



Missouri Economy Indicators

Transportation and Logistics Infrastructure

VOL. 2, ISSUE 15, 27 SEPTEMBER 2021

Amid the infection surges, quarantines and general uncertainty brought on by the COVID-19 pandemic, consumers replaced their typical demand for travel, dining and entertainment with even higher demand for consumer goods. The successful journey of those goods — from the factory to Missourians’ front doorsteps — hinges on the strength of the transportation network and the logistics industry. This brief explores the inventory and commercial use of Missouri’s transportation infrastructure as it relates to economic development.

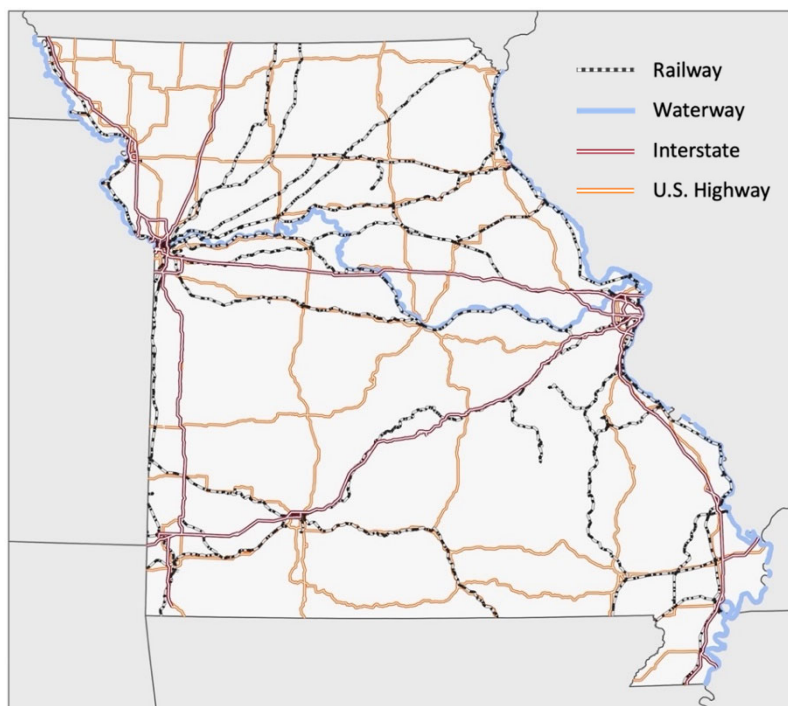
Missouri is Connected

Home to both the “Gateway to the West” and the “Heart of America,” Missouri plays a key role in connecting the U.S. and facilitating commerce.

As seen in the map to the right, seven major interstate highways — I-64, I-44, I-70, I-55, I-35, I-49 and I-29 — and every Class 1 railroad in the nation — BNSF, CP, CSX, KCS, NS and UP — serve Missouri. The state also has nine commercial airports; two of those fly internationally.

The country’s two longest navigable waterways — the Missouri and Mississippi rivers — add to the state’s transportation network. Missouri waterways move between 35 million and 40 million tons of cargo each year.¹

Major Missouri Railways, Waterways and Highways



Source: MU Extension graphic using data from U.S. Census and U.S. DOT

Missouri is a Net Freight Exporter, Especially for Chemical and Food Manufacturing Sectors

