

Gas Taxes in the United States and Globally:

Failing to Address Transportation Infrastructure



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Introduction

Transportation infrastructure is essential for economic growth. Investments in infrastructure help businesses deliver their product to markets, limits time spent in congestion, and improves productivity. In order to maintain quality transportation infrastructure, sustainable funding throughout the country is imperative. The United States currently suffers from insufficient funding due to a broken system. Without changes, more and more roads, bridges, and public transit systems will fall into disrepair.

The United States and countries around the world impose motor fuel taxes to raise revenue for transportation needs. This Midwest Economic Policy Institute (MEPI) Economic Commentary discusses the history of gas taxes in the United States, transportation funding in the United States, the shortfalls of user fees on gasoline and diesel, and gas taxes levied by other countries. Transportation infrastructure is critical to the economy and investments are needed to sustain future population growth across the globe.

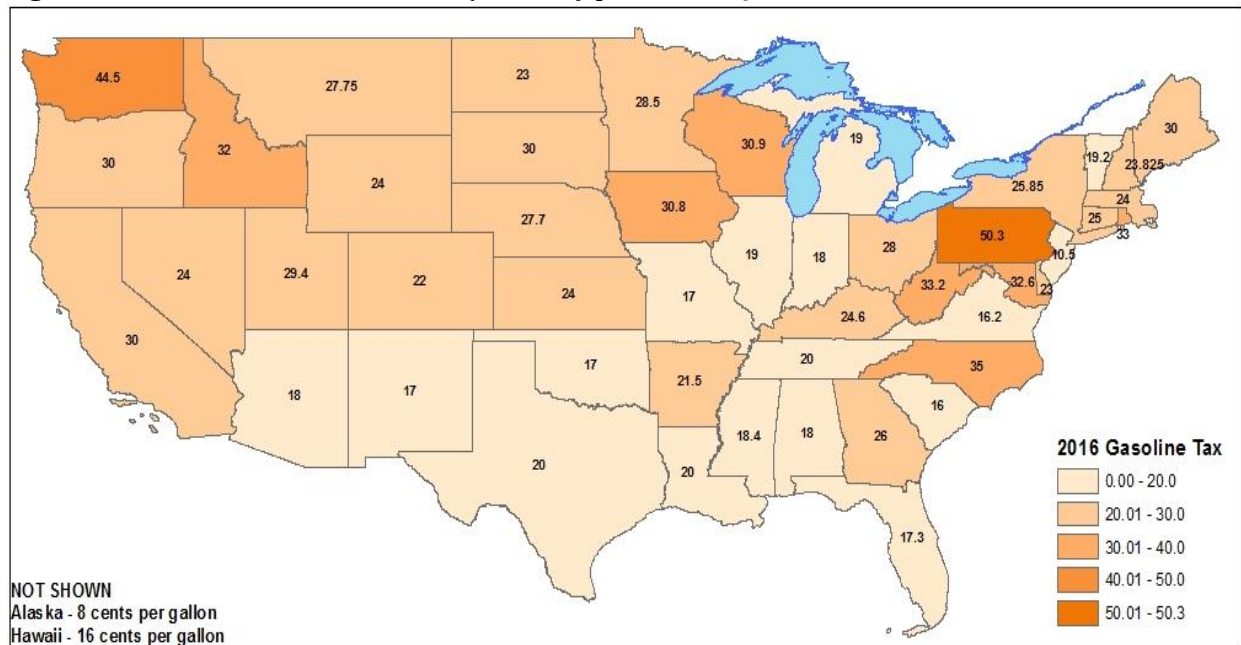
Motor Fuel Taxes in the United States

The primary source of transportation funding in the United States is the motor fuel tax. It was established by the Revenue Act of 1932, which created a 1-cent per gallon federal tax on the consumption of gasoline in the United States. The motor fuel tax - also known as the gas tax, fuel tax, or fuel duty tax - serves as a transportation user fee, which only charges those utilizing the infrastructure supported by the fee. The federal gasoline and diesel taxes currently stand at 18.4 cents and 24.4-cents per gallon, respectively.

