

## Taxes, Tesla, and Government Takings

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## Extended Abstract, January 4, 2018

In December of 2015, the Tesla Model S - an expensive, fully electric luxury sedan - was the best-selling personal vehicle in Denmark. It is unusual that a luxury car was a best seller. It is even more unusual that it was an electric car. Indeed, this was the first time an electric car had topped sales charts in any major market (Electrek 2016).<sup>1</sup> Immediately following the sales surge was a dramatic sales ebb. Very few new Tesla's were sold in the first six months of 2016. The reason for this dramatic variation in the Tesla market was a change in tax law passed by the Danish parliament in October 2015. The law ended a sales tax exemption for alternative-fuel vehicles. Buyers rushed in to purchase and register their Tesla's before the new tax regime took effect on the 1st of January 2016. In this paper we document the market's reaction to the tax policy change - in particular the surge in sales of new Tesla's in late 2015, and the reaction of the used car market in 2016. Using data we scraped from the most popular online used car marketplace in Denmark, we document how prices and characteristics of listed used Tesla's changed from 2015 to 2016. We will use this data to look for evidence of speculation that is registering Teslas before the tax change and selling them afterwards for a profit. Naturally some of the Teslas purchased were tax arbitrage by consumers who wanted to avoid taxes themselves.

The Danish government chose to announce the tax change well before the change was implemented. A natural question is which parties benefited from the way the tax change was rolled out. We will argue that there is little evidence of speculation on the used car market. Controlling for many observable characteristics, the price of used Tesla's increased in this period. Instead, our evidence is consistent with the idea that consumers who were planning on upgrading to a newer model of Tesla in 2016 instead upgraded in 2015, listing their older model on the used car marketplace. There it is likely that final consumers of new Tesla's gained from the tax rollout. They were able to avoid the new tax by purchasing in 2015. The big loser in our calculations is the government.

By announcing the tax change in advance, the government lost revenues from sales. We perform a back of the envelope calculation, and find that the government's losses were on the order of hundreds of millions of Danish Kroner (tens of millions of Euros). Our baseline estimate is that the government lost more than 350 million Danish Kroner. Since those that would have paid the taxes are purchasers of luxury vehicles, the rollout of the tax change might be thought of as a subsidy to the wealthiest Danes.

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<sup>1</sup> Tesla was producing only 1000 Model S's a week in 2015  
<https://transportevolved.com/2015/05/06/tesla-motors-posts-q1-2015-losses-due-to-strong-dollar-high-capital-expenditures-hits-1000-carweek-model-s-production/>