

**Table 67. Domestic R&D paid for by others and performed by the company, depreciation, capital expenditures, and adjusted domestic R&D, by industry and company size: 2023**

(Millions of U.S. dollars and percent change)

Industry and company size	NAICS code	Domestic R&D paid for by others and performed by the company	Depreciation	Capital expenditures related to R&D <sup>a</sup>	Adjusted domestic R&D paid for by others and performed by the company	Change	
						Amount	Percent
All industries	21-23, 31-33, 42-81	86,314	2,481	0	83,833	-2,481	-2.9
Manufacturing industries	31-33	50,682	1,117	0	49,565	-1,117	-2.2
Food	311	329	13	0	317	-13	-3.9
Beverage and tobacco products	312	3	*	0	3	*	-2.3
Textile, apparel, and leather products	313-16	8	*	0	8	*	-2.4
Wood products	321	6	*	0	6	*	-5.3
Paper	322	1	0	0	1	0	0.0
Printing and related support activities	323	7	r 0	0	7	r 0	0.0
Petroleum and coal products	324	5	0	0	5	0	0.0
Chemicals	325	12,789	533	0	12,257	-533	-4.2
Basic chemicals	3251	259	18	0	241	-18	-6.9
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	78	i D	0	D	D	D
Pesticide, fertilizer, and other agricultural chemicals	3253	D	D	0	D	D	D
Pharmaceuticals and medicines	3254	11,761	466	0	11,295	-466	-4.0
Soap, cleaning compound, and toilet preparations	3256	262	14	0	248	-14	-5.4
Paint, coating, adhesive, and other chemicals	3255, 3259	D	D	0	D	D	D
Plastics and rubber products	326	144	6	0	138	-6	-3.8
Nonmetallic mineral products	327	23	1	0	22	-1	-4.3
Primary metals	331	5	* r	0	5	*	-8.2
Fabricated metal products	332	231	i 2	i 0	230	i -2	i -0.7
Machinery	333	2,193	54	0	2,139	-54	-2.5
Agricultural implement	33311	D	D	0	D	D	D
Semiconductor machinery	333242	D	D	0	902	D	D
Engine, turbine, and power transmission equipment	3336	D	*	0	D	*	D
Other machinery	other 333	795	D	0	D	D	D
Computer and electronic products	334	7,627	227	0	7,400	-227	-3.0
Communications equipment	3342	1,081	i 31	i 0	1,050	i -31	i -2.9
Semiconductor and other electronic components	3344	3,380	115	0	3,265	-115	-3.4
Navigational, measuring, electromedical, and control instruments	3345	3,072	79	0	2,993	-79	-2.6
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	686	i 12	i 0	673	i -12	i -1.8
Search, detection, navigation, guidance, aeronautical, and nautical system and instruments	334511	2,261	65	0	2,196	-65	-2.9
Other measuring and controlling devices	other 3345	125	2	0	123	i -2	-1.4
Other computer and electronic products	other 334	94	2	0	91	-2	-2.6
Electrical equipment, appliances, and components	335	627	7	0	620	-7	-1.1
Transportation equipment	336	26,379	272	0	26,108	-272	-1.0
Motor vehicles, bodies, trailers, and parts	3361-63	2,124	66	0	2,058	-66	-3.1
Aerospace products and parts	3364	22,624	189	i 0	22,434	-189	i -0.8

