

MANUFACTURING IN IOWA



JULY 2015

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HIGHLIGHTS

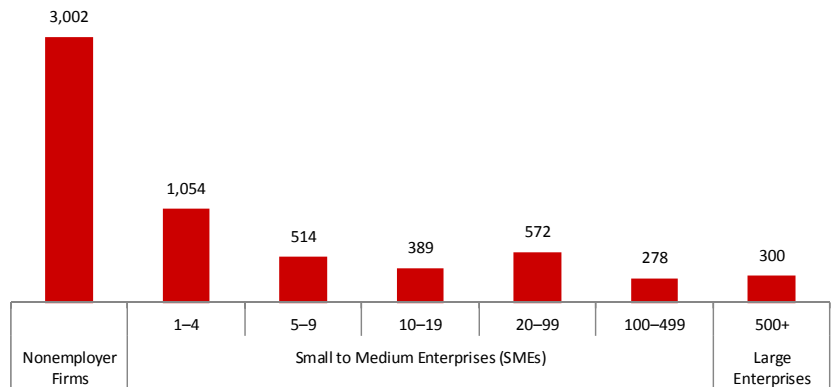
- Iowa is home to approximately 6,110 manufacturing firms.
- Manufacturing contributed \$31.2 billion to Iowa's economy in 2014, representing 18.3 percent of the state's total gross domestic product (GDP).
- Iowa ranks eighth among all states in its percentage of GDP from manufacturing.
- The manufacturing sector's 221,508 jobs accounted for 11.0 percent of Iowa's total employment in 2013.
- More than half (52.7 percent) of Iowa's manufacturing jobs are located in its non-metropolitan counties.
- Earnings from manufacturing jobs account for 12.9 percent of total earnings in Iowa's metropolitan areas and 23.3 percent of total earnings in non-metropolitan regions.
- The average manufacturing job in Iowa paid \$54,420 in wages and salaries in 2014.
- Iowa exported \$12.73 billion worth of manufactured goods to other countries in 2014.

NUMBER OF FIRMS

Iowa is home to approximately 6,110 manufacturing firms operating from 6,530 physical establishments throughout the state.

- A large fraction of Iowa’s manufacturing firms are small proprietorships or partnerships with no paid employees other than the principals. Known as “nonemployer firms,” these establishments comprise 49.2 percent of Iowa’s manufacturing firms.
- 45.9 percent of Iowa’s manufacturing firms are owned by small or medium-sized enterprises (SMEs) with fewer than 500 paid employees.
- Large manufacturing enterprises, with 500 or more employees, account for 4.9 percent of Iowa’s manufacturing firms.

NUMBER OF IOWA MANUFACTURING FIRMS BY EMPLOYMENT SIZE OF THE PARENT ENTERPRISE



Source: U.S. Census Bureau

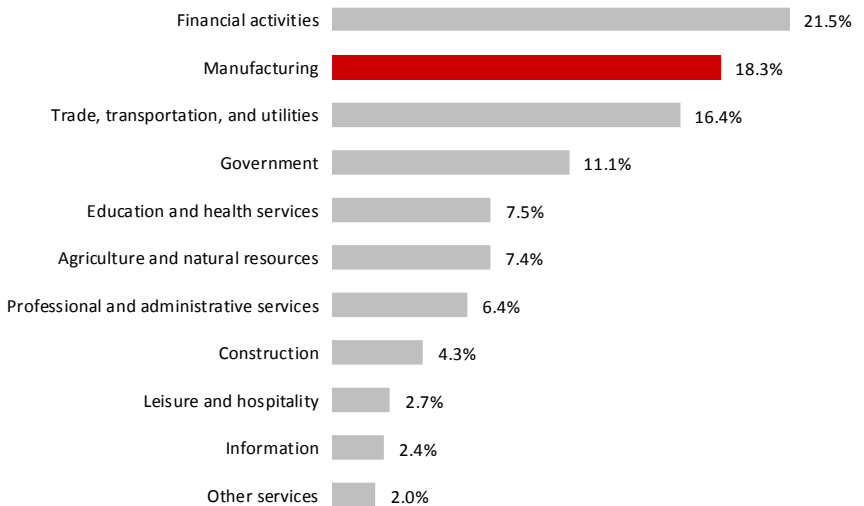
GROSS DOMESTIC PRODUCT

Gross domestic product (GDP) measures the contributions of labor and capital to the market value of goods and services produced in a state. The total GDP for Iowa’s industries in 2014 was \$170.6 billion.

The manufacturing sector contributed \$31.2 billion to Iowa’s economy in 2014, representing 18.3 percent of the state’s total GDP. Iowa ranks eighth among all states in the percentage of GDP derived from the manufacturing sector.

When measured by GDP size, manufacturing ranks second among Iowa’s major economic sectors. Manufacturing ranks fifth in GDP size among major economic sectors nationally.

