

Party Politics and Transport Policy Reform

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Introduction

- ▶ Growing concerns about environmental impact of human activity, including in transport sector
- ▶ Excessive car-dependence of transport systems ([World Bank, 2017](#)).
 - ▶ Congestion major determinant of travel delays in large cities ([Akbar et al., 2023](#)).
 - ▶ Emissions cause hundreds of billions of USD in health costs, many premature deaths ([OECD, 2016](#)).

Introduction

- ▶ Excessive car use linked to negative externalities ([Small and Verhoef, 2007](#)).
- ▶ Need policies that align the private and social costs of travel
 - ▶ Road pricing, carbon and fuel taxes, subsidies to alternative travel modes, etc.
- ▶ However, governments often lack will to implement necessary reforms
 - ▶ Backlash against green policies (Germany, US...)
 - ▶ Tendency towards inaction (e.g., road pricing)

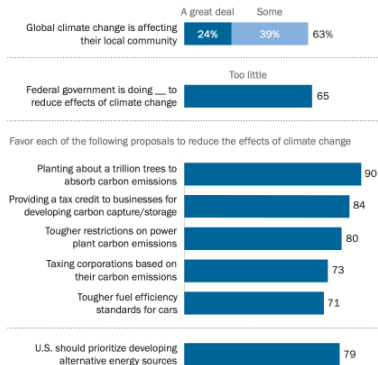
Introduction

- ▶ These policies are controversial, redistribute between different groups (e.g., drivers and non-drivers).
 - ▶ Support among voters may be insufficient
- ▶ However, inertia even when most voters favor these reforms

Voter preferences and government inertia

Americans see too little federal action on climate change, back range of policies to reduce its effects

% of U.S. adults who say ...



Note: Respondents who gave other responses or did not give an answer are not shown.

Source: Survey conducted April 29-May 5, 2020.

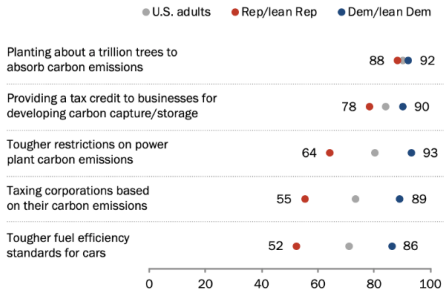
Two-Thirds of Americans Think Government Should Do More on Climate

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Voter preferences and government inertia

Bipartisan support for several policies aimed at reducing the effects of global climate change

% of U.S. adults who favor each of the following proposals to reduce the effects of global climate change



Note: Respondents who gave other responses or did not give an answer are not shown.

Source: Survey conducted April 29-May 5, 2020.

"Two-Thirds of Americans Think Government Should Do More on Climate"

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Environment secondary to other issues

- ▶ Voters may support environmental action, but as a secondary issue
 - ▶ "climate/environment" ranks behind Ukraine war, immigration, "the economic situation" (Eurobarometer, 2023)
 - ▶ U.S. : protecting the environment ranks 14th, dealing with climate change 17th (PEW, 2020)

Role of Parties

- ▶ Widespread voter opposition to green/transport reforms is not a given
- ▶ Discrepancy between voter and government/parties ambitions
- ▶ Inertia may relate to the *institutional system*
- ▶ Policies decided by politicians members of *parties*
 - ▶ multidimensional electoral platforms, including fiscal policy, education etc.
- ▶ What is the role of parties in transport/environmental policy?

This paper

- ▶ Empirics
 - ▶ Evidence of discrepancy between voter preferences and party platforms (Austria)
- ▶ Theory: what explains this discrepancy?
 - ▶ Parties coalitions of one or more politicians, aggregate voter preferences on multiple dimensions
 - ▶ Transport/enviro secondary wrt. fiscal, education, etc.
 - ▶ To increase chances of winning, compromise on secondary dimensions
 - ▶ If primary policy sufficiently more salient, no party propose transport/environmental policy reforms

Previous Literature

- ▶ Political economy of urban transport and environmental policy (theory)
- ▶ Majority voting
 - ▶ [Brueckner and Selod \(2006\)](#) system choice
 - ▶ [De Borger and Proost \(2012\)](#), [De Borger and Russo \(2018\)](#) and [De Borger et al. \(2022\)](#) road pricing and related mechanisms
 - ▶ [Fageda et al. \(2022\)](#) road pricing and low emission zones.
- ▶ Ignore parties
 - ▶ Role highlighted in empirical studies: Stockholm ([Quigley and Harsman, 2010](#)) and Milan ([Boggio and Beria, 2019](#)).

