



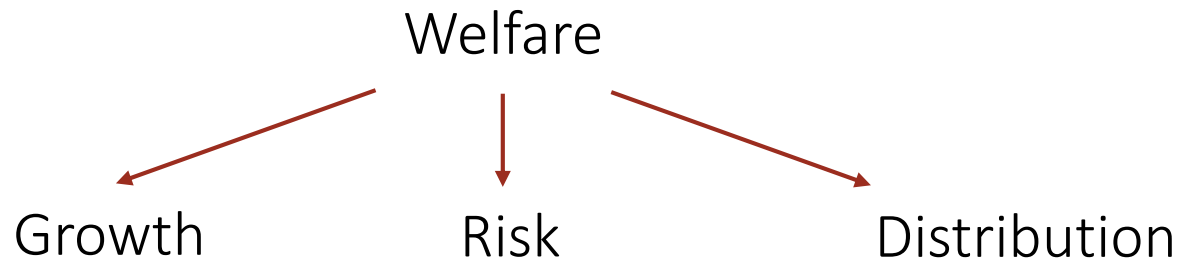
# The Evolving Role of Central Banking

by

Markus K. Brunnermeier

Princeton University

# Macro-Management



- Price stability
- Financial stability
- Fiscal debt sustainability

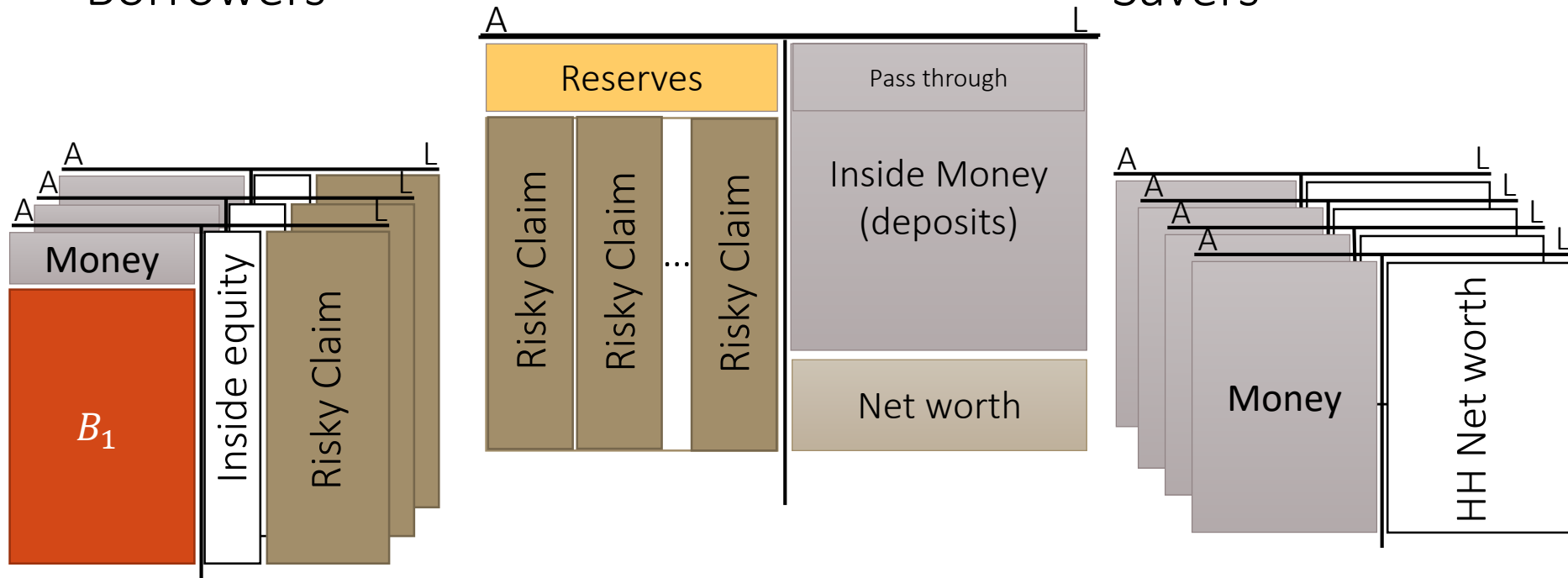
# ||| Roadmap

1. From a stock-flow to a risk perspective
  - Banks as money creators and “risk mitigators”
  - Amplification due to balance sheet impairments (bottleneck)
2. From a representative agent to a bottleneck perspective
3. Quantity vs. Prices
4. Independence – three dominance concepts
5. Size of Central Banks’ balance sheet
6. ZLB and Liquidity trap
7. MoPo and MacroPru interaction

