

NORTHEAST DISTRICT PROFILE: Freight and the District's Economic Future



Global trade and new technologies continue to transform the economy, redefining the way businesses operate, challenging supply chains and transportation networks, and creating new customer opportunities for Missouri businesses in places where they were once inconceivable. Businesses and their employees are more dependent than ever on integrated, agile, and efficient transportation networks to sustain economic competitiveness and facilitate journeys to work and connections to markets.

To compete in this global marketplace, businesses must optimize every asset—workforce skills, competitively priced products, and reliable transportation systems—to ensure their customers receive quality goods and services when they expect them. As the importance of trade and the demands of customers continue to evolve, Missouri companies often find freight an increasingly important factor in sustaining and enhancing their competitive position in the marketplace. Freight supports the domestic and international trade of Missouri businesses, and supports State and local economic development and job growth.

Northeast Missouri Population Trends

Missouri's population is projected to grow, with the 2012 population of 6,021,988 increasing to 7,159,350 by 2040. The modest population growth experienced by MoDOT's Northeast District from 2000 to 2012 is expected to continue, with the 2012 population of 293,204 projected to grow to 331,320 by 2040.¹ Almost three quarters of this growth will occur in Warren and Lincoln Counties, which together are expected to add 34,483 residents between 2012 and 2040. These two counties also saw the greatest growth between 2000 and 2012, with a combined increase of 22,166. Nine of the 17 counties within the District experienced a slight decline in population between 2000 and 2012; between 2012 and 2040 only six Counties (Clark, Knox, Lewis, Monroe, Scotland, and Shelby) are projected to lose population.

Modest population growth often tempers the expansion of non-traded sector businesses that are generally driven by population growth, such as local professional services (legal, accounting, and medical), local retail trade, real estate and financial services, and food service and restaurants.

Freight is an increasingly important factor in sustaining and enhancing the economic competitiveness of businesses in Missouri and in the Northeast District.

Transportation Dependence: Missouri and the Northeast Missouri Economy

Freight transportation represents a key competitiveness factor for Northeast Missouri businesses. Companies today compete on more than product quality and cost. The transportation networks serving their facilities must provide reliable connections to buyers and link to a multitude of markets to ensure timely deliveries of goods and services and provide access for employees and customers. Some business sectors use transportation facilities and services more extensively than others. An industry

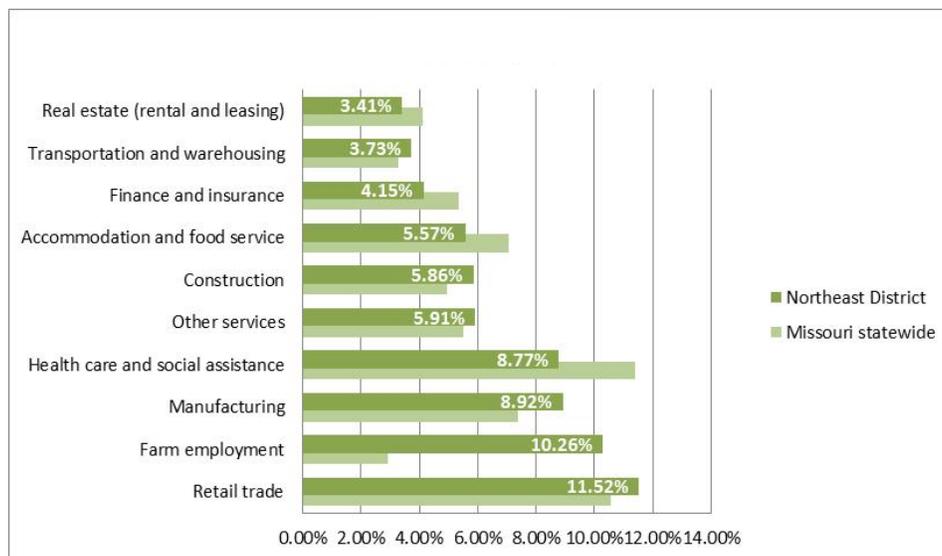
¹ US Census Intercensal Estimates, July 2000; US Census Annual Estimates; 2013 CEDDS by Woods and Poole Economics

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sector's dependence on transportation can be measured by examining the amount a business sector spends on transportation as a share of its total output.² Transportation satellite accounts provide national data regarding the amount spent on transportation per dollar of output for various sectors.

To better understand the role freight and goods movement play in the Northeast District and the contribution of multimodal transportation to the economic vitality of the region's key industry sectors, the project team evaluated the importance of these key industrial sectors based on the non-government employment concentrations in the region. More than two-thirds of the Northeast District's non-government employment is concentrated in 10 sectors: retail trade, farm employment, manufacturing, health care and social services, other services, construction, accommodation and food service, finance and insurance, transportation and warehousing, and real estate.³ **Figure 1** shows the breakdown of these employment sectors, by percentage, for the Northeast District and for the State.

