

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: 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	441,036	247,929	28,759	18,540	7,261	30,019	7,802	16,409	2,891	16,161	65,266
Manufacturing industries	31-33	274,075	146,749	10,875	10,019	3,974	25,547	4,440	11,337	2,581	11,435	47,118
Food	311	4,654	2,822	42	87	36	510	55	212	3	210	678
Beverage and tobacco products	312	1,113	593	10	54	4	92	13	55	*	62	229
Textile, apparel, and leather products	313-16	989	639	13	22	70	95	5	15	3	19	108
Wood products	321	203	145	* i	5	3	33	2	3	0	4	8
Paper	322	934	445	* i	34	20	381	3	6	0	5	40
Printing and related support activities	323	242	157	16	13	1	16	2	13	* i	3	20
Petroleum and coal products	324	1,269	738	0	19	18	34	5	36	* i	306	114
Chemicals	325	84,137	38,125	4,698	4,734	597	6,868	1,487	3,913	1,321	4,710	17,684
Basic chemicals	3251	2,443	1,494	6	50	33	224	38	142	4	161	292
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	1,653	1,049	1	69	1	105	16	111	9	0 - 208	80 - 297
Pesticide, fertilizer, and other agricultural chemicals	3253	1,460	809	1 i	159 i	6 i	112 i	29 i	115 i	18 i	39 i	172 i
Pharmaceuticals and medicines	3254	74,592	32,309	4,678	4,347	525	6,198	1,367	3,398	1,285	4,283	16,202
Soap, cleaning compound, and toilet preparation	3256	2,710	1,630	12	91	16	132	26	103	*	22	678
Paint, coating, adhesive, and other chemicals	3255, 3259	1,278	834	1	17	16	96	12	43	4	0 - 208	43 - 260
Plastics and rubber products	326	2,751	1,603	18	45	51	475	26	80	14 i	40	398
Nonmetallic mineral products	327	1,385	725	5 i	34 i	27 i	137 i	36 i	74 i	0 i	76 i	271 i
Primary metals	331	839	436	9	8	3	167	3	43	1	16	153
Fabricated metal products	332	2,327	1,422	24	70	28	364	16	33	9	31	328
Machinery	333	14,799	8,719	237	555	119	2,015	255	634	35	249	1,980
Agricultural implement	33311	1,872	1,028	0	137	7	266	7	41	2	56	328
Semiconductor machinery	333242	4,166	2,199	186	31	29	504	71	317	0	24	804
Engine, turbine, and power transmission equipment	3336	2,483	1,523	1	262	10	310	11 i	97	0 - 34	3	228 - 270 i
Other machinery	other 333	6,278	3,968	50	125	73	935	165 i	179	0 - 34	167	578 - 620

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Computer and electronic products	334	83,697	47,316	5,339	1,659	1,684	5,550	1,933	4,613	693	3,824	11,086
Communications equipment	3342	13,107	7,966	748	452	189	497	890	622	46	155	1,541
Semiconductor and other electronic components	3344	31,052	17,319	1,335	477	330	1,869	377	2,408	366	1,915	4,656
Navigational, measuring, electromedical, and control instruments	3345	16,727	10,598	349	529	175	1,894	131	337	6	413	2,295
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	3,208	1,783	178	113	33	226	56	74	2	207	535
Search, detection, navigation, guidance, aeronautical, and nautical system and instrument	334511	8,843	5,806	56	305	61	1,229	38	153	2	110	1,085
Other measuring and controlling device	other 3345	4,675	3,009	115	111	80	439	38	110	2	96	675
Other computer and electronic products	other 334	22,811	11,432	2,907	201	991	1,290	534	1,247	275	1,341	2,593
Electrical equipment, appliances, and components	335	4,487	2,982	53	159	34	338	94	113	5	165	544
Transportation equipment	336	52,629	29,584	13	1,845	1,007	7,011	386	929	374	865	10,614
Motor vehicles, bodies, trailers, and parts	3361-63	25,586	15,156	5	1,451	945	4,168	326	761	352	232	2,190
Aerospace products and parts	3364	24,291	12,755	3	321	33	2,410	41	133	4	589	8,002
Aircraft, aircraft engine, and aircraft parts	336411-13	22,968	12,067	2	246	32	2,156	39	132	4	576	7,714
Guided missile, space vehicle, and related parts	336414-15, 336419	1,323	688	2	75	1	254	2	1	*	13	288
Military armored vehicle, tank, and tank component	336992	11	5	0	0-5	0-5	1	*	0-5	*	*	0-7
Other transportation	other 336	2,741	1,669	5	66-74	22-31	433	19	28-37	19	43	414-424
Furniture and related products	337	410	291	1	9	1	50	2	3	2	5	45
Miscellaneous	339	17,209	10,006	395	667	271	1,411	118	561	117	846	2,816
Medical equipment and supplies	3391	14,531	8,061	367	617	251	1,183	104	523	106	806	2,513

