The Economic Impacts of Utah's Manufacturing Industry, 2018

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Analysis in Brief

Manufacturing is one of Utah's largest industries, making significant contributions to the state's economy. In 2018, the industry provided 7.0% of total employment, paid 9.6% of total earnings, and produced 11.0% of gross domestic product. Utah's manufacturing industry continues to grow despite a nationwide slowdown; however, this growth is exceeded by growth in other industries. Within production occupations, there is an underrepresentation of women and an over-representation of minorities compared with other occupations. Overall, Utah's manufacturing industry is a crucial component of the state's economic health and prosperity.

Key Findings

- **Employment**—Manufacturing provides 143,461 jobs in Utah, the fifth-largest industry. Approximately two-thirds of Utah manufacturing jobs are in durable goods. Manufacturing employment has grown 0.8% annually since 2008 but is outpaced by non-manufacturing industries' 2.1% yearly growth. Since 2007, Utah has had an above-average concentration of employment in manufacturing.
- **Earnings**—In 2018, Utah's manufacturing industry paid $10.4 billion, the third largest in the state. Average earnings in the manufacturing industry rank fourth at $72,565, 38.6% higher than the statewide average for all industries. Manufacturing earnings have grown an average of 1.4% per year, slower than the rest of Utah's economy but much faster than the 0.2% national manufacturing growth rate.
- **Gross Domestic Product**—At $19.6 billion in 2018, manufacturing is Utah's third-largest source of GDP and second-largest private sector industry. Manufacturing GDP has grown an average of 2.0% annually in Utah, twice the national rate.
- **Economic and Fiscal impacts**—In 2018, the total economic impacts of Utah's manufacturing industry included 427,980 jobs, $26.4 billion in earnings, and $44.0 billion in GDP. Overall, manufacturing supports one-fifth of all Utah jobs and one-quarter of Utah's total GDP and earnings. The estimated total net fiscal impact is $605.9 million in state operating revenues. Much of these effects are concentrated in Salt Lake County and the urban Wasatch Front.
- **Workforce Demographics**—Compared with other occupations in the state, women are underrepresented in production jobs. More than twice as many men are employed in production occupations as women. Minorities are overrepresented in production occupations, with over one-third of production workers identified as non-White or Hispanic. The largest minority among production workers is Hispanics at 27.0%. The age distribution of production workers matches closely with that of all workers in the state.

Manufacturing Industry Growth in Utah and the United States, 2018

	Billions	10-Year Annual Growth	One-Year Annual Growth
Gross Domestic Product			
Utah	$19.6	2.0%	4.9%
US	$2,321.2	1.0%	3.7%
Employment			
Utah	143,461	0.8%	3.0%
US	13,501,300	-0.3%	2.0%
Earnings			
Utah	$10.4	1.4%	3.3%
US	$1,155.7	0.2%	2.2%

Note: Ten-year growth calculated as compound annual growth. Dollar amounts in constant 2018 dollars.
Source: Bureau of Economic Analysis

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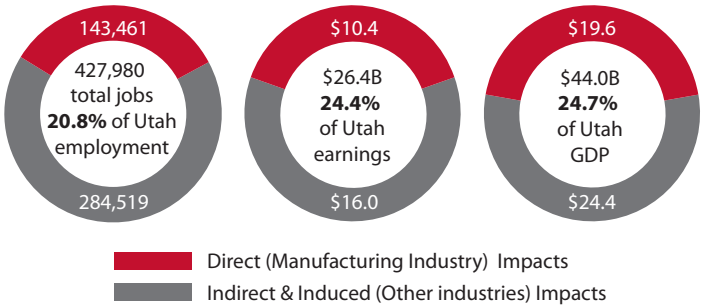

Source: Kem C. Gardner Policy Institute analysis of Bureau of Economic Analysis data using the REMI PI+ v2.3.1 model

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Manufacturing Industry Definition

This study focuses on the manufacturing industry as classified by the North American Industry Classification System (NAICS). Manufacturing is defined as an industry made up of establishments that engage in the mechanical, physical, or chemical transformation of materials, substances, or components into new products.[1] These establishments characteristically use power-driven machines and materials-handling equipment. However, establishments that transform materials or substances into new products by hand or in the worker's home and those engaged in selling to the general public products made on the same premises from which they are sold, such as bakeries, candy stores, and custom tailors, may also be included in this sector. Manufacturing establishments may process materials or may contract with other establishments to process materials for them. Both types of establishments are included in manufacturing.

Table 1: Establishments by Manufacturing Subsector, 2018

Subsector	Establishments	Share of Manufacturing Establishments	Share of Total Establishments
All-Industry Total	103,577		100.0%
Manufacturing Sector Total	4,390	100.0%	4.2%
Food Manufacturing	418	9.5%	0.4%
Beverage and Tobacco Product Manufacturing	68	1.5%	0.1%
Textile Mills	20	0.5%	0.0%
Textile Product Mills	76	1.7%	0.1%
Apparel Manufacturing	62	1.4%	0.1%
Leather and Allied Product Manufacturing	30	0.7%	0.0%
Wood Product Manufacturing	185	4.2%	0.2%
Paper Manufacturing	40	0.9%	0.0%
Printing and Related Support Activities	287	6.5%	0.3%
Petroleum and Coal Products Manufacturing	28	0.6%	0.0%
Chemical Manufacturing	259	5.9%	0.3%
Plastics and Rubber Products Manufacturing	168	3.8%	0.2%
Nonmetallic Mineral Product Manufacturing	196	4.5%	0.2%
Primary Metal Manufacturing	71	1.6%	0.1%
Fabricated Metal Product Manufacturing	721	16.4%	0.7%
Machinery Manufacturing	275	6.3%	0.3%
Computer and Electronic Product Manufacturing	292	6.7%	0.3%
Electrical Equipment and Appliance Manufacturing	59	1.3%	0.1%
Transportation Equipment Manufacturing	180	4.1%	0.2%
Furniture and Related Product Manufacturing	363	8.3%	0.4%
Miscellaneous Manufacturing	592	13.5%	0.6%

Note: Does not include self-employed manufacturers.
Source: Bureau of Labor Statistics

Table 2: Largest Employers in Utah's Manufacturing Industry, 2019

(Companies with at least 1,000 jobs)

Company	Description	Establishments	Employment Range
Autoliv	Other Motor Vehicle Parts Manufacturing	4	3,500–5,996
L3 Technologies	Instrument Manufacturing for Measuring and Testing Electricity and Electrical Signals	1	3,000–3,999
Merit Medical Systems, Inc.	Surgical and Medical Instrument Manufacturing	2	220–3,048
ATK Space Systems Inc.	Guided Missile and Space Vehicle Propulsion Unit and Propulsion Unit Parts Manufacturing	4	1,061–2,121
Fresenius USA Manufacturing, Inc.	Surgical and Medical Instrument Manufacturing	3	1,002–2,007
Becton, Dickinson and Company	Surgical and Medical Instrument Manufacturing	1	1,000–1,999
E A Miller	Animal (except Poultry) Slaughtering	1	1,000–1,999
Edwards Lifesciences LLC	Surgical and Medical Instrument Manufacturing	1	1,000–1,999
Hexcel Corporation	Carbon and Graphite Product Manufacturing	1	1,000–1,999
IM Flash Technologies, LLC	Semiconductor and Related Device Manufacturing	1	1,000–1,999
Lifetime Products Inc.	Sporting and Athletic Goods Manufacturing	1	1,000–1,999
Nestle Prepared Foods Company	Frozen Specialty Food Manufacturing	1	1,000–1,999
Ultradent Products, Inc.	Dental Equipment and Supplies Manufacturing	1	1,000–1,999
Utility Trailer Manufacturing Company	Truck Trailer Manufacturing	1	1,000–1,999

Note: Federal disclosure guidelines permit broad employment ranges, not exact counts. Ranges were determined by summing the minimum value and maximum value from each employment range for each establishment location. Companies are ranked by the maximum employment range value. For companies in the same range, companies are listed alphabetically, not by exact employment count. Some companies had a maximum of over 1,000 jobs, but their minimum was 999 or less and are not included in the table.
Source: Utah Department of Workforce Services

The manufacturing industry consists of NAICS codes 31–33 and includes 21 subsectors. In Utah, there were 4,390 operating manufacturing establishments in 2018, not including self-employed manufacturers (Table 1).[2] This is less than 5.0% of all establishments in the state. Within the manufacturing industry, fabricated metal product manufacturers (16.4%), miscellaneous manufacturers (13.5%), and food manufacturers (9.5%) were the most prevalent.

Manufacturing establishments range in size from single-employee companies to over 3,000 employees. Though Utah has an array of establishments in all manufacturing subsectors, a few large employers stand out. As of February 2019, the largest manufacturing employer in the state was likely Autoliv with at least 3,500 jobs, followed closely by L3 Technologies (Table 2). Federal guidelines prohibit the disclosure of exact counts and therefore, it is uncertain that Autoliv is definitively larger than L3 Technologies as L3 had an employment range maximum of 3,999 jobs.

Employment in Manufacturing

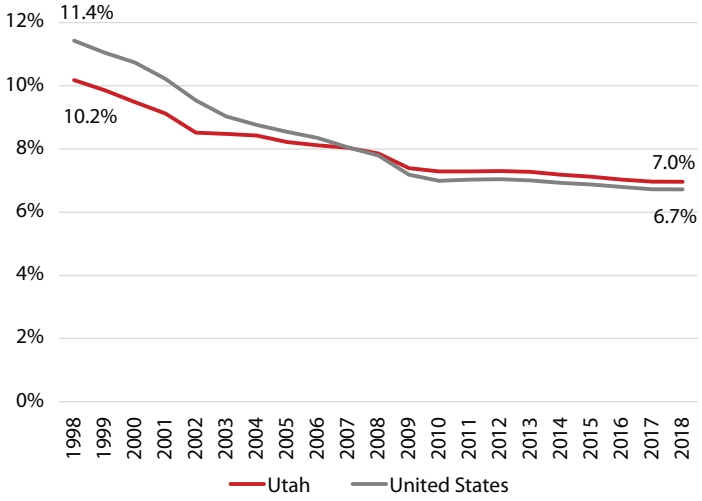
Nationwide, manufacturing's share of employment is decreasing. Both Utah and the U.S. have seen manufacturing jobs make up a smaller share of the workforce over the last two decades (Figure 1). However, manufacturing's employment share in Utah is declining more slowly than the nation. In 1998, manufacturing accounted for 11.4% of total employment nationwide (including Utah) and 10.2% in Utah. In 2007, the shares were nearly the same, having fallen to 8.1% and 8.0%, respectively. By 2018, 7.0% of Utah's total employment was in manufacturing compared with 6.7% of U.S. employment.

For these two reasons—comparative growth in Utah's manufacturing industry and nationwide manufacturing contraction—manufacturing's share of employment is currently higher in Utah than in the nation. Until the last decade, manufacturing has been a smaller share of Utah's job market than in the U.S. as a whole. In 1969, Utah's manufacturing employment location quotient was 0.55, indicating that manufacturing's share of employment in Utah was a little more than half of its share nationwide (Figure 2). However, manufacturing employment in the state rose steadily over the next four decades. In 2007, Utah's share of jobs in the manufacturing sector matched that of the United States. Since then, Utah's manufacturing employment concentration has remained higher than in the United States as a whole.

Nationwide, Utah ranks 33rd for employment in manufacturing, with over 143,000 jobs (Table 3). Louisiana, with fewer than 3,000 more manufacturing jobs than Utah, ranks 32nd, while Maryland ranks 34th with nearly 23,000 fewer jobs than Utah. Both states have a larger population than Utah, which ranks 30th according to 2018 Census Bureau estimates.[3]

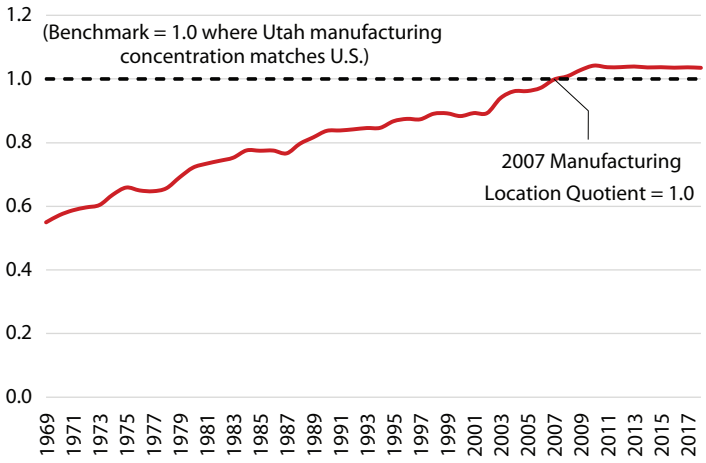
Compared with other states, Utah's manufacturing sector has seen relatively strong growth over the last 10 years. Manufacturing employment in the state averaged 0.8% annual growth from 2008 to 2018, fifth fastest in the nation. Only Nevada, Idaho, Michigan, and Montana saw more rapid growth. More recently, from 2017 to 2018, manufacturing jobs increased 3.0% in Utah, the 12th fastest growth rate nationally, and the highest in Utah since 2007.

