

## What is the Effect of Fuel Efficiency Information on Car Prices? Evidence from Switzerland.

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### Executive Summary

- Inadequate information is often identified as a potential cause for the so-called “energy efficiency gap,” the sluggish pace of investment in energy efficiency technologies, which potentially affects a wide variety of energy-using goods, including road vehicles. Some observers suggest that providing clearer information about the energy efficiency of these goods should help reduce this problem.
- To improve the fuel economy of vehicles, in 2003 Switzerland introduced a system of fuel economy and CO<sub>2</sub> emissions labels for new passenger cars, based on grades from A (best) to G (worst).
- In this paper we ask two key, and related, research questions. First, is the fuel economy capitalized into the price of the cars sold in Switzerland? Second, does the label have an additional effect on car price, above and beyond that of fuel economy alone?
- We seek to answer these questions using price and car characteristics data for all cars approved for sale in Switzerland from 2000 to 2011. The prices are manufacturer-suggested retail prices—not the prices from individual transactions—and so our research documents the manufacturer- or auto importers expectations about fuel economy and labels.
- It should be kept in mind that Switzerland has a population of about 8 million, about 4.2 million passenger cars, and new car sales are about 250,000-300,000 each year. This is a small car market, and there is no car manufacturing in Switzerland: All cars are imported.
- We first estimate hedonic regressions which seek to relate price to car characteristics, such as make and model, weight, horsepower, etc., including the fuel economy. The results suggest that there *is* a fuel-economy premium, but do not allow us to identify whether the fuel economy labels have an additional effect on car price, above and beyond the effect of fuel economy.
- To circumvent this problem, we take advantage of the numerical scoring system that the Swiss Federal Agency applies, with no exceptions, to place each car in its label class. We reason that cars whose scores barely qualify for a better label, such as the A label, must be similar to those that barely miss it. Using this approach—a Regression Discontinuity Design—we estimate that the A label increases price by 6-11% compared to an otherwise identical car that does not attain this label.
- We also pair A-label cars with a “match”—a similar car that does not make the A label. Matching estimators find this effect to be 5%.
- Our results suggest that automakers and auto importers believe that at least some consumers will be willing to pay more for a more fuel efficient car, and point to another opportunity yet for producers to engage in strategic behaviors when it is not possible for them to manipulate the product themselves.