

Would my driving pattern change if my neighbor were to buy an emissions-free car?

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Abstract

Several countries now promote purchase and use of green (emissions-free) cars through financial as well as non-financial incentives. The aim is to reduce the number of brown (polluting) cars on the road. We study how such incentives affect non-targeted consumers, that is, consumers who continue to drive a brown car. Using a simple model, we analyze the effects of policy instruments such as subsidizing green cars, taxing brown cars, and allowing green cars to drive in the bus lane. In our model, car owners are influenced by price incentives, but also by external effects from traffic (such as congestion) both in the regular lane and in the bus lane.

An extension of this model also considers how change in local driving habits affects brown car driving. We find that both subsidizing green cars and allowing green cars to drive in the bus lane might increase brown car driving, which is an unintended effect of the environmental policy. The results are tested on survey data for brown car owners. While most respondents report that their driving is unchanged due to policies to promote green cars, some respond that they reduced or even increased their driving. Increased driving is more likely to happen for those living in or around big cities, which is in line with the theory as they are more exposed to green cars.