Monetary Policy: A New Normal? & The I Theory of Money

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Stability concepts & interconnections

- **Output (gap)**

  $$E[W(y_t - y^*, \pi_t - \pi^*)]$$

- **Price Stability**

- **Instruments**

  - short-term interest rate
  - unconventional MoPo
Stability concepts & interconnections

- **Output (Gap)**
- **Price Stability**
- **Financial Stability**
- **Fiscal Debt**

\[ \text{E}[W( y_t - y^*, \pi_t - \pi^*, \text{risk concentration, sustain.})] \]

- **Instruments**
  - Short-term interest rate
  - Unconventional MoPo
  - Micro-prudential
  - LOLR
  - Fiscal rules
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  The Fiscal Theory of the Price Level

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The Fiscal Theory of the Price Level

Diabolic Loop
- Bank-Sovereign Nexus
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For complete description:
Brunnermeier Sannikov (2013) “Redistributive MoPo” (Jackson Hole paper)
Financial Stability in the I Theory

\[ \Delta \text{price} = f(\Delta E[\text{future cash flows}], \Delta \text{risk premia}) \]

- **Endogenous risk** (dynamics)
  - Amplification
  - Runs

- **Risk premia** (time varying)
  - Term spread: expectations hypothesis fails
  - Credit spread: default risk + risk premium predicts future economic activity

Gilchrist & Zakrajsek

Risk premium news
the main driver
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Depends on “undercapitalization” of critical sectors

Risk premium news the main driver
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  - Measured volatility is low when risk builds up (in background)

Gilchrist & Zakrajsek: Risk premium news the main driver

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- **Measure** of Topography (distribution) of risk concentration pockets
  - Distribution of **Liquidity Mismatch**

Risk premium news the main driver
Liquidity Mismatch

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

Distribution of Liquidity Mismatch (with Gorton & Krishnamurthy)
- Across sector
- Substitutability of sector

- Wealth shifts/undercapitalization likely, also shift risk premia
Risk Build-up Phase – “Volatility Paradox”

- Liquidity mismatch increases during tranquil times

- Intermediation chain often hide overall liquidity mismatch
- Distribution matters: “Topography of Liquidity Mismatch”

### Duration of projects
- Long-term irreversible projects
- Austrian element (Hayekian triangle)

### Specialization (specificity)
- Low market liquidity
  ⇒ larger fire-sale discount

### Debt maturity
- Austenian element
Sectorial analysis

- **Government**
  - Outside money
  - Inside money
  - Equity

- **Banks**
  - Reserves
  - Credit
  - Inside money
  - Equity

- **Households**
  - Real Estate
    - Risky Credit
    - Equity
  - Corporation
    - Factory
    - Risky Credit
    - Equity

- **Savers**

Riskier direct lending/credit
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<td>[ i_t = \pi_t + r_t^* + \lambda(y_t - y^<em>) + \alpha(\pi_t - \pi^</em>) ]</td>
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\[ i_t = \pi_t + r_t^* + \lambda(y_t - y^*) + \alpha(\pi_t - \pi^*) \]

- coefficients of Taylor rule are constant/stable

\[ \begin{pmatrix} i_t \\ \pi_t \\ \gamma_t \end{pmatrix} = F \begin{pmatrix} y_t - y^* \\ \pi_t - \pi^* \\ \text{VaR}_t[y_{t+\tau}] \\ \{LM\}^{sector}_t \end{pmatrix} \]
Trade-off: Price vs. Financial Stability

- Induce “financial risk taking” during crisis in order to reduce endogenous risk, contraction & disinflation
  - Precautionary delevering leads to
    - Fire-sale prices
    - Disinflation
  - Liquidity spiral
  - Inefficient due to pecuniary externalities
- Take on “financial risk” to
  - boost economy,
  - reduce endogenous risk (& risk premia)

1. “Stealth” recapitalization of impaired sector (bottleneck)
   - Banking vs. insurance, SMEs,
   - Corporate sector, household,…
2. Make risk-taking attractive
Mainstream: $\text{QE} = \text{interest rate cut below 0}$

Economically relevant duration

Interest rate cut
Interest rate cuts vs. QE/Forward Guidance

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$\tau$
Interest rate cuts vs. QE/Forward Guidance

- **Mainstream:** \( \text{QE} = \text{interest rate cut below 0} \)

- **I Theory view:** different distributional implications across and within financial sector
  - banks borrow short and lend long
  - insurance/pension funds companies
  - households – depends on mortgage market

Bottleneck MoPo: Whose balance sheets are impaired?
Inflation Index: Core vs. Headline

- **Empirical view:** “core” is better predictor of future $\pi_{t+\tau}$ - exclude energy since it is mean reverting

- **NK view:** Core excludes less sticky prices - exclude energy since prices are flexibel

- **I Theory view:** price changes cause wealth effect desirable or not? - exclude energy (in Europe) since it causes wealth transfer to middle east/Russia

(Is oil price drop and lowflation bad for Eurozone?)
Conclusions – the “Forgotten Normal”

- Price stability and financial stability are linked
  - Money is created by financial sector
- Monetary policy and Macro-prudential policy interact

- Taylor rule has to be expanded
  - Instruments (LHS of Taylor rule) are multi-dimensional
- I Theory: Wealth/income effects vs. substitution effects
- Financial stability – price stability trade-off:
  More financial risk taking (in crisis), less disinflation
- QE/Forward guidance ≠ interest rate cut (below zero)
- Reinterpretation of Optimal Inflation Index
  - Optimal inflation index depends on which sector is impaired