

TABLE 138

## Impact of producing specialized equipment or goods or services with specialized equipment on worker types, by industry: 2016–18

(Number and percent)

Industry	NAICS code	Companies (number)	Production workers				Nonproduction workers				Supervisory workers				Nonsupervisory workers			
			Increased	Decreased	Did not change	Did not employ	Increased	Decreased	Did not change	Did not employ	Increased	Decreased	Did not change	Did not employ	Increased	Decreased	Did not change	Did not employ
All industries	11, 21–23, 31–33, 42–81	108,525	11.4	2.8	58.8	27.0	8.3	2.2	69.4	20.1	7.2	1.4	72.0	19.4	8.7	2.5	68.4	20.4
Manufacturing industries	31–33	13,962	16.3	6.0	70.3	7.4	10.9	2.4	78.8	7.9	10.1	1.4	80.3	8.2	10.8	2.8	75.5	10.9
Food	311	535	9.2	9.5 r	73.9	7.3	2.4 r	9.5 r	78.9	9.2	6.2 r	9.0 r	75.8	9.0	5.0 r	7.5 r	75.8	11.7
Beverage and tobacco products	312	108	30.6	7.4	50.9	11.1 r	27.8 r	D	52.8	17.6 r	19.4 r	D	54.6	22.2 r	28.7 r	D	44.4	24.1 r
Textile, apparel, and leather products	313–16	273	10.3	D	81.0	6.2 r	D	D	73.3	21.2	4.8 r	D	74.0	19.4	6.2 r	D	61.9	26.7 r
Wood products	321	278	7.6	42.4	48.2	D	4.0 r	D	87.8	5.8 r	3.6	D	91.4	2.5 r	4.0	D	62.2	26.3 r
Paper	322	68	7.4	D	57.4 r	D	5.9	0.0	88.2	D	D	0.0	89.7	D	D	0.0	91.2	D
Printing and related support activities	323	858	16.0	8.3	74.9	D	11.9 r	0.0	84.3	3.8 r	8.9 r	D	83.4	5.7	10.4 r	D	82.2	6.8
Petroleum and coal products	324	16 r	0.0	0.0	100.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0	0.0
Chemicals	325	384	23.2 r	10.3	62.3	4.2	4.4	4.4	85.2	6.0	16.4 r	2.6 r	76.3	4.7 r	5.5	3.4	86.5	4.7
Pesticide, fertilizer, and other agricultural chemical manufacturing	3253	47 r	D	0.0	0.0	D	0.0	0.0	D	D	D	0.0	D	0.0	0.0	0.0	100.0 r	0.0
Pharmaceuticals and medicines	3254	77	11.7 r	19.5 r	61.0	D	14.3 r	11.7 r	70.1	D	6.5	13.0 r	76.6	D	13.6 r	11.1 r	62.9	12.4 r
Soap, cleaning compound, and toilet preparation manufacturing	3256	55	D	D	78.2	D	0.0	0.0	85.5	D	D	0.0	67.3	23.6 r	0.0	0.0	94.5	D
Other chemicals	other 325	206	15.5 r	11.7 r	72.8	D	3.4	D	88.3	4.9 r	5.3	0.0	94.7	D	5.3 r	D	90.3	2.9 r
Plastics and rubber products	326	565	8.3 r	5.0 r	83.9	D	6.4	1.9	90.8	D	6.0 r	1.1 r	89.4	D	7.6 r	D	85.3	5.8 r
Nonmetallic mineral products	327	178	14.5 r	D	79.9	5.6 r	10.1	D	53.9	34.3	7.3	D	66.5	26.2	12.4 r	D	58.4	29.2
Primary metals	331	114	14.0 r	D	80.7	D	5.4 r	0.0	86.6	8.0 r	9.6 r	0.0	86.0	D	9.6 r	D	83.3	4.4 r

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(Number and percent)

