Discussion of “Monetary Policy/Forward Guidance According to HANK”
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Introduction

Overview of HANK literature

- Study monetary policy by combining
  - standard sticky-price NK model
  - workhorse incomplete markets heterogeneous agent (HA) model
    - One asset (Huggett ’93, Aiyagari ’94) → Gornemann-Kuester-Nakajima, McKay-Nakamura-Steinsson, Auclert, ...
    - Two assets (Kaplan Violante ’14) → This paper

- Overall message:
  - HANK transmission mechanism quite different from RANK
  - Multiple potential sources of amplification / dampening
  - Compositional change towards GE effects
  - Redistributive effects really matter:
    - Who works/who owns the firms
    - Fiscal policy rule: taxes vs transfers vs spending
Then came Iván Werning

- Maybe none of this matters for the *aggregate* effect of mon. policy
  - PE and GE effects may cancel out
  - Intuition: if \( dR \) purely transitory

\[
\begin{align*}
  dc &= \underbrace{MPCdy}_{\text{Income (GE) effect}} - \underbrace{\sigma c (1 - MPC) \frac{dR}{R}}_{\text{Substitution (PE) effect}} \\
  \text{and } dc &= dy, \text{ then } \frac{dc}{c} = -\sigma \frac{dR}{R} \text{ irrespective of } MPC
\end{align*}
\] (1)

- Werning’s assumptions are fairly extreme. In benchmark:
  1. No trading (borrower/saver redistribution)
  2. No investment (source of labor demand)
  3. No government

- Can be relaxed a little, but ultimately quantitative question how close to RA we get with more realistic assumptions
  - This is where this paper comes in!
Strong points of KMV

- Innovative continuous-time methods
- Income process consistent with 'new' income risk evidence
- Careful mapping between hh balance sheets and macro aggregates
- Even better calibration relative to previous iteration:
  - Replaced GHH preferences with more conventional separable prefs
    - GHH was convenient for aggregation on labor supply side
    - but $c/n$ complementarities implied strong 'GE' effects even in RANK
  - Neutralized some of the distributional incidence of profits
Propensities to earn with separable preferences

- Separable preferences:
  \[ u(c) - v(n) = \log c - bn^2 \]

- Real wage \( w \), skill \( e^i \), FOC:
  \[ \frac{v'(n^i_t)}{u'(c^i_t)} = w_t e^i_t \quad \forall i, t \]

- Differentiate (\( \sigma \) EIS, \( \psi \) Frisch)
  \[ w_t e^i_t MPN^i_t = - \frac{\sigma}{\psi} \frac{w_t e^i_t n^i_t}{c^i_t} \cdot \text{MPC}^i_t \]

- Empirical evidence?
Role of investment and dynamic GE effects

▶ How come still get $> 66\%$ contribution from GE effects?
  ▶ With separable preferences, no investment and no persistence, cf (1):

\[
\text{Share of GE effect} \approx \text{MPC} \approx 20\%
\]

▶ My hunch: combination of two reasons
  1. Investment plays a big role
     ▶ It does in the RA model too: importance of clear RA benchmark
     ▶ Both for composition GE/PE, and for aggregate effect
     ▶ Show impulse responses for $I$ and $G$ separately
     ▶ Explain better role of hh-level adjustment costs and variable capacity utilization
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  2. Dynamic GE effects are important
     ▶ Future income changes (from future response to shocks) feed into current response
     ▶ “Intertemporal keynesian cross” (with Matt Rognlie & Ludwig Straub)
An alternative

- **Wage rigidities** solve a lot of the issues with price rigidities
  - Profits mildly procyclical (vs highly countercyclical)
  - Effective MPN out of AD increases can be controlled directly
- Example: Auclert-Rognlie (2016)
  - One asset, investment with adj. costs, all equity is traded
  - Income process same as KMV
  - Here: perfectly sticky wages
Forward guidance shock in Auclert-Rognlie

- PE Effect:
GE Effect: reviving Werning neutrality
Conclusion

- Very exciting paper, substantial advance to literature
- Leaves open many questions for follow-up work
- Next frontiers:
  - More empirical evidence, notably
    - Incidence of labor demand expansions
    - Marginal rules for govt tax/transfers/spending
  - More theory/empirics on mp + investment with heterogeneous firms
Thank you!
RANK model with GHH preferences

- Assume linear production
  \[ y_t = c_t = n_t \]

Euler equation

\[ u'(c_t - \nu(n_t)) = \beta \mathbb{E}_t \left[ R_{t+1} u'(c_{t+1} - \nu(n_{t+1})) \right] \quad (2) \]

intertemporal substitution with respect to net consumption \( g_t = c_t - \nu(n_t) \)

- Consider a one-time expansion of \( \frac{dR}{R} < 0 \). By (2), implies \( \frac{dg}{g} = -\sigma \frac{dR}{R} \)

- At steady-state with labor wedge \( \tau \),
  \[ \nu'(n) = \nu'(c) = (1 - \tau) \]

so \( \frac{dg}{g} = \frac{(1-\nu'(c))dc}{c-\nu(c)} = \tau \frac{c}{c-\nu(c)} \frac{dc}{c} = -\sigma \frac{dR}{R} \)

- Hence
  \[ \frac{dc}{c} = -\frac{\sigma}{\tau} \frac{c - \nu(c)}{c} \frac{dR}{R} \]

- Note \( \tau \) in the denominator: large general equilibrium effects in this RANK