Previous Literature

- ▶ Political economy: parties and multidimensional policy formation
 - ▶ Primary vs. secondary policies
 - ▶ [List and Sturm \(2006\)](#): secondary policy commitment for incumbent
 - ▶ [Anesi and De Donder \(2009\)](#) and [Anesi and De Donder \(2011\)](#): Parties provide a way to commit to policies differing from preferred by politicians
 - ▶ We assume parties *cannot* commit to a policy and study policy reforms

Previous Literature

- ▶ Little empirical literature on political preferences of citizens vs political parties in environmental/transport
 - ▶ [Lüth and Schaffer \(2022\)](#) Swiss data. Environmental topics have become more salient among citizens but not among parties.
 - ▶ [Huber et al. \(2020\)](#) and [Prakash and Bernauer \(2020\)](#) gap between public opinion and public policy in that respect
- ▶ More indirect evidence
 - ▶ Citizens' support towards climate policies (reviewed by [Drews and Van den Bergh \(2016\)](#) and [Ejelöv and Nilsson \(2020\)](#))
 - ▶ [Drews et al. \(2022\)](#) majority supports carbon tax, depending on how the tax revenues are being used.

Motivating Evidence

- ▶ Gap between voter preferences and parties' platforms?
- ▶ Empirical evidence based on the Austrian (passenger) transport sector.
 - ▶ Qualitative **evaluation of the political parties' ambition towards climate change (CCCA)**
 - ▶ By academic experts on party positions (survey filled by parties, party concepts, web information, media reports).
 - ▶ Five main political parties
 - ▶ Qualitative **evaluation of the parties' stances towards specific policies**
 - ▶ road pricing, increased parking fees, banning fossil fuel cars, reduction in parking space
 - ▶ Based on newspaper reports and party communication (press releases, etc.)

Motivating Evidence

- ▶ Empirical evidence based on the Austrian (passenger) transport sector.
 - ▶ Data on **citizens' ambition to implement policies against climate change**,
 - ▶ Policy choice experiment ([Juschten and Omann, 2023](#); [Hössinger et al., 2023](#)): climate policy bundle (11 policies + 3-5 intensity levels)
 - ▶ Evaluate policy measures (*reject, neutral, or support*)

Voters and parties ambition

	All	FPÖ	ÖVP	SPÖ	NEOS	Green
<i>Expert evaluation of parties' climate ambition by CCCA (2019)</i>		Not sufficient	Low	Somewhat	Sufficient	Sufficient
<i>Vote shares national election 2019 (in %)</i>		16.2	37.5	21.2	8.1	13.9
<i>Parties' support for policies</i>						
Road pricing		Very low	Low	Medium	Medium	Medium
Higher parking fees		Very low	Very low	Medium	Low	High
Ban of sale of fossil cars		Very low	Low	Medium	Medium	High
Reduction in parking		Very low	Low	Low	Medium	High
<i>Results Policy Choice Experiment</i>						
% who reach climate goal	57%	37.5%	51%	59%	72%	75%
<i>Citizens' policy preferences</i>						
% who do <i>not</i> support road pricing	37%	45%	48%	31%	29%	26%
% who do <i>not</i> support higher parking fees	29%	38%	33%	28%	20%	18%
% who do <i>not</i> support ban of sale of fossil cars	41%	65%	49%	38%	28%	19%
% who do <i>not</i> support reduction in parking	30%	44%	35%	30%	25%	21%
Nr. of observations	1547	78	167	205	105	249

Table 1: Evidence on transport policy preferences by Austrian citizens (segmented by party preference)

Summary

- ▶ Insufficient support for climate-friendly transport reform by mainstream parties
- ▶ Citizens more ambitious than policy-makers, esp. larger parties (ÖVP, SPÖ, FPÖ)
- ▶ Propose simple model to explain this discrepancy

Individuals

- ▶ Population of individuals with heterogeneous policy preferences
- ▶ Two policy dimensions: redistributive, $i = \{L, R, \emptyset\}$, and environmental, $j = \{G, B, \emptyset\}$
 - ▶ $i = L$ (resp. $i = R$) “left-wing” (resp. “right-wing”) redistributive
 - ▶ $j = G$ (resp. $j = B$) “green” (resp. “brown”) environmental
 - ▶ \emptyset “status quo” policy on each dimension.
- ▶ n_{ij} the size of group ij , with $\sum n_{ij} = 1$.