PERCENTAGE OF IOWA GDP BY MAJOR SECTOR



Source: U.S. Bureau of Economic Analysis

Note: Agriculture and natural resources industries include production agriculture, agricultural services, forestry, fishing, hunting, and mining. Activities such as grain processing, ethanol production, meat slaughtering and processing, agricultural chemical and fertilizer production, and agricultural equipment manufacturing are classified within the manufacturing sector, per national industrial accounting standards. The financial activities sector includes finance, insurance, and real estate industries.

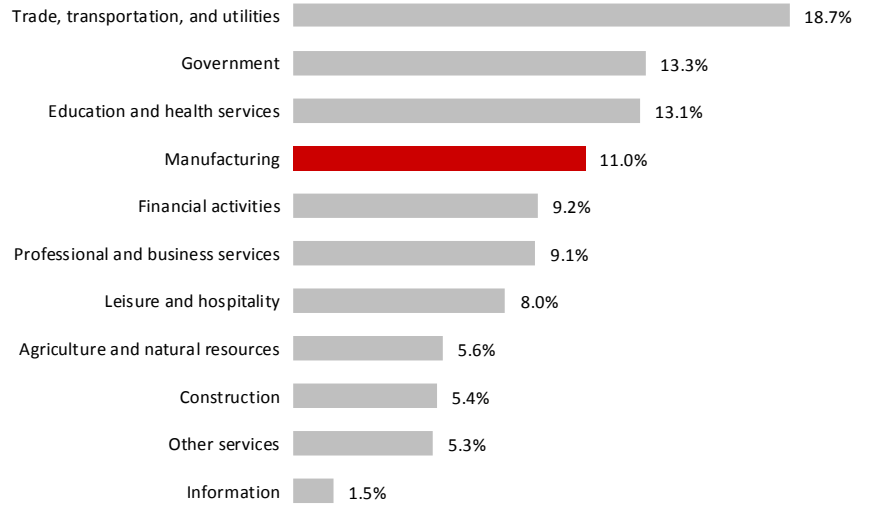
EMPLOYMENT

Iowa's manufacturing sector had 221,508 jobs in 2013, accounting for 11.0 percent of the state's total employment. In the United States, manufacturing accounted for 7.0 percent of total employment.

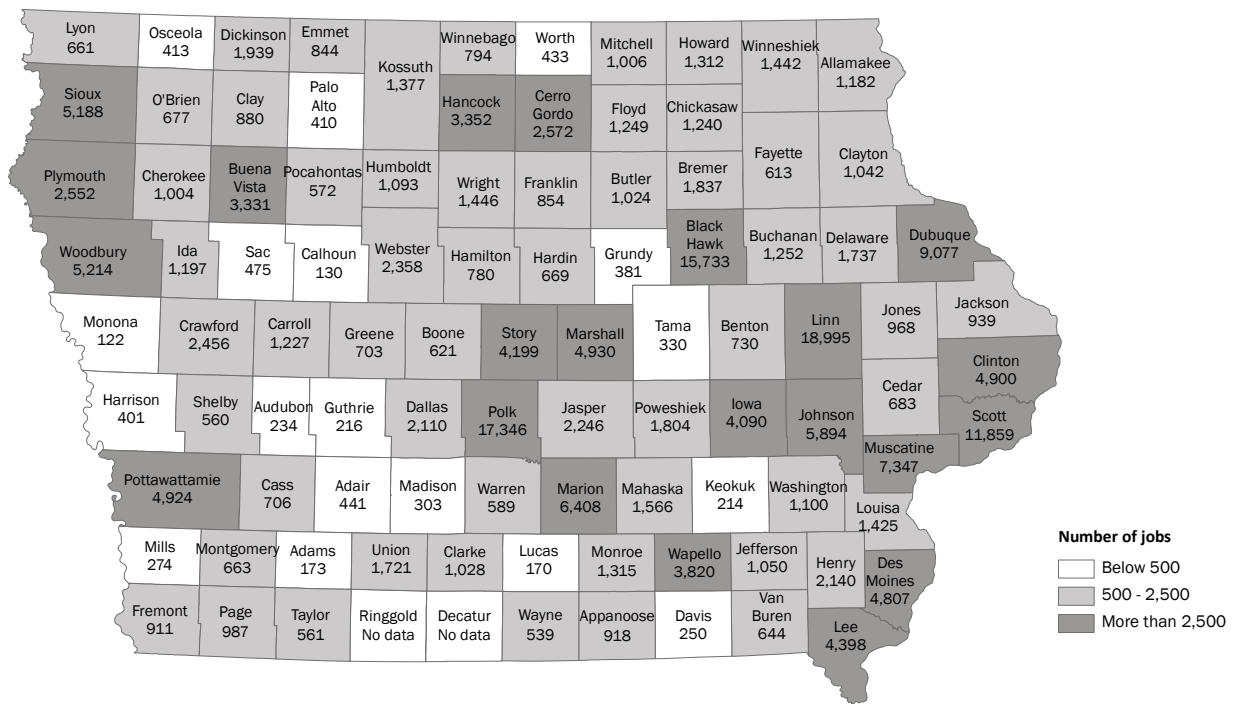
Measured by employment size, manufacturing ranks fourth among Iowa's major economic sectors. In the United States, manufacturing ranks seventh among major sectors.

