Present Bias Amplifies the Household Balance-Sheet Channels of Macroeconomic Policy

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Discussion
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What the Paper is About

- Study aggregate spending response to various shocks in a partial equilibrium model of household savings

- Macroeconomic policy:
  1. Fiscal Policy = unexpected one-time real helicopter drop of $\$1,000$ per household
  2. Monetary Policy = permanent drop in risk-free real interest rate from 1% to 0%

- Households make two decisions:
  1. Consumption: how much to spend vs how much to save in liquid assets
  2. Refinancing: discrete choice about whether to re-finance or pay off mortgage

- Continuous time model with present bias: instantaneous gratification

Present Bias

- Elegant way to model time inconsistency in continuous time, discount function:

$$D(t) = \begin{cases} 1 & \text{if } t = 0 \\ \beta e^{-\rho t} & \text{if } t > 0 \end{cases}$$

  $\Rightarrow$ standard exponential discounting with $\beta < 1$

- Assume naive present bias: very tractable, couple of extra lines of code

- Effects of present bias relative to exponential model
  - Different decision rules for consumption and refinancing
  - Different decision rules generate different household wealth distribution

“Present Bias Amplifies ... Macroeconomic Policy”

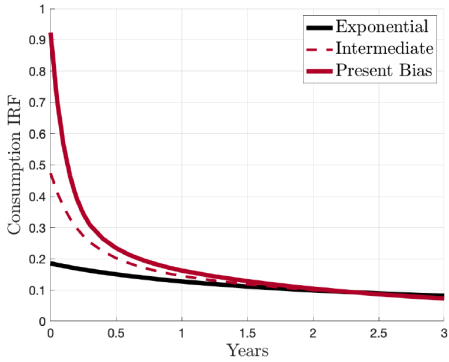

Figure 4: Consumption Response to Fiscal Policy.

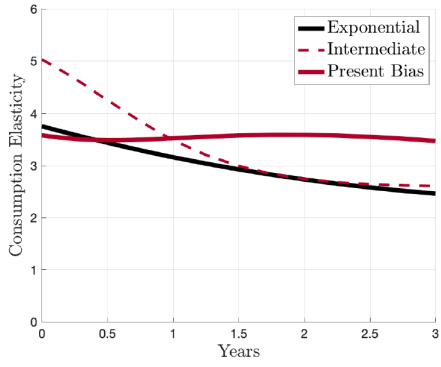

Figure 6: Consumption Response to Monetary Policy.

- **Q**: Why big difference in consumption response with vs without present bias?
- **A**: (i) Consumption: higher average MPC (ii) Refinancing: less frequent adjustment

Effects of Present Bias on Consumption

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    - Euler equation with exponential discounting:

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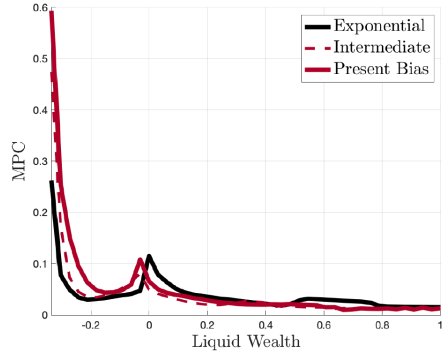
2. Discontinuous consumption function at borrowing constraint: consumption is discretely lower on borrowing constraint than just above.

Average MPC With and Without Present Bias



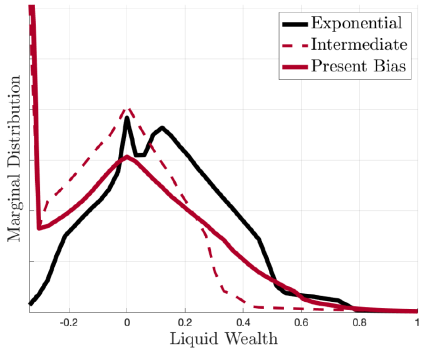
Q: In which model is MPC larger? Offsetting effects, so can go either way:

- Exponential model: higher calibrated ρ, so higher MPC away from constraint
- Present bias model: discontinuity at constraint, so higher MPC at constraint

A: Key moment: fraction of households very close to borrowing constraint or kink in rates at zero

Liquid Wealth Distribution

Model



SCF 2019 (same units)

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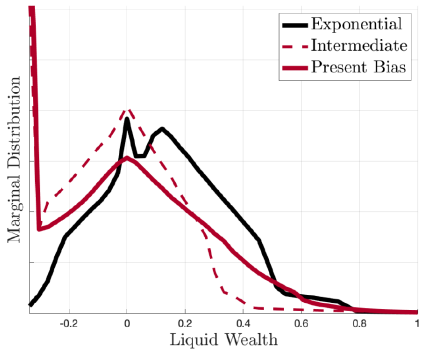

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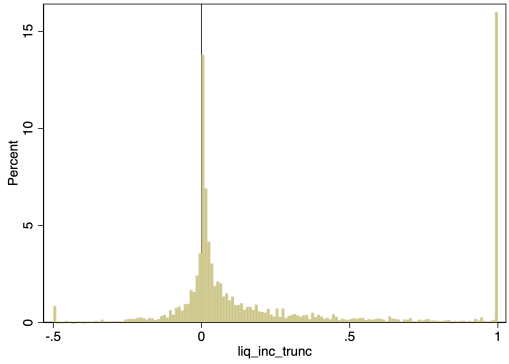

- Present bias model: overstates fraction of households on constraint
- Exponential model: matches shape better at bottom, but understates fraction constrained
- Both models could be calibrated to match the same fraction of households with high MPCs

Effect of Present Bias on Refinancing

- Two types of adjustment costs
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  2. Fixed effort cost $\varepsilon = \overline{\varepsilon}$. Switches lower effort cost $\varepsilon = \underline{\varepsilon}$ for an instant at Poisson rate ϕ

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- Present bias model isomorphic to exponential model with Calvo adjustment at rate ϕ (random menu cost model)
- Micro-foundation for Calvo? Parameter ϕ is no less fairy-like, but perhaps it makes the Calvo assumption more palatable

Suggestion to Make Conclusions More Convincing

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- Dry powder is observable: average quarterly MPC $\approx 15\% - 30\%$
- Speed of ignition is observable: 50% annual adjustment prob if optimal to adjust
- Calibrate both models to same key moments:
  1. Fraction of households close to constraint and kink, and hence average MPC
  2. Arrival rate of adjustment opportunities: $\phi = -\ln 0.5$. Calvo model in exponential case
- Show that these two calibrated models either
  - Generate different aggregate consumption response, or
  - Generate different distribution of consumption responses, or
  - Imply important differences in other implications, moments or parameter values