

Table 34. Domestic R&D paid for by others and performed by the company, by type of R&D, industry, and company size: 2023

(Millions of U.S. dollars)

Industry and company size	NAICS code	Total	Basic research	Applied research	Development
All industries	21–23, 31–33, 42–81	86,314	6,539	20,172	59,603
Manufacturing industries	31–33	50,682	4,011	8,412	38,259
Food	311	329	39	82	208
Beverage and tobacco products	312	3	*	*	3
Textile, apparel, and leather products	313–16	8	1	2	5
Wood products	321	6	1	*	6
Paper	322	1	*	0	1
Printing and related support activities	323	7	r *	r *	r 6
Petroleum and coal products	324	5	2	2	2
Chemicals	325	12,789	2,169	2,610	8,010
Basic chemicals	3251	259	41	65	153
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	78	i 12	i 22	i 44
Pesticide, fertilizer, and other agricultural chemicals	3253	D	D	D	*
Pharmaceuticals and medicines	3254	11,761	1,996	2,150	7,614
Soap, cleaning compound, and toilet preparations	3256	262	30	58	175
Paint, coating, adhesive, and other chemicals	3255, 3259	D	D	D	23
Plastics and rubber products	326	144	12	51	81
Nonmetallic mineral products	327	23	2	7	13
Primary metals	331	5	*	2	3
Fabricated metal products	332	231	i 12	i 76	i 143
Machinery	333	2,193	25	308	1,860
Agricultural implement	33311	D	0	D	D
Semiconductor machinery	333242	D	D	D	817
Engine, turbine, and power transmission equipment	3336	D	D	156	111
Other machinery	other 333	795	D	D	D
Computer and electronic products	334	7,627	332	i 869	6,426
Communications equipment	3342	1,081	i 177	i 163	i 741
Semiconductor and other electronic components	3344	3,380	128	221	3,031
Navigational, measuring, electromedical, and control instruments	3345	3,072	19	466	2,586
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	686	i *	i 44	i 641
Search, detection, navigation, guidance, aeronautical, and nautical system and instruments	334511	2,261	10	405	1,846
Other measuring and controlling devices	other 3345	125	9	i 17	99
Other computer and electronic products	other 334	94	8	18	68
Electrical equipment, appliances, and components	335	627	49	253	325
Transportation equipment	336	26,379	1,341	i 4,091	20,947
Motor vehicles, bodies, trailers, and parts	3361–63	2,124	96	483	1,544
Aerospace products and parts	3364	22,624	1,242	i 3,447	17,935
Aircraft, aircraft engine, and aircraft parts	336411–13	D	D	2,373	i 13,064
Guided missile, space vehicle, and related parts	336414–15, 336419	D	D	1,074	4,871
Military armored vehicle, tank, and tank components	336992	D	0	0	D
Other transportation	other 336	D	2	161	D
Furniture and related products	337	3	*	* r	3
Miscellaneous	339	301	26	59	216
Medical equipment and supplies	3391	247	19	58	170
Other miscellaneous manufacturing	3399	54	7	1	46
Nonmanufacturing industries	21–23, 42–81	35,632	2,528	11,760	i 21,344
Mining, quarrying, oil and gas extraction, and support activities	21	D	0	1	D
Utilities	22	2	*	1	* i
Wholesale trade	42	131	i 2	i 7	121
Electronic shopping and electronic auctions	454111–12	0	0	0	0
Transportation and warehousing	48–49	3	0	1	2

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Information	51	825	41	219	564
Publishing	511	486	16	164	306
Newspaper, periodical, book, and directory publishers	5111	1	0	0	1
Software publishers	5112	485	16	164	305
Telecommunications	517	D	*	D	D
Data processing, hosting, and related services	518	271	25	47	199
Other information	other 51	D	*	D	D
Finance and insurance	52	347	2	2	343
Real estate and rental and leasing	53	0	0	0	0
Lessors of nonfinancial intangible assets (except copyrighted works)	533	0	0	0	0
Other real estate and rental and leasing	other 53	0	0	0	0
Professional, scientific, and technical services	54	33,891	2,458	11,485	19,947
Architectural, engineering, and related services	5413	1,250	52	178	1,020
Computer systems design and related services	5415	4,310	339	1,996	1,975
Scientific research and development services	5417	27,085	2,029	9,225	15,831
Research and development in nanotechnology	541713	148	7	22	119
Research and development in biotechnology (except nanobiotechnology)	541714	6,820	886	417	5,517
Research and development in the physical, engineering, and life sciences (except nanotechnology and biotechnology)	541715	19,568	741	8,765	10,061
Research and development in the social sciences and humanities	541720	549	395	20	134
Other professional, scientific, and technical services	other 54	1,246	38	87	1,121
Health care services	621–23	D	20	38	D
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	186	4	4	177
All companies (number of domestic employees)	–	86,314	6,539	20,172	59,603
Small companies					
10–19 ^a	–	1,110	74	270	766
20–49	–	2,166	123	463	1,580
Medium companies					
50–99	–	2,098	298	408	1,392
100–249	–	3,604	213	954	2,437
Large companies					
250–499	–	3,210	280	588	2,342
500–999	–	4,422	207	1,475	2,739
1,000–4,999	–	10,500	2,188	1,431	6,881
5,000–9,999	–	5,357	612	1,120	3,626
10,000–24,999	–	21,600	377	6,928	14,296
25,000 or more	–	32,246	2,166	6,535	23,545

* = 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.

^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.

Source(s):

National Center for Science and Engineering Statistics and Census Bureau, Business Enterprise Research and Development Survey, 2023.