Figure 1: Top Ten Non-Government Employment Sectors, Northeast District



As noted in **Figure 1**, the importance of transportation to these key industry sectors can be measured by the amount each sector spent on transportation as a share of its total output. The project team evaluated several primary industry sectors and identified the corresponding industrial classification codes for each key sector in order to compare the applicable transportation costs per dollar of product output using the transportation satellite accounts research. Key business sectors for the Northeast District are shown in **Table 1**.

Table 1: North American Industrial Classifications for Key Industrial Sectors, Northeast District

Industrial Sectors	North American Industrial Classification Sector
Agribusiness, Food Processing, Food Technology	Agriculture
Machine Manufacturing	Manufacturing
Chemicals and Chemical Based Products	Manufacturing
Retail and Wholesale Trade	Retail and Wholesale Trade
Health Care and Social Services	Health Care and Social Assistance
Electrical Equipment, Component Manufacturing	Manufacturing

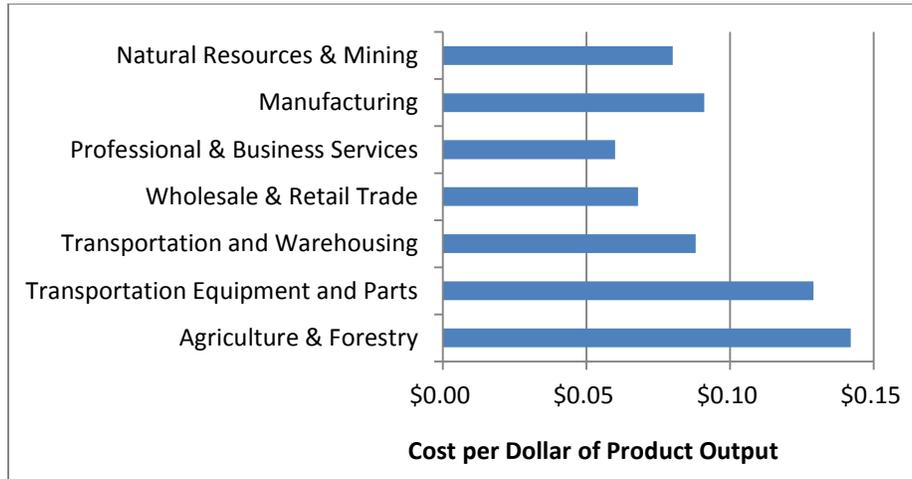
² "Transportation Satellite Accounts: A Look at Transportation's Role in the Economy," U.S. DOT Research and Innovative Technology Administration

³ Bureau of Labor Statistics, US Census 2012, County Business Patterns

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Figure 2 below shows the transportation cost per dollar of product output for several important existing industry sectors in Northeast Missouri based on their NAICS code. Improvements in transportation costs and services would have a significant effect on the profitability of companies in these industries, as lower transportation costs and more reliable service help reduce the cost of materials, resulting in lower overall production costs. Reliable delivery of materials can enhance productivity, and reducing distribution costs to the consumer may also improve competitiveness.

*Figure 2: Transportation Cost as a Share of Sector Output.
(Transportation cost per \$ of product value)*



Source: Transportation Satellite Accounts database, Bureau of Transportation Statistics, Research and Innovation Technology Administration

The Northeast District has been successful in retaining and attracting transportation-dependent businesses in several significant economic sectors as described in **Table 2**:

Table 2: Economic Sectors the Northeast District has retained and attracted transportation-dependent businesses

Manufacturing and Advanced Manufacturing	Agriculture and Food Processing	Transportation, Logistics and Freight (distribution centers)
SunEdison	General Mills	Brookstone
CertainTeed	Con Agra	Home Depot
Hercules, Inc.	Kraft Foods Group	Walmart
Watlow Missouri	Tyson Foods	Hartzell Hardwoods

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Economic Development Trends

Marion County has the highest number of business startups in the Northeast District, and two Counties—Audrain and Scotland—more than doubled their number of startup businesses in 2013 compared to 2012. Hannibal is the largest employment center; roughly 25 percent of the region's District's residents worked there in 2009. However, small businesses (defined as those employing fewer than 100 workers) play a major role in the economy of the Northeast District. In 2013 the National Establishment Time Series, or NETS, which is based on Dun & Bradstreet data, reported that 99 percent of all establishments in the District were small businesses. According to the same source, between 2003 and 2013 small establishments accounted for the most new businesses, with a net gain of 1,605, while medium and large establishments combined decreased by nine. Small businesses added 6,276 jobs during the same period, or about 75 percent of all new jobs in the District. Medium and large establishments lost 5,499 jobs, resulting in a total of 776 net new jobs for the District from 2003 to 2013.⁴

