

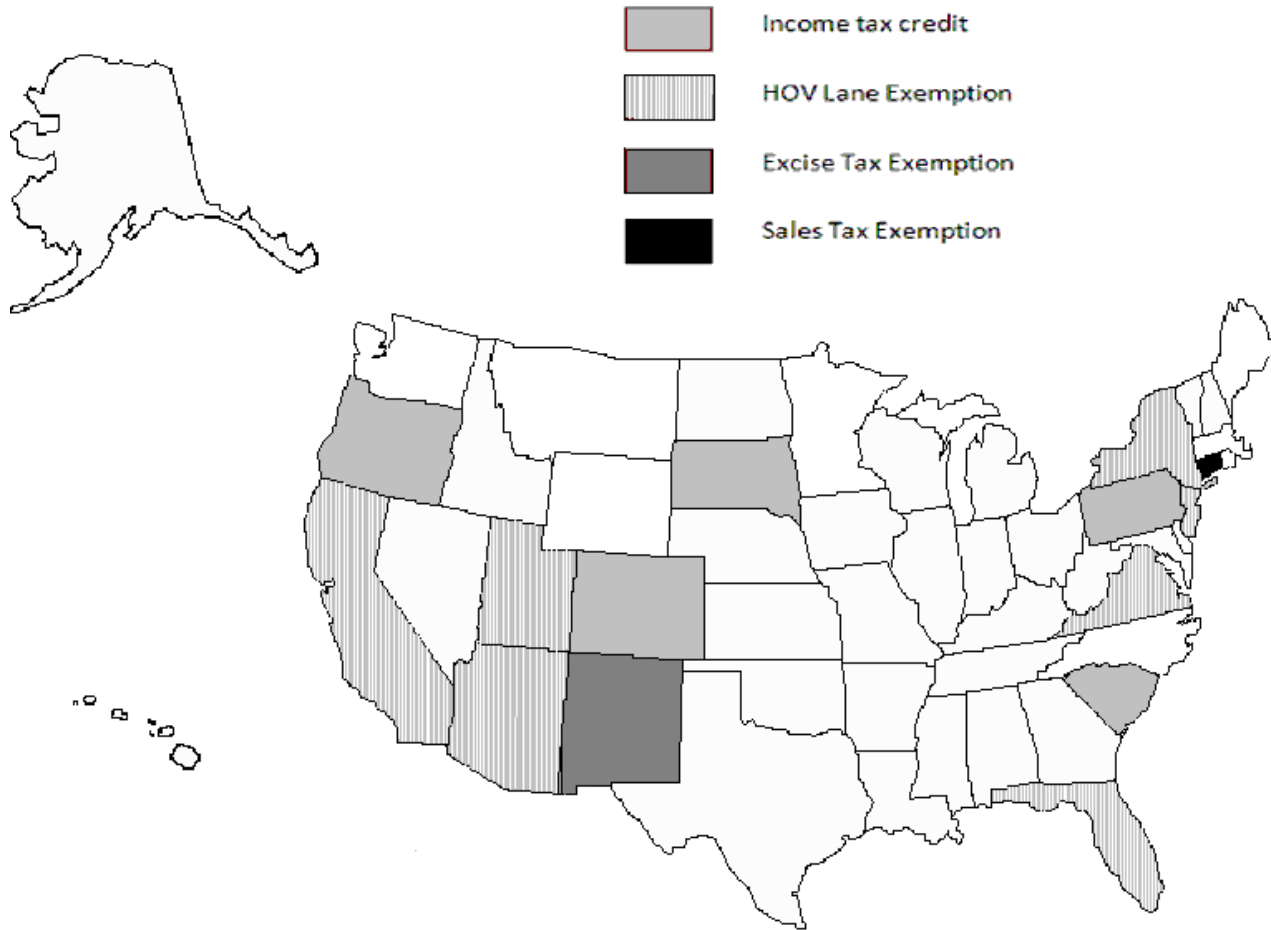
Using NHTS to Identify the Impact of Hybrid Electric Vehicles Incentives and the Determinants of Hybrid Vehicle Adoption

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Introduction

- Policy Evaluation
 - Are people living in states with hybrid electric vehicles(HEV) incentives more likely to purchase these technologies?
 - What are the characteristics of people who adopt these technologies?
- State level hybrid car incentives
 - Convenience incentive
 - Monetary incentive

State Incentives for HEVs, 2008



Introduction

- Previous evaluations of state level incentives for HEVs have been conducted on this topic, but mostly at the aggregate level
- Research into what characteristics predict adoption has been conducted
 - Attitudes found to be a predictor of adoption
 - In addition, socio-economic variables such as education and income

Preliminary Analysis

- Conducted at the individual level as to allow exploration of behaviors
- Merged NHTS with state-level incentive data and Texas Traffic Institute Traffic Congestion Index
- Logistic regression to identify the impact of incentives, traffic congestion, household demographics, and behavior on adoption
- Dependent variable – NHTS question – “Is (the vehicle) a hybrid or alternative fuel use vehicle?”

Preliminary Results

	Hybrid
	0.469
Sales Tax Exemptions	-1.36
	0.316
HOV Lane Exemptions	(2.02)*
	0.839
Excise Tax Exemptions	-0.36
Income Tax Credit	0.946
	-0.3
Traffic	1.299
Congestion	-1.01
HOV*(Congestion)	2.592
	(1.86).
Cost	1.118
	-0.84
Transit	1.308
	-1.57
Walkways	0.976
	-0.11
Aggressive	0.845
	-1.42
Number of times public transportation used (per month)	1.02
	(3.22)**
Number of walking trips (per month)	1.013
	(2.57)*
Household income	0.981
	-1.47
Education	1.074
	-1.66
Black	1.588
	(2.18)*
Observations	67407

The impact of HOV lane exemptions increases as traffic increases

Every public transportation or walking trip per month increases the odds that a person will purchase a hybrid

Discussion

- HEV incentives effective when they provide convenience incentive
 - In places where there is an HOV lane exemption, higher traffic increases the odds of adoption
 - Monetary incentives not significant
- Behavior most strongly predicts adoption
 - Behavior may capture the impact of environmental attitudes

Next Steps

- Data improvement
 - Re-evaluate hybrid variable
 - Perform analysis with the newly released NHTS version for better accuracy
- Methods
 - Regression Discontinuity Design
 - Without direction observation of treatment groups, assign treatment
 - vehicle model year can be used as a proxy for purchase date
- Additional Analyses
 - Explore the efficacy of HOV lane exemptions across income groups and other demographics

Thank you!

Questions or Comments?

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