Throughout the years, states have enacted their own excise taxes on gasoline and diesel fuel. Due to the opposition to tax hikes, 24 states have gone more than a decade without raising their fuel tax, including sixteen states that have gone two decades or more without an increase ([ITEP, 2014](#)). Recent efforts have been made by select states to raise fuel taxes in support of infrastructure investment. New Jersey recently passed a bill to significantly raise the state gas tax by 23-cents to 37.5-cents per gallon, which had not been increased in 26 years ([Pugliese, 2016](#)). Washington and Maryland are among other states that have recently passed legislation to raise their gas taxes.

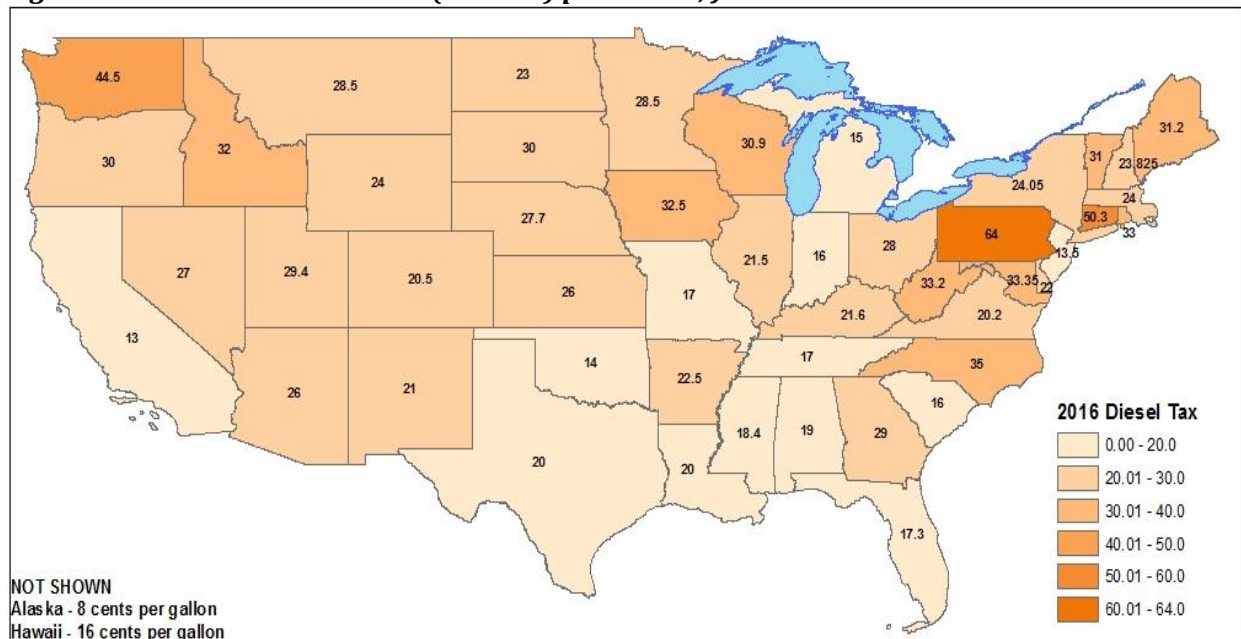
Figures 1 through 4 illustrate federal and state gasoline and diesel fuel taxes in 2016 and over time. As of January 2016, Pennsylvania had the highest state gasoline tax rate of 50.30-cents per gallon. Alaska, on the other hand, had the lowest state gasoline tax rate, at 8-cents per gallon. While the federal fuel tax remained stagnant, the average state gasoline tax rate increased from 19.05-cents in 1999 to 24.20-cents in 2016; similarly, the average state diesel tax rate increased by approximately 5-cents to 25.02-cents in 2016 ([FHWA, 2016\(a\)](#)).

