



Borrowing constraint, heterogeneous production sectors and policy implications: The case of China[☆]



Ren Wang^a, Jie Hou^{b,*}, Xiaobei He^c, Hui Song^d

^a School of Economics and Trade, Hunan University, Changsha 410205, China

^b International School of Economics and Management, Capital University of Economics and Business, Beijing 100070, China

^c cf40 Finance Forum, Xicheng, Beijing 100009, China

^d Research Center for Games and Economic Behavior, Shandong University, Jinan 250100, China

ARTICLE INFO

JEL classification:

E20
E44
E52
E62

Keywords:

Borrowing constraint
Heterogeneous production sectors
Monetary policy
Fiscal policy

ABSTRACT

It is well known that the financing capacity of China's private firms is negatively impacted by the discriminatory borrowing constraints imposed on them, but not on state-owned firms. In this paper, we aim to quantify the implication of the borrowing constraints on the transmission mechanism of monetary and fiscal policy, using a DSGE model with a heterogeneous production side of private and state-owned sectors. We fit our model to China's quarterly data from 2005 to 2014 and conduct several experiments. The main findings are as follows. First, a monetary policy shock interacts with private firms' borrowing constraint, thus having an additional effect on real variables, named reallocation effect. This is a deviation from the standard New Keynesian framework, where the real effect comes from the price rigidity. Second, intensified borrowing constraints of the private firms reduce the efficacy of a tax rate cut shock for private firms and lessen the tightening effects on the state-owned firms of such shock. Third, intensified borrowing constraints on the private firms reduce the efficacy of an expansionary monetary policy shock for private firms and enhance its effectiveness for the state-owned firms. The model can be easily extended to other developing economies in a similar environment.

1. Introduction

Empirical evidences show that private firms in China are suffering from borrowing constraints and having difficulty in raising capital. The incumbent Premier of China, Keqiang Li, has reiterated this problem on many occasions, pledging “making efforts to ease financing difficulties for private firms” multiple times.¹ In 2015, the Ministry of Finance cuts tax rate for private firms trying to relieve the financing difficulties of private firms, and the People's Bank of China (PBoC) also reduces interest rates five times aiming to stimulate the economy as a whole. With these practices taking place, a structural model is absent from existing literature to understand the transmission mechanism of these stimulative monetary and fiscal policies on the China economy under the discriminatory borrowing constraints, or to evaluate the impact and the effectiveness of these policies. This paper aims to fill up this gap by building a dynamic stochastic general equilibrium (DSGE) model with heterogeneous production sectors facing discriminatory borrowing constraints under a New Keynesian framework.

A distinctive feature in China's economy is the heterogeneity in productivity and borrowing constraints between private firms and

[☆] Jie Hou acknowledges financial support from Research and Innovation Center of Metropolis Economic and Social Development, CUEB.

* Corresponding author.

E-mail addresses: renwang@hnu.edu.cn (R. Wang), jie_hou_cueb@163.com (J. Hou), xiaobei_he@sina.com (X. He), songh@sdu.edu.cn (H. Song).

¹ For example, see http://english.gov.cn/premier/news/2016/06/22/content_281475377697645.htm.

state-owned firms. Empirical evidence documents that private firms enjoy some technical productivity advantage over state-owned firms. According to Hsieh and Klenow (2009), Brandt and Zhu (2010), Song, Storesletten, and Zilibotti (2011) and Brandt, Biesebroeck, and Zhang (2012), the TFP growth rate gap between private firms and state-owned firms is estimated to range from 1.42% to 2.3%, with the former taking the lead. However, the private firms are financially discriminated by state-owned banks by facing borrowing constraints. Pye and Lardy (2002) and Allen, Qian, and Qian (2005) argue that reforms in the financial markets have been much slower than those in the goods and labor market. Song et al. (2011) shows that private firms on average have less access to external credit than State-owned firms. Lin and Tan (1999) and Bai, Hsieh, and Qian (2006) find that state-owned firms inherit some types of policy burdens from the previous planned economic system which can be used as a leverage to bargain with the government and state-owned banks for policy favors, among which the easy access of bank loans. Evidence provided by Brandt and Li (2003) shows that private firms have less access to bank loans on which more collateral is required compared to state-owned firms, but their explanation is that state-owned banks have developed good channels for obtaining credit information about state-owned firms through their long business relationship. Cull and Xu (2005) finds that State-owned firms continue to receive a disproportionately large share of the credit extended by the state-owned banks. Cull, Li, Sun, and Xu (2015)'s empirical results suggest that state-owned firms have tight government connections and hence face substantially less financial constraints. Hale and Long (2011) also shows that state-owned firms continue to enjoy significantly more generous external financing capabilities than other types of Chinese firms, and that private firms face more financial constraints. Poncet, Steingress, and Vandenbussche (2010) employs a Chinese firm-level data with more than 20,000 firms to test whether firms face different credit constraints depending on their capital ownership. They find that private firms are credit constrained while state-owned firms are not. The heterogeneity within the manufacturing sector in China leads to underinvestment for private firms and is one of the key reasons of resource misallocation in China. Several empirical studies (Dollar and Wei, 2007; Genevieve and Wei, 2005; Liu and Siu, 2006) show that on average private firms have significantly higher returns to capital than state-owned firms but do not receive commensurate resources they are entitled to have.

