

VEHICULAR INFRASTRUCTURE COMPARISON Illinois vs. Missouri



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VEHICULAR INFRASTRUCTURE COMPARISON: ILLINOIS VS. MISSOURI
 ILEPI Economic Commentary #6

INTRODUCTION

Investment in quality infrastructure is a high-road economic development strategy for Illinois. As the primary component of the transit network, improving and expanding the state’s vehicular infrastructure system is a principal function of Illinois’ state government. One means of funding such investment is through user fees, such as motor fuel taxes, so that residents who use the transportation infrastructure pay for the service and the costs do not fall onto taxpayers who do not use roads and bridges. Still, some commentators and politicians assert that motor fuel taxes in Illinois are too steep compared to Illinois’ neighbors, especially Missouri. Reasons why Illinois’ motor fuel tax rates are relatively higher, however, are rarely discussed by critics.

This ILEPI Economic Commentary investigates both sides of the vehicular infrastructure equation: user *costs* through motor fuel taxes as well as the resultant *benefits* of higher quality roads and bridges. The Economic Commentary compares and contrasts the vehicular infrastructure system of Illinois to that of Missouri, Illinois’ neighboring border state to the southwest. The analysis initially provides an overview of the state economies before discussing user costs in both states. Then, the physical infrastructure and usage by state are evaluated. The study concludes by recapping key findings. Ultimately, the higher motor fuel tax burden in Illinois is demonstrated to be a worthwhile investment in the quality of public highways, streets, and bridges toward the state’s economic progress.

COMPARISON OF ECONOMIES

The Illinois economy is dependent on a high-quality, efficient transportation network. Between 1990 and 2012, the population of Illinois grew by 13 percent and vehicle travel on interstate highways increased by 25 percent, but lane miles on the system increased by just 11 percent.¹ Public transportation systems, in addition, provide 2 million rides per weekday to Illinois workers and consumers across the state.² Compared to Missouri, the Illinois economy necessitates a high level of infrastructure investment (Figure 1). With 6.0 million workers (59.9 percent of the population 16 years and older), the Illinois workforce more than doubles Missouri’s 2.8 million workers (58.8 percent of the population 16 years and older). The Illinois economy also produces \$436.4 billion more in economic output and has grown 1.4 percentage points faster since 2000 compared to its southwestern neighbor. Additionally, Illinois households earn more income on average (\$77,163) than their Missouri counterparts (\$63,405). Since people with higher incomes travel farther and more frequently, Illinois is required to devote more resources to its transportation network.³

Figure 1: Comparison of State Economies, Illinois vs. Missouri

Economic Indicators	Illinois	Missouri
Population, 16 Years and Older, 2012	10.1 million	4.7 million
Employed, 16 Years and Older, 2012	6.0 million	2.8 million
Employed % of Population	59.9%	58.8%
<i>Economic Output</i>		
2012 Real GDP	\$695.2 billion	\$258.8 billion
Real GDP Growth Since 2000	10.6%	8.2%
<i>Income</i>		
Average Household Income, 2012	\$77,163	\$63,405

Sources: “Selected Economic Characteristics” by the 2012 American Community Survey, 5-Year Estimates, available at factfinder2.census.gov; “Real GDP by State” by the U.S. Department of Commerce Bureau of Economic Analysis, converted to 2012 dollars, available at bea.gov/itable/index.cfm.

COMPARISON OF USER COSTS

Opponents of high-quality infrastructure investment argue that motor fuel taxes are too high in Illinois.⁴ In Illinois, the per-gallon gasoline and gasohol tax rate is 39.1 cents and the diesel rate is 44.9 cents per gallon. By contrast, motor fuel taxes are a uniform 17.3 cents per gallon for gasoline, gasohol, and diesel fuel in Missouri. After federal tax rates are included, motorists pay 57.5 cents per gallon for gasoline in Illinois compared to just 35.7 cents per gallon in Missouri (Figure 2). This disparity in user costs to pay for streets, highways, bridges, and public transportation has led some think tanks to argue that high gasoline taxes are a “problem” for Illinois.⁵