Figure 1: State Gasoline Tax Rates (in cents) per Gallon, June 2016



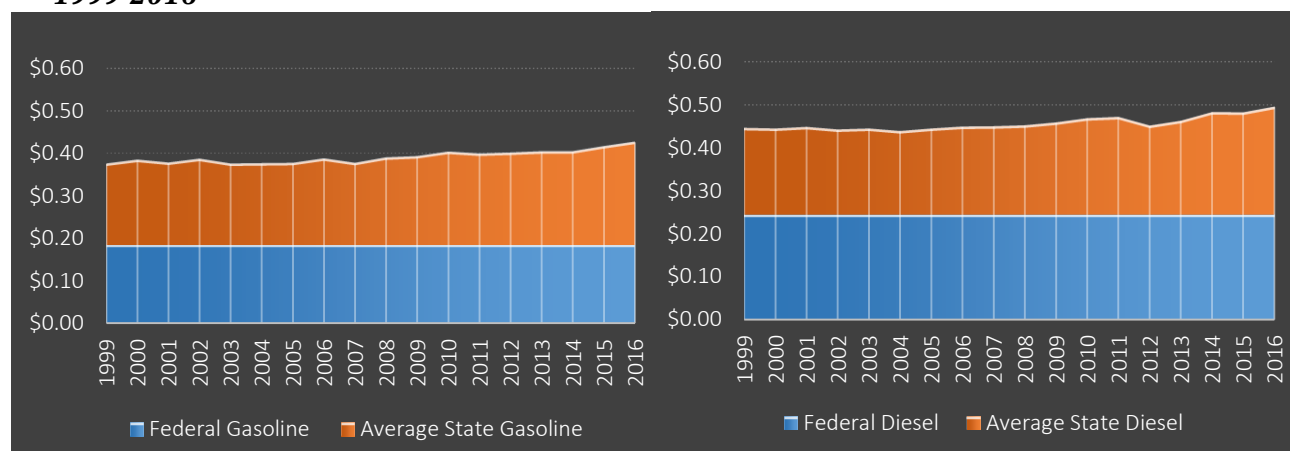
Source: January 2016 Monthly Motor Fuel Reported by States, by the Federal Highway Administration ([2016\(c\)](#)).

Figure 2: State Diesel Tax Rates (in cents) per Gallon, June 2016



Source: January 2016 Monthly Motor Fuel Reported by States, by the Federal Highway Administration ([2016\(c\)](#)).

Figures 3 & 4: Total Average Gasoline and Diesel Tax Rates per Gallon in the United States, 1999-2016

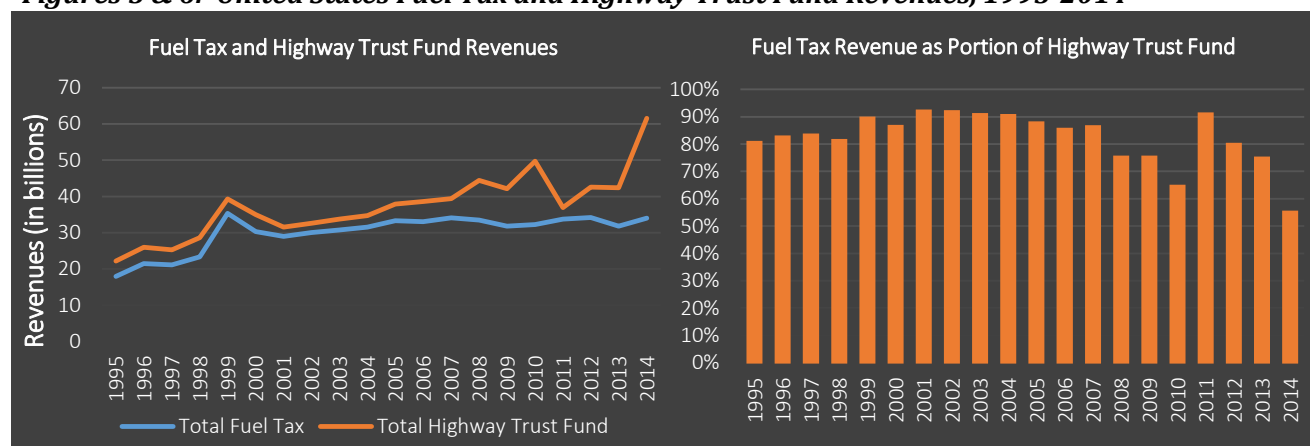


Source(s): "Highway Statistics Series," 1999-2016, by the Federal Highway Administration ([2016\(b\)](#)).

