

Discussion of “Endogenous Forward Guidance”

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Overview

Question: Why did central banks implemented unconventional policies?

- **Canonical view:** stabilize the economy (getting around the ZLB)
- **Alternative view:** reduce the fiscal burden (inflating away gov't debt)

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Methodology:

- DSGE model: standard NK + Fiscal Policy + ZLB constraint
- Optimal (Ramsey) monetary policy \Rightarrow “Endogenous” forward guidance
- Comparison of two alternative models
 - **“No debt concerns” model:** “independent” Central Bank
 - **“Debt concerns” model:** “subservient” Central Bank
- Estimation on pre-ZLB, conterfactuals on ZLB period

Main Results

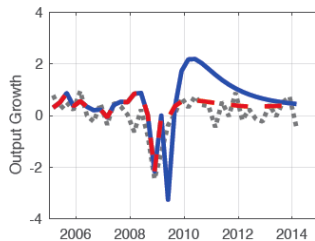
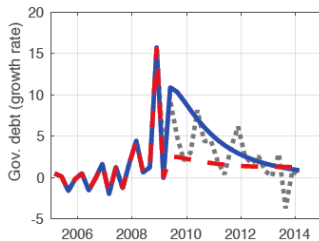
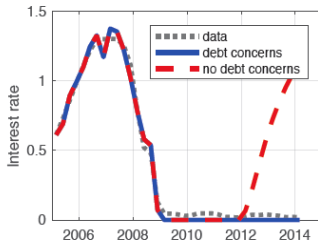
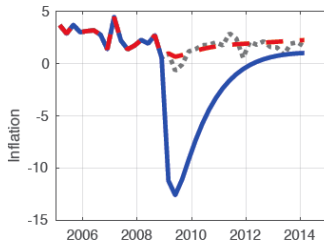
- **Theoretical:** optimal monetary policy \Rightarrow “augmented” Taylor rule

$$i_t = \overbrace{\mathcal{T}_t}^{\text{Taylor Rule}} + \overbrace{\mathcal{Z}_t}^{\text{ZLB component}} + \overbrace{\mathcal{D}_t}^{\text{Debt component}}$$

micro-foundation for earlier studies (e.g. Leeper (1991), Bianchi and Melosi (2018), etc.)

- **Quantitative:**
 - \Rightarrow not much empirical support for “debt concern” model
 - Data: no disinflation despite low growth (“missing disinflation” puzzle)
 - Debt concern model: large deflation!

Forecasts in the Great Recession



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- Preference shock \Rightarrow Lower Interest rate (ZLB) \Rightarrow two effects on Gov't BC
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 - 2 Present Value of Surpluses \uparrow
- **Conventional wisdom:** effect (1) dominates
 \Rightarrow debt concerned central bank \rightarrow **inflation** (e.g. Bianchi and Melosi (2017))
- **HERE:** effect (2) dominates
 \Rightarrow debt concerned central bank \rightarrow **deflation**

Comment #1: What drives the result?

- Let's look at the gov't budget constraint

$$\mathbb{E}_t \sum_{j=0}^{\infty} q_t^j (S_{t+j} - B_t^j) = 0$$

where $S_t \equiv$ primary surplus, $B_t^j \equiv$ debt of maturity j , $q_t^j \equiv$ bond price

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- **Crucial aspect:** timing of surpluses vs. maturity of debt
- **Example:** constant surpluses, decaying maturity at rate δ
 \Rightarrow cash-flows $(S - \delta^j B)$ negative at short horizons, positive at long horizons
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 - \Rightarrow cash-flows $(S - \delta^j B)$ negative at short horizons, positive at long horizons
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- Results likely overturned (and more plausible) if
 - Primary surpluses deteriorates (e.g. large automatic stabilizers)
 - deterioration is persistent, relatively to maturity decay rate

Comment #2: Comparison with Bianchi-Melosi (2017)

- **BM17:** deflation at the ZLB if monetary regime is “active”
- **Here:** deflation at the ZLB if monetary regime is “passive (debt concerns)”
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 - ... but are interest rate rules so different?

- **BM17**

“Active” : $i_t = 0.87i_{t-1} + (1 - 0.87)(1.60\pi_t + 0.5\hat{y}_t)$

“Passive” : $i_t = 0.66i_{t-1} + (1 - 0.66)(0.63\pi_t + 0.27\hat{y}_t)$

- **This paper (implied)**

“No debt concerns” : $i_t \simeq 0.98i_{t-1} + (1 - 0.98)(2.70\pi_t + 0.001\hat{y}_t + 0.763\Delta y_t)$

“Debt concerns” : $i_t \simeq 0.81i_{t-1} + (1 - 0.81)(0.833\pi_t + 0.12\hat{y}_t + 0.0053\Delta y_t)$

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- **Conjecture:** what about public expenditure? (in BM17 responds to \hat{y}_t)

Comment #3: Was the FED concerned about debt?

