

TABLE 10

## Domestic R&amp;D paid for by the company and others and performed by the company, by type of cost, industry, and company size: 2016

(Millions of U.S. dollars)

Industry and company size	NAICS code	Total	Salaries, wages, and fringe benefits	Stock-based compensation	Temporary staffing	Expensed equipment	Materials and supplies	Lease and rental payments	Depreciation	Royalties and licensing fees	Other purchased services (except R&D)	Other
All industries	21-23, 31-33, 42-81	374,685	214,959	21,644	16,704	5,584	26,696	6,100	13,674	1,928	10,196	57,200
Manufacturing industries	31-33	250,553	137,103	9,666	10,045	3,802	23,040	3,556	10,138	1,660	6,705	44,838
Food	311	4,828	2,942	93	131	30	404	61	225	166	256	521
Beverages and tobacco products	312	D	D	16	48	7	78	11	55	0	18	D
Textiles, apparel, and leather products	313-16	1,166	771	29	53	2	118	3	23	1	55	109
Wood products	321	188	136	D	11	2	24	D	3	*	2	D
Paper	322	851	D	*	D	35	346	D	D	1	D	D
Printing and related support activities	323	219	D	D	D	10	D	10	D	*	*	D
Petroleum and coal products	324	381	251	*	8	D	D	2	D	1	D	D
Chemicals	325	73,575	33,090	3,446	4,651	441	6,394	1,148	3,736	827	1,713	18,128
Basic chemicals	3251	2,545	1,576	6	D	49	233	D	147	1	116	D
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	711	D	D	43	D	D	15	D	1	D	D
Pesticides, fertilizers, and other agricultural chemicals	3253	D	D	D	D	3	103	D	D	8	D	D
Pharmaceuticals and medicines	3254	64,628	27,812	3,411	4,238	360	5,771	983	3,246	817	1,472	16,517
Soaps, cleaning compounds, and toilet preparations	3256	2,800	1,625	14	126	6	158	24	D	*	14	D
Paints, coatings, adhesives, and other chemicals	3255, 3259	D	1,016	4	D	D	D	46	D	1	16	D
Plastics and rubber products	326	3,752	2,113	54	87	144	533	41	192	1	192	396
Nonmetallic mineral products	327	1,289	801	1	46	6	92	9	76	1	13	244
Primary metals	331	592	339	3	8	1	116	3	19	5	8	91
Fabricated metal products	332	2,239	1,408	20	D	31	292	21	38	12	30	D
Machinery	333	12,585	7,402	137	703	107	1,654	77	531	21	210	1,743
Agricultural implements	33311	1,565	874	*	116	16	253	6	46	2	7	244
Semiconductor machinery	333242	3,411	1,673	80	108	11	451	3	247	3	85	749
Engines, turbines, and power transmission equipment	3336	1,959	1,181	1	295	*	211	1	91	6	9	164
Other machinery	other 333	5,650	3,674	56	184	79	739	67	146	9	110	586
Computer and electronic products	334	77,385	47,344	5,488	1,891	1,418	4,641	1,526	3,716	421	2,752	8,188
Communications equipment	3342	13,112	8,016	777	434	159	317	932	560	22	621	1,273
Semiconductors and other electronic components	3344	31,391	20,208	2,263	660	345	1,569	341	1,691	112	1,062	3,142
Navigational, measuring, electromedical, and control instruments	3345	14,885	9,637	208	593	195	1,466	163	345	8	318	1,951
Electromedical, electrotherapeutic, and irradiation apparatuses	334510, 334517	2,632	1,557	72	87	16	216	33	81	3	97	470
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	7,533	5,094	32	298	35	879	28	144	D	108	D
Other measuring and controlling devices	other 3345	4,720	2,986	105	208	145	372	102	119	D	113	D
Other computer and electronic products	other 334	17,997	9,483	2,239	205	719	1,289	90	1,120	279	751	1,822
Electrical equipment, appliances, and components	335	4,771	3,183	32	201	40	317	66	125	4	81	722

