

## Tax Policies and Alternative Revenue Sources: State Responses to Declining Purchasing Power of Roadway Funding

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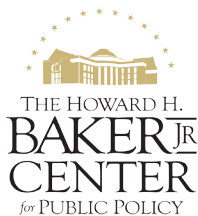
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## Tax Policies and Alternative Revenue Sources: State Responses to Declining Purchasing Power of Roadway Funding

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In the past three years, most states have increased or introduced new taxes in order to boost transportation funding. These policy changes are largely in response to the declining purchasing power of traditional transportation funds stemming from gasoline and diesel taxes. This report provides a brief update and overview of roadway funding in Tennessee, with an emphasis on the gasoline tax. The primary goal is to discuss roadway funding in other states, paying attention to the tax policies and alternative revenue sources that states are using in response to ongoing funding challenges. Lastly, we briefly discuss the strengths and weaknesses of these revenue mechanisms.<sup>1</sup>

### Roadway Funding in Tennessee

Tennessee's Department of Transportation (TDOT) had roughly \$2 billion<sup>2</sup> to use toward highway funding in 2014 which equated to about \$314 per person.<sup>3</sup> Approximately 46 percent of available revenues came from the Federal Highway Administration (FHA) while remaining revenues largely came from state revenue sources. Figure 1 shows the revenue sources for the state highway system which amounted to \$707 million<sup>4</sup> in the 2014-2015 fiscal year. Like other states and the federal government, fuel taxes are Tennessee's primary revenue source for roadway funding. The per unit gasoline tax, diesel tax, and special tax on petroleum together account for 63 percent of available funds. Motor vehicle registrations are the next largest contributor accounting for 31 percent of funds. Remaining revenues stem from the sales and use tax on aviation, rail, and waterway fuel diverted to the transportation fund, as well as gross receipt taxes and a portion of the beer tax.<sup>5</sup> Tennessee does not use any tolls, general funds, or debt financing for highway funding, and sales tax rates are not applied to fuel sales.

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<sup>1</sup> For background, see Baker Center Policy Brief 4.15, which describes the structure of transportation funding and recent funding conditions in Tennessee. The Brief can be retrieved from <http://bakercenter.utk.edu/wp-content/uploads/2015/11/Policy-Brief-4-15-Gas.11.24.15.pdf>.

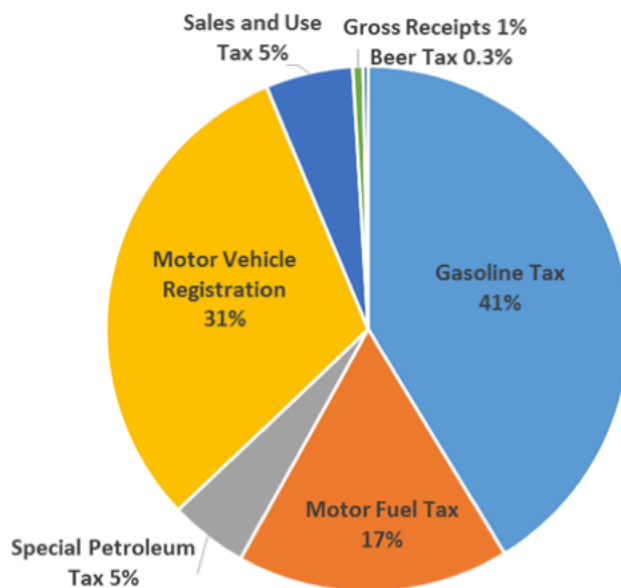
<sup>2</sup> Revenues for highway funding are from the U.S. Department of Transportation, Federal Highway Administration, *Highway Statistics 2014*, Table SF-1. Retrieved from <https://www.fhwa.dot.gov/policyinformation/statistics/2014/> on October 20, 2016.

