

TABLE 48

## Domestic R&amp;D performance by performer and source of funds, by industry and company size: 2016

(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	374,685	317,731	56,954	46,854	37,499	9,355
Manufacturing industries	31-33	250,553	211,660	38,893	41,132	33,740	7,392
Food	311	4,828	4,611	217	140	140	*
Beverages and tobacco products	312	D	987	D	183	183	0
Textiles, apparel, and leather products	313-16	1,166	1,156	9	13	12	1
Wood products	321	188	181	7	D	10	D
Paper	322	851	851	*	3	3	* i
Printing and related support activities	323	219	219	*	D	2	D
Petroleum and coal products	324	381	367	14	D	56	D
Chemicals	325	73,575	64,165	9,410	31,375	27,193	4,182
Basic chemicals	3251	2,545	2,284	261	111	109	2
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	711	693	18	17	17	*
Pesticides, fertilizers, and other agricultural chemicals	3253	D	1,061	D	D	D	D
Pharmaceuticals and medicines	3254	64,628	55,983	8,644	30,777	26,628	4,149
Soaps, cleaning compounds, and toilet preparations	3256	2,800	2,660	141	399	372	27
Paints, coatings, adhesives, and other chemicals	3255, 3259	D	1,484	D	D	D	D
Plastics and rubber products	326	3,752	3,584	169	154	151	3
Nonmetallic mineral products	327	1,289	1,274	14	298	297	1
Primary metals	331	592	583	10	D	36	D
Fabricated metal products	332	2,239	2,127	112	112	80	31
Machinery	333	12,585	11,699	886	468	435	33
Agricultural implements	33311	1,565	1,552	12	183	182	*
Semiconductor machinery	333242	3,411	3,028	383	22	*	22
Engines, turbines, and power transmission equipment	3336	1,959	1,901	58	8	7	2
Other machinery	other 333	5,650	5,218	432	255	246	9
Computer and electronic products	334	77,385	68,515	8,869	1,567	1,313	254
Communications equipment	3342	13,112	11,293	1,818	283	240	43
Semiconductors and other electronic components	3344	31,391	29,176	2,215	432	386	46
Navigational, measuring, electromedical, and control instruments	3345	14,885	10,131	4,753	450	288	162
Electromedical, electrotherapeutic, and irradiation apparatuses	334510, 334517	2,632	2,466	165	52	50	2
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	7,533	3,121	4,412	282	126	156
Other measuring and controlling devices	other 3345	4,720	4,544	176	116	112	4
Other computer and electronic products	other 334	17,997	17,914	82	402	399	3
Electrical equipment, appliances, and components	335	4,771	4,302	469	160	149	10
Transportation equipment	336	51,275	32,905	18,371	5,592	2,749	2,843
Automobiles, bodies, trailers, and parts	3361-63	22,042	19,293	2,749	2,136	1,999	137
Aerospace products and parts	3364	26,645	12,272	14,373	3,411	708	2,702
Aircraft, aircraft engines, and aircraft parts	336411-13	25,221	11,930	13,291	3,289	587	2,702
Guided missiles, space vehicles, and related parts	336414-15, 336419	1,424	342	1,083	122	121	1
Military armored vehicles, tanks, and tank components	336992	D	3	D	0	0	0
Other transportation	other 336	D	1,337	D	45	42	3

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Furniture and related products	337	366	366	*	25	25	0
Miscellaneous manufacturing	339	D	13,768	D	D	904	D
Medical equipment and supplies	3391	11,668	11,474	194	840	815	25
Other miscellaneous manufacturing	3399	D	2,294	i	D	89	i
Nonmanufacturing industries	21–23, 42–81	124,132	106,071	18,061	5,722	3,759	1,963
Mining, extraction, and support activities	21	3,296	2,897	400	273	273	0
Utilities	22	351	325	26	203	190	14
Wholesale trade	42	452	442	i	10	i	3
Electronic shopping and electronic auctions	454111–12	1,569	1,569	i	0	i	0
Transportation and warehousing	48–49	488	486		16	16	0
Information	51	70,748	70,075	674	2,072	1,999	73
Publishing	511	33,574	33,174	400	1,401	1,333	68
Newspaper, periodical, book, and directory publishers	5111	79	77	i	3	i	6
Software publishers	5112	33,495	33,098	397	1,395	1,327	68
Telecommunications	517	D	3,530	i	D	181	181
Data processing, hosting, and related services	518	11,914	11,776	138	275	270	5
Other information	other 51	D	21,594	D	216	215	*
Finance and insurance	52	7,331	7,237	94	95	95	0
Real estate and rental and leasing	53	475	475	0	3	3	0
Lessors of nonfinancial intangible assets (except copyrighted works)	533	27	27	0	3	3	0
Other real estate and rental and leasing	other 53	449	449	0	*	*	0
Professional, scientific, and technical services	54	37,595	20,845	16,750	2,844	993	1,851
Architectural, engineering, and related services	5413	3,412	1,816	1,596	463	101	362
Computer systems design and related services	5415	15,747	13,255	2,492	i	203	107
Scientific research and development services	5417	14,842	2,811	12,031	2,054	766	i
Biotechnology research and development	541711	4,464	750	i	3,714	483	i
Physical, engineering, and life sciences (except biotechnology) research and development	541712	9,659	2,029	7,630	1,454	i	389
Social sciences and humanities research and development	541720	719	32	687	118	0	118
Other professional, scientific, and technical services	other 54	3,595	2,962	632	123	19	104
Health care services	621–23	848	782	66	25	i	23
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	977	i	939	i	38	100
All companies (number of domestic employees)	–	374,685	317,731	56,954	46,854	37,499	9,355
Micro companies <sup>a</sup>							
5–9	–	1,581	i	1,044	i	536	i
Small companies							
10–19	–	4,958	i	3,887	i	1,071	i
20–49	–	9,662	i	7,473	i	2,189	1,658
Medium companies							
50–99	–	9,298	7,728	1,570	1,916	1,523	393
100–249	–	14,875	11,722	3,153	2,701	1,960	741
Large companies							
250–499	–	13,092	11,438	1,654	1,437	1,141	296
500–999	–	14,450	13,525	924	1,769	1,484	285

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1,000–4,999	–	63,971	53,305	10,666	9,252	7,311	1,940
5,000–9,999	–	40,633	35,887	4,746	3,462	2,424	1,038
10,000–24,999	–	65,594	53,384	12,210	12,377	11,158	1,219
25,000 or more	–	136,571	118,339	18,232	11,205	8,325	2,880

\* = amount < \$500,000; D = data withheld to avoid disclosing operations of individual companies; 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> Business R&D and Innovation Survey does not include companies with fewer than five 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. Statistics are representative of companies located in the United States that performed or funded R&D.

**Source(s)**

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