Figure 1: Manufacturing Industry Share of Total Employment, 1998–2018



Source: U.S. Source: U.S. Bureau of Economic Analysis

Figure 2: Utah's Rising Location Quotient for Manufacturing Employment, 1969–2018



Note: Utah's manufacturing location quotient equals the industry's share of total employment in Utah divided by the industry's share nationwide. For data from 1969 to 1997, SIC industry codes are used to measure the location quotients. From 1998 to 2018, NAICS industry classifications are used.
Source: U.S. Bureau of Economic Analysis

Table 3: State Employment in Manufacturing, 2008–2018

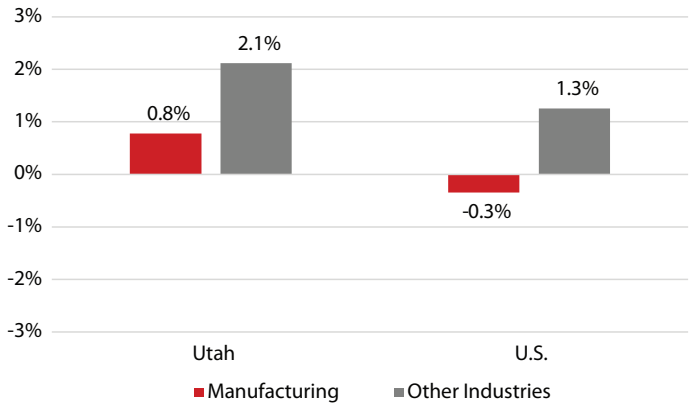
State	2018 Employment		10-Year Annual Growth		One-Year Growth	
	Jobs	Rank	Percent	Rank	Percent	Rank
Alabama	277,818	17	-0.4%	29	1.3%	36
Alaska	15,628	49	0.4%	13	-2.8%	49
Arizona	185,529	25	0.1%	18	3.8%	5
Arkansas	167,076	29	-1.1%	41	2.2%	24
California	1,434,262	1	-0.5%	30	1.1%	39
Colorado	167,168	28	0.7%	6	2.6%	19
Connecticut	170,445	27	-1.3%	46	1.2%	37
Delaware	28,714	45	-1.3%	44	4.4%	4
District of Columbia	2,154	51	0.6%	7	NA	NA
Florida	419,793	12	0.5%	10	2.6%	18
Georgia	433,629	11	0.2%	17	2.8%	15
Hawaii	18,903	48	0.3%	15	0.4%	45
Idaho	75,384	37	1.0%	2	2.8%	17
Illinois	608,272	5	-1.0%	40	1.9%	28
Indiana	558,603	7	0.5%	11	1.5%	33
Iowa	230,349	23	-0.1%	23	3.1%	11
Kansas	172,666	26	-1.1%	42	2.5%	21
Kentucky	260,659	19	0.4%	14	0.7%	44
Louisiana	146,399	32	-0.9%	36	0.9%	42
Maine	57,660	39	-0.9%	37	2.2%	25
Maryland	120,784	34	-1.1%	43	2.8%	16
Massachusetts	260,513	20	-1.3%	45	0.3%	46
Michigan	657,448	4	1.0%	3	2.2%	23
Minnesota	339,257	14	-0.3%	25	1.1%	38
Mississippi	151,217	30	-0.8%	35	0.7%	43
Missouri	288,323	16	-0.4%	27	2.8%	14
Montana	25,557	47	0.9%	4	3.7%	7
Nebraska	103,795	35	-0.1%	21	1.9%	27
Nevada	61,881	38	1.7%	1	14.6%	1
New Hampshire	76,136	36	-0.5%	32	2.5%	22
New Jersey	264,733	18	-1.5%	49	1.4%	35
New Mexico	33,596	44	-1.9%	51	3.2%	10
New York	480,317	10	-1.5%	48	-0.3%	48
North Carolina	499,183	8	-0.7%	34	1.7%	30
North Dakota	27,781	46	0.1%	19	5.0%	3
Ohio	730,959	3	-0.4%	28	2.0%	26
Oklahoma	149,890	31	-0.5%	31	7.2%	2
Oregon	213,599	24	0.3%	16	3.0%	13
Pennsylvania	603,101	6	-1.0%	38	1.6%	31
Rhode Island	42,883	42	-1.5%	47	0.3%	47
South Carolina	259,885	21	0.4%	12	3.8%	6
South Dakota	47,103	41	0.6%	9	3.3%	9
Tennessee	367,789	13	-0.1%	24	1.0%	41
Texas	965,227	2	-0.1%	22	3.4%	8
Utah	**143,461**	**33**	**0.8%**	**5**	**3.0%**	**12**
Vermont	34,162	43	-1.0%	39	1.4%	34
Virginia	255,217	22	-0.7%	33	2.6%	20
Washington	309,746	15	0.1%	20	1.5%	32
West Virginia	49,955	40	-1.6%	50	1.0%	40
Wisconsin	494,421	9	-0.3%	26	1.9%	29
Wyoming	12,270	50	0.6%	8	NA	NA
United States*	13,501,300		-0.3%		2.0%	

Note: Share of total equals manufacturing employment divided by total employment in the state. Ten-year growth rates calculated as a compound annual growth rate.
NA: 2017 data are not published to avoid disclosure of confidential information; estimates are included in higher-level totals.
*The difference between the United States and sum-of-states reflects overseas activity, economic activity taking place outside the borders of the United States by the military, and associated federal civilian support staff.
Source: U.S. Bureau of Economic Analysis

Employment in other sectors has also been increasing. In Utah, employment in non-manufacturing industries rose at an annual rate of 2.1% over the last decade, compared with 1.3% nationally (Figure 3). Despite relatively strong growth in Utah's manufacturing industries, other non-manufacturing industries are adding substantially more jobs, employing a greater share of the workforce.

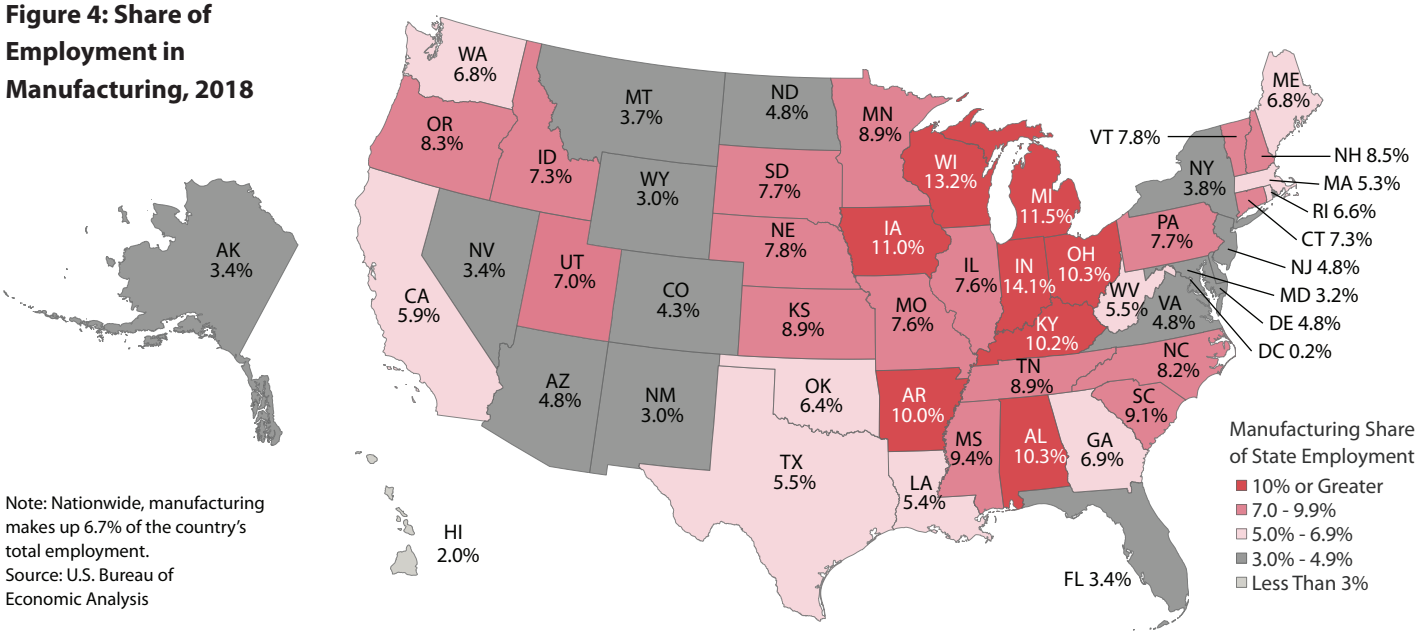
Manufacturing employment accounts for 7.0% of total employment in the state (Figure 4). Indiana has the highest share of manufacturing employment, 14.1%, more than twice the percentage in Utah. Wisconsin (13.2%), Michigan (11.5%), Iowa (11.0%), Alabama (10.3%), Ohio (10.3%), Kentucky (10.2%), and Arkansas (10.0%) also have high relative concentrations of manufacturing employment, with at least one in every 10 jobs in the manufacturing industry. Among Utah's border states, only Idaho has a higher share of manufacturing employment at 7.3%. The rest of Utah's neighbors have concentrations of less than 5.0%.

Figure 3: Industry Job Growth, 2008–2018
(Compound annual growth rate)



Note: Other Industries includes all industries other than manufacturing.
Source: U.S. Bureau of Economic Analysis

Figure 4: Share of Employment in Manufacturing, 2018



Note: Nationwide, manufacturing makes up 6.7% of the country's total employment.
Source: U.S. Bureau of Economic Analysis

Table 4: Employment by Industry in Utah, 2018

Industry	Employment	Share of Total Employment	Rank
Farm	21,165	1.0%	18
Forestry, Fishing, and Related Activities	4,196	0.2%	21
Mining, Quarrying, and Oil and Gas Extraction	14,460	0.7%	19
Utilities	4,988	0.2%	20
Construction	133,414	6.5%	7
Manufacturing	**143,461**	**7.0%**	**5**
Wholesale Trade	56,739	2.8%	14
Retail Trade	216,210	10.5%	2
Transportation and Warehousing	83,459	4.0%	12
Information	44,328	2.2%	16
Finance and Insurance	131,661	6.4%	8
Real Estate and Rental and Leasing	117,678	5.7%	9
Professional, Scientific, and Technical Services	159,186	7.7%	4
Management of Companies and Enterprises	29,408	1.4%	17
Administrative and Support and Waste Management and Remediation Services	116,220	5.6%	10
Educational Services	67,926	3.3%	13
Health Care and Social Assistance	172,715	8.4%	3
Arts, Entertainment, and Recreation	47,952	2.3%	15
Accommodation and Food Services	133,541	6.5%	6
Other Services	103,418	5.0%	11
Government and Government Enterprises	258,813	12.6%	1
All Industry Total	**2,060,938**	**100.0%**	

Source: U.S. Bureau of Economic Analysis

Manufacturing is the fifth-largest industry in Utah by employment (Table 4). It provides more jobs than other prominent sectors like accommodation and food services, construction, and finance and insurance. Overall, government and government enterprises account for the largest share of employment, followed by retail trade, health care and social assistance, and professional, scientific, and technical services.

Approximately two-thirds of Utah manufacturing jobs are in durable goods (Table 5). Nationwide, 62.7% of manufacturing jobs are in durable goods. The most substantial subsector disparity between Utah and the U.S., by a wide margin, is in miscellaneous durable goods. This subsector, which is Utah's largest, includes products as varied as medical equipment and supplies, jewelry, sporting goods, toys, and signs. Miscellaneous durable goods manufacturing made up 15.4% of Utah manufacturing jobs in 2018, compared with only 5.6% nationwide. Food manufacturing employment ranks second in Utah with 18,413 jobs, or 12.8% of manufacturing employment. Fabricated metal products and transportation equipment also each account for over 10.0% of the state's manufacturing employment.

