Monetary Policy and Wealth Effects: The Role of Risk and Heterogeneity

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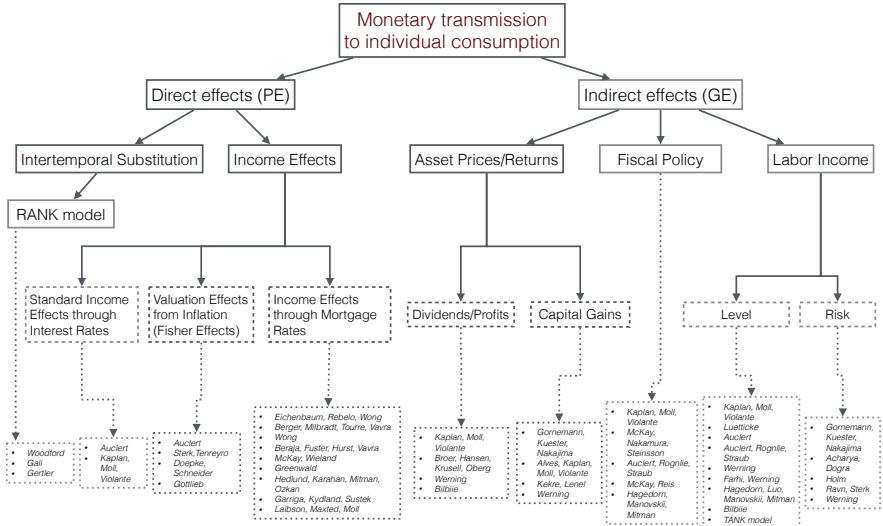
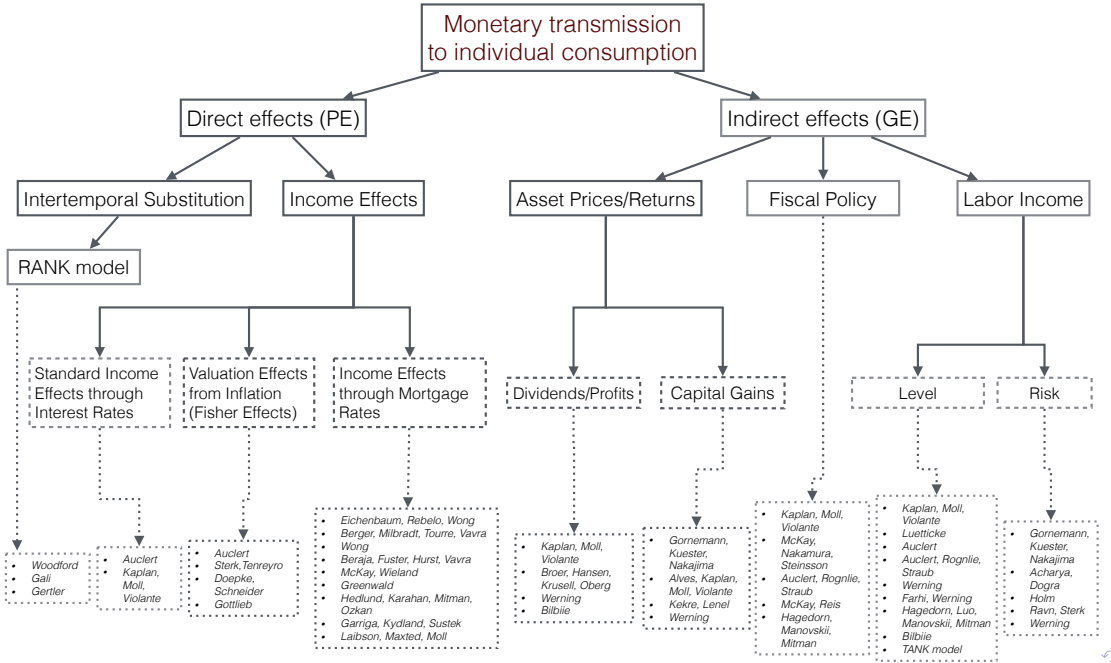
SUMMARY

- Monetary policy transmission via:
  1. (Time-varying) background rare disaster risk
  2. Risky household debt
  3. MPC heterogeneity
- Large indirect effects from (1) and (2)
- Fiscal function important

