

The Change of the Scale of China's Shadow Banking and the Effects of Financial Deleveraging

Jialin Liu

Dickson Poon School of Law, King's College London

Abstract. This paper aims to discuss the effectiveness of financial deleveraging by observing and studying the changes in the scale of shadow banking in China. China's shadow banking can be divided into two parts: intra-bank shadow banking and extra-bank shadow banking, whose scale can be calculated by the indirect method based on the balance sheet and the direct method respectively. Through data statistics and calculations, it is concluded that the scale of shadow banking in China has slowed down since 2017 and started to decline gradually in 2018. In other words, financial deleveraging is effective.

1. Introduction

In the second half of 2016, "deleveraging and risk prevention" became the primary content and objective of the regulation of shadow banking in China. Since then, China has issued a series of policy initiatives to regulate business products such as interbank certificates of deposit, entrusted loans and asset management, signifying that shadow banking has entered a new stage of full implementation of regulation.

This paper first defines shadow banking, then adopts a combination of direct and indirect methods to measure the scale of shadow banking, and calculates the scale of shadow banking from December 2010 to June 2019 by using data from official databases and reputable statistical databases. Finally, the effects of financial deleveraging are discussed from the perspective of changes in the size of shadow banking.

2. The definition of Shadow Banking

China's shadow banking can be divided into two parts, intra-bank shadow banking and extra-bank shadow banking, based on the definition of shadow banking by domestic and foreign scholars and the current state of the Chinese financial market. Intra-bank shadow banking refers to a type of financial business of commercial banks, which has a function similarly to that of deposit and loan businesses, aims to circumvent strict banking supervision, and employs unregulated accounting as a means. Specifically, intra-bank shadow banking comprises "interbank shadow", such as interbank buy-back acceptance bills, and "non-interbank shadow", which refers to interbank lending and interbank deposit between banks and non-bank financial institutions, and the "investment banking shadow", which utilizes financial institutions as channels.[1]

Extra-bank shadow banking refers to the business conducted by non-bank financial institutions such as trust companies, microfinance companies, and financial leasing companies, which creates credit through money transfers and provides services for social financing.[2] The specific reference of extra-bank shadow banking is trust assets, private finance and Internet finance, among which trust assets of bank-trust cooperation should be excluded from other shadow banking types to avoid double counting in the subsequent shadow banking scale calculation. In this paper, the classification of shadow banking will be given in the calculation formula.

3. Evaluation of the size and deleveraging effectiveness of shadow banking in China

Financial deleveraging can be helpful in lowering the amount of debt in a country or a business, but it depends on a number of variables, including the severity of the debt issue, the rate of deleveraging, and the influence on economic growth.

3.1. The method of measuring the scale of shadow banking

This paper calculates the size of intra-bank shadow banks and extra-bank shadow banks independently using distinct methodologies. The former is measured using an indirect method based on the balance sheet, but it differs from that of Sun Guofeng and Jia Junyi (2015), primarily in the difference of balance sheet accounts, and the balance sheet used in this paper is the balance sheet of the entire banking system, including the central bank and commercial banks. The scale of extra-bank shadow banks is measured using the direct method, which is the accumulation of the scale of trust assets (excluding assets from banking and credit

asta.liu77@gmail.com

cooperation model), private finance and Internet finance. The calculation is based on semi-annual data, spanning December 2010 through June 2019.

3.2. The scale of intra-bank shadow banking

3.2.1 Calculation formula.

Based on the accounting principles embodied in the balance sheet, since assets and liabilities are numerically equal, the study estimates the size of shadow banking by subtracting all assets other than shadow other than shadow assets from liabilities.

