

TABLE 78

Domestic R&D paid for and performed by the company, depreciation, capital expenditures, and adjusted domestic R&D, by industry and company size: 2017

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

Industry and company size	NAICS code	Domestic R&D paid for and performed by the company	Depreciation	Capital expenditures related to R&D	Adjusted domestic R&D paid for by the company and others	Change	
						Amount	Percent
All industries	21-23, 31-33, 42-81	339,036	13,495	25,882	351,423	12,388	3.7
Manufacturing industries	31-33	216,155	9,760	15,158	221,552	5,398	2.5
Food	311	4,453	206	578	4,824	371	8.3
Beverage and tobacco products	312	968	48	133	1,053	84	8.7
Textile, apparel, and leather products	313-16	919	18	108 - 250	1,010 - 1,151	91 - 232	D
Wood products	321	170	2	11	179	9	5.2
Paper	322	1,292	39	120	1,373	81	6.3
Printing and related support activities	323	218	10	21	229	11	5.1
Petroleum and coal products	324	301	6 - 13	70 - 219	357 - 510	57 - 208	D
Chemicals	325	63,285	3,126	5,082	65,242	1,957	3.1
Basic chemicals	3251	2,393	143	221	2,471	78	3.3
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	612	25	71	657	45	7.4
Pesticide, fertilizer, and other agricultural chemicals	3253	1,092	136 - 162	201	1,150 - 1,158	58 - 66	D
Pharmaceuticals and medicines	3254	55,229	2,671	4,353	56,911	1,682	3.0
Soap, cleaning compound, and toilet preparation	3256	2,488	81	143	2,549	62	2.5
Paint, coating, adhesive, and other chemicals	3255, 3259	1,471	43 - 68	95	1,498 - 1,501	26 - 30	D
Plastics and rubber products	326	3,637	197	305	3,746	109	3.0
Nonmetallic mineral products	327	1,303	103	70	1,270	-33	-2.5
Primary metals	331	741	37	36 - 82	740 - 785	0 - 45	D
Fabricated metal products	332	2,099	32	188	2,255	156	7.4
Machinery	333	12,257	490	675 - 846	12,442 - 12,613	185 - 356	D
Agricultural implement	33311	1,511	36	49 - 187	1,524 - 1,662	13 - 151	D
Semiconductor machinery	333242	3,228	255	290 - 339	3,263 - 3,312	35 - 84	D
Engine, turbine, and power transmission equipment	3336	1,921	79	90	1,931	11	0.5
Other machinery	other 333	5,596	120	246 - 389	5,722 - 5,865	126 - 269	D
Computer and electronic products	334	69,942	4,044	4,622	70,520	578	0.8
Communications equipment	3342	10,972	545	755	11,183	211	1.9
Semiconductor and other electronic components	3344	27,859	1,839	2,273	28,293	434	1.6
Navigational, measuring, electromedical, and control instruments	3345	10,089	230	565	10,424	335	3.3
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	2,545	66	115	2,594	49	1.9
Search, detection, navigation, guidance, aeronautical, and nautical system and instrument	334511	3,214	71	302	3,445	231	7.2
Other measuring and controlling device	other 3345	4,329	92	147	4,384	55	1.3