The revenue collected from federal fuel taxes is deposited into the Highway Trust Fund (HTF), which was established in 1956 to fund the construction of the interstate highway system ([FHWA, 2016\(e\)](#)). While fuel taxes served as the primary source of funding for the HTF comprising over 80 percent of its funding between 1995 and 2007, they have proven to be an unsustainable revenue source in recent years. Between 2008 and 2014, the HTF received \$65 billion from the U.S. Treasury's general fund to meet the fund's obligations, since annual spending for highways and transit began to exceed the revenues generated to maintain and expand the infrastructure ([CBO, 2015](#)).

Figures 5 and 6 illustrate the impact of fuel taxes on the HTF since 1995. Both the amount generated by fuel taxes and the total revenues of the HTF remained fairly consistent over time, until 2005; at that time, fuel tax revenues flattened out just above \$30 billion. Consequently, other resources, like the general fund, were required to make up the fuel taxes shortfalls.

Figures 5 & 6: United States Fuel Tax and Highway Trust Fund Revenues, 1995-2014



Source: "Net Revenues to the Federal Highway Trust Fund, 1995-2014" ([2016\(g\)](#)) by the Federal Highway Administration

The Shortfalls of Motor Fuel Taxes in the United States

While the gas tax remained a primary source of revenue and has been raised throughout its existence, the tax has not been increased for over two decades. The last federal increase occurred in 1993,

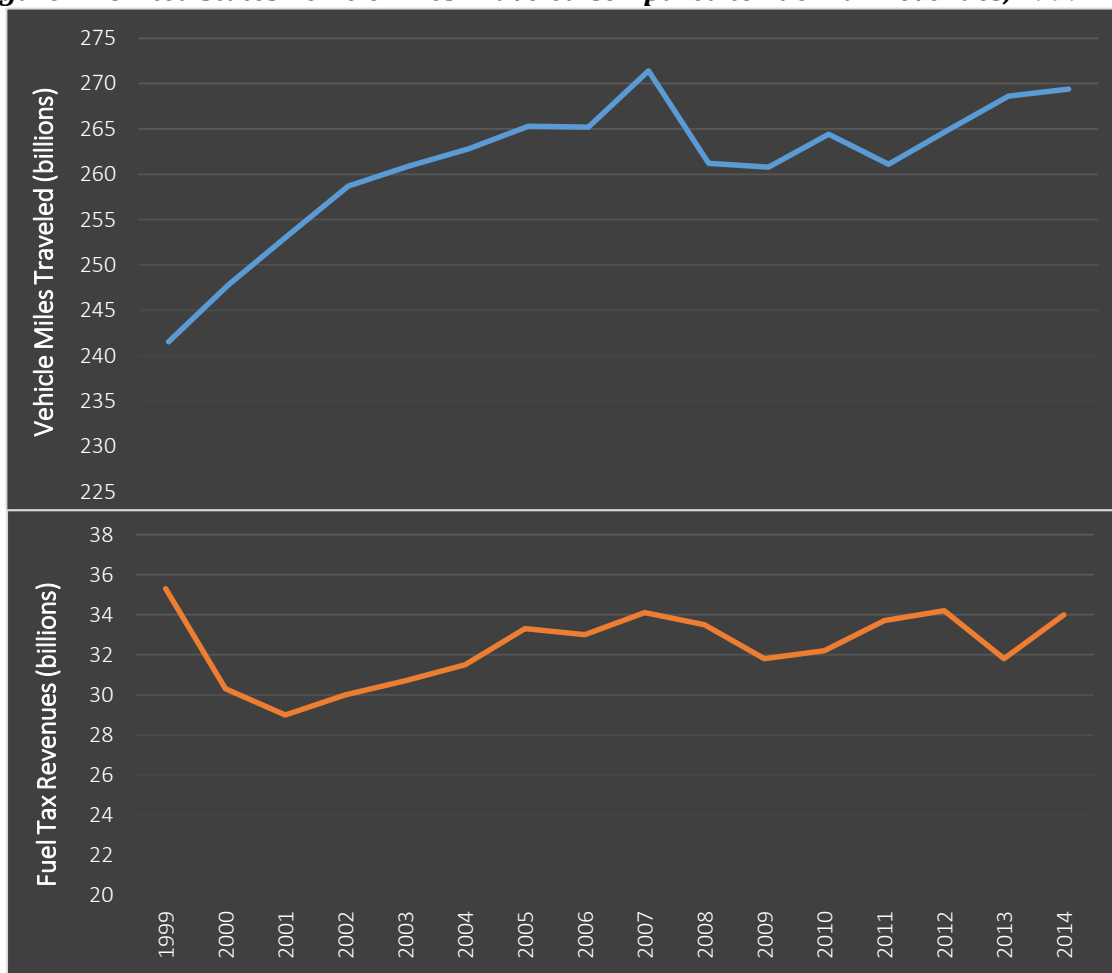
when the gasoline tax was raised by 4.3-cents per gallon ([Weingroff, 2005](#)). The major shortfalls that now plague the federal fuel tax are discussed on below, including stagnant revenues, inflation, and environmental standards.