Primary vs. secondary

- ▶ $U_{ij}(i, j)$ utility of an individual of type ij :

$$U_{ij}(i, j) = \gamma + \delta, \quad U_{ij}(i, \emptyset) = \gamma, \quad U_{ij}(i, -j) = \gamma - \delta,$$

$$U_{ij}(\emptyset, j) = \delta, \quad U_{ij}(\emptyset, \emptyset) = 0, \quad U_{ij}(\emptyset, -j) = -\delta,$$

$$U_{ij}(-i, j) = -\gamma + \delta, \quad U_{ij}(-i, \emptyset) = -\gamma, \quad U_{ij}(-i, -j) = -\gamma - \delta,$$

- ▶ Environmental dimension is *secondary* $\gamma - \delta > \delta \Rightarrow \gamma > 2\delta$
 - ▶ Extension with some “green primary” voters

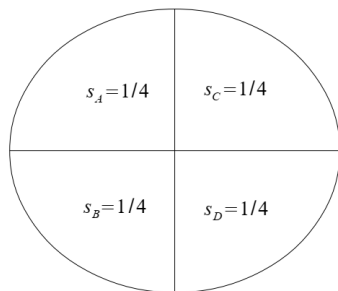
Parties

- ▶ Representative politician for each group of individuals, same preferences
- ▶ Parties: coalitions of one or more member agreeing on policy platform (i, j)
 - ▶ Party by LG politician as $p = LG$, party by $LG+LB$ as $p = LG + LB$, etc.
- ▶ Politicians *cannot* commit to policy ex-ante (any elected politician can block a reform)
 - ▶ Only propose with status quo if heterogeneous preferences
 - ▶ Only common preferred policy credible if homogeneous
 - ▶ Example: $LG&LB$ will propose (L, \emptyset)

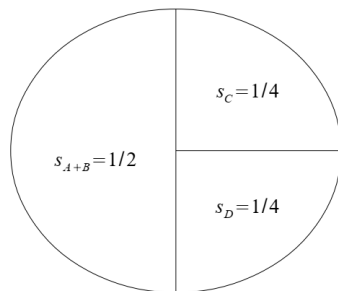
Equilibrium

- ▶ Equilibrium: stable set of parties and an election outcome
 - ▶ no politician breaks and forms party with a subset of members (Levy, 2004; Anesi and De Donder, 2009)
- ▶ Election FPP. Stochastic: each party has a probability $\pi_p \in [0, 1]$ of winning
- ▶ Support s_p : number of voters preferring p 's platform
 - ▶ Highest s_p implies highest π_p etc.
- ▶ Given sets I and II , with p_I in I and p_{II} and p'_{II} , in II ,
 $s_{p_I} = s_{p_{II}} + s_{p'_{II}} \Rightarrow \pi_{p_I}^I > \pi_{p_{II}}^{II} + \pi_{p'_{II}}^{II}$,
 - ▶ “superadditivity”: support for parties that do not merge does not increase, and they face a larger competitor

Superadditivity



$$\pi_A = \pi_B = \pi_C = \pi_D = 1/4$$



$$\pi_{A+B} > 1/2, \pi_C = \pi_D < 1/4$$

Timing

- 1 Parties form and set their platforms
- 2 Election takes place
- 3 Winning party implements its platform and individuals receive the ensuing utility

Finding equilibria

- ▶ Objective: find conditions for a configuration of parties to be a stable equilibrium
- ▶ Consider each combination in turn