BIG PICTURE: MOLL'S HANK SUMMARY




Monetary transmission to individual consumption
Direct effects (PE)
Indirect effects (GE)
Intertemporal Substitution
Income Effects
Asset Prices/Returns
Fiscal Policy
Labor Income
RANK model
Standard Income Effects through Interest Rates
Valuation Effects from Inflation (Fisher Effects)
Income Effects through Mortgage Rates
Dividends/Profits
Capital Gains
Level
Risk
Woodford
Gali
Gertler
Auclert
Kaplan, Moll, Violante
Auclert
Sterk,Tenreyro
Doepke, Schneider
Gottlieb
Eichenbaum, Rebelo, Wong
Berger, Milbradt, Tourre, Vavra
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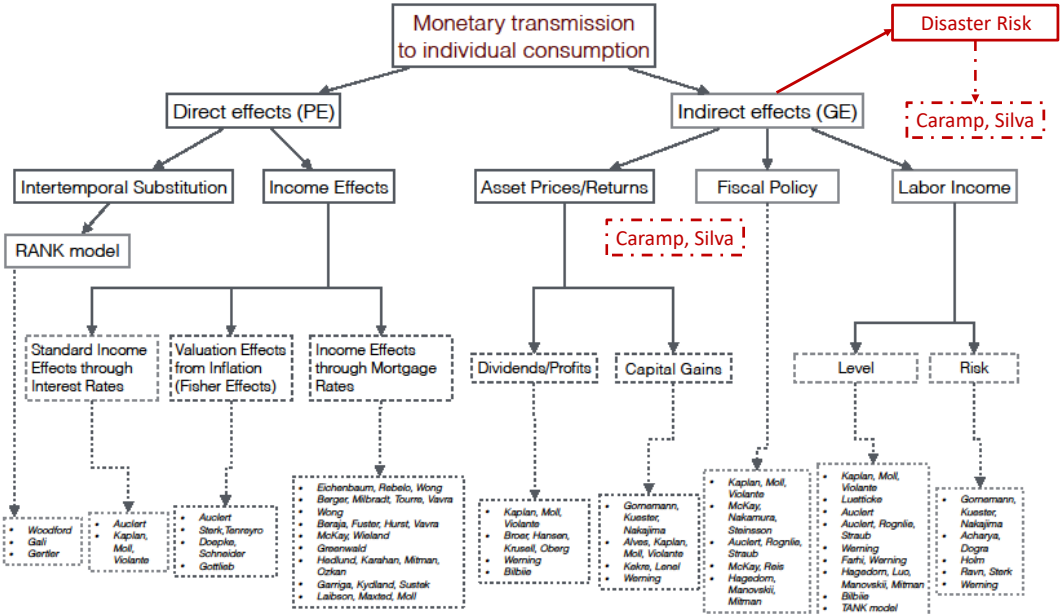
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Caramp, Silva
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DISASTER-HANK

$$y_t = \underbrace{\sigma^{-1}\hat{y}_t}_{\text{IS}} + \underbrace{\chi_d \epsilon_\lambda \hat{y}_t}_{\text{Risk}} + \underbrace{(\rho - \underline{\omega})e^{\underline{\omega} t}\Omega_0}_{\text{Outside Wealth}} + \underbrace{\frac{\mu_b \chi_r}{1-\mu_b}\bar{\psi}_m \bar{d}_p \hat{y}_t}_{\text{Inside Wealth}}$$

1. Output response decomposition: $dy = 7\% + \boxed{39\% + 47\%} + 7\%$

2. Amplification relative to RANK: 20% heterogeneity, 50% time-varying risk, 10% interaction

3. Interaction term very interesting

Background Disaster Risk

- Precautionary savings motive
- Normally, from uninsured idiosyncratic shocks
- Can be cyclical: e.g. labor income risk (Ravn-Sterk)
- This paper: rare disasters in the background
- Counter-cyclical by construction: intensifies when MP tightens

WHAT DISASTERS?

1. Real activity (Rietz-Barro-Gabaix)
2. Banking runs/crises (Bernanke-Diamond-Dybvig-Gertler-Kiyotaki-Prestipino)
3. Inflation (Hilscher-Raviv-Reis)

Real Activity

This paper, main text:

$$\underbrace{\lambda_t}_{\text{Disaster Risk Arrival Rate}} = F(i_t - r_n), \quad F'(.) > 0$$

$$\frac{\dot{C}_{j,t}}{C_{j,t}} = \underbrace{\sigma^{-1}(i_t - \pi_t - \rho_j)}_{\text{Intertemporal Substitution}} + \underbrace{\frac{\lambda_t}{\sigma}\left[\left(\frac{C_{j,t}}{C^*_{j,t}}\right)^{\sigma} - 1\right]}_{\text{Precautionary Savings Motive}}$$

$$i_t = r_n + \phi_\pi \pi_t + u_t$$

Realistic?

