Princeton Initiative 2011
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

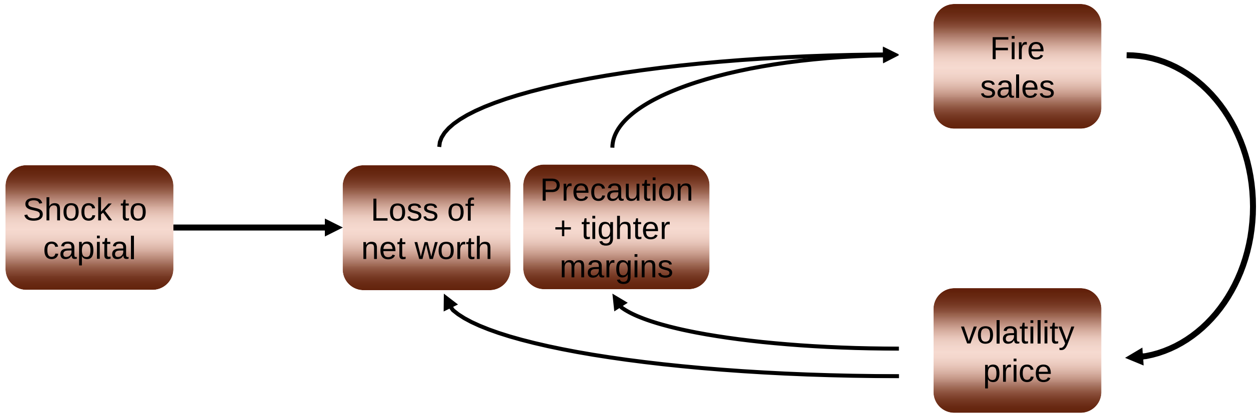
  … but
  - Credit crunch due to
    adverse feedback loops & liquidity spirals
    - Non-linear dynamics
- New insights to monetary and international economics

Program overview http://www.princeton.edu/princeton_initiative

- 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

preventive

crisis management

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Minsky moment – Wile E. Coyote Effect

Instruments

- Output (gap)

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

inter-
action

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

Methodology

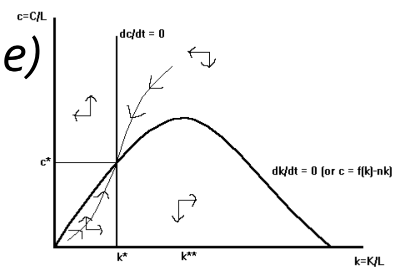
timeline

- *Verbal Reasoning (qualitative)*

  Fisher, Keynes, …

Macro

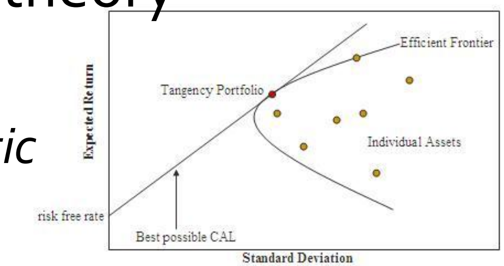
- Growth theory
  - *Dynamic (cts. time)*
  - *Deterministic*



- Introduce stochastic
  - *Discrete time*
    - Brock-Mirman, Stokey-Lucas
    - DSGE models

Finance

- Portfolio theory
  - *Static*
  - *Stochastic*



- Introduce dynamics
  - *Cts. time*
    - Option Black Scholes
    - Term structure CIR
    - Agency theory Sannikov

- **Cts. time macro with financial frictions**

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Heterogeneous agents + frictions

- Lending-borrowing/insuring since agents are different

Poor-rich Productive Less patient Less risk averse More optimistic	← Limited direct lending due to frictions	Rich-poor Less productive More patient More risk averse More pessimistic

- Friction → $p_s MRS_s$ different even after transactions
- **Wealth distribution matters!** (net worth of subgroups)
- **Financial sector is not a veil**

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Liquidity Concepts

- Financial instability arises from the fragility of liquidity

A	L
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

Liquidity
~~Maturity~~ mismatch

- 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 BruSan
- Debt constraints
  - Costly state verification a la Townsend CF, BGG
  - Commitment problems/collateral constraints KM, BP
    - 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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