

Bank Capital, Financial Stability and Basel Regulation in a Low Interest-Rate Environment

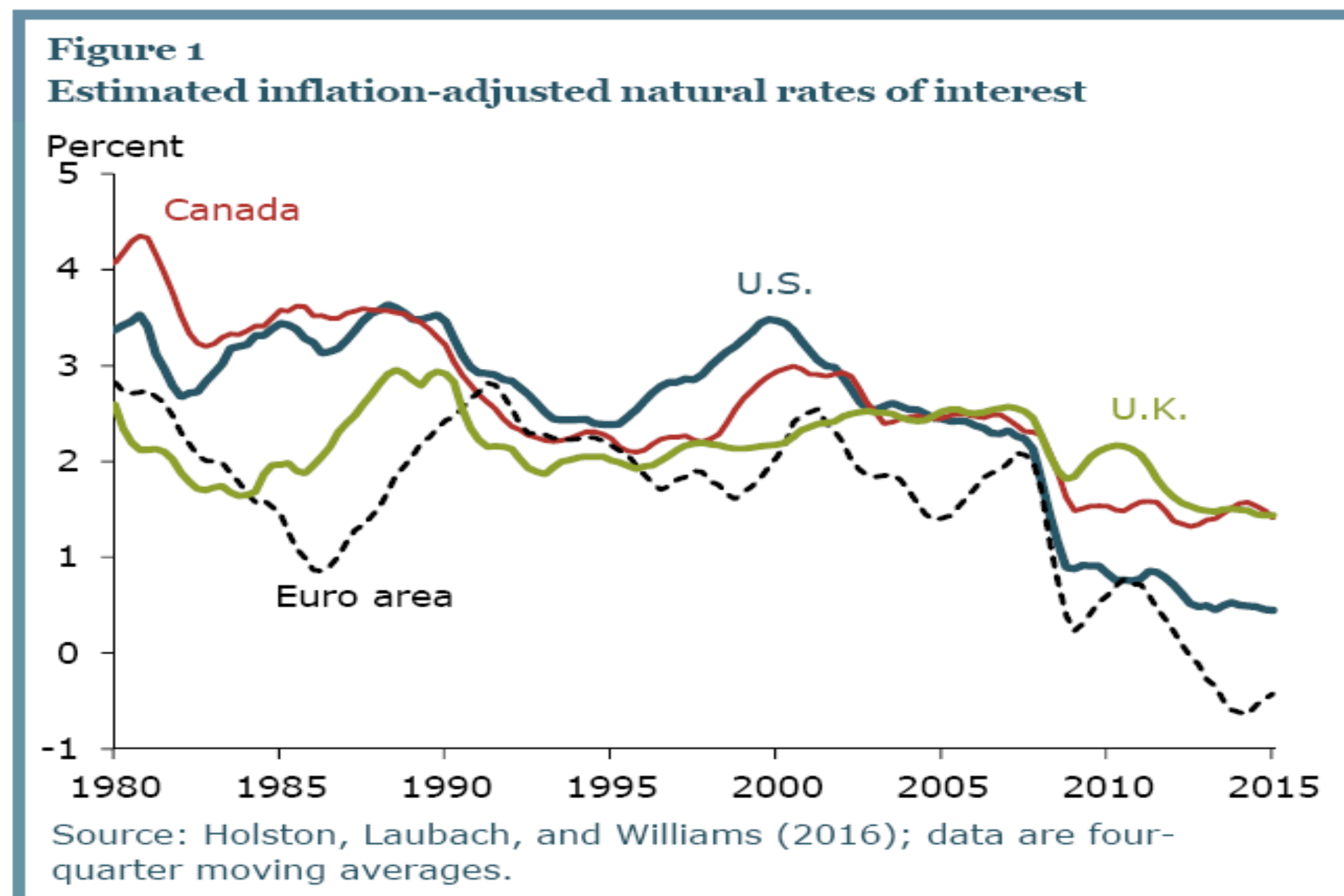
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Introduction

- One of the major challenges in the post GFC is a **significant decline in the neutral interest rate**:



- Low interest rates change agents' behavior, in terms of assets and liabilities
 - **Both household assets and liabilities are expanded** due to fast rising house prices
 - **Bank equity capital has also seen a substantial increase**

Motivation

- All these developments should have an effect on the implementation of Basel III
 - Higher borrowing has made financial markets more volatile, calling for **stricter banking regulations**
 - Higher capital makes banks safer, calling for a **relaxation in Basel requirements** Basel III regulations

Model Overview

- DSGE model** with a housing market and a banking sector
- The economy features **patient and impatient households**, bankers and a final goods firm
 - Bankers are credit constrained in how much they can borrow from savers, and borrowers are credit constrained with respect to how much they can borrow from bankers
- The central bank follows a Taylor rule for the setting of interest rates**
- The countercyclical capital buffer of Basel III** is represented by a Taylor-type rule for the setting of the capital requirement ratio