Table 5: Employment by Subsector in Utah's Manufacturing Industry, 2008–2018

	2018 Employment		Share of Manufacturing		10-Year Annual Growth		One-Year Growth	
Subsector	**Utah**	**US**	**Utah**	**US**	**Utah**	**US**	**Utah**	**US**
Manufacturing Sector	**143,461**	**13,501,300**	**100%**	**100%**	**0.8%**	**-0.3%**	**3.0%**	**2.0%**
Durable Goods	94,428	8,458,100	65.8%	62.7%	0.5%	-0.4%	3.1%	2.7%
Wood Products	3,460	466,300	2.4%	3.5%	-1.8%	-0.8%	2.7%	3.0%
Nonmetallic Mineral Products	5,841	456,600	4.1%	3.4%	-0.4%	-0.5%	2.2%	2.3%
Primary Metals	3,985	387,500	2.8%	2.9%	0.0%	-1.5%	-1.2%	2.7%
Fabricated Metal Products	15,290	1,531,900	10.7%	11.4%	1.4%	-0.4%	3.8%	2.8%
Machinery	6,744	1,177,200	4.7%	8.7%	0.2%	-0.4%	5.7%	3.6%
Computer and Electronic Products	13,433	1,084,500	9.4%	8.0%	-0.1%	-1.5%	0.2%	1.2%
Electrical Equipment, Appliances, and Components	2,350	424,800	1.6%	3.2%	4.8%	-0.1%	4.8%	3.3%
Transportation Equipment*	14,667	1,731,700	10.2%	12.8%	0.2%	0.7%	4.7%	3.4%
Furniture and Related Products	6,542	436,600	4.6%	3.2%	-2.3%	-1.7%	3.7%	-0.1%
Miscellaneous	22,116	761,000	15.4%	5.6%	2.2%	0.3%	3.4%	3.4%
Nondurable Goods	49,033	5,043,200	34.2%	37.4%	1.3%	-0.2%	3.0%	0.8%
Food	18,413	1,709,200	12.8%	12.7%	1.8%	1.1%	3.1%	1.3%
Beverage and Tobacco Products	1,070	298,600	0.7%	2.2%	4.6%	3.7%	6.0%	4.6%
Textile Mills	594	115,900	0.4%	0.9%	6.7%	-2.9%	11.0%	-1.4%
Textile Product Mills	996	124,100	0.7%	0.9%	0.1%	-2.1%	-1.5%	-0.9%
Apparel	1,287	157,500	0.9%	1.2%	2.3%	-3.7%	-5.8%	-4.4%
Leather and Allied Products	452	40,200	0.3%	0.3%	5.6%	0.4%	13.6%	3.6%
Paper	2,625	367,300	1.8%	2.7%	-0.6%	-1.9%	5.6%	-0.9%
Printing and Related Support	5,564	489,000	3.90%	3.62%	-2.6%	-2.8%	-1.5%	-2.0%
Petroleum and Coal Products	1,686	121,200	1.20%	0.90%	3.3%	0.3%	2.7%	1.8%
Chemicals	9,730	874,100	6.80%	6.47%	1.3%	0.0%	-3.6%	1.3%
Plastics and Rubber Products	6,616	746,100	4.60%	5.53%	3.5%	0.0%	18.5%	2.1%

NA: Not shown to avoid disclosure of confidential information; estimates are included in higher-level totals.
*Transportation Equipment Manufacturing is a category computed from the combination of Motor Vehicles, Bodies and Trailers, and Parts Manufacturing and Other Transportation Equipment Manufacturing.
Note: Share of manufacturing equals subsector employment divided by total employment in the state's manufacturing sector. Ten-year growth rates calculated as compound annual growth rates.
Source: US. Bureau of Economic Analysis

Over three-quarters of Utah's manufacturing jobs are located in the four counties of the Wasatch Front (Table 6). Salt Lake County alone accounts for 41.6% of the total. However, manufacturing makes up only 6.5% of the jobs in Salt Lake County and 6.8% in the Wasatch Front. The industry is an essential source of employment in some of Utah's rural counties, providing 21.2% of jobs in Box Elder, 16.3% in Juab, 15.3% in Cache, and 9.7% in Sanpete. One in 10 jobs in Weber County is also in manufacturing, the only other county with a share above 10% (Figure 5).

A majority of Utah's counties have experienced annual growth in manufacturing employment since 2008. Grand, Wasatch, and Juab counties have experienced the fastest annual growth at rates higher than 5.0% annually (Figure 6). Beaver County has also experienced relatively high yearly growth at a rate of 4.6%. Dagget County has experienced the fastest loss of manufacturing employment with a negative growth rate of -5.6% per year. Duchesne, Box Elder, Uintah, and Garfield also experienced declines in employment greater than 1.0% annually. Manufacturing also shrank in Tooele and San Juan counties.

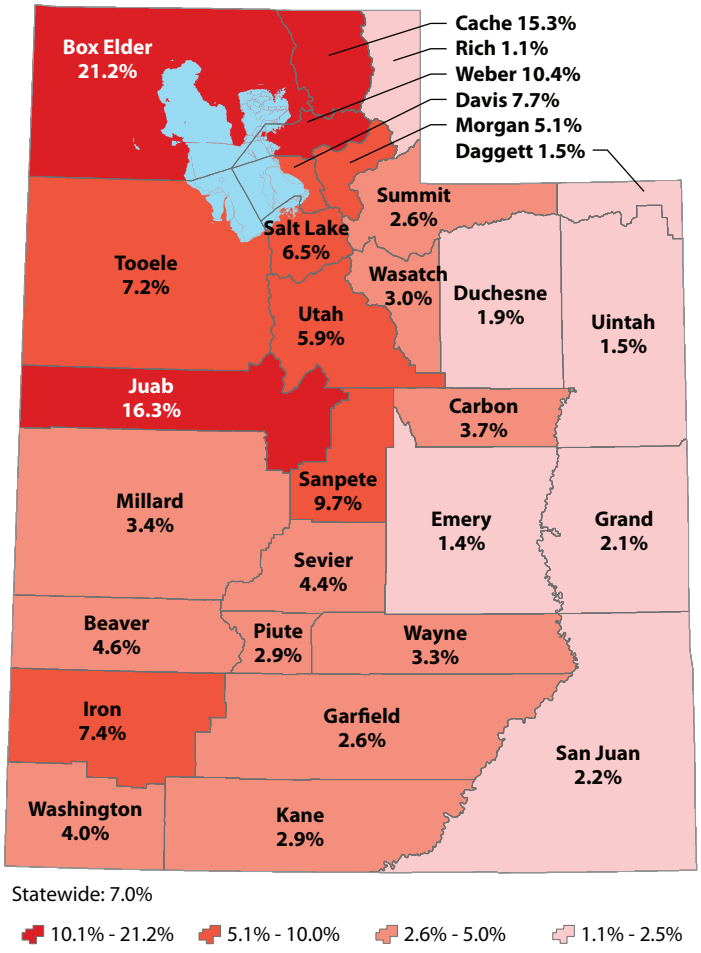
Detailed employment data is not consistently available at the county level, with many industries not disclosed. However, the total number of establishments operating in a county is regularly reported. Every county had at least one manufacturing firm operating in 2018 (Table 7). Daggett County had a single establishment, followed by Piute and Rich with two establishments each. Salt Lake County had the most with 2,016 or 45.8% of all manufacturing establishments in the state. Utah County accounts for the second-largest share of 16.0% with 704.

Table 6: Manufacturing Industry Employment by County, 2018

County	Jobs	Share of State	Share of County
Beaver	192	0.1%	4.6%
Box Elder	6,319	4.4%	21.2%
Cache	12,008	8.4%	15.3%
Carbon	418	0.3%	3.7%
Daggett*	9	0.0%	1.5%
Davis	14,772	10.3%	7.7%
Duchesne	227	0.2%	1.9%
Emery	70	0.0%	1.4%
Garfield	95	0.1%	2.6%
Grand	173	0.1%	2.1%
Iron	2,021	1.4%	7.4%
Juab	896	0.6%	16.3%
Kane	155	0.1%	2.9%
Millard	248	0.2%	3.4%
Morgan	259	0.2%	5.1%
Piute*	18	0.0%	2.9%
Rich*	18	0.0%	1.1%
Salt Lake	59,677	41.6%	6.5%
San Juan	147	0.1%	2.2%
Sanpete	1,265	0.9%	9.7%
Sevier	562	0.4%	4.4%
Summit	1,099	0.8%	2.6%
Tooele	1,684	1.2%	7.2%
Uintah	276	0.2%	1.5%
Utah	21,481	15.0%	5.9%
Wasatch	511	0.4%	3.0%
Washington	4,043	2.8%	4.0%
Wayne*	63	0.0%	3.3%
Weber	14,755	10.3%	10.4%
Total	**143,461**	**100.0%**	**7.0%**

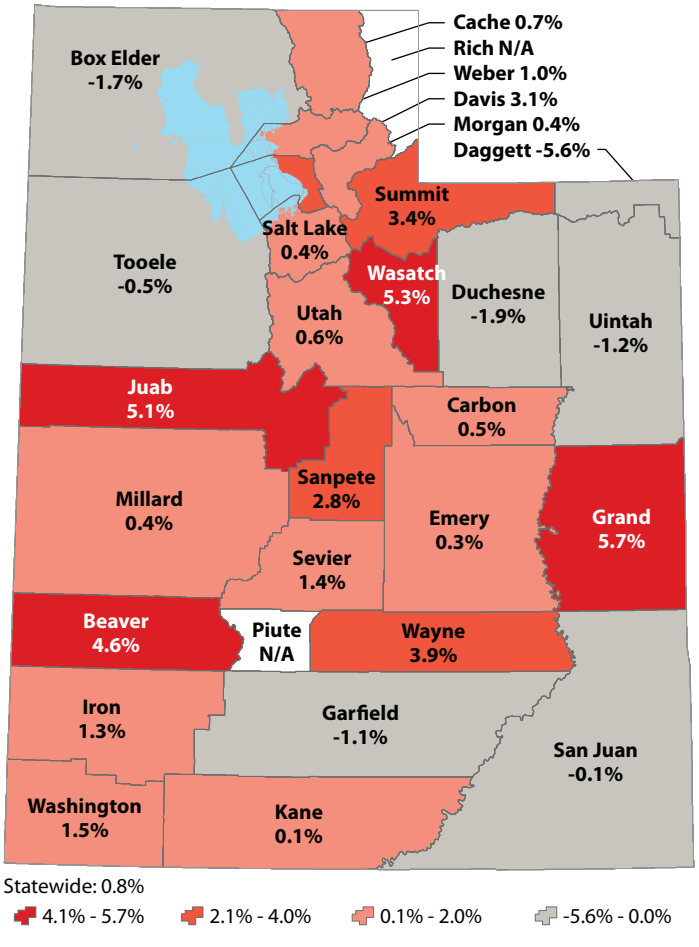
* Estimated by the Gardner Institute
Source: U.S. Bureau of Economic Analysis

Figure 5: Manufacturing Share of Total Employment by County, 2018



Note: Data for Daggett, Piute, Rich, and Wayne counties are estimated.
Source: Bureau of Economic Analysis and Kem C. Gardner Policy Institute

Figure 6: Annual Growth in Manufacturing Employment by County, 2008–2018



Note: Compound annual growth rates. Data for Daggett and Wayne counties are based partially on estimates. Data for Piute and Rich are not disclosed.
Source: Bureau of Economic Analysis and Kem C. Gardner Policy Institute

Table 7: County Manufacturing Establishments by Sector, 2018

County	311 Food	312 Beverages and Tobacco Products	313 Textile Mills	314 Textile Product Mills	315 Apparel	316 Leather and Allied Products	321 Wood Products	322 Paper	323 Printing and Related Support Activities	324 Petroleum and Coal Products	325 Chemicals	326 Plastics and Rubber Products	327 Nonmetallic Mineral Products	331 Primary Metals	332 Fabricated Metal Products	333 Machinery	334 Computer and Electronic Products	335 Electrical Equipment and Appliances	336 Transportation Equipment	337 Furniture and Related Products	339 Miscellaneous	County Total
Beaver	2	1									1	1	1		1				1	1		9
Box Elder	13				2		5	2	1		1	2	7	4	19	3	0		10	11	8	88
Cache	29	1		4	3	4	14		16		11	15	11	1	48	15	17	3	9	17	29	247
Carbon				1					1				3		4	4	1	1		2	3	20
Daggett															1							1
Davis	28	1	2	12	2	0	15	2	34	10	21	10	14	3	61	19	12	4	21	23	35	329
Duchesne	3						1		2		2		1		4	8				2	1	24
Emery															2	1				1		4
Garfield							1				2		1		1	0	1			1		7
Grand		2	1				2				2	1			1	1				2	2	14
Iron	6	3			1	2	4	2	5		3	7	3	3	15	5	1	1	6	9	17	93
Juab	2		1								2	3	3	1	4					5	1	22
Kane	1												1		1		1			1	1	6
Millard	2										2		4		2	1					1	12
Morgan	1					1						2	2		7	1	1	1	2	1	3	22
Piute							1												1			2
Rich							1						1									2
Salt Lake	180	37	8	35	28	8	68	23	139	10	115	84	66	31	303	141	178	37	71	154	300	2,016
San Juan	1						1						1			1				1		5
Sanpete	6			1	1	1	2				3	1	2	1	5	1	2		3	3	2	34
Sevier	4	1							2	2	2		2		4	1			1	1	6	26
Summit	14	4		1	1		5	2	5	1	7		4		5		7		3	3	12	74
Tooele	6			1		1	3			1	1	2	5	3	6	2	1		4	1	4	41
Uintah	2	1		2	1	2	2		1		1		2	2	6	4				2		28
Utah	64	6	4	13	16	8	31	7	62	2	48	23	30	18	104	40	45	6	18	64	95	704
Wasatch	9		1		1		5		3		2	1			4	1		2	1	8	2	40
Washington	12	5	3	3	5	1	8		4	1	13	7	22	1	49	7	11	1	7	36	27	223
Wayne	1						4						1			1						7
Weber	33	6	1	3	2	2	13	2	13	1	21	9	10	3	65	19	14	3	24	15	43	302
State Total	**419**	**68**	**21**	**76**	**63**	**30**	**186**	**40**	**288**	**28**	**260**	**168**	**197**	**71**	**722**	**276**	**292**	**59**	**182**	**364**	**592**	**4,402**

Source: U.S. Bureau of Labor Statistics

Wages, Compensation, and Earnings in Manufacturing

Utah manufacturers paid $7.9 billion in wages and salaries in 2018, one-tenth of total wages paid in the state (Table 8). Utah ranks 28th nationwide for the share of wages paid to manufacturing employees. Over the last 10 years, total manufacturing wages in the state have risen 1.2% annually, adjusted for inflation, the eighth fastest growth rate in the United States. From 2017 to 2018, total manufacturing wages rose by 2.8%.

