

TABLE 34

Domestic R&D paid for by others and performed by the company, by type of cost, industry, and company size: 2018

(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	63,230	36,004	556	2,051	389	5,410	990	1,638	217	4,239	11,737
Manufacturing industries	31-33	39,393	22,892	376	1,190	261	3,872	596	979	198	1,421	7,608
Food	311	242	147	1	9	1	15	15	11	0	17	25
Beverage and tobacco products	312	109	62	*	i 5	1	8	4	8	0	12	9
Textile, apparel, and leather products	313-16	4	2	0	* i	0	*	* i	* i	0	* i	1
Wood products	321	4	3	*	i *	i *	*	*	*	0	* i	1
Paper	322	2	1	*	i *	i *	*	* i	* i	0	*	* i
Printing and related support activities	323	4	4	*	i *	i *	*	*	* i	0	* i	* i
Petroleum and coal products	324	23	15	0	*	1	2	1	1	0	1	2
Chemicals	325	10,553	5,593	301	480	75	528	275	514	3	773	2,012
Basic chemicals	3251	192	126	0	0 - 23	6	13	3	10	*	14	0 - 23
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	85	68	0	*	0	1	2	0 - 16	0	*	0 - 16
Pesticide, fertilizer, and other agricultural chemicals	3253	326	152	*	i 99 - 126	* i	17	4	21	* i	* i	2 - 35
Pharmaceuticals and medicines	3254	9,792	5,138	300	350	67	491	256	465	3	754	1,966
Soap, cleaning compound, and toilet preparation	3256	137	86 - 112	*	i 6	0 - 3	i 4	9	0 - 20	0	4	0 - 30
Paint, coating, adhesive, and other chemicals	3255, 3259	21	0 - 20	0	*	0 - 3	2	*	*	0	*	0 - 20
Plastics and rubber products	326	83	31	0	* i	*	40	*	1	0	5	6
Nonmetallic mineral products	327	24	13	0	1	0	1	2	1	0	*	5
Primary metals	331	22	7	0	1	i 0	9	* i	* i	0	* i	5
Fabricated metal products	332	105	45	5	17	12	11	2	5	*	0	9
Machinery	333	1,034	732	*	18	7	132	3	47	*	37	58
Agricultural implement	33311	10	7	0	0	*	1	*	*	0	0	2
Semiconductor machinery	333242	543	443	0	0 - 19	*	34	*	44	0	*	0 - 24
Engine, turbine, and power transmission equipment	3336	173	112	*	0 - 19	5	35	2	2	0	0	0 - 20
Other machinery	other 333	307	170	0	0 - 19	1	61	1	1	*	37	14 - 39
Computer and electronic products	334	9,775	6,355	64	303	84	1,159	182	250	78	149	1,151

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Communications equipment	3342	1,285	948	3	27	15	135	82	30	1	26	17
Semiconductor and other electronic components	3344	2,410	1,580	38	51	19	80	68	102	76	85	310
Navigational, measuring, electromedical, and control instruments	3345	5,863	3,681	23	208	49	938	29	109	*	33	793
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	163	99	0	9	2	9	4	3	0	5	32
Search, detection, navigation, guidance, aeronautical, and nautical system and instrument	334511	5,455	3,445	0 - 24	186	0 - 48	902	23	84	*	0 - 29	712 - 762
Other measuring and controlling device	other 3345	245	137	0 - 24	13	0 - 48	27	2	21	*	0 - 29	0 - 48
Other computer and electronic products	other 334	217	147	*	17	*	7	2	8	*	5	30
Electrical equipment, appliances, and components	335	266	163	3	21	2	15	8	12	*	4	38
Transportation equipment	336	16,735	9,444	1	314	74	1,917	104	121	116	415	4,230
Motor vehicles, bodies, trailers, and parts	3361-63	2,506	1,254	*	144	50	447	76	79	101	42	314
Aerospace products and parts	3364	13,131	7,618	0 - 1	148	0 - 25	1,355	18 - 21	30	0 - 5	340	3,585 - 3,623
Aircraft, aircraft engine, and aircraft parts	336411-13	12,222	7,132	0	95	0 - 25	1,163	19	30	0 - 5	330	3,422 - 3,457
Guided missile, space vehicle, and related parts	336414-15, 336419	909	487	0 - 1	54	0	192	0 - 3	*	*	10	160 - 169
Military armored vehicle, tank, and tank component	336992	6	2	0	0 - 5	0 - 5	0 - 2	*	0 - 5	0	0	0 - 5
Other transportation	other 336	1,092	571	0 - 1	16 - 23	0 - 25	112 - 116	6 - 11	6 - 14	10 - 16	33	287 - 332
Furniture and related products	337	5	3	*	*	*	*	*	*	*	*	1
Miscellaneous	339	402	271	1	21	5	35	1	6	*	7	54
Medical equipment and supplies	3391	264	165	1	21	5	28	1	2	*	4	38
Other miscellaneous manufacturing	3399	138	106	0	1	0	7	0	5	0	3	16