More than half (52.7 percent) of Iowa's manufacturing jobs are located in non-metropolitan areas. By county, manufacturing employment was highest in Linn (18,995 jobs), followed by Polk (17,346 jobs).

PERCENTAGE OF IOWA JOBS BY MAJOR SECTOR



NUMBER OF MANUFACTURING JOBS BY COUNTY



Source: U.S. Bureau of Economic Analysis

Note: These employment statistics count the number of full-time and part-time jobs, as opposed to the number of employed persons.

IOWA'S DIVERSE MANUFACTURING SECTOR

DURABLE AND NONDURABLE GOODS

Industries within the manufacturing sector are frequently grouped into two broad categories: durable goods and nondurable goods. *Durable* goods are tangible products that can be stored or inventoried and that have an average life of at least three years. *Nondurable* goods have an average life of less than three years.

Iowa's durable goods industries account for a higher fraction of jobs and GDP than nondurable goods industries. Durable goods production accounts for 55.1 percent of Iowa's manufacturing GDP and 60.1 percent of its manufacturing jobs. Nationally, durable goods production accounts for 54.3 percent of manufacturing GDP and 62.4 percent of manufacturing jobs.

SPECIALIZATION BY INDUSTRY

Areas of relative industrial specialization within the manufacturing sector may be identified using "location quotients," which divide a state's percentage of employment in a given industry by that same industry's percentage of U.S. employment. A location quotient greater than one indicates specialization and suggests the state has a relative competitive advantage in that industry. Iowa demonstrates relative specialization in the following manufacturing industries: machinery, food and beverages, wood products, primary metals, and furniture and related products.

DURABLE GOODS EMPLOYMENT

Machinery.....	42,140
Fabricated metals.....	20,992
Transportation equipment.....	16,751
Computers and electronics.....	12,492
Wood products.....	8,812
Primary metals.....	8,403
Furniture and related products.....	7,203
Electrical equipment and appliances...	5,928
Nonmetallic mineral products.....	5,211
Miscellaneous.....	5,114
<i>Total, durable goods.....</i>	<i>133,046</i>

NONDURABLE GOODS EMPLOYMENT

Food and beverages.....	53,299
Plastics and rubber products.....	10,808
Chemicals.....	10,182
Printing and related.....	7,535
Paper.....	3,760
Apparel.....	1,554
Textile and textile product mills.....	886
Petroleum and coal.....	438
<i>Total, non-durable goods.....</i>	<i>88,462</i>

IOWA'S MANUFACTURING INDUSTRIES RANKED BY GDP

	2013 GDP (\$ millions)	% of Iowa Manufacturing Totals			Comparative U.S. Percentages			Location Quotient
		GDP	Jobs	Establishments	GDP	Jobs	Establishments	
Machinery.....	7,806	25.5%	19.0%	8.5%	7.1%	9.1%	6.3%	2.10
Food and beverages.....	6,556	21.4%	24.1%	14.4%	11.6%	14.1%	12.7%	1.71
Chemicals.....	4,761	15.6%	4.6%	4.0%	17.0%	6.5%	4.1%	0.70
Fabricated metals.....	1,680	5.5%	9.5%	15.6%	6.9%	11.7%	14.6%	0.81
Computers and electronics.....	1,643	5.4%	5.6%	1.7%	12.6%	8.5%	3.6%	0.66
Transportation equipment.....	1,490	4.9%	7.6%	3.2%	12.9%	12.0%	3.2%	0.63
Plastics and rubber products.....	1,168	3.8%	4.9%	3.0%	3.6%	5.2%	2.7%	0.93
Primary metals.....	968	3.2%	3.8%	1.6%	3.1%	3.2%	1.3%	1.18
Electrical equipment and appliances.....	713	2.3%	2.7%	1.3%	2.5%	3.1%	2.0%	0.86
Paper.....	685	2.2%	1.7%	1.0%	2.6%	3.0%	0.9%	0.57
Nonmetallic mineral products.....	657	2.1%	2.4%	6.1%	2.0%	3.2%	3.9%	0.74
Miscellaneous.....	643	2.1%	2.3%	13.9%	4.1%	5.4%	15.9%	0.42
Furniture and related products.....	529	1.7%	3.3%	4.7%	1.2%	3.1%	5.2%	1.05
Wood products.....	510	1.7%	4.0%	7.1%	1.3%	3.2%	6.0%	1.24
Printing and related.....	496	1.6%	3.4%	7.2%	1.8%	4.1%	8.4%	0.83
Petroleum and coal.....	189	0.6%	0.2%	0.4%	8.4%	0.9%	0.6%	0.22
Textile and textile product mills.....	66	0.2%	0.4%	2.1%	0.8%	1.9%	2.4%	0.21
Apparel.....	52	0.2%	0.7%	4.2%	0.5%	1.8%	6.1%	0.38

