

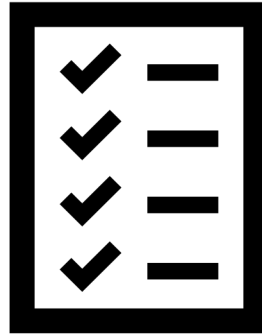


Introducing a Mileage Tax for BEVs Preferences for Tariff Systems and Distance Measurement

Alessio Levis

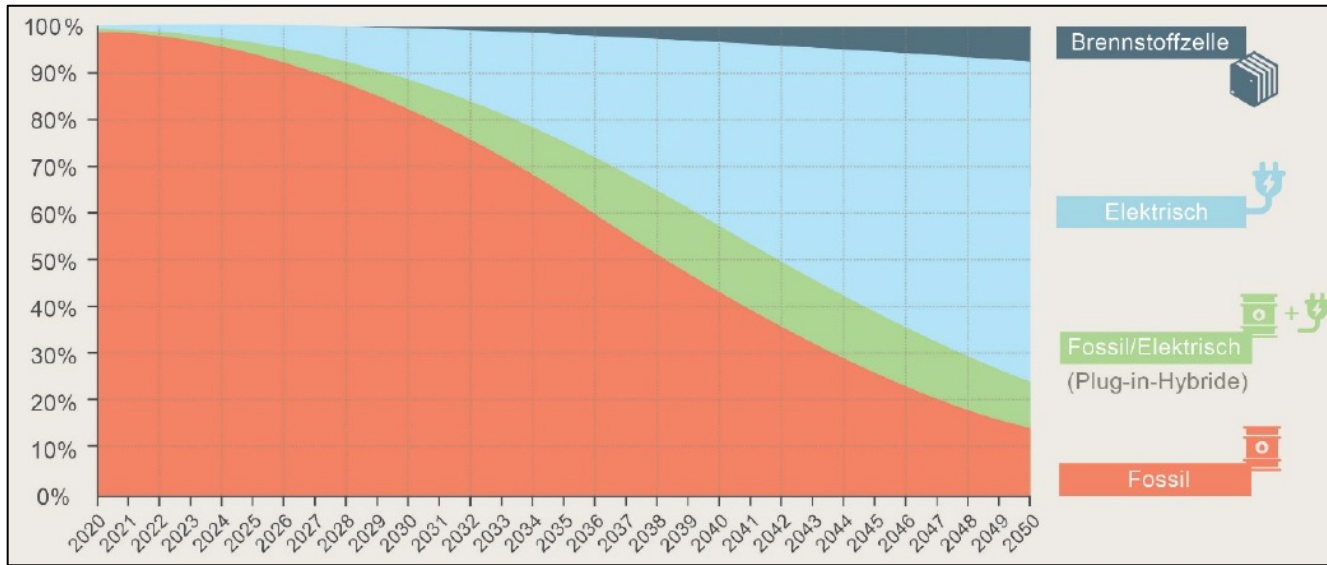
Doctoral Student, ETH Zürich

24.10.2023



Why we should study public support for a mileage tax for BEVs

Mileage Tax for BEVs – Electric Car Adoption



<https://www.astra.admin.ch/astra/de/home/themen/strassenfinanzierung/nachhaltige-finanzierung.html>

New mileage tax: Public opinion for referendum and consumer behaviour

- Average of 540 passenger cars per 1000 inhabitants
- 80% of households have at least one car
- 5.5 millions entitled to vote

Dilemma: Voters and car owners are very sensitive to increased costs

Mileage Tax for BEVs – Increased Costs with Mileage Tax

Costs
69 Rp./km

10 Years/150k km
103k CHF

Tesla Model 3 Long Range 4x4



Costs
75-80 Rp./km

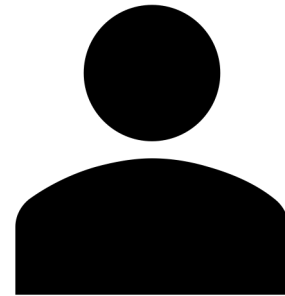
10 Years/150k km
112-120k CHF

<https://www.tcs.ch/de/testberichte-ratgeber/ratgeber/elektromobilitaet/kosten-elektroauto.php>

Mileage Tax for BEVs – Need for Research

Political Feasibility is important!