<sup>3</sup> Estimated population is from the U.S. Census Bureau, American Factor Finder, Annual Estimates of the Resident Population: April 1, 2010 to July 1, 2015, 2015 Population Estimates. Retrieved from <http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=CF> on October 20, 2016.

<sup>4</sup> State of Tennessee, The Budget, Fiscal Year 2016-2017, Page A-65, Distribution of Actual Revenue by Fund, Fiscal Year 2014-2015. Retrieved from <http://www.tn.gov/assets/entities/finance/budget/attachments/2017BudgetDocumentVoll.pdf> on October 20, 2016.

<sup>5</sup> For additional details on transportation funding, see Tennessee Comptroller of the Treasury, Offices of Research and Education Accountability, *Tennessee Transportation Funding: Challenges and Options*, January 2015. Retrieved from <http://www.comptroller.tn.gov/OREA/PublicationDetails?ReportKey=57b20768-f541-4531-bfac-4746da14d85c> on October 21, 2016.

Figure 1: State Revenues for Highway Fund by Source, 2014-2015 Fiscal Year



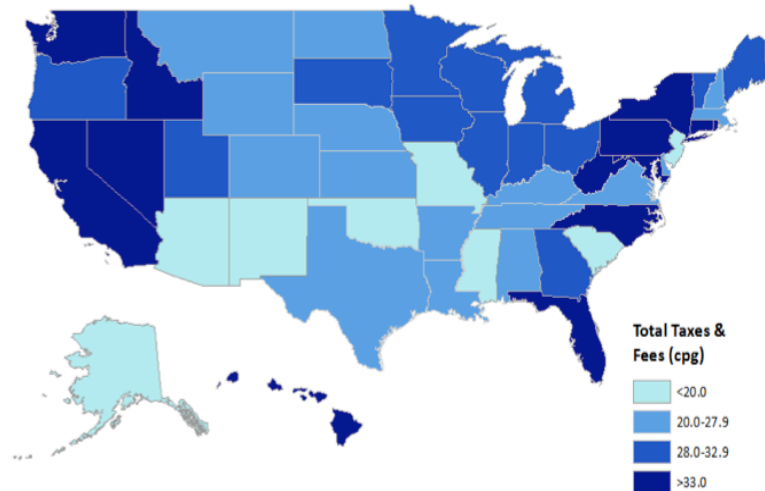
### Impacts of Inflation and Other Factors

At both the state and federal levels, fuel taxes have historically been the primary revenue source for transportation funds. Figure 2 below demonstrates how gasoline tax rates compare across states.<sup>6</sup> The federal tax rate on gasoline is 18.4 cents per gallon. Excluding the federal rate, the average gas tax imposed by states is 29.72 cents per gallon; the average for states in the southern region of the U.S. is 20.31 cents per gallon. Tennessee maintains a flat excise tax on gasoline of 21.4 cents per gallon that includes a one cent petroleum fee and a 0.4 cent environmental assurance fee. Tennessee has the 11<sup>th</sup> lowest gasoline tax rate<sup>7</sup> and is 6<sup>th</sup> lowest for its 18.4 cents per gallon diesel fuel tax. Fuel taxes make for an attractive user fee revenue source for states and the federal government as they are generally associated with relatively low administrative costs, risk of tax evasion, and compliance costs. Revenue streams tend to be more stable compared to taxes based on more volatile measures such as gas prices. Additionally, fuel taxes incentivize drivers to purchase more fuel efficient vehicles. However, Tennessee along with other states has experienced significant declines in the purchasing power of fuel tax revenues.

<sup>6</sup> Gasoline tax rates and rankings were obtained from the American Petroleum Institute (API) and provide a snapshot of gas tax rates as of 10/1/2016. For taxes or fees that vary across a state, a weighted average using population is used. Retrieved from <http://www.api.org/oil-and-natural-gas/consumer-information/motor-fuel-taxes> on October 21, 2016.