Sources: U.S. Bureau of Economic Analysis and County Business Patterns, U.S. Census Bureau

AVERAGE MANUFACTURING EARNINGS PER JOB

- Iowa’s manufacturing workers earned an average of \$54,420 in wages and salaries in 2014. Workers across all sectors of Iowa’s economy earned an average of \$42,530 in wages and salaries per job.
- Average earnings per job in Iowa’s manufacturing sector were 86.4 percent of the U.S. average for manufacturing jobs. Iowa’s all-sector average earnings per job were 82.8 percent of the U.S. average.
- Manufacturing ranked second among Iowa’s major sectors in average wage and salary earnings per job.
- By detailed manufacturing industry, average earnings were highest in Computers and electronics manufacturing, at \$85,011 per job.
- Manufacturing wages vary across the state, with higher levels typically found in and near metropolitan areas and larger cities. In 2014, the top three counties by average manufacturing wages and salaries were Linn (\$82,716), Black Hawk (\$64,603), and Fremont (\$62,874).
- Manufacturing jobs in 17 of Iowa’s 99 counties paid more than the statewide average of \$54,420 in wages and salaries per job in 2014. Manufacturing pay levels were below 80 percent of the statewide average in 37 counties.

AVERAGE WAGE AND SALARY EARNINGS PER JOB IN IOWA (\$000S)

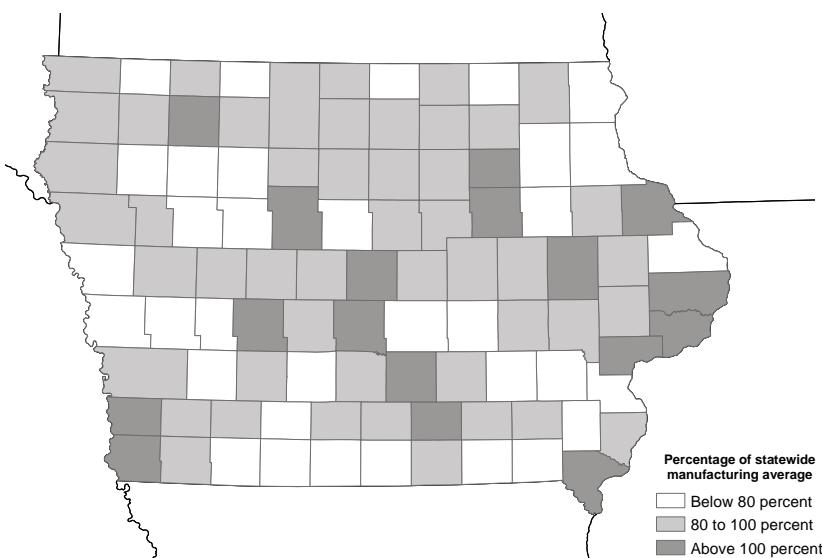
By Major Sector

Average for all sectors.....	42.5
Financial activities.....	65.0
Manufacturing.....	54.4
Construction.....	51.9
Information.....	50.8
Professional and business services.....	46.4
Government.....	45.6
Education and health services.....	39.0
Agriculture and natural resources.....	38.6
Trade, transportation, and utilities.....	36.6
Other services.....	28.8
Leisure and hospitality.....	14.7

By Manufacturing Industry

Computers and electronics.....	85.0
Chemicals.....	67.1
Petroleum and coal.....	65.5
Machinery.....	62.7
Primary metals.....	61.4
Paper.....	55.8
Transportation equipment.....	50.8
Plastics and rubber products.....	49.8
Nonmetallic minerals.....	49.3
Fabricated metals.....	48.6
Electrical equipment and appliances.....	48.5
Food.....	48.0
Furniture and related.....	47.1
Wood products.....	46.9
Miscellaneous.....	44.1
Textile mills.....	41.9
Printing and related.....	40.6
Apparel.....	37.2
Beverage and tobacco.....	37.1
Leather and allied products.....	34.4
Textile product mills.....	29.7