Revenues

As described previously, the Highway Trust Fund can no longer depend on fuel tax revenues to match transportation needs. Figure 7 compares vehicle miles traveled in the United States to fuel tax revenues between 1999 and 2014. While it may be expected that an increase in travel would produce a surge in revenues due to the additional consumption of fuel, the relationship between vehicle miles traveled (VMT) and fuel revenues does not hold. As shown below, VMT steadily increased between 1999 and 2002, yet fuel revenues generally decreased in that same period; additionally, a steady increase in VMT between 2011 and 2014 resulted in varying, yet fairly consistent, fuel revenues.

Consequently, it is concerning that the primary source of transportation funding in the United States does not support increased infrastructure use. In August 1999, total VMT was only 204 billion miles; it increased to over 284 billion miles by August 2016. As the country's population continues to grow and require more from the transportation system, funding must be able to match the demand.

Figure 7: United States Vehicle Miles Traveled Compared to Fuel Tax Revenues, 1999-2014



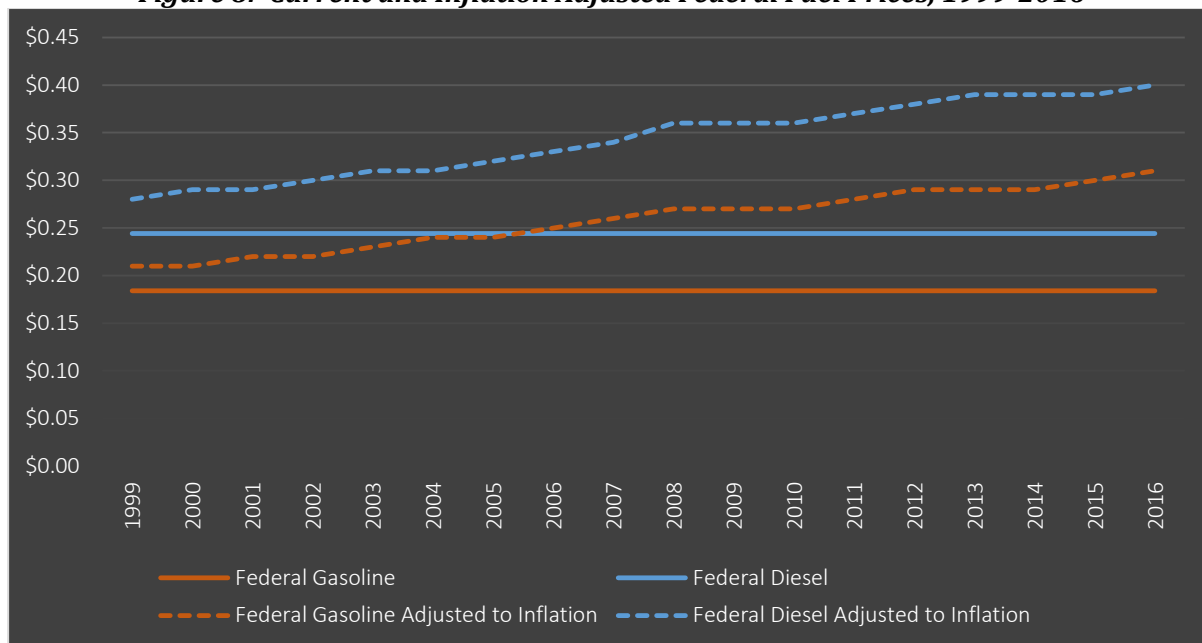
Source(s): "Traffic Volume Trends," 1999-2016, by The Federal Highway Administration ([2016\(h\)](#)); "Net Revenues to the Federal Highway Trust Fund, 1995-2014" ([2016\(g\)](#)) by the Federal Highway Administration

