Discussion of "A Model of Safe Asset Determination"

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Summary

- What makes a country's debt a "safe" asset?
- Various definitions of what a *safe asset* is...
  - informationally insensitive - Dang, Gorton, Holmstrom (2015)
  - "A friend in need is a friend indeed"
    - assets with payoffs negatively correlated with low consumption
  - Absolute security of nominal repayment (Krisnamurthy Vissing-Jorgensen 2012)
  - Legal fiction? - No truly safe asset
    - Special types of contracts which play a special role in the financial system
    - These assets have low risk weights legally

Summary

- This paper: Safe Asset = Asset with low default risk
- Why do some assets have low default risk
  - better fundamentals
  - safe because perceived to be safe

Environment

- Two countries $i = 1, 2$
  - seek to rollover debt s_i, fundamental in each country θ_i
  - budget constraint
    if no default

$$\underbrace{s_i\theta_i}_{\substack{\text{tax}\\ \text{revenue}}} + \underbrace{p_i s_i}_{\substack{\text{new}\\ \text{issuance}}} \geq \underbrace{s_i}_{\substack{\text{outstanding}\\ \text{debt}}} \Leftrightarrow p_i \geq \underbrace{1-\theta_i}_{\substack{\text{fiscal}\\ \text{shortfall}}}$$

    else default

- $1 + f$: fixed supply of global savings:

$$p_1 s_1 + p_2 s_2 = 1 + f$$

- Sufficient Funding

$$1 + f \geq (1 - \theta_1)s_1 + (1 - \theta_2)s_2$$

Environment

- Investor j's decision:

$$\max_{x \in [0,1]} \mathbb{E} \left\{ x \left[\frac{\mathbb{I}(p_1 \geq 1 - \theta_1)}{p_1} \right] + (1 - x) \left[\frac{\mathbb{I}(p_2 \geq 1 - \theta_2)}{p_2} \right] \right\}$$

- *Cash-in-market pricing*

$$p_1 = \frac{x(1+f)}{s_1} \qquad p_2 = \frac{(1-x)(1+f)}{s_2}$$

- Key forces:
  - Strategic Complementarity: Invest in countries where others invest (avoid default)
  - Strategic Substitutability: Invest in country where fewer invest (higher returns)

Common Knowledge Eq'm

- Country 1 safe + Country 2 defaults
- Country 2 safe + Country 1 defaults
- Country 1,2 safe

Outcomes independent of country fundamentals

Some interesting predictions

- Larger supply of savings $1 + f$ better for bigger country
- Country with larger debt can be safer even if it has relatively poorer fundamentals.

Simple model which can be extended in many directions

Extension: Capital Controls

- Supply of savings from investors
  - in country 1 $= \lambda(1+f)$
  - in country 2 $= (1-\lambda)(1+f)$

- Return from investing in country 1 bond
  - for investor from country 1 $= \frac{1}{[\lambda x_1+(1-\lambda)x_2](1+f)}$
  - for investor from country 2 $= \frac{1-\tau_1}{[\lambda x_1+(1-\lambda)x_2](1+f)}$

- Return from investing in country 2 bond
  - for investor from country 1 $= \frac{1-\tau_2}{[\lambda(1-x_1)+(1-\lambda)(1-x_2)](1+f)}$
  - for investor from country 2 $= \frac{1}{[\lambda(1-x_1)+(1-\lambda)(1-x_2)](1+f)}$
- With closed capital accounts: $\tau_1 = \tau_2 = 1$: $x_1 = 1, x_2 = 0$. No country defaults.

Capital controls can stabilize global economy

Testable Predictions?

Why is US debt the preferred safe asset?

- In debt to GDP terms, US is not special. Why not Japan (2× debt to gdp)?
- Lower default probability? Even with current policy uncertainty, very low default probability.
- credit default swaps cheaper on German debt. maybe hard to infer US default probability from credit default swaps
- most predictions seems sensible but no smoking gun revealing that the theory in this paper is the definitive answer.