AVERAGE MANUFACTURING WAGES BY COUNTY



Sources: U.S. Bureau of Economic Analysis, U.S. Bureau of Labor Statistics

EXPORTS FROM IOWA

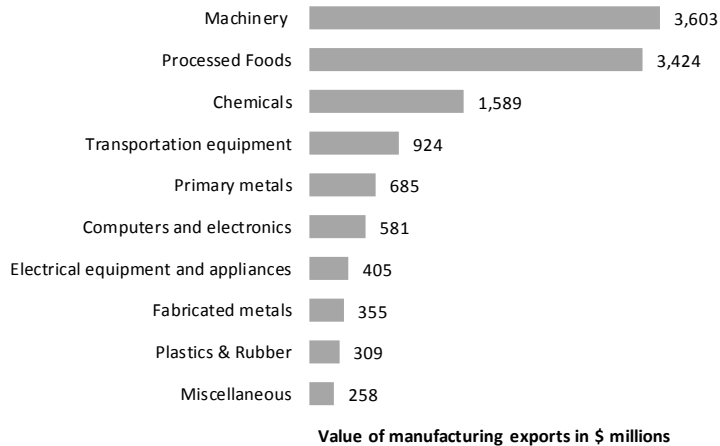
BY TYPE OF GOOD

In 2014, the state of Iowa was the transportation origin for \$15.1 billion worth of merchandise exports including agricultural commodities, raw materials, and manufactured goods. Manufactured goods accounted for 84 percent of the state’s total exports.

With \$12.73 billion worth of manufactured exports in 2014, Iowa ranked 27th among all states on this measure (see Export Data Notes for information about export measurement).

Iowa’s single largest manufacturing export industry was Machinery manufacturing, which accounted for 28.3 percent of the state’s total manufacturing exports.

IOWA’S TOP 10 MANUFACTURING EXPORT INDUSTRIES

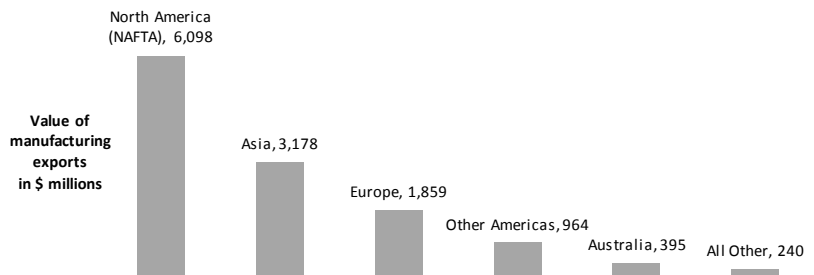


BY DESTINATION

The greatest share (47.9 percent) of Iowa’s manufactured exports are shipped to its trading partners in North America. Asia and Europe follow as the top importers of manufactured goods from Iowa.

Canada was the top destination country for Iowa’s manufactured exports in 2014, followed by Mexico and Japan.

DESTINATIONS OF IOWA MANUFACTURING EXPORTS



EXPORT DATA NOTES

Origin of Movement

It is important to note that Iowa’s export totals do not reflect the value of agricultural and other goods that were originally produced in Iowa but ultimately exported from other states. The trade statistics on this page are based on origin of movement (OM) data from the U.S. Department of Commerce. The OM data credit exports to the state where the goods began their final journey to the point of exit from the United States, as specified on official U.S. export declarations filed by shippers. The place from which merchandise began its export journey is not necessarily the place where the merchandise was produced. In many cases, the OM is the location of a distributor, warehouse, or cargo processing facility. Consequently, OM cannot be used to reliably describe the production origin of U.S. exports.

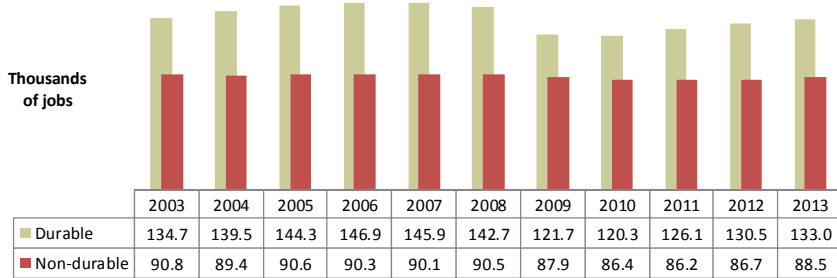
Source: *ITA Trade Stats Express, Office of Trade and Industry Information, International Trade Administration, U.S. Department of Commerce*

TOP 10 DESTINATION COUNTRIES FOR IOWA MANUFACTURING EXPORTS

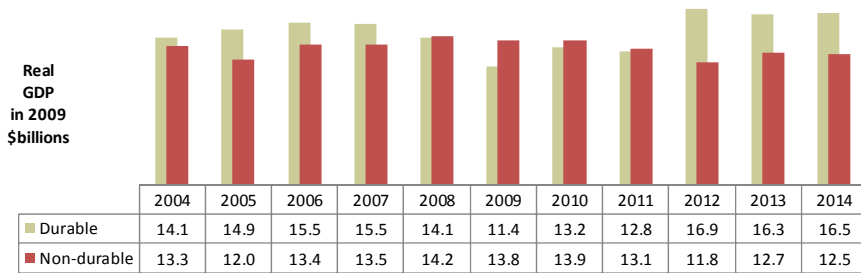
Exports (\$ millions)	
Canada.....	4,511
Mexico.....	1,588
Japan.....	1,021
China.....	537
Brazil.....	497
Germany.....	488
Australia.....	395
South Korea.....	363
France.....	315
United Kingdom.....	259

