

Modeling and designing reforms with distributional effects in mind

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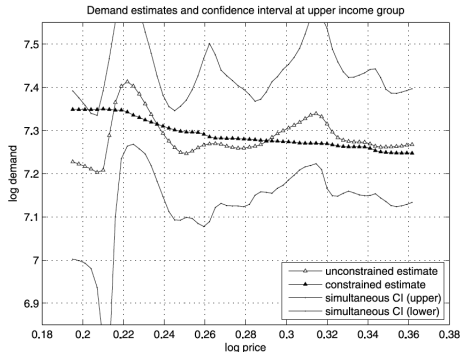
Conference on Benefit-Cost Analysis:
Distributional Issues and International Experience
Paris, France,
March 25, 2025

Observation

- ▶ Analyses of distributional effects often tend to be static, taking a snapshot of exposure to policy at a given point in time
- ▶ But policy effects on specific groups tend to vary over time:
 - ▶ The price-elasticity of demand for carbon-intensive goods tends to vary across income groups
 - ▶ The risk of labor stranding also varies across groups
 - ▶ Even when general equilibrium considerations are included, labor markets may still be modeled as frictionless, neglecting potential labor stranding in presence of search costs

Upper income group

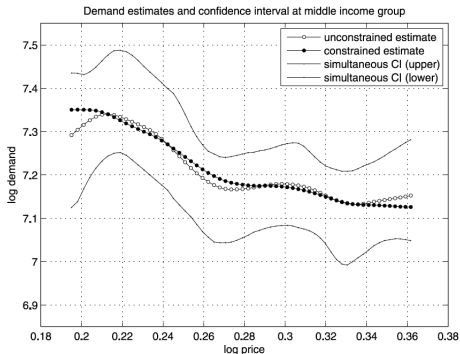
Figure 1: Data from the U.S. National Household Travel Survey, Blundell et al. (2012)



(a) upper income group

Middle income group

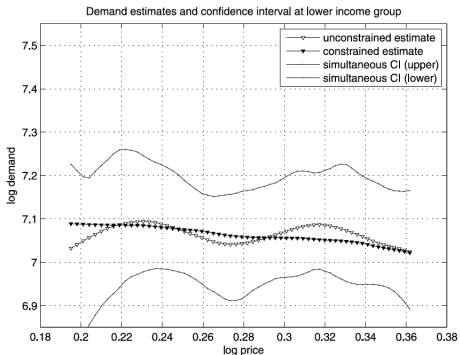
Figure 2: Data from the U.S. National Household Travel Survey, Blundell et al. (2012)



(b) middle income group

Lower income group

Figure 3: Data from the U.S. National Household Travel Survey, Blundell et al. (2012)



(c) lower income group

Horizontal versus vertical inequalities


- ▶ Most often, the focus is on vertical inequalities
- ▶ But policy, especially climate policy, can also impact horizontal inequalities (backlash from rural communities)
- ▶ Policy can be designed to address horizontal inequalities as well.
Two examples:
 - ▶ The Inflation Reduction Act
 - ▶ The Canadian carbon tax

Distributional effects and public support

- ▶ The absence of distributional considerations in cost-benefit analysis is one obstacle to the implementation of progressive reforms – or non-regressive (Tinbergen)
- ▶ Another obstacle is people's understanding (or lack thereof) of distributional effects
- ▶ Voters may not understand that proposed policies are progressive (or that they may benefit them) and oppose such policies
- ▶ Including distributional effects in cost-benefit analysis may prevent backlash in presence of obviously regressive designs, as observed with the Yellow Vest movement
- ▶ However, it would not spur the implementation of progressive designs that voters do not recognize as such

Information provision

Figure 4: Example of choice card in Carattini et al. (2017): 150 CHF/tCO₂ and income tax rebate

Taux de la taxe : CHF 150 CHF par tonne de CO ₂	
Utilisation des recettes : diminution de l'impôt sur le revenu	
Ordre de grandeur des impacts :	
• Augmentation du prix de l'énergie (essence, diesel, huile de chauffage)	35-40 cts par litre
• Réduction des émissions de CO ₂ en Suisse	15%
• Pouvoir d'achat de l'ensemble des ménages	-0.2%
• Pouvoir d'achat des ménages à bas revenu	

VOTE



Experience

- ▶ Often, policies that economists support are unpopular among voters, or at least ex-ante unpopular

Causal analysis of public support

Figure 5: Policy evaluation and the causal analysis of public support



EVIDENCE-BASED POLICY

Policy evaluation and the causal analysis of public support

Support for initially unpopular policies may grow over time

By Stefano Carattini¹, Robert Dier², John List³ | [Read full article](#)

ing policy evaluation with causal analysis of public support would allow scholars to create a body of knowledge on the conditions under which policies become more (or less) popular after implementation and what are the drivers of changes in beliefs and public support.

Consider congestion charges, which make accessing a city center costly. That only a handful of cities around the world have congestion charges in place reflects how little things have changed since 1965.

PHOTO: GETTY IMAGES

Current and future research

- ▶ Causal analysis of public support applied to the New York congestion charge and “cap and invest” in the state of Washington
- ▶ Cash for subsidy reform in Ghana (randomized controlled trial) to help phasing out fossil fuel subsidies without backlash (progressivity is not enough); such reforms may be funded by countries in the North, compatible with the concept of international carbon dividends (Carattini et al. 2019; Budolfson et al. 2021)
- ▶ Providing information at scale, training some 10,000 Italian secondary schoolteachers as part of a randomized controlled trial, while surveying teachers, parents, and students with the goal of addressing biased beliefs about climate change and climate policy at scale

Experiencing carbon pricing

Figure 6: Changes in voting behavior on carbon pricing across precincts between 2018 (I-1631) and 2024 (I-2117) along partisanship

