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Center for Economic Development and Business Research

Kansas Manufacturing Chemical Product Manufacturing

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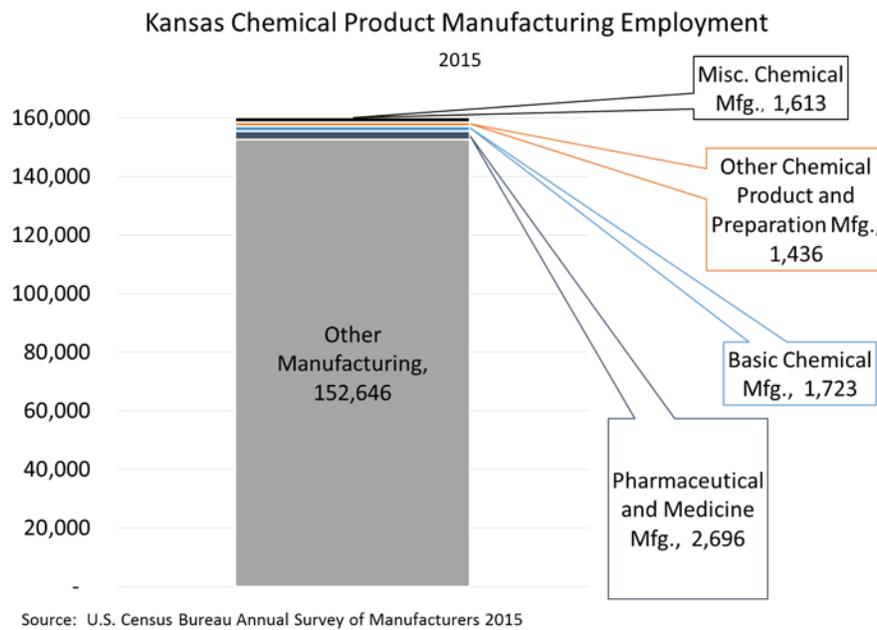
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Chemical Product Manufacturing

The chemical manufacturing subsector includes companies whose operations are based on the transformation of organic and inorganic raw materials by a chemical process and the formulation of products. This subsector distinguishes the production of basic chemicals from the production of intermediate and end products produced by further processing of basic chemicals. This subsector does not include all industries transforming raw materials by a chemical process, there are the components of these processes in the production of other industries, for example, refining of crude petroleum and primary metal manufacturing.

There are seven components of chemical product manufacturing in Kansas, totaling five percent of total state manufacturing employment. Pharmaceutical and medicine manufacturing is the largest industry in this subsector in Kansas, employing 1.7 percent of the state's manufacturing workers. Basic chemical manufacturing employees 1.1 percent of the manufacturing workers in Kansas. Each of the remaining subsectors employs less than one percent of manufacturing workers in the state.¹



In Kansas, chemical product manufacturing is a high-wage industry with generally slow employment growth. There are seven establishments in the state with over 250 employees, while 40 percent of the establishments have between ten and 50 employees.² Over the past decade employment in this industry has averaged around 7,000 workers, with employment growth averaging 0.6 percent.³

¹ Unless otherwise referenced, all data in this report is from the U.S. Census Bureau Annual Survey of Manufactures 2015

² U.S. Census Bureau – County Business Patterns 2015

³ Bureau of Labor Statistics – Quarterly Census of Employment and Wages

Pharmaceutical and Medicine Manufacturing

This industry comprises establishments primarily engaged in manufacturing medicinal products, isolating and processing drugs and herbs, and manufacturing pharmaceutical products.

There is a low concentration of pharmaceutical and medicine manufacturing in Kansas, relative to the United States as a whole. There are 28 percent fewer workers in this industry in Kansas than the national average. This industry accounts for 1.7 percent of Kansas manufacturing employment. There are approximately 28 establishments in Kansas in this industry, which is primarily comprised of establishments with 20 to 50 employees. One of the largest employers in the state in this industry is Pfizer Animal Health.⁴

Over the next five years, this industry will continue to benefit from the same trends that have supported its growth in the past, including increasing health expenditure and growing interest in wellness and nutrition among mainstream consumers. As discretionary income continues to strengthen, more consumers will trade up to premium, all-natural and organic products, helping lift industry revenue.⁵

Employment

There was an average of 2,000 pharmaceutical and medicine manufacturing workers in Kansas between 2005 and 2015. Industry employment increased significantly in 2007 and has increased steadily since that time.⁶

