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Evaluating the effectiveness of China's financial reform—The efficiency of China's domestic banks☆

Cheng HSIAO [a,b,c,*], Yan SHEN [d], Wenlong BIAN [d]

[a] Department of Economics, University of Southern California, CA, United States
[b] Department of Quantitative Finance, National Tsinghua University, Taiwan
[c] WISE, Xiamen University, Xiamen, China
[d] National School of Development, Peking University, Beijing, China

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ABSTRACT

This paper estimates the cost and profit efficiency of the Chinese domestic banking sector to evaluate the effectiveness of China's financial reforms since 1978. We use the performance of foreign banks as the benchmark because foreign banks, subject to intensive worldwide competition, are perceived as possessing superior governing structure and organization, more advanced technologies and better trained labor force. On the other hand, competition in China's banking sector is mainly in the form of nonprice measures, thus putting foreign banks at a disadvantage. We find domestic banks have gradually caught up the cost advantage of foreign banks in a manner consistent with the increased competitive pressure. On the other hand, the profit advantage of domestic banks over foreign banks is widening because of institutional arrangements, cultural and social networks as well as the profit scope and revenue scale economy.

1. Introduction

Since 1978, China has undergone a series of financial reforms aiming to transform an administrative banking system into a market-based banking sector. This paper intends to assess the effectiveness of China's financial reforms on the efficiency of the banking sector. However, contrary to the conventional approach of comparing the outcome of a treatment with the outcome in the absence of that treatment (e.g. Angrist & Pischke, 2014; Chen, Skully, & Brown, 2005; Ching, Hsiao, Wan, & Wang, 2011; Heckman & Vytlacil, 2007; Hsiao, Ching, & Wan, 2012; Hsiao, 2014, Chap. 9), we do not separately identify the effect of each deregulation policy implemented. Instead, we assess the performance of China's domestic banks after a series of financial reforms using the performance of foreign banks as the benchmark. We assume foreign banks, under intensive world-wide competition, possess superior governing structure and organization, more advanced technologies, and better trained labor force. Furthermore, their administrative and operating structures are less likely to be affected by China's reforms in domestic banks' ownership structure and incentive scheme. On the other hand, under the current supervision structure, competition in China's banking sector is more in the nonprice areas which foreign banks probably are in a disadvantageous position.

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* Corresponding author at: Department of Economics, University of Southern California, Los Angeles, CA, United States.
E-mail addresses: chsiao@usc.edu (C. HSIAO), shenyan01@gmail.com (Y. SHEN), 882281a@163.com (W. BIAN).

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There are a number of studies on the efficiency of China's banking sector. For instance, Ariff and Can (2008) used a nonparametric data envelope analysis (DEA) based technique to measure the cost- and profit-efficiency of 28 commercial banks from 1995 to 2004, finding that joint-stock banks, on average, were more cost and profit efficient than state-owned banks. Berger, Hasan, and Zhou (2009) used the stochastic frontier analysis (SFA) for domestic banks and two wholly foreign-owned banks during the period 1994–2003 and found that the big four state-owned banks were least cost efficient and foreign banks were most cost efficient. On the other hand, Chen et al. (2005) used the DEA method to examine the technical efficiency of 43 banks from 1993 to 2000 and showed that large state-owned banks were more efficient than medium-sized banks. Yin, Yang, and Mehran (2013) found that the profit efficiency of foreign banks was not statistically different from that of state-owned banks.

Instead of estimating the envelope of efficiency frontier as in the DEA approach (e.g. Chen et al., 2005; Fu & Heffernan, 2007), we use the stochastic frontier analysis (e.g. Good, Röller, & Sickles, 1995; Kumbhakar, 1990; Schmidt and Sickles, 1984; Sickles, Good, & Johnson, 1986) to study the domestic and foreign banks' cost and profit efficiency relative to the frontier of a given level of input or output factors. Based on BankScope data of 107 commercial banks for the post-WTO period of 2007 to 2012, we find that foreign banks are most cost efficient but least profit efficient during this period. We also explore the reasons behind this phenomenon.

We proceed by first briefly describing the historical evolution of China's banking sector in Section 2. Section 3 sets up the stochastic frontier analysis framework. Data and empirical findings are presented in Section 4. In Section 5 we explore the existence of the economy of scope in China's banking industry. Concluding remarks are presented in Section 6.