Table 1. Simple Balance Sheet of the Bank

Assets	Liabilities
Loans (L)	Residents' Deposits (D _R)
Foreign Exchange Holdings (FE)	Corporate Deposits (D _C)
Bond Custody (B)	Treasury Deposits (D _G)
Claims on Government (CG)	Non-Bank Inter-bank Deposits (D _{NB})
Shadow Assets (SB ₁)	

First, cash in circulation (C) is the difference between the cash created by the People's Bank of China and the cash held by commercial banks. Due to transaction needs, a portion of the deposit is converted into cash. In fact, this portion of deposits is also initially obtained through the expansion of bank assets. Therefore, the cash held by this non-banking sector should also be placed on the right side of the accounting equation. Second, off-balance sheet financial products (FM) refer to non-principal protected financial products. While the purchase of FM results in deposits on the liability to be removed from the balance sheet, the loans (L) that make it balanced remain on the asset side, resulting in no corresponding assets on the liability side of the balance sheet. When subtracting non-shadow assets from liabilities, an extra portion will be

deducted, resulting in a smaller shadow size than the actual size of the bank. Therefore, FM should be added to the liability side. Third, the bond custody (B) refers to the number of claims held by commercial banks as investors. Fourth, CG refers to the claims of the People's Bank of China on the government (i.e., special government bonds). Fifth, FE are formed when a country increases its money supply by purchasing foreign currency in its own currency. In summary, we have:

$$L+FE+B+CG+SB_1=D_R+D_C+D_G+D_{NB}+C+FM$$

$$SB_1=D_R+D_C+C+D_{NB}+D_G-L-FE-CG-B+FM$$

Since the money supply $M_2 \approx D_R+D_C+C+D_{NB}$, we have:

$$SB_1= M_2+D_G-L-FE-CG-B+FM$$

3.2.2 Data sources and processing.

All data are obtained from official statistical surveys as well as authoritative databases. The Survey and Statistics Department of the People's Bank of China extracts M_2 from the monetary and quasi-monetary data in the Table of Money Supply. D_G , FE and CG are derived from the Balance Sheet of Monetary Authorities of the Survey and Statistics Department of the People's Bank of China respectively. L is the sum of the loan accounts from the RMB Credit Balance Sheets of Large Chinese National Banks and RMB Credit Balance Sheet of Small and Medium Chinese National Banks. B is derived from the Bond Custody (by Investor) of China Bond Information Network. FM are derived from non-capital-protected wealth management product, according to the China Banking Sector Wealth Management Market Report published by the Banking Sector Wealth Management Registration and Custody Center.

In this paper, all the collected data are classified and plotted as a line graph, and the shadow assets (SB₁), i.e., the size of shadow banking within banks, are calculated from December 2010 to June 2019 using a formula.

3.2.3 Data statistics and results

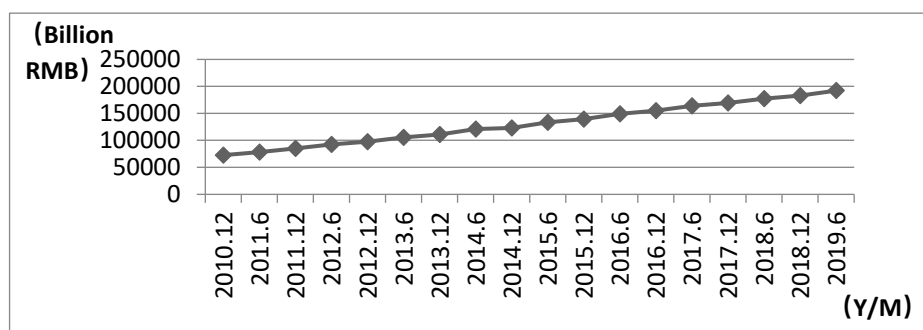


Fig. 1. Money Supply (M₂)

