

TABLE 33

Domestic R&D paid for by others and performed by the company, by type of cost, industry, and company size: 2021

(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	74,695	41,653	985	3,197	600	8,324	1,140	2,747	281	6,170	9,597
Manufacturing industries	31-33	38,394	22,148	426	1,941	243	4,808	423	1,435	222	1,831	4,917
Food	311	297 - 302	189	1	10	6	15	15	14 - 26	1	7	37
Beverage and tobacco products	312	19	13	0	4	0	0	0	1	0	0	0
Textile, apparel, and leather products	313-16	11	6	* i	* i	0	2	* i	0	* i	* i	2
Wood products	321	2 - 10	3	0	0	*	*	*	*	0	*	0 - 6
Paper	322	0	0	0	0	0	0	0	0	0	0	0
Printing and related support activities	323	0 - 7	*	* i	* i	* i	* i	* i	0	* i	* i	0 - 6 i
Petroleum and coal products	324	5	4	* i	* i	* i	* i	* i	0	* i	* i	* i
Chemicals	325	12,393	6,173	354	1,287	68	891	200	670	10	999	1,741
Basic chemicals	3251	154	115	0	0 - 12	0 - 12	12	*	12	0	4	0 - 12
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	69 - 98 i	56 i	0	0	0 - 13	0 - 42	0 - 20	0 - 25	i	0	0 - 41
Pesticide, fertilizer, and other agricultural chemicals	3253	211 - 241 i	103 - 134 i	* i	6 - 21 i	0	0 - 67 i	0 - 31 i	0 - 25 i	0	* i	* i
Pharmaceuticals and medicines	3254	11,697	5,749	354	1,263	56	807	170	620	6	988	1,682
Soap, cleaning compound, and toilet preparations	3256	209	121	* i	4	0	7	0 - 31	14	4	6	18 - 56
Paint, coating, adhesive, and other chemicals	3255, 3259	19 - 28	0 - 27	0	*	0 - 13	0 - 27	0	0 - 25	0	2	0 - 27
Plastics and rubber products	326	183	96	0	2 r	2	47	0	6	3	*	28
Nonmetallic mineral products	327	31	19	0	0	*	2	*	1	0	5	4
Primary metals	331	22 - 26 i	8 i	0	1 i	1	7 i	* i	0 - 6	0	1 i	5 i
Fabricated metal products	332	412	146	*	11	13	100 r	7 r	13	*	112 r	9
Machinery	333	1,003	520	1	127	4	168	9	33	*	13	128
Agricultural implement	33311	60 - 68	0 - 60	0	1	0	7	1	0 - 17	0	0 - 11	0 - 60
Semiconductor machinery	333242	167	107	0	7	*	25	2	17	*	3	6
Engine, turbine, and power transmission equipment	3336	128 - 134	99	1	0	2	19	1	0 - 11	0	*	4
Other machinery	other 333	641	252 - 315	*	119	2	117	5	0 - 17	* i	0 - 11	56 - 119
Computer and electronic products	334	6,852	4,422	66	179	57	764	69	311	28	192	764
Communications equipment	3342	1,218 i	962 i	* i	35 i	7 i	55 i	15 i	22 i	* i	35 i	87 i
Semiconductor and other electronic components	3344	1,880	1,291	63	66	19	62	19	116	26	69	148

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Navigational, measuring, electromedical, and control instruments	3345	3,630	2,078	3	67	23	645	32	167	1	88	526
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	250	154	0	27	*	20	6	3	0	6	34
Search, detection, navigation, guidance, aeronautical, and nautical system and instruments	334511	3,193	1,819	*	29	20	614	24	159	1	54	472
Other measuring and controlling devices	other 3345	187	105	3	11	3	10	3	6	*	28	20
Other computer and electronic products	other 334	123	92	0	11	8	3	2	5	0	*	2
Electrical equipment, appliances, and components	335	486	294	0	42	6	61	7	20	7	13	35
Transportation equipment	336	16,356	10,095	*	264	87	2,690	115	353	172	472	2,109
Motor vehicles, bodies, trailers, and parts	3361-63	3,637	1,901	*	156	39	369	82	116	120 - 173	246	552 - 611
Aerospace products and parts	3364	11,568	7,487	*	88	39	2,145	21	209	0 - 52	184	1,341 - 1,397
Aircraft, aircraft engine, and aircraft parts	336411-13	10,552	6,760	0	65	37	1,933	21	209	0 - 52	183	1,291 - 1,347
Guided missile, space vehicle, and related parts	336414-15, 336419	1,016	726	*	23	2	212	0	*	0	1	50
Military armored vehicle, tank, and tank components	336992	1	*	0	*	*	*	*	0	0 - 2	*	0 - 2
Other transportation	other 336	1,149	707	*	20	8	176	13	28	0 - 52	42	100 - 158
Furniture and related products	337	3	3	0	*	*	*	*	*	*	*	*
Miscellaneous	339	311	157	3	14	1	60	1	4	*	16	55
Medical equipment and supplies	3391	233	112	3	13	*	42	1	2	*	7	53
Other miscellaneous manufacturing	3399	78	45	0	*	*	18	*	2	*	9	3
Nonmanufacturing industries	21-23, 42-81	36,300	19,505	559	1,256	358	3,516	717	1,312	59	4,340	4,679
Mining, quarrying, oil and gas extraction, and support activities	21	183	123	0	0	5	0	3	6	8	36	2
Utilities	22	35	8	1	2	1	3	*	0	0	5	16
Wholesale trade	42	84	62	4	1	*	*	1	2	0	2	11
Electronic shopping and electronic auctions	454111-12	4 - 8	3	0	0	0	0 - 3	0	2	0	0	0
Transportation and warehousing	48-49	8 - 10	4	0	0	0	0	0	0 - 2	0	0	5
Information	51	1,366	1,069	42	38	4	58	17	32	7	20	80
Publishing	511	631	475	2	19	4	50	2	26	5	5	45
Newspaper, periodical, book, and directory publishers	5111	23	17	0	0	0	2	0	0	0	4	0
Software publishers	5112	608	457	2	19	4	48	2	26	5	1	45
Telecommunications	517	30 - 98	0 - 69	0	5	*	*	0 - 9	0 - 5	3	1	0 - 27