# 1. From Level to Risk Perspective

■ Borrowers

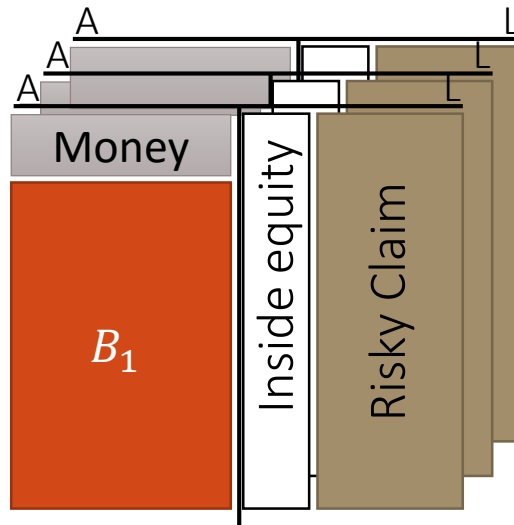
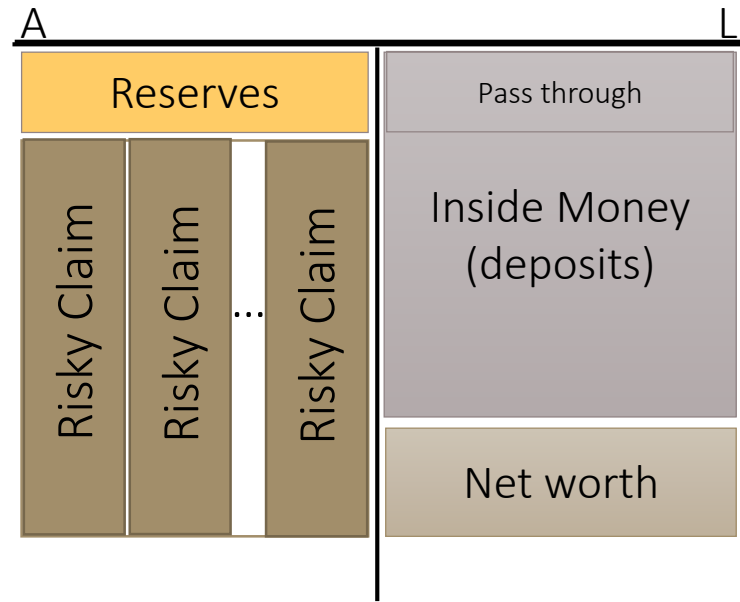
■ Savers



## ■ The Loanable Funds Model

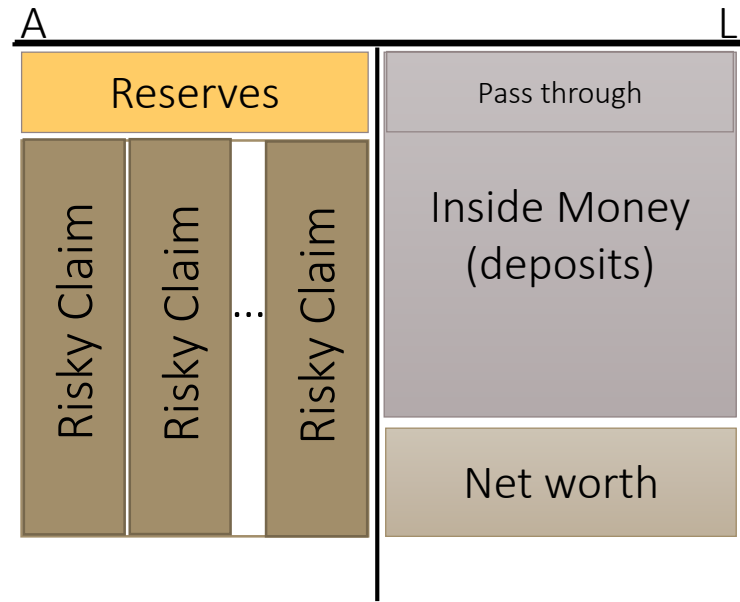
- Money creation (inside money) depends on risk bearing capacity
- Demand for money rises if idiosyncratic risk cannot be diversified
- Amplification/endogenous risk