Nationwide, manufacturing wage growth has lagged behind the rest of the economy, and Utah is no exception (Figure 7). While the state's 1.2% annual manufacturing growth was far better than the national average 0.2% growth rate, wages in non-manufacturing industries in Utah grew at more than double that rate at an average of 3.0% per year.

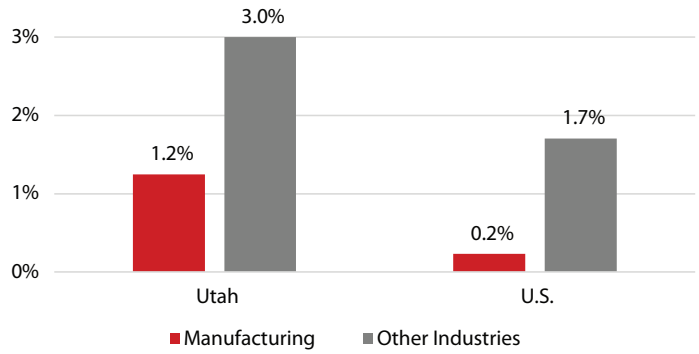
The manufacturing industry accounted for 10.2% of the $77.8

Table 8: Employee Wages in the Manufacturing Industry, 2008–2018
(Constant 2018 dollars)

	2018 Wages		Share of Total		10-Year Annual Growth		One-Year Growth	
State	Billions	Rank	Percent	Rank	Percent	Rank	Percent	Rank
Alabama	$15.2	20	15.6%	6	0.2%	26	2.2%	24
Alaska	$0.7	48	3.4%	49	1.5%	4	-2.5%	49
Arizona	$13.2	26	8.4%	35	0.6%	22	4.9%	4
Arkansas	$8.0	32	13.9%	11	-0.2%	33	2.3%	23
California	$129.0	1	10.2%	27	1.5%	5	2.1%	25
Colorado	$10.7	27	6.3%	39	0.8%	16	1.7%	30
Connecticut	$13.2	25	11.3%	20	-1.5%	46	-0.7%	45
Delaware	$1.7	44	6.5%	38	-1.8%	49	4.8%	5
District of Columbia	$0.1	51	0.2%	51	-1.6%	47	NA	NA
Florida	$23.8	12	5.0%	42	0.8%	15	3.7%	10
Georgia	$25.0	11	9.7%	30	0.9%	14	2.7%	18
Hawaii	$0.7	50	1.7%	50	-0.1%	30	0.4%	41
Idaho	$4.5	37	13.2%	13	2.4%	1	4.0%	7
Illinois	$43.5	4	11.3%	19	-0.2%	32	1.8%	28
Indiana	$35.1	7	22.5%	1	0.7%	19	1.6%	32
Iowa	$13.4	24	17.6%	4	0.7%	20	3.5%	12
Kansas	$10.1	29	14.1%	10	-0.7%	41	3.0%	15
Kentucky	$14.9	22	16.0%	5	0.9%	11	0.0%	43
Louisiana	$10.6	28	10.4%	25	0.1%	27	2.6%	19
Maine	$3.0	39	10.0%	29	-0.9%	42	0.4%	39
Maryland	$8.9	30	4.9%	43	-0.7%	39	2.4%	21
Massachusetts	$21.7	14	8.1%	36	-0.6%	38	-1.8%	48
Michigan	$42.5	5	17.7%	3	0.7%	17	1.8%	27
Minnesota	$21.6	15	12.5%	16	0.4%	24	0.6%	37
Mississippi	$7.5	34	15.0%	8	0.0%	28	0.4%	40
Missouri	$16.5	18	11.1%	21	-0.4%	37	2.4%	20
Montana	$1.0	47	4.8%	44	0.9%	10	3.9%	8
Nebraska	$5.4	35	10.6%	23	0.7%	18	3.2%	14
Nevada	$3.3	38	4.5%	46	1.5%	3	17.3%	1
New Hampshire	$5.1	36	13.2%	14	-0.3%	34	1.7%	29
New Jersey	$19.8	17	7.2%	37	-2.1%	50	0.5%	38
New Mexico	$1.5	45	3.7%	48	-2.9%	51	0.1%	42
New York	$30.0	8	4.2%	47	-1.7%	48	-0.4%	44
North Carolina	$29.3	9	11.9%	17	-0.2%	31	1.7%	31
North Dakota	$1.4	46	6.0%	40	0.9%	13	5.0%	3
Ohio	$44.4	3	15.2%	7	-0.3%	35	1.9%	26
Oklahoma	$8.5	31	10.4%	26	0.6%	21	10.6%	2
Oregon	$14.1	23	13.2%	15	1.2%	9	4.0%	6
Pennsylvania	$35.7	6	10.5%	24	-0.7%	40	1.4%	34
Rhode Island	$2.5	41	8.8%	33	-0.9%	43	-0.8%	46
South Carolina	$15.4	19	14.9%	9	1.3%	7	2.3%	22
South Dakota	$2.2	42	11.1%	22	1.5%	2	3.8%	9
Tennessee	$20.9	16	13.3%	12	0.3%	25	-1.6%	47
Texas	$68.4	2	9.2%	32	0.5%	23	3.3%	13
Utah	**$7.9**	**33**	**10.2%**	**28**	**1.2%**	**8**	**2.8%**	**17**
Vermont	$1.8	43	11.5%	18	-1.4%	45	0.8%	36
Virginia	$14.9	21	5.9%	41	-0.4%	36	3.5%	11
Washington	$22.8	13	9.6%	31	0.9%	12	2.8%	16
West Virginia	$2.8	40	8.5%	34	-1.0%	44	1.5%	33
Wisconsin	$28.5	10	19.0%	2	0.0%	29	1.2%	35
Wyoming	$0.7	49	4.7%	45	1.5%	6	NA	NA
United States*	$883.2		9.9%		0.2%		2.0%	

Note: Percentages and dollar amounts based on wages and salaries adjusted for inflation to 2018 dollars using the U.S. consumer price index. The share of all industries equals manufacturing wages and salaries divided by total wages and salaries in the state. Ten-year growth calculated as compound annual growth.
NA: Not shown to avoid disclosure of confidential information; estimates are included in higher-level totals.
*The difference between the United States and sum-of-states reflects overseas activity, economic activity taking place outside the borders of the United States by the military and associated federal civilian support staff.
Source: U.S. Bureau of Economic Analysis

Figure 7: Industry Wage Growth, 2008–2018
(Compound annual growth rate)



Note: Other Industries consists of all industries other than manufacturing. Wages are adjusted for inflation to 2018 dollars.
Source: U.S. Bureau of Economic Analysis

million in total wages and salaries paid in Utah in 2018 (Table 9). At $7.9 billion, manufacturing ranks third in the state for total wages. Government and government enterprises make up 15.5% of Utah's total wages and are the leading industry in the state, followed by professional, scientific, and technical services. The average annual wage for all manufacturing workers (full-time and part-time) was $55,162, ranking it the fifth highest-paying industry in Utah. Industry average wages ranged from a low of $9,353 in farming to as high as $83,311 in the utilities sector. The statewide average annual wage for all employees was $37,768, 31.5% less than in the manufacturing industry.

Computer and electronic products and miscellaneous durable manufacturing contributed the most to manufacturing wages in 2018 (Table 10). These were the only two subsectors to break the $1 billion mark in 2018. Contributing $1.16 billion and $1.12 billion, respectively, these two subsectors account for 28.8% of all manufacturing wages. All nondurable goods manufacturing subsectors combined are responsible for less than one-third of manufacturing wages.

The leather and allied products subsector has seen the fastest growth in total wages over the last 10 years, with a 9.3% average annual growth rate since 2008. However, in 2018 this subsector paid $10.4 million in wages and salaries, 0.1% of Utah's total manufacturing wages, and the state's smallest sector. Plastics and rubber products and petroleum and coal products grew annually at 5.0% and 4.8%, respectively, over the last decade. Still, these subsectors combined account for only 6.1% of all manufacturing wages. The largest share of manufacturing wages are in computer and electronic products (14.7%) and miscellaneous durable goods (14.1%) which have respectively grown by 1.0% and 3.5% annually

Nationwide, computer and electronic products manufacturing is also responsible for the largest share of manufacturing wages, at 15.0%. However, transportation equipment ranks second in

Table 9: Employee Wages by Industry in Utah, 2018

Industry	Total Wages (Millions)	Share of State	Average Wage	Rank
Farm	$198.0	0.3%	$9,353	21
Forestry, Fishing, and Related Activities	$62.2	0.1%	$14,823	19
Mining, Quarrying, and Oil and Gas Extraction	$744.7	1.0%	$51,497	6
Utilities	$415.6	0.5%	$83,311	1
Construction	$5,555.4	7.1%	$41,640	9
Manufacturing	**$7,913.6**	**10.2%**	**$55,162**	**5**
Wholesale Trade	$3,533.9	4.5%	$62,284	3
Retail Trade	$6,010.1	7.7%	$27,798	15
Transportation and Warehousing	$3,135.3	4.0%	$37,567	12
Information	$2,966.2	3.8%	$66,916	2
Finance and Insurance	$5,308.4	6.8%	$40,319	11
Real Estate and Rental and Leasing	$1,102.5	1.4%	$9,369	20
Professional, Scientific, and Technical Services	$7,939.5	10.2%	$49,876	7
Management of Companies and Enterprises	$1,770.7	2.3%	$60,213	4
Administrative and Support and Waste Management and Remediation Services	$3,520.0	4.5%	$30,288	14
Educational Services	$1,725.0	2.2%	$25,396	16
Health Care and Social Assistance	$7,001.3	9.0%	$40,537	10
Arts, Entertainment, and Recreation	$798.4	1.0%	$16,651	18
Accommodation and Food Services	$2,661.9	3.4%	$19,934	17
Other Services	$3,393.7	4.4%	$32,815	13
Government and Government Enterprises	$12,081.7	15.5%	$46,681	8
Total	**$77,838.1**	**100.0%**	**$37,768**	

Source: U.S. Bureau of Economic Analysis

the nation with a 14.8% share of manufacturing industry wages. In Utah, transportation equipment manufacturing is the state's third-largest subsector behind miscellaneous durable goods. Nationwide, the miscellaneous subsector is responsible for only 4.6% of the industry's total wages and salaries.

Only half of the manufacturing subsectors had a positive annual growth rate nationwide. Only two subsectors, food and beverage and tobacco grew at an annual rate higher than 1.0%. Conversely, eight subsectors contracted at a rate higher than 1.0% a year. Apparel manufacturing had the lowest annual growth rate at -4.7%.

Table 10: Employee Wages by Subsector in the Manufacturing Industry, 2008–2018
(Millions of 2018 dollars)

	2018 Wages		Share of Manufacturing		10-Year Annual Growth		One-Year Growth	
Subsector	**Utah**	**U.S.**	**Utah**	**U.S.**	**Utah**	**U.S.**	**Utah**	**U.S.**
Manufacturing Sector	**$7,913.6**	**$883,224.0**	**100%**	**100%**	**1.2%**	**0.2%**	**2.8%**	**2.0%**
Durable Goods	$5,516.1	$589,534.0	69.7%	66.7%	0.9%	0.3%	2.4%	2.8%
Wood Products	$105.2	$19,142.0	1.3%	2.2%	-2.0%	-0.2%	4.4%	3.3%
Nonmetallic Mineral Products	$304.7	$25,205.0	3.8%	2.9%	-0.4%	-0.3%	-2.1%	1.8%
Primary Metals	$270.3	$27,297.0	3.4%	3.1%	-1.2%	-1.1%	-5.0%	4.3%
Fabricated Metal Products	$775.4	$86,337.0	9.8%	9.8%	1.8%	-0.1%	4.6%	3.4%
Machinery	$386.2	$81,103.0	4.9%	9.2%	0.3%	0.1%	5.6%	3.3%
Computer and Electronic Products	$1,162.3	$132,724.0	14.7%	15.0%	1.0%	0.7%	2.1%	2.2%
Electrical Equipment, Appliances, and Components	$147.2	$27,441.0	1.9%	3.1%	4.8%	0.2%	5.4%	1.2%
Transportation Equipment*	$986.6	$130,884.0	12.5%	14.8%	-0.2%	0.9%	6.2%	3.7%
Furniture and Related Products	$260.7	$18,568.0	3.3%	2.1%	-1.8%	-1.3%	3.2%	-0.1%
Miscellaneous	$1,117.4	$40,833.0	14.1%	4.6%	3.5%	0.7%	-0.6%	2.1%
Nondurable Goods	$2,397.5	$293,690.0	30.3%	33.3%	2.0%	0.1%	3.6%	0.2%
Food	$786.5	$80,129.0	9.9%	9.1%	2.3%	1.7%	1.5%	1.1%
Beverage and Tobacco Products	$46.6	$14,694.0	0.6%	1.7%	4.2%	1.2%	3.8%	1.6%
Textile Mills	$17.6	$5,409.0	0.2%	0.6%	4.3%	-2.2%	27.0%	-1.5%
Textile Product Mills	$31.2	$4,964.0	0.4%	0.6%	-0.4%	-1.6%	1.3%	-1.1%
Apparel	$15.5	$5,025.0	0.2%	0.6%	1.1%	-4.7%	-8.1%	-5.1%
Leather and Allied Products	$10.4	$1,245.0	0.1%	0.1%	9.3%	-1.6%	40.1%	-4.2%
Paper	$174.6	$25,251.0	2.2%	2.9%	1.7%	-1.4%	17.9%	-1.4%
Printing and Related Support	$221.0	$22,124.0	2.8%	2.5%	-2.6%	-3.2%	-2.2%	-1.8%
Petroleum and Coal Products	$187.9	$13,389.0	2.4%	1.5%	4.8%	0.6%	4.1%	1.3%
Chemicals	$593.3	$81,023.0	7.5%	9.2%	1.7%	0.4%	-3.4%	-0.1%
Plastics and Rubber Products	$313.0	$40,437.0	4.0%	4.6%	5.0%	0.8%	22.4%	1.7%

