Discussion of "Optimal Monetary Policy in HANK Economies"

S. Acharya E. Challe K. Dogra

Discussed by

Clodomiro Ferreira
Bank of Spain

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Model and main results

"Relatively simple" HANK-type environment

- CARA utility + gaussian idiosyncratic earnings shocks
- Incomplete markets and a natural borrowing limit
- NK block generates a standard Phillips curve
- Standard monetary-fiscal authority controls nominal interest rates and labour tax.
- Utilitarian social welfare function

Main results

1. Analytically tractable Ramsey problem, with consumption dispersion (CD) as a key component
2. Incentive to decrease CD implies optimal deviation from production efficiency and 0-inflation
3. New time-inconsitency in optimal policy.
4. Features of such deviation depend crucially on cyclicality of income risk

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Key features & mechanism

1. **TRACTABILITY**: CARA + gaussian shocks + no borrowing limit imply
   - Precautionary savings (u”’>0)
   - Linear consumption / saving rules
   - Homogeneous MPC which is time-varying
   - Linear Aggregation
2. **CONSUMPTION DISPERSION**: given incomplete markets, CD driven by two key forces:
   - amount of income risk
   - sensitivity of consumption to income changes
3. **OPTIMAL POLICY**: production efficiency + inequality reduction:
   - pro-cyclical risk: trade-off between reduction of risk and reduction of pass-through implies deviation from RANK gets dampened
   - counter-cyclical risk: more persistent departures from "divine coincidence"

Optimal monetary policy in HANK: the contestants

	Mechanisms				Optimal MP	
	NK	Fisher	UIE	Earn. Heterog.	Time-0	Time-∞
Acharya et al. (2019)						
Bhandari et al. (2019)						
Nuño & Thomas (2019)						
RANK						

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RANK	✓	X	X	X		

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RANK	✓	X	X	X	$\pi > 0$	$\pi = 0$

Comment I: Time-0 vs. Time-∞ in the basic RANK

In the basic textbook RANK (see Gali (2007) ch. 5 or Woodford (2003) ch. 6-7) the Ramsey problem under commitment is to choose a path $\{\pi_t, y_t\}, t \geq 0$ that maximizes

$$\mathcal{L} = \sum_{t=0}^{\infty} \beta^t \Big\{ \underbrace{\frac{1}{2}\left[\pi_t^2 + \lambda\left(x_t - x^*\right)^2\right]}_{\text{period-welfare}} + \psi_t \underbrace{\left[\pi_t - \kappa x_t - \beta \pi_{t+1}\right]}_{\text{period-Phillips curve}} \Big\} \tag{4.1}$$

with ψ_t the lagrange multiplier associated with the period-t PC. The FOCs are similar to the ones in Acharya et al. (2019)

$$\pi_t + \psi_t - \psi_{t-1} = 0 \tag{4.2}$$

$$\lambda\left(x_t - x^*\right) - \kappa \psi_t = 0 \tag{4.3}$$

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- **Time-0 optimal policy** : optimal policy chosen taking as given expectations at $t = -1$ and the state at $t = 0$.

$$\psi_{-1} = 0 \tag{4.4}$$

"Doing something now, but promising to behave differently in the future"
$\Rightarrow$ Inflationary bias at t=0
$\Rightarrow$ Time-inconsistency of optimal policy

- **Time-less optimal policy**: optimal policy chosen such that evolution at t = 0 is consistent with what was expected from such policy in the past.

$$\pi_0 = \mathbb{E}_{t-1}\pi_0 \tag{4.5}$$

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Comment II: Cyclical Income Risk

- Cyclicality of **income risk** key for determinancy / stability and dynamic properties of model.
- The theoretical results rely on income broadly defined, including labour and non-labour sources.
- This income cyclicality depends on the parameter

$$\phi = \frac{\partial Var(x)}{\partial y} \equiv \text{cyclicality of cash on hand} \tag{4.6}$$

- Guvenen et al. (2014) results (countercyclical left skewness) are only about labour income: W2 form in the US Social Security Administration records. This includes wages and salaries, bonuses and exercised stock options
- We know less (empirically) about the cyclical properties of income...

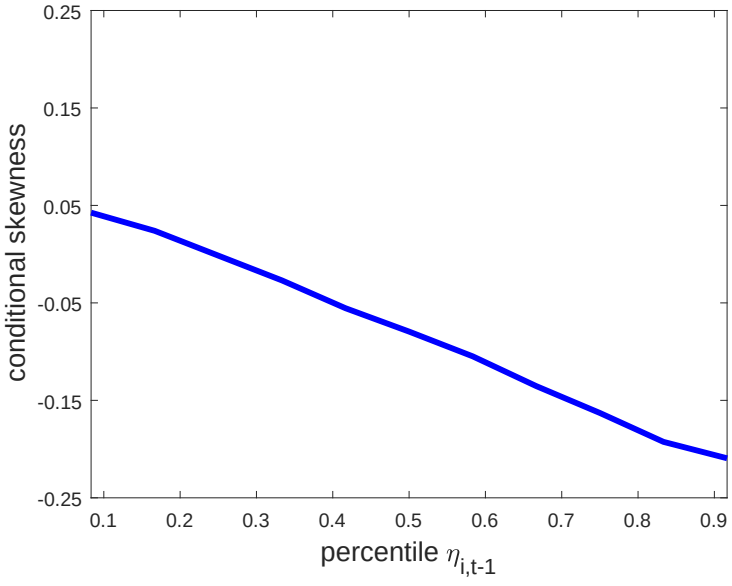
Quick estimation using Spanish household data

- I estimate a version of Arellano et al. (2017) labour income process using household data for Spain 2002-2014.
- For a given household i of age j at time t, persistent income $y_{i,j,t}$ is assumed to follow a generalized Markov process.
- In particular, the τ^{th} conditional quantile of persistent income given its past $y_{i,j-1,t-1}$ is assumed to be:

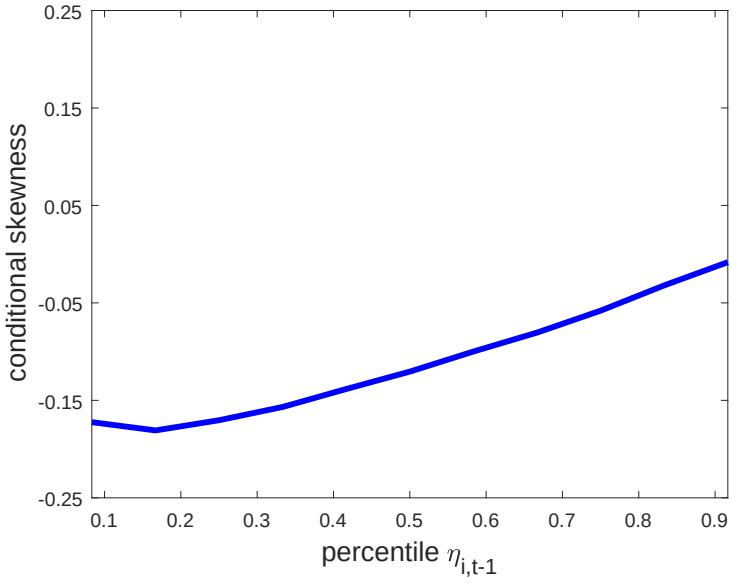
$$y_{i,j,t} = Q_{j,t}\left(y_{i,j-1,t-1}, u_{i,j,t}\right) \quad , \quad u_{i,j,t}|y_{i,j-1,t-1}... \sim U[0,1]$$

- In the data, $y_{i,j,t}$ is defined as the residual from a regression of log-labour income on a set of covariates including age of the household head, education categories, family size, etc.

Conditional Skewness - Average age



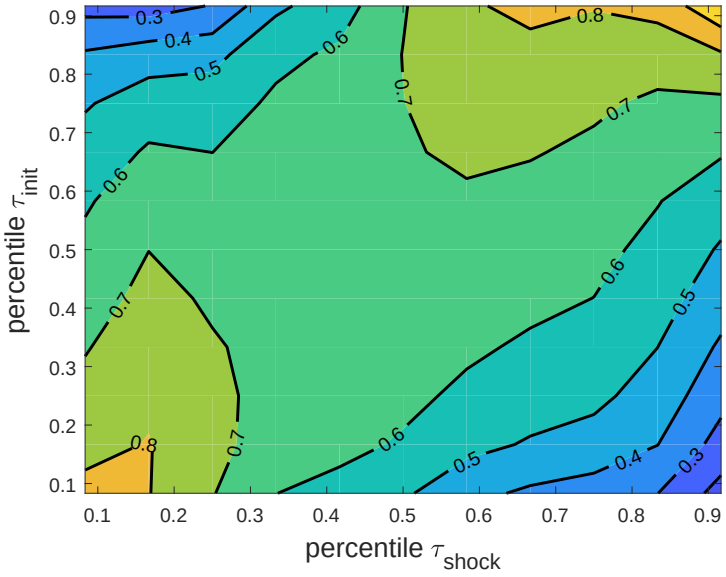
2002-2008



2008-2014

Persistence of earnings histories - Average age

$$\rho\left(\nu_{i,t-1}\tau_{i,t}\right) = \frac{\partial Q_{\nu|\nu-1}\left(\nu_{i,t-1},\tau_{i,t}\right)}{\partial \nu} \tag{4.7}$$



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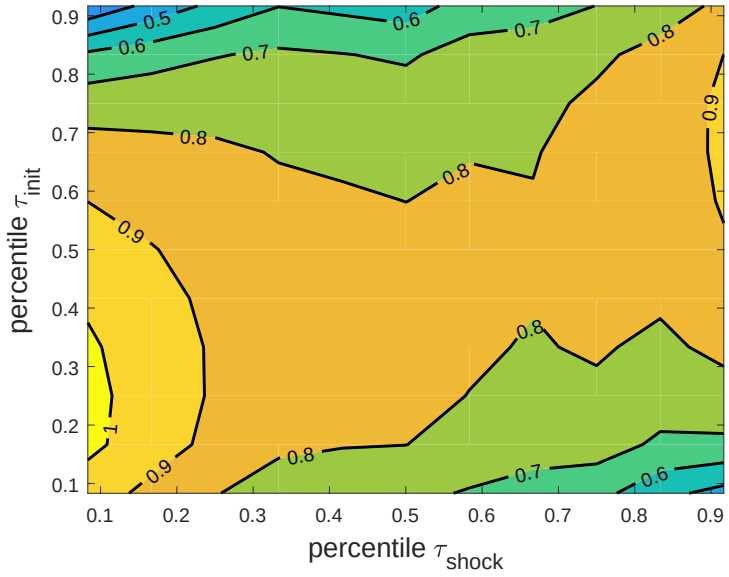

2008-2014

An unfair comment: Size and homogeneity of MPC

- My impression is that with current parametrization (even with $r = 4\%$!) , the homogeneous MPC μ is quite small.
- MP affects μ through easiness to borrow and save to smooth shocks.
- Data: between wealthy and poor HTM, almost 40%-50% of households in the UK-US ...
- ... how meaningful is the self insurance channel?

Overall

- A very promising and interesting paper!
- Fair enough, I have a personal bias to like it...
- ... but together with the PRANK paper by Acharya & Dogra (2018), I think they form a combo which sheds A LOT of light on the current RANK-TANK-HANK-SAM literature.

HANK

THANKs!