New York Fed Event
Flight-to-Safety Capital Flows
Global Financial Architecture

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Papers

- Brunnermeier, Merkel, Sannikov
  - “Safe Assets: A Dynamic Trading Perspective”
  - “FTPL with a Bubble”
  - “International Monetary Theory: A Risk Perspective”
Official Reserves Holdings (IMF) in Safe Assets

- Official Sector Reserves Holding

- Private sector holdings
Global Financial Architecture & Flight-to-Safety

- **Flight-to-safe asset**
  - Tightening of US Monetary Policy
  - Risk-on, Risk-off

- **Cross-border capital flows**

- **Source of the Problem:**
  Safe Asset (reserve assets) are asymmetrically supplied
Exorbitant Privilege: US Treasury Debt Evaluation Puzzles

- Two valuation puzzles from standard perspective: (Jiang, Lustig, van Nieuwerburgh, Xiaolan, 2019, 2020)
  1. “Public Debt Valuation Puzzle”
     - Empirical: $E[PV_{\xi}(\text{surpluses})] < 0$, yet $\frac{B}{\phi} > 0$
  2. “Gov. Debt Risk Premium Puzzle”
     - Procyclical surplus (> 0 in booms, < 0 in recessions) $\Rightarrow \beta > 0$
     - But empirically, $\beta$ is often negative

- Safe asset = exorbitant privilege ($\beta \ll 0$)

\[ P_t = E_t[PV_{\xi^*}(\text{surpluses})] + E_t[PV_{\xi^*}(\text{service flows})] \]

- $\beta \ll 0$: safe asset gains in value when risk is high
- In incomplete markets setting (Bewley, Ayagari, BruSan, ...)

Exorbitant Privilege: US Treasury Debt Evaluation Puzzles
What’s a Safe Asset?    What is its Service Flow?

- \( P_t = E_t[PV_{\xi^*}(\text{cash flows})] + E_t[PV_{\xi^*}(\text{service flows})] \)

Example: \( = 0 \)

![Diagram showing the cash flow assets of portfolios A and B over time with arrows indicating shocks.](image-url)
What’s a Safe Asset? What is its Service Flow?

- \( P_t = E_t[PV_{\xi^*}(\text{cash flows})] + E_t[PV_{\xi^*}(\text{service flows})] \)

- Value come from re-trading
- Insures by partially completing markets
- Reduces \( Var_t[\bar{g}_c] \)

- Service flow has self-fulfilling component: higher price of asset = higher service flow
What’s a Safe Asset? What is its Service Flow?

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In recessions:
Risk is higher
- Service flow is more valuable
- Cash flows are lower
  (depends on fiscal policy)
What’s a Safe Asset?

- In incomplete markets setting (Bewley, Aiyagari, BruSan, ...)
- Good friend analogy (Brunnermeier Haddad, 2012)
  - When one needs funds, one can sell at stable price... since others buy
    - Idiosyncratic shock: Partial insurance through retrading - low bid-ask spread
    - Aggregate (volatility) shock: Appreciate in value in times of crises

Safe asset definition

- Tradeable: no asymmetric info – info insensitive
  - Service flow is derived from “dynamic re-trading”

Individual $\beta^i_t = -\frac{\text{Cov}_t[\xi^i_t/\xi^i_t, dr_t]}{\text{Var}_t[\xi^i_t/\xi^i_t]} \leq 0$

where $\xi^i_t$ is SDF of agent $i$

Note: $-\text{Cov}_t[\xi^i_t/\xi^i_t, dr_t] = \zeta^i_t \sigma^f_t + \zeta^i_t \sigma^r_t$

where $d\xi^i_t/\xi^i_t = -\zeta^f_t dt - \zeta^i_t dZ_t - \zeta^i_t dZ^i_t$
Understandings for log utility, $\gamma = 1$

\[
rf = \rho + E[g_c] - \{Var_t[g_c] + Var_t[\tilde{g}_c]\} + \text{Risk Premium} - \{\lambda(\text{Collateral Constr}) - \Delta i\}
\]

- Time Preference rate
- Precautionary savings/self-insurance
  - Aggregate risk
  - Idiosyncratic risk
- Convenience yield

Risk-free rate

Risk (inflation + loss of safe asset status)
Local/EME and Global Safe Asset

- High value of safe asset $\iff$ low cash flow $r$
  possibly $r < g$ enables Ponzi scheme

- **Local safe asset:** EME government bond
  - $r^{EM} > r^{US}$
  - Borrow in low $r^{US}$ and invest in physical capital (equity, FDI,...)
  - Possible loss of safe asset status – jumps to US Treasury

- **Global safe asset:** US Treasury
  - Especially if risk is high
Local Safe Asset & Borrowing at US Dollar rate
Loss of local Safe Asset & US Treasury as Safe Asset

EMDE Government

Future taxes
Gov. debt

EMDE HH/Firms (consolidated)

Gov. debt
$-Treasuries
Ph-Capital
Future taxes
Net worth

US (only international)

$-Treasuries
International: Flight to Safety

- Risk-on, Risk-off  
  Flight-to-safe asset

- Problem: Safe asset is *asymmetrically supplied* by AE
  Flight-to-safety  ➔  cross-border capital flows

- Debt issues at times of global crisis
  - For AE  at inflated prices  eases conditions
  - For EME  at depressed prices  worsens conditions