Note: Percentages and dollar amounts are based on aggregate wages adjusted for inflation to 2018 dollars using the U.S. consumer price index. Share of manufacturing equals subsector's wages divided by total wages in the state's manufacturing sector. Ten-year growth rates calculated as a compound annual growth rate.
*Transportation Equipment Manufacturing is a category computed from the combination of Motor Vehicles, Bodies and Trailers, and Parts Manufacturing and Other Transportation Equipment Manufacturing.
Source: US. Bureau of Economic Analysis and U.S. Bureau of Labor Statistics

Compensation differs from wages and salaries in that it accounts for benefits paid to employees in addition to wages. Total compensation provides a broader and more complete picture of the financial remuneration paid to employees in the manufacturing industry. Proprietors' income is the income derived from self-employment and does not differentiate between wages and salaries and (self-paid) benefits. Likewise, proprietors are not considered employees and their income is not included in employee wage and salary totals. Proprietors can have a net loss in total income if the business is new or has sporadic revenue. Reasons for irregular revenue may include cases where manufacturing time is significant and revenue is only earned after completion. Similarly, a self-employed manufacturer may have another primary job, and self-employment could be a secondary source of revenue. Earnings are the summation of employee compensation and proprietors' income, which encompasses all workers in the industry and provides the broadest picture of the financial remuneration of workers in the manufacturing industry.

In 2018, earnings in Utah's manufacturing industry totaled $10.4 billion, making it the third largest industry in the state (Table 11). Manufacturing is responsible for 9.6% of total earnings in Utah. Only government and government enterprises and professional, scientific, and technical services account for larger shares at 16.0% and 9.7%, respectively. However, with the fifth-highest employment in the state, average earnings in the manufacturing industry rank fourth. The average earnings were $72,565 in 2018, 38.6% higher than the statewide average of $52,364 for all industries.

Table 11: Earnings by Industry in Utah, 2018
(2018 dollars)

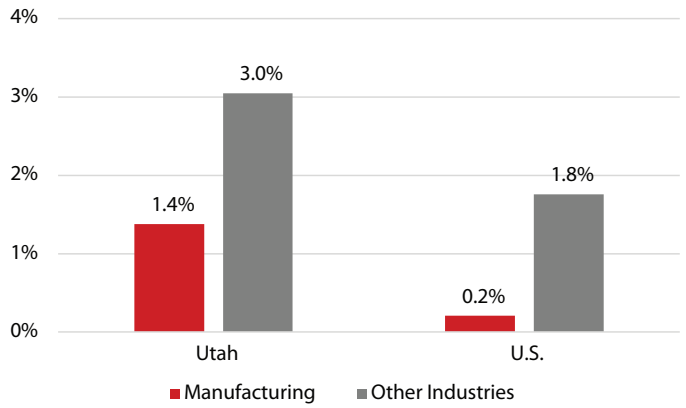
	Earnings			Average Earnings	
Industry	**Millions**	**Share of Total**	**Rank**	**Dollars**	**Rank**
Farm	$272.1	0.3%	20	$12,856	21
Forestry, Fishing, and Related activities	$88.5	0.1%	21	$21,103	20
Mining, Quarrying, and Oil and Gas extraction	$830.9	0.8%	18	$57,459	9
Utilities	$792.6	0.7%	19	$158,901	1
Construction	$8,872.0	8.2%	5	$66,499	7
Manufacturing	**$10,410.3**	**9.6%**	**3**	**$72,565**	**4**
Wholesale Trade	$4,919.8	4.6%	8	$86,710	2
Retail Trade	$8,193.7	7.6%	6	$37,897	15
Transportation and Warehousing	$4,537.5	4.2%	11	$54,368	10
Information	$3,802.2	3.5%	12	$85,775	3
Finance and Insurance	$6,920.9	6.4%	7	$52,566	12
Real Estate and Rental and Leasing	$3,440.8	3.2%	13	$29,239	17
Professional, Scientific, and Technical Services	$10,486.9	9.7%	2	$65,878	8
Management of Companies and Enterprises	$2,115.2	2.0%	16	$71,926	5
Administrative and Support and Waste Management and Remediation Services	$4,591.2	4.3%	10	$39,505	14
Educational Services	$2,279.7	2.1%	15	$33,561	16
Health Care and Social Assistance	$9,200.0	8.5%	4	$53,267	11
Arts, Entertainment, and Recreation	$1,094.5	1.0%	17	$22,824	19
Accommodation and Food Services	$3,119.8	2.9%	14	$23,362	18
Other Services	$4,688.1	4.3%	9	$45,331	13
Government and Government Enterprises	$17,263.1	16.0%	1	$66,701	6
All Industry Total	**$107,919.6**	**100.0%**		**$52,364**	

Source: U.S. Bureau of Economic Analysis

Similar to wage growth over the last 10 years, earnings growth in manufacturing has lagged behind the rest of the economy (Figure 6). Nationally and in Utah, manufacturing earnings have grown, but at a significantly slower pace than other industries. Still, manufacturing earnings growth has fared better in Utah than in the rest of the nation, growing an average of 1.4% per year, compared with 0.2% nationally. During this same time, wages in non-manufacturing industries averaged 3.0% annual growth in Utah and 1.8% nationally.

In 2018, the manufacturing industry paid $10.2 billion in total compensation to employees in 132,258 jobs, which results in average manufacturing compensation of $77,097 (Table 12). Average compensation in durable goods manufacturing totals $81,618 per job, compared with $68,435 in nondurable goods. Total compensation is highest in miscellaneous durable goods manufacturing at $1.6 billion in 2018. However, average compensation is highest in the petroleum and coal products subsector at $182,041.

Figure 8: Industry Earnings Growth, 2008–2018
(Compound annual growth rate)



Note: Other Industries consists of all industries other than manufacturing. Earnings are adjusted to constant 2018 dollars.
Source: U.S. Bureau of Economic Analysis

There were 11,203 self-employed proprietors in Utah's manufacturing industry in 2018; two-thirds of them were in durable goods subsectors (Table 12). Self-employment in durable goods manufacturing is more than double that in nondurable goods. However, total income is significantly higher for proprietors in nondurable goods manufacturing subsectors, at $186.6 million compared with $27.0 million. The average income for proprietors is highest in the beverage and tobacco manufacturing subsector at $212,841, followed closely by petroleum and coal products at $210,942. Food manufacturing ranks third highest with an average income of $114,444.

Table 12: Earnings by Subsector and Type of Recipient in the Manufacturing Industry, 2018
(2018 dollars)

	Employees			Proprietors			Total		
Subsector	**Jobs**	**Total Compensation** (Thousands)	**Average Compensation**	**Jobs**	**Total Income** (Thousands)	**Average Income**	**Jobs**	**Earnings** (Thousands)	**Average Earnings**
Manufacturing Sector	**132,258**	**$10,196,713**	**$77,097**	**11,203**	**$213,578**	**$19,064**	**143,461**	**$10,410,291**	**$72,565**
Durable Goods	86,903	$7,092,866	$81,618	7,525	$26,988	$3,586	94,428	$7,119,854	$75,400
Wood Products	2,656	$131,254	$49,418	804	$1,603	$1,994	3,460	$132,857	$38,398
Nonmetallic Mineral Products	5,382	$376,757	$70,003	459	$9,553	$20,813	5,841	$386,310	$66,138
Primary Metals	3,894	$336,887	$86,514	91	$246	$2,703	3,985	$337,133	$84,601
Fabricated Metal Products	14,310	$953,246	$66,614	980	$28,983	$29,574	15,290	$982,229	$64,240
Machinery	6,085	$485,302	$79,754	659	-$1,078	-$1,636	6,744	$484,224	$71,801
Computer and Electronic Products	13,003	$1,451,553	$111,632	430	$10,289	$23,928	13,433	$1,461,842	$108,825
Electrical Equipment, Appliances, and Components	1,991	$203,684	$102,302	359	-$327	-$911	2,350	$203,357	$86,535
Transportation Equipment*	14,180	$1,264,473	$89,173	487	-$4,008	-$8,230	14,667	$1,260,465	$85,939
Furniture and Related Products	5,981	$319,201	$53,369	561	$4,400	$7,843	6,542	$323,601	$49,465
Miscellaneous	19,421	$1,570,509	$80,867	2,695	-$22,673	-$8,413	22,116	$1,547,836	$69,987
Nondurable Goods	45,355	$3,103,847	$68,435	3,678	$186,590	$50,731	49,033	$3,290,437	$67,107
Food	17,476	$975,298	$55,808	937	$107,234	$114,444	18,413	$1,082,532	$58,792
Beverage and Tobacco Products	988	$62,949	$63,714	82	$17,453	$212,841	1,070	$80,402	$75,142
Textile Mills	532	$22,260	$41,842	62	-$93	-$1,500	594	$22,167	$37,318
Textile Product Mills	819	$38,706	$47,260	177	-$753	-$4,254	996	$37,953	$38,105
Apparel	493	$19,940	$40,446	794	$2,071	$2,608	1,287	$22,011	$17,103
Leather and Allied Products	235	$12,980	$55,234	217	$759	$3,498	452	$13,739	$30,396
Paper	2,602	$213,489	$82,048	23	$742	$32,261	2,625	$214,231	$81,612
Printing and Related Support	4,969	$268,452	$54,025	595	$10,738	$18,047	5,564	$279,190	$50,178
Petroleum and Coal Products	1,617	$294,360	$182,041	69	$14,555	$210,942	1,686	$308,915	$183,224
Chemicals	9,274	$811,406	$87,493	456	$30,200	$66,228	9,730	$841,606	$86,496
Plastics and Rubber Products	6,350	$384,007	$60,474	266	$3,684	$13,850	6,616	$387,691	$58,599

Note: Compensation includes wages and benefits. Proprietor's income is from self-employment. Self-employment is calculated from the difference between total employment and wage and salary employment.
*Transportation Equipment Manufacturing is a category computed from the combination of Motor Vehicles, Bodies and Trailers, and Parts Manufacturing and Other Transportation Equipment Manufacturing.
Source: U.S. Bureau of Economic Analysis

Manufacturing Gross Domestic Product

In 2018, manufacturing contributed $19.6 billion to Utah's economy (Table 13). Nationwide, Utah ranks 31st for the largest manufacturing gross domestic product (GDP), between Maryland (30th) and Arkansas (32nd). Neighboring Colorado ranks 29th with $25.8 billion in manufacturing GDP. Over the last decade, Utah's manufacturing GDP has grown an average of 2.0% per year, twice the national rate and 10th fastest among the 50 states and the District of Columbia. From 2017 to 2018, Utah's manufacturing sector grew 4.9%, 1.2 percentage points higher than the nation as a whole and 17th fastest.