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Nonmanufacturing industries	21-23, 42-81	23,838	13,113	179	861	128	1,537	395	659	19	2,818	i 4,129	
Mining, quarrying, oil and gas extraction, and support activities	21	130	67	0	0-9	i 0-5	i *	i 0-10	0-52	i 2	i 0-29	0-63	
Utilities	22	51	0-49	i *	*	0-3	0-8	1	0	0	2	0-49	
Wholesale trade	42	25	15	0	0-9	1	0-11	0-5	0-4	*	0-11	0-11	
Electronic shopping and electronic auctions	454111-12	94	0-95	0	0-9	i 0	0	0	0-88	0	0-29	0-95	i
Transportation and warehousing	48-49	7	0-8	0	0	0	0	0	0-8	0	0	0	
Information	51	862	617	51	28	17	18	15	16	*	36-66	31-68	
Publishing	511	489	354	26	4	15	10	7	9	*	36	28	
Newspaper, periodical, book, and directory publishers	5111	*	*	0	0	0	0	0	0	0	0	0	
Software publishers	5112	489	353	26	4	15	10	7	9	*	36	28	
Telecommunications	517	65	0-57	0-26	4	0-2	5	0-9	0-7	0	0-29	0-38	
Data processing, hosting, and related services	518	191	160	0-15	16	1	0-4	1	1	*	1	0-15	
Other information	other 51	117	45-104	0-26	4	0-2	i 0-4	0-9	0-7	0	0-29	0-40	
Finance and insurance	52	45	45	0	0	0	0	0	0	0	0	0	
Real estate and rental and leasing	53	0	0	0	0	0	0	0	0	0	0	0	
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	0	0	0	0	0	0	0	0	0	0	0	
Professional, scientific, and technical services	54	22,486	12,206	128	826	107	1,499	370	556-644	17	2,752	i 3,932-4,028	
Architectural, engineering, and related services	5413	1,684	1,006	4	111	8	196	22	0-65	i *	67	201-273	
Computer systems design and related services	5415	2,291	1,638	24	25	*	22	18	18	*	35	512	
Scientific research and development services	5417	17,761	9,129	101	589	90	1,247	312	539	17	2,623	i 3,114	
Research and development in biotechnology	541711	5,037	2,340	48	188	4	311	68	57-137	2	1,058	i 878-958	

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Research and development in the physical, engineering, and life sciences (except biotechnology)	541712	12,080	6,294	36	381	80	934	224	403	15	1,557	i 2,157
Research and development in the social sciences and humanities	541720	644	494	17	21	6	3	21	0 - 78	*	8	0 - 78
Other professional, scientific, and technical services	other 54	750	434	*	i 101	9	34	18	0 - 61	*	27	62 - 130
Health care services	621-23	75	47	*	i 0	*	9	i 0 - 10	i 0 - 21	i 0	0 - 21	i 0 - 21
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	62	0 - 63	0	0 - 9	0 - 5	0 - 13	0 - 10	0 - 63	0	0	0 - 63
All companies (number of domestic employees)	-	63,230	36,004	556	2,051	389	5,410	990	1,638	217	4,239	i 11,737
Small companies												
10-19 ^a	-	1,050	607	5	i 30	10	85	21	26	* i	50	217
20-49	-	1,695	1,022	7	66	21	156	45	24	3	97	255
Medium companies												
50-99	-	1,875	960	42	55	36	179	57	32	9	102	404
100-249	-	3,921	2,162	66	202	33	302	109	94	4	i 298	651
Large companies												
250-499	-	3,041	1,892	14	202	43	167	75	75	2	159	411
500-999	-	2,096	1,289	29	68	24	185	59	90	i 5	80	267
1,000-4,999	-	10,068	5,965	209	464	81	899	254	489	77	284	i 1,347
5,000-9,999	-	9,063	4,532	70	351	43	730	139	i 417	8	1,321	i 1,451
10,000-24,999	-	9,997	6,111	113	i 276	29	i 503	129	i 173	i 95	1,270	i 1,298
25,000 or more	-	20,423	11,464	2	337	68	2,205	102	218	15	i 578	5,435

* = 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.

^a 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.