Based on the features mentioned above, we build a DSGE model tailored to the China economy with heterogeneous production sectors and discriminatory borrowing constraints. We assume that state-owned firms enjoy sufficient external financing from banks, while private firms with relative higher productivity are credit constrained through a Kiyotaki-Moore (1997)-type of borrowing constraint. Different from Song et al. (2011)'s real overlapping generation model, our model features sticky wage and price. The model also incorporates fiscal and monetary authorities, enabling us to evaluate monetary and fiscal policies in a New Keynesian framework. We fit the model to China data from 2005 to 2014 using Bayesian techniques and conduct several simulation experiments.

The simulation results show that borrowing constraint for the private firms play an important role in shaping the dynamics of macroeconomic variables, especially within the manufacturing sector. With the introduced borrowing constraints, it is intuitive that a negative borrowing constraint shock leads to depressed investment and hence lower share of capital and employment in the private firm sector and to the opposite effects in the state-owned firm sector. Similarly, a tax rate cutting shock unilaterally for the private firms enhances the profit for private firms, leading to higher investment and employment in the private sector, and the opposite in the state-owned sector. However, more interesting is the impact of monetary policy shocks. We find that an expansionary monetary policy shock reduces the financing cost for both private and state-owned firms, causing an aggregate increase of capital and employment. It also boosts the value of collaterals for private firms, leading to asymmetric movements on marginal productivity of labor and capital of private and state-owned firms. As a result, the private and state-owned firms adjust their inputs differently, inducing reallocation of capital and labor between the private and public production sectors, i.e. redistribution of capital and employment share between private and state-owned firms. We call this as the reallocation effect of monetary policy, which is absent from the standard New Keynesian framework. The reallocation of capital and labor within the manufacturing sector has been documented as a focal point of economic growth and business cycle dynamics in China. For instance, Song et al. (2011) and Brandt et al. (2012) find that about 70% of the TFP growth is driven by resource reallocation from state-owned firms to private firms. Hsieh and Klenow (2009) show that moving to 'U.S. efficiency', by reducing the resource misallocations, would increase total factor productivity (TFP) by 30%–50% and would boost TFP by 2% per year over 1998–2005. With those work focusing on the consequences of resource reallocation to the macro economy, in this paper we emphasize on identifying the effect of monetary policy on resource reallocation under borrowing constraint.

We also show that, the reallocation effect strengthens when its source, the borrowing constraints on the private sector, intensifies. When the government cuts tax rates exclusively for private firms, the intensified borrowing constraints dampen the benefits such policy brings to the private firms, and reduce the disadvantage it brings to the state-owned firms. Following an expansionary monetary policy shock, intensified borrowing constraints of the private firms reduce the efficacy of such policy for private firms and enhance its effectiveness for the state-owned firms.

Our model can also be applied to other countries with heterogeneous production sectors, where private firms tend to face discriminatory financial constraints compared to state-owned firms, and the government tends to play an important role in directing financial resources to state-owned firms. A growing literature suggests that this theme is relevant in quite a few developing countries, for example, Banerjee and Benjamin (2005, 2010), Jeong and Townsend (2007), Restuccia and Rogerson (2008), Alfaro, Charlton, and Kanczuk (2008), Hsieh and Klenow (2009), Buera, Kaboski, and Shin (2011), Bartelsman, Haltiwanger, and Scarpetta (2013).

Download English Version:

<https://daneshyari.com/en/article/5083107>

Download Persian Version:

<https://daneshyari.com/article/5083107>

[Daneshyari.com](https://daneshyari.com)