

TABLE 48

## Domestic R&amp;D performance by performer and source of funds, by industry and company size: 2018

(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	441,036	377,806	63,230	52,547	42,668	9,878
Manufacturing industries	31-33	274,075	234,682	39,393	47,321	39,079	8,242
Food	311	4,654	4,412	242	234	232	2
Beverage and tobacco products	312	1,113	1,004	109	234	233	1
Textile, apparel, and leather products	313-16	989	986	4	18	18	*
Wood products	321	203	199	4	13	13	* i
Paper	322	934	932	2	15	14	1
Printing and related support activities	323	242	238	4	3	3	*
Petroleum and coal products	324	1,269	1,246	23	230	230	*
Chemicals	325	84,137	73,584	10,553	35,552	31,571	3,981
Basic chemicals	3251	2,443	2,251	192	72	72	*
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	1,653	1,568	85	6 - 96	6 - 18	0 - 79
Pesticide, fertilizer, and other agricultural chemicals	3253	1,460	1,135	i 326	100 - 107 i	101 i	0 - 7
Pharmaceuticals and medicines	3254	74,592	64,800	9,792	34,981	31,078	3,903
Soap, cleaning compound, and toilet preparation	3256	2,710	2,573	137	270 - 350	271	0 - 79
Paint, coating, adhesive, and other chemicals	3255, 3259	1,278	1,257	21	33 - 123	33 - 45	0 - 79
Plastics and rubber products	326	2,751	2,667	83	115	68	47
Nonmetallic mineral products	327	1,385	1,361	24	15	15	0
Primary metals	331	839	817	22	38	37	1
Fabricated metal products	332	2,327	2,222	105	86	85	1
Machinery	333	14,799	13,765	1,034	484	429	55
Agricultural implement	33311	1,872	1,862	10	188	188	*
Semiconductor machinery	333242	4,166	3,623	543	43	1 - 10	32 - 42
Engine, turbine, and power transmission equipment	3336	2,483	2,310	173	49 - 72	50	0 - 21
Other machinery	other 333	6,278	5,970	307	182 - 205	182 - 191	0 - 22
Computer and electronic products	334	83,697	73,922	9,775	2,213	1,785	429
Communications equipment	3342	13,107	11,822	1,285	i 844	779	64 i
Semiconductor and other electronic components	3344	31,052	28,642	2,410	398	384	13
Navigational, measuring, electromedical, and control instruments	3345	16,727	10,864	5,863	701	359	342
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	3,208	3,046	163	80	80	*
Search, detection, navigation, guidance, aeronautical, and nautical system and instrument	334511	8,843	3,388	5,455	504 - 515	177 - 186	328
Other measuring and controlling device	other 3345	4,675	4,430	245	107 - 117	94 - 103	13

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Other computer and electronic products	other 334	22,811	22,594	217	271	261	9
Electrical equipment, appliances, and components	335	4,487	4,222	266	158	109	49
Transportation equipment	336	52,629	35,894	16,735	6,849	3,218	3,631
Motor vehicles, bodies, trailers, and parts	3361-63	25,586	23,080	2,506	2,761 - 2,786	2,608	154 - 177
Aerospace products and parts	3364	24,291	11,160	13,131	4,010	555	3,455
Aircraft, aircraft engine, and aircraft parts	336411-13	22,968	10,746	12,222	3,877	422	3,455
Guided missile, space vehicle, and related parts	336414-15, 336419	1,323	414	909	133	133	0
Military armored vehicle, tank, and tank component	336992	11	6	6	0	0	0
Other transportation	other 336	2,741	1,649	1,092	54 - 78	55	0 - 23
Furniture and related products	337	410	404	5	19 - 20	19	0 - 1
Miscellaneous	339	17,209	16,807	402	1,043 - 1,048	1,003	40 - 46
Medical equipment and supplies	3391	14,531	14,267	264	866	839	27
Other miscellaneous manufacturing	3399	2,678	2,540	138	177 - 182	163	14 - 18
Nonmanufacturing industries	21-23, 42-81	166,961	143,123	23,838	5,226	3,589	1,637
Mining, quarrying, oil and gas extraction, and support activities	21	1,905	1,775	130	141	141	*
Utilities	22	275	224	51	223	211	12
Wholesale trade	42	906	881	25	39	36	4
Electronic shopping and electronic auctions	454111-12	11,652	11,557	94	0 - 131	0 - 131	0
Transportation and warehousing	48-49	942	935	7	31	31	0
Information	51	94,349	93,487	862	2,141	2,062	79
Publishing	511	32,770	32,281	489	1,184	1,108	75
Newspaper, periodical, book, and directory publishers	5111	131	131	*	6	5	1
Software publishers	5112	32,639	32,150	489	1,178	1,103	75
Telecommunications	517	3,696	3,631	65	353	352	2
Data processing, hosting, and related services	518	23,306	23,115	191	209	207	2
Other information	other 51	34,576	34,459	117	395	395	0
Finance and insurance	52	7,471	7,426	45	348	347	1
Real estate and rental and leasing	53	1,022	1,022	0	*	*	0
Lessors of nonfinancial intangible assets (except copyrighted works)	533	6	6	0	*	*	0
Other real estate and rental and leasing	other 53	1,016	1,016	0	*	*	0
Professional, scientific, and technical services	54	44,860	22,374	22,486	2,021	552	1,469
Architectural, engineering, and related services	5413	3,961	2,277	1,684	419	103	316

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Computer systems design and related services	5415	15,923	13,633	2,291	140	111	29
Scientific research and development services	5417	20,185	2,424	17,761	1,287	238	1,049
Research and development in biotechnology	541711	5,857	820	5,037	70 - 221	71	0 - 150
Research and development in the physical, engineering, and life sciences (except biotechnology)	541712	13,657	1,577	12,080	1,067	167	900
Research and development in the social sciences and humanities	541720	671	27	644	0 - 150	0	0 - 150
Other professional, scientific, and technical services	other 54	4,791	4,041	750	175	100	75
Health care services	621-23	1,476	1,401	75	129 i	80	49 i
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	2,103	2,041	62	26 - 157	3 - 134	23
All companies (number of domestic employees)	-	441,036	377,806	63,230	52,547	42,668	9,878
Small companies							
10-19 <sup>a</sup>	-	4,390	3,340	1,050	528	415	113
20-49	-	11,252	9,556	1,695	1,958	1,562	396
Medium companies							
50-99	-	12,321	10,446	1,875	2,011	1,836	174
100-249	-	18,547	14,626	3,921	2,723	2,062	661
Large companies							
250-499	-	19,645	16,604	3,041	2,984	2,352	631
500-999	-	17,657	15,561	2,096	1,477	1,227	250
1,000-4,999	-	68,578	58,509	10,068	7,175	5,696	1,479
5,000-9,999	-	45,337	36,274	9,063	6,654	6,239	415
10,000-24,999	-	84,420	74,423	9,997	16,503	14,801	1,702 i
25,000 or more	-	158,889	138,465	20,423	10,535	6,478	4,056

\* = 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> Business 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 U.S. Census Bureau, Business Research and Development Survey, 2018.