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Gas Tax Alternatives: Access User Fee and Potential Gas Price Effects Overview

Increased fuel efficiency, electric vehicle adoption, and changes in miles driven are among the factors driving volatility in revenue collected from the state motor fuels tax. **The regional and statewide business community in North Carolina has proposed an “access user fee” concept as a potential method of replacing the gas tax to modernize and stabilize funding for transportation.**

The scenario raises the question of how much of the savings from a repealed gas tax would result in cost savings to consumers at the pump and if it would have an impact on cross-border travel to buy gas. Based on prior research on pricing and consumer behavior:

- a *temporary* holiday from the current North Carolina \$0.405 per gallon gas tax would result in end-consumer savings between \$0.20 and \$0.35 (50% to 87% of the total cost savings) per gallon based on the experience of other states with temporary suspensions of the gas tax. *The potential long-term effect of a gas tax repeal on prices is unknown.*
- It is likely that a repeal of the state gas tax would result in limited increased purchases from out-of-state drivers, but those would most likely occur in areas with existing cross-state commuting patterns and not from active efforts of out-of-state drivers to drive more on North Carolina roads. *Despite anecdotal evidence, the observed rate of cross-state “price shopping” for gas is low.*

Background

In the proposed scenario, a user access fee would replace state gasoline taxes and the existing electric vehicle (EV) fee. In North Carolina in 2023, the state gasoline tax is \$0.405 per gallon. With fuel prices averaging between \$3.23 in North Carolina in March 2023¹, the state gas tax makes up around 13% of the total price paid by drivers at the pump, depending on price fluctuations. For comparison, 87% of the current retail price of gas is not part of the state gas tax. If the motor fuels tax were repealed under the access fee scenario, it raises the question as to whether the price paid for a gallon of gasoline would drop by the value of the tax (\$0.405 per gallon or around 13%) or if gasoline companies and wholesalers would absorb some or all the cost savings along the supply chain, ultimately passing the cost on to consumers. The evidence is mixed.

Short-Term Effects on Consumer Prices

In 2022, various states explored gas tax alternatives and gas tax holidays as a response to a spike in oil prices following the Russian invasion of Ukraine. By the end of the year, most of the gas tax holidays had expired or were repealed, but they offered insights into the effect of removing state gas taxes on a temporary holiday or short-term basis.

- In **New York** state, a temporary suspension of a \$0.16 gas tax between June and December 2022 resulted in an average price decline of \$0.08 relative to the national average, indicating that half

¹ <https://www.gasbuddy.com/gasprices/north-carolina>

of the potential savings to consumers were captured somewhere else along the supply chain. Independent research from Forbes and the nonprofit news agency New York Focus came to similar conclusions that only about half of the benefits from the temporary suspension of the gas tax resulted in cost savings to consumers²³.

- In **Maryland, Georgia, and Connecticut**, gas tax holidays went into effect in March 2022 and prices dropped below the national average, but not by the full value of the gas tax reduction. Modeling from the University of Pennsylvania Wharton Budget Model⁴ showed that in the short term, between 58% and 87% of the tax savings were passed on to consumers indicating some of the cost savings were absorbed in the supply chain.

In all states, the gas tax holidays resulted in small short-term benefits to consumers, saving them on average \$3 at the pump to fill up their tanks. They also resulted in losses in state tax revenue for transportation and transit projects, which typically rely on gas taxes for funding.

These cases reinforce the findings of the 2013 article from Doyle and Samphantharak showing the cross-state effects of a gas tax moratorium in **Illinois** and **Indiana** which showed that only about 70% of the cost savings related to a gas tax suspension were passed on to consumers⁵. They found the effect of cost savings to be less near the state borders, indicating that sellers were likely to raise their prices if they were across the border from a higher tax state, while still offering a lower price than the neighboring state. The research attributes some of the savings absorbed along the supply chain by a combination of:

- Higher prices charged by wholesalers and other supply chain actors in gas tax holiday states
- Higher demand for gas, as consumers drive more when prices are lower
- Gas stations near state borders raising prices to generate more profit from cross-border drivers. This was more likely to support reflect commuting patterns and not active price shopping for gas.