2. The evolution of China's banking sector

The financial system of the first thirty years of the People's Republic of China since 1949 was an all-inclusive monopoly by a single bank. The People's Bank of China (PBOC) was the only bank, it performed the functions of both the central bank and commercial bank. Under government directions, the PBOC was in charge of issuing currency—*renminbi* (RMB), managing exchange rates, controlling inflation, coordinating government revenue and expense, channeling household savings to state projects, etc.[1] Since 1978, China has embarked on a gradual approach to reform its financial system. The first stage was to put competitive pressure on state-owned banks by establishing more state-owned banks. Three additional banks were established in 1979: the Agriculture Bank of China (ABC) to manage rural finance, the Bank of China (BOC) to handle business related to foreign trade, and the China Construction Bank (CCB) to finance long-term investment and construction activities. In January 1984, the Industrial and Commercial Bank of China (ICBC) was separated from PBOC to manage urban banking business. These became the big four state-owned banks in China (Big Four). In September 1983, the PBOC was designated as the central bank of China in charge of supervising the banking industry.

The second stage of the reform was to gradually establish a hard budget for the management of state-owned banks and allow more diversified bank ownership structures. National-level joint-stock commercial banks began to be established in 1986, starting with the Bank of Communication. Local financial institutions also started to appear in cities. In 1979, the first city credit cooperative was founded in Henan Province. In the 1990s, China had over 5000 city credit cooperatives and city cooperative banks. However, the central government did not demonstrate full determination to stop commercial banks from making policy loans. Huge amounts of non-performing loans (NPLs) were accumulated in the 1990s. In 2001 the official non-performing loan ratio was 25.4% (1.88 trillion RMB NPLs over 7.4 trillion RMB total loans)[2]—but if the 1.4 trillion NPLs transferred to asset management companies (AMCs) during 1999 and 2001 were also factored in, the actual NPL ratio would be 37.3%.[3]

After joining the WTO in 2001, China had five years to strengthen its financial system to fulfill WTO regulations. The goal of this third stage of the reform was the privatization of state-owned banks to establish sound governing structure and operating mechanisms. Several steps were taken to implement the reform. The first step was to inject new capital to the Big Four to make them solvent before transforming state ownership to private ownership. In 2003 Central Huijin Investment Company Limited was established. Through Huijin, foreign reserves in the amount of 60 billion US dollars were injected as new capital of state-owned banks during 2004 and 2005.[4] Also in 2004 and 2005, 1.24 trillion RMB NPLs were transferred from commercial banks to the AMCs. Next, the China Banking Regulatory Commission (CBRC) was created in 2003 to regulate financial institutions. The third step was to gradually adopt new accounting standards, which made definitions of financial items consistent with international accounting standards. The fourth step was to diversify the governing structure of banks by encouraging joint ownership of non-government shareholders.

China's opening to foreign banks has taken a gradual approach. In 1980 the Export Import Bank of Japan opened its first representative office in Beijing, and in 1981 Nanyang Commercial Bank opened its first operational branch in Shenzhen. By the end of 1993, there were 76 operational branches in 13 cities serving foreign enterprises and individuals for business related to foreign currency. In 1994 the first law to regulate foreign banks, "Regulations of the People's Republic of China Governing Financial Institutions with Foreign Capital" was passed, specifying conditions for opening new branches, regulatory standards, and relaxation of regional operations. In 1996, foreign banks were allowed to do RMB business for foreign enterprises and foreign residents in Shanghai. Responding to the Asian Financial Crisis, China further relaxed restrictions on foreign banks' operations in 1998 and 2001, where foreign banks were allowed to access RMB from domestic inter-bank market and to attract RMB deposits in greater regions. By the end of 2006, there had been 14 wholly foreign-owned banks and joint-venture foreign banks with legal entity. Moreover, 74 foreign banks

[1] PBOC website: About us. http://www.pbc.gov.cn/publish/main/531/index.html.

[2] Almanac of China's Finance and Banking, 2002.

[3] In 1999, four AMCs were established: China Great Wall AMC, China Orient AMC, China Cinda AMC, and China Huarong AMC.

[4] In January 2004, foreign reserves with 45 billion US dollars (about 372.4 billion RMB) were injected to Bank of China and China Construction Bank. In April 2005, Central Huijin instilled 15 billion US dollars into Industrial and Commercial Bank of China, and in 2008, Huijin instilled 19 billion US dollars into Agricultural Bank of China.