# 1. From Level to Risk Perspective



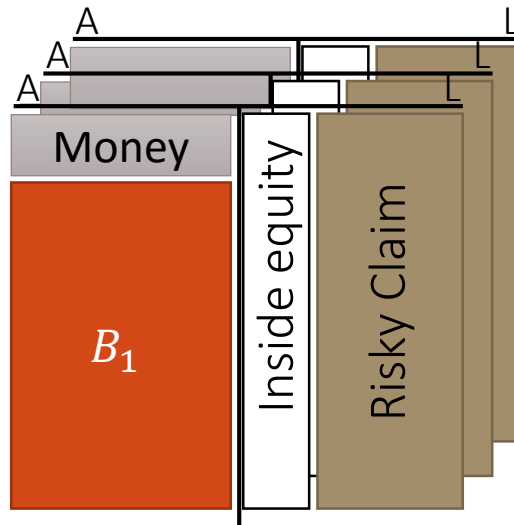
■ The I Theory of Money  
• with Yuliy Sannikov

# 1. From Level to Risk Perspective



Banks as

- Risk mitigators
- Money creator (inside money) depends on risk bearing capacity
- Demand for money if idiosyncratic risk cannot be diversified
- Amplification/endogenous risk



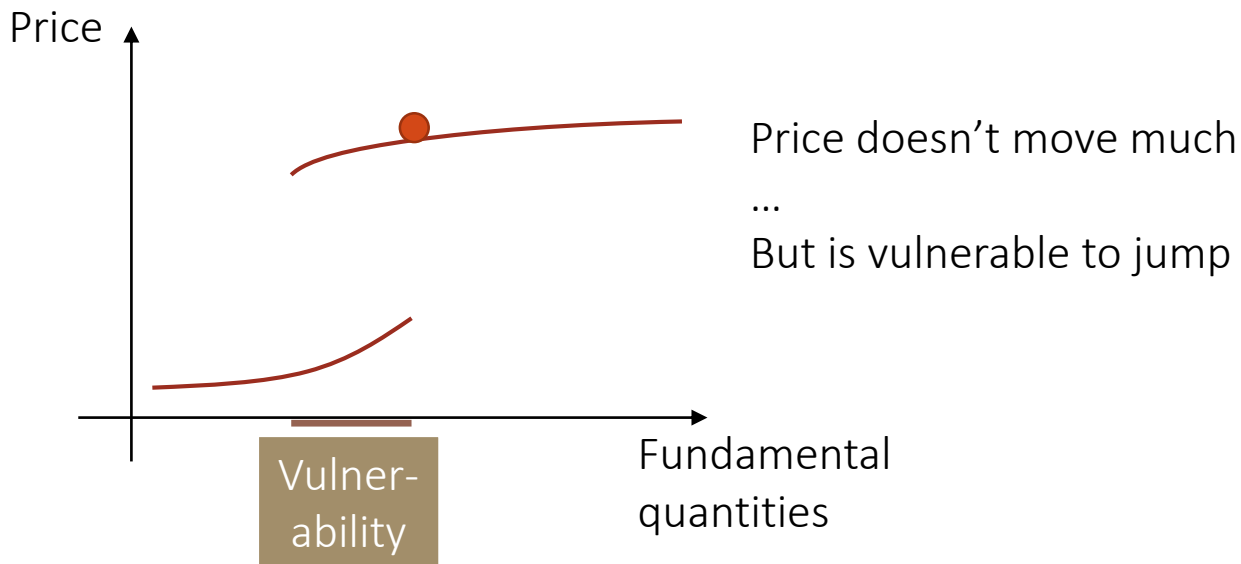
■ The I Theory of Money  
 • with Yuliy Sannikov

## 2. From an Average to a Bottleneck Perspective

- Identify bottleneck → which may lead to amplification
  - Financial sector
  - Household sector in 2000s the US
  - Corporate sector in Japan 1990s
- Ex-post repair “sector-aggregate” balance sheet
  - E.g. QE2 in US supported house prices
    - helped households (most effective)
    - Not useful for Japan
- Transmission channel might be “sectorially impaired”
  - Monetary Transmission Mechanism works differently across sectors/regions
  - SME are disadvantaged compared to sovereigns and large corporations

# 3. Quantities vs. Prices: a) Vulnerabilities

- **Watching:** Vulnerability Indicator (build-up phase)
- Trigger vs. Amplification
  - Triggers: **varies** subprime, internet,
  - Amplification: **common** liquidity mismatch
- Prices vs. Quantities
  - Prices follow trend, but Quantities show build-up of risk