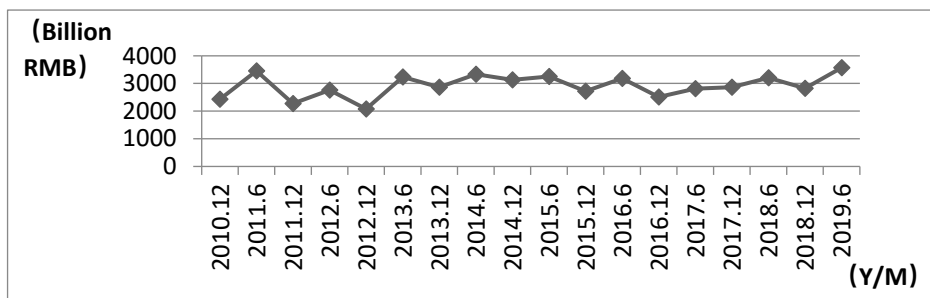


Fig. 2. Treasury Deposits (DG)

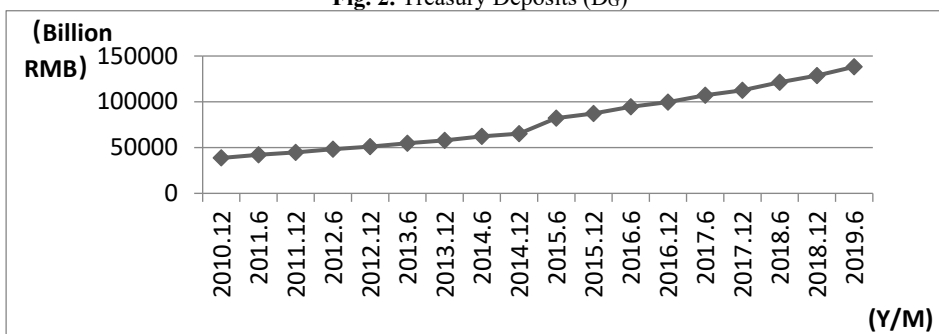


Fig. 3. Loans (L)

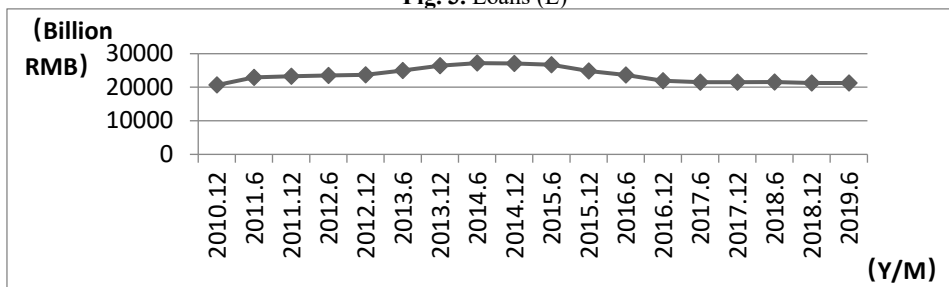


Fig. 4. Foreign Exchange Holdings (FE)

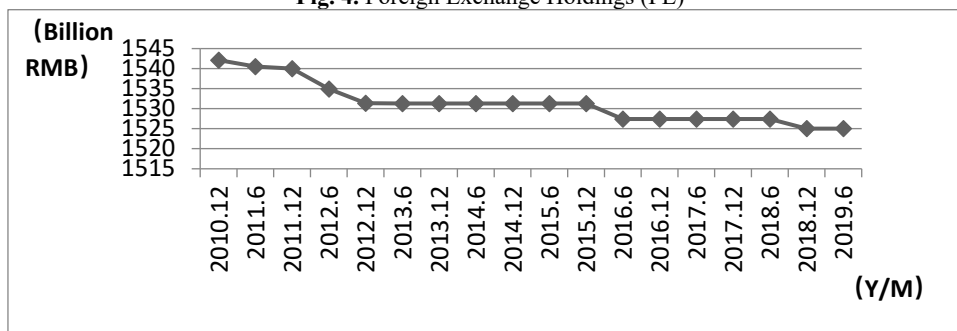


Fig. 5. Claims on Government (CG)