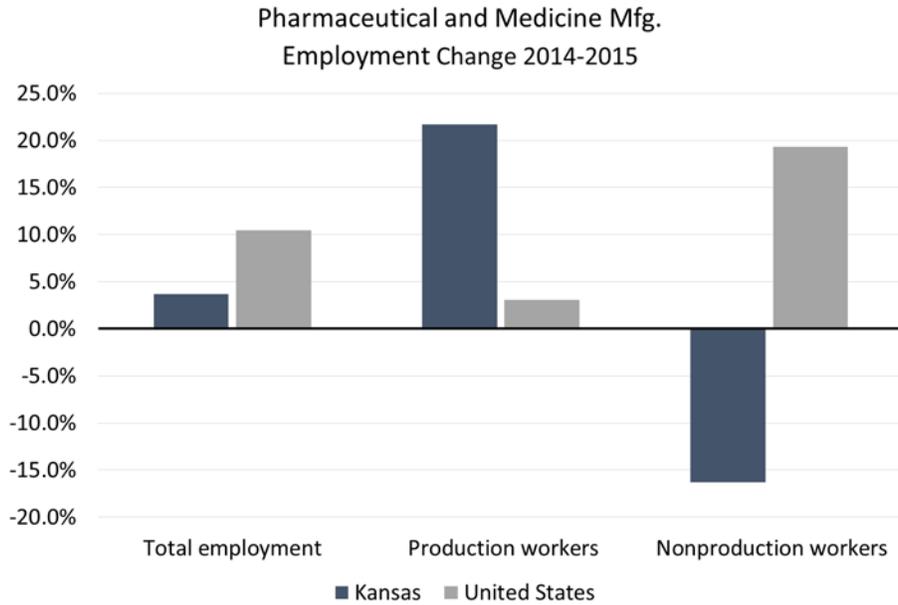
Of the 2,696 pharmaceutical and medicine manufacturing employees in Kansas in 2015, 62 percent were production workers, and 38 percent were nonproduction workers. There were 0.62 nonproduction workers for each production worker in the state, lower than the national average for this industry of 0.97 nonproduction workers for each production worker.

Between 2014 and 2015, pharmaceutical and medicine manufacturing employment increased in Kansas and the United States. There was a total increase in Kansas of 95 workers; production workers increased by 296 and nonproduction workers decreased by 201 workers.

⁴ Infogroup, Inc.

⁵ IBIS World Vitamin and Supplement Manufacturing in the U.S. March 2017

⁶ Bureau of Labor Statistics – Quarterly Census of Employment and Wages



Source: U.S. Census Bureau Annual Survey of Manufacturers 2015

Wages

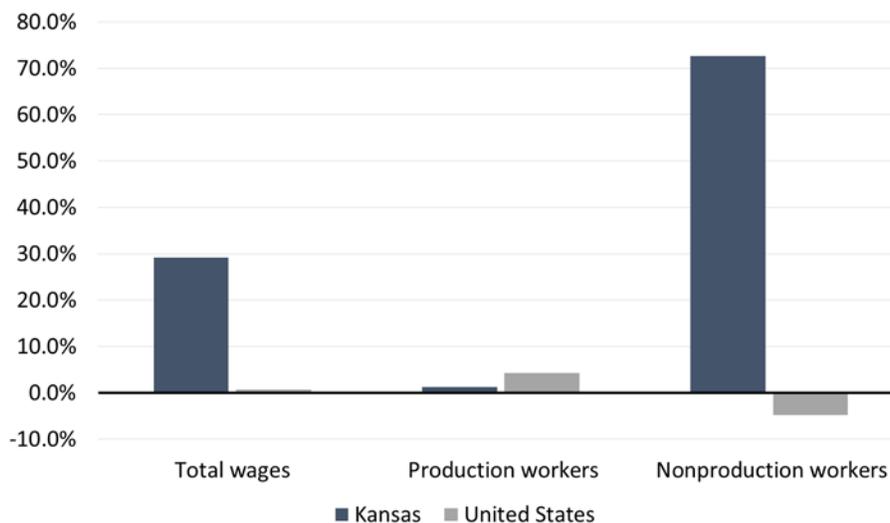
Pharmaceutical and medicine manufacturing is a high-wage industry. The average salary in 2015 for employees in this industry in Kansas was \$78,769, 41.2 percent higher than the average salary for manufacturing in the state. At \$59,002 annually, production workers in this industry earned 24 percent more than the average for production workers in Kansas. At \$110,541 a year, nonproduction workers earned 44.5 percent more than the average for nonproduction workers in manufacturing in Kansas.