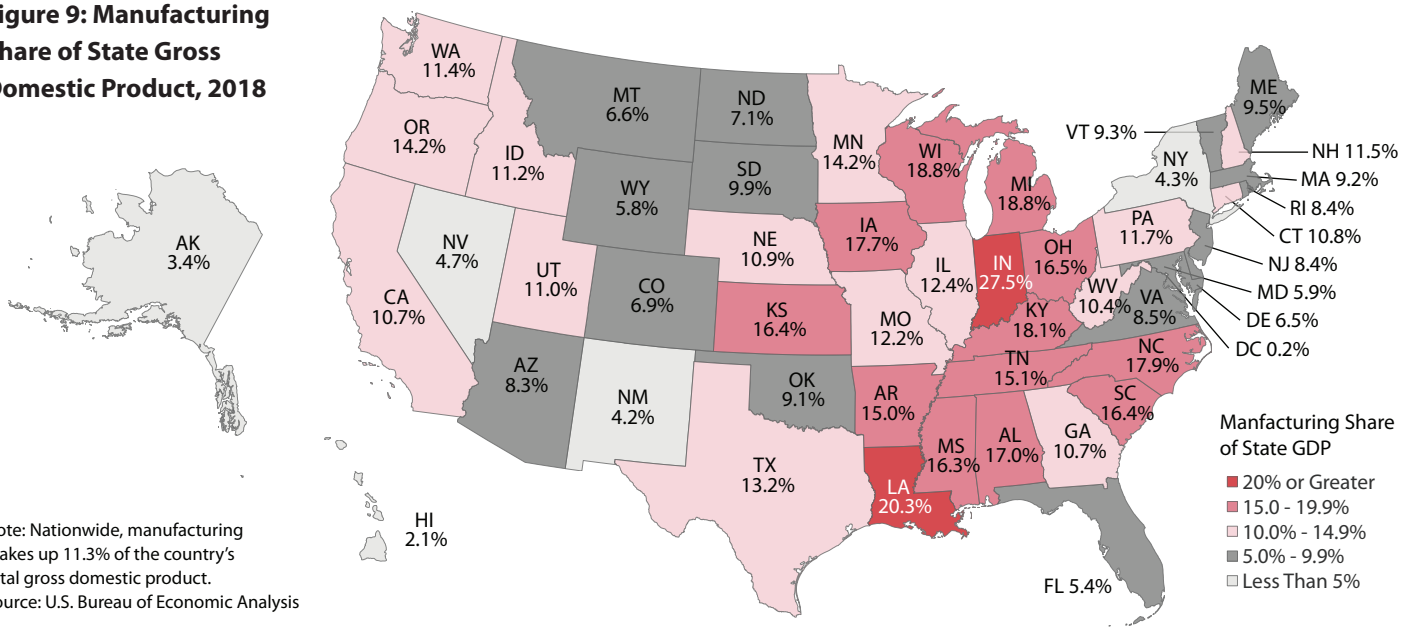
In 2018, manufacturing contributed 11.0% of Utah's GDP (Figure 9). The state is on par with the nation, where 11.3% of national GDP is produced by the manufacturing industry. While Utah ranks close to Colorado for manufacturing GDP, Colorado's manufacturing industry makes up only 6.9% of state GDP. By this measure, Utah is more similar to neighboring Idaho, where the manufacturing sector contributes 11.2% of total state GDP. Idaho and Utah rank 23rd and 24th, respectively, for the manufacturing share of GDP.

Table 13: State Gross Domestic Product in Manufacturing, 2008–2018

State	2018 Manufacturing GDP		10-Year Annual Growth		One-Year Growth	
	Billions	Rank	Percent	Rank	Percent	Rank
Alabama	$37.6	23	1.1%	25	3.8%	28
Alaska	$1.8	50	0.7%	35	8.7%	7
Arizona	$28.9	27	0.5%	36	5.0%	15
Arkansas	$19.3	32	0.8%	32	3.8%	26
California	$320.7	1	1.0%	27	3.1%	31
Colorado	$25.8	29	1.4%	22	3.9%	22
Connecticut	$29.7	26	-4.1%	50	0.8%	47
Delaware	$4.8	43	-0.8%	46	9.8%	5
District of Columbia	$0.3	51	0.8%	31	5.9%	12
Florida	$56.2	13	2.0%	9	4.8%	19
Georgia	$63.3	11	1.9%	11	3.1%	32
Hawaii	$2.0	49	2.3%	6	9.7%	6
Idaho	$8.6	37	1.4%	21	3.8%	27
Illinois	$107.7	4	1.4%	23	3.9%	24
Indiana	$100.7	6	0.8%	30	2.8%	34
Iowa	$33.6	25	0.7%	33	3.6%	30
Kansas	$27.6	28	1.8%	14	6.6%	10
Kentucky	$37.7	22	1.6%	15	1.5%	44
Louisiana	$52.2	18	0.4%	39	15.8%	1
Maine	$6.2	40	-0.2%	44	1.6%	43
Maryland	$24.4	30	1.8%	13	3.9%	23
Massachusetts	$52.6	15	0.7%	34	0.0%	50
Michigan	$99.2	7	2.3%	4	1.7%	42
Minnesota	$52.2	17	1.9%	12	3.0%	33
Mississippi	$18.8	33	0.5%	37	4.8%	18
Missouri	$39.0	20	0.5%	38	2.5%	39
Montana	$3.3	46	2.8%	1	13.2%	4
Nebraska	$13.5	35	1.5%	20	3.7%	29
Nevada	$7.9	39	0.9%	28	13.3%	3
New Hampshire	$9.7	36	2.3%	5	2.3%	41
New Jersey	$52.3	16	-1.8%	49	2.8%	35
New Mexico	$4.2	44	0.2%	42	6.3%	11
New York	$71.7	9	-0.8%	45	0.0%	51
North Carolina	$100.7	5	0.3%	40	0.1%	49
North Dakota	$4.0	45	1.6%	18	5.0%	16
Ohio	$111.5	3	1.0%	26	4.0%	21
Oklahoma	$18.5	34	-1.6%	48	8.3%	8
Oregon	$34.1	24	0.9%	29	5.2%	13
Pennsylvania	$91.5	8	0.1%	43	3.9%	25
Rhode Island	$5.1	42	0.3%	41	1.2%	45
South Carolina	$38.4	21	2.5%	3	2.5%	38
South Dakota	$5.1	41	2.6%	2	2.7%	36
Tennessee	$55.0	14	1.6%	16	0.2%	48
Texas	$237.7	2	2.3%	7	7.4%	9
Utah	**$19.6**	**31**	**2.0%**	**10**	**4.9%**	**17**
Vermont	$3.1	47	-1.0%	47	1.1%	46
Virginia	$45.3	19	1.6%	17	2.4%	40
Washington	$64.6	10	2.0%	8	5.1%	14
West Virginia	$8.1	38	1.2%	24	4.1%	20
Wisconsin	$63.1	12	1.5%	19	2.5%	37
Wyoming	$2.3	48	-5.5%	51	13.3%	2
United States*	$2,321.2		1.0%		3.7%	

Note: Percentages and dollar amounts based on gross domestic product adjusted for inflation to 2018 dollars using the U.S. consumer price index. Share of all industries equals manufacturing GDP divided by total GDP in the state. Ten-year growth calculated as compound annual growth.
*The difference between the United States and sum-of-states reflects overseas activity, economic activity taking place outside the borders of the United States by the military and associated federal civilian support staff.
Source: U.S. Bureau of Economic Analysis

Figure 9: Manufacturing Share of State Gross Domestic Product, 2018



Note: Nationwide, manufacturing makes up 11.3% of the country's total gross domestic product.
Source: U.S. Bureau of Economic Analysis

Table 14: Gross Domestic Product by Industry in Utah, 2018

Industry	Millions	Share	Rank
Agriculture, Forestry, Fishing, and Hunting	$776.0	0.4%	20
Mining, Quarrying, and Oil and Gas Extraction	$2,747.9	1.5%	15
Utilities	$2,311.5	1.3%	18
Construction	$11,027.1	6.2%	7
Manufacturing	**$19,581.7**	**11.0%**	**3**
Wholesale Trade	$9,071.3	5.1%	9
Retail Trade	$12,158.4	6.8%	5
Transportation and Warehousing	$6,621.7	3.7%	11
Information	$8,535.1	4.8%	10
Finance and Insurance	$15,466.0	8.7%	4
Real Estate and Rental and Leasing	$24,360.9	13.7%	1
Professional, Scientific, and Technical Services	$12,151.8	6.8%	6
Management of Companies and Enterprises	$2,415.3	1.4%	17
Administrative and Support and Waste Management and Remediation Services	$5,350.8	3.0%	12
Educational Services	$2,677.1	1.5%	16
Health Care and Social Assistance	$10,377.4	5.8%	8
Arts, Entertainment, and Recreation	$1,570.3	0.9%	19
Accommodation and Food Services	$4,460.6	2.5%	14
Other Services	$4,744.5	2.7%	13
Government and Government Enterprises	$21,732.4	12.2%	2
All Industry Total	**$178,137.6**	**100.0%**	

Source: U.S. Bureau of Economic Analysis

Manufacturing is Utah's third-largest industry as measured by GDP, and the second-largest in the private sector (Table 14). Real estate and rental and leasing contribute the most to Utah's total GDP with $24.4 billion in 2018, followed by government and government enterprises with $21.7 billion. The top three industries combined make up one-third of the state's GDP. Manufacturing exceeded the next largest industry, finance and insurance, by more than $4.1 billion.

Economic and Fiscal Impacts

Economic impacts are changes in the size and structure of a region's economy when goods and services are purchased from vendors within the region using money generated from outside the region. These in-state vendors will then purchase some of their inputs from other regional suppliers, who in turn may do the same. These rounds of purchases generate what are called "indirect" effects. When the employees at the exporting companies and the chain of regional suppliers spend the earnings that are supported by this activity, this creates "induced" effects in the local economy. The Gardner Institute used the Regional Economic Models, Inc. (REMI) PI+ model to estimate the economic and fiscal impacts of Utah's manufacturing industry. REMI PI+ is a dynamic model that incorporates supply chain, economic geography, econometric, general equilibrium, and demographic components.

The manufacturing industry has an outsized effect on the state's economy. In total, direct, indirect, and induced impacts of Utah's manufacturing industry contributed one-quarter (24.7%) of the state's GDP in 2018, one-fifth (20.8%) of total employment, and almost one-quarter (24.4%) of earnings paid in Utah. In 2018, total economic impacts in Utah from the manufacturing industry included 427,980 jobs, $26.4 billion in earnings, and $44.0 billion in GDP (Table 15). These results include direct economic activity within the industry, as well as the indirect and induced impacts manufacturing companies, and workers, have on other industries.

The impact of the manufacturing industry reverberates throughout the entire Utah economy. Utah's construction and real estate and rental and leasing industries feel some of the most significant effects, with impacts of about $4.1 billion in GDP each (Table 16). Similarly, construction receives 10.5% of employment impacts and 11.8% of earnings impacts. Retail and wholesale trade; professional, scientific, and technical services; government; and health care and social assistance also see significant impacts from manufacturing.

The economic activity supported by Utah's manufacturing industry generated an estimated $1.3 billion in state tax revenue (Table 17). This revenue is a combination of personal income taxes, corporate income taxes, and state sales taxes. The largest share came from personal income taxes, with total estimated revenue of $600.9 million in 2018. State sales taxes were the next largest, contributing $534.4 million.

The total state revenues are offset by state operating expenditures in public education, higher education, and other non-education operations due to the increased population supported by manufacturing activity and its impacts. The resulting total state operating expenditures are estimated at $644.7 million in 2018. The result is an estimated total net fiscal impact of $605.9 million in state operating revenues as a result of Utah's manufacturing industry.

Table 15: Statewide Impacts of Manufacturing in Utah, 2018
(Dollar amounts in billions)

Impact	Direct	Indirect & Induced	Total
Employment	143,461	284,519	427,980
Earnings by Place of Work	$10.4	$16.0	$26.4
Gross Domestic Product	$19.6	$24.4	$44.0

Source: Kem C. Gardner Policy Institute analysis of Bureau of Economic Analysis data using the REMI PI+ v2.3.1 model

Table 16: Statewide Manufacturing Industry Total Impacts by Industry, 2018
(Dollar amounts in millions)

Industry	Employment	Earnings	GDP
Agriculture, Forestry, Fishing, and Hunting	901	$29.4	$28.7
Mining	4,305	$148.4	$690.6
Utilities	1,335	$151.8	$489.8
Construction	44,728	$3,120.9	$4,118.1
Manufacturing	**143,461**	**$10,410.3**	**$19,581.7**
Wholesale Trade	15,645	$1,404.5	$2,471.7
Retail Trade	33,209	$1,387.8	$1,951.7
Transportation and Warehousing	15,189	$1,022.7	$1,310.4
Information	3,610	$361.6	$589.3
Finance and Insurance	12,202	$722.8	$1,076.1
Real Estate and Rental and Leasing	19,195	$633.6	$4,094.5
Professional, Scientific, and Technical Services	22,078	$1,575.1	$1,737.4
Management of Companies and Enterprises	1,303	$131.4	$76.8
Administrative, Support, Waste Management, and Remediation Services	22,479	$944.5	$1,070.9
Educational Services; Private	4,497	$179.3	$145.8
Health Care and Social Assistance	21,670	$1,272.2	$1,386.0
Arts, Entertainment, and Recreation	8,298	$211.6	$273.2
Accommodation And Food Services	17,772	$439.8	$586.3
Other Services	15,038	$740.1	$790.0
Government	21,065	$1,495.8	$1,488.2
Total	**427,980**	**$26,383.4**	**$43,957.2**

Source: Kem C. Gardner Policy Institute analysis of U.S. Bureau of Economic Analysis data using the REMI PI+ v2.3.1 model

Table 17: Utah Manufacturing Estimated State Fiscal Impacts, 2018

(Millions)

Impact	Amount
Personal Income Tax Revenues	$600.9
Corporate Income Tax Revenues	$115.3
State Sales Tax Revenues	$534.4
Total State Revenues	**$1,250.6**
State Non-Education Expenditures	$333.6
State Public Education Expenditures	$172.9
State Higher-Education Expenditures	$138.2
Total State Operating Expenditures	**$644.7**
Net State Operating Revenue	**$605.9**

Source: Kem C. Gardner Policy Institute analysis using the REMI PI+ model and Gardner Policy Institute fiscal model.

