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Abstract

China's nominal interest rate has long been regulated by the government, resulting in its adjustment lagging behind price fluctuations.

We embed a borrowing constraint a la Kiyotaki and Moore (1997) in a New Keynesian model with a transient interest rate peg, which characterizes the Chinese monetary policy.

We study the interactions between collateral constraint, nominal rigidity and interest rate fixation.

We prove fixed interest rate amplifies the financial acceleration effect, which adds positive feedback in the model's propagation mechanism.

Introduction

The fixation of nominal interest rate is the main factor of China's macroeconomic instability, especially before 2000.

Although interest rate liberalization paced up in China during recent years, the benchmark loan and deposit rates of commercial banks are still not primarily determined by market forces.

When the nominal interest rate is fixed at a certain level, higher inflation implies lower real interest rates and thus higher demand, generating even higher inflation, and vice versus.

The economy is driven into a vicious inflationary or deflationary spiral, which can only be stopped by quantity control and administrative regulation.

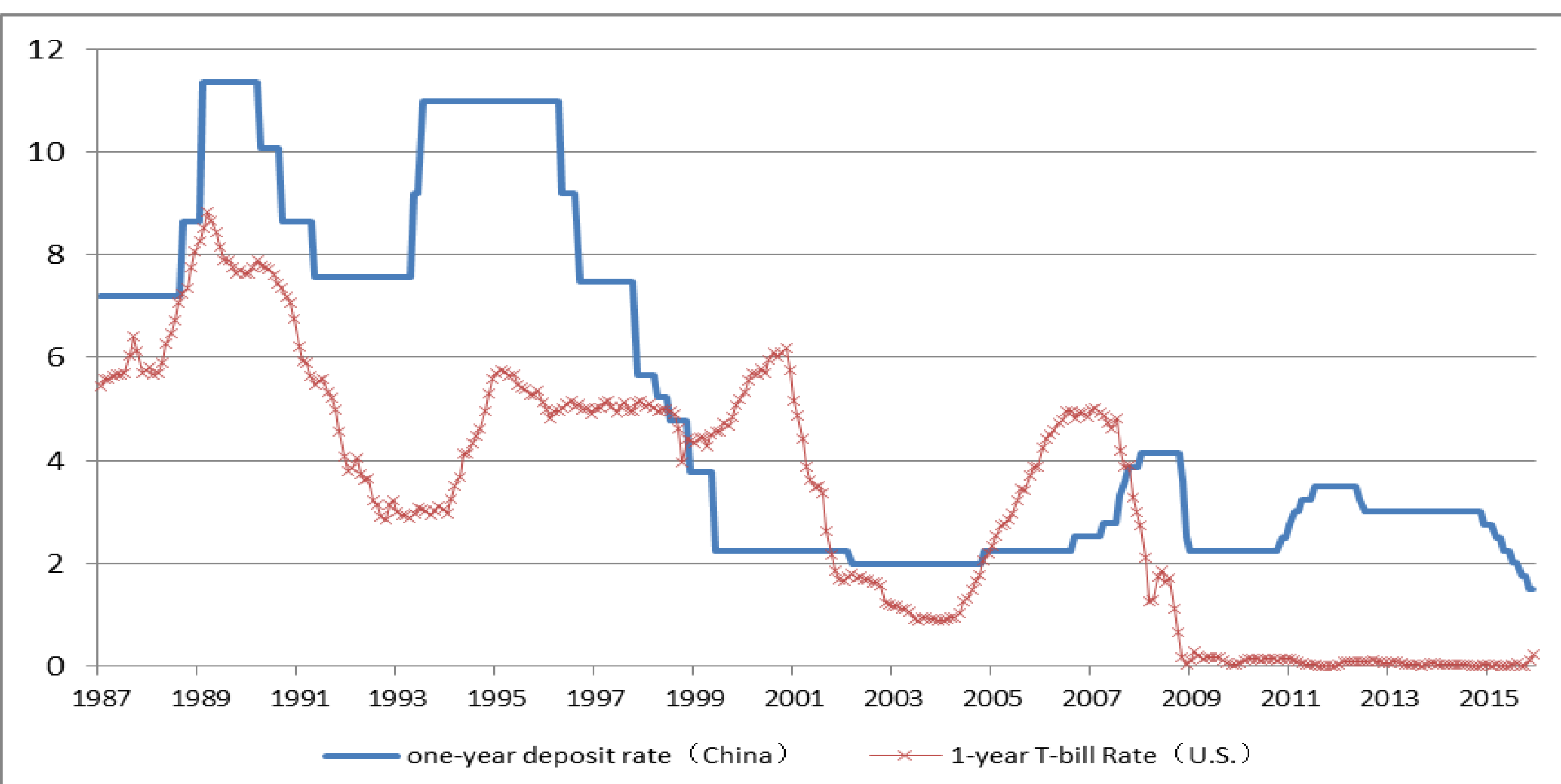


Figure 1: Nominal interest Rate in China versus U.S.