Pharmaceutical and Medicine Mfg. Annual Wage per Worker 2015	
Total employment	\$78,769
Production workers	\$59,002
Nonproduction workers	\$110,541

Source: U.S. Census Bureau Annual Survey of Manufacturers

Between 2014 and 2015, total wages in this industry increased in Kansas and in the United States. The relative change in Kansas was much larger. The total increase in wages can be attributed to a relatively small increase in the wages for production workers and a much larger increase in wages for nonproduction workers.

Pharmaceutical and Medicine Mfg.
Change in Wages 2014-2015



Source: U.S. Census Bureau Annual Survey of Manufacturers 2015 - Inflation adjusted growth rate.

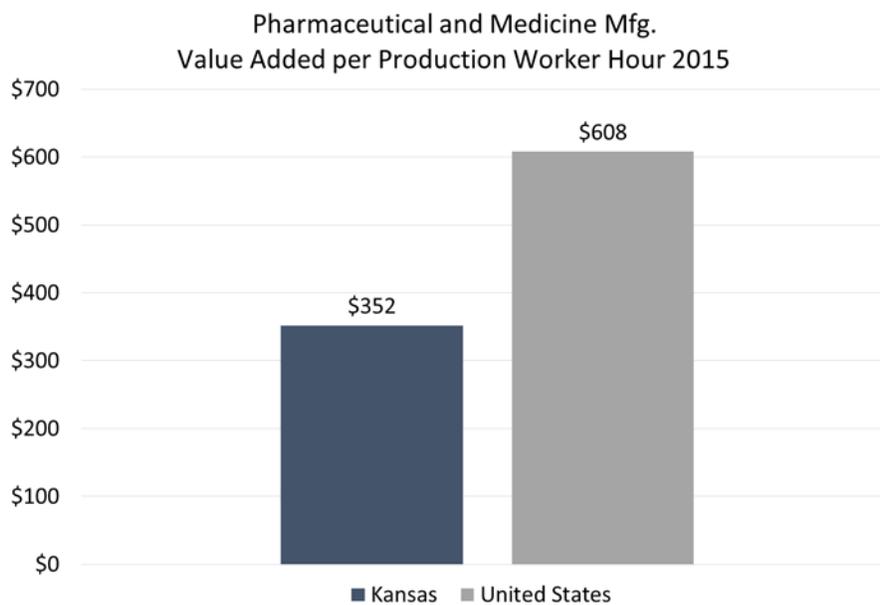
In Kansas, there has been an increase in employment and wages for production workers in pharmaceutical and medicine manufacturing, indicating an increase in demand for these workers. There has been a decrease in employment and a significant increase in wages for nonproduction workers, indicating a shortage of workers in this area.

Productivity

In 2015, pharmaceutical and medicine manufacturing workers in Kansas worked an average of 39.93 hours a week, down 9.7 percent from 2014 and more than the national average for this industry of 36.93, which decreased 1.2 percent from 2014. It is also more than the average for manufacturing in Kansas of 39.06 hours a week.

In the United States, the average value added per production worker hour in manufacturing, in general, was \$152 in 2015.⁷ In 2015, the average value added per production worker hour for pharmaceutical and medicine manufacturing was \$608. The Kansas average was \$352. This difference in productivity may be attributed to the difference in the specific type of manufacturing done in Kansas, the amount of capital investment by local companies, the skill and experience of local production workers, or other factors.

⁷Productivity is an average measure of the efficiency of production. It can be measured as the ratio of inputs to outputs. In measuring the efficiency of manufacturing industries, it is common to measure productivity as the ratio of the production hours to the value added from the manufacturing activity. The value added from the manufacturing activity is determined by subtracting the cost of materials and supplies from the value of shipments.



Source: U.S. Census Bureau Annual Survey of Manufacturers 2015

Basic Chemical Manufacturing

This industry group comprises establishments primarily engaged in manufacturing chemicals using basic processes, such as thermal cracking and distillation. Chemicals manufactured in this industry group are usually separate chemical elements or separate chemically defined compounds.

