

The Takeaway

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The Effect of Gas Tax Holidays On Inflation Expectations and Consumption

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The COVID-19 pandemic and the Russia-Ukraine conflict triggered significant supply disruptions and skyrocketing gas prices. By the first half of 2022, the average price of gasoline had risen by over 50%. In response to these escalating prices, several U.S. state governors, alongside the federal government, contemplated temporary suspensions of the gas tax to mitigate the impact of these high prices. A distinctive feature of gas prices is that the price at the pump includes both federal and state-level gas taxes. Any changes in the tax rate are immediately apparent to consumers.

Although the idea of suspending gas taxes was considered in more than 25 U.S. states, only five—Maryland, Georgia, Connecticut, New York, and Florida—implemented such measures with what has been termed a “gas tax holiday”. Figure 1 illustrates U.S. gas prices alongside the commencement dates of each state's tax holiday. Maryland, Georgia, and Connecticut were the first three states to act. Maryland reduced its tax by 36.1 cents per gallon, Georgia by 29.1 cents, and Connecticut by 25 cents. New York followed with a 16-cent reduction per gallon between June 1st and December 31st. Lastly, Florida implemented a 25.3 cent cut in October.



WHAT'S THE TAKEAWAY?

Skyrocketing gas prices have politicians looking for ways to alleviate the cost at the pump.

There are wide variations in how much gas tax reductions are actually passed through to consumers.

States with pronounced pass-through rates saw more significant declines in both inflation expectations and consumption.

Research suggests that gas tax holidays may reduce consumption in lieu of savings.

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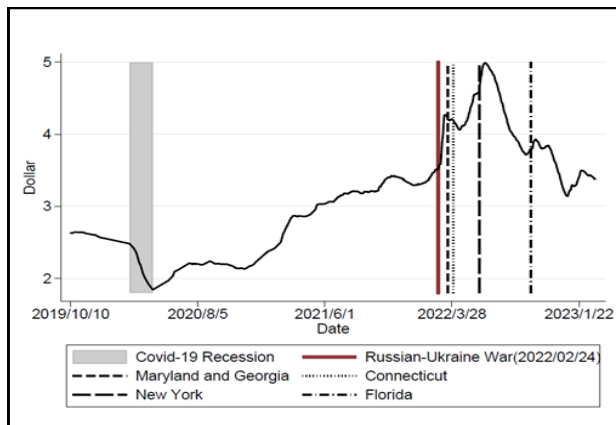
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Policymakers, however, may not have fully considered a critical dimension of gas prices—their influence on household inflation expectations and, subsequently, on consumption patterns. The dynamics between shifts in inflation expectations and consumption behavior remain a subject of on-

Figure 1: U.S. Average Regular-Grade Gas Prices



Source: Jo, Klopack, and Puller (2024)

going discussion. Existing research highlights the prominent role of gas prices in forming U.S. households' inflation expectations due to their prominent visibility.¹ Given that gas taxes account for a significant share of the retail gas prices in the U.S., their direct pass-through to consumer prices might substantially shape households' expectations regarding inflation. Before any policy action, the impact of a temporary gas tax reduction on inflation expectations and consumption patterns is not straightforward. A reduction in gas prices could, in theory, prompt consumers to adjust their inflation expectations downwards, aligning with prior findings. Yet, the temporary nature of such a tax reduction may result in unchanged or even escalated future inflation expectations. Therefore, our analysis aims to explore the implications of the gas tax holiday on both inflation expectations and consumption patterns.²

GAS PRICES AT THE PUMP

Let's begin our exploration by examining the impact of gas tax holidays on retail gasoline prices. If

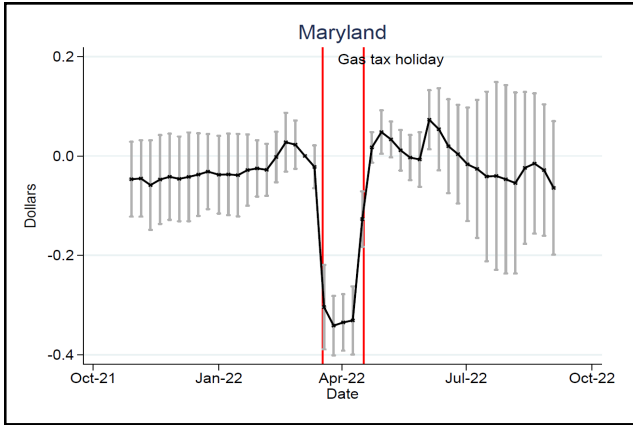
markets are imperfectly competitive, gas tax reductions may not be fully passed on to consumers, and the effect of the policy on inflation expectations may be blunted.

