Quantities and Prices in China's Monetary Policy Transmission
From Window Guidance to Interbank Rates

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Outline

Introduction

- In most advanced economies (esp. pre-crisis): one central bank, one major tool, one central target
- Post-crisis also macroprudential $\leftrightarrow$ financial stability

- China: multiple actors, multiple tools, multiple targets
- Quantity-oriented tools and targets

- Analyse one transmission channel of monetary policy in China: Major tools $\rightarrow$ Bank financing $\rightarrow$ Real economy
- Focus on role of interbank rates, window guidance, structural change

Institutional structure

- Monetary policy authority: Key competencies shared between People's Bank of China (PBOC) and State Council
- State Administration of Foreign Exchange (SAFE) manages capital controls

- Targets identified in literature: Price stability, economic growth/employment, exchange rate target
- Intermediate quantity targets: Growth rates of monetary aggregates, bank credit, commercial bank reserves etc.
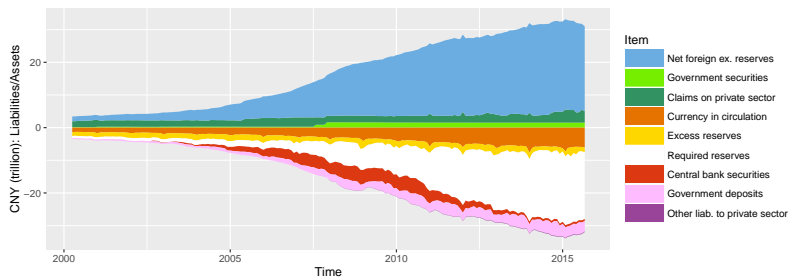
Monetary policy tools

Figure 1: Monetary policy tools used in China

	Market-based	Non-market-based
Qty-based	- Central bank bill issuance amount - Repo amount - Required reserve amount	- Targeted central bank transactions - Credit controls/ window guidance - Capital controls
Price-based	- Central bank bill rate - Repo rate (Re-)Discount rate - Interest on (required and excess) reserves	- Benchmark lending and deposit rates - Regulatory controls

Balance sheet of the PBOC
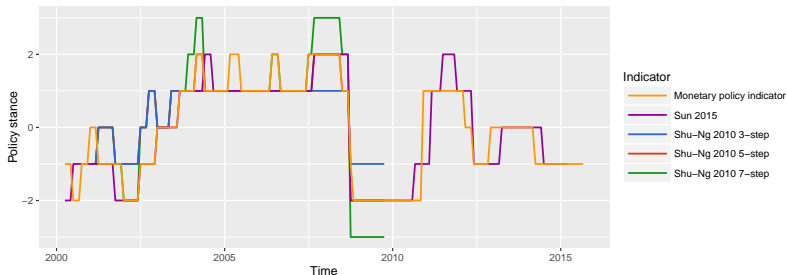
Figure 2: Balance Sheet of the PBOC

- Key differences vis-à-vis other advanced economies: Large forex reserves, high reserve requirements
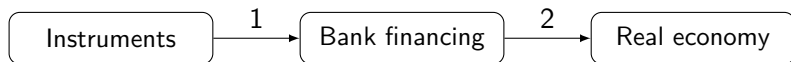
Window guidance

- Window guidance: Guidance of commercial bank lending through official persuasion

Figure 3: Monetary policy indicator

Estimation approach
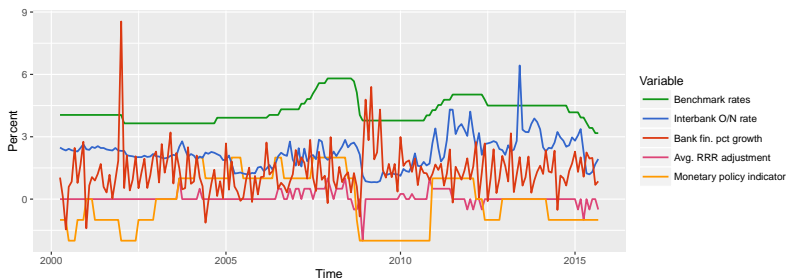
Figure 5: Two-step estimation approach

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┌──────────────┐    1    ┌────────────────┐    2    ┌──────────────┐
│ Instruments  │ ──────► │ Bank financing │ ──────► │ Real economy │
└──────────────┘         └────────────────┘         └──────────────┘
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- Step 1: Monetary policy tools $\rightarrow$ Bank financing

- Step 2: Bank financing $\rightarrow$ Real economic variables

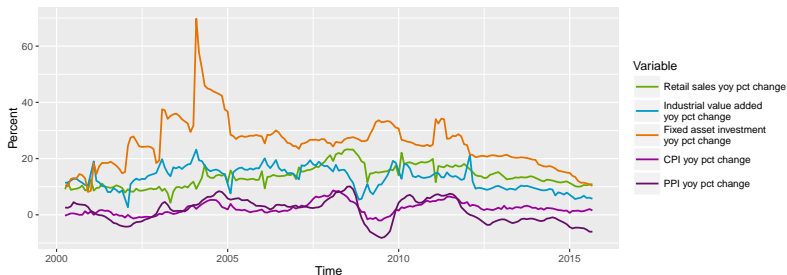# Major monetary policy-related variables