<sup>7</sup> Rankings are according to the American Petroleum Institute (API) as of 10/14/2016. Retrieved from <http://www.api.org/~media/Files/Statistics/State-Motor-Fuel-Taxes-Report-Oct-2016.pdf> on October 21, 2016.

Figure 2: Current State Gasoline Tax Rates (Includes Fees, Cents per Gallon)



Tennessee’s fuel tax is a flat excise tax that is a fixed number of cents per gallon; about three-fifths of states have a similar fixed tax rate on gasoline purchases. Given that flat excise taxes are not adjusted for inflation, gas tax revenues have been incapable of keeping up with rising prices, especially construction costs. The Consumer Price Index (CPI) increased by 67 percent from 1990 to 2010.<sup>8</sup> Construction costs have increased at an even faster rate. The Producer Price Index (PPI) for materials and supplies for highway and street construction increased by 95 percent over the same period.<sup>9</sup> Additionally, several states, including Tennessee, have not made changes to their fuel tax rates in years or even decades. Twenty-one states have not increased their gasoline tax rates in over a decade, and fifteen of those states have not increased rates in over two decades.<sup>10</sup> Tennessee last increased the gasoline tax in 1989 by four cents per gallon and the diesel fuel tax in 1990 by one cent per gallon.

As inflation and stagnant tax rates continue to threaten transportation funding, revenues are further strained by decreases in fuel consumption due to increases in fuel economy. Federal CAFE standards set for 2025 will mean significant advances in fuel economy and a further deterioration in the productivity of the traditional gasoline tax. Funding challenges are further exacerbated as states try to use deflated transportation funds to meet increases in demand arising from ongoing population growth. Tennessee’s population is expected to grow 9.9 percent between 2016 and 2025. In the presence of these funding challenges, the states have moved in a variety of directions. Several states have opted to increase their fuel tax rates, some have turned to alternative approaches to raise revenues like imposing the sales tax on fuel sales, while others are exploring innovative mechanisms like taxes on vehicle miles traveled.

<sup>8</sup> Consumer Price Index for All Urban Consumers was obtained from the U.S. Department of Labor, Bureau of Labor Statistics from <http://www.bls.gov/cpi/> on October 24, 2016.

<sup>9</sup> The Producer Price Index (PPI) for the highway and street construction industry was obtained from the U.S. Department of Labor, Bureau of Labor Statistics from <http://www.bls.gov/ppi/constructionupdate.htm> on October 24, 2016; however, the highway and street construction PPI was discontinued as of July 2010.

<sup>10</sup> Institute on Taxation and Economic Policy (ITEP)

## State Reactions to Declining Purchasing Power

Since 2013, 18 states have either increased their fuel taxes or restructured how their gasoline tax rates are determined (see Table 1).<sup>11</sup> Eight states— Idaho, Iowa, Massachusetts, Nebraska, New Hampshire, South Dakota, Washington, and Wyoming— have increased their per unit tax rate on gasoline. The average increase was 7.3 cents per gallon or about 40 percent of the overall average rate. Some states phased in gas tax hikes over several years (e.g., Nebraska and Washington). For example, Washington increased fuel taxes by 11.9 cents, of which 7 cents were applied in 2015 and 4.9 cents in 2016.

Ten states imposed some form of a variable tax rate which varies with inflation, the wholesale price of gasoline, fuel efficiency, or some combination thereof. Yet there is much variation in states' effective tax rates, how often the variable rates are updated, and the limits placed on the rates. Three states (Maryland, Michigan, and Rhode Island) elected to increase and index gasoline tax rates to inflation using the Consumer Price Index (CPI).<sup>12</sup> Four states (Pennsylvania, Utah, Vermont, and Virginia) either imposed or replaced per unit tax rates with a variable rate based on wholesale gasoline prices. To minimize revenue volatility from gasoline price fluctuations, many states establish a wholesale price floor, ceiling, or both, or regulate the magnitude by which the effective tax rate can change over a given period of time. Kentucky, for example, recently passed legislation that raised the floor wholesale price which equivalently set a minimum tax of 24.6 cents per gallon to prevent revenue cuts in the wake of falling gas prices. Georgia removed the sales tax component, changed the gasoline tax to a single excise tax, and indexed the higher rate to both inflation and average vehicle fuel efficiency. Lastly, North Carolina implemented a more unique tax structure as it imposed a fixed per gallon rate that is indexed to both population and inflation.