RECENT TRENDS IN IOWA MANUFACTURING

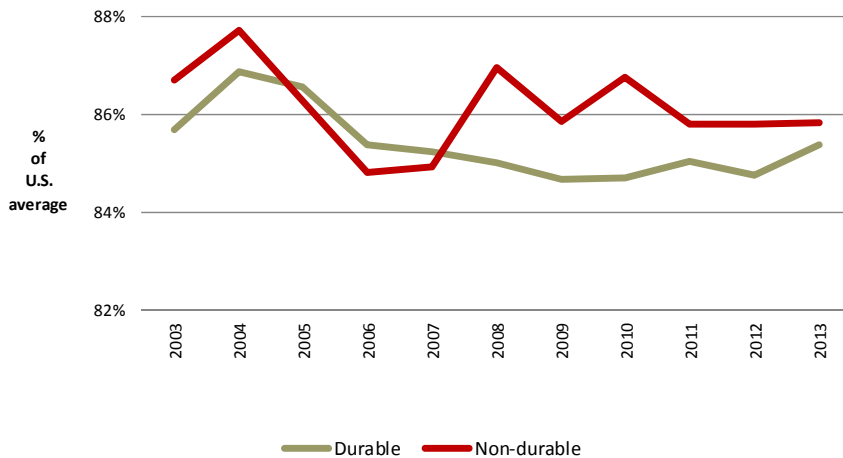
MANUFACTURING JOBS



MANUFACTURING GDP



IOWA MANUFACTURING WAGE & SALARY EARNINGS PER JOB COMPARED TO U.S. AVERAGES



IOWA EMPLOYMENT GAINS AND LOSSES IN THOUSANDS OF JOBS, 2003 - 2013

BY MAJOR SECTOR

Financial activities	39.1
Education and health services	37.8
Professional and business services	30.3
Leisure and hospitality	14.8
Government	9.2
Agriculture and natural resources	8.9
Trade, transportation, and utilities	6.7
Construction	5.5
Other services	4.1
Manufacturing	(4.0)
Information	(5.8)

BY DETAILED MANUFACTURING INDUSTRY

Durable Goods	
Machinery	10.2
Fabricated metals	1.3
Primary metals	1.1
Computers and electronics	1.0
Nonmetallic mineral products	(1.4)
Transportation equipment	(1.7)
Furniture and related products	(2.2)
Wood products	(3.4)
Electrical equip. & appliances	(5.3)
Nondurable Goods	
Chemicals	2.8
Food and beverages	1.8
Petroleum and coal	(0.1)
Textile and textile product mills	(0.3)
Paper	(0.8)
Apparel	(1.1)
Printing and related	(1.6)
Plastics and rubber products	(3.1)
Miscellaneous Manufacturing	(1.1)

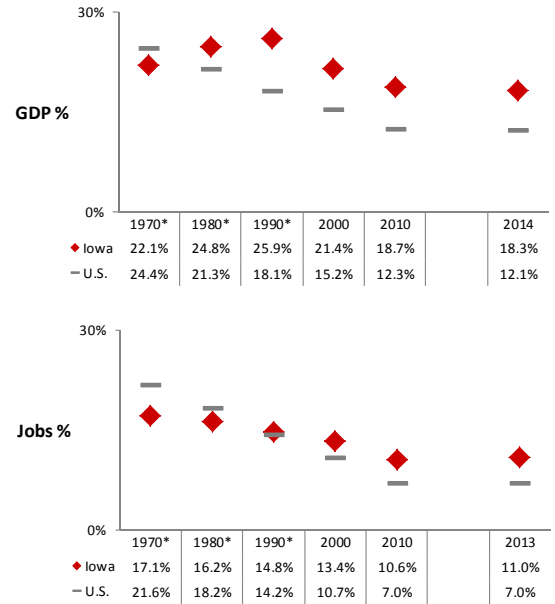
Source: U.S. Bureau of Economic Analysis