Left vs. Right

- ▶ Policy platforms: $(LG + LB) \rightarrow (L, \emptyset)$ and $(RG + RB) \rightarrow (R, \emptyset)$.
Hence, $s_{LG+LB} = n_{LG} + n_{LB}$ and $s_{RG+RB} = n_{RG} + n_{RB}$
- ▶ LG politician must prefer joining LB one to running alone (given R -party)

$$\begin{aligned}
 U_{LG}(L, \emptyset)\pi_{LG+LB} + U_{LG}(R, \emptyset)(1 - \pi_{LG+LB}) &\geq \\
 U_{LG}(L, G)\pi_{LB}^{oL} + U_{LG}(L, B)\pi_{LB}^{oL} & \\
 + U_{LG}(R, \emptyset)\pi_{RG+RB}^{oL} &
 \end{aligned}$$

- ▶ if LG and LB split, divide support, i.e., $s_{LG} = n_{LG}$ and $s_{LB} = n_{LB}$,
but $s_{RG+RB} = n_{RG} + n_{RB}$

Left vs. Right

- ▶ Given $\pi_{RG+RB}^{oL} = 1 - \pi_{LG}^{oL} - \pi_{LB}^{oL}$, we get

$$\frac{\gamma}{\delta} \geq \frac{\pi_{LG}^{oL} - \pi_{LB}^{oL}}{2(\pi_{LG+LB}^{oL} - \pi_{LB}^{oL} - \pi_{LG}^{oL})}$$

- ▶ Must hold if $\pi_{LG}^{oL} \leq \pi_{LB}^{oL}$: if LG breaks party, gets
 - ▶ lower chance of preferred primary policy
 - ▶ positive chance of preferred secondary
- ▶ But if $\pi_{LG}^{oL} \leq \pi_{LB}^{oL}$, even bigger chance that opposite secondary is adopted

Intuition

- ▶ When forming L -party, politician trades off possibility of preferred secondary (G or B) for greater probability of winning, implementing L -policy
- ▶ Advantageous if and only if
 - ▶ gain in winning probability large enough
 - ▶ ratio between γ and δ sufficiently large
- ▶ Holds if and only if primary policy sufficiently salient to voters relative to secondary

Left vs. Right

- ▶ Similar equilibrium conditions for all other politicians:

$$\frac{\gamma}{\delta} \geq \frac{\pi_{LG}^{oL} - \pi_{LB}^{oL}}{2(\pi_{LG+LB} - \pi_{LB}^{oL} - \pi_{LG}^{oL})} \quad \text{and} \quad \frac{\gamma}{\delta} \geq \frac{\pi_{LB}^{oL} - \pi_{LG}^{oL}}{2(\pi_{LG+LB} - \pi_{LB}^{oL} - \pi_{LG}^{oL})}.$$

$$\frac{\gamma}{\delta} \geq \frac{\pi_{RG}^{oR} - \pi_{RB}^{oR}}{2(\pi_{RG+RB} - \pi_{RB}^{oR} - \pi_{RG}^{oR})} \quad \text{and} \quad \frac{\gamma}{\delta} \geq \frac{\pi_{RB}^{oR} - \pi_{RG}^{oR}}{2(\pi_{RG+RB} - \pi_{RB}^{oR} - \pi_{RG}^{oR})},$$

Green vs. Brown

- ▶ Policy platforms: $(LG + RG) \rightarrow (\emptyset, G)$ and $(LB + RB) \rightarrow (\emptyset, B)$
 - ▶ Hence $s_{LG+RG} = n_{LG} + n_{RG}$ and $s_{LB+RB} = n_{LB} + n_{RB}$
- ▶ LG politician prefers joining the RG one to running alone:

$$\begin{aligned} U_{LG}(\emptyset, G)\pi_{LG+RG} + U_{LG}(\emptyset, B)(1 - \pi_{LG+RG}) \geq \\ U_{LG}(L, G)\pi_{LG}^{oG} + U_{LG}(R, G)\pi_{RG}^{oG} + \\ + U_{LG}(\emptyset, B)\pi_{RB+LB}^{oG} \end{aligned}$$

Green vs. Brown

- ▶ Which boils down to

$$2\delta\pi_{LG+RG} \geq 2\delta \left(\pi_{LG}^{oG} + \pi_{RG}^{oG} \right) + \gamma \left(\pi_{LG}^{oG} - \pi_{RG}^{oG} \right).$$