Agribusiness, Food Processing, and Food Technology

Agriculture, food processing, and food technology make up a strong industry cluster in the Northeast District. This sector employed 2,777 in 2013, an increase of 197 jobs since 2006. Soybeans and corn are the major crops, and in recent years both have benefited from increased foreign demand. Ethanol and biodiesel remain important industries, though they have not yet generated the profits anticipated prior to the recent recession. The University of Missouri Food and Agricultural Policy Research Institute expects both corn and soybean prices to drop over the next five years due to record high yields. Net farm income was higher in 2013 than at any time since the 1970s, but global production of grains and oilseeds exceeded consumption and stocks increased. Animal producers are five times more concentrated in the Northeast region than in the U.S. as a whole, and both livestock and milk prices have remained relatively strong. Food manufacturing was the top manufacturing employment sector in the State in 2013 for the fourth consecutive year, with 39,747 jobs. International agribusiness producers such as Con Agra in Macon, Kraft Foods in Kirksville, and General Mills in Hannibal are significant employers in the District.

Machine Manufacturing

Machinery manufacturing is also strong in the Northeast District; employment grew by 14 percent per year from 2003 to 2007, compared to only 1.5 percent for the U.S. as a whole. Employment declined in 2008 with the global recession but has begun to rebound, and is expected to grow by 3.39 percent between 2012 and 2022.⁵ The sector was Missouri's third largest foreign export segment in 2009 and 2010, and exports to other states are also substantial. Scotland and Ralls Counties have significant employment in machine manufacturing in businesses such as Watlow Industries in Hannibal, which manufactures industrial thermal systems; Bodine Aluminum in Troy, which makes parts for Toyota; Dura Automotive Systems in Moberly; Orscheln Products LLC, also in Moberly, makers of transportation motion control systems; and SAF-Holland USA Inc., which manufactures coupling, lifting, and suspension systems for commercial vehicles.

Electrical Equipment and Component Manufacturing

Manufacturing of electrical equipment and components is another key sector. Charles Industries in Canton, manufacturers of communications and power enclosures and marine and industrial equipment, is an important employer in the region. As the global economy recovers, analysts expect "quite impressive" growth in the worldwide market for industrial machinery and equipment between 2014 and 2018,⁶ driven by consumer products such as cars and food as well as oil and gas exploration, construction, and green energy. Annual U.S. growth is projected to be 6.3 percent in 2014 (more than double the 2.9 percent increase seen in 2013) and growth should average between five and six percent between 2014 and 2018.

Chemicals and Chemical-Based Products

Chemical products represent another important employment sector in the Northeast District, and wages are higher than average. The average annual wage for skilled machine operators and inspectors ranges from \$30,000 to \$36,000, and chemists make over \$65,000.⁷ This industry has the potential to increase incomes in the region, which averaged only \$28,266 in 2008—well below the state average of \$40,710. Providing the appropriate training will be key, however. Major employers include BASF, which produces agricultural chemical products in Palmyra; and Hercules, Inc. a manufacturer of fertilizer, industrial organic chemicals, and paint products in Louisiana. Chemicals were Missouri's second largest foreign export in 2009 at \$1.9 billion and demand is expected to remain strong in the agriculture and automotive areas, with demand for chemicals related to the construction industry picking up somewhat as well.⁸

⁴ Youreconomy.org, developed by the Edward Lowe Foundation

⁵ www.missourieconomy.org, Industry Employment Projections by Region

⁶ Jonathan Cassell, IHS Technology, "Rise of the Machines: Industrial Machinery Market Growth to Double in 2014." April 16, 2014.

⁷ MERIC Pattern Industry Insights: Chemical Manufacturing

⁸ NASDAQ.com, "Chemical Industry Stays the Course" by Zacks.com, August 12, 2014.

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Transportation equipment, chemicals, and machinery were the three top Missouri exports to Canada in 2013. Canada is already the largest importer of Missouri goods, and trade discussions with several Canadian provinces in 2014 point to increases in exports of Missouri products. The State has signed trade agreements with Quebec, Korea, Taiwan, China, Brazil, and several European countries to sell \$9.7 billion in Missouri products over the next four years, according to the Governor's office.

Wholesale and Retail Trade

Job opportunities in wholesale and retail trade are expected to be above average between 2012 and 2022. MERIC forecasts a 4.5 percent increase in wholesale employment and a 4.07 percent increase in retail employment for the region, for a total of 571 new jobs.⁹ Though internet sales will continue to compete with brick-and-mortar stores, both depend on efficient freight transportation to get their products in the hands of consumers. Overall growth is anticipated in both wholesale and retail trade in the next few years as the country and the world recover from the recent global recession.

