

# Behavioral Responses to Increased Household Fuel Economy: Regression Discontinuity Evidence\*

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**PRELIMINARY: PLEASE DO NOT QUOTE OR CITE.**

## Abstract

Improvements in fuel economy reduce the price per mile of driving, potentially resulting in less than proportional reductions in fuel consumption due to behavioral shifts that “take back” some efficiency gains. A focus solely on this “rebound” effect, however, may be misleading, because a multi-vehicle household might additionally shift miles traveled between vehicles *within* its fleet. Exploiting plausibly exogenous variation in fuel economy induced by eligibility for the 2009 U.S. Cash for Clunkers (CfC) program, we use a regression discontinuity (RD) research design to investigate both the traditional rebound effect from reduced driving costs as well as this potential within-household substitution. We use rich administrative data for households purchasing cars in Texas to evaluate vehicle miles traveled and gasoline consumption in the years surrounding the 2009 program. The data show a clear first stage – households on the eligible side of the program’s cutoff experience a relative increase in the fuel economy of their fleet as compared to households that were ineligible. However, our RD approach finds that this improvement in fuel economy does not translate into additional miles driven: households on both sides of the cutoff change their annual VMT by similar and statistically indistinguishable amounts. Moreover, the RD estimates suggest a proportional reduction in fuel consumption, and that CfC-eligible households did not disproportionately continue to drive their older, less fuel efficient vehicles. These findings have important implications for other policies that target fuel economy, such as Corporate Average Fuel Economy (CAFE) standards.

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