“MONETARY POLICY ACCORDING TO HANK”

Greg Kaplan  Benjamin Moll  Giovanni L. Violante

Discussion by Yuriy Gorodnichenko (UC Berkeley)
TRANSMISSION OF MONETARY SHOCKS

• Classic question

• Key building blocks
  o New Keynesian models: intertemporal substitution
  o “Old” Keynesian models: income effect
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• New theme in recent monetary economics research
  o Heterogeneity is potentially important for aggregate dynamics
  o Monetary shocks induce re-distribution
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• This paper: a beautiful model of how household heterogeneity interacts with price stickiness.
Transmission of Monetary Shocks

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• This paper: a beautiful model of how household heterogeneity interacts with price stickiness.

• My comments: evaluate implications of the model empirically.
EMPIRICAL FRAMEWORK

- Romer and Romer (AER 2004) shocks (updated to 2008).
- Jorda (AER 2005) projections

\[ \Delta X_{t+h} = \sum_{s=1}^{4} \alpha_s^h \Delta X_{t-s} + \sum_{m=1}^{20} \beta_{s}^{(h)} \epsilon_{t-m}^{RR} + \text{error}, \quad h = 0, \ldots, H \]

Cumulative impulse response for $X$ is $\{\theta_h\}_{h=0}^{H}$ where $\theta_h = \sum_{q=0}^{h} \hat{\beta}_1^{(h)}$. 
POINT #1: WHAT IS MOVED BY MONETARY SHOCKS?

percentage points

GDP (p-val = 0.000)
POINT #1: WHAT CONSUMPTION IS MOVED BY MONETARY SHOCKS?

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![Graph showing consumption moved by monetary shocks](image_url)
**POINT #1: WHAT CONSUMPTION IS MOVED BY MONETARY SHOCKS?**

- **Consumption (p-val = 0.000)**
- **Nondurables (p-val = 0.006)**

Graphs showing percentage points of consumption and nondurables over time.
POINT #1: WHAT CONSUMPTION IS MOVED BY MONETARY SHOCKS?

Consumption (p-val = 0.000)

Nondurables (p-val = 0.006)

Durables (p-val = 0.000)

Services (p-val = 0.000)
POINT #1: WHAT CONSUMPTION IS MOVED BY MONETARY SHOCKS?

Aggregate consumption is moved by durables & services. Non-durables have little effect.
Other (smaller) component of GDP are more sensitive to MP.
POINT #3: INCOME RESPONSES BY TYPE

Model: labor + transfers are key. Data: little or wrong-sign reaction.

- Business Income (p-val = 0.000)
- Wages and Salaries (p-val = 0.000)
- Financial Income (p-val = 0.000)
- Transfer Income (p-val = 0.000)
**POINT #3: INCOME RESPONSES BY TYPE**

Model: labor + transfers are key. Data: little reaction for earnings.
POINT #4: GHH PREFERENCE

- Earnings: $z_i w l_i$
- Optimality condition for labor: $\psi l^{1/\phi} = w$
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• Earnings: $z_i w l_i$

• Optimality condition for labor: $\psi l^{1/\phi} = w$
  - labor supply of household $i$ does not vary with wages received by household $i$.
  - if aggregate wages do not move, employment does not vary.
## Point #4: GHH Preference

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<tr>
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<tr>
<td>Change in $r^b$ (pp)</td>
<td>-0.23%</td>
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**Component of Change in $C$ due to:**

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### Point #4: GHH Preference + Sticky Wages

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Component of Change in $C$ due to:

- **Direct effect: $r^b$**
  - Baseline: 12%
  - $\delta^u = 0$: 12%
  - Sticky wages: 9%

- **Indirect effect: $w$**
  - Baseline: 59%
  - $\delta^u = 0$: 58%
  - Sticky wages: 69%

- **Indirect effect: $T$**
  - Baseline: 32%
  - $\delta^u = 0$: 31%
  - Sticky wages: 24%

- **Indirect effect: $r^a$**
  - Baseline: 0%
  - $\delta^u = 0$: 0%
  - Sticky wages: 0%
Suppose wages are increasingly sticky so that \( w_t = \bar{w} \). Then there is no change in employment, earnings are fixed. The indirect channel of monetary policy transmission is shut down.

**Point #4: GHH Preference + Sticky Wages**

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  - wages are strongly procyclical.
Real wages are not very procyclical.
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- Optimality condition for labor: $\psi l^{1/\phi} = w$
  - labor supply of household $i$ does not vary with wages received by household $i$.
  - if aggregate wages do not move, employment does not vary.
  - wages are strongly procyclical.
  - cross-sectional dispersion of earning is stable.
Cross-sectional earnings inequality increases (weakly) after a contractionary monetary shock. Source: Coibion et al. (2014)
Guevenen et al. (JPE 2014): skewness becomes more negative in recessions.
POINT #5: ENDOGENOUS BORROWING CONSTRAINTS

In the model, there is an exogenous borrowing constraint for liquid assets:

\[ b_t \geq b \text{ with } b = $10K \]
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Iacoviello (AER 2005): households can borrow against illiquid assets (housing)

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Alternative formulation: \( b_t \geq b(a_t) \) with another channel of transmission of MP.
**POINT #5: ENDOGENOUS BORROWING CONSTRAINTS**

Response of house prices to a contractionary monetary shock.

![Graph showing the response of house prices to a contractionary monetary shock.](image-url)
POINT #6: DISTRIBUTIONAL EFFECTS OF MP SHOCKS

• Income composition channel
  o Heterogeneity across households in terms of their primary sources of income (earnings, business, financial or transfer income).

• Portfolio/financial segmentation channel:
  o If low-income households tend to hold relatively more currency than high-income households (Erosa and Ventura 2002, Albanesi 2007), then inflationary actions on the part of the central bank would represent a transfer from low-income households toward high-income households which would tend to increase consumption inequality.

• Savings redistribution channel
  o An unexpected increase in interest rates or decrease in inflation will benefit savers and hurt borrowers as in Doepke and Schneider (2006), thereby generating an increase in consumption inequality (to the extent that savers are generally wealthier than borrowers).

• Earnings heterogeneity channel
  o Unemployment disproportionately falls upon low income groups, as documented in Carpenter and Rogers (2004).
Response of cross-sectional consumption inequality to a contractionary monetary policy shock. Source: Coibion et al. (2014)
SUMMARY

• One of the most important questions in macroeconomics.

• Excellent start of an exciting research agenda.

• Need more work to connect the model to the data.