Does tax policy work when consumers have imperfect price information? Theory and evidence
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Theoretical model

• Goal: uncover what drives the incidence of tax changes on consumers

• Elements of the model:
  • Consumer search model with imperfect information
  • 2 types of consumers:
    • Shoppers: informed (i.e. know all prices)
    • Non-shoppers: less informed (i.e. only know the distribution of prices, incur search cost to draw additional prices)
  • Level of competition between sellers

• 2 stage game: (i) firm entry (ii) firms set prices and consumers make search and buying decisions

• Consumers can switch from one seller to another, buying a fixed quantity of the good

• Key role of: the share of price-sensitive consumers + the number of sellers
Theoretical predictions

Findings:

- pass-through is an increasing function of the share of shoppers
- average pass-through: ↑ and then ↓ in the number of sellers
Empirical findings

- Leverage data on fuel prices in France and Germany over the COVID crisis
- Analyze both a tax increase and decrease
- Synthetic DiD (+ an event study to study dynamic effects)

Findings:

- Diesel consumers more “price sensitive”: look more for information
- Higher pass through for diesel than for E10 and E5
- Asymmetric pass through
- Humped shaped relationship between pass-through and the number of fuel stations in a local market
Some Questions and Comments: Consumer behavior

Imperfect information and Price sensitivity of consumers:

• Theoretically:
  • What do you gain from using this price sensitivity concept rather than price elasticity?
  • What drives differences in price sensitivity? ability to retrieve information? or financial constraint (/outside options)?
  • How is the share of shoppers ($\phi$) determined? Is it exogenous? How do you identify it? Is it something the government can act upon? And if so, how?

• Empirically:
  • You characterize price sensitivity by the number of search divided by the number of vehicles. But, diesel drivers drive twice as much.
  • Is not there something mechanical whereby if you go more often to the gas station, you also look more frequently at prices?
Some Questions and Comments: Firms / Competition

- **Mark-ups**: Do you have empirical evidence for differences in mark-ups between the different types of fuel?

- "Local market" / Scope of search:
  - "rival sellers": if I commute to work everyday, I will search for fuel near where I live and near where I work - i.e. sellers near my work are competing with those near my house.
  - Could we envision different search radii depending on how financially/time constrained individuals are?
Where would you say the fuel market stands in comparison with other sectors with respect to imperfect information / price-sensitivity of consumers?

- **Cost of price adjustment**: low cost of price adjustment $\neq$ menu costs: costs of printing price tags in supermarkets

- **Cost of information**: fuel vs grocery shopping
  - Retrieving the information:
    - centralized information on apps/online platforms $\neq$ information on prices when visiting the shop
  - Complexity of the information:
    - single good $\neq$ bundle of goods
Some Questions and Comments: Policy Recommendations

- **Magnitude of the effects:** even though the goal is more to have a ranking of the pass-through and not quantify them, it would be useful to have a sense of the magnitude of the effects (involving quantities)

- **Fairness?** Is it always the case that the more financially constrained are the ones more able to look for/find the information?

- **Benefit of this policy instrument:**
  - Fast but asymmetric pass-through (higher for tax increase than tax decrease)
  - Does this asymmetry make it a desirable policy instrument (esp. if used frequently)? What about other policies (checks, etc)?