MANUFACTURING SECTOR PERCENTAGE SHARES OF GDP AND EMPLOYMENT

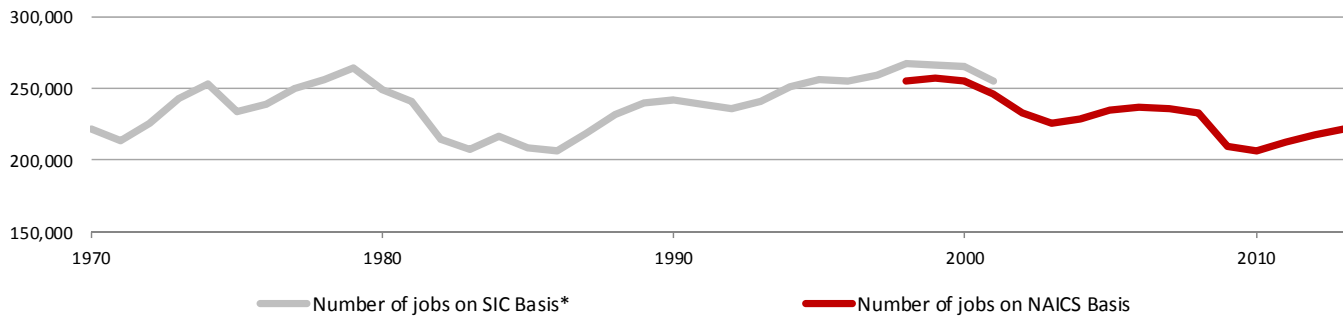
Manufacturing has accounted for a declining share of U.S. GDP in recent decades, with the manufacturing sector’s contribution falling from 24.4 percent to 12.3 percent between 1970 and 2010. In 2014, the national percentage was 12.1 percent.

In Iowa, the share of total GDP contributed by manufacturing dropped from 22.1 percent in 1970 to 18.7 percent in 2010. The manufacturing sector’s share fell to 18.3 percent in 2014.

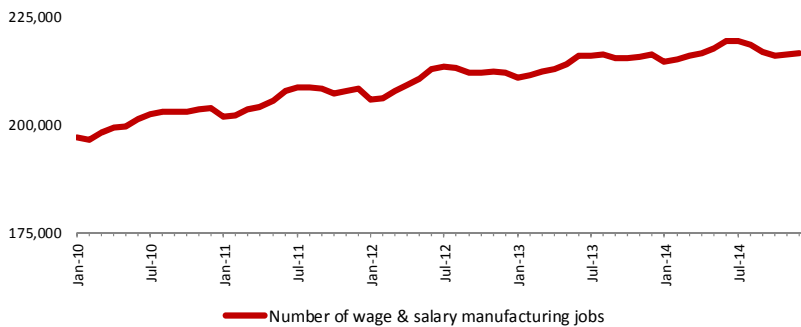
Manufacturing activity also requires a smaller share of jobs compared to decades past. Manufacturing jobs accounted for 21.6 percent of total U.S. jobs in 1970, compared to 7.0 percent in 2010. The share was unchanged at 7.0 percent nationally in 2013. In Iowa, manufacturing jobs now account for 11.0 percent of total employment, compared to 10.6 percent in 2010 and 17.1 percent in 1970.



IOWA’S HISTORICAL MANUFACTURING EMPLOYMENT



RECENT MONTHLY MANUFACTURING JOB LEVELS IN IOWA

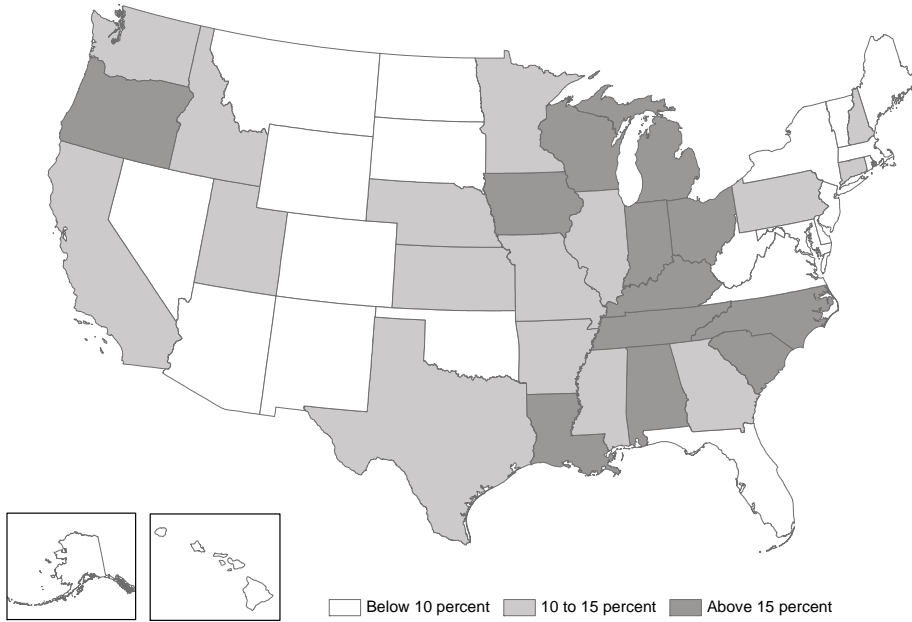


***SIC and NAICS**

The North American Industry Classification System (NAICS) is used by Federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data. NAICS replaced the Standard Industrial Classification (SIC) system in 1997. Historical data compiled under the SIC system, indicated with an asterisk (*) on this page, are not directly comparable to data compiled on a NAICS basis.