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Other miscellaneous manufacturing	3399	2,678	1,945	28	49	20	229	14	38	i 11	41	303
Nonmanufacturing industries	21-23, 42-81	166,961	101,180	17,884	8,521	3,286	4,472	3,362	5,072	311	4,726	18,148
Mining, quarrying, oil and gas extraction, and support activities	21	1,905	1,220	46	142	18	149	24	51	2 i	36	218
Utilities	22	275	130	1	11	2	7	2	5	4	29	84
Wholesale trade	42	906	i 627	i 0	i 14	i 3	i 92	i 4	i 3	i 1	i 20	i 141
Electronic shopping and electronic auctions	454111-12	11,652	i 6,106	i 1,509 - 1,865	i 0 - 279	i 102 - 116	i 0 - 106	i 0 - 125	i 287 - 645	i 3	i 0 - 54	i 2,384 - 2,742
Transportation and warehousing	48-49	942	670	9	84	16	103	8	25	*	15	12
Information	51	94,349	57,163	14,778	4,249	2,437	1,195	2,436	2,721	183	1,380	7,806
Publishing	511	32,770	21,417	3,549	1,290	273	412	307	444	79	1,054	3,946
Newspaper, periodical, book, and directory publishers	5111	131	90	0	8	1	i *	i 1	i 14	i *	i 5	i 11
Software publishers	5112	32,639	21,327	3,549	1,282	272	411	306	429	79	1,048	3,935
Telecommunications	517	3,696	2,539	156	i 172	19	559	i 142	i 29	1	41	37
Data processing, hosting, and related services	518	23,306	15,950	2,845	538	282	146	523	451	87	179	2,304
Other information	other 51	34,576	17,257	8,228	2,249	1,863	78	1,464	1,797	16	106	1,519
Finance and insurance	52	7,471	4,436	217	i 1,788	74	63	i 46	290	8	120	430
Real estate and rental and leasing	53	1,022	608	84	27	23	4	5	44	*	9	218
Lessors of nonfinancial intangible assets (except copyrighted works)	533	6	*	0	0	0	0	0	0	0	6	* i
Other real estate and rental and leasing	other 53	1,016	607	84	27	23	4	5	44	*	4	218
Professional, scientific, and technical services	54	44,860	27,750	837	1,823	594	2,624	613	1,246	103	3,047	i 6,224
Architectural, engineering, and related services	5413	3,961	2,989	11	158	11	276	32	64	i 1	72	347
Computer systems design and related services	5415	15,923	11,005	565	667	411	513	127	501	14	131	1,990
Scientific research and development services	5417	20,185	10,463	132	695	133	1,461	376	621	68	2,734	i 3,502

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Research and development in biotechnology	541711	5,857	2,791	60	235	12	389	86	86 - 166	49	1,077	i 987 - 1,069
Research and development in the physical, engineering, and life sciences (except biotechnology)	541712	13,657	7,162	55	439	107	1,069	269	456	19	1,649	i 2,434
Research and development in the social sciences and humanities	541720	671	511	17	21	14	3	21	0 - 79	*	8	0 - 80
Other professional, scientific, and technical services	other 54	4,791	3,293	129	304	39	373	78	60	i 20	i 111	385
Health care services	621-23	1,476	722	51	i 109	4	i 134	i 104	i 47	i 5	i 21	278
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	2,103	1,750	0 - 348	0 - 279	4 - 10	0 - 106	0 - 125	0 - 348	2	0 - 54	0 - 348
All companies (number of domestic employees)	-	441,036	247,929	28,759	18,540	7,261	30,019	7,802	16,409	2,891	16,161	65,266
Small companies												
10-19 <sup>a</sup>	-	4,390	2,658	74	178	40	287	92	72	25	252	713
20-49	-	11,252	6,963	200	535	252	929	245	169	68	540	1,350
Medium companies												
50-99	-	12,321	7,344	343	477	142	1,227	326	218	134	621	1,488
100-249	-	18,547	11,532	622	812	166	1,614	351	459	119	769	2,103
Large companies												
250-499	-	19,645	11,354	1,084	1,027	346	1,395	523	466	122	646	2,682
500-999	-	17,657	10,241	969	800	218	1,385	331	494	331	650	2,237
1,000-4,999	-	68,578	41,397	5,313	2,312	872	4,190	992	2,438	463	1,600	9,003
5,000-9,999	-	45,337	24,963	2,589	2,125	399	3,010	663	1,920	96	i 1,974	i 7,597
10,000-24,999	-	84,420	45,727	5,028	3,575	1,348	5,590	1,325	i 4,173	465	4,650	12,539
25,000 or more	-	158,889	85,750	12,537	6,698	3,478	10,392	2,954	5,999	1,069	4,457	25,553

\* = 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. 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.