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Aircraft, aircraft engine, and aircraft parts	336411-13	D	D	0	0	16,558	i	D	D		
Guided missile, space vehicle, and related parts	336414-15, 336419	D	D	0	0	5,876		D	D		
Military armored vehicle, tank, and tank components	336992	D	*	0	0	D		*	D		
Other transportation	other 336	D	17	i	0	D		-17	i	D	
Furniture and related products	337	3	*	0	0	3		*	-2.4		
Miscellaneous	339	301	2	0	0	299		-2	-0.8		
Medical equipment and supplies	3391	247	2	0	0	245		-2	-0.8		
Other miscellaneous manufacturing	3399	54	*	0	0	54		*	-0.9		
Nonmanufacturing industries	21-23, 42-81	35,632	1,364	i	0	34,268		-1,364	i	-3.8	
Mining, quarrying, oil and gas extraction, and support activities	21	D	D	0	0	33	i	D	D		
Utilities	22	2	0	0	0	2		0	0.0		
Wholesale trade	42	131	i	2	0	128	i	-2	-1.8		
Electronic shopping and electronic auctions	454111-12	0	0	0	0	0		0	NA		
Transportation and warehousing	48-49	3	*	0	0	3		*	-10.0		
Information	51	825	12	0	0	812		-12	-1.5		
Publishing	511	486	7	0	0	479		-7	-1.5		
Newspaper, periodical, book, and directory publishers	5111	1	i	0	0	1	i	0	0.0		
Software publishers	5112	485	7	0	0	478		-7	-1.5		
Telecommunications	517	D	D	0	0	D		D	D		
Data processing, hosting, and related services	518	271	2	0	0	268		-2	-0.9		
Other information	other 51	D	D	0	0	D		D	D		
Finance and insurance	52	347	0	0	0	347		0	0.0		
Real estate and rental and leasing	53	0	0	0	0	0		0	NA		
Lessors of nonfinancial intangible assets (except copyrighted works)	533	0	0	0	0	0		0	NA		
Other real estate and rental and leasing	other 53	0	0	0	0	0		0	NA		
Professional, scientific, and technical services	54	33,891	1,332	i	0	32,559		-1,332	i	-3.9	
Architectural, engineering, and related services	5413	1,250	8	0	0	1,241		-8	-0.7		
Computer systems design and related services	5415	4,310	75	0	0	4,235		-75	-1.7		
Scientific research and development services	5417	27,085	1,246	i	0	25,839	i	-1,246	i	-4.6	
Research and development in nanotechnology	541713	148	4	r	0	144		-4	-2.8		
Research and development in biotechnology (except nanobiotechnology)	541714	6,820	133	0	0	6,687		-133	-1.9		
Research and development in the physical, engineering, and life sciences (except nanotechnology and biotechnology)	541715	19,568	i	1,084	i	0	18,484	i	-1,084	i	-5.5
Research and development in the social sciences and humanities	541720	549	25	0	0	524		-25	-4.6		
Other professional, scientific, and technical services	other 54	1,246	3	0	0	1,243		-3	-0.2		
Health care services	621-23	D	D	0	0	214		D	D		

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			Amount	Percent	Amount			Percent	
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	186	16	0	169	-16	-8.8		
All companies (number of domestic employees)	-	86,314	2,481	0	83,833	-2,481	-2.9		
Small companies									
10-19 <sup>b</sup>	-	1,110	6	0	1,103	-6	-0.6		
20-49	-	2,166	29	0	2,137	-29	-1.3		
Medium companies									
50-99	-	2,098	42	0	2,056	-42	-2.0		
100-249	-	3,604	99	0	3,506	-99	-2.7		
Large companies									
250-499	-	3,210	58	0	3,152	-58	-1.8		
500-999	-	4,422	98	0	4,324	-98	-2.2		
1,000-4,999	-	10,500	534	0	9,967	-534	-5.1		
5,000-9,999	-	5,357	180	0	5,177	-180	-3.4		
10,000-24,999	-	21,600	836	i	20,764	-836	i		
25,000 or more	-	32,246	i	600	i	0	31,646	i	

\* = -\$500,000 < 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%; NA = not available.

NAICS = 2017 North American Industry Classification System.

<sup>a</sup> Capital expenditures related to R&D are assumed to be \$0 for domestic R&D paid for by others and performed by the company.

<sup>b</sup> The Business Enterprise Research and Development (BERD) 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. To enable comparisons between U.S. statistics from the BERD Survey and statistics from other nations, in this table an internationally comparable adjusted domestic R&D estimate is calculated by subtracting depreciation relating to R&D operations, which is included in U.S. R&D from the BERD Survey, and adding capital expenditures relating to R&D operations, which is excluded from U.S. R&D from the BERD Survey.

**Source(s):**

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