Summary: In the case of North Carolina, evidence shows that a temporary holiday from the \$0.405 gas tax would result in end-consumer savings between **50% and 87%** of the cost reduction or between \$0.20 and \$0.35 per gallon based on the experience of other states with *temporary* suspensions of the gas tax. As noted above, the potential long-term effect of a gas tax repeal on prices is unknown.

Cross-State Commuting Patterns

Research shows that consumers buy gas along existing commuting or travel routes and it is rare that drivers go farther distances or cross state borders to “price shop” for gas. Consumers who travel farther to purchase cheaper gas often end up offsetting their savings in consuming more fuel. Research from the Chicagoland area (Illinois-Indiana) finds that consumers would need to save between \$0.06 and \$0.08 per gallon to drive an additional mile to get to a gas station: in this case across the border in Indiana where fuel prices were lower than in Illinois. They found that there were few cases where drivers actively went

² <https://www.forbes.com/sites/rpapier/2022/12/05/did-new-yorks-gas-tax-holiday-save-consumers-money/?sh=b71f9ae2bb10>

³ <https://www.nysfocus.com/2022/10/26/most-of-new-york-gas-tax-holiday-savings-dont-go-to-new-yorkers-analysis-finds/>

⁴ <https://budgetmodel.wharton.upenn.edu/issues/2022/6/15/effects-of-a-state-gasoline-tax-holiday>

⁵ Doyle and Samphantharak, 2013. “\$2.00 gas! Studying the effects of a gas tax moratorium” Journal of Public Economics, Volume 104, August 2013, Pages 79-80 <http://dx.doi.org/10.1016/j.jpubeco.2007.05.011>

out of their way to cross the border to buy fuel on a regular basis, and they often reflected existing commuting patterns⁶.

Summary: In the case of North Carolina, it is likely that some increased sales would occur in areas with high levels of existing cross-state commuting patterns such as in the Charlotte Metro Area, but **it is unlikely that a shift in gas taxes will have a significant effect on sales or revenue of gas resulting from cross-state travel.**

For example. In 2019, the Census Bureau estimated that 58,000 people employed in Mecklenburg County lived in South Carolina while 23,000 people who lived in Mecklenburg County commuted to South Carolina⁷. The net of 35,000 South Carolina drivers entering the state regularly in Charlotte is not large enough to cause a significant shift in gas tax revenue – this represents less than 0.5% of the 8.5 million registered vehicles in North Carolina.

Long-Term Effects

The effect on prices of a long-term replacement for the gas tax is unknown. The Urban Institute, a think-tank, argues that lower fuel costs due to a tax rebate or repeal would result in greater demand, limiting the price benefit to consumers as people opt to drive more or drive instead of taking public transit⁸. A short-term gas tax holiday would drive actors along the supply chain to increase their prices to respond to the greater demand, but it is uncertain how it would have a long-term price effect.

The long-term effects on cross-state travel to purchase cheaper fuel are highly uncertain. In the last year, legislatures in Tennessee, Virginia, Washington Louisiana, and Oklahoma are considering alternatives to gas taxes in the wake of declining revenues, with tolling and Mileage-Based User Fees (MBUFs) as the most common alternative to per-gallon gas taxes. However, they face political headwinds in many states and generate questions related to privacy, enforcement, and mechanisms for collection. In future, it is likely the U.S. will see a patchwork of state laws changing the way fees are collected for road use as gas tax revenues are forecast to decline and fuel-efficient and electric vehicles become more common.

⁶ Manuszak and Moul, 2009. “How Far for a Buck? Tax Differences and the Location of Retail Gasoline Activity in Southeast Chicagoland”. MIT Review of Economics and Statistics, Volume 91, Issue 9. November 2009. Pages 744-765.
<https://doi.org/10.1162/rest.91.4.744>

⁷ <https://onthemap.ces.census.gov/>

⁸ <https://www.urban.org/urban-wire/ease-pain-pump-help-people-avoid-pump>