Theoretical Background

Traditional wisdom holds that when the interest rate is inflexible, there is no unique equilibrium in macroeconomic models.

Unique equilibrium exists if the nominal interest rate is pegged for a finite time period, that is, if monetary policy switches from fixed to flexible interest rate regime after some specific period.

Like zero lower bound(ZLB), nominal interest rate pegging may lead to economic instability because the real interest rate tends to magnify rather than counteract the movement of inflation and output gap.

The magnitude of economic fluctuation depends on how long the economy stays in the fixed-interest-rate state. The longer the interest rate is fixed, the more sensitive is the economy to the external shocks.

Results

Interest rate fixation and borrowing constraint strengthen each other.

Under fixed nominal interest rate, a fall of inflation rate increases real interest rate, which decreases the value of collateral assets and increase external finance premiums. This constrains the ability of firms to obtain new loans, with depressing effects on investment and ultimately on output.

The fall in output brings deflationary pressures, which, in turn, increases the real interest rate under fixed nominal interest rate.

A decrease in current price level also raises the real value of the current debt and redistributes wealth from debtors to savers, which reduces short-run investment of firms and decreases aggregate demand.

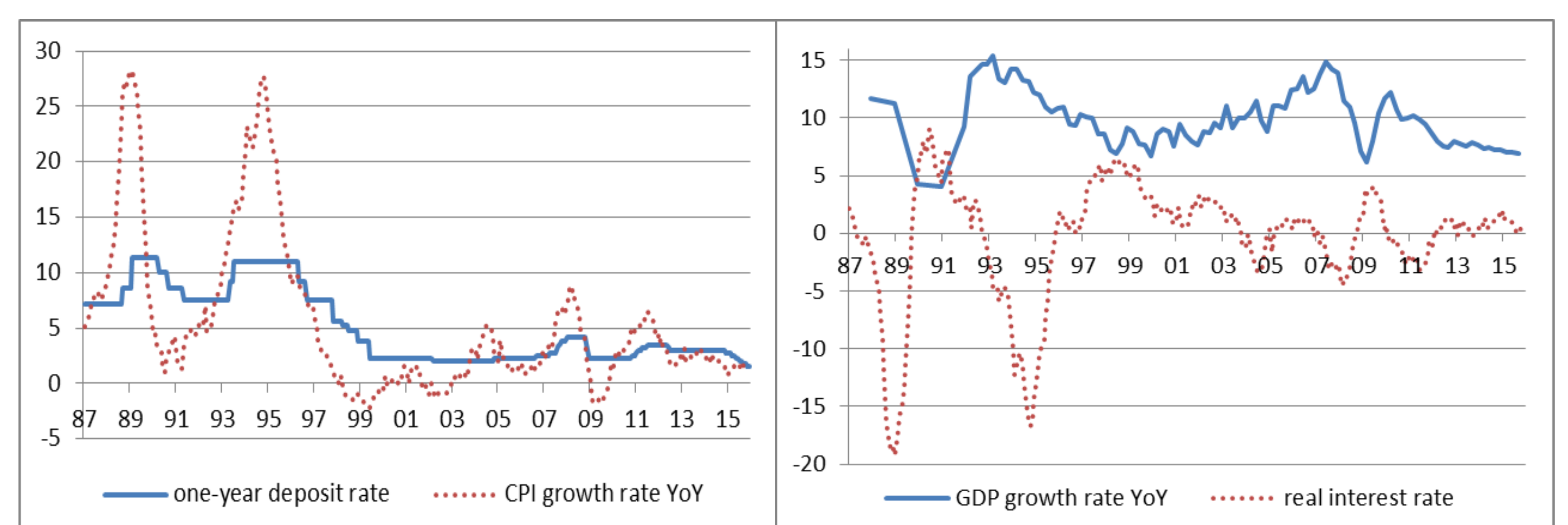


Figure 2: Inflation, Interest rate and GDP growth in China

Monetary Policy in China

Commercial banks are the dominant funding channel in China, especially before the market-oriented interest rate reform.

