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Macro, Money and Finance
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Motivation

- **Aim:** Bridge the gap between
  - Macro/money research
  - Finance research

- **Financial sector helps to**
  - overcome financing frictions and
  - channels resources
  - creates money

- ... but
  - Credit crunch due to adverse feedback loops & liquidity spirals
    - Non-linear dynamics

- **New insights to monetary and international economics**
Program overview

- Friday
  - Macro models with financial frictions in continuous time
  - Financial frictions: Empirical evidence
- Saturday
  - Demand for liquid assets, Money and Bubbles
  - Funding liquidity risk (rollover risk)
  - Bubbles
- Sunday
  - Fiscal Theory of the Price Level
  - International: Global Liquidity and Capital control
Systemic risk – a broad definition

- Systemic risk build-up during (credit) bubble ... and materializes in a crisis
  - “Volatility Paradox” → contemp. measures inappropriate

- Spillovers/contagion – externalities
  - Direct contractual: domino effect (interconnectedness)
  - Indirect: price effect (fire-sale externalities) credit crunch, liquidity spirals

- Adverse GE response → amplification, persistence
Minsky moment – Wile E. Coyote Effect
**Instruments**

- Price stability
  - Monetary policy
    - Short-term interest
    - Policy rule (terms structure)

- Financial stability
  - Macroprudential policy
    - Reserve requirements
    - Capital/liquidity requirements
    - Collateral policy
    - Margins/haircuts
    - Capital controls

- Output (gap)
Methodology

- **Verbal Reasoning** *(qualitative)*
  - Fisher, Keynes, ...

Macro
- **Growth theory**
  - *Dynamic (cts. time)*
  - *Deterministic*
- **Introduce stochastic**
  - *Discrete time*
    - Brock-Mirman, Stokey-Lucas
    - DSGE models
- **Cts. time macro with financial frictions**

Finance
- **Portfolio theory**
  - *Static*
  - *Stochastic*
- **Introduce dynamics**
  - *Cts. time*
    - Option  Black Scholes
    - Term structure  CIR
    - Agency theory  Sannikov
Heterogeneous agents + frictions

- Lending-borrowing/insuring since agents are different
  - Poor-rich
  - Productive
  - Less patient
  - Less risk averse
  - More optimistic
  - Rich-poor
  - Less productive
  - More patient
  - More risk averse
  - More pessimistic

- Limited direct lending due to frictions

- Friction ➔ \( p_s MRS_s \) different even after transactions

- Wealth distribution matters! (net worth of subgroups)

- Financial sector is not a veil
Liquidity Concepts

- Financial instability arises from the fragility of liquidity.
  
  Technological liquidity
  - Reversibility of investment
  
  Market liquidity
  - Specificity of capital
    - Price impact of capital sale
  
  Funding liquidity
  - Maturity structure of debt
    - Can’t roll over short term debt
  - Sensitivity of margins
    - Margin-funding is recalled

- The liquidity mismatch between assets and liabilities determines the severity of the amplification effects.
Types of Funding Constraints

- **Equity constraint**
  - Skin in the game constraint

- **Debt constraints**
  - Costly state verification a la Townsend
  - Commitment problems/collateral constraints
    - Incomplete contracts a la Hart-Moore
    - Credit rationing a la Stiglitz-Weiss

- Affected by
  - **Price** of collateral
  - **Volatility** of collateral
Liquidity - Persistence & Amplification

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