Figure 2A illustrates gasoline prices in Maryland compared to those in neighboring states, after controlling for time and state fixed effects. Prior to the tax holiday, Maryland's retail gas prices closely mirrored those of its neighbors. However, with the implementation of the tax holiday, prices in Maryland dropped almost immediately by an amount nearly equivalent to the tax reduction, maintaining lower levels throughout the holiday period. On average, gas prices during the holiday were 29 cents lower than in control states, indicating an almost complete pass-through of the 36 cent tax reduction.

Figure 2B presents the gas prices in New York during its tax holiday, juxtaposed with prices in neighboring states. Unlike Maryland, which enacted its tax suspension in March 2022 with immediate effect, New York's legislation for a tax holiday was passed in April 2022 but scheduled to start in June 2022. In the three months leading up to the holiday, New York's gas prices stayed comparable to those in adjacent states. About three weeks before the policy was set to take effect, the relative price in New York increased by about 10 cents, before dropping again as the tax was reduced by 16 cents beginning on June 1. Due to the prior increase, the drop in gas prices in New York, relative to neighboring states, was not as pronounced as in Maryland.

We estimate pass-through for the remainder of the states. Our findings indicate significant state-by-state variations in pass-through rates. Prices in Maryland fell by nearly 30 cents of the 36 cent tax decrease, implying a pass-through rate of 0.83. Florida reported a decrease of 20.8 cents per gallon, translating to a pass-through rate of 0.82 with a 25-cent tax cut. Georgia and Connecticut saw reductions of 18.1 and 13.9 cents per

Figure 2A: Gas Prices in Maryland



Source: Jo, Klopock, and Puller (2024)

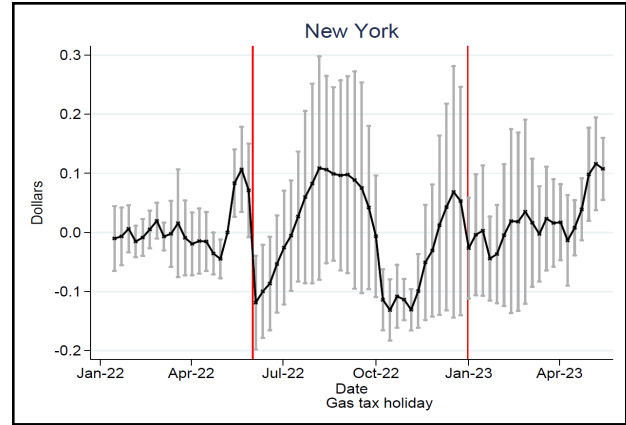
gallon, corresponding to pass-through rates of 0.62 and 0.56, respectively. New York, however, showed an almost negligible pass-through effect on its retail gas prices.

INFLATION EXPECTATION

We next assess the influence of the gas tax holiday on inflation expectations. Figure 3, with its blue bars, displays the estimated changes in inflation expectations across states that implemented the gas tax holiday. Our analysis predicts a decrease in inflation expectations by 0.49 percentage points in both Maryland and Florida. In contrast, Georgia and Connecticut are expected to see reductions of 0.37 percentage points and 0.33 percentage points, respectively, with New York showing only marginal changes. Notably, states experiencing a higher pass-through rate witnessed a more substantial drop in inflation expectations. This finding underscores the fact that the channel through which the tax cut can impact household beliefs is through prices.

To benchmark the magnitude of this effect, Figure 3 compares the predicted changes in inflation expectations (blue bar) with the predicted changes in expenditure-weighted inflation (red bar) attributable to the gas tax holiday. Utilizing data on gas price reductions during the tax holiday, we can compute the state-level change in the expenditure-weighted inflation rate. This comparison indicates that households tend to place greater importance on gas prices in shaping their inflation expectations than the actual expenditure