- Referendum as *Damoklesschwert* in Swiss politics
- Consumer behaviour by car owners is crucial for achieving net-zero target by 2050
- Worldwide hot topic with various countries facing similar challenges



The Swiss Mobility Panel



Schweizer Mobilitätspanel

Panel suisse de mobilité

Panel svizzero sulla mobilità

Swiss Mobility Panel

ETH zürich **ISTP**



Prof. Dr. Kay
W. Axhausen,
PI



Prof. Dr. Thomas
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Dr. Keith Smith,
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Florian Lichtin,
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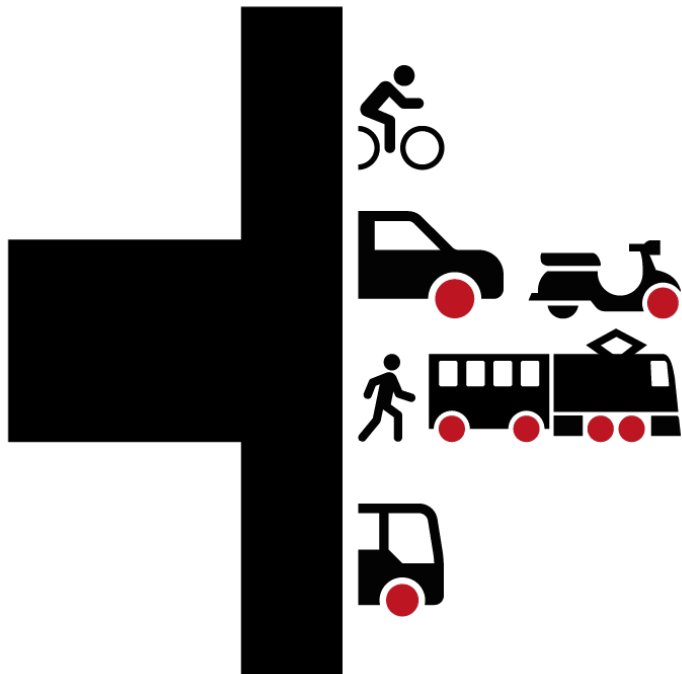


Lea Stapper,
Doctoral Student

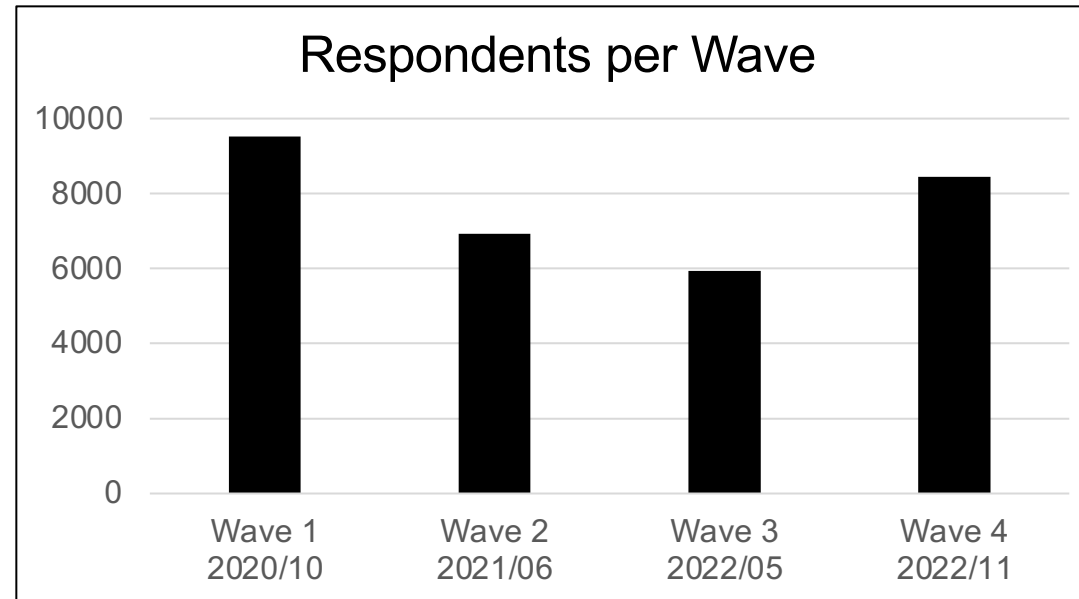


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Swiss Mobility Panel – Info



- Sample of 8'500 nationally-representative Swiss residents
- Online, panel survey (within-subject)
- Geo-referenced data (residential location)



Wave 5 – Mileage Tax Experiment Flow

1. We ask respondents mobility related questions
2. We tell respondents how mineral oil tax revenues are decreasing
3. We then continue by showing respondents how a new mileage tax could be designed
 - Tariff system (4 different systems)
 - Measurement method (3 methods)
4. Present respondents two proposals that show random combinations and ask them to decide for a proposal
5. Measure follow-up items

Wave 5 – Mileage Tax Experiment Conjoint

| Tariff System | | | |
|------------------|--------------------------|--------------------------------|---|
| <u>Flat-rate</u> | Depends on <u>weight</u> | Depends on <u>engine power</u> | Depends on <u>weight and engine power</u> |

| Measurement of Driven Kilometres | | |
|----------------------------------|--|---|
| <u>GPS</u> device | <u>Annual check</u> at road traffic office | Send <u>picture</u> of odometer with mileage to road traffic office |

Mileage Tax for BEVs – RD & Analysis

What are we interested in?

- Effect of policy design on support rates?
- Effect explained by (1) fairness, (2) privacy concerns and (3) convenience considerations?
- Do intentions to buy an electric car in future change with new mileage tax?



Questions?