The concentration of basic chemical manufacturing workers in Kansas is below the national average, but there are approximately 1,700 employees in this industry in the state, 1.1 percent of manufacturing employment. There are about 41 establishments in this industry in Kansas, with an average of 20 to 50 employees per establishment. The majority of these establishments are in organic chemical manufacturing.⁸ Two of the largest employers in Kansas in this industry are White Energy, an ethanol producer, and Air Products and Chemicals, Inc., an industrial gas manufacturer.⁹

Over the next five years, basic organic chemical manufacturing is anticipated to expand. This growth will be attributed to higher consumer demand and manufacturing output, and a gradual increase in exports.¹⁰

⁸ U.S. Census Bureau – County Business Patterns 2015

⁹ Infogroup, Inc.

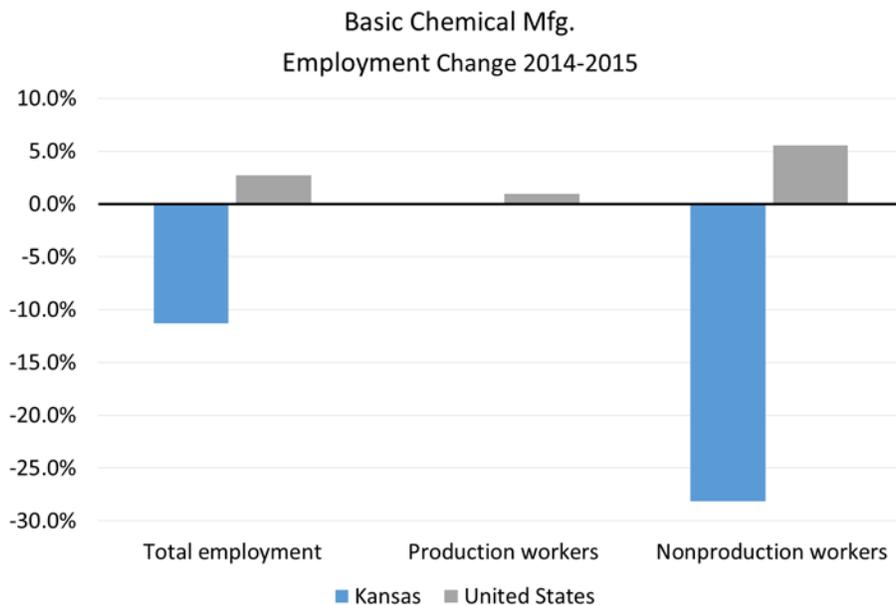
¹⁰ IBISWorld Organic Chemical Manufacturing in the U.S. April 2017

Employment

There was an average of 1,900 basic chemical manufacturing workers in Kansas between 2005 and 2015. Industry employment contracted significantly in 2006 and 2007. There was also a decline in employment in 2010 and 2011. However, employment has increased since that time.¹¹

Of the 1,723 basic chemical manufacturing workers in Kansas in 2015, 68 percent were production workers, and 32 percent were nonproduction workers. There were 0.48 nonproduction workers for each production worker in the state, slightly lower than the national average for this industry of 0.65 nonproduction workers for each production worker.

Between 2014 and 2015, total basic chemical manufacturing employment decreased in Kansas by 11.3 percent. In the United States as a whole, employment increased by 2.7 percent. There was a total decrease in Kansas of 219 workers, a reduction of one production worker and 218 nonproduction workers.



Source: U.S. Census Bureau Annual Survey of Manufacturers 2015

Wages

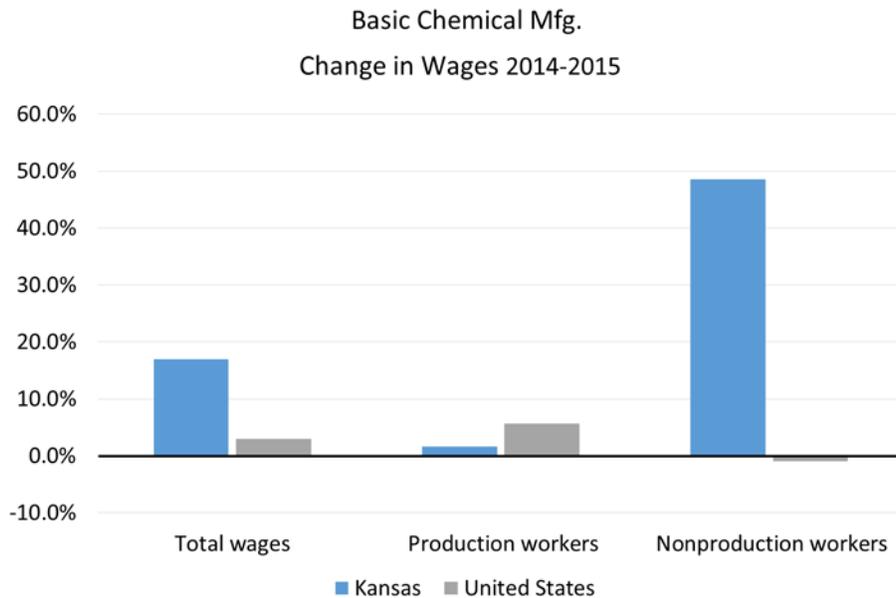
Jobs in basic chemical manufacturing are high-wage jobs in Kansas. The average salary in 2015 for this industry in Kansas was \$71,797, 28.7 percent higher than the average salary for manufacturing in the state. At \$60,356 annually, production workers in basic chemical manufacturing earned 26.9 percent more than the average for production workers in Kansas. At \$95,749 a year, nonproduction workers earned 25.2 percent more than the average for nonproduction workers in manufacturing in Kansas.