Massachusetts and Michigan are examples of states that attempted to implement variable gasoline tax rates, but either all or a portion of the initiatives were rejected or repealed by voters. Massachusetts increased their gas tax rate from 21 to 24 cents per gallon and planned to phase in indexing to the CPI, but the indexing portion was later repealed by voters via ballot initiative. Michigan voters rejected replacing the fixed fuel tax rate with a variable tax based on wholesale prices. However, recent legislation passed a 7.3 cent increase to the existing 19 cents per gallon tax, which will be indexed to inflation beginning in 2022.

Stable administrative costs make the introduction of new or higher existing fees an attractive source of additional transportation funding. Indeed, five states have increased registration fees since 2013 with Georgia doing so on the basis of weight for trucks.<sup>13</sup> While the former helps address overall funding needs, the latter tackles the differences in roadway usage: heavier vehicles do more damage to roadways than do light vehicles and weight-based registration fees reflect associated costs. In addition to heftier charges for vehicle registrations, 10 states have instituted larger registration fees for hybrid and electric vehicles, intended to recoup the funding forgone at the pump.<sup>14</sup> Georgia's HB 170 is the most recent to do so, instituting a \$200

<sup>11</sup> Data on gasoline tax changes were obtained from the National Conference of State Legislatures and state government websites.

<sup>12</sup> States indexing rates to inflation use the CPI for All Urban Consumers (CPI-U). No states currently index their rates specifically to inflation using other measures.

<sup>13</sup> Data on vehicle registration fee changes were obtained from the National Conference of State Legislatures and state government websites.

<sup>14</sup> National Conference of State Legislatures (<http://www.ncsl.org/research/energy/state-electric-vehicle-incentives-state-chart.aspx>)

Table 1: States that have enacted legislation that change or alter how gasoline tax rates are determined

Legislation	State	Year Legislation Passed	Description of Change
Increased fixed tax rate	Idaho	2015	Increased gas tax by 7 cents per gallon
	Iowa	2015	Increased gas tax by 10 cents per gallon
	Massachusetts	2013	Increased gas tax by 3 cents per gallon
	Nebraska	2015	Increased gas tax by 6 cents per gallon over six years
	New Hampshire	2014	Increased gas tax by 4.2 cents per gallon
	South Dakota	2015	Increased gas tax by 6 cents per gallon
	Washington	2015	Increased gas tax by 11.9 cents per gallon over two years
Increased tax rate and indexed to CPI	Wyoming	2013	Increased gas tax by 10 cents per gallon
	Maryland	2013	Indexed gas tax to CPI; Imposed a sales and use tax on motor fuel
	Michigan	2015	Increased gas tax; Beginning in 2022, tax will be indexed to CPI
Imposed variable tax rate based on gasoline prices	Rhode Island	2014	Indexed gas tax to CPI
	Pennsylvania	2013	Imposed percentage of wholesale price tax
	Utah	2015	Imposed percentage of wholesale price tax
	Vermont	2013	Imposed percentage of wholesale price tax
Indexed to inflation and fuel efficiency	Virginia	2013	Imposed percentage of wholesale price tax
	Georgia	2015	Imposed fixed tax rate; Indexed gas tax to CPI and fuel efficiency; Exempts fuel sales from state sales tax
Indexed to population and inflation	North Carolina	2015	Imposed fixed tax rate; Indexed gas tax to population and CPI
Established new limits for variable tax rate	Kentucky	2015	Raised floor on wholesale fuel price for variable gas tax

registration fee applied solely to electric vehicles.<sup>15</sup> Equity considerations suggest that these fees should be set to be approximately equal to what would be generated from a traditional gasoline propelled vehicle.

