

Summary

Who goes electric? Characteristics of electric car ownership in Norway 2011-2017

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This report characterizes owners of electric vehicles and other passenger cars in Norway based on data from matched administrative registers containing persons and households covering the period 2011-2017. This is the first time such data has been used in a research project on electric vehicles and policies to stimulate purchase and ownership of electric vehicles. We find that electric vehicle owners are more likely to be families with children, live in central areas and have high income and higher education compared to other car owners. Those who face road tolls on their commute to work are also more likely to have an electric vehicle. Over time, owners of electric vehicles have become more similar to other vehicle owners. Those who buy an electric vehicle are more likely than other car buyers to keep their old car, but also this difference has decreased over time.

We describe the anatomy of electric car ownership in Norway, the leading country in terms of the market penetration of low-emission vehicles. We use matched administrative micro data covering the entire population of private car owners in the country.

The results show that socioeconomic characteristics are strong predictors of the car portfolio, and that battery electric vehicle (BEV) ownership increases with income and education, and is higher among families with children living at home. While BEV pioneers were particularly selected, BEV owners have become more similar to other car owners over time. We document large geographic differentials in BEV ownership, partly due to a strong association between BEV ownership and certain incentives affecting the journey to work, such as toll road exemption and access to the bus lane.

The extent to which BEVs crowd out traditional cars is of major importance to the total emissions. In a study of car portfolio adjustment, we show that BEV buyers are less likely than other car buyers to sell their old car, but this difference has diminished over time.

The relationship between electric vehicle ownership and income has received considerable attention. When comparing across all vehicle owners, BEV ownership is more concentrated among the richest households than ownership of traditional vehicles with and internal combustion engine (ICEVs). However, when only comparing owners of new cars, the difference is smaller. When new car ownership is measure by the value of the car, we find a strong positive relationship between household income and money spent on buying new ICEVs as well as BEVs, as expected.