Manufacturing has different regional effects across the state. Every county in Utah has at least one manufacturing establishment. In addition, cross-county supply chain linkages, commuting, and consumer spending magnify the local impacts of the state's manufacturing industry. These effects are particularly acute in rural areas where workers often cross county boundaries for employment, shopping, or recreation. As a result, the county impacts shown in Table 18 are the impacts of manufacturing in all Utah counties on each county. Included are direct, indirect and induced, and total impacts on employment, earnings, and GDP in all 29 counties organized by the four Wasatch Front counties and the remaining 25 "rural" counties.[4]

Not surprisingly, the Wasatch Front is the center of the state's manufacturing industry. Collectively, the four counties accounted for 110,685 direct jobs, $8.4 billion in direct earnings, and $15.0 billion in direct GDP, over three-quarters of Utah's manufacturing industry. More than 80.0% of manufacturing's economic impacts occurred in the Wasatch Front. Salt Lake County alone captured roughly half of Utah's statewide manufacturing impacts, including 45.2% of total employment impacts, 51.3% of total earnings impacts, and 47.6% of total GDP impacts.

Outside the Wasatch Front, Cache County experienced the largest impacts of the manufacturing industry among rural counties. Far exceeding any other rural county, the manufacturing industry generated 29,005 jobs and $2.3 billion in GDP in Cache in 2018. The same year, manufacturing contributed 13,615 jobs and $1.9 billion to GDP in Box Elder County, the second largest of any rural county. Washington, Summit, and Tooele counties also saw significant manufacturing impacts. The industry supported 8,612, 5,995, and 4,567 jobs in these counties, respectively.

In all, manufacturing impacts are concentrated in the northern counties of Utah surrounding the Wasatch Front. As the economic and population center of the state, this region offers many opportunities for manufacturing companies to grow. Aided by multiple transportation options including two interstates, an international airport, and rail lines; higher educational institutions including technical schools, two-year colleges, and four-year universities; and a well-diversified economy, northern Utah is a principal driver of the manufacturing industry in the state.

Table 18: County-Level Impacts of Manufacturing in Utah, 2018

(Dollar amounts in millions)

Impact	Direct	Indirect & Induced	Total
WASATCH FRONT COUNTIES			
Salt Lake County			
Employment	59,677	133,846	193,523
Earnings by Place of Work	$4,617.0	$8,911.4	$13,528.4
Gross Domestic Product	$7,455.1	$13,460.6	$20,915.8
Davis County			
Employment	14,772	30,837	45,609
Earnings by Place of Work	$1,118.4	$1,340.4	$2,458.8
Gross Domestic Product	$2,794.1	$1,783.0	$4,577.1
Utah County			
Employment	21,481	44,890	66,371
Earnings by Place of Work	$1,594.0	$2,194.9	$3,788.9
Gross Domestic Product	$2,605.4	$3,304.0	$5,909.4
Weber County			
Employment	14,755	27,661	42,416
Earnings by Place of Work	$1,093.8	$1,395.7	$2,489.6
Gross Domestic Product	$2,185.4	$1,983.9	$4,169.3
RURAL COUNTIES			
Beaver County			
Employment	192	144	336
Earnings by Place of Work	$8.2	$3.1	$11.3
Gross Domestic Product	$29.0	$15.6	$44.6
Box Elder County			
Employment	6,319	7,296	13,615
Earnings by Place of Work	$488.9	$308.4	$797.3
Gross Domestic Product	$1,463.6	$484.1	$1,947.7
Cache County			
Employment	12,008	16,997	29,005
Earnings by Place of Work	$733.7	$777.7	$1,511.4
Gross Domestic Product	$1,157.8	$1,126.7	$2,284.5
Carbon County			
Employment	418	674	1,092
Earnings by Place of Work	$27.2	$33.7	$60.9
Gross Domestic Product	$66.5	$103.7	$170.2

Impact	Direct	Indirect & Induced	Total
Daggett County			
Employment	9*	19	28
Earnings by Place of Work	$0.1	$0.5	$0.6
Gross Domestic Product	$0.5	$2.8	$3.3
Duchesne County			
Employment	227	556	783
Earnings by Place of Work	$9.4	$31.2	$40.6
Gross Domestic Product	$19.9	$82.6	$102.5
Emery County			
Employment	70	285	355
Earnings by Place of Work	$2.1	$17.4	$19.5
Gross Domestic Product	$4.4	$99.9	$104.3
Garfield County			
Employment	95	107	202
Earnings by Place of Work	$2.5	$3.4	$5.9
Gross Domestic Product	$3.9	$7.2	$11.1
Grand County			
Employment	173	177	350
Earnings by Place of Work	$10.3	$5.5	$15.8
Gross Domestic Product	$12.5	$17.3	$29.8
Iron County			
Employment	2,021	1,910	3,931
Earnings by Place of Work	$110.3	$64.4	$174.6
Gross Domestic Product	$249.2	$118.9	$368.2
Juab County			
Employment	896	711	1,607
Earnings by Place of Work	$54.6	$24.0	$78.5
Gross Domestic Product	$230.4	$35.5	$266.0
Kane County			
Employment	155	147	302
Earnings by Place of Work	$5.4	$8.2	$13.6
Gross Domestic Product	$30.3	$13.1	$43.4
Millard County			
Employment	248	412	660
Earnings by Place of Work	$15.6	$24.1	$39.6
Gross Domestic Product	$31.4	$93.6	$125.0
Morgan County			
Employment	259	826	1,085
Earnings by Place of Work	$17.3	$31.0	$48.2
Gross Domestic Product	$23.8	$51.6	$75.4
Piute County			
Employment	18*	11	29
Earnings by Place of Work	$0.214	$0.145	$0.359
Gross Domestic Product	$0.430	$0.049	$0.479

Impact	Direct	Indirect & Induced	Total
Rich County			
Employment	18*	83	101
Earnings by Place of Work	$0.214	$2.4	$2.6
Gross Domestic Product	$0.369	$4.8	$5.2
San Juan County			
Employment	147	84	231
Earnings by Place of Work	$4.0	$4.0	$8.0
Gross Domestic Product	$10.6	$8.8	$19.4
Sanpete County			
Employment	1,265	1,114	2,379
Earnings by Place of Work	$53.6	$38.4	$92.0
Gross Domestic Product	$126.3	$38.5	$164.8
Sevier County			
Employment	562	916	1,478
Earnings by Place of Work	$27.1	$40.3	$67.5
Gross Domestic Product	$145.3	$81.8	$227.1
Summit County			
Employment	1,099	4,896	5,995
Earnings by Place of Work	$79.4	$273.7	$353.0
Gross Domestic Product	$136.9	$588.3	$725.2
Tooele County			
Employment	1,684	2,883	4,567
Earnings by Place of Work	$111.0	$120.7	$231.7
Gross Domestic Product	$365.0	$244.8	$609.8
Uintah County			
Employment	276	586	862
Earnings by Place of Work	$7.7	$35.2	$42.9
Gross Domestic Product	$17.8	$117.2	$135.0
Wasatch County			
Employment	511	1,823	2,334
Earnings by Place of Work	$22.9	$73.7	$96.5
Gross Domestic Product	$41.2	$122.3	$163.5
Washington County			
Employment	4,043	4,569	8,612
Earnings by Place of Work	$194.8	$207.9	$402.7
Gross Domestic Product	$373.4	$381.0	$754.4
Wayne County			
Employment	63*	62	125
Earnings by Place of Work	$0.7	$1.8	$2.5
Gross Domestic Product	$1.3	$3.6	$4.9

* Direct employment in Daggett, Piute, Rich, and Wayne is not disclosed. The Gardner Institute estimated it by subtracting the sum of manufacturing employment in the other 25 counties from the statewide total. This is then divided by the total number of manufacturing establishments across these four nondisclosed counties, then multiplied by the number of manufacturing establishments in each of the four counties.
Source: Kem C. Gardner Policy Institute analysis of Bureau of Economic Analysis data using the REMI PI+ v2.3.1 model

Workforce Demographics in Production Occupations

In previous sections, all employment numbers are presented by the North American Industry Classification System (NAICS), which measures the number of jobs by industry. In the following section, jobs are measured by occupation, specifically, production occupations as defined by the Standard Occupational Classification System (SOC). The difference between the two employment measures is how the job is classified. Employment is either defined by the industry of the firm regardless of job duties (employment by industry) or by the nature of the job itself (employment by occupation). For example, a baker would be classified as being employed in the food manufacturing industry and would also be classified as a production worker. Conversely, a human resources manager at a food manufacturing company would be classified as employed in the manufacturing industry by NAICS, but would be classified as a management occupation by SOC. As a result, the employment presented below represents a portion of jobs in the manufacturing industry, but is a representative sample. The metrics below do not include manufacturing employees who are not production workers, e.g., human resources personnel or executives. The occupations included are listed in Table 19.

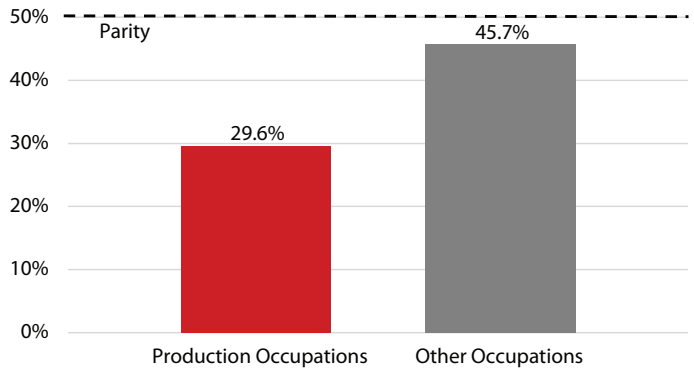
Women are underrepresented in production occupations in Utah. More than twice as many men are employed in production occupations as women. As a result, women make up 29.6% of workers in production occupations (Figure 10). Comparatively, 45.7% of workers in non-production occupations are women, much closer to parity. Eight percent of male workers in Utah work in a production occupation compared to 4.2% of female workers (Figure 11).

Table 19: Production Occupations by Minor Group

Occupation Code	Occupations Category
51-1000	Supervision of Production Workers*
51-2000	Assemblers and Fabricators
51-3000	Food Processing Workers
51-4000	Metal Workers and Plastic Workers
51-5100	Printing Workers
51-6000	Textile, Apparel, and Furnishings Workers
51-7000	Woodworkers
51-8000	Plant and System Operators
51-9000	Other Production Occupations

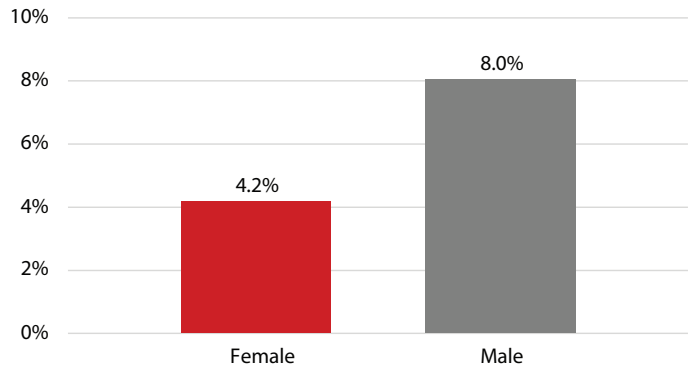
*Workers who spend 80% or more of their time performing supervisory activities of production occupations; persons with supervisory duties who spend less than 80% of their time supervising are coded with the workers they supervise.
Note: Category names and job titles are descriptive, not comprehensive of each occupation identified by the corresponding occupation codes, which follow the 2018 Standard Occupational Classification (SOC) system.
Source: Bureau of Labor Statistics

Figure 10: Women in Production Occupations, 2017
(Female share of workers)



Note: Results are statistically significant at the p > .05 level.
Source: U.S. Census Bureau, American Community Survey, Integrated Public Use Microdata Series

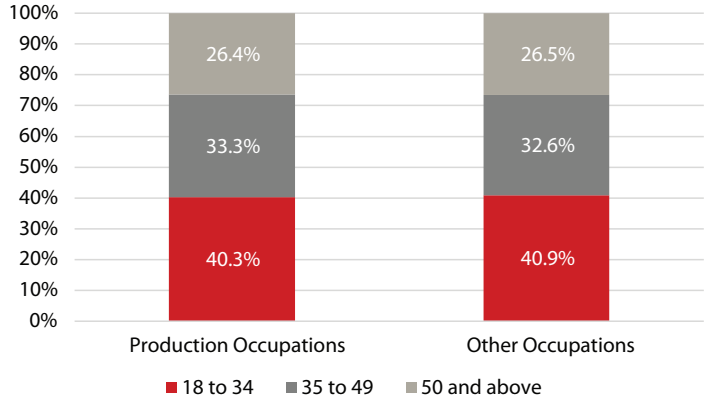
Figure 11: Workers in Production Occupations, 2017
(Share of all workers)



Note: Results are statistically significant at the p > .05 level.
Source: U.S. Census Bureau, American Community Survey, Integrated Public Use Microdata Series

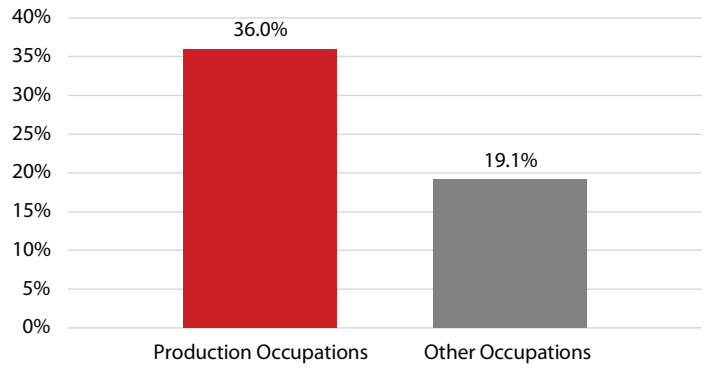
The age composition of Utah's production workers closely resembles that of other occupations in the state.[5] Only a slightly larger share of workers employed in production occupations tend to be mid-career compared with workers in other occupations. In 2017, 33.3% of production workers were aged 35 to 49, compared with 32.6% of workers in non-production occupations, a difference of 0.7-percentage point (Figure 12). The share of workers younger than 35 is slightly lower in production occupations, by 0.6-percentage point. The shares of workers aged 50 and above were roughly equal for production and non-production occupations at 26.4% and 26.5%, respectively. While these results are statistically significant at the 95% confidence level, they are not outside the margins of error.