Figure 6: Major monetary policy-related variables

- *Not* examined: discount rate, interest on requires/excess reserves

Major real-economic variables

Figure 7: Major real economic variables

- Limited by choice of data frequency: Monthly-frequency data
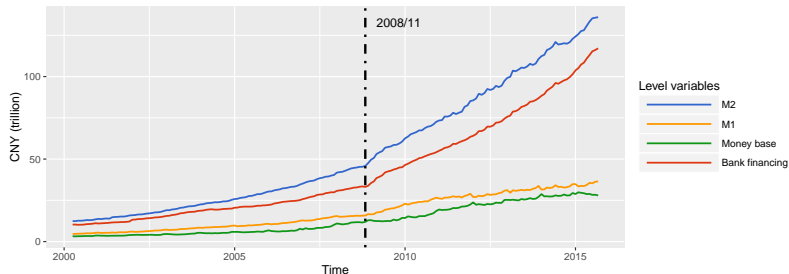
Structural change

Figure 8: Chow test for structural change

H_0: Constant growth rate of bank financing

F test
Statistic = 6.481, p-value = 0.1326, break point = 2008/11

Figure 9: Growth of credit and monetary aggregates in level terms

Quantitative analysis

1 Revankar-Yoshino exogeneity test: H_0: IBOR is exogenous

$$M1PC_t = MBPC_t + IBOR_t + RRRC_t + MPI_t + u_{1t} \qquad (1)$$

$$M1PC_t = IBOR_{t-1} + BENCH_t + IVYOY_t + u_{2t} \qquad (2)$$

$$IBOR_t = MBPC_t + M1PC_{t-1} + IBOR_{t-1} + RRRC_{t-1}$$
$$+ CPIYOY_{t-1} + IVYOY_{t-1} + XRPC_t + u_{3t} \qquad (3)$$

Figure 10: Revankar-Yoshino exogeneity test results

	Full sample	Pre-crisis	Post-crisis
χ^2	58.1857	30.1654	3.9815
df	2	2	2
p	0.0000	0.0000	0.1366

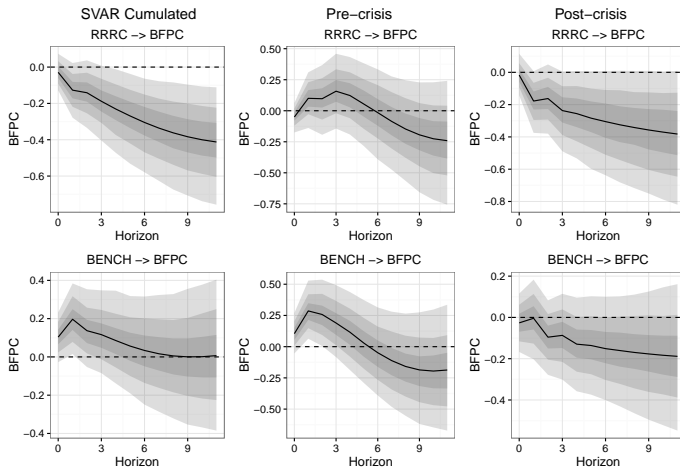## Structural Vector Autoregression

2 SVAR model:

$$AY_t = C_0^* + C_1^* t + A_1^* Y_{t-1} + A_2^* Y_{t-2} + Be_t \qquad (4)$$

where B is unrestricted along diagonal, zero otherwise, and

$$A = \begin{bmatrix} 1 & 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 \\ a_{31} & a_{32} & 1 & 0 & 0 \\ a_{41} & a_{42} & a_{43} & 1 & 0 \\ a_{51} & a_{52} & a_{53} & a_{54} & 1 \end{bmatrix} \qquad Y_t = \begin{bmatrix} RRRC_t \\ BENCH_t \\ MPI_t \\ IBOR_t \\ BFPC_t \end{bmatrix}$$
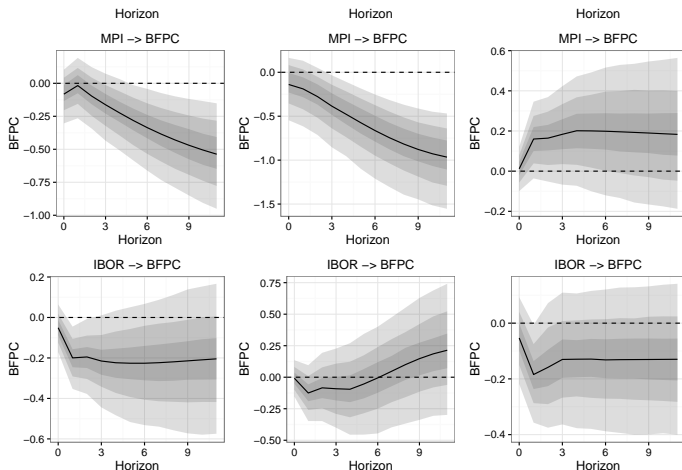
SVAR impulse responses (1)

