

Discussion

Navigating by Falling Stars: Monetary Policy with Fiscally Driven Natural Rates

by Rodolfo Campos, Jesús Fernández-Villaverde, Galo Nuño, Peter Paz

Ralph Luetticke

University of Tuebingen

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Background

- Bewley-Huggett-Aiyagari models are about the equilibrium interest rate r^*
- Supply of savings: Household preferences, income risk, portfolio frictions
- Demand for savings: Firms, households, government

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- Demand for savings: Firms, households, government
- These channels are also at work in HANK models, interacting with monetary policy

This Paper

Cause: Public debt's impact on the equilibrium interest rate



Mediator: Adjustments in monetary policy rules



Effect: Changes in inflation

Economic Consequences of Public Debt

- How do interest rates respond?
- How much crowding out of capital?
- What is the fiscal burden?
- What are the distributional effects?

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- Large literature: Woodford (1990), Aiyagari and McGrattan (1998), Heathcote (2005), Challe and Ragot (2011), Krishnamurthy and Vissing-Jorgensen (2012), Azzimonti and Yared (2019), Aguiar et al. (2021), Mian et al. (2021), Reis (2021), Bayer et al (2023)

Public Debt and the Interest Rate

- Interest rate as function of public debt: $\mathcal{R}(B)$, where $\mathcal{R} = R_t^B / \pi_t - \log(Y_{t+1}/Y_t)$
- Log-linearized solution yields constant semi-elasticity of interest rate:

$$\mathcal{R}(B) \approx \mathcal{R}(\bar{B}) + \eta_B \ln(B/\bar{B})$$

- Marginal effect of additional debt starting from steady state:

$$\frac{\partial \mathcal{R}(B)}{\partial \ln B} = \eta_B$$

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- Summer and Rachel (2019) summarize the literature with $\eta_B = 2.1\%$
- This paper finds an even larger semi-elasticity $\eta_B = 2.4\%$ (average of point estimates)

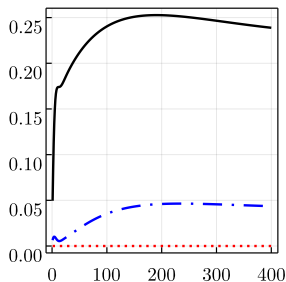
Public Debt and the Interest Rate

- Portfolio frictions are needed to generate empirical estimates of the semi-elasticity
- Bayer et al (2023) study a 10% increase in public debt

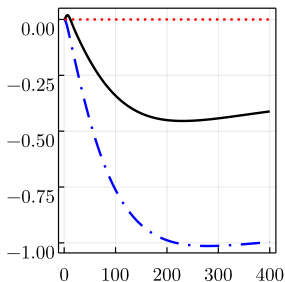
Model	RANK	HANK-1Asset	HANK-2Assets	This paper
η_B	0.0	0.5	2.5	1.0

Bayer et al (2023): IRFs to 10% Higher Debt Target

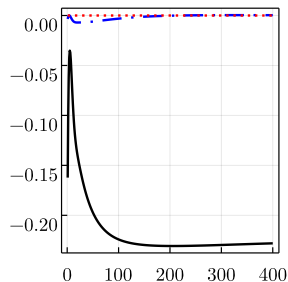
Real rate



Capital



Capital Premium



Economic Consequences of Public Debt

Economic Question

Key Findings

Interest rates response?

Sizable reaction of bond rate / lower capital premium

Crowding out of capital?

Less than previously thought

What is the fiscal burden?

Larger than previously thought

Distributional effects?

Inequality in wealth declines

What are the Implications for Monetary Policy?

- Bayer et al (2023): Monetary policy understands the natural rate = No inflation
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- Bayer et al (2023): Monetary policy understands the natural rate = No inflation
- We also estimate a Taylor Rule and find a significant response to public debt in the US
- However, no systematic exploration of implications of monetary policy
- Most of the HANK literature does not engage with this issue

What are the Implications for Monetary Policy?

This paper provides a comprehensive analysis of the implications for monetary policy

Some key takeaways:

- Inflation response is higher in HANK than in RANK. Consumption heterogeneity raises inflation.
- Low public debt leads to ZLB. Higher inflation target required.
- Robust monetary rule using change in nominal interest rates (no natural rate)
- What is the role of timing (announcement vs. implementation)?

Comments

- Do richer asset structure to match $\eta_B = 2.4\%$
- Estimate your model using Bayesian IRF matching
- Many HANK models have a misspecified Taylor rule. Does this matter?
Does inertia in the Taylor rule help?
- Relate your decomposition of inflation to Kaplan et al (2023)

Conclusion: Monetary Policy with Fiscally Driven Natural Rates

This paper: What are the monetary implications of public debt?

- New estimates of the natural rate response
- Analysis of the inflation response and its drivers + ZLB
- Robust Taylor rules are possible

Broader issues:

- No coordination problem. Monetary policy only has to stabilize inflation
- Low public debt as an explanation for the recent ZLB period?