By isolating motor fuel tax rates, opponents are ignoring the big-picture issues of total revenues for road construction and of road quality. First, while motor fuel taxes are higher in Illinois than in Missouri, annual revenues for the state’s Road Fund are lower per person in Illinois. Illinois residents contributed just \$205 per capita to the Road Fund in 2013 compared to \$311 per capita in Missouri during that same year, meaning that Missouri extracts more revenues from its taxpayers through other fees. Second, the federal government subsidizes highway construction substantially more for Missouri. While state revenues used for highways in 2011 were greater in Illinois (\$4.5 billion) than Missouri (\$3.1 billion), federal payments for highways were only \$1.3 billion in Illinois compared to \$1.6 billion in Missouri. As a result, the federal government accounted for just 27.7 percent of highway construction and maintenance in Illinois but a full 53.4 percent in Missouri. Note that higher incomes compared to Missouri mean that workers in Illinois also pay more in federal income taxes each year. Disproportionate support from the federal government (and thus from Illinois taxpayers) has allowed the State of Missouri to maintain lower motor fuel user fees.

Elevated motor fuel tax rates in Illinois increase the quality of the state’s roads and help to reduce future costs to commuters, truckers, families, and visitors. The American Society of Civil Engineers estimates that driving on roads in need of repair costs Missouri motorists \$380 in extra vehicle repairs and operating expenditures each year. In comparison, the personal cost of driving on poor roads costs Illinois motorists \$292 annually, or 23.2 percent less per year. Higher fuel taxes are thus a preventative front-end solution for Illinois drivers (Figure 2).

Figure 2: User Fees and Revenue Sources, Illinois vs. Missouri

User Cost or Revenue Source	Illinois	Missouri
<i>Motor Fuel Tax Rates</i>		
Gasoline Per Gallon	\$0.391	\$0.173
Diesel Per Gallon	\$0.449	\$0.173
Gasoline Per Gallon, Including Federal	\$0.575	\$0.357
Diesel Per Gallon, Including Federal	\$0.693	\$0.417
<i>Road Revenues</i>		
Road Fund Revenue Per Capita, 2013	\$205	\$311
State Revenues Used for Highways, 2011	\$4.5 billion	\$3.1 billion
Federal Payments for Highways, 2011	\$1.3 billion	\$1.6 billion
Federal Government %	27.7%	53.4%
<i>Personal Cost</i>		
Repairs from Poor Roads Per Motorist	\$292	\$380

Sources: “State Motor Fuel Taxes: Rates Effective 4/1/2014” by the American Petroleum Institute, available at api.org/oil-and-natural-gas-overview/industry-economics/~media/Files/Statistics/StateMotorFuel_OnePagers.pdf; “Comprehensive Annual Financial Report” (FY2013) by the State of Illinois Comptroller’s Office, available at www.ioc.state.il.us/index.cfm/resources/reports/cafr; “Comprehensive Annual Finance Report” (FY2013) by the State of Missouri Office of Administration, available at <http://content.oa.mo.gov/accounting/reports>; “2013 Report Card for America’s Infrastructure: Illinois” and “2013 Report Card for America’s Infrastructure: Missouri” by the American Society of Civil Engineers, available at www.infrastructurereportcard.org/states/.

In 2013, the federal government bankrolled 21.2 percent of Illinois’ General Fund revenues but 41.2 percent of revenues in Missouri’s General Fund (Figure 3). Personal income taxes, even with the temporary income tax hike in Illinois, are also greater in Missouri due to the state’s progressive tax code. An individual or family earning \$25,000 per year would pay 5.0 percent in state income taxes in Illinois and 5.1 percent in Missouri, or \$25 more. Another individual or family with an annual income of \$100,000 would still pay 5.0 percent in income taxes in Illinois but would contribute 5.8 percent in Missouri, or \$775 more. Since state revenues from personal incomes and from the federal government are lower in Illinois, the state is prompted to make up the difference elsewhere, such as in a higher sales tax rate (Figure 3). Higher motor fuel tax rates in Illinois are another method to raise revenues to make up the shortfall by placing the burden of road quality on those who use the infrastructure, rather than increasing income taxes on workers who may not actually use the roads.