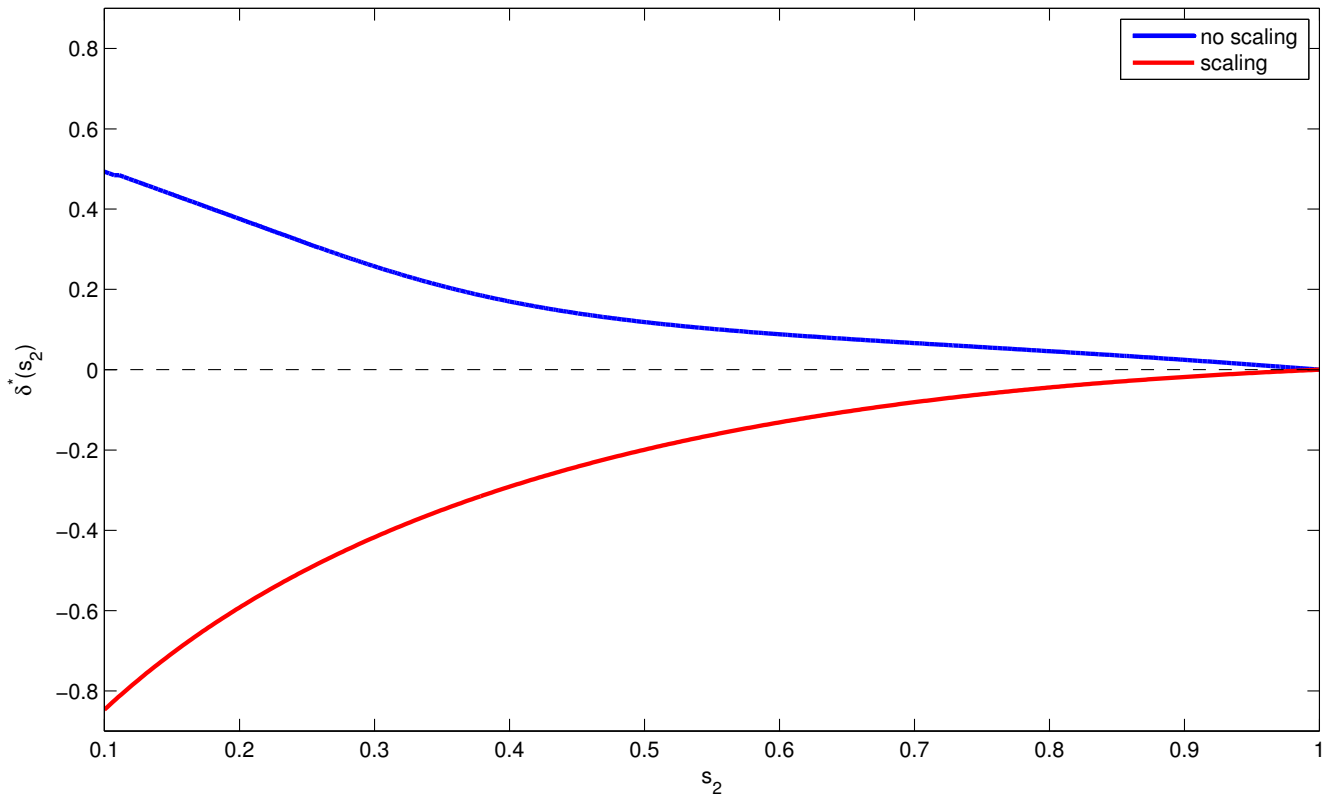
Some minor quibbles: scaling tax revenues

- Country with larger outstanding debt more likely to be safe asset
- Recall
  budget constraint: $\underbrace{s_i \theta_i}_{\substack{\text{tax} \\ \text{revenue}}} + p_i s_i \geq s_i$
- tax revenue scales with s_i

Scaling: Why?

- Suppose instead:

$$\theta_i + p_i s_i \geq s_i \Leftrightarrow p_i \geq 1 - \frac{\theta_i}{s_i}$$



- NOW: Country 2 less likely to default if it issues less debt

Why Global games?

- (CK) outcome independent of fundamentals
- (GG) weak relationship between fundamentals and outcomes
- (GG) multiplicity persists
  - Different equilibria have different comparative statics
  - e.g $f \uparrow \Rightarrow$ in threshold eq'm small country defaults more while in oscilating eq'm it can stabilize small country
  - Non-monotone eq'm not intuitive: some people who get worse info about country 2 invest in country 2. maybe vulture funds.

Conclusion

Very Interesting paper