State Highway Funding in New England: The Road to Greater Fiscal Sustainability

Jennifer Weiner and Darcy Saas

STATES IN NEW ENGLAND AND ACROSS THE NATION ARE PROJECTING TRANSPORTATION FUNDING SHORTFALLS. THE STRUCTURE OF THE MOTOR FUEL EXCISE TAX — A KEY SOURCE OF HIGHWAY REVENUES FOR MOST STATES — IS WIDELY CITED AS A FACTOR CONTRIBUTING TO THESE GAPS. AS A FLAT, PER-GALLON LEVY, THE TRADITIONAL “GAS TAX” IS NOT FISCALLY SUSTAINABLE AS IT FACES EROSION FROM INFLATION AND INCREASED VEHICLE FUEL EFFICIENCY. WHAT OPTIONS DO STATES HAVE IN THE NEAR TERM TO SUPPORT MORE SUSTAINABLE FUNDING FOR HIGHWAYS OR OTHER MODOES OF TRANSPORTATION?

INTRODUCTION

There is general agreement that many of the region’s roads and bridges are in need of significant repair and improvement. According to the American Society of Civil Engineers, over half of public road miles in the New England states are in poor or mediocre condition. Furthermore, over ten percent of the region’s bridges are structurally deficient, while nearly one third are functionally obsolete.¹ There is concern that revenue sources will be inadequate relative to the projected expense of maintaining and keeping New England’s roads, bridges, and other transportation assets in good condition. How to address this challenge is largely a policy choice; a new report by the Federal Reserve Bank of Boston’s New England Public Policy

Centers seeks to inform discussions about transportation funding options. The report, State Highway Funding in New England: The Road to Greater Fiscal Sustainability, compares gas-tax structures in the New England states and examines alternative tax structures that could improve fiscal sustainability. This article is based on that report and explores challenges associated with relying on the motor fuel excise tax as a primary revenue source for transportation expenditures.2

A KEY, BUT CHALLENGED, REVENUE SOURCE FOR TRANSPORTATION

The motor fuel excise tax or gas tax has long been a key source of highway revenues for the federal government and most states. Motor fuel taxes — including taxes on gasoline and diesel fuel — are a large source of state highway revenues in New England. In fiscal year (FY) 2013, these levies represented nearly one-third to over one-half of own-source revenues for highways in the six New England states, with the majority of motor fuel tax collections associated with sales of gasoline. All six New England states levy an excise tax per gallon of gasoline sold. As of July 1, 2014, excise tax rates in the region ranged from 12.1 cents per gallon in Vermont to 32.5 cents in Rhode Island. Massachusetts’ excise tax per gallon was 24.0 cents per gallon, slightly more than the U.S. average, which was 20.9 cents per gallon (as of January 1, 2014).

Two of the most frequently cited criticisms of the gas tax in its common form relate directly to fiscal sustainability. First, revenues from a conventional flat-rate excise tax do not automatically grow with inflation, whereas the costs associated with maintaining, constructing, and reconstructing roads tend to increase as prices and wages rise. Second, as vehicle fuel efficiency increases, flat-rate gas taxes will generate less revenue for a given amount of road use than in the past. We consider each challenge in turn.

The motor fuel excise tax differs from other major taxes, such as general sales or income taxes, whose revenues tend to grow automatically with inflation due to the nature of their bases.3 The gas tax is typically levied as a flat tax per gallon sold. To prevent the value of traditional gas taxes from declining due to inflation, legislatures must actively and periodically vote to adjust the rates. That seldom occurs widely in practice. A 2011 report by the Institute on Taxation and Economic Policy (ITEP) noted that 14 states had gone at least 20 years without increasing their gas tax rates, and 26 states had gone at least 10 years. The federal gas tax, which is the largest source of funding for federal aid for highways, has not been raised since 1993, and many observers believe that it will not be raised in the near future, despite solvency issues facing the Federal Highway Trust Fund.

New England states have varied in their willingness to increase their gas tax rates over the years. At one extreme, nominal excise tax rates in Massachusetts and New Hampshire remained unchanged from the early 1990s until increases were adopted in 2013 (Massachusetts) and 2014 (New Hampshire). At the other end of the spectrum, Maine automatically adjusted its excise tax each year to the changes in the consumer price index (CPI), a common measure of general inflation, between 2003 and 2011, leading to small but steady rate increases during that period.

Like Maine, some other states have mitigated the challenges of inflation and effected regular adjustments to the tax through legislative processes by adopting such automatic adjustments to their gas tax rates, a process known as indexing.4 Massachusetts and Rhode Island recently (in 2013 and 2014, respectively) passed legislation to automatically index their excise taxes to the CPI in future years, joining Florida and Maryland, but Massachusetts voters repealed the indexing provision in a November 2014 referendum.5

Other states have adopted taxes whose rates are based on a percentage of the price of gasoline — a similar structure to a typical sales tax — to complement or even replace their gasoline excise tax. Among the New England states, Vermont levies two assessments tied to the retail price of
gasoline and Connecticut is the only state to levy a tax on the wholesale price of gasoline. As gas prices tend to rise over time, a price-based gas tax is likely to yield a more sustainable revenue stream than a traditional flat excise tax without requiring changes to the tax rate. Two potential drawbacks are that gasoline prices tend to be volatile and their long-term trends may not match up with trends in highway maintenance or construction costs.

