Table 22. Foreign R&D paid for by the company and others and performed by the company, by type of R&D, industry, and company size: 2024

(Millions of U.S. dollars)

Industry and company size	NAICS code	Total foreign R&D performance			Research (basic and applied)			Development		
		Total	Paid for by the company	Paid for by others	Total	Paid for by the company	Paid for by others	Total	Paid for by the company	Paid for by others
All industries	21–23, 31–33, 42–81	164,727	150,198	14,529	26,058	21,335	4,723	138,669	128,863	9,807
Manufacturing industries	31–33	90,435	88,546	1,890	14,015	13,646	369	76,420	74,900	1,520
Food	311	1,523	1,522	1 i	162	162	0	1,361	1,360	1 i
Beverage and tobacco products	312	998	998	0	203	203	0	795	795	0
Textile, apparel, and leather products	313–16	118	118	0	18	18	0	100	100	0
Wood products	321	2	2	0	1	1	0	1	1	0
Paper	322	78	78	0	56 i	56 i	0	22 i	22 i	0
Printing and related support activities	323	5	5	0	2	2	0	3	3	0
Petroleum and coal products	324	199	199	* i	46	46	* i	153	153	* i
Chemicals	325	26,941	26,396	545	5,953	5,793	161 i	20,987	20,604	384
Basic chemicals	3251	921	910	11	249	D	D	673	D	D
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	516	D	D	203	D	D	312	D	D
Pesticide, fertilizer, and other agricultural chemicals	3253	168	D	D	35	D	D	134	133	* i
Pharmaceuticals and medicines	3254	24,122	23,612	509	5,212	5,077	134 i	18,910	18,535	375
Soap, cleaning compound, and toilet preparations	3256	950	950	0	172	172	0	778	778	0
Paint, coating, adhesive, and other chemicals	3255, 3259	264	D	D	83	83	*	181	D	D
Plastics and rubber products	326	418	404	14	119	113	6	299	291	8
Nonmetallic mineral products	327	227 i	226 i	* r	60	60	* r	166 i	166 i	* r
Primary metals	331	178	176	2	36	35	1	142	141	1
Fabricated metal products	332	748	734	14 r	181	180	*	567	554	13 r
Machinery	333	6,419	6,325	94	1,001	982	19	5,418	5,342	76
Agricultural implement	33311	1,096	D	D	75	75	*	1,021	D	D
Semiconductor machinery	333242	1,947	D	D	135 i	D	D	1,812	D	D
Engine, turbine, and power transmission equipment	3336	1,255	D	D	276	D	D	979	D	D
Other machinery	other 333	2,121	2,101	20	516 i	513 i	3	1,605	1,589	17
Computer and electronic products	334	37,633	37,370	263	4,159	4,132	27	33,474	33,239	235
Communications equipment	3342	3,848	3,829	19	464	462	2	3,385	3,368	17
Semiconductor and other electronic components	3344	21,742	21,563	179	2,315	2,305	10	19,427	19,258	169
Navigational, measuring, electromedical, and control instruments	3345	3,359	3,300	59	710	696	14	2,649	2,604	45
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	548	531	17 i	249	247	3 i	298 i	284 i	14 i
Search, detection, navigation, guidance, aeronautical, and nautical system and instruments	334511	484	463	21	196	185	11	288	277	10
Other measuring and controlling devices	other 3345	2,327	2,307	20	265	264	*	2,063	2,043	20
Other computer and electronic products	other 334	8,683	8,678	6	670	669	1	8,013	8,009	4
Electrical equipment, appliances, and components	335	1,880 i	1,866 i	14	247 i	247 i	* i	1,633 i	1,619 i	14
Transportation equipment	336	8,040	7,153	886	911	761	150	7,129	6,393	736
Motor vehicles, bodies, trailers, and parts	3361–63	5,925	D	D	331	D	D	5,593	5,148	445

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(Millions of U.S. dollars)