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Data processing, hosting, and related services	518	607	527	6 - 41	9	*	8	8	2	0	7	1 - 36											
Other information	other 51	29 - 99	0 - 69	0 - 35	5	i	*	0 - 9	0 - 5	0	7	0 - 35											
Finance and insurance	52	45	45	0	0	0	0	0	0	0	0	0											
Real estate and rental and leasing	53	0 - 1	*	0	0	0	0	0	0	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	0 - 1	*	0	0	0	0	0	0	0	0	0 - 1											
Professional, scientific, and technical services	54	34,413	i	18,086	i	512	1,214	i	347	i	3,440	i	691	i	1,268	i	44	i	4,264	i	4,548		
Architectural, engineering, and related services	5413	2,007	1,255	4	70	6	257	28	5	*	113	268											
Computer systems design and related services	5415	3,221	2,208	249	35	4	90	81	49	5	97	402											
Scientific research and development services	5417	28,019	i	13,844	i	240	i	953	i	329	i	3,060	i	560	i	1,200	i	37	i	4,044	i	3,753	i
Research and development in nanotechnology	541713	73	i	36	i	0	1	i	0	7	i	1	i	*	i	0	2	i	26	i			
Research and development in biotechnology (except nanobiotechnology)	541714	7,374	3,253	79	191	7	435	68	183	*	1,835	i	1,323										
Research and development in the physical, engineering, and life sciences (except nanotechnology and biotechnology)	541715	20,046	i	10,154	i	142	i	729	i	322	i	2,573	i	487	i	1,013	i	36	i	2,193	i	2,398	i
Research and development in the social sciences and humanities	541720	525	400	19	32	*	46	4	4	0	14	7											
Other professional, scientific, and technical services	other 54	1,166	779	19	156	8	33	22	14	2	9	125											
Health care services	621-23	95	56	*	1	i	1	i	4	i	4	i	1	0	13	i	17	i					
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	62 - 66	49	0	*	0	7 - 14	1	0 - 4	0	0	0 - 4											
All companies (number of domestic employees)	-	74,695	41,653	985	3,197	600	i	8,324	i	1,140	2,747	281	6,170	i	9,597								
Small companies																							
10-19 ^a	-	1,219	638	12	24	18	181	31	16	1	155	r	143										
20-49	-	2,434	1,287	21	120	34	456	57	29	10	108	313											
Medium companies																							
50-99	-	2,052	1,155	86	65	17	277	57	45	6	62	283											
100-249	-	3,993	2,463	113	94	22	357	75	69	12	293	494											
Large companies																							
250-499	-	3,358	2,049	20	205	44	256	89	73	18	152	452											
500-999	-	3,777	2,068	32	136	66	378	91	167	3	i	131	705										
1,000-4,999	-	11,006	5,399	202	1,225	93	862	159	542	47	i	905	i	1,572	i								

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5,000–9,999	–	8,944 i	5,357 i	101	366 i	121 i	1,333 i	176 i	478 i	21 i	169 i	820 i
10,000–24,999	–	20,549	11,348	382	578 i	130 i	1,543 i	290 i	833 i	127	3,506 i	1,811 i
25,000 or more	–	17,361	9,889 i	17	385	53 i	2,680 i	115	495	35 i	688	3,003

* = amount < \$500,000; i = more than 50% of the estimate is a combination of imputation and reweighting to account for nonresponse; r = relative standard error is more than 50%.

NAICS = 2017 North American Industry Classification System.

^a The Business Enterprise 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 \$50,000 or more of R&D and are not comparable 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 Census Bureau, Business Enterprise Research and Development Survey, 2021.