Traditionally, states have not had the ability under federal law to toll existing interstate highways, but new law instituted under the Moving Ahead for Progress in the 21st Century Act (MAP-21) in 2012 provided some leeway. MAP-21 made permanent a pilot program which allowed states to toll for new construction of highways, bridges, and tunnels. Lanes added to existing highways may now be tolled as high-occupancy toll (HOT) lanes<sup>16</sup>—lanes that are free for cars with multiple occupants, but may be used by less-crowded vehicles for a fee. The door is open for some tolling of federal highways, but the restricted nature means that more states have decided to increase or institute tolls on state roads instead. Since 2012, Delaware raised tolls on one of its state routes, and resolutions in Florida and Louisiana called for more tolling in general. Meanwhile Massachusetts and Ohio have enacted laws requiring more revenue be generated by existing toll roads, the latter of which will be used to pay off existing roadway debt.<sup>17</sup>

Though the majority of the twenty states making transportation funding changes have favored small tweaks to traditional mechanisms like indexing, some states are utilizing more novel approaches. In October of this year, Tennessee joined 36 other states in allowing public-private partnerships for infrastructure development. Public-private partnerships, or P3s, involve a shift in responsibility and risk for some portion of public infrastructure in return for some benefit,

<sup>15</sup> Transportation for America (<http://t4america.org/maps-tools/state-transportation-funding/>)

<sup>16</sup> For more information on changes to tolling regulations under MAP-21 see: [http://www.fhwa.dot.gov/ipd/revenue/road\\_pricing/tolling\\_pricing/](http://www.fhwa.dot.gov/ipd/revenue/road_pricing/tolling_pricing/)

<sup>17</sup> National Conference of State Legislatures Transportation Funding and Finance Legislation Database And Transportation for America (<http://t4america.org/maps-tools/state-transportation-funding/>)

often tolling. Private responsibilities can range from operation and maintenance of existing infrastructure to the building and subsequent management of new infrastructure.<sup>18</sup> Tennessee law currently limits P3s to potential public transit projects.<sup>19</sup> Colorado's US-36 project provides an example of successful roadbuilding using P3. Because maintenance consumes most of the Colorado Department of Transportation's operating budget, a P3 allowed the state to indirectly access private financing and widen the highway without waiting for revenue to flow in. Thus, the widening project was completed five years ahead of schedule.<sup>20</sup> In return, the concessionaire gets to collect tolls on the new express lanes for the next 50 years; tolls may grow to no more than \$14 per vehicle each way over that time period.<sup>21</sup> Tolls for the express lanes vary by time of day and number of passengers; carpools may use the lanes free of charge.

Charging users based on vehicle miles traveled (VMT) is perhaps the most precise conceptually sound way to fund roadways based on usage. The current gasoline excise tax used by 31 states and the federal government is intended as a user fee, since taxes paid rise with miles driven. However, this approach does not take into account individual vehicles' fuel efficiency, so revenue-per-mile varies by vehicle. Pilot programs in Washington, Oregon, and Iowa have tried different approaches to assessing a road use tax using VMT. Oregon currently offers their *OreGo* program, which charges drivers for the number of miles driven at a rate of 1.5 cents per mile, then credits the tax paid at the pump. Users may choose between GPS-enabled and basic devices; non-GPS enabled devices charge for miles driven out of a state. An earlier study utilized only GPS-based devices to track miles driven, but it was determined that a more privacy-friendly option should be offered.<sup>22</sup> The pilot program on which *OreGo* is based generated 28 percent more revenue than the existing excise fuel tax and was predicted to more than double revenue based on future fuel efficiencies of 40 mpg average.<sup>23</sup>

## Evaluation of Gas Tax Policies and Alternative Approaches

Following years of stagnant user fee rates, rising construction costs, growing populations and purchasing power erosion from inflation, the states are now looking for mechanisms to increase the productivity of revenue sources used to fund transportation infrastructure. The experience of the states shows the classic experimentation that takes place on an ongoing basis in our federalist system. States choose their own policy path based on their unique circumstances.