Simulations

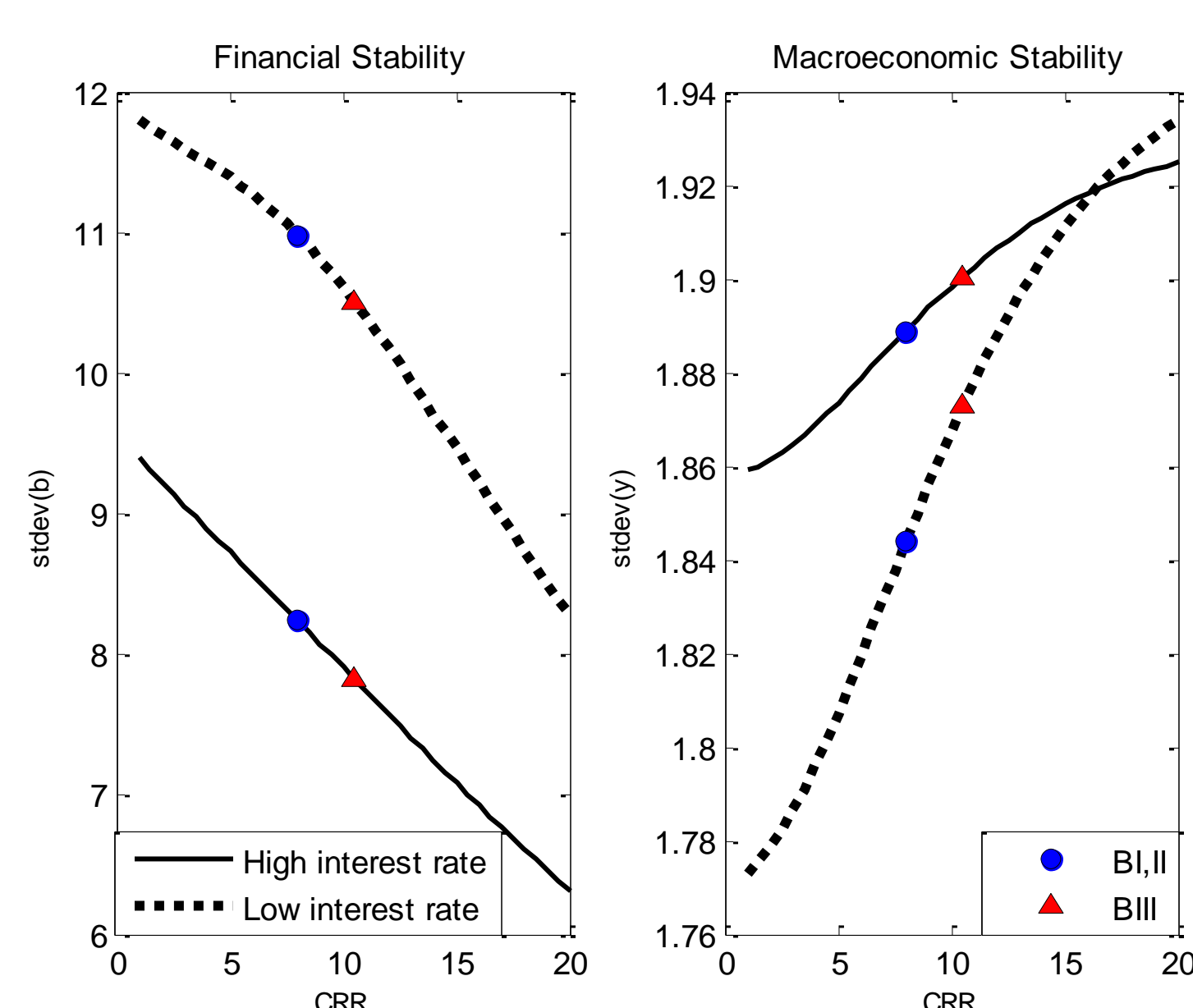


Figure: Financial and Macroeconomic Stability. High and Low interest rate

Financial and Macro Stability

- For all levels of CRR, there is a **trade-off between financial stability and macroeconomic stability**
- Financial instability is more of concern in a low interest-rate economy**, and thus the call for a tighter CRR is more warranted
- Even though banks are safer when the CRR is set high, **borrowers become more vulnerable** in the face of shocks
 - This trade-off becomes worse when the interest rate becomes lower
- The low interest-rate environment calls for a macroprudential use of Basel III regulation and an **optimal implementation of the countercyclical capital buffer**

Basel III Regulation

- A rule for the countercyclical buffer**

$$CRR = CRR_{SS} + \phi_b * (\text{credit}) + \phi_y * (\text{outputdev})$$

Optimal Policy

Optimal combination of the parameters in countercyclical buffer rule, which **maximizes welfare**:

Optimal LTV Rule		
	ϕ_b	ϕ_y
High interest rate	1.4	0
Low interest rate	1.7	0

- For the low interest-rate environment**, since challenges for financial stability are stronger, **the rule needs to be more aggressive**
- It is not optimal** in any of the two economies **to respond to macroeconomic fluctuations**

Conclusions

- In this paper, we use a **DSGE model with housing and a banking sector** to study the effects of the **decrease in the natural rate of interest**
- Our model captures some key developments of the household balance sheet as observed in the data
 - **A decrease in the interest rate increases the value of housing assets**
 - **Borrowers become more indebted**, calling for a more active use of CRR
 - An increase in CRR helps stabilizing financial cycles, but it also brings a **side-effect on macro stability**
- We study the **optimal implementation of Basel III regulation**
 - For the low interest-rate environment, the rule that proxies the CCB needs to be more aggressive on credit cycles

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