Figure 11: Step 1 estimations: Cumulated impulse responses (1)

SVAR impulse responses (2)

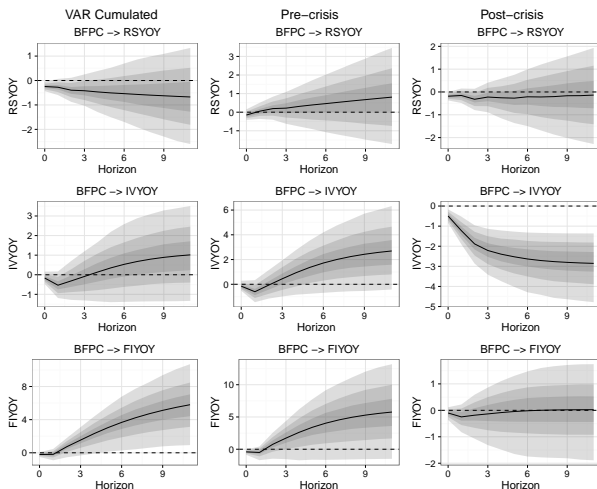Figure 12: Step 1 estimations: Cumulated impulse responses (2)

Robustness checks & IBOR effects

- Robustness checks: Difference vs. level variables, alternative policy indicator, reversed ordering, credit proxies etc.
- Reserve requirements influential but determinacy/significance varies, benchmarks largely ineffective
- Window guidance and interbank rates very consistent, quantitatively negative, considerable significance level

- Effects on the interbank overnight rate: Reserve requirements and benchmark rates strongly impact interbank rate, effect of window guidance on interbank rate negligible
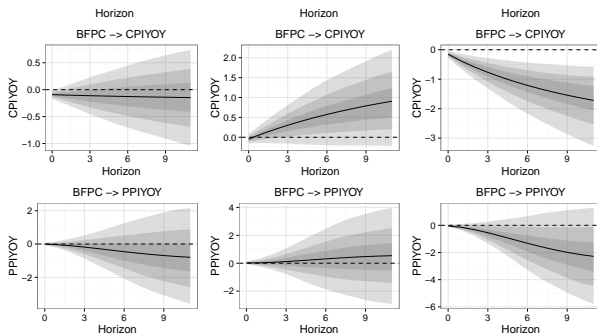
Real economic effects (1)

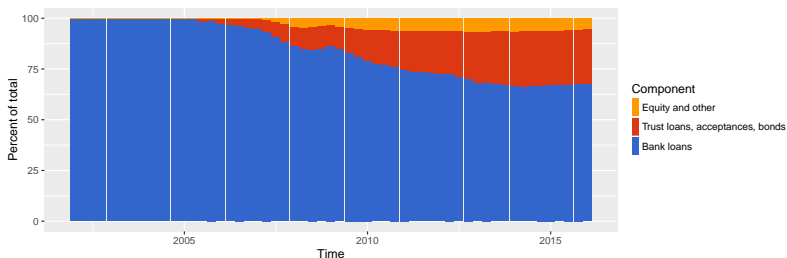Figure 13: Step 2 estimations: Cumulated impulse responses (1)

Real economic effects (2)

Figure 14: Step 2 estimations: Cumulated impulse responses (2)
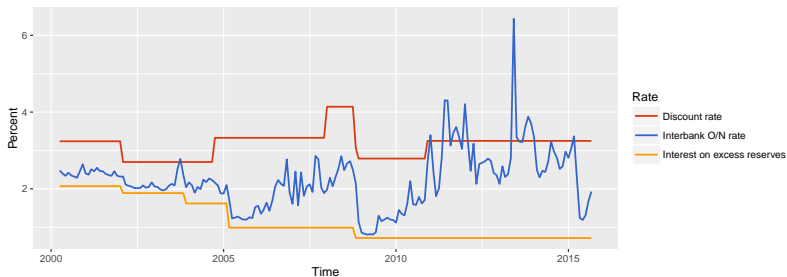
Capital-market based finance

Figure 15: Aggregate financing to the real economy

- Declining role of banks $\rightarrow$ declining effectiveness of window guidance?

Interest rate corridor

Figure 16: Interest rate corridor

- Goal to establish interbank rate as primary tool, but volatile ↔ quantity-based tools, but quantity targets still missed
- Lack of credible corridor with binding limits

Conclusion

- Strongest impact on bank financing from interbank rate, window guidance and reserve requirements

- Most consistent: Window guidance and interbank rates, former strong pre-crisis, latter strong (and exogenous) post-crisis

- Bank financing associated with increasing activity in industrial sectors and fixed asset investment, but elasticity of real economy vis-à-vis bank financing lower post-crisis

- Improve interest rate channel: Credible interest rate corridor, lower number of tools, reserve averaging provisions and longer maintenance periods

- Well-established interest rate $\leftrightarrow$ Relevance for rebalancing