

Vehicle Fuel Efficiency and other Vehicle attributes

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Since the seminal works of Court (1939) and Griliches (1961), economists have analyzed vehicle markets, uses and policies by applying the hedonic price approach that links together vehicle prices and their attributes. Particular attention has been paid to automotive fuel efficiency. Unfortunately, attribute price estimates are plagued by multicollinearity of attributes. There is a simple reason for the strong multicollinearity. Vehicles have two basic elements: horsepower and weight and all the other attributes come from various engineering combinations of these two elements.

In this paper, we build on the hedonic price model developed by Atkinson and Halvorsen (1984) and analyze the effects of fuel price and wealth on automotive fuel efficiency and costs while considering horsepower and weight as the basic attributes. The model is estimated from two cross-sections: 1999 and 2003, new vehicles sales in Canada. We find that vehicle fuel efficiency has a unitary elasticity with respect to fuel price with no impact on vehicle cost. Wealth has a negative impact on vehicle fuel efficiency and a positive one on cost.