Inflation

In general, inflation is the largest factor impacting the declining purchasing power of fuel tax revenues over time. Figure 8 illustrates the comparison between current and inflation adjusted fuel tax rates. The federal fuel tax on gasoline would be 31-cents in 2016 if it had been indexed to inflation – almost 13-cents more per gallon. The federal fuel tax on diesel would be 40-cents a gallon in 2016 if the tax was pegged to inflation – almost 16-cents more per gallon ([BLS, 2016](#)). Eleven states, including Georgia, Kentucky, Michigan, and Massachusetts, passed legislation to index their state fuel taxes to inflation so the tax does not lose its purchasing power ([NCSL, 2016](#)).

Furthermore, while federal fuel taxes have remained constant since 1993, the costs of constructing and maintaining roads and bridges have not. The National Highway Construction Costs Index (NHCCI) is 13 percent higher today than it was in 2003 ([FHWA, 2016\(f\)](#)). Furthermore, the Institute on Taxation and Economic Policy found that transportation construction costs have risen by 63 percent since 1990 ([ITEP, 2014](#)). Without a comparable increase in fuel taxes across the nation, this inflation in construction costs has meant that a dollar of road funding does not go as far today as it did in 1999 ([ITEP, 2014](#)).

Figure 8: Current and Inflation Adjusted Federal Fuel Prices, 1999-2016



Source: "Highway Statistics Series," 1999-2016, by the Federal Highway Administration ([2016\(b\)](#)) and "CPI Inflation Calculator," 1999-2016, by the Bureau of Labor Statistics ([2016](#)).

Environmental

A variety of regulations have been implemented to improve the fuel efficiency of vehicles as a means to reduce CO₂ emissions. Most significant are the Corporate Average Fuel Economy (CAFE) Standards, which are fuel efficiency requirements for newly-built vehicles. In 2011, CAFE Standards went from 27.5 miles per gallon (mpg) for new cars to 30.2 mpg. By 2025, CAFE Standards are to be increased significantly, to between 46 mpg and 61 mpg, depending on the size of the passenger vehicle ([U.S. Department of Transportation, 2016](#)). Thus, motorists will, on average, fill up fewer times at the pump despite driving the same amount and their vehicles will cause the same amount of wear-and-tear on roadways that they do today. This exacerbates the funding gap, since transportation funds receive more gas tax revenue from vehicles with lower levels of fuel efficiency.

Motor Fuel Taxes on the International Level

Similar to the United States, motor fuel taxes are used worldwide as a source of revenue. Some countries, like Brazil, Canada, China, and South Africa, dedicate fuel tax revenues to road construction. Other countries, like Australia, England, Germany, and Italy, deposit fuel taxes into general revenue funds, where a portion of the revenue in the general fund pays for road construction. A variety of international countries also impose tollway fees, congestion taxes in large cities, carbon dioxide emissions fees, and private-public partnerships as mechanisms for maximizing revenues and investments in transportation systems ([Vary & Sousa, 2015](#)).