Industry	NAICS code	Companies (number)	Production workers				Nonproduction workers				Supervisory workers				Nonsupervisory workers											
			Increased	Decreased	Did not change	Did not employ	Increased	Decreased	Did not change	Did not employ	Increased	Decreased	Did not change	Did not employ	Increased	Decreased	Did not change	Did not employ								
Fabricated metal products	332	3,053	20.2	5.5	r	71.2	3.1	10.2	2.6	r	82.6	4.6	13.7	0.6	80.0	5.7	15.1	4.3	r	71.5	9.1					
Machinery	333	3,101	20.6	5.1	r	63.8	10.5	15.1	2.3	r	76.6	6.0	14.1	0.6	r	79.4	5.9	12.9	1.9	r	77.3	7.9				
Computer and electronic products	334	1,812	11.5	3.9		71.4	13.2	11.3	3.0		77.8	7.9	5.1	2.3	r	80.2	12.4	8.6	2.3		76.4	12.7				
Communications equipment	3342	228	14.9	D		62.7	14.5	14.9	r	0.0	78.1	7.0	r	2.6	0.0	89.9	7.5	r	12.7	r	D	74.1	12.3			
Semiconductor and other electronic components	3344	319	9.4	7.2	r	69.8	13.5	r	6.9	7.5	r	75.5	10.0	r	3.1	6.0	r	78.3	12.5	r	5.3	3.1	r	80.8	10.7	
Navigational, measuring, electromedical, and control instruments	3345	1,109	11.2	2.4	r	74.7	11.7	12.5	2.6	r	78.3	6.6	6.7	1.8	r	78.2	13.3	8.9	2.5	r	75.7	12.9				
Other computer and electronic products	other 334	157	12.7	r	D	64.3	22.9	4.5	0.0		79.7	15.8	r	D	D	82.8	14.0	r	7.0	0.0	74.5	18.5				
Electrical equipment, appliances, and components	335	419	24.6	1.2	r	62.5	11.7	15.5	D		79.7	4.3	9.1	D	84.0	6.7	13.4	D		77.8	7.9					
Transportation equipment	336	493	18.6	2.8		66.0	12.5	r	15.3	r	2.2	67.2	15.3	r	15.9	r	1.4	r	70.1	12.5	r	15.3	r	2.0	69.1	13.5
Automobiles, bodies, trailers, and parts	3361–63	292	4.8	3.8		73.3	D	7.5	3.8		69.5	19.2	r	8.2	2.4	r	70.2	19.2	r	5.1	3.1	71.1	20.8			
Aerospace products and parts	3364	108	27.8	D		70.4	0.0	18.3	r	0.0	81.7	0.0	7.3	r	0.0	92.7	0.0	13.9	r	D	86.1	0.0				
Other transportation	other 336	93	49.5	r	0.0	40.9	r	D	D	0.0	44.1	r	D	D	0.0	44.1	r	D	D	0.0	44.1	r	D			
Furniture and related products	337	350	16.9	D		81.4	D	9.7	r	D	83.7	5.1	r	10.3	r	D	84.3	4.3	r	5.7	r	0.0	86.4	7.9		
Miscellaneous	339	1,360	8.2	5.7	r	76.0	10.1	8.6	1.3		72.6	17.5	2.5	0.7	r	83.3	13.5	4.6	r	2.5	75.9	17.0				
Medical equipment and supplies	3391	608	5.4	12.0	r	79.1	3.5	4.3	2.3	r	76.5	16.9	3.8	D	89.5	4.9	3.1	5.3		76.1	15.5					
Other miscellaneous manufacturing	3399	751	10.4	r	D	73.5	15.8	12.0	r	D	69.6	18.1	1.5	r	D	77.9	20.6	5.6	r	D	75.8	18.4				