- A simple decomposition:

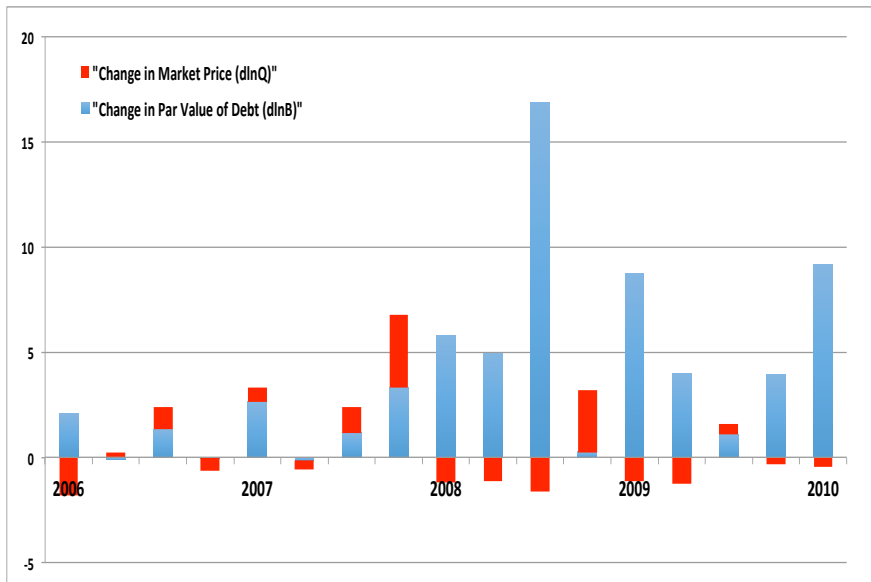
$$\begin{array}{ccccc} \text{Market Value of Debt} & & \text{Market Price} & & \text{Par-value} \\ \widehat{MV}_t & = & \widehat{Q}_t & \times & \widehat{B}_t \end{array}$$

or in log-differences

$$d \ln MV_t = d \ln Q_t + d \ln B_t$$

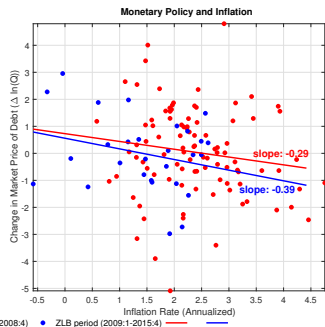
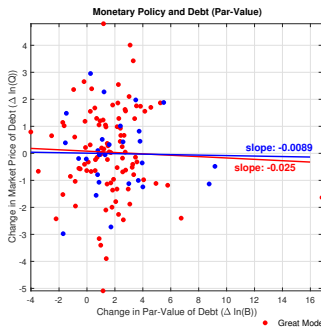
- Since MV_t and B_t are observables, we can infer Q_t
- **Common assumption:** the central bank controls Q_t
- **Question:** did we see any change in the relationships between
 - $d \ln Q_t$ and $d \ln B_t$?
 - $d \ln Q_t$ and inflation?

Market Value of Debt: Decomposition



Behaviour of Market Price of Debt

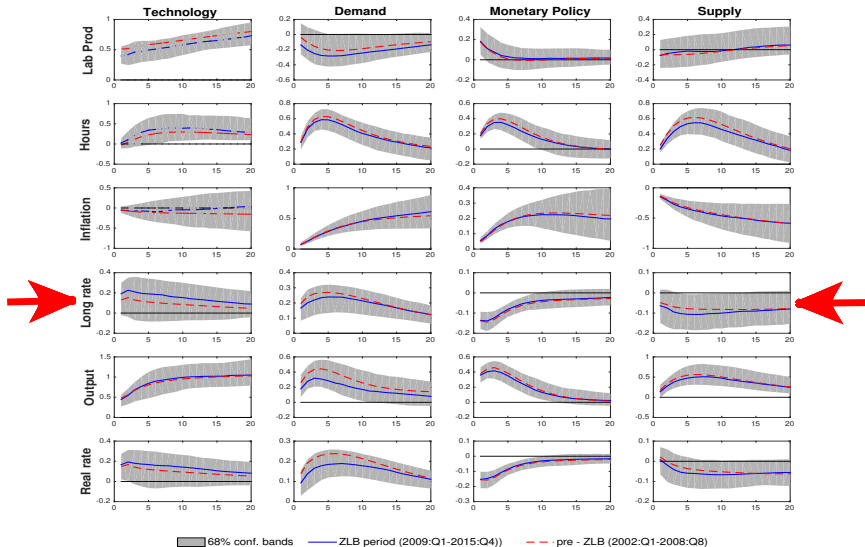
Great Moderation (1985:Q1 - 2008:Q3) vs ZLB (2008:Q4-2015:Q4)



Comment #4: Was there a structural break at the ZLB?

- If so, we should see that macro variables respond differently to macro shocks
- Approach in Debortoli-Galí-Gambetti (2018):
 - time-varying coefficient VAR (TVC-SVAR)
 - shocks identified with combination of long-run and sign restrictions
 - compare impulse responses for pre-ZLB and ZLB period

Similar responses at ZLB and pre-ZLB



Other Comments/Suggestions

- In the quantitative model, central bank internalizes effects on debt, but not on taxes. Why?
- The “no debt concern” model seems to fit the data quite well
 - better than with simple rule?
 - what about forward guidance puzzle?
- At the moment, no formal empirical test of “debt concerns” model
 - Regime-Switches estimation per-ZLB? Likelihood ratio test after ZLB?