- ▶ Observe $s_{LG} = n_{LG} + n_{LB}$, $s_{RG} = n_{RG} + n_{RB}$ and $s_{LB+RB} = 0$.
Hence, $\pi_{LG+RG} < \pi_{LG}^{oG} + \pi_{RG}^{oG}$.
- ▶ Thus, $\pi_{LG}^{oG} > \pi_{RG}^{oG}$ necessary
- ▶ Necessary condition for RG not to break party: $\pi_{RG}^{oG} > \pi_{LG}^{oG}$.
- ▶ Cannot hold jointly

Intuition

- ▶ Suppose $n_{LG} + n_{LB} > n_{RG} + n_{RB}$, so $\pi_{LG}^{oG} > \pi_{RG}^{oG}$
- ▶ By breaking G -party up and proposing (L, G) , LG politician would attract all L -voters (primary)
- ▶ All R -voters would prefer former partner, RG
 - ▶ no support for the B -party (status quo on primary)
- ▶ Hence, LG politician would increase likelihood of her preferred secondary implemented
 - ▶ And (net) likelihood of preferred primary.

Mixed parties

- ▶ Never an equilibrium
- ▶ Example: $(LB + RG) \rightarrow (\emptyset, \emptyset)$ and $(LG + RB) \rightarrow (\emptyset, \emptyset)$.
 - ▶ Support 1/2 for each party
- ▶ One member could always break up party, propose preferred primary get support from all voters with same primary preference
 - ▶ Must be advantageous at least for majoritarian preference

Proposition

Proposition

If and only if γ is large enough compared to δ (see below), no party proposes any secondary (environmental, transport) policy reform, even if a majority of voters supports such reform.

$$\frac{\gamma}{\delta} \geq \frac{\pi_{LG}^{oL} - \pi_{LB}^{oL}}{2(\pi_{LG+LB} - \pi_{LB}^{oL} - \pi_{LG}^{oL})} \quad \text{and} \quad \frac{\gamma}{\delta} \geq \frac{\pi_{LB}^{oL} - \pi_{LG}^{oL}}{2(\pi_{LG+LB} - \pi_{LB}^{oL} - \pi_{LG}^{oL})}.$$

$$\frac{\gamma}{\delta} \geq \frac{\pi_{RG}^{oR} - \pi_{RB}^{oR}}{2(\pi_{RG+RB} - \pi_{RB}^{oR} - \pi_{RG}^{oR})} \quad \text{and} \quad \frac{\gamma}{\delta} \geq \frac{\pi_{RB}^{oR} - \pi_{RG}^{oR}}{2(\pi_{RG+RB} - \pi_{RB}^{oR} - \pi_{RG}^{oR})},$$

Unbundling policy decisions

- ▶ If environment (sufficiently) secondary, no reform even if voters favor it
 - ▶ government inertia may block welfare-improving reforms
- ▶ Issue is not necessarily voter opposition to environmental reform, but bundling with primary policies
- ▶ Unbundling?
 - ▶ Direct democracy on environmental policy
 - ▶ Decentralize environmental policy to local governments

Direct Democracy

- ▶ Suppose elected officials only decide on primary policy dimension
- ▶ Referendum on secondary dimension
 - ▶ Environmental reform with majority support highest probability of implementation
- ▶ Desirable? If and only if “welfare optimal” (green?) reform is majoritarian
- ▶ Caveat: Brexit

Decentralization

- ▶ Consider two regions (symmetric)
- ▶ Assume redistributive policy decided at national level, environmental one at regional level
 - ▶ Unbundling: regional parties only focus on environmental reform. Majoritarian in each region wins
- ▶ Trade-off between inertia (centralization) and lack of coordination

Concluding remarks

- ▶ We studied the role of parties in transport policy
- ▶ Point to importance of considering multidimensional nature of party platforms
 - ▶ Inertia on enviro policy not necessarily due to voter opposition, but to relative lower priority to other issues
 - ▶ Parties tend to compromise on secondary dimensions
- ▶ Solutions: Unbundling?
 - ▶ Direct democracy, decentralization on environment

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