

To Control or Not Control ?
The Impact of Capital Control on Economic Growth

张婧妍, 雷嘉欣, 王天民, 赵德明, 王翔

December 2018

Outlines

- Introduction
- Literature Review
- Model
- China-relevant Cases

Outlines

- Introduction
- Literature Review
- Model
- China-relevant Cases

Introduction

- Capital outflow
 - 资本外流现象在发展中国家较为严重
 - 中国资本管制严格



Outlines

- Introduction
- Literature Review
- Model
- China-relevant Cases

Literature Review

- To Control?

- ▣ Rodrik(2007): 影响汇率、出口

- ▣ Kaplan & Rodrik(2001): 马来西亚的经验

- ▣ Missing Links from Capital Inflows to Growth:

Solow(1956); Hall & Jones(1999): 外国资本流入仅有短期作用

Gourinchas & Jeanne (2006) : 生产率是长期增长的主要决定因素

Henry (2006) : 股权市场自由化的好处持续时间很短

- ▣ Thresholds for Benefiting from Financial Openness

Stulz (2005) : 产权与制度门槛

Literature Review

- or Not Control?
 - ▣ Zingales(2003): 政治上，推动国内自由化
 - ▣ IMF(1997): 资本流动自由化
 - ▣ Rajan & Zingales(2003b): 削弱阻碍改革的利益集团

Outlines

- Introduction
- Literature Review
- **Model**
- China-relevant Cases

Model

- $Y_i = \beta_1 + \beta_2 X_i + \omega \Gamma + \varepsilon_i$

Γ : VIX, Inflation, Export, Real interest rate

X_i : KAOPEN (Chinn and Ito 2008)

Y_i : Real GDP Growth, Unemployment, CPI

- ▣ The impact of capital control policy
- ▣ Endogenous: selection bias
- ▣ Differences between countries with capital control or not

Model

- Propensity Score Method
 - Intuitive Explanation: Find someone who is “similar” to you
 - but don't have the treatment
 - to re-construct the counterfactual

Model

- $p(X_i) = \Pr(D_i = 1|X_i)$
- $D_i = 1$ treated $D_i = 0$ not treated

Model

- ▣ $p(X_i) = \Pr(D_i = 1|X_i)$
- ▣ $D_i = 1$ treated $D_i = 0$ not treated
- ▣ probability that a country undertakes the policy

Model

- Step 1: Logit Method

Model

- Step 1: Logit Method
 - probability that a country undertakes the policy
 - Inflation
 - Export
 - Institution index

Model

- Step 2: Matching
 - Use “Matching” as if we are doing experiments with controlled groups and treatment groups
 - Randomized Controlled Trials

Model

- Step 2: Matching
 - Five methods
 - kNN
 - kNN - Without Replacement
 - Radius with caliper
 - (The kNN family)
 - Kernel
 - Local-Linear Matching

Model

- Step 2: Matching
- The Philosophy of kNN: Resort to nearest neighbors
 - kNN – With/Without Replacement
 - kNN – With/Without Radius Constraints
 - kNN – With Radius Caliper Constraints
 - $k=1$ or not

Model

- Step 2: Matching
- The Philosophy of kNN: "A Great Neighborhood" if ...
 - Ample amount of samples
 - Large enough "common area" (common support)
 - Distribution is dense

... then the methodology of finding neighbors wouldn't be a problem

Model

- Step 2: Matching
- Another philosophy: weights for all, instead of just neighbors
 - All samples matter
 - Adopt Multivariate Kernel Regression Estimator for weights
 - Using eigenvector directly

Model

- Step 2: Matching

- $E(Y_1) = E\left(\frac{Y_i D_i}{p(X_i)}\right) E(Y_0) = E\left(\frac{Y_i(1-D_i)}{1-p(X_i)}\right)$

- $ATT = \frac{Y_i(D_i - p(X_i))}{p(X_i)(1-p(X_i))}$

- differences in outcome between the treated observations and their respective controls

Model

- Step 2: Matching
 - Regression results

	(1) unemployment_rate	(2) real_gdp_growth	(3) cpi
_treated	-1.544 (1.451)	-0.0149 (0.00769)	-1.490 (4.471)
_cons	8.782*** (0.248)	0.0363*** (0.00131)	67.43*** (0.763)
<i>N</i>	584	584	584
<i>R</i> ²	0.002	0.006	0.000
adj. <i>R</i> ²	0.000	0.005	-0.002