¹¹ Bureau of Labor Statistics – Quarterly Census of Employment and Wages

Basic Chemical Mfg. Annual Wage per Worker 2015	
Total employment	\$71,797
Production workers	\$60,356
Nonproduction workers	\$95,749

Source: U.S. Census Bureau Annual Survey of Manufacturers

Between 2014 and 2015, wages in basic chemical manufacturing increased in both Kansas and the United States. The increase in Kansas can mostly be attributed to increases in the wages of nonproduction workers.



Source: U.S. Census Bureau Annual Survey of Manufacturers 2015 - Inflation adjusted growth rate.

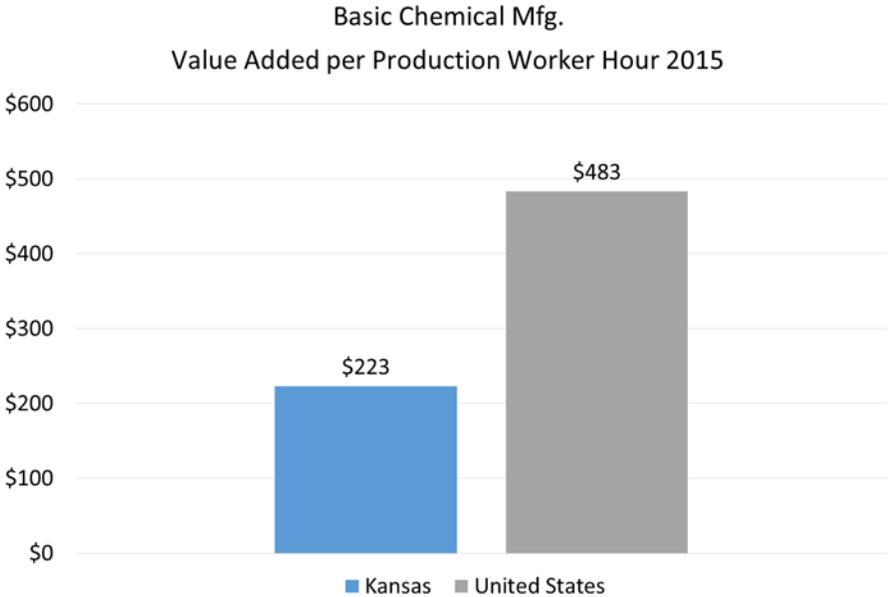
In Kansas, there has been a decrease in employment and an increase in wages for nonproduction workers in basic chemical manufacturing indicating a decrease in the supply of these workers. There has been very little change in the employment and wages of production workers, indicating a stable labor market.

Productivity

In 2015, basic chemical manufacturing workers in Kansas worked an average of 43.20 hours a week, an increase of 8.2 percent from 2014. This is somewhat less than the national average of 41.69 hours, which increased 0.5 percent from 2014. It is greater than the mean for manufacturing in Kansas of 39.06 hours a week.

In the United States, the average value added per production worker hour in manufacturing, in general, was \$152 in 2015. In 2015, the average value added per production worker hour for basic chemical manufacturing was \$483 in the United States. The Kansas average was \$223. This difference in productivity may be attributed to the difference in the specific type of manufacturing done in Kansas,

the amount of capital investment by local companies, the skill and experience of local production workers, or other factors.



Source: U.S. Census Bureau Annual Survey of Manufacturers 2015