Welfare Analysis Of Changing Notches: Evidence From Bolsa Familia

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THIS PAPER: NEW METHOD FOR PLACING BOUNDS ON MVPF

- Question: how can we evaluate the welfare gains from policy reforms featuring notches?

  - MVPF (Hendren & Sprung-Keyser 2020): ratio of households' WTP for reform relative to its budgetary cost

  - Govt. values giving \$MVPF to HH more than spending \$1 on best alternative $\implies \Delta\mathcal{W} > 0$

  - **Problem:** generally need many modeling assumptions on agent's problem (e.g. utility function form, nature of frictions, etc.) and study small changes in notches

- **Solution:** revealed preference-based approach to bound the MVPF using only information about the total costs, and # of "jumpers" and "bunchers" around a policy notch change

- **"Diff-in-disc"** empirical application to large-scale transfer program in Brazil aimed at alleviating extreme poverty (notch moves up)

  - Check sensitivity to shifting the unaffected "bandwidth" and generalized DiD polynomial forms $\implies$ MVPF bounds do not change much (small standard errors)

  - Placebo tests: randomly assign bins below notch to treatment group

SUMMARY & ILLUSTRATION OF THE METHOD

Group	Number of households	WTP (per-household)	Cost to Govt. (per-household)
Mechanical Households	$M = G(\tau; \mathbf{p}')$	Δb	Δb
Bunching Households	$B = G(\tau; \mathbf{p}) - G(\tau; \mathbf{p}')$	$\in [\Delta b, b']$	Δb
Threshold Households	$T = G(\tau'; \mathbf{p}) - G(\tau; \mathbf{p})$	b'	b'
Jumping Households	$J = G(\tau'; \mathbf{p}') - G(\tau'; \mathbf{p})$	$\in [0, b']$	b'

- Mechanical and threshold HHs are **inframarginal** to the reform
  - Mechanical HHs always report below initial notch
  - Threshold HHs get the new benefit because they report in between the two notches

- In contrast, bunching and jumping HHs exhibit **behavioral** responses
  - Bunchers (B) bunch at initial notch and then bunch at new notch
  - Jumpers (J) are initially above new notch and bunch at new notch once implemented

- Revealed preference argument holds $\forall \Delta b$, $\Delta \tau$ and modeling other agent choice variables

COMMENT #1: ROLE OF INFORMALITY AND ENFORCEMENT

- Two main questions I had after reading:

  1. **Where would enforcement fit in?**

     - ★ It could show up in the total cost of the policy (sufficient statistic)

     - ★ Could collapse the standard Allingham-Sandmo problem into the $v(\cdot)$ evasion cost function

     - ★ What if moving from old to new policy $\implies$ change in prob. of getting caught or punishment?

     - ★ Challenging for identification and interpreting revealed preferences **(expected values)**

 2. **Is this method useful beyond the informal economy context?**

     - ★ Enforcement capacity lower in developing economy context

     - ★ Other reasons: simplicity of the tax code, lack of financial education (optimization frictions)

- My guess is that Prop. 3 still holds b/c enforcement can be embedded within the utility function, but discussion of this seems warranted

COMMENT #2: SCHEDULES WITH MULTIPLE NOTCHES

- Tax systems with multiple notches are overwhelmingly common
  - ▶ BF has another notch far away from the extreme poverty notch used here
  - ▶ But what happens if the notches are <u>close</u> together?

- **Impacts generalizability of method to advanced economy context where multiple close notches are relatively more common**
  - ▶ Example: Glogowsky (2021) extends standard Saez (2010) approach to German IHT system with multiple close notches in taxable gift amount
    - ★ Shows that this creates two sets of bunchers: one type behaves as if there is a kink and the other as if there is a notch
  - ▶ Revealed preference argument should still go through (?) but with more subsets of the 4 archetypal HHs
  - ▶ Discussion of this case seems warranted given that the paper's thesis is to provide a new practical tool to PF economists

RELATED POINT: WHAT IS THE ROLE OF "SCHMEDULING"?

Density vs Per Capita Income

As of June of 2014 | As of June of 2016
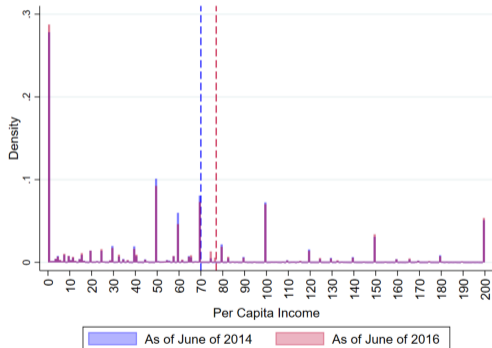
- **Schmeduling**: taxpayers inaccurately perceive tax schedule (Liebman & Zeckhauser 2004)
  - ▸ Rees-Jones & Taubinsky (2020) show 43% of U.S. taxpayers "iron" over PIT kinks
  - ▸ Okay, U.S. system is very complicated

- But BF is simple and also has bunching around vestigial notches
  - ▸ Leads authors to use non-standard bunching estimator due to lumpy per capita income

- Formulas hold for BF b/c this appears to be "benignant" bunching

- Would the behavioral assumptions needed to maintain the main proposition hold elsewhere?

A FEW MISCELLANEOUS THOUGHTS

- Gelman & Imbens (2018) on RD designs and using local linear or quadratic polynomials

  ▸ Econometric critique of using higher-order polynomials would apply here

  ▸ Show results for $K = 0, K = 1$ local polynomial order as reference in Table 3

  ▸ How bad are the pre-trends that you need the polynomial correction?

- **Discounted MVPF** estimates by integrating over event study graphs (Figure 5 and 7)

  ▸ Baseline MVPF bounds appear to total missing mass estimates over time

  ▸ Can augment the baseline sufficient statistics along these lines (Appendix A.6)

  ▸ Discount rate of HHs (not policymaker) matters for this calculation

  ▸ Accounts for optimization frictions due to gradual learning about policy

- Why is the number of mechanical households so large here? (2 million compared to $B + J = 50k$) Is enforcement that strict?

Overall assessment

- **New method that overcomes many empirical challenges in identifying MVPF and other welfare measures of tax reforms**
  - Looking forward to seeing applications other than along misreporting dimension

- Very well-written, impressive battery of robustness checks, and largely transparent on limitations of method

- **My main suggestion: clarify extent to which the method would apply to non-informal economy contexts where we often have...**
  - More enforcement either in auditing capacity or punishments
  - "Schmeduling" with profound lack of understanding of schedule
  - Multiple notches placed close together, which are common features of PIT, property tax, and transfer programs in advanced economies

THANKS!