Forbearance vs. Interest Rates: Experimental Tests of Liquidity and Strategic Default Triggers

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Motivation

- Household debt relief played a central role in policy responses to crises
  - Home Affordable Modification Program $\Rightarrow$ $4.6 billion spent to restructure mortgages in the Great Recession (Ganong and Noel, 2020)
  - $1.4 trillion worth of US mortgages and $655 billion worth of student loans entered forbearance via CARES Act during COVID Recession (Cherry et al., 2021, Kim et al., 2022)

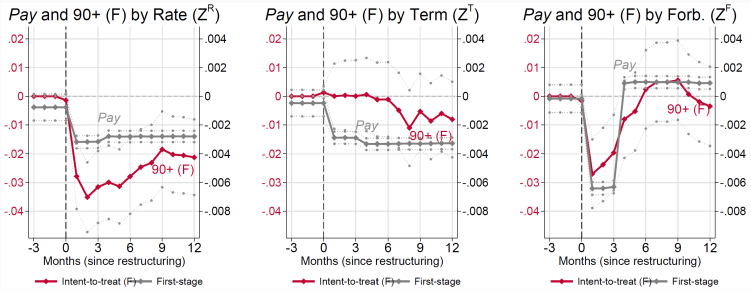
- Ongoing: US policy debates over student loan forgiveness and overhauling consumer bankruptcy

- **This paper:** what causes consumer default and what forms of debt relief best prevent default?

Approach Overview

- Author partnered with a bank in Turkey to randomize parameters of a debt relief tool
  - **Population:** delinquent, unsecured borrowers (~personal loans)
  - **Debt relief tool:** bank offers borrowers option to refinance
- Experiment varied three debt relief parameters:
  - Rate reduction size: small or large rate reduction offered
  - Term extension: small or large maturity extension
  - Forbearance: option to postpone principal payments for 3 months
- Rate reduction lowers both current and future payments
- Term extension and forb. lower current payments but raise future payments

Results Overview



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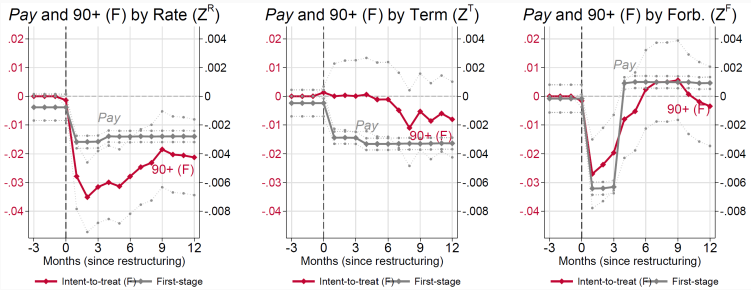

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- **Interpretation:** these patterns are at odds with liquidity being the sole trigger of default; strategic incentives matter
- Concludes from analysis of responses to current vs future payment that strategic behavior explains most of the default response

Comment 1: Reconciling results in the literature

Can the paper help us understand differences in results?

- Default is **mostly** due to liquidity , not strategic motives
  - Mortgages: Scharlemann Shore (2016), Gerardi et al. (2017), Ganong Noel (2020, 2023)
  - Consumer bankruptcy: Indarte (2023)
- Default is **mostly** due to strategic , not liquidity motives
  - Credit cards: Dobbie and Song (2020)
  - Unsecured personal loans: Aydin (2023)?
- What is it about these various settings that lead to different conclusions?
  - **Population?** Paper finds strategic motives relatively weaker for fin. weaker consumers
  - Moralizing language (Bursztyn et al., 2019), anticipated reciprocity (Fiorin et al., 2023), and collateral ?
  - Additional dimensions to explore in data? Variation in recourse? Social norms?

Comment 2: Interpretation of results—do future payments *affect* default more than current ones?

