

TABLE 50

## Domestic R&amp;D performance by performer and source of funds, by industry and company size: 2019

(Millions of U.S. dollars)

Industry and company size	NAICS code	Performed by the company			Performed by others		
		Total	Paid for by the company	Paid for by others	Total	Paid for by the company	Paid for by others
All industries	21-23, 31-33, 42-81	492,956	428,968	63,989	45,879	37,537	8,342
Manufacturing industries	31-33	285,674	248,109	37,564	40,561	33,886	6,675
Food	311	4,180	3,937	243	193	190	3
Beverage and tobacco products	312	1,082	971	111 i	179	176	3
Textile, apparel, and leather products	313-16	904	873	31	16	16	0
Wood products	321	186	180	6	11	11	*
Paper	322	1,064	1,064	*	4	4	0
Printing and related support activities	323	420 i	420 i	0	6 i	6 i	0
Petroleum and coal products	324	1,306	1,203	103	248 - 350	248 - 347	0 - 3
Chemicals	325	97,063	87,288	9,775	30,566	25,666	4,901
Basic chemicals	3251	2,360	2,198	162	65	63	1
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	1,172	1,092	80	24 - 73	25	0 - 47
Pesticide, fertilizer, and other agricultural chemicals	3253	1,822 - 1,846	1,501	320 - 345	191 - 216	192	0 - 24
Pharmaceuticals and medicines	3254	87,619	78,652	8,966	29,875	25,052	4,823
Soap, cleaning compound, and toilet preparation	3256	2,760	2,596	164	322	291	31
Paint, coating, adhesive, and other chemicals	3255, 3259	1,305 - 1,333	1,249	56 - 84	42 - 90	42	0 - 47
Plastics and rubber products	326	2,856	2,770	85	82	53	29
Nonmetallic mineral products	327	1,508 i	1,473 i	35	23	23	*
Primary metals	331	665	649	16	18	15	3
Fabricated metal products	332	2,885	2,632	254	55	35	21
Machinery	333	15,184	13,930	1,254	473	415	58
Agricultural implement	33311	1,921	1,913	9	199	199	0
Semiconductor machinery	333242	4,459	3,854	604	43	5	38
Engine, turbine, and power transmission equipment	3336	1,301	1,096	205	33	18	14
Other machinery	other 333	7,503	7,067	436	199	194	5
Computer and electronic products	334	86,729	75,570	11,159	2,611	2,021	590
Communications equipment	3342	12,595	11,495	1,100 i	969 - 972	936	32 - 35 i
Semiconductor and other electronic components	3344	35,183 i	31,975 i	3,208	418	363	56
Navigational, measuring, electromedical, and control instruments	3345	17,562	10,912	6,650	870	380	490
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	3,342	3,117	225	127	118	9
Search, detection, navigation, guidance, aeronautical, and nautical system and instrument	334511	9,662	3,400	6,262	597	158	439
Other measuring and controlling device	other 3345	4,558	4,395	163	146	104	42
Other computer and electronic products	other 334	21,388	21,188	201	352 - 355	342	10 - 13
Electrical equipment, appliances, and components	335	5,263	4,886	377	125	124	1
Transportation equipment	336	45,375	31,505	13,870 i	5,082	4,055	1,027 i

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Motor vehicles, bodies, trailers, and parts	3361-63	24,117	20,883	3,233 i	3,536	3,371	165
Aerospace products and parts	3364	18,358 i	8,900	9,458 i	1,491 i	632	859 i
Aircraft, aircraft engine, and aircraft parts	336411-13	16,891 i	8,341	8,550 i	1,373 i	514	859 i
Guided missile, space vehicle, and related parts	336414-15, 336419	1,467	559	908	118	118	0
Military armored vehicle, tank, and tank component	336992	35	25	10	0	0	0
Other transportation	other 336	2,865	1,697	1,168	55	51	3
Furniture and related products	337	409	407	2	23	23	*
Miscellaneous	339	18,596	18,352	244	741 - 840	708 - 800	33 - 40
Medical equipment and supplies	3391	16,014	15,812	202	742	708	33
Other miscellaneous manufacturing	3399	2,582	2,540	42	0 - 98	0 - 92	0 - 7
Nonmanufacturing industries	21-23, 42-81	207,283	180,858	26,425	5,318	3,651	1,667
Mining, quarrying, oil and gas extraction, and support activities	21	2,717	2,535	183	123	123	*
Utilities	22	275	237	38	182	171	11
Wholesale trade	42	1,191	1,104	87	50	47	3
Electronic shopping and electronic auctions	454111-12	3,131 - 15,818 i	3,088 - 15,775 i	43 - 61	125 i	125 i	0
Transportation and warehousing	48-49	9,890 i	9,504 i	386	43	43	0
Information	51	110,227	109,062	1,165	2,132	2,061	72
Publishing	511	33,019	32,447	572	1,045	1,001	44
Newspaper, periodical, book, and directory publishers	5111	61	61	*	4	4	0
Software publishers	5112	32,958	32,386	572	1,042	998	44
Telecommunications	517	3,733	3,700	33	418	416	2
Data processing, hosting, and related services	518	30,558	30,154	404	269	249	20
Other information	other 51	42,917	42,761	155	401	395	6
Finance and insurance	52	8,917	8,890	28	319	319	0
Real estate and rental and leasing	53	1,371	1,371	0	7	7	0
Lessors of nonfinancial intangible assets (except copyrighted works)	533	45	45	0	*	*	0
Other real estate and rental and leasing	other 53	1,326	1,326	0	7	7	0
Professional, scientific, and technical services	54	53,233	29,131	24,103	2,182	603	1,579
Architectural, engineering, and related services	5413	4,207	2,288	1,919	465	95	370
Computer systems design and related services	5415	21,046	18,395	2,651	174	128	46
Scientific research and development services	5417	21,669	3,265	18,403	1,397	316	1,081
Research and development in biotechnology	541711	6,457	1,083	5,374	236	118	118
Research and development in the physical, engineering, and life sciences (except biotechnology)	541712	14,446 i	2,155	12,291 i	1,039	198	841
Research and development in the social sciences and humanities	541720	766	27	738	122	*	122

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Other professional, scientific, and technical services	other 54	6,312	5,182	1,129	146	64	82
Health care services	621-23	2,265	1,928	337	69	66	4
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	1,380 - 14,067	1,322 - 14,012	34 - 58	86	86	0
All companies (number of domestic employees)	-	492,956	428,968	63,989	45,879	37,537	8,342
Small companies							
10-19 <sup>a</sup>	-	5,501	4,432	1,070	657	514	143
20-49	-	12,418	10,040	2,378	1,567	1,214	353
Medium companies							
50-99	-	14,021	11,492	2,529	2,548	2,176	372
100-249	-	19,793	16,520	3,274	2,260	1,912	348
Large companies							
250-499	-	18,883	15,356	3,527	2,120	1,719	402
500-999	-	23,969	21,549	2,420	2,311	2,118	193
1,000-4,999	-	75,671	64,475	11,196	6,733	4,512	2,221
5,000-9,999	-	50,811	44,728	6,083	6,194	5,634	559
10,000-24,999	-	88,263	74,385	13,878	10,996	8,850	2,147
25,000 or more	-	183,626	165,991	17,635	10,492	8,888	1,604

\* = amount &lt; \$500,000; 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> 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.