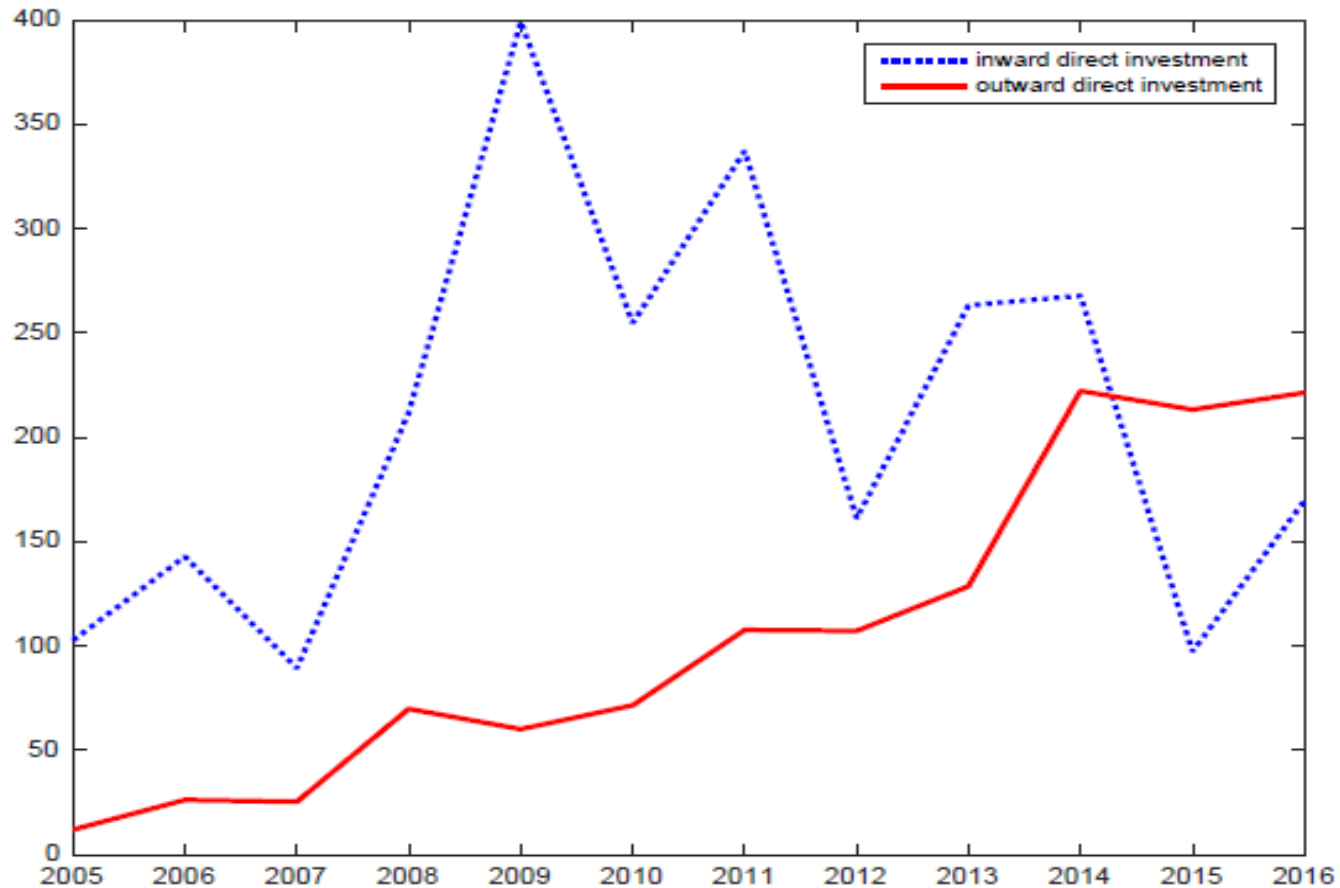
Model

- Step 2: Matching
 - Regression results
 - We find that the policy doesn't significantly improve GDP growth and unemployment.