- Paradox: “Poor insure rich Paradox”
International: Flight to Safety

- Risk-on, Risk-off

Flight-to-safe asset (in US$)

Source: Brunnermeier and Reis (2023)
Defend Bubble from **Jumping to** Foreign Asset (US Treasury)

- Exorbitant privilege ("Bubble net worth") leaves country
- EMDE safe asset status is even more wobbly

\[ r^f + \text{RISK PREMIUM} < g \]
\[ > r^s \]

- Note: risk is endogenous
due to self-fulfilling expectations

- So is the risk premium
  = price of risk \star (exogenous + endogenous risk)

- Note: growth \( g \) is endogenous

- Multiple equilibria (invites speculative attacks)
US Monetary Policy Spillover: Loss of Local Exorbitant Privilege

- The two alternatives of US Monetary Policy in fall 2021

- Taylor Principle $\phi_\pi > 1$, i.e. real rate $r^\$$ increase

- US MoPo spillovers to EMDC
  - US Treasury becomes more attractive as global safe asset
    - Emerging markets assets struggle compete
      - $r^{EM} < g^{EM}$ down to sustain local EMDC safe asset
      - $r^{EM} \geq r^\$$ up to be attractive relative to US Treasury

Gamble for social cohesion within US backward-looking MoPo
Interaction with Financial Sector

EMDE Government
- Future taxes
- $-Reserves
- Bubble

Gov. debt

Deposits

Physical Capital

Net worth

EMDE HH/Firms (consolidated)
- Future taxes
- $-debt

Gov. debt

Peso-debt

Net worth

EMDE Banks
- Gov. debt
- F-taxes
- $-debt
- $-claims HH
- $-claims F

Peso-debt

Deposits

Net worth

US (only international)
- $-Treasuries
GloSBies: Rechanneling instead of Reserves Approach

- Global Financial Architecture: “Poor insure the Rich”
  - Crisis: Flight-to-Safety: $r^S_\downarrow$, $r^{EMDC}_\uparrow$ (forces austerity on EMDC)
    ⇒ IMF lending, SWAP lines, EM hold $\text{-reserves}$ ⇒ $r^S$ is low
  - Sanctions and $\text{-reserves}$ (Safe Asset = good friend in bad times)
    Source: Asymmetric Supply of Safe Asset (not shortage)

- “Rechanneling Approach”: Resilient & self-stabilizing

- **GloSBies**: “Global Safe Asset from & for Emerging Economies”

- Flight-to-Safety across asset class instead of borders
Extra Slides
How to Defend *Bubbly* Safe-asset Status

Bubble/Ponzi scheme *bursts* vs. Bubble *jumps* to another asset/Ponzi scheme
  a) Domestic asset, e.g. crypto asset
  b) Foreign asset, e.g. US Treasury

- **Ex-post:** Prop up fundamentals
- **Ex-post:** Support bubble
  - Tradability: Market maker of last resort
  - Capital control (outflows)
  - FX intervention (with reserves)
- **Ex-ante:** Prevention
  - Capital control (inflow)
  - Reserves (signal/commitment)
Defend Bubble: *Prop up Fundamentals*

- Prop up Fundamentals
  - So that discounted primary surplus support old bubbly valuation
- Avoid bursting of bubble
  - If \( r < g \)
    - Small primary surplus is sufficient
      - Credible commitment as welfare benefits of safe asset status is high (if gov. maximizes long-term welfare)
- Avoid jumping of bubble
Defend Bubble: **Tradability of Safe Asset**

- Maintain high tradability/ market liquidity
  - Market maker of last resort by Central Bank
  - Informationally insensitive: Reduce asymmetric information
    - Low default risk

![Diagram showing posterior distribution after bad and good signal with cash flow axis](image-url)
Defend Bubble: Tradability of Safe Asset

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**Defend Bubble: Avoid “wobbles”** (self-fulfilling)

- If government bond is risky
  
  $$r^f + \text{risk premium} < g \quad (1)$$

**Risk premium**

- **Negative** if safe asset appreciates in crises times (AE)
  
  (1) easy \quad \rightarrow \text{Safe asset status easy to maintain}

- **Positive** if safe asset status is “wobbly” (EMDE)
  
  (1) fails occasionally \quad \rightarrow \text{loss of safe asset status}

- Capital controls: Gov. debt only safe asset
Defend Bubble from **Jumping to other Domestic Assets**

- E.g. equity, crypto assets,... (land has high trading costs)
- Total wealth in economy stays the same
- ... but redistributive (depending who owns other assets)
  - Loss of seigniorage/exorbitant privilege for government

**For short-lived assets:** like most liquid assets other than stocks can only be used to sustain **Ponzi schemes**
- In models, Ponzi schemes are prevented by no Ponzi conditions,
- Part of **equilibrium selection**
  (only have to hold in all equilibria when markets are complete)
- **Insolvency law:** legal prohibition or running Ponzi scheme
  - Firm is liquidated once book equity becomes too negative
    ⇒ can’t be rolled over forever and pay out to shareholder/CEOs ...

**For long-lived assets** like stocks
- Insolvency adds background bankruptcy risk that triggers liquidation and delisting
  In survival state, bubble must grow at larger rate to be attractive
  ⇒ less sustainable (as gov. debt always survives and thus need a lower growth rate)
- **Crypto assets** are not subject to insolvency law, but more difficult to sustain if
  - If issuer extracts more seigniorage (issue bubbly crypto at faster pace) or gov. imposes tax (financial repression)