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Other real estate and rental and leasing	other 53	1,485	6.0	r	D	56.9	36.4	6.8	r	0.0	64.6	28.6	3.0	r	0.0	71.3	25.7	5.9	r	0.0	71.3	22.8				
Professional, scientific, and technical services	54	18,044	11.3		1.5	56.3	30.9	9.4		2.3	68.9	19.4	9.0		1.4	70.1	19.5	9.8		2.7	68.3	19.2				
Legal services	5411	871	13.1	r	0.0	28.5	58.4	13.7		D	29.4	50.4	19.4		0.0	34.8	45.7	15.0		D	43.6	34.7				
Accounting, tax preparation, bookkeeping, and payroll services	5412	960	9.5	r	D	62.4	24.3	D		6.4	r	65.3	22.7	D		D	74.1	21.3	D		D	66.4	22.1			
Architectural, engineering, and related services	5413	5,304	8.8		1.6	r	63.7	25.9	5.2		1.7	r	78.2	14.9	5.1		0.7	r	83.0	11.2	7.7		1.6	r	77.0	13.7
Specialized design services	5414	407	0.0		D	42.5	56.8	D		D	62.4	24.6	r	D		0.0	61.7	26.0	D		0.0	72.5	15.2	r		
Computer systems design and related services	5415	5,285	13.5		D	54.7	31.7	9.4		0.7	r	71.9	18.0	9.5		1.8	r	68.8	19.9	8.2		2.6	r	69.8	19.4	
Management, scientific, and technical consulting services	5416	2,124	10.8	r	3.7	r	51.9	33.6	16.5		3.5	r	63.6	16.4	14.8		3.5	r	56.6	25.1	15.0	r	3.5	r	55.0	26.5
Scientific research and development services	5417	763	15.9		2.0	55.1	27.0	19.4		3.0	r	68.6	9.0	14.2	r	D	74.8	10.9	17.3		2.8	r	68.2	11.7		
Advertising, public relations, and related services	5418	456	10.4		0.0	63.0	26.6	11.2	r	D	53.1	33.6	14.7	r	0.0	64.0	21.3	20.3	r	0.0	58.5	21.2				
Other professional, scientific, and technical services	5419	1,871	13.3		D	56.5	27.6	8.6	r	D	65.5	23.3	7.6	r	0.0	68.1	24.3	7.7	r	D	69.1	20.6				
Management of companies and enterprises	55	D	D		0.0	D	0.0	0.0		0.0	D	0.0	0.0		0.0	D	0.0	0.0		0.0	D	0.0	0.0			
Administrative and support and waste management and remediation services	56	6,600	14.7		1.4	r	55.8	28.1	8.2		1.3	r	63.5	27.0	7.0		D	68.1	24.1	6.7		2.1	r	67.1	24.1	

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Educational services	61	716	D	0.0	62.4	32.0	r	D	0.0	88.0	D	8.2	r	0.0	79.9	D	D	0.0	88.0	D
Health care and social assistance	62	13,627	8.4	1.2	r	58.6	31.8	7.0	2.0	68.2	22.8	6.2	0.9	71.4	21.5	6.7	1.0	71.0	21.3	
Health care services	621–23	13,627	8.4	1.2	r	58.6	31.8	7.0	2.0	68.2	22.8	6.2	0.9	71.4	21.5	6.7	1.0	71.0	21.3	
Social assistance	624	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Arts, entertainment, and recreation	71	1,313	D	D	59.1	37.6	D	D	63.6	29.7	D	D	66.3	30.5	10.4	r	D	60.5	25.8	
Accommodation and food services	72	4,252	15.2	9.7	46.6	28.4	13.2	6.1	51.1	29.6	9.4	7.5	60.4	22.7	9.6	6.1	59.0	25.3		
Other services	81	9,406	8.2	2.6	61.4	27.8	3.4	2.3	r	71.1	23.2	3.5	D	71.7	24.3	5.5	3.2	r	64.4	26.9

D = withheld to avoid disclosing data for individual companies; data are included in higher-level totals. r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2019 Annual Business Survey: Data Year 2018.