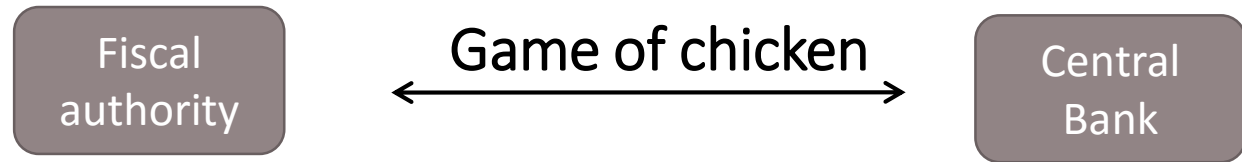




# 3. Quantities vs. Prices: b) Target

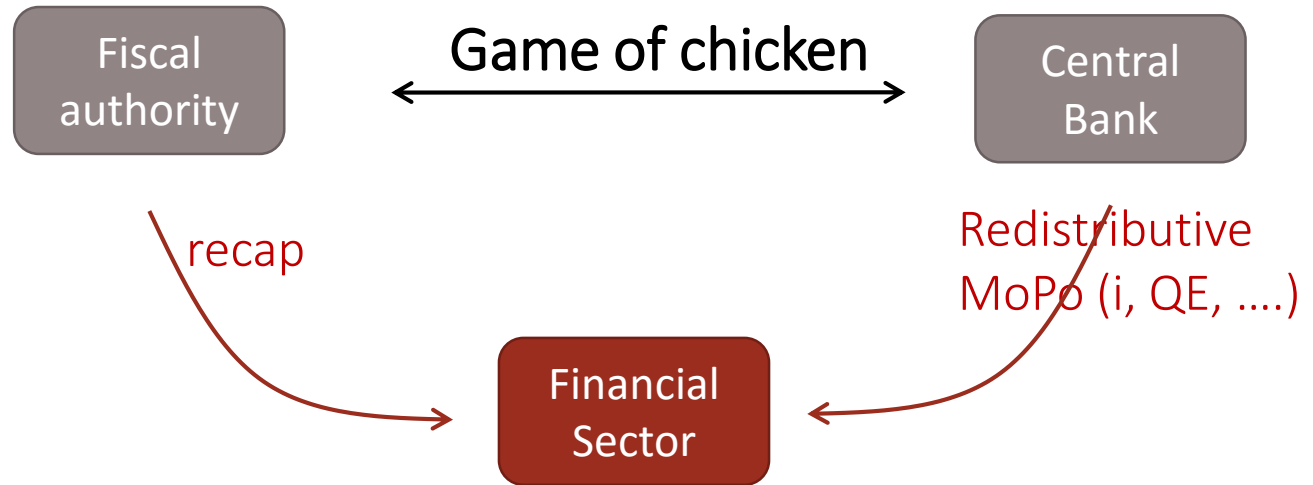
- **Targeting:** Fed funds vs. Repo rate
  - Reverse repo
- Remoteness from risk for Central Bank
- Should Central Bank assume risk and thereby reduce endogenous risk?
  - Assume small amount of risk and reduce endogenous risk by a big amount

# 4. Independence of Central Bank



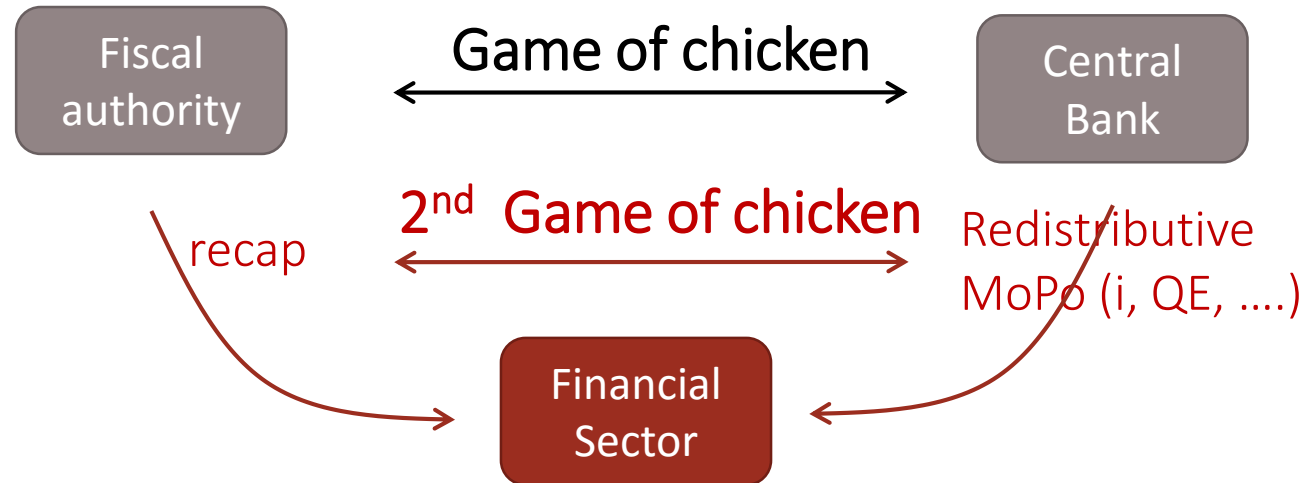
- Monetary dominance
  - Fiscal authority is forced to adjust budget deficits
- Fiscal dominance
  - Inability or unwillingness of fiscal authorities to control long-run expenditure/GDP ratio
  - Limits monetary authority to raise interest rates
- 0/1-Dominance vs. battle: “dynamic game of chicken”