Measure of strategic response reflects large strategic incentives

The experiment allows for a decomposition of the share of the behavioral response to interest rates that is attributable to a strategic effect (as opposed to a liquidity effect):

$$\frac{\Delta Y}{\Delta R} = \underbrace{\underbrace{\frac{\Delta Y}{\Delta Pay}}_{\hat{\phi}=1.11}\underbrace{\frac{\Delta Pay}{\Delta R}}_{0.96\%\ FV_0}}_{\text{Liquidity}\approx\frac{1}{3}} + \underbrace{\underbrace{\frac{\Delta Y}{\Delta PV^{fu}}}_{\hat{\psi}=0.33}\underbrace{\frac{\Delta PV^{fu}}{\Delta R}}_{6.28\%\ FV_0}}_{\text{Strategic}\approx\frac{2}{3}}$$

where 1.11 and 0.33 are estimates of the sensitivity of behavior to current and future payments, ϕ and ψ, respectively and 96 cents and \$6.28 per \$100 of principal are the corresponding first stage effect of interest rate reductions.

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- 6.28% FV isn't a behavioral response, it's a parameter of the debt relief policy
- 2/3 reflects both the response to strategic incentives and the size of the incentive
- For NPV-equivalent changes to present and future payments, response to current payment **("liquidity") is about 3-4x stronger (1.11 vs 0.33)**

Comment 3: To IV or Not IV?

LATE with binary vs. continuous treatment

- Second stage: $Y_i = X_i\beta_i + \varepsilon_i$. First stage: $X_i = Z_i\pi_i + \eta_i$
- Binary treatment ($X_i \in \{0, 1\}$):

$$\beta^{LATE} = \frac{E[Y_i|Z_i = 1] - E[Y_i|Z_i = 0]}{E[X_i|Z_i = 1] - E[X_i|Z_i = 0]} = E[\beta_i|\pi_i > 0]$$

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- Continuous treatment ($X_i \in \mathbb{R}$):

$$\beta^{LATE} = \frac{E[Z_i X_i \beta_i]}{E[Z_i^2 \pi_i]} = \frac{E[\pi_i \beta_i]}{E[\pi_i]}$$

  - **Continuous treatment $\Rightarrow$ LATE upweights obs with a relatively *stronger* first stage**

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- Bias for forbearance? What about multi-instrument TSLS? **Suggestions:**
  - See how treatment intensity varies with groups that differ in first-stage strength
  - Estimate "reduced-form" within groups and scale effect by average treatment intensity

Comment 4: What is strategic default?

What is strategic default?

- Paper: "A default is strategic if an able borrower won't pay"
  - Many papers adopt similar definitions...but what does "able" mean in practice?
  - No liquid assets? Liquidation costs > wealth? No kidneys left to sell?
- Economically, what is a meaningful line to draw? Why delineate default causes?
- And how does "inability" relate to current vs future payments? Paper's take: reaction to current payments = liquidity, reaction to future payments = strategic

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- Indarte (2023) focuses on moral hazard (strategic) and liquidity motives , i.e. the default responses to (1) the wealth gain from default vs (2) cash-on-hand
  - **Economic justification:** relative strength of these motives is informative about the costs and insurance value of debt relief

Separating moral hazard (strategic) and liquidity effects

- The default response to debt payment sizes reflects both moral hazard and liquidity effects (Indarte, 2023). Consider a default indifference condition:

$$V_t^{def} = V_t^{repay}(y_t, d_t)$$
$$u(a_t + e_t) - \sigma + \mathbb{E}^{def}(V_{t+1}) = \max_{d_{t+1}} \; u(a_t + y_t^{\star} - R_t d_t + d_{t+1}) + \mathbb{E}^{repay}(V_{t+1})$$

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- If we take the response to future payments = strategic motive, we can subtract it from the response to current payments to get the liquidity effect:
  - Liquidity 2.36x ($=\frac{1.11-0.33}{0.33}$) stronger than strategic (I find about 4x for US bankruptcy)

Conclusion

In conclusion...

- Very interesting paper!
- New evidence from a rich RCT on an important policy question
- Sheds light on how to best design debt relief
- Would also be valuable to interact debt relief treatments and examine the extent to which they are complements vs substitutes!

Thanks!