

TABLE 34

## Domestic R&amp;D paid for by others and performed by the company, by type of cost, industry, and company size: 2017

(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	61,065	36,047	591	1,879	375	6,341	1,113	1,578	332	2,825	9,986
Manufacturing industries	31-33	41,072	24,363	435	1,127	226	5,076	657	1,055	304	1,200	6,627
Food	311	244	136	1	10	*	16	16	10	0	26	31
Beverage and tobacco products	312	107	67	0	3	0	8	4	9	0	9	7
Textile, apparel, and leather products	313-16	1	1	*	*	0	*	*	*	0	*	*
Wood products	321	5	3	*	*	*	1	*	*	0	*	1
Paper	322	29	11	*	3	*	10	*	1	0	1	3
Printing and related support activities	323	11	9	*	1	*	1	*	*	*	*	1
Petroleum and coal products	324	15	10	0	0-5	*	1	0-5	0-5	0	0	0-5
Chemicals	325	11,692	5,816	386	478	64	612	347	551	20	659	2,759
Basic chemicals	3251	181	121	0	0-16	6	12	5	10	*	14	0-16
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	16	7	*	0-9	*	1	*	1	*	*	0-9
Pesticide, fertilizer, and other agricultural chemicals	3253	284-383	146-174	*	68-119	*	0-19	4	0-25	*	*	0-88
Pharmaceuticals and medicines	3254	10,973	5,430	386	352	57	578	330	510	20	640	2,672
Soap, cleaning compound, and toilet preparation	3256	118-213	87	*	8	*	5	8	8	*	4	0-88
Paint, coating, adhesive, and other chemicals	3255, 3259	23	0-23	0	0-23	1	0-19	*	0-23	0	*	0-23
Plastics and rubber products	326	117	34	0	*	3	70	*	1	0	3	5
Nonmetallic mineral products	327	30	16	0	0	0	2	0	*	0	0	12
Primary metals	331	8	5	0	*	*	3	*	*	*	*	*
Fabricated metal products	332	107	60	0	*	2	35	*	*	*	0	9
Machinery	333	940	672	2	24	4	131	7	44	1	4	51
Agricultural implement	33311	59	43	0	2	*	5	*	4	0	0	5
Semiconductor machinery	333242	465	374	*	2	*	38	0	35	0	2	14
Engine, turbine, and power transmission equipment	3336	159	104	*	*	2	37	1	*	0	1	14
Other machinery	other 333	257	151	2	20	2	52	6	5	1	2	17
Computer and electronic products	334	8,633	6,067	46	306	60	726	114	222	268	97	727

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Communications equipment	3342	1,715	1,348	4	34	11	141	57	31	19	11	58
Semiconductor and other electronic components	3344	2,289	1,530	31	53	21	91	42	117	7	56	341
Navigational, measuring, electromedical, and control instruments	3345	4,420	3,031	12	201	22	486	12	65	241	27	323
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	150	96	0	15	1	12	1	2	*	*	23
Search, detection, navigation, guidance, aeronautical, and nautical system and instrument	334511	4,083	2,829	0 - 12	175	0 - 22	451	11	58	196 - 242	0 - 27	255 - 301
Other measuring and controlling device	other 3345	187	106	0 - 12	11	0 - 22	22	1	6	0 - 44	0 - 27	0 - 44
Other computer and electronic products	other 334	209	157	0	19	6	9	2	8	*	3	6
Electrical equipment, appliances, and components	335	181	101	0	1	2	16	1	16	1	1	43
Transportation equipment	336	18,663	11,176	*	293	87	3,414	167	196	14	394	2,921
Automobiles, bodies, trailers, and parts	3361-63	2,745	1,278	*	142	46	622	81	100	12	85	378
Aerospace products and parts	3364	14,480	9,200	0	109 - 126	30	2,356	56 - 87	36 - 97	*	277	2,312 - 2,417
Aircraft, aircraft engine, and aircraft parts	336411-13	13,103	8,430	0	110	29	1,882	55 - 87	34 - 97	*	277	2,188 - 2,287
Guided missile, space vehicle, and related parts	336414-15, 336419	1,377	771	0	0 - 16	1	474	*	0 - 3	0	*	112 - 133
Military armored vehicle, tank, and tank component	336992	5	0 - 6	0	0 - 5	*	0 - 5	*	0 - 1	0	0	0 - 5
Other transportation	other 336	1,433	691 - 699	0	19 - 42	11	429 - 438	0 - 29	0 - 59	2	33	120 - 231
Furniture and related products	337	3	2	0	*	*	*	*	*	*	*	1
Miscellaneous	339	285	178	0	7 - 13	3	31	0 - 5	2 - 9	0	5	47 - 57