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Other computer and electronic products	other 334	21,022	1,430	1,028	20,621	-402	-1.9
Electrical equipment, appliances, and components	335	4,110	98	194	4,206	96	2.3
Transportation equipment	336	34,629	727	1,781	35,682	1,054	3.0
Motor vehicles, bodies, trailers, and parts	3361-63	21,137	557	1,186	21,766	629	3.0
Aerospace products and parts	3364	11,903	110 - 171	486	12,197 - 12,279	294 - 376	D
Aircraft, aircraft engine, and aircraft parts	336411-13	11,473	108 - 171	483	11,764 - 11,848	292 - 375	D
Guided missile, space vehicle, and related parts	336414-15, 336419	430	0 - 3	3	430 - 433	0 - 3	D
Military armored vehicle, tank, and tank component	336992	4	0 - 1	*	3 - 6	0 - 1	D
Other transportation	other 336	1,585	0 - 59	108	1,634 - 1,714	49 - 129	D
Furniture and related products	337	419	4	37 - 49	452 - 464	33 - 45	D
Miscellaneous	339	15,410	560 - 568	960	15,801 - 15,805	391 - 395	D
Medical equipment and supplies	3391	13,348	533	819	13,635	287	2.1
Other miscellaneous manufacturing	3399	2,062	28 - 36	140	2,166 - 2,170	104 - 108	D
Nonmanufacturing industries	21-23, 42-81	122,881	3,734	10,724	129,871	6,990	5.7
Mining, quarrying, oil and gas extraction, and support activities	21	2,841	91	403 - 410	3,153 - 3,160	312 - 319	D
Utilities	22	281	56	444	669	388	138.1
Wholesale trade	42	503	5	32 - 46	529 - 544	26 - 41	D
Electronic shopping and electronic auctions	454111-12	9,318	544	213	8,987	-331	-3.5
Transportation and warehousing	48-49	1,116	31	291	1,376	260	23.3
Information	51	78,898	2,200	5,135	81,832	2,934	3.7
Publishing	511	33,276	564	1,209	33,921	645	1.9
Newspaper, periodical, book, and directory publishers	5111	74	5	5	74	*	-0.4
Software publishers	5112	33,201	558	1,204	33,847	646	1.9
Telecommunications	517	3,643	14	595 - 989	4,224 - 4,617	581 - 975	D
Data processing, hosting, and related services	518	16,037	281	1,332 - 1,557	17,089 - 17,313	1,052 - 1,276	D
Other information	other 51	25,943	1,342	1,604 - 1,775	26,205 - 26,374	261 - 431	D
Finance and insurance	52	7,565	156	1,182	8,591	1,026	13.6
Real estate and rental and leasing	53	708	24	35	719	11	1.6
Lessors of nonfinancial intangible assets (except copyrighted works)	533	138	*	1	139	1	0.7
Other real estate and rental and leasing	other 53	570	24	34	580	10	1.8
Professional, scientific, and technical services	54	18,972	584	2,662	21,050	2,078	11.0
Architectural, engineering, and related services	5413	1,561	9	62	1,614	53	3.4

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								Amount	Percent
Computer systems design and related services	5415	11,669	443		1,683		12,909	1,240	10.6
Scientific research and development services	5417	2,817	105		665		3,377	560	19.9
Research and development in biotechnology	541711	795	27		238 - 244		1,007 - 1,012	211 - 217	D
Research and development in the physical, engineering, and life sciences (except biotechnology)	541712	1,936	78		417		2,275	339	17.5
Research and development in the social sciences and humanities	541720	86	*		5 - 9		90 - 95	4 - 9	D
Other professional, scientific, and technical services	other 54	2,925	27		252		3,150 i	225	7.7
Health care services	621-23	958 i	28 i		147 - 175 i		1,077 - 1,104 i	119 - 147 i	D
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	1,722	14		155 i		1,863 i	141 i	8.2
All companies (number of domestic employees)	-	339,036	13,495		25,882		351,423	12,388	3.7
Small companies									
10-19 ^a	-	2,402	39		313		2,677	274 i	11.4
20-49	-	7,593	191		847		8,249	656	8.6
Medium companies									
50-99	-	8,070	171		845		8,744	674	8.4
100-249	-	13,514	340		1,672		14,845	1,332	9.9
Large companies									
250-499	-	11,773	272		924		12,424	651	5.5
500-999	-	16,295	484		1,645		17,455	1,160	7.1
1,000-4,999	-	52,341	1,950		4,385		54,776	2,435	4.7
5,000-9,999	-	32,701	1,352		2,741		34,091	1,390	4.2
10,000-24,999	-	63,415	3,250		5,127		65,292 i	1,877 i	3.0
25,000 or more	-	130,931	5,445		7,384		132,870	1,939	1.5

* = -\$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.

NAICS = 2012 North American Industry Classification System.

^a The Business Research and Development Survey (BRDS) did 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 R&D. An estimate range may be displayed in place of a single estimate to avoid disclosing operations of individual companies. To enable comparisons between U.S. BRDS statistics and those of other nations, in this table an internationally comparable adjusted domestic R&D estimate is calculated by subtracting depreciation relating to R&D operations, which was included in U.S. BRDS domestic R&D, and adding capital expenditures relating to R&D operations, which was excluded from U.S. BRDS domestic R&D.

Source(s):

National Center for Science and Engineering Statistics and Census Bureau, Business Research and Development Survey, 2017.