An analysis of four countries' demographics and transportation trends was performed to understand how the United States compares worldwide. As shown in Figure 9, the United States' combined federal and state gasoline tax is considerably lower than other developed nations. Consumers in the United States spend 85-cents less per gallon on gas taxes than those in Australia – the second lowest gas tax out of the five countries compared in Figure 9. A driver in the United States spends anywhere from \$1.56 to \$4.71 less per gallon on fuel taxes than a comparable driver in Germany, Japan, or the United Kingdom; to put that into perspective, the gasoline tax per gallon in Germany and the United Kingdom are 7 and 11 times greater than the United States' motor fuel tax.

Figure 9: Statistics by Country*

Country	Year	Population (millions)	Gas Tax per Gallon	Gas Tax Revenue (billions)	Gas Tax Revenue per Capita	Passenger Vehicles (millions)	Gas Tax Revenue per Passenger Vehicle
Australia	2014	23.5	\$1.29	\$14.0	\$596	13.3	\$1,053
Germany	2014	81.0	\$3.43	\$24.5	\$303	43.9	\$559
Japan	2010	128.1	\$2.00	\$24.7	\$193	60.5	\$408
United Kingdom	2011	63.2	\$5.15	\$45.0	\$712	28.5	\$1,579
United States	2014	317.8	\$0.44	\$75.0	\$236	252.0	\$298

*All country statistics are for the year specified. Thus, all demographics – gas tax per gallon, gas tax revenue, population, and number of passenger vehicles – for Australia are 2014 numbers, while numbers for Japan are 2010.

**The U.S. gas tax per gallon is calculated at the average combined state and federal gasoline and diesel tax in 2014.

Source(s): **Gas Tax Per Gallon and Gas Tax Revenue sources:** [ENO Center for Transportation](#) and the [Federal Highway Administration](#). **Population sources:** [Australian Bureau of Statistics](#), [The World Bank](#), [Statistics Bureau of Japan](#), [Office for National Statistics](#), and [U.S. Census Bureau](#). **Passenger Vehicles sources:** [Australian Bureau of Statistics](#), [BAST Federal Highway Research Institute](#), [Statistics Japan](#), [Office for National Statistics – Department of Transport](#), and the [Federal Highway Administration](#).

In general, consumers in the United States spend less on the use of transportation systems than those in other countries due to low fuel taxes. In fact, the United States raises the second-least amount of gas tax revenue per capita and the least amount of gas tax revenue per passenger vehicle of the five countries analyzed. Specifically, gas tax revenue per passenger vehicle in the United States is \$1,053 less than Australia and \$1,579 less than the United Kingdom. Even though the United States generates the most revenue from its federal and state fuel tax with an estimated \$75 billion in 2014 revenues, the country raises less for the population and registered passenger vehicles than comparable countries overall. This means that the United States has relatively fewer resources available to invest in a world-class transportation network to remain globally competitive.

It should be noted that each country raises and deposits transportation revenue differently. Australia, Germany, Japan, and the United Kingdom all have fuel taxes that support different funds in addition to transportation investment ([ENO Center for Transportation, 2014](#)). On the other hand, the United

States' dedicates its federal gas tax revenues toward transportation infrastructure with the Highway Trust Fund; however, how fuel taxes at the state level are spent is determined by the individual state.

Conclusion

Despite the differences in funding strategies for transportation investments across the world, the United States can learn from international policies supportive of higher motor fuel taxes. The United States currently does not have a gas tax rate that can sustainably fund transportation needs. Germany and the United Kingdom raise more money from their gas taxes than they spend on transportation investments. The United States must come up with new ways to generate additional revenue to address its transportation infrastructure deficit and create a budget surplus. Raising the federal gas tax rate would generate additional, needed revenue to fix crumbling transportation systems and build new transportation systems across America.

As vehicles become more fuel efficient and consumers require less fuel, revenues from gas taxes will continue to decline and construction costs will continue to rise, resulting in lower revenues to fund necessary transportation infrastructure projects. Countries across the globe and the United States must develop new resources to sustainably fund transportation investments over the long-run. Raising the federal fuel tax on gasoline and diesel is one possibility.

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