Figure 3: State Government Funds, Illinois vs. Missouri

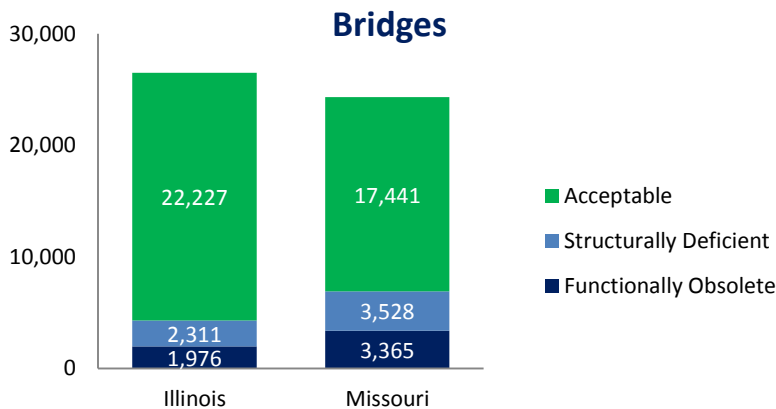
State Government Funds	Illinois	Missouri
General Fund Revenue, 2013	\$40.6 billion	\$22.7 billion
Federal Government % of General Fund	21.2%	41.2%
Income Tax Rate: \$25,000	5.0%	5.1%
Income Tax Rate: \$50,000	5.0%	5.6%
Income Tax Rate: \$100,000	5.0%	5.8%
Sales Tax Rate	6.25%	4.225%

Sources: “Comprehensive Annual Financial Report” (FY2013) by the State of Illinois Comptroller’s Office, available at www.ioc.state.il.us/index.cfm/resources/reports/cafr; “Comprehensive Annual Finance Report” (FY2013) by the State of Missouri Office of Administration, available at <http://content.ao.mo.gov/accounting/reports>; “Facts & Figures 2013: How Does Your State Compare?” by the Tax Foundation, available at taxfoundation.org/article/facts-figures-2013-how-does-your-state-compare.

COMPARISON OF INFRASTRUCTURE AND USAGE

Illinois has an extensive vehicular infrastructure network. The state has the third largest bridge inventory in America with 26,514 bridges (Figure 4). Unfortunately, 4,287 of the state’s bridges (16.2 percent) are either “structurally deficient” or “functionally obsolete.” On the other hand, Illinois’ bridge infrastructure compares favorably to Missouri’s 24,334-bridge network, where 6,893 are in bad condition (28.3 percent). Illinois also has more public-use road miles than Missouri: 139,500 miles compared to 131,700 miles, despite being over 13,000 square miles smaller in total land area (Figure 5).⁶ Three in ten (29.6 percent) public road miles are located in urban areas in Illinois compared to just two in ten (18.1 percent) in Missouri. Superior bridge quality, a larger road network, and a greater share of roads in densely-populated cities and suburbs all contribute toward higher user costs for Illinois infrastructure.

Figure 4: Bridges, Number and Quality, Illinois vs. Missouri



Sources: “2013 Report Card for America’s Infrastructure: Illinois” and “2013 Report Card for America’s Infrastructure: Missouri” by the American Society of Civil Engineers, available at www.infrastructurereportcard.org/states/.

