TABLE 33

Domestic R&D paid for by others and performed by the company, by type of cost, industry, and company size: 2022

(Millions of U.S. dollars)

Industry and company size	NAICS code	Total	Salaries, wages, and fringe benefits		Temporary staffing	Expensed equipmen		Lease and rental payments	Depreciation	and licensing	Other purchased services (except R&D)	Other
All industries	21-23, 31-33, 42-81	83,489	46,597	1,255	2,923	613	i 8,694	1,179	2,325	280	4,366 i	15,257
Manufacturing industries	31-33	45,461	26,837	726	1,496	236	4,596	350	1,079	220	1,662	8,260
Food	311	D	212	2	13	1	40	19	D	0	*	50
Beverage and tobacco products	312	107	68	0	6	5	9	4	7	0	0	9
Textile, apparel, and leather products	313-16	D	9	0	0	0	1	0	D	0	0	3
Wood products	321	5	3	* j	* i	*	*	*	*	* j	1	1
Paper	322	*	*	* j	* i	*	i * i	* i	0	* j	* i	*
Printing and related support activities	323	1	1	* i	* i	*	i * i	* i	* r	* i	* i	*
Petroleum and coal products	324	4	3	* j	* i	*	i *	* i	0	* i	*	*
Chemicals	325	12,210	6,723	498	1,000	59	725	141	513	55	979	1,518
Basic chemicals	3251	D	132	0	D	3	20	2	D	0	1	D
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	80	i 60 i	0	*	*	D	1	D	0	*	D
Pesticide, fertilizer, and other agricultural chemicals	3253	D	D	* j	D	*	i D	D	D	* j	*	*
Pharmaceuticals and medicines	3254	11,353	6,230	498	953	50	622	98	456	51	965	1,430
Soap, cleaning compound, and toilet preparations	3256	D	126	0	5	3	6	D	D	4	11	D
Paint, coating, adhesive, and other chemicals	3255, 3259	29	D	0	*	2	D	0	*	0	2	D
Plastics and rubber products	326	219	116	0	1	1	54	*	6	0	4	38
Nonmetallic mineral products	327	29	20	0	*	1	3	*	1	0	1	3
Primary metals	331	20	r 13 r	0	0	0	2 i	* i	*	0	6 i	0
Fabricated metal products	332	222	i 129 i	* i	12 i	11	i 21 i	2 i	10 i	* j	1 i	35
Machinery	333	1,218	638	1 i	106	7	231	8	70 r	*	39	116
Agricultural implement	33311	D	88	0	2	*	r 11	1	D	0	22	4
Semiconductor machinery	333242	48	27	0	1	*	8	2	2	0	2	5
Engine, turbine, and power transmission equipment	3336	D	200	1 i	4	5	i 81	1	D	0	3	3
Other machinery	other 333	725	322	1	99	2	132	4	51 r	*	11	104
Computer and electronic products	334	5,483	3,196	205	152	63	743	67	162	24	156	715
Communications equipment	3342	795	i 560 i	0	2 i	10	i 34 i	8	11 i	*	19 i	151
Semiconductor and other electronic components	3344	1,950	1,216	204	63	5	24	31	84	23	31	266
Navigational, measuring, electromedical, and control instruments	3345	2,671	1,373	1	86 i	47	678	28	62	*	104	293
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	619	i 363 i	0	61 i	*	i 38 i	8 i	8 i	* i	71 i	70
Search, detection, navigation, guidance, aeronautical, and nautical system and instruments	334511	1,976	957	1	16	47	632	18	53	*	32	219
Other measuring and controlling devices	other 3345	77	53	0	9	*	8	2	1	*	*	4

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Domestic R&D paid for by others and performed by the company, by type of cost, industry, and company size: 2022

(Millions of U.S. dollars)