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Transportation equipment	336	51,275	27,424	7	1,603	1,306	6,925	461	872	152	997	11,530
Automobiles, bodies, trailers, and parts	3361-63	22,042	12,470	7	1,252	D	3,570	299	640	127	D	D
Aerospace products and parts	3364	26,645	13,397	*	D	167	2,865	130	191	D	665	D
Aircraft, aircraft engines, and aircraft parts	336411-13	25,221	12,747	*	265	165	2,321	128	190	D	665	D
Guided missiles, space vehicles, and related parts	336414-15, 336419	1,424	649	0	D	2	544	2	1	*	1	D
Military armored vehicles, tanks, and tank components	336992	D	D	0	*	0	D	D	*	0	*	D
Other transportation	other 336	D	D	0	D	D	D	D	41	D	D	D
Furniture and related products	337	366	D	0	D	D	D	D	3	1	4	41
Miscellaneous	339	D	8,525	335	538	219	1,041	113	473	47	363	D
Medical equipment and supplies	3391	11,668	6,884	332	501	209	907	99	436	46	346	1,908
Other miscellaneous manufacturing	3399	D	1,642	3	37	10	135	14	37	1	16	D
Nonmanufacturing industries	21-23, 42-81	124,132	77,856	11,978	6,658	1,782	3,656	2,544	3,536	268	3,491	12,362
Mining, extraction, and support activities	21	3,296	1,972	37	146	3	166	63	108	3	D	D
Utilities	22	351	115	D	33	1	D	D	68	4	D	D
Wholesale trade	42	452	327	0	8	*	D	D	4	8	9	D
Electronic shopping and electronic auctions	454111-12	1,569	1,106	D	1	*	1	*	182	0	0	D
Transportation and warehousing	48-49	488	389	0	84	1	6	1	0	0	*	6
Information	51	70,748	43,191	10,886	3,333	1,353	1,335	1,844	1,983	208	984	5,633
Publishing	511	33,574	22,827	2,793	1,297	188	442	589	619	104	821	3,893
Newspaper, periodical, book, and directory publishers	5111	79	55	*	1	2	4	*	7	0	10	1
Software publishers	5112	33,495	22,772	2,793	1,297	186	439	589	612	104	811	3,892
Telecommunications	517	D	2,167	187	175	D	745	189	D	1	2	D
Data processing, hosting, and related services	518	11,914	8,414	D	384	232	67	178	282	103	131	D
Other information	other 51	D	9,782	D	1,476	D	80	887	D	*	29	D
Finance and insurance	52	7,331	4,599	29	1,576	46	9	50	94	0	434	494
Real estate and rental and leasing	53	475	416	D	9	*	2	6	9	5	4	D
Lessors of nonfinancial intangible assets (except copyrighted works)	533	27	22	0	*	0	*	*	0	*	4	*
Other real estate and rental and leasing	other 53	449	394	D	9	*	2	6	9	5	*	D
Professional, scientific, and technical services	54	37,595	24,485	831	1,414	353	1,919	537	1,045	38	1,602	5,369
Architectural, engineering, and related services	5413	3,412	2,539	8	124	17	188	41	23	*	122	351
Computer systems design and related services	5415	15,747	10,707	597	574	186	505	178	591	4	95	2,310
Scientific research and development services	5417	14,842	8,300	158	596	102	1,174	284	380	31	1,368	2,448
Biotechnology research and development	541711	4,464	2,467	67	203	16	343	87	D	6	634	D
Physical, engineering, and life sciences (except biotechnology) research and development	541712	9,659	5,327	86	380	81	828	180	307	25	726	1,720

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Social sciences and humanities research and development	541720	719	506	6	13	6	2	18	D	*	9	D
Other professional, scientific, and technical services	other 54	3,595	2,939	68	121	48	53	34	52	3	18	260
Health care services	621-23	848	478	56	25	9	93	30	34	3	20	101
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	977	777	23	30	15	47	9	8	1	7	60
All companies (number of domestic employees)	-	374,685	214,959	21,644	16,704	5,584	26,696	6,100	13,674	1,928	10,196	57,200
Micro companies <sup>a</sup>												
5 - 9	-	1,581	923	48	81	32	129	35	37	9	52	235
Small companies												
10 - 19	-	4,958	2,884	106	541	72	395	115	94	32	86	631
20 - 49	-	9,662	6,028	284	448	124	886	205	193	62	159	1,275
Medium companies												
50 - 99	-	9,298	5,733	314	396	84	792	221	245	47	241	1,226
100 - 249	-	14,875	9,198	589	686	179	1,288	290	371	121	298	1,856
Large companies												
250 - 499	-	13,092	7,956	714	470	301	842	228	363	193	271	1,755
500 - 999	-	14,450	8,886	773	543	235	977	344	469	98	340	1,784
1,000 - 4,999	-	63,971	36,794	4,329	2,075	889	3,958	836	2,616	266	1,860	10,348
5,000 - 9,999	-	40,633	22,337	D	2,001	393	2,302	786	1,294	51	610	D
10,000 - 24,999	-	65,594	37,692	1,661	2,770	562	6,275	660	3,297	297	2,639	9,742
25,000 or more	-	136,571	76,529	D	6,692	2,713	8,852	2,381	4,696	752	3,639	D

\* = amount &lt; \$500,000; D = data withheld to avoid disclosing operations of individual companies; 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 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&amp;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&amp;D.

**Source(s)**

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