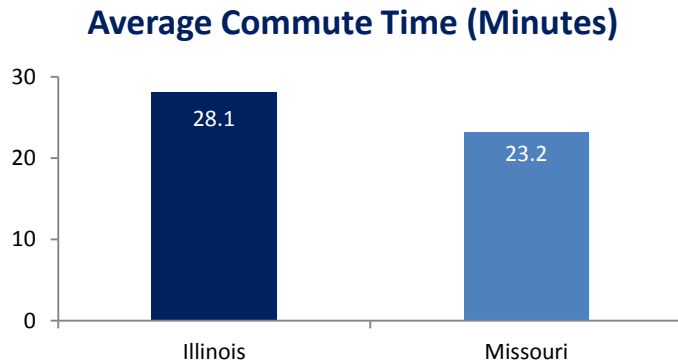
Although Illinois has comparable numbers of bridges and public road miles to Missouri, demand for vehicular infrastructure is significantly greater in Illinois than Missouri (Figure 5). There are 8.4 million driver’s licenses issued in Illinois to Missouri’s 4.3 million and Illinois motorists travel 103.2 billion miles compared to Missouri’s 68.8 billion. At 6.2 billion gallons, Illinois drivers consumed 2.1 billion gallons more fuel than their counterparts to the southwest. Moreover, while fewer workers commuted to work in a car, truck, or van in Illinois (82.5 percent) than in Missouri (91.1 percent), Illinois workers were more likely to travel to their jobs using public transportation, including buses: 8.7 percent to 1.5 percent. Finally, congestion is significant in Illinois, as the average commute time to work is 28.1 minutes in Illinois compared to 23.2 minutes in Missouri (Figure 6). Congestion has also been estimated to cost the Chicago metropolitan area \$4.2 billion per year in lost economic activity.⁷ The high demand by workers and families for Illinois’ road network, paired with the related need to improve and expand the infrastructure to reduce congestion, contributes toward higher user costs.

Figure 5: Infrastructure, Usage, and Method of Commute to Work, Illinois vs. Missouri

Roads, Usage, and Methods	Illinois	Missouri
<i>Infrastructure</i>		
Total Public Road Miles, 2011	139,500	131,700
Rural	70.4%	81.9%
Urban	29.6%	18.1%
<i>Usage</i>		
Driver’s Licenses, 2011	8.4 million	4.3 million
Vehicle Miles Traveled, 2011	103.2 billion	68.8 billion
Total Motor Fuel Gallons, 2011	6.2 billion	4.1 billion
<i>Method of Commute to Work</i>		
Car, Truck, or Van	82.5%	91.1%
Public Transit	8.7%	1.5%

Sources: “Highway Statistics Series: Illinois 2011 State Statistical Abstract” and “Highway Statistics Series: Illinois 2011 State Statistical Abstract” by the U.S. Department of Transportation Federal Highway Administration, available at <http://www.fhwa.dot.gov/policyinformation/statistics/abstracts/2011/>; “Selected Economic Characteristics” by the 2012 American Community Survey, 5-Year Estimates, available at factfinder2.census.gov.

Figure 6: Average Commute Time to Work in Minutes, Illinois vs. Missouri



Sources: “Selected Economic Characteristics” by the 2012 American Community Survey, 5-Year Estimates, available at factfinder2.census.gov.

Positioned at the crossroads of the American economy, northeastern Illinois espouses the largest intermodal inland port in the Western Hemisphere and the third-largest in the world after Hong Kong and Singapore.⁸ There are 113 public-use airports and 41 freight railroads in Illinois. Of these 113 airports, O’Hare International Airport is the second-busiest airport in the world— with 878,000 total take-offs and landings each year— and enables the movement of goods, services, and passengers to anywhere in the

