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The cost effects of shadow banking activities and political intervention: Evidence from the banking sector in China

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ABSTRACT

In this paper, we examine how the shadow banking activities of Chinese commercial banks affect their cost efficiency. Furthermore, we investigate whether the relation between shadow banking activities and the bank cost efficiency changes across heterogeneous types of government political intervention in banks. We find that the growth of shadow banking activities has a significantly positive effect on the cost efficiency of Chinese commercial banks. In addition, evidence suggests that political intervention has detrimental effects on bank cost efficiency, which will weaken or dominate the positive relation between the growth of shadow banking activities and bank cost efficiency.

1. Introduction

China has a bank-based financial system. Remarkable progress has been made regarding banking reform following the country's entry into the World Trade Organization (WTO) in 2001. However, China's banking sector has been slow to transition to a truly modern banking industry because it is still dominated by large state-owned banks, namely, the “Big Four” banks, ICBC, CBC, BOC, and ABC.[1] The dominance of the large state-owned banks implies that there is insufficient competition within the banking sector. In addition, China's banking sector is under strict government intervention as well as regulations regarding operating management and the product range. Financial repression remains an essential characteristic of China's financial system (Allen, Qian, Zhang, & Zhao, 2013).

Nevertheless, in recent years, the rapid rise of shadow banking has been a major part of China's financial transformation (Guo & Xia, 2014; Li, 2014; Li, Hsu, & Qin, 2014). Activities in China's shadow banking system have grown significantly in diversity and breadth, which has helped to alleviate financial repression. Dang, Wang, and Yao (2014) compare the shadow banking system between China and U.S., classify Chinese shadow banking activities into three broad classes based on organization structures,[2] and

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[1] The Big Four banks are Industrial & Commercial Bank of China, Construction Bank of China, Bank of China, and Agricultural Bank of China, respectively.

[2] The first class involves banks as a direct intermediary; the second class consists of credit intermediation conducted by non-bank financial institutions; and the last class of activities is composed of lending by micro lenders, pawn shoppers, and the underground black market.

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reveal that the most important characteristic of shadow banking in China is its close connection with traditional banks. In China, shadow banking mainly relies on commercial banks to perform basic functions of credit intermediation. Without the involvement of bank activities, the Chinese shadow banking system would not have experienced such fast growth; this makes shadow banking very bank-centric.

There is a growing body of research on shadow banking in developed countries and other emerging market countries. It has become an increasingly popular research topic in recent years (Adrian & Ashcraft, 2012; Acharya, Khandwala, & Öncü, 2013; Colombo, Onnis, & Tirelli, 2013; Chernenko & Sunderam, 2014; Lu, Guo, Kao, & Fung, 2015; Li & Lin, 2016), but most studies overlook the cost effects of banks' shadow banking activities. In particular, empirical evidence on the cost effects of Chinese commercial banks' shadow banking activities remains extremely scarce. Furthermore, in addition to many studies on bank efficiency in China (Yao, Jiang, Feng, & Willenbockel, 2007; Berger, Hasan, & Zhou, 2009; Jiang, Yao, & Zhang, 2009; Jiang, Yao, & Feng, 2013; Hou, Wang, & Zhang, 2014; Lin, Doan, & Doong, 2016), minimal research has described the relation between shadow banking activities and bank cost efficiency or investigated the impact of political intervention on this relation.

To address the lacuna in recent literature, we examine how the shadow banking activities of Chinese commercial banks affect their cost efficiency. Furthermore, we also investigate whether the relation between shadow banking activities and the bank cost efficiency changes across heterogeneous types of political intervention in bank businesses. A sample of 54 Chinese commercial banks from 2003 to 2014 is used for this purpose.[3]

To evaluate the effects of shadow banking activities and political intervention on bank performance, we scrutinize banks' ability to minimize cost. Cost minimization remains the common denominator for both commercial and policy loan-oriented unions (Wang, Chang, & Chen, 2008). In addition, in modeling and estimating the impact of technical inefficiency on profit, it is assumed that both inputs and outputs are choice variables, which is inconsistent with the constraints of Chinese commercial banks on their credit quota. Thus, at least partly, output variables are not chosen by the banks entirely independently. Thus, we estimate and compare the banks' X-efficiency of cost minimization, defined as the extent to which the actual operating cost attains the minimum technically feasible cost (Berger, Hunter, & Timme, 1993).

Our hypothesis is that the growth of shadow banking activities has significant positive effects on the cost efficiency of Chinese commercial banks because they contribute to finding a means of circumventing the strict constraints on bank operations and the product range, therefore improving banks' ability to minimize costs. In addition, the growth of shadow banking activities stimulates banking competition, facilitates the transfer of fund price information for managers, and promotes the technical innovations of banks, which can also strengthen banks' market incentives and capability to minimize costs. Moreover, to commence shadow banking activities, banks usually reshape the internal mechanics of management, resulting in reduced operational inefficiency. In particular, we hypothesize that more shadow banking activities lead to higher cost efficiency.

Furthermore, as is often the case with government donorship, political intervention can impair managers' abilities to operate a financial intermediary efficiently by clogging information channels and decreasing the availability of useful information for managers (Adams, 1988; Wang et al., 2008). In addition, political intervention misaligns the banks' incentives to minimize cost according to banking market fluctuations, confines the ability of the management to make optimal production decisions, and occasionally provides bank managers with chances and excuses to shirk their responsibility. Therefore, we argue that political intervention has detrimental effects on bank cost efficiency, which will weaken or dominate the positive relation between the growth of shadow banking activities and bank cost efficiency. Moreover, the relation between shadow banking activities and the bank cost efficiency changes across heterogeneous types of political intervention in bank operations. The empirical results are consistent with our above hypotheses.

Our main determinant analysis of cost efficiency is conducted by employing a Quantile-Regression-Based thick frontier approach (TFA) as proposed by Wang et al. (2008) and Kumbhakar, Wang, and Horncastle (2015). In contrast to stochastic frontier analysis (SFA), this approach is distribution-free, which reflects the fact that we do not need to impose distribution assumption on technical inefficiency. In addition, Quantile-Regression-Based TFA avoids the criticism of data envelopment analysis (DEA) of not allowing for random error and sensitivities to outliers. To check the robustness of our results, we use a one-step stochastic cost frontier model to confirm the main conclusions of this paper.

This paper is organized as follows. Section 2 provides the information on the shadow banking activities of Chinese commercial banks and provides an indicator definition measuring the development of the shadow banking activities. Section 3 describes the methodology, variable definitions, and data. Section 4 discusses the empirical results. Section 5 concludes this paper.

2. Shadow banking activities of Chinese commercial banks

The global financial crisis that started in 2007 attracted the attention of regulators, investors and academic researchers with regard to the increasing shadow banking system worldwide. The term "shadow banking" was coined by McCulley (2007); however, a consensus of its concrete definition has not yet been reached. The common definitions can be classified into three perspectives. The first perspective, outlined by the Federal Reserve Bank of New York, defines shadow banking as financial institutions, markets and instruments that can reproduce the core business of commercial banks. The second perspective views shadow banking as a system of credit

[3] A noteworthy structural change in China's banking industry was the introduction of a formal deposit insurance system in May 1, 2015, which gave rise to a considerable impact on Chinese banks' conventional and unconventional businesses. To avoid being influenced by this change and focus on our theme in this study, the data after 2015 are excluded from our sample.