BANK RUNS

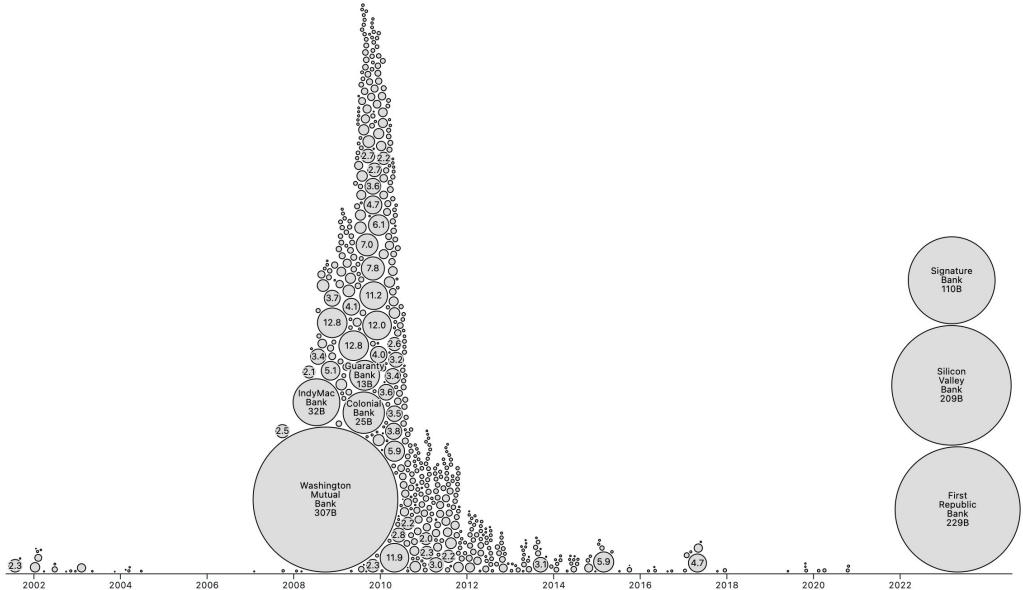
This paper, major extension in appendix:

$$\lambda_t = F_2(i_t - r_n)$$

F_2 = function of bank balance sheet characteristics

$$\underbrace{(Q^*_{t+1} + Z_{t+1})K^b_t}_{\text{Realized Return on Capital}} \quad < \quad \underbrace{\bar{R}_t D_t}_{\text{Promised Payment to Depositors}}$$

Realistic?



Picture Credit: Mike Bostock (https://observablehq.com/@mbostock)

Inflation Disasters

- Background inflation disaster risk
- Very bad one-time cost push shock: $Pr_t\left(|\pi_{t,t+1} - \bar{\pi}| > d\right)$
- Persistent deviation from target: $Pr_t\left(|\frac{\pi_{t,t+h}}{H} - \bar{\pi}| > d\right)$
- $\lambda_t = F_3(Pr_t)(i_t - r_n)$

SCARS

- After monetary contractions the present discounted value of time-varying risk is zero:

$$\int_0^\infty \epsilon^{-\rho t} \chi_d \epsilon_\lambda \hat{y} dt = 0$$

- Timing of risk, not present value. Just shifting risk over time
- Could add irreversible scars of anticipated/realized disasters?

Insurance

Is there anything agents could do to protect from background disaster risk?

- Derivatives
- Deposit insurance
- Inflation options
- *Domestic* disasters? FX exposure

EIS

- With EIS <1, anticipated decline in disposable income in disaster states => higher savings
- Jacobsen-Jacobsen-Kleven-Zucman: EIS>1 out of *wealth* tax
- That's why direct effects unimportant?
- Robustness. Epstein-Zin? Why not just set to 1 throughout?

News Shocks

- Monetary policy contraction impulse acts as news of a possible future disaster
- Recasting the paper as a Beaudry-Portier situation
- The BP view: jointly explaining stock prices and real macro
- This paper accomplishes something similar
- Pure news shock: disaster doesn't need to ever materialize

(T)HANK

- The model is a really a TANK. DTANK?

Conclusion

- Thought-provoking paper
- Strong contribution to the HANK literature
- The disaster risk angle a new, general channel
- Empirics, analytics, quantitative ✓