# Discussion of "Who Are the Hand-to-Mouth?" by Mark Aguiar, Mark Bils and Corina Boar

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# The canonical model of consumption

- Ex-ante identical agents with Markov income process $\Pi(e'|e)$
- One uncontingent asset $a$, all solve

$$V_t(a,e) = \max_{c,a'} \frac{c^{1-\frac{1}{\sigma}}}{1-\frac{1}{\sigma}} + \beta \mathbb{E}\left[V_{t+1}(a',e')|e\right]$$

$$c + a' = R_t a + Y_t e, \qquad a' \geq \underline{a}$$

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  - consumption, savings and wealth dynamics
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- Very few parameters: $\sigma$, $\beta$, $R$, $\Pi$, $\underline{a}$. Infinite number of predictions!
  - Distributions of wealth, income, consumption, MPCs
  - Cross-household correlations, eg $Corr(\Delta c_{it}, \Delta y_{it})$
  - Dynamic aggregate moments, eg, $\frac{\partial C_t}{\partial Y_s}$ and $\frac{\partial C_t}{\partial R_s}$ ("iMPCs")

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- Can calibrate to hit some of these moments in data (**not all jointly**)

# This paper

- Classifies households into three types:
  - Zeldes *HTM* if low net worth
  - Kaplan-Violante *HTM* if high net worth but low liquid assets
  - Not *HTM* otherwise
- Calculates new moments from PSID:
  1. Transitions across *HTM* status
  2. $E\left[\Delta c_{it} | HTM\right]$, with or without individual fixed effects
  3. $E\left[|\Delta c_{it}| | HTM\right]$ and $E\left[|\Delta y_{it}| | HTM\right]$ (a proxy for volatility)
  4. $E\left[\ln Categories_{it} | HTM\right]$
  5. $E\left[APC_{it} | HTM\right]$ [my personal favorite, sadly gone from new version!]
- Shows no calibration of canonical model can match these moments
- But, a calibration with ex-ante heterogeneity in $(\beta, \sigma)$ can

# My take on the paper

- I completely agree that:
  1. Ex-ante homogeneity assumption in canonical model is crazy
  2. Something like $\beta$ heterogeneity is needed to explain the data
  3. Low $\beta$ is hard to tell apart from high $\sigma$
  4. Ultimately, $\sigma$ heterogeneity is probably important as well

  [cf also Parker, Guvenen,...]
- **Rest of discussion**:
  1. How do we know for sure it's $\sigma$ heterogeneity?
  2. How does it change the big picture if it is?

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- **Q**: What *exactly* favors one over the other **in structural model**?
  - Category adjustment fact interesting, but not used in model
  - Current calibration has type with both very low $\beta$ *and* high $\sigma$: why?
  - Don't we need extra moment on relation b/w $\Delta C$ and $\Delta R$ to tell?

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- Broader **Q**: what moment(s) do you want future work to calibrate $\sigma$ heterogeneity to?

# How does the big picture change?

- All models get some moments wrong.
  - Why is it important to hit the ones in this paper?
  - Why is it important to do this with $\sigma$ heterogeneity?
- The usual procedure in the literature is:
  - Calibrate the canonical model to hit some moments, eg MPC
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- The usual procedure in the literature is:
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  - Use the model to extrapolate to other moments that matter for GE
- Key **Q**: Take two models that match the MPC, one with $\sigma$ heterogeneity and one without. How does the extrapolation change?
- Paper gives one example with $\frac{\partial C_0}{\partial R_0}$. Can develop this more!

# Two thoughts on extrapolation

- **Develop $\frac{\partial C_0}{\partial R_0}$ more**. We know that, for agent $i$ with $APC_i = 1$

$$\frac{\partial c_{0i}}{\partial \ln R_0} = -\sigma_i (1 - MPC_i)$$

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- **Extra moments**. In Auclert-Rognlie-Straub, we show that the iMPCs $\frac{\partial C_t}{\partial Y_s}$ and $\frac{\partial C_t}{\partial R_s}$ are sufficient statistics for dynamic GE
  - Extrapolation from MPC ($\frac{\partial C_0}{\partial Y_0}$) to these other iMPCs, and therefore effects of fiscal and monetary policy, will likely change
  - Showing *how* would help make convincing case that $\sigma$ heterogeneity is the next step for the literature

# Concluding thoughts

- Very nice paper, whose main message I believe in
- Tell us what moments to use to calibrate our $\sigma$ heterogeneity to
- Tell us what macro conclusions we get wrong if we don't