Industry and company size	NAICS code	Total	Salaries, wages, and fringe benefits	Stock-based compensation		/ Expensed equipment		rental	Depreciation	and licensing	Other purchased services (except R&D)	Other
Other computer and electronic products	other 334	67	46	*	i 1	1	7	*	5	* i	1 r	7
Electrical equipment, appliances, and components	335	429	i 296 i	0	1	i 2	i 51 i	2 i	13 i	5 i	22 i	37 i
Transportation equipment	336	24,790	15,187 i	18	195	72	2,678	103	276	136	426	5,698
Motor vehicles, bodies, trailers, and parts	3361-63	2,159	1,065	D	70	16	206	53	60	117	98	D
Aerospace products and parts	3364	21,570	13,457 i	D	111	50	2,353	41	192	9	288	D
Aircraft, aircraft engine, and aircraft parts	336411-13	15,268	i 9,284 i	0	35	26	1,568 i	3 i	48	0	246	4,059
Guided missile, space vehicle, and related parts	336414-15, 336419	6,302	4,174	D	75	24	785	39	145	9	42	D
Military armored vehicle, tank, and tank components	336992	4	3	0	*	0	1	0	0	0	0	*
Other transportation	other 336	1,057	662 i	D	14	i 6	i 119 i	9 i	24 i	10 i	39 i	D
Furniture and related products	337	5	3	*	i *	i 0	1	*	*	* i	* i	1
Miscellaneous	339	350	221	1	9	13 ı	r 38	3	3	0	28	35
Medical equipment and supplies	3391	282	180	1	9	12 ı	r 25	3	2	0	22	28
Other miscellaneous manufacturing	3399	68	41	0	*	1	13	*	1	0	5	7
Nonmanufacturing industries	21-23, 42-81	38,028	i 19,760 i	529	1,428	377	i 4,098 i	830 i	1,245 i	60	2,704 i	6,997 i
Mining, quarrying, oil and gas extraction, and support activities	21	D	29 i	0	2	i 2	i 0	D	D	1 i	D	D
Utilities	22	D	D	*	2	*	i 19	*	0	0	*	D
Wholesale trade	42	41	33 i	1	i D	*	1 i	D	1	*	* i	D
Electronic shopping and electronic auctions	454111-12	0	0	0	0	0	0	0	0	0	0	0
Transportation and warehousing	48-49	D	38	0	0	6	39	*	*	0	D	D
Information	51	947	680	9	31	9	61	20	43	D	14	D
Publishing	511	693	513	0	21	6	57	12	36	D	7	D
Newspaper, periodical, book, and directory publishers	5111	1	1	0	0	0	0	0	0	0	0	0
Software publishers	5112	693	512	0	21	6	57	12	36	D	7	D
Telecommunications	517	76	D	*	8	2 1	r *	6	1	D	2	D
Data processing, hosting, and related services	518	137	100	9	1	1	4	2	5 r	0	5	11
Other information	other 51	42	D	*	i 1	i *	i 1 i	* i	1 i	D	* i	D
Finance and insurance	52	49	49	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	36,139	i 18,801 i	518	1,388	359	i 3,964 i	802 i	1,198 i	37 i	2,649 i	6,424 i
Architectural, engineering, and related services	5413	971	709	0	39	10	68	15	7	0	36	88
Computer systems design and related services	5415	3,656	2,503	306	153	3	43	109	51	1	104	384

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Industry and company size	NAICS code	Total	Salaries wages and fring benefit	, je Stock-ba		Temporary staffing	Expensed equipmen		rental	Depreciation	and licensing	Other purchased services (except R&D)	Other
Scientific research and development services	5417	30,328	14,829	i 203	i	1,028 i	337	i 3,780 i	651 i	1,135 i	35 i	2,495 i	5,834 i
Research and development in nanotechnology	541713	102	57	0		11	*	7	1	1	*	1	23
Research and development in biotechnology (except nanobiotechnology)	541714	7,310	3,187	i 22	i	273	3	i 663	66	134	2	1,441 i	1,518
Research and development in the physical, engineering, and life sciences (except nanotechnology and biotechnology)	541715	22,244	11,200	i 153	i	713 i	334	i 3,038 i	580 i	999 i	33 i	926 i	4,267 i
Research and development in the social sciences and humanities	541720	672	385	28		31	*	71	4	*	0	128	25
Other professional, scientific, and technical services	other 54	1,184	761	9		168	9	73	28	5	1	14	118
Health care services	621-23	D	40	*		*	*	8	D	D	*	4	D
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	94	D	0		D	*	5	D	D	D	D	3 i
All companies (number of domestic employees)	_	83,489	46,597	1,255		2,923	613	i 8,694	1,179	2,325	280	4,366 i	15,257
Small companies													
10-19 ^a	_	1,269	834	25	i	59 i	18	100	24	14	2 i	30	162
20-49	_	1,907	1,098	10		100	25	227	61	39	2	80	264
Medium companies													
50-99	_	1,990	1,140	48		67	19	265	56	36	23	80	255
100-249	_	3,003	1,770	37		126	17	284	63	97	7	84	518
Large companies													
250-499	_	3,080	1,837	49		190	40	246	74	75	23	98	448
500-999	_	2,795	1,679	19	i	136	39	238	72	70	2 i	124	417
1,000-4,999	-	9,890	4,754	433		720	71	742	152	461	63 i	910 i	1,583
5,000-9,999	_	4,692	2,450	61		318	23	587	11 i	38	6	199	999
10,000-24,999	_	25,072	14,024	i 530		757 i	231	i 2,316 i	452 i	985 i	119	2,260 i	3,398 i
25,000 or more	_	29,792	17,012	i 42	i	450	130	3,687	213 i	511	32 i	501	7,214

^{* =} amount < \$500,000; D = data withheld to avoid disclosing operations of individual companies.; 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.

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.

^a The Business Enterprise Research and Development Survey does not include companies with fewer than 10 domestic employees.

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Source(s):
National Center for Science and Engineering Statistics and Census Bureau, Business Enterprise Research and Development Survey, 2022.