Outlines

- Introduction
- Literature Review
- Model
- China-relevant Cases

China-relevant Cases



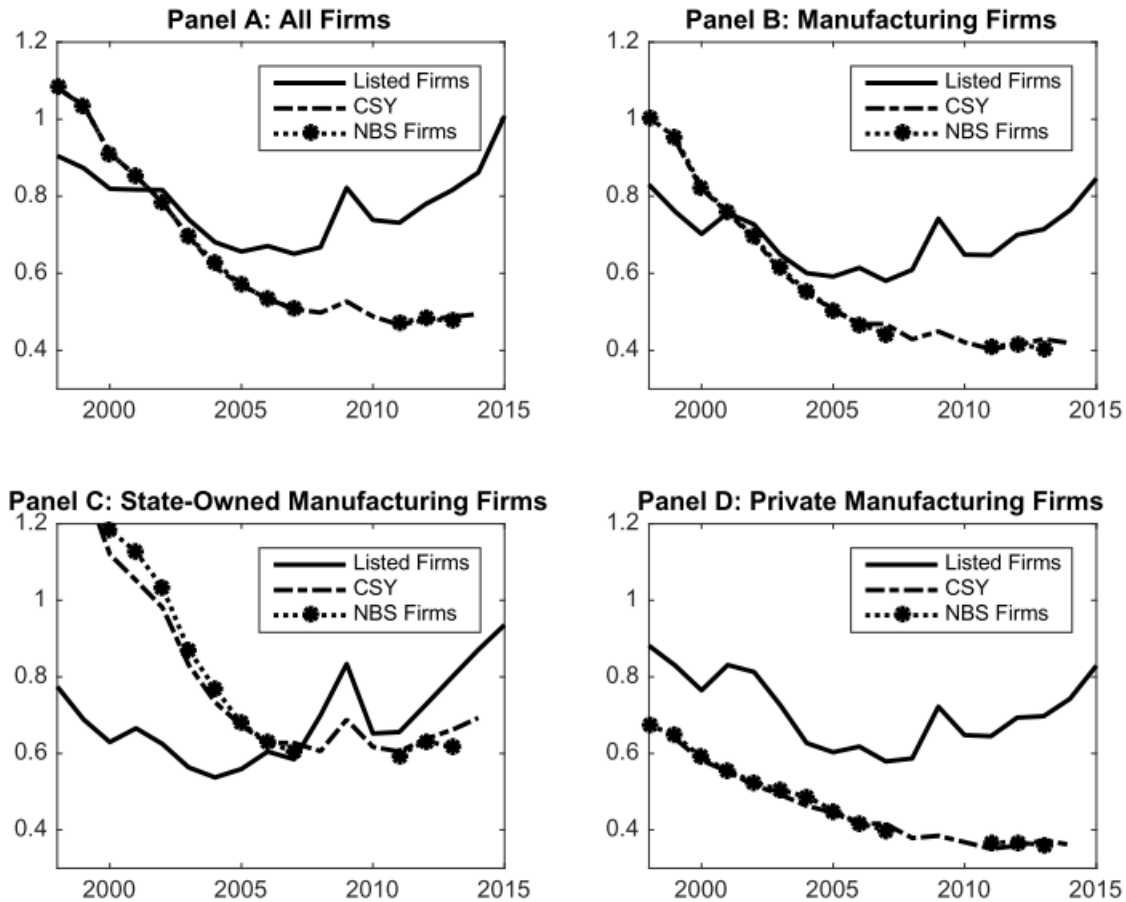
China's inward and outward foreign direct investment (billion USD)
(Song & Xiong, 2018)