Figure 12: Utah Worker Age Groups in Production Occupations, 2017
(Share of all workers)



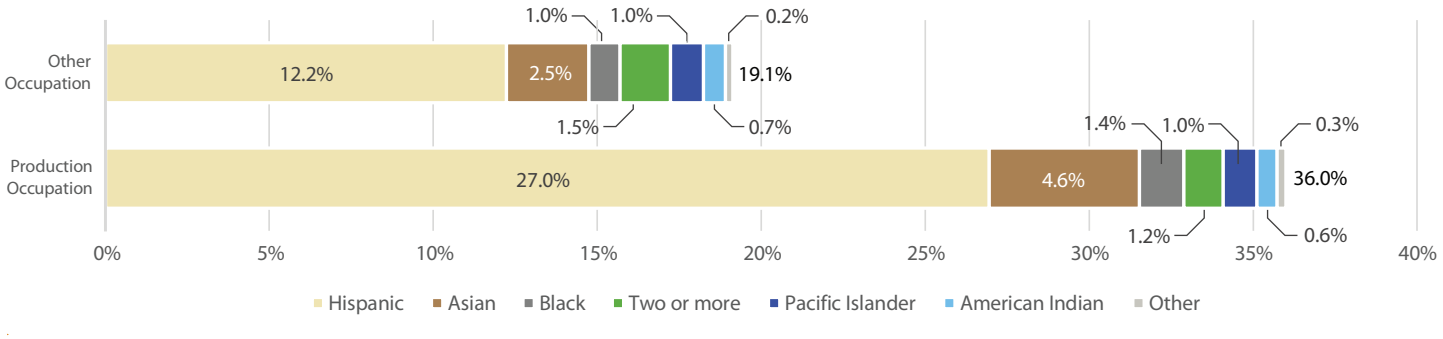
Note: Results are statistically significant at the p > .05 level.
Source: U.S. Census Bureau, American Community Survey, Integrated Public Use Microdata Series

Figure 13: Racial and Ethnic Minorities in Production Occupations, 2017
(Share of all workers)



Note: Results are statistically significant at the p > .05 level.
Source: U.S. Census Bureau, American Community Survey, Integrated Public Use Microdata Series

Figure 14: Minority Racial and Ethnic Groups among Utah Workers in Production Occupations, 2017
(Share of all production workers)



Note: The remaining 80.9% of other occupation workers and 64.0% of production workers not shown are non-Hispanic Whites. Results are statistically significant at the p > .05 level except for Other, Pacific Islander, and American Indian.
Source: U.S. Census Bureau, American Community Survey, Integrated Public Use Microdata Series

Over one-third of production workers identified as non-White or Hispanic, meaning there is an overrepresentation of minorities in production occupations (Figure 13).[6] The largest minority share of production workers identifies as Hispanic, 27.0%. Asians make up the second-largest share at 4.6% of production workers (Figure 14). In all minority groups except two or more and American Indian, the individual minority shares are larger in production occupations than in non-production.

History of Manufacturing in Utah

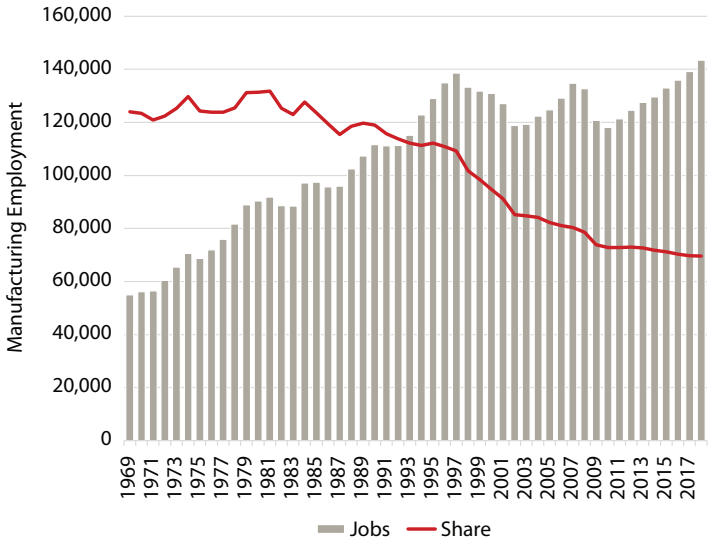
The manufacturing industry in Western states has historically been smaller than the national average.[7] During westward expansion, many Western states, Utah included, were focused on natural resources, which tended to be extracted and transported to manufacturing facilities in the East for processing.

To some extent, Utah had a more robust manufacturing sector than other intermountain states due to the Mormon pioneers' desire to be self-sufficient.[8] The 1840s included the construction of manufacturing facilities for making adobe brick, a grist mill, a sawmill, and a system for recovering salt from the Great Salt Lake.[9] As Utah's economy developed but remained isolated from other markets, the settlers began establishing industries manufacturing pottery, newsprint, clothing, furniture, wood products, food products, and various machinery and equipment. Utah manufacturing continued to exist on a subsistence level until reductions in transportation costs and increased interstate commerce brought additional manufacturing activity to the region.[10]

In the late 19th century, new technologies and improved transportation via the transcontinental railroad and the automobile brought the import- and export-based manufacturing economy to Utah. This competition shuttered many Utah companies, but at the same time gave rise to Utah manufacturers who were able to find a competitive advantage.[11] In 1905, the Merchants and Manufacturers Association of Utah organized to promote and stimulate industrial growth in the state.[12] From the late 19th century through World War II, both Utah and the West's overall manufacturing industry still lagged behind the national average.[13]

As a result of World War II, the federal government spent billions of dollars on manufacturing facilities and scientific research, much of which spawned new industries compatible with the West.[14] From 1940 to 1956, Utah's manufacturing employment expanded from 17,900 to 35,300.[15] These industries, including computers, electronics, aerospace, and primary metals manufacturing, defined the next few decades of Utah's manufacturing industry. The rise of these post–World War II durable goods industries permanently restructured the state's manufacturing composition. Before 1950, the durable goods sectors had less than half of all manufacturing employment; by 1950, they had risen to over two-thirds, a ratio still expressed today.[16]

Figure 15: Manufacturing Employment in Utah, 1969–2018



Source: U.S. Bureau of Economic Analysis

Since 1969, employment in Utah's manufacturing industry has generally been on the rise (Figure 15). There have been a few setbacks along the way. The most recent and significant, the Great Recession in 2008, caused a 9.0% reduction in manufacturing employment, a loss of 14,577 jobs in a single year. It took eight years for Utah's manufacturing employment to reach pre-recession levels, hitting 135,966 in 2016. The sector continued to grow in 2017 and 2018, reaching an all-time high of 143,461.

Overshadowing the general rise in manufacturing employment in Utah has been the growth of other industries. Since the closing of the Geneva Steel plant and Kennecott's reduction in its workforce due to improved technologies in the 1980s, manufacturing's share of total employment has been on a decline. The manufacturing share peaked in 1981 at 13.2%, but as of 2018, manufacturing jobs accounted for 7.0% of all jobs in the state, nearly a 50% reduction.

Conclusion

Manufacturing in Utah was directly responsible for $19.6 billion in direct gross domestic product in 2018, 11.0% of the state's total GDP. In 2018, the industry provided an average of 143,461 jobs in the state earning an average of $72,565. This is 38.6% higher than the state average and ranks manufacturing as the fourth-highest paying industry in Utah.

The impacts of manufacturing in Utah extend beyond the industry itself. The indirect and induced impacts in 2018 included an additional $24.4 billion in GDP, $16.0 billion in earnings, and 284,519 jobs. In summation, Utah's manufacturing industry supports one-quarter of Utah's total GDP and earnings, and one-fifth of all Utah jobs. Much of these effects are concentrated in Salt Lake County and the urban Wasatch Front. The manufacturing industry in the four counties of Weber, Davis, Salt Lake, and Utah generated $35.6 billion in GDP, 80.9% of manufacturing's statewide GDP impact. Cache and Box Elder counties had the most substantial impacts of Utah's rural counties.

Workers in production occupations show some notable differences from those in other occupations. In 2017, women were underrepresented, filling only 29.6% of production occupations. Comparatively, 45.7% of workers in non-production occupations are women. Over one-third of Utah's production workers identify as non-White or Hispanic. This is an overrepresentation of minorities in production occupations compared with other occupations, where they fill about one-fifth of jobs. The age distribution of production workers matches very closely with that of all workers in the state, with only a slightly larger share of workers aged 35 to 49.

In the last decade, Utah's manufacturing GDP has grown by an average of 2.0% annually and employment by 0.8% annually. From 2017 to 2018, Utah's manufacturing GDP and employment grew by 4.9% and 3.0%, respectively. In all cases, growth in the manufacturing industry in Utah has outpaced or even reversed course from the nation as a whole. In 2018, Utah's concentration in the manufacturing industry was higher than that of the United States. However, this growth has been outpaced by growth in other industries. Since 2008, nonmanufacturing industry job growth averaged 2.1% compared with manufacturing's 0.8%. Similarly, manufacturing earnings grew an average of 1.4% per year compared with 3.0% in nonmanufacturing industries.

Despite this, manufacturing remains a key industry in the state. Manufacturing was Utah's third-largest industry by GDP in 2018, with the fifth-highest employment and fourth-highest average earnings. Though manufacturing growth lags behind other industries, the relative size of Utah's manufacturing industry produces impacts that reverberate throughout industries and across all counties, and contributes to the overall health of the state's economy.

Endnotes

1. Bureau of Labor Statistics. Industries at a Glance. Manufacturing: NAICS 31-33. https://www.bls.gov/iag/tgs/iag31-33.htm.
2. An establishment is a specific location of a company. A company may have multiple establishments in any given geographic area.
3. Annual Estimates of the Resident Population: April 1, 2010 to July 1, 2018 from the U.S. Census Bureau, Population Division.
4. These are not all rural counties according to the Census Bureau's definition of metropolitan and non-metropolitan counties. Rather, they follow Governor Herbert's definition for his 25,000 jobs in 25 counties rural employment initiative.
5. This study defines a production occupation by the Standard Occupational Classification (SOC) system from the Bureau of Labor Statistics. This includes all occupations classified the major group 51-0000 Production Occupations. Any occupation classified under one of the other 22 major groups is included in the "Other Occupations" group in this report. A complete list of the occupations for all major groups is found here, https://www.bls.gov/soc/2018/major_groups.htm.
6. Following U.S. Census Bureau conventions, we use eight racial and ethnic groups. We count people with Hispanic, Latino, or Spanish origins as part of the "Hispanic" ethnic group, which includes people of any race. We count people not identifying as Hispanic in one of seven race groups: American Indian or Alaskan Native ("American Indian"), Asian, Black or African American ("Black"), Native Hawaiian or Other Pacific Islander ("Pacific Islander"), White, "other," or "two or more." The "other" race group is for people whose race the Bureau was unable to classify, even after reviewing any write-in responses and the race and ethnicity responses of family members. To avoid double counting, no race group includes people of Hispanic ethnicity, not even "other" or "two or more." Non-Hispanic Whites made up 78.3% of Utah's total population in 2017, putting the minority share at 21.7%.
7. Christensen, Michael. 1994. "Manufacturing in Utah." *Utah History Encyclopedia*, Utah Education network. https://www.uen.org/utah_history_encyclopedia/m/MANUFACTURING.shtml.
8. Ibid.
9. Utah Manufacturer's Association (UMA). A History of the Utah Manufacturer's Association. https://www.umaweb.org/about-uma/.
10. Wood, Jim. 1991. "Manufacturing in the West since World War II." *Utah Economic and Business Review*. Graduate School of Business. Bureau of Economic and Business Research, University of Utah.
11. Christensen, 1994.
12. UMA.
13. Wood, 1991.
14. Ibid.
15. UMA.
16. Wood, 1991.

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