

# Discussion of Schmid, Valaitis, & Villa “Government Debt Management and Inflation with Real and Nominal Bonds”

Thomas King

Federal Reserve Bank of Chicago<sup>1</sup>

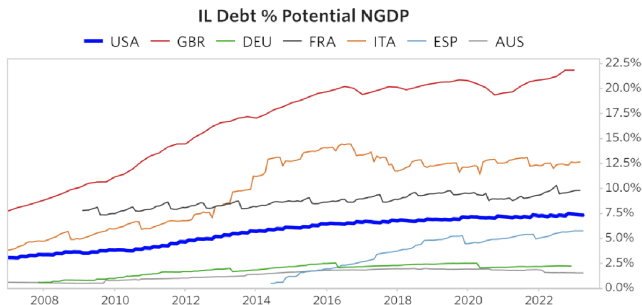
25 May 2023

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<sup>1</sup>The views expressed here are not official positions of the Chicago Fed or the Federal Reserve System.

# Summary

Real vs. nominal debt question is important because advanced economies have increasingly relied on inflation-linked bonds:



Costs and benefits of these programs, and their optimal structure and size, are still open questions.

# Background

Question goes back to Lucas and Stokey (1983).

- Key insights in these models:
  - Government should try to keep distorting taxes as low and stable as possible, but time inconsistency is a problem.
  - Problem is worse in monetary economies because the government always has an incentive to inflate away nominal debt.
  - This makes the cost of issuing such debt higher.
- In theory, real debt should be able to mitigate this incentive (Calvo, 1988).

# This paper...

Authors look at this question in a quantitative NK model with real and nominal debt.

- Compare commitment vs. non-commitment cases.
- Compute optimal allocations and portfolios.
- Compute welfare gains of access to real bonds.

Note: this is not easy.

# Main findings: commitment

Under full commitment:

- **Government lends in real terms and borrows in nominal terms**, on average.
- Following positive  $g$  shocks it borrows less and lends less.
- Outstanding debt is inflated away in periods with higher spending.
- Real assets are accumulated in good times and drawn down in bad times.
- Nominal debt falls in periods when interest rates are higher.
- Thus, bond **quantities** smooth fluctuations.
- Welfare is higher than if you just had nominal debt.

## Main findings: no commitment

Without commitment, the opposite is true:

- Government *borrow*s in real terms and lends in nominal terms.
- Bond prices smooth fluctuations.
- Again, welfare is higher than if you just had nominal debt.
- BUT, you still can't replicate the full-commitment benchmark.

With some modifications, model can “rationalize” observed U.S. debt allocations.

- (Not clear this is useful.)

# Comments

- Context
- Odd results without commitment
- Real-world considerations
- Thoughts on the term structure

# Context

The question of real vs. nominal debt has been examined before.

- Alvarez, Kehoe, and Neumeyer (2004); Persson, Persson, and Svensson (2006).
- Basic conclusion from these papers: gov't can replicate Ramsey policy with a carefully chosen real and nominal maturity structure.
- Why does the present paper differ from this?
  - Stochastic, rather than perfect foresight
  - No money in the utility function
  - Independent, inflation-targeting central bank
  - Only short maturities
- Which of these matters, and how much?



## Odd results: TIPS as commitment device?

Without commitment, “future gov’ts have incentives to monetize debt ex-post to which households respond by raising the current gov’t’s borrowing costs ex ante.”

Is this really what is going on?

- Without access to TIPS:

$$E[\pi] = 1.7\% \text{ and } E[i] = 5.9\%$$

- With* TIPS:

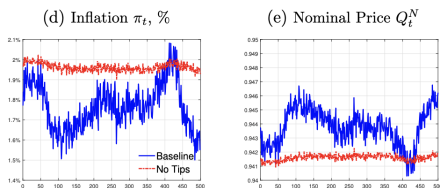
$$E[\pi] = 1.9\% \text{ and } E[i] = 6.1\%$$

- Welfare goes up, but allocations are still not Ramsey.
- Assumed cost of high inflation makes the gov’t avoid it anyway.

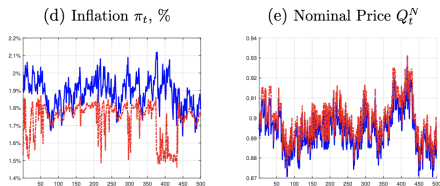
# Odd results: Taylor rule

$$Q_t^{-1} = \frac{1}{\beta} \pi \left( \frac{\pi_t}{\pi} \right)^{\phi_\pi}$$

## Commitment



## No Commitment



# Cost-benefit considerations 1

Commitment model quantifies a (modest) welfare gain from TIPS.

Important to consider real-world details that might change this conclusion.

## 1. Non-pecuniary benefits of Treasuries

- In general...
  - Krishnamurthy & Vissing-Jorgensen (2012)
- ...especially on nominals...
  - Fleckenstein et al. (2014); D'Amico et al. (2018); Andreasan & Christensen (2021)
  - Differs across maturities and is countercyclical
- ... and especially at short end.
  - Nagel (2016); Greenwood et al. (2015)

## Cost-benefit considerations 2

2. Some debt owned by investors who are segmented from tax liabilities (e.g., foreign investors, past generations)

3. What about the ZLB?

- Potentially big changes in fiscal multipliers could affect welfare/optimal policy.
- E.g., in Ramsey case,  $\pi$  falls when  $g$  falls — could lead to very bad outcomes if ZLB is binding.
- Should be easy to implement!

4. Multiple maturities of debt issuance.

- This is important for thinking about welfare (Angeletos, 2002).

# Term structure 1

Interesting questions about short- vs. long-term debt.

- Appendix moves in this direction.
- Worth thinking about what the yield curve looks like:
  - For households,  $g_t$  shocks look like negative supply shocks.
  - Consequently, model has positive real and nominal term premia.
  - But, with the current preferences, these will be very small.
  - (With endogenous  $g_t$ , likely negative.)
- Also evidence that quantities of debt matter directly for term premia:
  - Laubach (2009); K&VJ (2011); Swanson (2012); D'Amico & King (2013); Greenwood & Vayanos (2014); Li & Wei (2015);...
  - Doesn't happen in authors' model.

## Term structure 2: Portfolio-balance effects?

These issues may matter a lot for quantitative conclusions:

- Matters because term premia affect debt costs.
- The absence of such effects suggests preferences and welfare are misspecified.

Could be addressed by assuming that households have preferences over types of debt.

- E.g., short vs. long; real vs. nominal; safe vs. volatile.
- Not so different from MIU models.
- In this case, households are worse off and demand higher term premia when they have to hold more long-term debt.
- But these effects may be smaller for real bonds.