

TABLE 32

Domestic R&D paid for and performed by the company, by industry and company size: 2019

(Millions of U.S. dollars)

Industry	NAICS code	Company size (domestic employees)										
		All companies	10-19 ^a	20-49	50-99	100-249	250-499	500-999	1,000-4,999	5,000-9,999	10,000-24,999	25,000 or more
All industries	21-23, 31-33, 42-81	428,968	4,432	10,040	11,492	16,520	15,356	21,549	64,475	44,728	74,385	165,991
Manufacturing industries	31-33	248,109	2,007	4,606	7,013	9,921	8,834	13,163	36,818	33,246	53,071	79,430
Food	311	3,937	0 - 26	29	91	163	191	184	506	194 - 234	1,687 - 1,697	856
Beverage and tobacco products	312	971	15	18	16	10	12 - 20	26	21	204	101	541 - 547
Textile, apparel, and leather products	313-16	873	0 - 23	68	0 - 10	22 - 41	22	14	190	282	86	166
Wood products	321	180	0	4	5	22	5	7	45	85	7	0
Paper	322	1,064	2	12	6	29	24	10	76	119	341	446
Printing and related support activities	323	420	i 123	4	18	22	52	i 11	29	i 72	i 89	0
Petroleum and coal products	324	1,203	1	4	0 - 140	16 - 35	39	25 - 65	44	0 - 279	0 - 193	455 - 1,050
Chemicals	325	87,288	905	2,072	4,186	4,549	3,949	5,178	10,289	12,926	27,034	16,201
Basic chemicals	3251	2,198	0 - 45	97	43	142	103	149	1,033	259 - 312	308	15
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	1,092	0 - 45	14	13 - 27	96	22	64	99 - 133	0	704 - 772	0
Pesticide, fertilizer, and other agricultural chemicals	3253	1,501	21	22	20 - 34	39	25	25	166 - 237	695 - 751	362 - 476	0
Pharmaceuticals and medicines	3254	78,652	820	1,880	3,951	4,077	3,663	4,856	8,155	11,538	23,828	15,884
Soap, cleaning compound, and toilet preparation	3256	2,596	21	10	48	116	50	33	348	379	i 1,410	181
Paint, coating, adhesive, and other chemicals	3255, 3259	1,249	0 - 45	49	82 - 99	78	85	51	419 - 489	0	239 - 366	121
Plastics and rubber products	326	2,770	6	50	134	208	233	316	684	633	333	174
Nonmetallic mineral products	327	1,473	i *	10	26	11 - 30	0 - 15	190	150	37 - 57	1,014	i 0
Primary metals	331	649	0 - 4	12 - 18	16	101	24	46	228	98	105 - 111	9
Fabricated metal products	332	2,632	110	155	290	520	350	417	547	154	i 88	0
Machinery	333	13,930	134	554	460	929	535	710	2,384	3,839	1,387	2,997
Agricultural implement	33311	1,913	4	48	13	44	20	81	270	141	0	1,293
Semiconductor machinery	333242	3,854	0 - 125	15	0 - 48	87	45	154	709 - 762	2,666 - 2,799	0	0
Engine, turbine, and power transmission equipment	3336	1,096	7	i 42	1	34	48	64	89	462	350	0
Other machinery	other 333	7,067	0 - 125	449	397 - 448	764	423	412	1,263 - 1,317	436 - 570	1,037	1,704

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Computer and electronic products	334	75,570	247	942	912	1,465	1,613	3,137	13,281	9,175	i	12,764	32,034			
Communications equipment	3342	11,495	0 - 102	227	0 - 264	194	220 - 367	904	2,554	1,537 - 1,644		0 - 1,131	4,218 - 5,850			
Semiconductor and other electronic components	3344	31,975	i	0 - 102	187	224	752	859	1,048	4,348	5,520 - 5,547	i	9,716	9,192 - 9,320		
Navigational, measuring, electromedical, and control instruments	3345	10,912		146	i	492	426	393	282 - 389	679 - 778	3,474	339 - 421	1,919	i	2,586	
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	3,117		70	i	113	198	81	131	453	1,155	0	914	i	0	
Search, detection, navigation, guidance, aeronautical, and nautical system and instrument	334511	3,400		8		65	29 - 104	67	95	20	648	77 - 157	388	i	1,927	
Other measuring and controlling device	other 3345	4,395		67		313	124 - 199	244	57 - 163	205 - 304	1,670	263	617		659	
Other computer and electronic products	other 334	21,188		0 - 102	i	36	0 - 264	127	32 - 144	406 - 506	2,905	1,670	i	0 - 1,131	i	14,302 - 15,913
Electrical equipment, appliances, and components	335	4,886		132		162	190	291	221	872	1,329	482	578		630	
Transportation equipment	336	31,505		143	i	129	165	737	765	1,157	2,973	3,000	3,059		19,375	
Motor vehicles, bodies, trailers, and parts	3361–63	20,883		7		14	0 - 84	393	604	762	1,966	2,088	i	1,968	12,993 - 13,085	
Aerospace products and parts	3364	8,900		135	i	75	58 - 87	308	108	201 - 231	795	336	1,083		5,774	
Aircraft, aircraft engine, and aircraft parts	336411–13	8,341		13		61	11 - 40	223	106	201 - 231	506	336	1,083		5,774	
Guided missile, space vehicle, and related parts	336414–15, 336419	559		122	i	14	46	86	2	0	289	0	0		0	
Military armored vehicle, tank, and tank component	336992	25		1		*	23	1	1	0	0	0	0		0	
Other transportation	other 336	1,697		0		41	0 - 84	35	52	164 - 194	213	575	8		515 - 609	
Furniture and related products	337	407		0		1 - 5	27	30 - 34	19 - 23	35	116	157	15		0	
Miscellaneous	339	18,352		159		366 - 372	337 - 477	733 - 752	751 - 785	793 - 831	3,924	1,505 - 1,785	4,190 - 4,384		4,953 - 5,535	
Medical equipment and supplies	3391	15,812		145		271	338	564	597	466	2,781	1,506	4,191		4,954	
Other miscellaneous manufacturing	3399	2,540		14		95 - 101	0 - 140	170 - 189	155 - 189	327 - 365	1,144	0 - 279	i	0 - 193	0 - 581	