Importance of Freight to the Economic Development Future of the Northeast District

Manufacturing and Exports

Manufacturing continues to be a vital part of Missouri's economy and exports of Missouri manufactured goods continue to increase. Missouri businesses exported over \$3 billion in goods by the close of the first quarter of 2014, and nearly \$13 billion in 2013.^{10,11} Four primary industries in the manufacturing sector accounted for over 62 percent of Missouri exports: transportation equipment, chemicals, food and kindred products, and machinery related businesses. These industries exported over \$8 billion in products in 2013.¹² Agricultural products, fabricated metal products, electrical equipment, minerals and ores, primary metal manufacturing, and computer and electronic products round out the top ten exports from the State in 2013. Over 6,100 businesses in Missouri exported products and services in 2012, and 89.5 percent of Missouri's exports are manufactured goods produced in communities around the State. Manufacturing exports support nearly 107,000 jobs in the State, and 85 percent of the companies engaged in exporting goods and services are small businesses.¹³

Manufacturing matters in Missouri because:

- Employees in manufacturing firms earn an average of \$77,060 annually in pay and benefits, while average workers in all industries earn \$60,168. This means manufacturing jobs pay, on average, 19.9 percent more than non-manufacturing jobs.¹⁴
- Manufacturing firms account for nearly two-thirds of all research and development in the U.S. and are a leading user of new technologies and processes.¹⁵
- Manufacturing has the highest multiplier effect of any economic sector. For every dollar spent in manufacturing another \$1.48 is added to the economy, helping to stimulate economic growth.
- Missouri's economy is intrinsically linked to its ability to move people, materials, components, and finished goods within the State and to national and international destinations.
- Missouri's principal trading partners are Canada, Mexico, China, Japan, and Korea.¹⁶ The industries most dependent on exports include grain farming, oilseed farming, wholesale trade, and aircraft manufacturing. Agriculture continues to play a significant role in the Northeast District's economy. Food manufacturers benefit from the proximity of farms to produce crops, and many crop farmers produce feedstock for nearby animal producers. Retailers and wholesalers of farm-related products benefit by locating near producers, and firms providing trucking, rail, and Mississippi River port services provide key linkages.
- Export products are intrinsically dependent on multimodal freight transportation.

⁹ MERIC Industry Employment Projections by Region, accessed at www.missourieconomy.org

¹⁰ WISER Export Trade data, 2014

¹¹ U.S. Census Freight Trade State Exports, Missouri

¹² Missouri Economic Research and Information Center, Missouri Department of Economic Development, March 2013

¹³ U.S. Department of Commerce, International Trade Administration, National Association of Manufacturing, 2013

¹⁴ Bureau of Economic Analysis, Industry Economic Accounts, 2011

¹⁵ Brookings Institute, Metropolitan Policy Program, "Why Does Manufacturing Matter?" February 2012

¹⁶ US Census, State Exports, Foreign Trade, 2013

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Conclusion

The economy of MoDOT's Northeast District depends in large part on agriculture and food processing, manufacturing, and wholesale and retail trade. Farming ranks second in employment for the District, accounting for over ten percent of all jobs. Corn, soybeans, and animal products are key items, and demand for these both within the U.S. and internationally should remain strong. Food processing giants Con-Agra, Kraft Foods, General Mills, and Tyson Foods are major employers, and exports of food products to established trade partners such as Canada, Mexico, China, Taiwan, and Korea are also predicted to grow.

Manufacturing ranks third in jobs for the Northeast District, and as noted previously these jobs are vital as they offer above-average wages. The outlook is positive for both domestic and foreign markets for machinery, transportation components, electrical equipment, and chemicals, which represent the significant manufacturing industries in the region. Retail and wholesale trade is the top source of employment in the Northeast District, and the predicted population growth, especially in Warren and Lincoln Counties, will contribute to growth in this sector. National brands such as Walmart, Home Depot, and Brookstone have already built major distribution centers in the District, and Hartzell Hardwoods, a leading producer of hardwood lumber, is expanding its warehouse facility in Kirskville.

All of these industries depend on a dependable, efficient freight network. Major highways such as I-70 and US-61, US-63, and US-36 link the region's producers to the rest of the nation, and the many secondary roads that cross the district enable businesses and farms to send their products to suppliers and markets. These roads are also crucial for deliveries to businesses and homes in the rural areas that make up most of the region. Ports along the Mississippi River play a critical role in moving goods to international shipping destinations, and rail infrastructure is important as well. Research has shown that investing in physical infrastructure reduces costs and improves efficiencies in conducting business, boosts job creation, and fosters growth cycles within countries.¹⁷ Based on this research, maintaining the region's existing freight infrastructure and expanding both capacity and connections in ways that increase reliability and reduce costs are essential to the economic vitality of the businesses and residents of the Northeast District.

¹⁷ Deloitte LLP and the Council on Competitiveness, "2013 Global Manufacturing Competitiveness Index"