology)	541712	573	1,577	10	0	24	8	551	34	22	1	*	45	10	2	2	i 19	26	1	e 2	1	i 1	i 1	34	219	33	19	*	*	e 2	i 2
Research and development in the social sciences and humanities	541720	10	27	0	0	0	0	17	0	0	0	1	i *	0	0	0	0	0	0	0	0	0	0	*	i *	0	0	0	0	0	0
Other professional, scientific, and technical services	other 54	859	4,041	8	e 4	e 17	e 2	e 901	62	35	1	e 16	e 115	107	1	e 5	288	10	e 6	e 7	e 5	e 19	2	e 39	e 206	28	e 80	1	e 12	e 1	e 1
Health care services	621-23	178	1,401	2	*	e 14	2	1,006	i 17	*	e *	e *	4	*	*	e *	e 5	*	e *	e *	e *	e *	e *	i 6	73	92	i 13	i *	i *	e *	e *
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	592	2,041	0 - 10	*	e 0 - 80	0 - 9	0 - 1,863	0 - 71	0 - 82	i 0 - 7	0 - 24	0 - 42	0 - 103	0 - 3	e 0 - 5	0 - 104	0 - 42	0 - 18	0 - 11	31	0 - 24	0 - 4	e 0 - 27	0 - 495	53	55	0 - 5	e 0 - 21	0 - 3	
All companies (number of domestic employees)	-	24,698	377,806	1,284	20	e 4,673	423	129,656	4,286	6,193	1,432	i 278	4,498	4,094	89	2,376	12,239	6,004	2,556	1,645	1,178	359	266	4,227	22,581	20,323	7,021	250	3,976	157	

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Small companies																														
10-19 <sup>b</sup>	-	3,948	3,340	17 e	2 e	32 e	5 e	809	80	36 e	8 e	11 e	97 e	63 e	4	11 e	82 e	42	14 e	18 e	18 e	11 e	4 e	82	234	66 e	57 e	4 e	32 e	3 e
20-49	-	6,950	9,556	43 e	6 e	72 e	24 e	2,787	149 e	225 i	19 e	31 e	226 e	161 e	17	17 e	300 e	95 e	77	44 e	42 e	28 e	16 e	253	1,154	229 e	204	22 e	64 e	13
Medium companies																														
50-99	-	4,406	10,446	63	2 e	135	13 e	3,281	147	171	12 e	30	203	119 e	5	17 e	312	165	53	56	40 e	32	11 e	210	1,230	274	158	12 e	91	18
100-249	-	4,562	14,626	138	3 e	146	42	4,693	313	194	23	17	302	229	3 e	27	591	155	56	82	86	42	8 e	225	1,503	365	336	36	109	9
Large companies																														
250-499	-	1,967	16,604	49	2 e	158	38	6,398	393	197	7	24	233	185	1 e	53	280	126	102	63	65	42	3 e	537	1,738	502	310	9	116	19
500-999	-	1,098	15,561	41	1 e	127	25	4,613	284	94	9	18 i	255	131	3	9	1,044	152	175	45	73	11	5	187	2,149	494	270	25	80	0-59
1,000-4,999	-	1,221	58,509	393	1 e	616	126	22,251	868	928	447	57	816	945	12 i	126	1,147	613	224	551	709 i	95	180	855	6,081	1,909	1,052	35	277	22
5,000-9,999	-	231	36,274	75	0-6	673 i	41	14,481	846	591	97 i	5	340	452	10	1,929	620	465	61	122	49	7	1	222	1,377 i	851	693	41	187	0-59 i
10,000-24,999	-	201	74,423	76	0-6 e	467	33 i	22,954	369	544	721 i	46	668	819	26 i	102	4,353 i	3,180	1,016 i	550	57	34	10	724	3,491	2,334	1,036	48	1,528	6
25,000 or more	-	114	138,465	388	2	2,247	76	47,389	839	3,212	90	39	1,358	989	7	85	3,509	1,011	778	114	39	56	26	933	3,623	13,299	2,904	18	1,491	12

\* = 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 ten 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. 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 of 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.