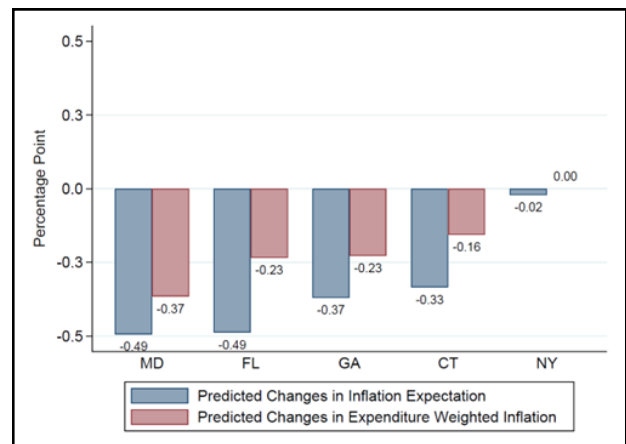
Figure 2B: Gas Prices in New York



Source: Jo, Klopock, and Puller (2024)

share of gas might suggest. Excluding New York, households in the treated states attribute, on average, a weight to gas prices in their inflation expectations that is 1.8 times greater than its share in total expenditures, which stands at 4.3%. This led to the gas tax holiday. Utilizing data on gas price reductions during the tax holiday, we can compute the state-level change in the expenditure-weighted inflation rate. This comparison indicates that households tend to place greater importance on gas prices in shaping their translates to households attributing 7.7% importance to gas prices in forming their inflation expectation.

Figure 3: Changes in Inflation Expectation



Source: Jo, Klopock, and Puller (2024)

CONSUMPTION

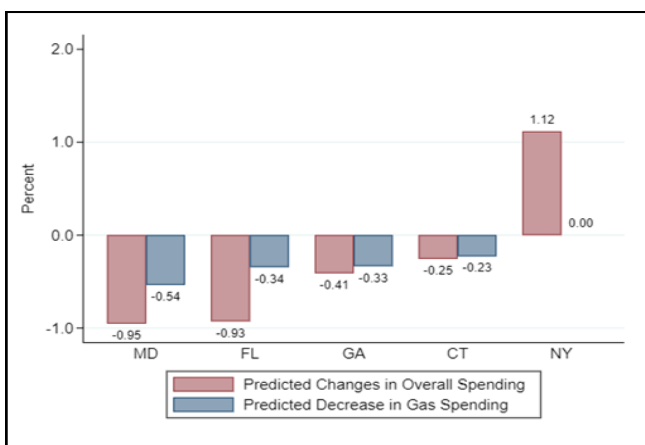
The effect of a reduction in the gas tax on overall consumption is theoretically ambiguous. Initially, there is an expected decrease in gas expenditure, due to its generally inelastic consumption pat-

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terns. Thus, a drop in gas prices from the tax cut should lead to reduced total gas expenditures. This reduction, in turn, could increase consumers' disposable income, potentially boosting overall consumption. However, an opposing effect may arise if the policy lowers inflation expectations, possibly leading to an increase in the perceived real interest rate and encouraging intertemporal substitution. Such a shift might make saving appear more advantageous than spending, thereby diminishing overall consumption.

The red bar of Figure 4 illustrates the predicted changes in total expenditure during gas tax holiday. Maryland and Florida, both exhibiting significant pass-through rates, experienced notable reductions in expenditures, unlike Georgia and Connecticut, where pass-through rates were lower. For instance, in Maryland, a 29-cent drop in gas prices correlated with a 0.95% decrease in total spending. In contrast, Connecticut's 13.9-

Figure 4: Changes in Overall Spending



Source: Jo, Klopach, and Puller (2024)

cent price reduction led to only a 0.25% fall in overall spending. This reduction in expenditures exceeds the predicted decrease in gas expenditure, represented by the blue bars in Figure 4. While the gas tax holiday aimed to lessen inflationary pressures on consumers and potentially boost consumption by increasing disposable income, the results suggest an unintended effect: by potentially elevating the perceived real interest rate, the tax holiday might have inadvertently encouraged greater household savings.

CONCLUSION

Our findings draw attention to potential unintended effects of the gas tax holiday policy. State governments enacted gas tax holidays largely as a measure to mitigate the effects of rising prices on households. We find evidence that in fact the policy may have reduced short-term expenditures. This may be an important consideration for local governments given potential impacts for local employment and other outcomes.

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Notes:

¹ A substantial body of literature underscores the pivotal role of gas prices in shaping households' inflation expectations. Notable contributions include Trehan (2011), Coibion and Gorodnichenko (2015), Binder (2016), and Kilian and Zhou (2022), among others, highlighting the consistent finding across various studies.

² The analysis presented in this Takeaway is derived from the research conducted by Jo, Klopach, and Puller (2024) in their study, "Fueling Expectations: The Causal Impact of Gas Prices on Inflation Expectations and Consumption."

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