China-relevant Cases



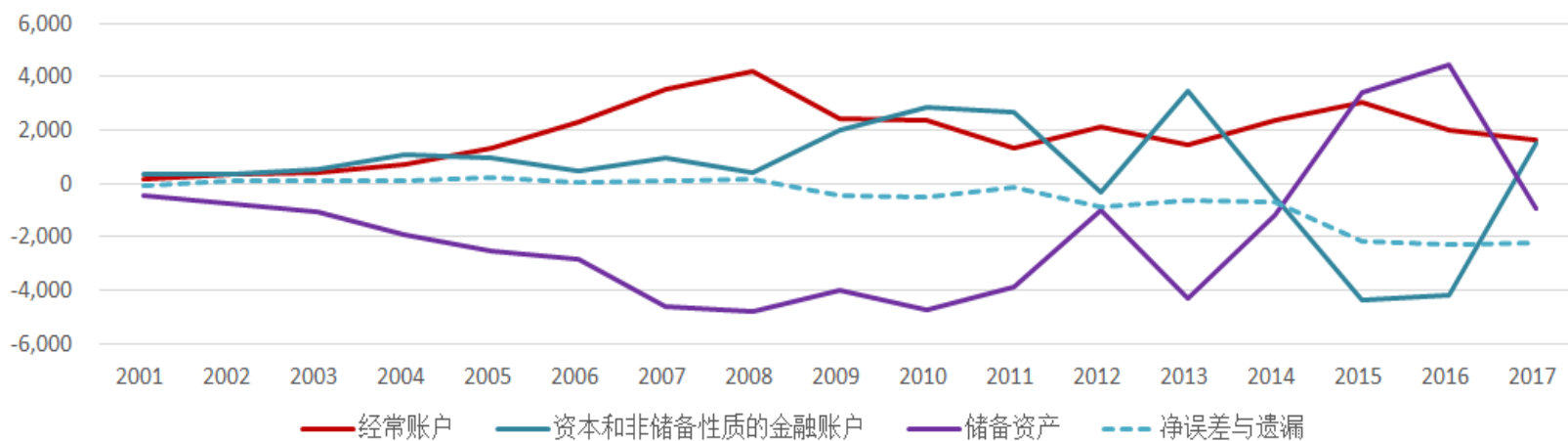
The return on capital in China (Bai & Zhang, 2015)

China-relevant Cases



China's Firm Debt Revenue Ratios (Bai et al., 2017)

China-relevant Cases



• 规避管制

- 经常账户：高开或者低开发票
- 伪装受限投资
- 衍生品市场

China-relevant Cases

- 高开或者低开发票



The Economist

Topics ▾ Current edition More ▾

Capital inflows to China

Hot and bothered

Despite strict capital controls, China is being flooded by the biggest wave of speculative capital ever to hit an emerging economy

Print edition | Finance and economics >

Jun 26th 2008 | beijing

Capital Inflows to China: Hot and Bothered” ,*The Economist* , 26 June, 2008 Available at <https://www.economist.com/finance-and-economics/2008/06/26/hot-and-bothered>

China-relevant Cases

- 伪装受限投资 (Carvalho & Garcia2008)
 - 可交易股权
 - 贸易融资

- 衍生品市场
 - 非交割远期 (Lipscomb 2005)
 - 在岸衍生品市场 (Ostry et al. 2011)

Summary

- Capital control短期内对于稳定汇率、金融体系有所作用
- 对经济增长的直接效应几乎没有
- 长期内资本总有办法规避管制——管制成本也随时间上升
- 国内宏观经济环境、健全的金融体系是关键

References

- Angrist J. D. & Steve P. (2009) *Mostly Harmless Econometrics: An Empiricist's Companion*. Princeton University Press.
- Bai, C. E., Hsieh, C. T., & Song, Z. M. (2016). The long shadow of a fiscal expansion (No. w22801). National Bureau of Economic Research.
- Carvalho, B. S. D. M., & Garcia, M. G. (2008). Ineffective controls on capital inflows under sophisticated financial markets: Brazil in the nineties. In *Financial Markets Volatility and Performance in Emerging Markets* (pp. 29-96). University of Chicago Press.
- Chong-En, B., & Qiong, Z. (2015). The Return on Capital in China and Its Determinants. *China Economist*, 10(3), 20.
- Eswar S. Prasad & Raghuram G. Rajan. (2018). A Pragmatic Approach to Capital Account Liberalization. *Journal of Economic Perspectives*, 22(3), 149–172.
- Lipscomb, L. (2005). An overview of non-deliverable foreign exchange forward markets.
- Kristin J. Forbes and Michael W. Klein. (2015). Pick Your Poison: The Choices and Consequences of Policy Responses to Crises. *IMF Economic Review*, 63(11), 198-237.
- Maurice Obstfeld & Alan M. Taylor. (2017). International Monetary Relations: Taking Finance Seriously. *Journal of Economic Perspectives*, 31(3), 23–28.
- Ostry, J. D., Ghosh, A. R., Habermeier, K. F., Laeven, L., & Chamon, M., Qureshi, M. S., & Kokenyne, A. (2011). Managing Capital Inflows; What Tools to Use? (No. 11/06). International Monetary Fund.
- Song, Z. M., & Xiong, W. (2018). Risks in China's Financial System. National Bureau of Economic Research.