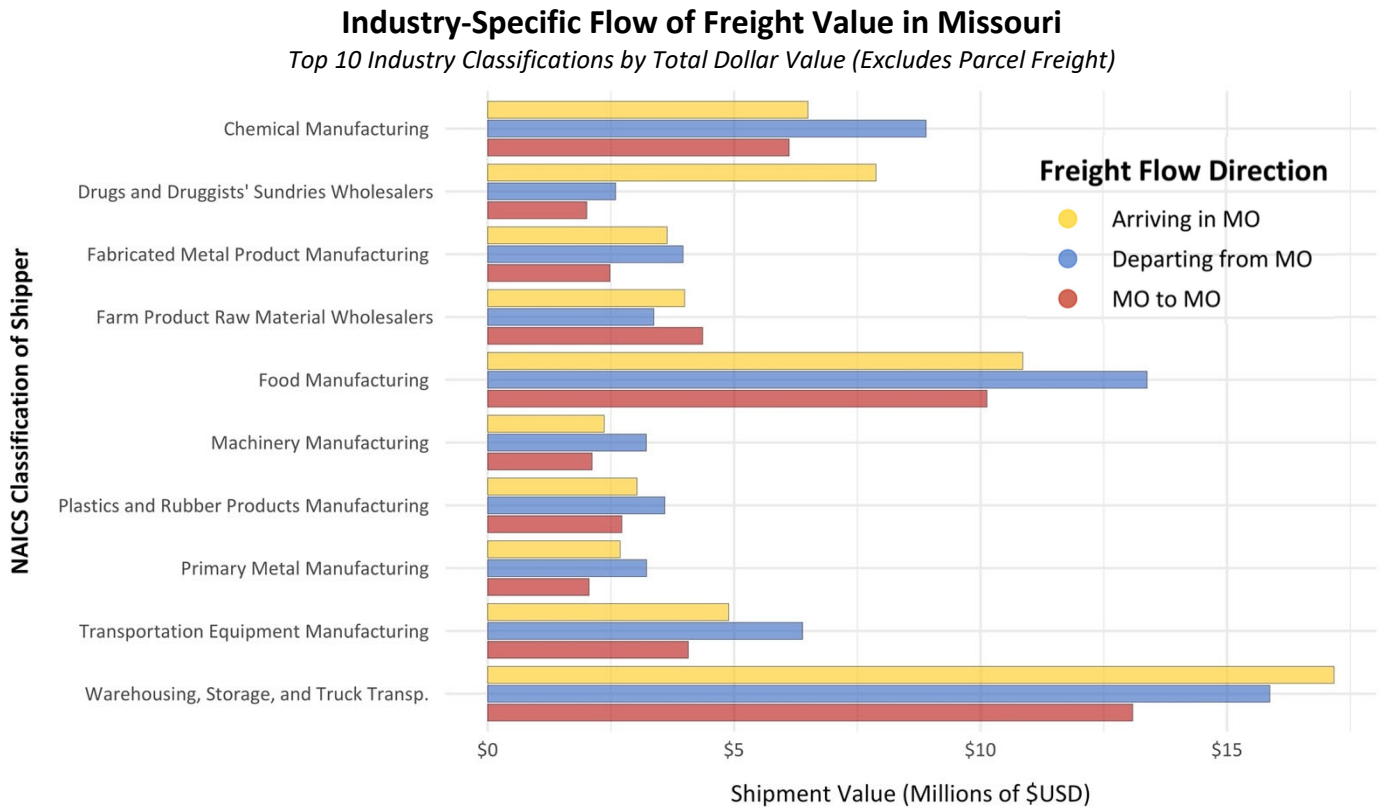
Flow of Freight by Weight and Value in Missouri

Flow Direction	Number of Shipments	Total Value (\$USD)	Total Weight (Tons)
Arriving in MO	67,365	\$865,981,748	840,177
Departing from MO	84,689	\$958,725,354	1,023,398
MO to MO	60,820	\$717,666,627	846,854
Total	212,874	\$ 2,542,373,729	2,710,429

Source: U.S. Dept. of Transportation (DOT) Commodity Flow Survey, 2017

As indicated in the 2017 Commodity Flow Survey, more than 210,000 freight shipments began or ended their journey in Missouri. Those shipments totaled more than \$2.5 billion in value and almost 2.7 million tons in weight (see table). Values for number of shipments, dollar value and shipment weight were higher for shipments *leaving* Missouri than for shipments arriving in the state. Thus, in the global freight network, Missouri functions as a net exporter.

Looking at the flow of freight by industry classification, two main industry sectors drive Missouri’s status as a net freight exporter: *food manufacturing* and *chemical manufacturing* (see figure below).² The two sectors combined for 14% of all shipments in 2017; they shipped more than \$220 million in freight out of the state and received \$174 million in freight from other states. Note, a nontrivial amount of Missouri’s freight activity consists of *intra*-state shipments, which originate and terminate within the state. These are often shipments between companies to supply materials and parts used in the production process.



Source: MU Extension graphic using data from U.S. DOT Commodity Flow Survey, 2017

All Transportation Modes Help Facilitate Commerce, but Highways Dominate

While railways and waterways combined to move nearly 63% of all 2017 freight tonnage in Missouri, they accounted for only 0.74% of all freight *value* in that year; that excludes freight trips that used multiple modes of transportation. Clearly, Missouri’s roadways — and the trucks that travel on them — drive commercial transportation activity in the state.

Missouri has one of the most extensive motor vehicle transportation networks in the U.S.; it only trails Texas and California in terms of limited-access highway mileage.³ Limited-access roadways, such as interstates and expressways, intend to minimize congestion and maximize mobility. Business owners looking to expand or relocate their business operations consistently rank access to such highways as among the most desired locational factors.⁴ Locating near highways may increase firms’ competitiveness by allowing businesses to quickly and cheaply serve a wider base of customers and, thus, increase market size.