# 4. Independence & 3 Dominance Concepts



- Monetary dominance
  - Fiscal authority is forced to adjust budget deficits
- Fiscal dominance
  - Inability or unwillingness of fiscal authorities to control long-run expenditure/GDP ratio
  - Limits monetary authority to raise interest rates
- Financial dominance
  - Inability or unwillingness of financial sector to absorb losses
    - Refusal to issue no equity – pay out dividends in early phase of crisis

# 4. Independence: 2<sup>nd</sup> Game of Chicken



- Monetary dominance
  - Fiscal authority is forced to adjust budget deficits
- Fiscal dominance
  - Inability or unwillingness of fiscal authorities to control long-run expenditure/GDP ratio
  - Limits monetary authority to raise interest rates
- **Financial dominance**
  - Inability or unwillingness of financial sector to absorb losses
    - Refusal to issue no equity – pay out dividends in early phase of crisis

# 5. Size of CB's Balance Sheet

- Should size of CB's balance stay large?
- Who should do maturity transformation of risk-free government debt?
  - Central bank or private sector (money market funds)?
  - Need of a safe government asset (ESBies)
- Maturity Rat race (Brunnermeier & Oehmke)
  - Private sector is not good at maturity transformation
  - Informational value of interbank market is only for high frequency movements, but not long-run build up of imbalances.

# 6. ZLB & Liquidity trap

- Difficulty in creating inflation due to
  - Zero Lower Bound
  - Liquidity trap (more generally)
    - Risk bearing capacity is impaired
    - Endogenous risk is rising

# 7. MacroPru & MoPo Interaction

- MoPo  
asset prices distortion
  - Insurance/recap sector risk -- The I Theory
  - Impacts *jointly*:  
risk taking, endogenous risk and risk premia
- MacroPru  
quantity restrictions
  - Control risk taking (quantity) separately from risk premia
- MacroPru **complements** MoPo
  - Not substitutes
- Good MacroPru enables more aggressive MoPo
  - More redistribution ex-post
  - More risk-transfers/insurance ex-ante
  - Value of money is higher (lifts level)
- Common MoPo in currency union –  
MacroPru can be state dependent

# Conclusion

1. From a stock-flow to a risk perspective
  - Amplification due to balance sheet impairments (bottleneck)
2. From a representative agent to a bottleneck perspective
  - Ex-post: Redistribute
  - Ex-ante: Insurance
3. Quantity vs. Prices
  - Watch for vulnerability build-up
  - Target rates. Which? Should central bank assume risk?
4. Independence – three dominance concepts
5. Size of Central Banks' balance sheet
  - Safe government asset – ESBies
  - Who should do maturity transformation of safe asset
6. ZLB and Liquidity trap
7. MoPo and MacroPru interaction



# Redistributive Monetary Policy

<b>(New) Keynesian Demand Management</b>		<b>I Theory of Money Risk (Premium) Management</b>
Stimulate aggregate consumption		Alleviate balance sheet constraints
<b>Woodford (2003)</b>	<b>Tobin (1982)</b>	<b>BruSan</b>
Price <u>stickiness</u> & ZLB Perfect capital markets	Both	Financial <u>frictions</u> Incomplete markets
Representative Agent	Heterogeneous Agents	
Cut $i \Rightarrow$ reduces $r$  Euler equation $\Rightarrow c$ (substitution effect)	Cut $i$ Changes bond prices <u>Redistributes</u> from <u>low MPC to high MPC</u> consumers	Cut $i$ or QE Changes asset prices Ex-post: <u>Redistributes</u> (wealth effect) (depend on asset holdings)
Focus on levels	Focus on levels and risk dynamics	