Discussion of "Redistributive Inflation and Optimal Monetary Policy" by Yucheng Yang

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Quick Summary of the Paper

- Interested in optimal monetary policy in HANK
- Three new channels:
  - Heterogeneity in consumption baskets
  - Nominal revaluations
  - Heterogeneous earnings elasticities
- Finds monetary policy should be *asymmetric*
- Nice combination of micro/macro to tackle big policy question

Conceptual Comment 1: What is the Optimal Policy Solving?

- Using MIT shocks for welfare is tricky
- My work (Boppart et al 2018) you can linearize HA models with MIT shocks
- Can you do welfare analysis at the same time?

How does this optimal policy compare to the "truth"?

- Consider the basic NK model
- We know the analytic welfare to 2nd order:

$$\begin{aligned} E\left[W_0 - W^*\right] &= -\frac{1}{2}E\left[\sum \beta^t \left\{\left(\widehat{c}_t - \widehat{c}_t^e\right)^2 + \frac{\epsilon}{\kappa}\pi_t^2\right\}\right] \\ &= -\frac{1}{2}E\left[\sum \beta^t \left\{\left(\widehat{x}_t\right)^2 + \frac{\epsilon}{\kappa}\pi_t^2\right\}\right] \end{aligned}$$

- If you work this out (using log-linear approx)

$$\begin{aligned} E_0\left[W_0 - W^*\right] &= -\frac{1}{2}E_0\left[\sum \beta^t \left\{\left(\varphi_x^2 + \frac{\epsilon}{\kappa}\varphi_\pi^2\right) a_t^2\right\}\right] \\ &= -\frac{1}{2}\frac{\varphi_x^2 + \frac{\epsilon}{\kappa}\varphi_\pi^2}{1-\beta}E_0\left[a_t^2\right] \\ &= -\frac{1}{2}\frac{\varphi_x^2 + \frac{\epsilon}{\kappa}\varphi_\pi^2}{1-\beta}\left(\sigma_a\right)^2 \end{aligned} \tag{1}$$

How does this optimal policy compare to the "truth"?

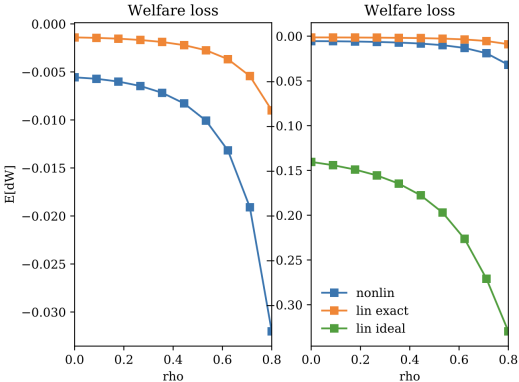
- If we compare this to the MIT shock exercise:

$$\begin{aligned}
E_0\left[W_0 - W^*\right] &= -\frac{1}{2}E_0\left[\sum \beta^t \left\{\left(\left(\rho^t\varphi_x\right)^2 + \frac{\epsilon}{\kappa}\left(\rho^t\varphi_\pi\right)^2\right)a_0^2\right\}\right] \\
&= -\frac{1}{2}\sum \beta^t \left\{\left(\left(\rho^t\varphi_x\right)^2 + \frac{\epsilon}{\kappa}\left(\rho^t\varphi_\pi\right)^2\right)\right\} E_0\left[a_0^2\right] \\
&= -\frac{1}{2}\sum \beta^t \left\{\left(\left(\rho^t\varphi_x\right)^2 + \frac{\epsilon}{\kappa}\left(\rho^t\varphi_\pi\right)^2\right)\right\} \sigma_a^2 \\
&= -\frac{1}{2}\left(\frac{\varphi_x^2}{1-\beta\rho^2} + \frac{\epsilon}{\kappa}\frac{\varphi_\pi^2}{1-\beta\rho^2}\right)\sigma_a^2 \\
&= -\frac{1}{2}\frac{\varphi_x^2 + \frac{\epsilon}{\kappa}\varphi_\pi^2}{1-\beta\rho^2}\sigma_a^2
\end{aligned}$$

- With $\beta = 0.99$ and $\rho = 0.7$, have $(1-\beta) \simeq 0.01$ comparing to 1 vs $1 - \beta\rho^2 \simeq 0.5$ so factor of 50 off if the shocks die fast

How does this optimal policy compare to the "truth"?

- Explored solving things fully non-linearly vs different linear:



- Bottom line: not quite capturing the full optimal policy
- *What should you do conditional on a shock*

Calibration Comment 1: Consumption baskets

Theoretically, price indices should be by *expenditure* levels, not income:

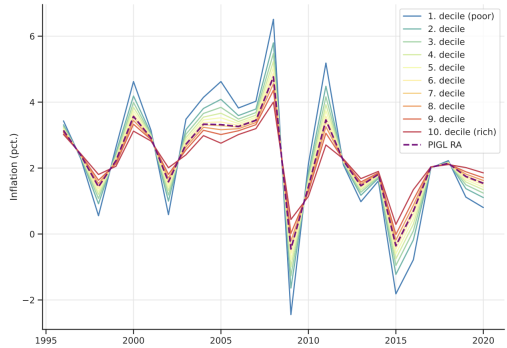


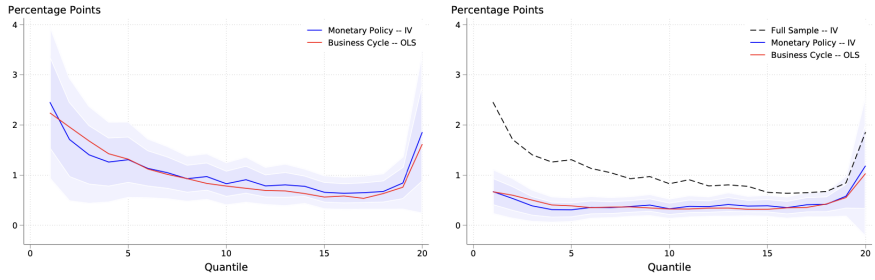
Figure 3. Generalized Sato-Vartia inflation under quasi-separability by expenditure decile.
Source: Hochmuth et al (2023)

- Lower expenditure households have more cyclical inflation
- ...but unclear if there's an average gap...
- Would be interesting to redo LPs

Calibration Comment 2: Unequal incidence vs unequal risk?

Models heterogeneous elasticity to aggregate earnings

Figure 2: Regression coefficients β_{12}^{q} across the income distribution



(a) Full sample

(b) Only individuals employed in $t-1$ and $t+12$

Source: Broer et al (2023)

- Data suggests drops are due to extensive margin...
- ...suggests some people disproportionate bear costs
- Fiscal policy may be better suited

Final thoughts

- Very nice paper
- Good use of micro/macro to try to dig deeper into optimal MP
- Think harder about the optimal policy exercise
- Looking forward to seeing the next version