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Nonmanufacturing industries	21–23, 42–81	180,858	2,425	5,435	4,478	6,599	6,522	8,386	27,657	11,482	21,314	i	86,561		
Mining, quarrying, oil and gas extraction, and support activities	21	2,535	3	8	322	4	56	43	66	256	1,776		0		
Utilities	22	237	*	4 - 10	0 - 2	5	0	0 - 161	65	3	0 - 161		0 - 161		
Wholesale trade	42	1,104	88 - 100	531	118	196	106 - 121	i	23	19	i	0	11	i	0
Electronic shopping and electronic auctions	454111–12	3,088 - 15,775	i	0	0 - 170	7	0 - 510	0 - 303	0 - 1,264	0 - 559	0 - 946	i	0	0 - 13,832	i
Transportation and warehousing	48–49	9,504	i	2	0 - 170	0 - 186	0 - 510	62	i	0 - 676	793	0 - 676	7,974	i	0 - 676
Information	51	109,062		518	1,848	1,367	2,788	3,348	5,603	19,456	7,376	6,396		60,362	
Publishing	511	32,447		173 - 207	809	361	682 - 807	642	592 - 696	7,852	2,606 - 2,689	2,246		16,308	
Newspaper, periodical, book, and directory publishers	5111	61		4	1	6	4	44	2	0	0	0		0	
Software publishers	5112	32,386		169 - 203	808	355	679 - 803	598	590 - 694	7,852	2,606 - 2,689	2,246		16,308	
Telecommunications	517	3,700		29	33	135	114	169	87	67	59	23		2,982	
Data processing, hosting, and related services	518	30,154		0 - 316	769	810	1,622 - 1,643	2,102	3,791	8,524	4,097	2,447 - 2,772		5,668	
Other information	other 51	42,761		0 - 316	237	61	225 - 350	435	1,028 - 1,132	3,011	531 - 614	1,354 - 1,679		35,405	
Finance and insurance	52	8,890		78	0 - 170	0 - 186	197	598	264	1,572	902	1,960		2,960 - 3,323	
Real estate and rental and leasing	53	1,371		*	10	3	7	35	24	1,293	0	0		0	
Lessors of nonfinancial intangible assets (except copyrighted works)	533	45		*	7	2	i	1	35	0	0	0		0	
Other real estate and rental and leasing	other 53	1,326		0	2	1	6	0	24	1,293	0	0		0	
Professional, scientific, and technical services	54	29,131		1,016	2,867	2,332	2,763	1,494	1,169	3,674	2,002	2,407	i	9,408	
Architectural, engineering, and related services	5413	2,288		207	237	313	430	199	121	381	274	i	125	1	
Computer systems design and related services	5415	18,395		409	1,568	993	1,006	758	709	2,639	i	288	2,192	i	7,833
Scientific research and development services	5417	3,265		353	817	643	890	260	211	27	*	2	i	62	
Research and development in biotechnology	541711	1,083		127	256	247	91	i	169	132	0	0		62	
Research and development in the physical, engineering, and life sciences (except biotechnology)	541712	2,155		224	551	388	800	83	79	27	*	2	i	0	

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Research and development in the social sciences and humanities	541720	27	2	10	7	*	8	0	0	0	0	0		
Other professional, scientific, and technical services	other 54	5,182	47	244	383	436	277	127	627	1,441	88	1,512		
Health care services	621–23	1,928	695	0 - 170	147	134	523	0 - 267	165	1	0 - 267	0 - 267		
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	1,322 - 14,012	12 - 24	0 - 170	0 - 186	0 - 510	0 - 303	0 - 1,264	i	0 - 559	0 - 946	i	359 - 793	0 - 13,640

* = amount < \$500,000; i = > 50% of the estimate is a combination of imputation and reweighting to account for nonresponse.

NAICS = 2012 North American Industry Classification System.

^a The Business Enterprise 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. 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. 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 Census Bureau, Business Enterprise Research and Development Survey, 2019.