The Center’s research illustrates that New England states that periodically increased their gas tax rate experienced less erosion in their gas tax revenues, as did the states that levy an additional tax on the price of gasoline. Figure 1 presents a cross-state comparison of inflation-adjusted gasoline tax revenue per 10,000 vehicle miles traveled in each New England state in 1993 versus 2012. Gas taxes in Maine, which employed automatic indexing for close to a decade, experienced small reductions (4.9 percent) in inflation-adjusted revenue per 10,000 vehicle miles traveled between the two years. Massachusetts and New Hampshire, the two states that did not adjust their tax rates over this period, saw the largest declines (37.9 and 32.2 percent, respectively). Connecticut and Vermont experienced less erosion primarily because of growth in revenues earned from their price-based taxes.

As noted previously, the second challenge to the fiscal sustainability of the gas tax is vehicle fuel efficiency increases. Rising fuel efficiency means that revenues derived from traditional gas taxes would decline even in the absence of inflation. Since 1993, the average fuel economy of all light-duty vehicles in the United States has grown from 19.3 miles per gallon to 21.6 miles per gallon in 2012.

To address this threat to fiscal sustainability, some analysts have proposed indexing gasoline excise rates to changes in average vehicle fuel economy. The idea behind this concept is that tax rates are periodically adjusted upward as vehicles become more fuel efficient, allowing states to retain some of the revenue they would otherwise lose due to decreased gasoline consumption. To our knowledge, no state currently employs this approach.

Over the past 20 years, inflation has played a more important role with respect to gas tax erosion than rising fuel efficiency and will likely continue to do so in the next few decades (see Figure 2). However, increasing federal fuel economy standards through 2025 and the growing availability of hybrid and electric vehicles suggest that rising fuel efficiency will represent a greater threat to gas tax revenue streams in the years ahead than it has in the recent period. Average on-road fuel efficiency among all light-duty vehicles is expected to reach 28.7 miles per gallon by 2025 and 37.2 miles per gallon by 2040 (gains of 33 percent and 73 percent over 2012, respectively).

Figure 2. Annual Inflation-adjusted Tax for Vehicle Traveling 10,000 Miles per Year at 18.4 Cents per Gallon Assuming National Average Fuel Efficiency

Source: Authors’ calculations using data from FHWA, BLS, CBO, and EIA. Methodological appendix available at www.bostonfed.org/neppc.

Note: Combined impact includes increased fuel efficiency of conventionally powered vehicles and increased presence of hybrid, electric, and other alternative fuel vehicles.
CONCLUSION

Shortfalls between projected transportation expenditures and projected transportation revenues are, at least in some sense, a policy choice. Policymakers have always had the option to raise more revenues or to shift spending away from other areas, including the general fund, to fund highways at the level necessary to maintain a state of good repair.

If states wish to promote more sustainable revenue streams for highways while continuing to rely on gasoline taxes as a major component of highway funding, it is important for policymakers to consider the dual revenue impacts of rising costs and improving gas mileage when evaluating policies to modify existing structures.

Darcy Saas is Deputy Director of the New England Public Policy Center at the Federal Reserve Bank of Boston.

Jennifer Weiner was formerly a senior policy analyst at the New England Public Policy Center at the Federal Reserve Bank of Boston and is now Research Economist with RTI International.

Learn more about the New England Public Policy Center through its website: www.bostonfed.org/neppc

Endnotes

1.) American Society of Civil Engineers. “2013 Report Card for America’s Infrastructure.”

2.) The full report is available at the Center’s website: www.bostonfed.org/neppc

3.) The dollar value of retail sales will tend to increase as prices rise, increasing general sales tax revenues even if the sales tax rate remains unchanged. Likewise, income tax revenues tend to increase as wage rates rise.

4.) Critics of automatic gas tax indexing have argued that lawmakers should be required to vote on any tax increase, whereas proponents contend that the automatic feature is necessary to maintain the value of the tax, given the political difficulty of raising the tax rate through the legislative process. Maine’s experience with automatic indexing presents an example of a potential middle ground. While indexing was in effect in Maine, the tax rate was automatically adjusted on an annual basis, but the legislature was required by law to vote every two years on whether to repeal the indexing measure (which it ultimately did). See Paul Carrier. “Boost in gas tax gets green light.” The Portland Press Herald. April 10, 2002.


6.) Because fuel efficiency growth in these states did not match the national average over this period, these states experienced less revenue erosion than suggested by Figure 2.

7.) U.S. Department of Transportation. FHWA. Highway Statistics, Table VM-1. Various Years. These estimates represent the ratio of actual vehicle miles traveled by light-duty vehicles (including hybrid, electric, and other alternative-fuel vehicles) divided by actual gallons of gasoline consumed. Increases in average fuel efficiency have not always been even, as they also depend on the mix of vehicle types. In some years during this period, average fuel efficiency decreased, reflecting a shift from more fuel-efficient passenger cars to less fuel-efficient light-duty vehicles, such as SUVs, mini-vans, and pick-up trucks.

8.) See O’Connell and Yusef (2013), and ITEP (2013).

9.) Another alternative, also previously used by Ohio and Michigan, would be to inversely link gas tax rates to actual gasoline consumption. See Bowman and Mikesell (1983).

10.) Estimates represent miles-per-gallon equivalents, which capture both conventionally powered and hybrid, electric, and other alternative-fuel vehicles. Sales of hybrid and electric vehicles in New England are expected to grow from 3.4 percent of total light-duty vehicle sales in 2012, to 4.7 percent in 2025, and 6.8 percent by 2040. See Energy Information Association. 2014 Annual Energy Outlook, Tables 48 and 59. This assumes that auto manufacturers are able to comply with Corporate Average Fuel Economy (CAFE) standards set by the Department of Transportation.