Sources: U.S. Bureau of Economic Analysis and U.S. Bureau of Labor Statistics

PERCENTAGE OF STATE GDP FROM MANUFACTURING



TOP 10 STATES BY % OF GDP FROM MANUFACTURING

Indiana	29.5%
Oregon	25.9%
Louisiana	21.2%
Michigan	20.1%
North Carolina	19.8%
Kentucky	19.2%
Wisconsin	18.8%
Iowa	18.3%
Alabama	17.7%
Ohio	16.9%

Source: U.S. Bureau of Economic Analysis

INDICATORS OF INNOVATION POTENTIAL: WHERE IOWA RANKS AMONG ALL STATES

Iowa's economy employs 8.2 engineers for every thousand workers.

The U.S. economy demands 12.5 engineers per thousand workers.

WORKFORCE

RANK

Percentage of adults with high school diploma or higher.....	8
Science & engineering degrees as % of higher education degrees conferred....	28
Percentage of adults with bachelor's degree or higher.....	37
Engineers as a percentage of the workforce.....	43

RESEARCH AND TECHNOLOGY

RANK

Academic R&D in science & engineering fields per \$1 million in GDP.....	13
Business R&D performance as a percentage of private sector GDP.....	20
Utility patents awarded per 1,000 jobs.....	28
High-technology firms as a percentage of all business establishments.....	49

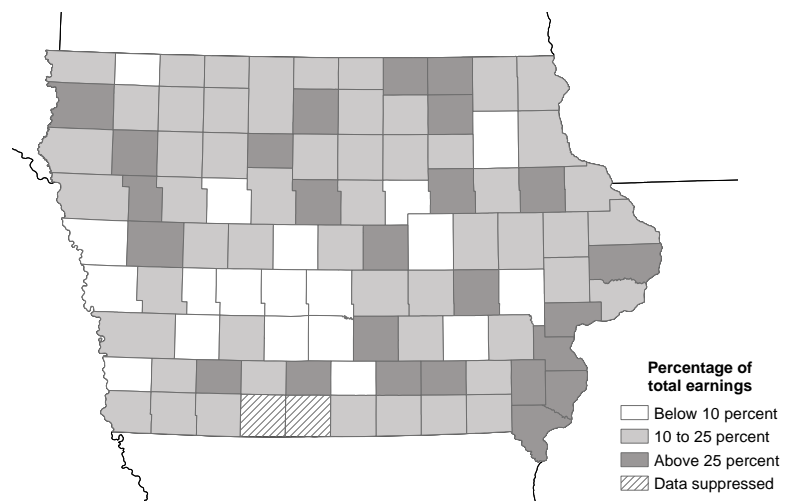
Sources: 2013 American Community Survey, U.S. Census Bureau; Science & Engineering Indicators 2014, National Science Foundation; and U.S. Patent and Trademark Office

CONTRIBUTIONS TO LOCAL ECONOMIES

The manufacturing sector contributes to local economies in Iowa in a number of ways. Manufacturing firms pay wages to local workers, they purchase raw materials and services from local producers and firms, their profits accrue to local owners and investors, and they pay taxes to local and state governments.

- On average, manufacturing jobs account for 11.0 percent of total employment in Iowa. This fraction is lower in the state's metropolitan counties (8.6 percent) and higher in non-metropolitan counties (14.6 percent), according to data for 2013.
- Manufacturing accounts for 16.9 percent of total worker earnings in Iowa. The sector's earnings percentage exceeds its employment percentage because manufacturing jobs tend to pay higher wages than many other sectors.
- Manufacturing accounts for 12.9 percent of total earnings in Iowa's metropolitan areas and 23.3 percent of total earnings in non-metropolitan regions.
- Of Iowa's 99 counties, 25 counties derive more than one quarter of total worker earnings from manufacturing jobs.
- The top three counties by percentage of total earnings from manufacturing in 2013 were Iowa (47.6%), Marion (46.2%), and Muscatine (44.3%).

MANUFACTURING PERCENTAGE OF TOTAL EARNINGS



Source: U.S. Bureau of Economic Analysis

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The ISU Center for Industrial Research and Service (CIRAS) provides applied research, education, and technical assistance to Iowa industry through partnerships with Iowa's universities, community colleges, and government agencies. Assistance is supported in part by the DoC/NIST Hollings Manufacturing Extension Partnership, the DoD/DLA Procurement Technical Assistance Program, and the DoC/EDA University Center Program. For additional information, contact Dr. Ronald Cox at rcox@iastate.edu or 515-294-0099.