Last year, motorists drove nearly 200 million miles on Missouri roadways, and roughly 40% of those miles were driven on limited-access highways (see table). However, of the 30 million vehicle miles traveled (VMT) by

Missouri Roadways by Mileage and Use

Statistic	Interstate Highways	U.S. & MO Highways	All Other Roadways
Mileage	1,380	1,619	128,318
VMT (Vehicle Miles Traveled)	51,005,778	26,954,151	119,507,073
% CVMT	22.2%	14.7%	12.4%

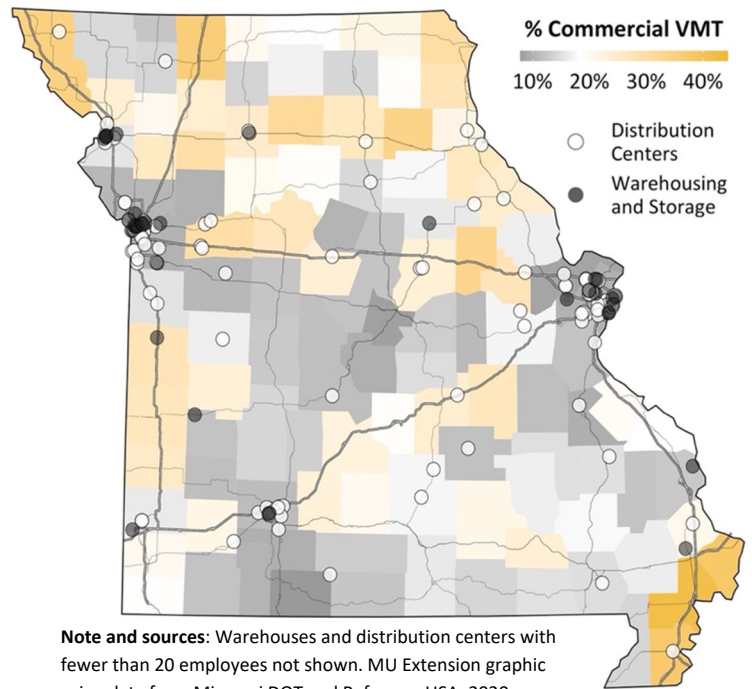
Source: MoDOT Data Summary Tool, 2020

commercial vehicles, such as tractor-trailers and other cargo vehicles, 51% were driven on limited-access highways. Likewise, the percent of commercial vehicle miles traveled (% CVMT) on Missouri’s roadways was highest for interstates, accounting for 22% of traffic.

Unsurprisingly, an interstate or U.S. highway serves many of Missouri’s counties with high commercial vehicle use (see map). The map illustrates the ratio of commercial VMT to total VMT by county. In more populated metropolitan counties, motorists use roadways for a wider variety of activities, such as commuting and recreation. Thus, higher proportions of commercial VMT are found in Missouri’s rural counties, especially in the Bootheel — as shown in the I-55 corridor to Memphis — and in northwest Missouri within the I-29 corridor to Omaha and I-35 corridor to Des Moines. The map also shows locations of Missouri’s largest warehouses and distribution centers, which largely locate near limited-access highways. Notable warehousing and distribution employers in Missouri include Aldi, Dollar General, General Mills, Kraft Foods, O’Reilly Auto Parts and Walmart.

Commercial Use of Missouri Highways as a Percent of VMT

VMT = Vehicle Miles Traveled (by County)



Note and sources: Warehouses and distribution centers with fewer than 20 employees not shown. MU Extension graphic using data from Missouri DOT and ReferenceUSA, 2020

The economic viability of the logistics industry — a group of sectors comprising wholesale distribution centers, warehousing and storage facilities and transportation support services — depends on the transportation network’s quality and reliability. From 2010 to 2020, Missouri added more than 14,000 logistics jobs, a 10-year increase of nearly 20%. Logistics jobs support employment in other sectors because expansion in warehousing businesses generally leads to direct and indirect increases in jobs among real estate, administrative support and finance and insurance firms.

Footnotes

1. Source: U.S. Army Corps of Engineers Waterborne Commerce Statistics Center
2. Although the figure only shows freight flows by dollar value, the food and chemical manufacturing sectors were also net exporters in terms of tonnage and number of shipments.
3. U.S. Federal Highway Administration (2020), Highway Statistics Series. *Office of Highway Policy Information*.
4. Kaelble, S. (2016), Critical Site Selection Factors. *Area Development*.

All Missouri Economy Indicators briefs in this series are available at tinyurl.com/ExceedEconomyIndicators

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The Missouri SBDC is funded in part through a Cooperative Agreement with the U.S. Small Business Administration and is a University of Missouri Extension partner. All opinions, conclusions, and/or recommendations expressed herein are those of the author(s) and do not necessarily reflect the views of the SBA.



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