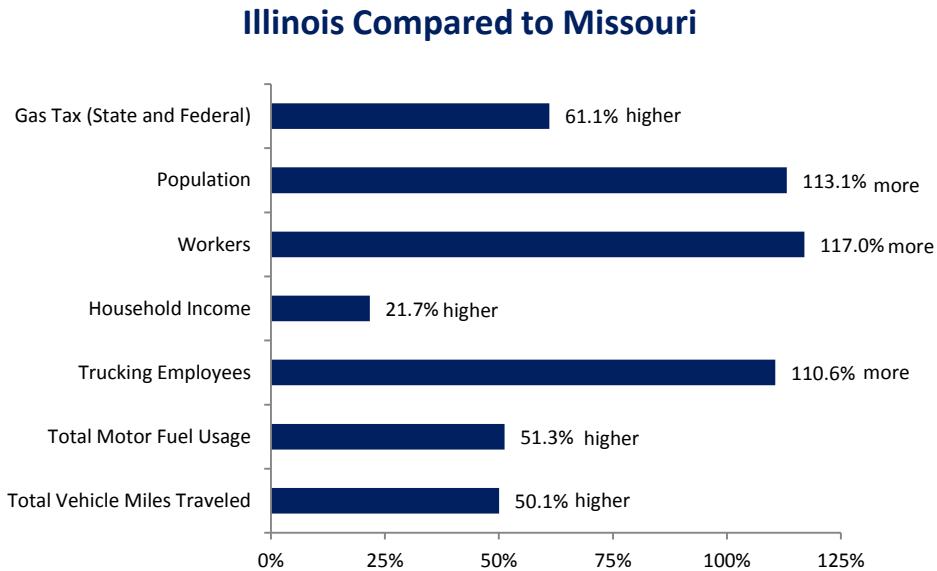
United States in under four hours.⁹ Illinois' comprehensive rail network is also the second-largest in the nation, with 7,028 miles of railroad. Missouri, by contrast, ranks 10th in the nation with 4,019 rail miles (Figure 7). As the rail hub of America, nearly half of the nation's rail freight originates in, terminates in, or comes through the City of Chicago.¹⁰

Figure 7: Logistics and Freight Sectors, Illinois vs. Missouri

Logistics and Freight	Illinois	Missouri
<i>Rail</i>		
Railroads, 2012	7,028 miles	4,019 miles
State Rank	2 nd	10 th
<i>Ports</i>		
Short Tons of Cargo, 2012	119.1 million	24.1 million
State Rank	5 th	26 th
<i>General Freight Trucking</i>		
Trucking Business Establishments, 2011	5,634	1,484
Trucking Employees, 2011	46,580	22,116

Sources: "2013 Report Card for America's Infrastructure: Illinois" and "2013 Report Card for America's Infrastructure: Missouri" by the American Society of Civil Engineers, available at www.infrastructurereportcard.org/states/; "2011 County Business Patterns: Geography Area Series" by the U.S. Census Bureau and the U.S. Department of Commerce, available at factfinder2.census.gov.

Figure 8: Illinois Compared to Missouri, Select Variables, Percentage by Which Illinois Exceeds Missouri



Sources: "State Motor Fuel Taxes: Rates Effective 4/1/2014" by the American Petroleum Institute, available at api.org/oil-and-natural-gas-overview/industry-economics/~media/Files/Statistics/StateMotorFuel_OnePagers.pdf; "Selected Economic Characteristics" by the 2012 American Community Survey, 5-Year Estimates, available at factfinder2.census.gov; "2011 County Business Patterns: Geography Area Series" by the U.S. Census Bureau and the U.S. Department of Commerce, available at factfinder2.census.gov; "Highway Statistics Series: Illinois 2011 State Statistical Abstract" and "Highway Statistics Series: Illinois 2011 State Statistical Abstract" by the U.S. Department of Transportation Federal Highway Administration, available at <http://www.fhwa.dot.gov/policyinformation/statistics/abstracts/2011>.

Accordingly, Illinois transports significantly more freight than Missouri (Figure 7). Illinois' ports receive 119.1 million short tons of cargo, the fifth-most in the nation, compared to Missouri's 24.1 million short tons. To meet this demand, the Illinois economy comprises 5,634 business establishments in the "general freight trucking" industry which employ 45,580 truckers and workers. By contrast, there are only 22,116 workers employed by 1,484 trucking establishments in the State of Missouri. The price of supporting jobs and businesses in the trucking industry, however, is high: one 40-ton truck does as much damage to an

interstate highway as 9,600 cars.¹¹ But the flourishing freight transportation sector of the Illinois economy requires a first-class logistics network so that the state continues to be a cost-effective business option to locate in Illinois to bring products to market or to export goods internationally. Trucking and freight logistics therefore remain a significant reason why per-gallon motor fuel taxes, particularly diesel fuel, are higher in Illinois compared to Missouri.