Changes to the gasoline tax have taken a variety of forms, including rate increases to enhance revenue yield, indexing of rates to maintain purchasing power over time and imposition of the sales tax to enhance revenue yield when prices are rising. A number of more complicated steps have been taken to protect transportation funds as well as consumers. It is clear from this brief presentation that there is no single-best means of enhancing the capacity to fund essential transportation infrastructure.

Tennessee is likely to be one more state looking for a solution to its funding problem in 2017. Policymakers and the public should evaluate the alternatives carefully since each will offer

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<sup>18</sup> For more details on the array of P3 types, see: [http://www.fhwa.dot.gov/ipd/p3/defined/om\\_concession.aspx](http://www.fhwa.dot.gov/ipd/p3/defined/om_concession.aspx)

<sup>19</sup> National Council on Public-Private Partnerships maintains up-to-date information on P3 legislation: <http://www.ncppp.org/tennessee-p3-bill-signed-into-law/>

<sup>20</sup> <http://www.denverpost.com/2015/06/22/u-s-36-first-phase-gets-send-off-from-local-state-fed-officials/>

<sup>21</sup> Colorado Department of Transportation's *Update on US 36 Public-Private Partnership: Understanding the Facts*.

<sup>22</sup> *Get in the Know with OreGo* Factsheet from the Oregon Department of Transportation.

<sup>23</sup> *Road Usage Charge Pilot Program 2013 Final Report* Oregon Department of Transportation.



unique strengths and weaknesses. Here are some of the things that should be considered in any evaluation of policy options.

- Transportation infrastructure provision is a primary responsibility of state governments in the U.S. *Adequately* maintaining revenues ensures provision of a system that can support commerce and recreation.
- Gasoline taxes and related levies are in the spirit of *user fees* that are intended to generate revenues from the primary beneficiaries of the transportation network. Nonresident individuals will contribute to funding Tennessee's roadways to the extent they purchase gasoline in state; interstate truckers pay tax to Tennessee based on miles driven in the state. This means that the state can *export* some of its user fee burden to nonresidents.
- Any new levies would give rise to new *costs of administration and compliance*. Some options, like a VMT tax, would entail substantial new costs as well as possible privacy concerns. Raising current rates, on the other hand, would entail no new costs. Imposition of the sales tax would be relatively straightforward since gasoline retailers are generally tasked with sales tax collection and remittance on non-fuel sales.
- The current system is *harmonized* across states, and for long-haul truckers, harmonized across North America. This system supports relatively low costs of administration and compliance.
- Vehicle miles traveled and gasoline demand are relatively *stable* from year-to-year but their growth is slowing and they may ultimately show contraction. Imposition of the sales tax can enhance *revenue yield* over time when prices are rising, even in the face of stagnant or mildly declining gasoline use. However, when prices fall, so do revenues. Together this can produce substantial *revenue volatility* over time. The potential for revenue volatility is a primary weakness of the sales tax applied to gasoline purchases.
- The forces that have contributed to the current funding challenge are not likely to change. If the state chooses to stick with per unit excise taxes, there will be ongoing pressures on the ability to fund infrastructure. The problems of *inelasticity* (i.e. weak revenue growth) and inadequate yield can be addressed through recurrent rate increases, indexing or some combination of the two.
- The current system of road user finance is relatively well known to individual and business consumers alike. This *transparency* is an important strength of the current system. Complicated mechanisms intended to jointly address revenue need and other policy objectives can weaken support for the system.