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Medical equipment and supplies	3391	240	147	0	8	3	25	1	3	0	5	48
Other miscellaneous manufacturing	3399	44	31	0	0-5	0	6	0-5	0-7	0	*	0-9
Nonmanufacturing industries	21-23, 42-81	19,993	11,683	155	752	148	1,265	456	522	28	1,625	i 3,359
Mining, extraction, and support activities	21	309	196	0	12	*	15	12	7	1	*	67
Utilities	22	36	14	*	2	*	9	*	0	0	0	10
Wholesale trade	42	31	21	0	*	1	1	*	*	*	0	7
Electronic shopping and electronic auctions	454111-12	0	0	0	0	0	0	0	0	0	0	0
Transportation and warehousing	48-49	31	31	0	0	*	0	0	*	0	0	0
Information	51	1,354	1,116	39	35	5	17	16	14	2	30	80
Publishing	511	1,062	902	3-39	18	5	11	9	8	*	24	44-81
Newspaper, periodical, book, and directory publishers	5111	0	0	0	0	0	0	0	0	0	0	0
Software publishers	5112	1,062	902	3-39	18	5	11	9	8	*	24	44-81
Telecommunications	517	40-163	0-106	0	11	*	1	0-8	1	1	0-7	0-36
Data processing, hosting, and related services	518	119	110	0-7	3	*	*	*	*	*	1	0-7
Other information	other 51	11-134	0-106	0-36	3	0	5	0-8	5	0	0-7	0-36
Finance and insurance	52	51	51	0	0	0	0	0	0	0	0	0
Real estate and rental and leasing	53	10	7	1	*	*	*	*	0	0	0	1
Lessors of nonfinancial intangible assets (except copyrighted works)	533	0	0	0	0	0	0	0	0	0	0	0
Other real estate and rental and leasing	other 53	10	7	1	*	*	*	*	0	0	0	1
Professional, scientific, and technical services	54	17,951	10,100	114	700	138	1,205	414	499	24	1,584	i 3,171
Architectural, engineering, and related services	5413	1,147	714	1	40	9	106	23	9	*	48	198

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Computer systems design and related services	5415	1,658	1,001	*	80	3	35	15	9	3	16	495
Scientific research and development services	5417	14,504	7,949	112	513	114	1,043	359	473	21	1,507	2,412
Biotechnology research and development	541711	3,653	1,869	32	143	3	290	66	129	14	789	319
Physical, engineering, and life sciences (except biotechnology) research and development	541712	9,978	5,463	54	355	96	747	268	333	7	718	1,937
Social sciences and humanities research and development	541720	873	618	26	16	15	5	25	12	*	*	156
Other professional, scientific, and technical services	other 54	641	437	*	67	12	22	18	8	*	12	66
Health care services	621-23	144	93	2	*	3	13	8	1	1	10	13
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	76	53	0	2	*	5	4	1	0	1	10
All companies (number of domestic employees)	-	61,065	36,047	591	1,879	375	6,341	1,113	1,578	332	2,825	9,986
Small companies												
10-19 <sup>a</sup>	-	909	552	6	36	5	85	21	9	0-33	12	146-187
20-49	-	1,842	1,032	6	55	15	186	86	40	16	50	355
Medium companies												
50-99	-	2,071	1,208	36	143	14	174	75	48	6	52	314
100-249	-	3,703	2,143	61	132	21	344	124	67	7	142	662
Large companies												
250-499	-	2,331	1,514	11	101	31	145	60	52	7	65	345
500-999	-	1,576	1,010	23	56	42	129	30	56	4	42	185
1,000-4,999	-	12,771	6,596	282	506	83	1,196	284	527	17	920	2,361
5,000-9,999	-	7,497	4,435	71	300	72	350	107	264	4	598	1,296
10,000-24,999	-	10,070	6,115	90	229	29	1,490	171	274	25	426	1,220

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25,000 or more	-	18,295	i	11,441	i	4	321	63	i	2,242	i	156	i	240	209 - 250	516	i	3,058 - 3,105	i

\* = 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.

<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. Statistics are representative of companies located in the United States that performed or funded R&D. 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, 2017.