Industry and company size	NAICS code	Total foreign R&D performance			Research (basic and applied)			Development		
		Total	Paid for by the company	Paid for by others	Total	Paid for by the company	Paid for by others	Total	Paid for by the company	Paid for by others
Aerospace products and parts	3364	1,931	1,525	406	541	407	134	1,390	1,118	272
Aircraft, aircraft engine, and aircraft parts	336411–13	D	D	D	D	D	D	D	D	D
Guided missile, space vehicle, and related parts	336414–15, 336419	D	D	D	D	D	D	D	D	D
Military armored vehicle, tank, and tank components	336992	0	0	0	0	0	0	0	0	0
Other transportation	other 336	184	D	D	38	D	D	146	127	19
Furniture and related products	337	47	47	1 i	17	17	* i	31	30	* i
Miscellaneous	339	4,981	4,926	56	841	836	5	4,140	4,089	51
Medical equipment and supplies	3391	4,582	4,527	55	782	777	5	3,800	3,750	50
Other miscellaneous manufacturing	3399	399	398	1 i	60	59	* i	340	339	1 i
Nonmanufacturing industries	21–23, 42–81	74,292	61,652	12,640	12,043	7,690	4,353	62,249	53,963	8,287
Mining, quarrying, oil and gas extraction, and support activities	21	355	330	25	34	34	0	321	296	25 i
Utilities	22	10	10	0	4	4	0	6	6	0
Wholesale trade	42	110 i	105 i	5 i	10	10	0	101 i	96 i	5 i
Electronic shopping and electronic auctions	454111–12	2,291 i	2,291 i	0	1,074 i	1,074 i	0	1,216 i	1,216 i	0
Transportation and warehousing	48–49	270	270	0	28	28	0	241	241	0
Information	51	46,361	46,162	200	3,968	3,938	30	42,393	42,224	169
Publishing	511	16,913	16,775	138	1,322	1,292	30	15,591	15,483	107
Newspaper, periodical, book, and directory publishers	5111	9 i	9 i	0	0	0	0	9 i	9 i	0
Software publishers	5112	16,904	16,767	138	1,322	1,292	30	15,582	15,475	107
Telecommunications	517	224	D	D	21	21	0	203	D	D
Data processing, hosting, and related services	518	13,775	13,768	7	1,690	D	D	12,086	D	D
Other information	other 51	15,449	D	D	935 i	D	D	14,514 i	D	D
Finance and insurance	52	4,129	4,060	69	850	794	55	3,280	3,265	14
Real estate and rental and leasing	53	106	106	0	41	41	0	65	65	0
Lessors of nonfinancial intangible assets (except copyrighted works)	533	0	0	0	0	0	0	0	0	0
Other real estate and rental and leasing	other 53	106	106	0	41	41	0	65	65	0
Professional, scientific, and technical services	54	20,377	8,036	12,341	6,001	1,733 i	4,267	14,376	6,303	8,073
Architectural, engineering, and related services	5413	37	29	8	7	5	2	31	24	6
Computer systems design and related services	5415	5,870	5,814	56	882	857	25	4,988	4,957	31
Scientific research and development services	5417	13,219	949	12,270	4,356	117 i	4,239	8,863	832 i	8,031
Research and development in nanotechnology	541713	19	19	0	9	9	0	11	11	0
Research and development in biotechnology (except nanobiotechnology)	541714	2,830	17	2,812	1,709	3	1,706	1,121	14	1,106
Research and development in the physical, engineering, and life sciences (except nanotechnology and biotechnology)	541715	10,368	912	9,456	2,638	105 i	2,533	7,730 i	807 i	6,922
Research and development in the social sciences and humanities	541720	2	0	2	0	0	0	2	0	2
Other professional, scientific, and technical services	other 54	1,250 i	1,243 i	7	756 i	755 i	1	494	489	5
Health care services	621–23	98 i	98 i	0	9 i	9 i	0	89 i	89 i	0

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Industry and company size	NAICS code	Total foreign R&D performance			Research (basic and applied)			Development		
		Total	Paid for by the company	Paid for by others	Total	Paid for by the company	Paid for by others	Total	Paid for by the company	Paid for by others
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	186	186	0	24	24	0	163	163	0
All companies (number of domestic employees)	–	164,727	150,198	14,529	26,058	21,335	4,723	138,669	128,863	9,807
Small companies										
10–19[a]	–	644	636	8	109 i	107 i	2	535	529	6
20–49	–	1,205	1,164	40	239	234	4 i	966	930	36
Medium companies										
50–99	–	1,173	1,142	31	266	263	3	907	879	28
100–249	–	2,858	2,768	90	480	475	5	2,378	2,292	86
Large companies										
250–499	–	4,436	4,344	92	1,213	1,154	59	3,223	3,190	32
500–999	–	5,095	4,890	205	1,239	1,147	91	3,856	3,743	114
1,000–4,999	–	28,998	27,308	1,690 i	5,387	5,045	342 i	23,611	22,264	1,348 i
5,000–9,999	–	13,367	11,590	1,777	3,013	1,611	1,402	10,354	9,979	375 i
10,000–24,999	–	37,522	31,313	6,210	6,176	4,481	1,695	31,346	26,832	4,515
25,000 or more	–	69,429	65,043	4,386 i	7,937 i	6,819 i	1,118 i	61,491	58,224	3,268 i

* = 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, 2024.