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The Effects of Gasoline Taxes

Opposition to increasing taxes on gasoline is typically framed around the assertion that differences in state gasoline taxes lead consumers to cross state borders in pursuit of lower priced gas. This report examines whether that claim is supported by research that examines the effect of cross-border tax differences.

Will Consumers Travel Save Money on Gasoline?

The question regarding whether a consumer will travel to purchase gasoline is a complex issue. There are many variables affecting the outcome including distance, travel patterns and purchasing patterns.¹ Research has shown that consumers will cross borders for lower priced goods that can be transported, but, as scholars point out, the ability to transport gasoline is limited, thus reducing the economic incentive to travel across the border for lower fuel prices.

One study of consumer behavior in northern Illinois and Indiana found that there is some evidence that consumers will cross borders for lower gasoline if they live within a mile or so from the border. Their "results indicate that the willingness of a typical Chicagoland consumer to travel an additional mile to buy gasoline corresponds to about \$0.065 to \$0.084 per gallon."² This behavior, Manuszak and Moul conclude, is most likely to occur when the consumer is seeking other cheaper goods (in this study, cigarettes).³

Only a limited number of studies have researched the impact of gasoline price differentials within competing locales. Most of these studies have been completed in foreign nations (such as the Netherlands and Switzerland). The extent studies on cross-border fuel price differentials

¹ Mark D. Manuszak and Charles C. Moul, "How Far for a Buck? Tax Differences and the Location of Retail Gasoline Activity in Southeast Chicagoland," *Review of Economics and Statistics* 91 (2009): 4, accessed March 13, 2013, <http://www.mitpressjournals.org/doi/pdf/10.1162/rest.91.4.744>.

² Mark D. Manuszak and Charles C. Moul, "How Far for a Buck? Tax Differences and the Location of Retail Gasoline Activity in Southeast Chicagoland," p. 744.

³ Mark D. Manuszak and Charles C. Moul, "How Far for a Buck? Tax Differences and the Location of Retail Gasoline Activity in Southeast Chicagoland."

in other nations have come to the conclusion that price differentials do affect the behavior of consumers who live near the border.⁴

A 2005 report analyzing the 2000 suspension and later reinstatement of the gasoline sales tax in Indiana and Illinois focused on the relationship between the overall cost of gasoline on both sides of the border and the pass-through rate of taxes on gasoline (the actual amount of the tax that is passed on to the consumer through higher prices).⁵ The MIT researchers found a 60 to 80 percent pass-through rate of the gasoline tax and found that prices on both sides of the border responded to cross-border competition, helping to determine the pass-through rate of the tax.

Alm et al., analyzed monthly price data of gasoline nationwide between 1984 and 1999 and came to the conclusion that a “full shifting of gasoline taxes to the final consumer” in urban areas where competition is high, but a less than full shift occurs in rural areas. They also found that changes in the tax of gasoline “are reflected almost instantly in the tax-inclusive gasoline price,” as opposed to increases in retail prices of gasoline, which tends to have a more measured response to wholesale price adjustments.⁶

Proposed Gasoline Tax Increase in New Hampshire

During the 2013 session the New Hampshire State Legislature is considering increasing the state gasoline and diesel excise tax in order to improve roads and bridges. Both taxes would increase by 15 cents if the plans were approved. The taxes will increase in phases; gasoline will increase over four years, while diesel will increase over six years. On March 7, the House approved the bill by a vote of 207-163. The bill, HB 617, is now in the state senate’s Ways and Means Committee.⁷ In its current form, the New Hampshire State Senate is strongly opposed to implementing the new tax.⁸

Conclusion

Consumers are not motivated to drive far if the price of travelling exceeds the savings gained. Moreover, consumers are more likely to cross state borders for gasoline if they are also purchasing other cheaply priced goods. Commuters face a different set of circumstances as they may already travel across borders regularly for work purposes. Thus, these consumers are

⁴ Kusum Singh, “Cross Border Shopping: Implications for State Fiscal Competition in Multiple Tax Instruments,” (Ph.D. Dissertation, University of Kentucky, 2011), last modified 2011, accessed March 13, 2013, http://uknowledge.uky.edu/cgi/viewcontent.cgi?article=1162&context=gradschool_diss, pp. 70-71.

⁵ Joseph J. Doyle, Jr., and Krislert Samphantharak, “\$2.00 Gas! Studying the Effects of a Gas Tax Moratorium,” p. 6.

⁶ James Alm et al., “Perfect Competition, Urbanization, and Tax Incidence in the Retail Gasoline Market,” *Economic Inquiry* 47 (January 2009): 1, <http://onlinelibrary.wiley.com/doi/10.1111/j.1465-7295.2008.00164.x/pdf>, p. 131.

⁷ New Hampshire General Court, “Bill Status System,” accessed April 18, 2013, http://www.gencourt.state.nh.us/bill_status/Results.aspx?q=1&txtsessionyear=2013.

⁸ New Hampshire Public Radio, “How the North Country Reps Voted on Gas Tax Hike,” last modified March 7, 2013, accessed March 13, 2013, <http://www.nhpr.org/post/how-north-country-reps-voted-gas-tax-hike>.

not subject to the same variables. Thus far, there has not been much research done in the United States solely pertaining to gasoline price differentials and consumer behavior. However, abroad, several studies have concluded that consumers do take into account lower price differentials when deciding at what location to purchase goods.

This report was completed on April 23, 2013 by Michael Gibson, Lexi Carol Hanks and Matt Lauro in response to a request from the House Transportation Committee under the supervision of Associate Director Kate Fournier and Professor Anthony Gierzynski.

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