Figure 8 contrasts Illinois to Missouri across many factors to demonstrate why Illinois' motor fuel tax is relatively higher. All comparisons are presented as the percentage amount by which Illinois exceeds Missouri. The gasoline tax that Illinois motorists face, for example, is 61.1 percent higher than the Missouri rate. But Illinois has 113.1 percent more people and 117.0 percent more workers than Missouri and Illinois households earn 21.7 percent more each year compared to Missouri workers. These figures indicate that Illinois has both a greater need for vehicular infrastructure and a greater ability to pay for the services (Figure 8).

Although gas taxes are 61.7 percent higher per gallon in Illinois, this user fee aligns with the road usage of the state's families and businesses (Figure 8). Total motor fuel usage and total vehicle miles traveled are respectively 51.3 percent and 50.1 percent higher in Illinois than Missouri. While this is slightly below the 61.7 percent markup in the motor fuel tax, the difference is partially due to the considerably larger trucking industry in Illinois: there are 110.6 percent more trucking company employees in Illinois than in Missouri. Finally, Illinois' gas tax rate is above that of Missouri because Illinois receives significantly less funding from the federal government than Missouri.

CONCLUSION

While it is certainly true that Illinois motorists face a higher per-gallon motor fuel tax rate than their Missouri counterparts, the higher rate is a public policy response to meet extraordinary demand and provide greater quality in Illinois. Drivers pay 57.5 cents per gallon in state and federal gasoline taxes and 69.3 cents per gallon in state and federal diesel taxes in Illinois compared to respective Missouri figures of 35.7 cents per gallon and 41.7 cents per gallon.

However, motor fuel tax rates are higher in Illinois than Missouri for a multitude of reasons:

- Illinois has 3.2 million more workers and produces almost \$440 billion more in economic output;
- Illinois households earn over 20 percent more and have a higher ability to pay for infrastructure investment;
- Illinois receives around just one-quarter of its annual total highway revenues (\$1.3 billion) from the federal government compared to *over one-half* in Missouri (\$1.6 billion);
- Higher upfront motor fuel taxes prevent future repair and maintenance costs, as the cost of driving on poor roads is \$292 annually for Illinois motorists and \$380 per year for Missouri motorists;
- Illinois comprises more bridges, fewer “structurally deficient” or “functionally obsolete” bridges, and more public road miles even though Missouri has more land area;
- The freight industry is significantly larger in Illinois, transporting 95 million more short tons of cargo and employing over 110 percent more general freight trucking workers; and
- Illinois motorists drive over 50 percent more vehicle miles and use over 50 percent more fuel annually than Missouri motorists.

Illinois' superior vehicular infrastructure system is one reason why the state's economy is larger and growing faster compared to Missouri. Over the long run, the increased motor fuel tax rates faced by Illinois motorists provide significant benefits. They improve the quality of the state's infrastructure while reducing back-end personal costs. They also allow Illinois to update and expand the network, further increasing the state's economic growth, business competitiveness, worker mobility, and quality of life. Ultimately, the higher motor fuel tax burden is a worthwhile investment in the quality of public highways, streets, and bridges in Illinois.

ENDNOTES

- ¹ American Society of Civil Engineers (ASCE). (2014). “Roads: 2014 Report Card for Illinois’ Infrastructure,” available at <http://www.isasce.org/wp-content/uploads/2014/04/2014-Illinois-Roads-Final-Report.pdf>.
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- ⁵ *Ibid.* 4, IPI.
- ⁶ U.S. Census Bureau. (2014). “State & County QuickFacts.” U.S. Department of Commerce, available at <http://quickfacts.census.gov/qfd/index.html>.
- ⁷ *Ibid.*1, ASCE.
- ⁸ Illinois Department of Commerce & Economic Opportunity. (2014). “Why Illinois: Grade A Logistics,” available at <http://www.illinois.gov/dceo/whyillinois/GradeALogistics/Pages/default.aspx>.
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- ¹⁰ Illinois Department of Transportation. (2014). “Illinois State Rail Plan: Project Overview,” available at <http://www.dot.il.gov/ilrailplan/ProjectOverview.html>.
- ¹¹ *USA Today*. (2007). “Overweight Trucks Damage Infrastructure,” available at http://usatoday30.usatoday.com/news/nation/2007-09-10-3878428638_x.htm.