Discussion of "Macroeconomics and Household Heterogeneity", by Krueger, Mitman & Perri

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What the paper does

- **Question**: how does *cross-household wealth heterogeneity* affect the economy's aggregate response to a severe recession, such as the 2007-9 Great Recession
- Analyze first what mechanisms allow the model to replicate the wealth distribution...
- ... and then understand how such distribution affects the economy's response to the recession

In addition:

- How does *unemployment insurance* affect the aggregate and welfare consequences of the recession

Framework and main findings

- RBC model with aggregate TFP shocks and uninsurable idiosyncratic earnings risk (as in Krusell & Smith, 1998; KS)

Main findings:

- Wealth distribution matters only if it features sufficiently many households with few assets ...
- ... consistently with the actual empirical US distribution
- Extending the KS model with (permanent) discount-factor heterogeneity (as in Carroll, Slacalek & Tokuoka, 2014) allows to generate both (i) empirically plausible wealth distribution and (ii) large aggregate response to shock
- Unemployment benefits soften the impact on aggregate consumption

Praise

- Impressive piece of work on a very important question
- Remarkable modelling and computational effort
- Exhaustive model assessment with respect to micro evidence
- Clear and intuitive results...
- ... that deliver an important message:
  - getting the wealth distribution right is not just important *per se*, but also to understand aggregate fluctuations
  - further reason why macroeconomists should take heterogeneity seriously

Comments

- (Lack of) model assessment along aggregate dimensions
- Source of Great Recession
- Modelling of demand-determined output extension

Model macro assessment

- Extensive analysis of model's empirical performance along micro dimensions (cross-household wealth distribution, before and during Great Recession)
- However, no assessment along *macro* dimensions (fall in output, consumption, etc., during Great Recession)
- Given the paper's declared focus on
    - dynamics of *macroeconomic* variables...
    - ... during a specific event (2008-9 Great Recession)
    - and on *quantitative* answers,

  such macro assessment would be welcome

Source of the Great Depression

- TFP as the only driving force behind Great Recession
- Great Recession had a largely *financial* origin
- **Suggestion**: complement TFP $\downarrow$ with a negative financial shock
- For instance, introduce a borrowing limit $\phi > 0$:

$$a \geq -\phi,$$

  and simulate a reduction in ϕ
- See e.g. Guerrieri & Lorenzoni (2015)

Extension to demand-determined output

- Reduced-form specification for (partially) demand-determined output,

$$Y = ZC^{\omega}F(K, N).$$

- **Suggestion**: introduce nominal rigidities + monetary policy rule
- E.g. price adjustment costs *à la* Rotemberg (1982) $\Rightarrow$ inflation equation,

$$\begin{aligned}(\pi_{Z,\Phi} - 1)\,\pi_{Z,\Phi} &= \frac{mc_{Z,\Phi} - \frac{\varepsilon-1}{\varepsilon}}{\psi/\varepsilon} \\ &\quad + \beta E\left[(\pi_{Z',\Phi'} - 1)\,\pi_{Z',\Phi'}\frac{Y_{Z',\Phi'}}{Y_{Z,\Phi}} \mid Z, \Phi\right]\end{aligned}$$

  where $mc_{Z,\Phi}$ is real marginal cost
- More standard, no additional state variable!

Demand-determined output (cont'd)

- For nominal rigidities to matter, policy-makers should be unable to replicate flexible-price equilibrium, e.g. due to ZLB constraint
- Financial shock may help make the ZLB constraint binding.
- Model version with endogenous labor supply is best suited for this purpose (otherwise, output would not respond in the short-run, over and above exogenous TFP fall)

Other comments

- Two social insurance programs:
  - Unemployment insurance: constant replacement ratio (ρ), endogenous tax rate
  - Retirement benefits: constant payroll tax rate, endogenous replacement ratio
- Why this asymmetry? Does it matter for the results?

Conclusion

- Impressive piece of work on an important question
- Clear and intuitive results that deliver an important message
  - getting the wealth distribution right is important to understand aggregate fluctuations (and not just *per se*!)
- Some macro model assessment would make the paper even more convincing
- Perhaps give a thought to:
  - Source of Great Recession in the model (financial shock?)
  - Modelling of demand-determined output (nominal rigidities?)