The effect of the inter-bank market interest rates on the real economy is blocked, because the amount and rates of loans are controlled directly by the government.

Traditional monetary policy transmission mechanisms in Macroeconomics textbook cannot apply in China.

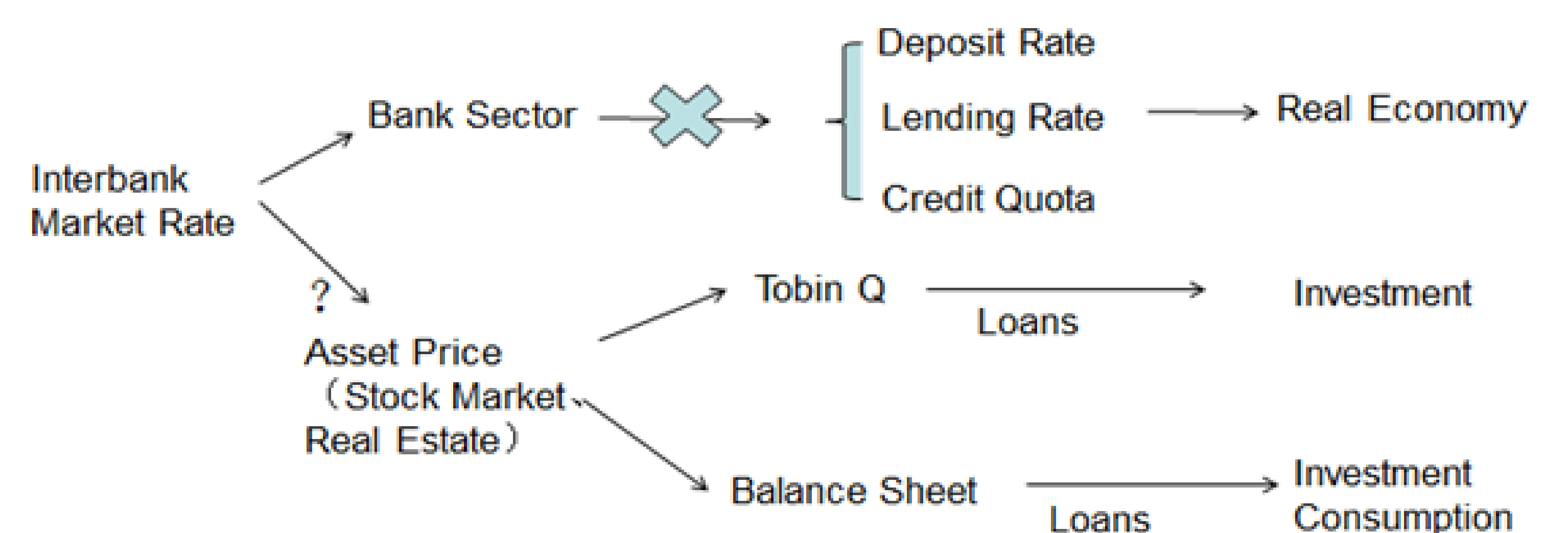


Figure 3: Monetary Policy Transmission Channel in China

Misspecification in Model Estimation

In the estimation of DSGE models of China, assuming flexible interest rate can lead to model misspecification, especially when the data sample traces back to the 1990s.

There will be systematic errors in estimated model parameters.

The instability caused by the fixed nominal interest rate may be attributed to other frictions or exogenous shocks.

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References

- Eggertsson, Gauti B and Paul Krugman. 2012. "Debt, Deleveraging, and the Liquidity Trap: A Fisher-Minsky-Koo Approach." *The Quarterly Journal of Economics*, 127(3), 1469-513.
- Fisher, I., 1933, "The Debt-Deflation Theory of Great Depressions", *Econometrica*, Vol., PP 337-357.
- Iacoviello, M. (2005). House prices, borrowing constraints, and monetary policy in the business cycle. *American Economic Reviews* 95(3), 739-64.
- Kiyotaki, N. and J. Moore (1997). Credit cycles. *Journal of Political Economy* 105(2), 211-248.
- Liu, Z., P. Wang, and T. Zha (2013). Land-price dynamics and macroeconomic fluctuations. *Econometrica* 81(3), 1147-1184.
- Laséen, S. and L. E. Svensson, 2011, "Anticipated Alternative Policy Rate Paths in Policy Simulations", *The International Journal of Central Banking*, Vol. 7, PP 1-35.