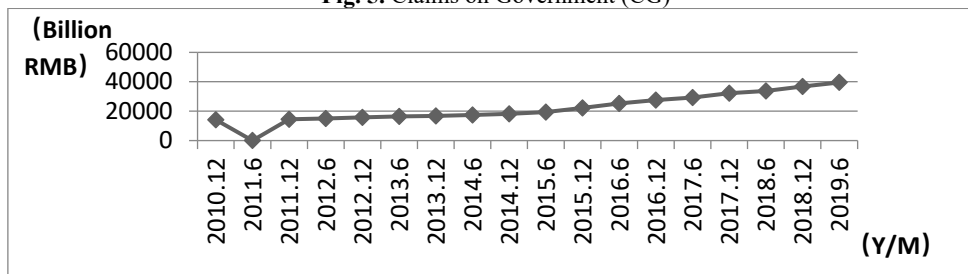


Fig. 6. Bond Custody (B)

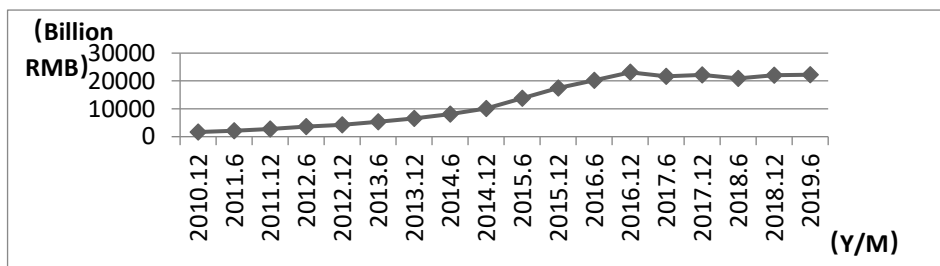


Fig. 7. Off-Balance Sheet Financial Products (FM)

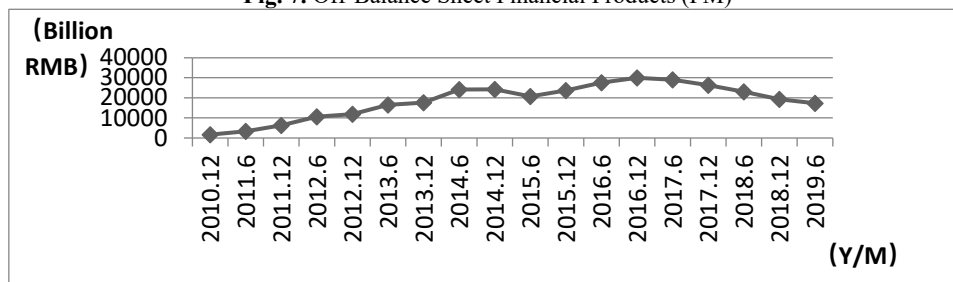


Fig. 8. Shadow Assets (SB₁)

3.3. The scale of extra-bank shadow banking

3.3.1 Calculation formula.

The extra-bank shadow banking system is separated into three parts: trust assets, private finance, and internet finance. Trust assets do not include bank-trust cooperation, private finance includes loans from microfinance companies, financial leasing, and pawnbrokers, and internet finance only includes the balance of peer-to-peer network lending, which makes up a large portion.

In summary, then the study has:

$$SB_2 = TA + MC + FL + PS + P2P$$

3.3.2 Data sources and processing.

TA are derived from the Main Business Data of Trust Companies of the China Trust Association. MC is derived from the Statistical Data Report of Microfinance Companies of the People's Bank of China, and FL is derived from the China Leasing Union's Report on the Development of China's Financial Leasing Industry. PS is derived from the semi-annual data of the National Pawnbroking Industry Supervision and Management Information System from the Operation of the National Pawnbroking Industry, and the data of P2P network lending is derived from the statistics of Home of Net Lending.

3.3.3 Data statistics and results

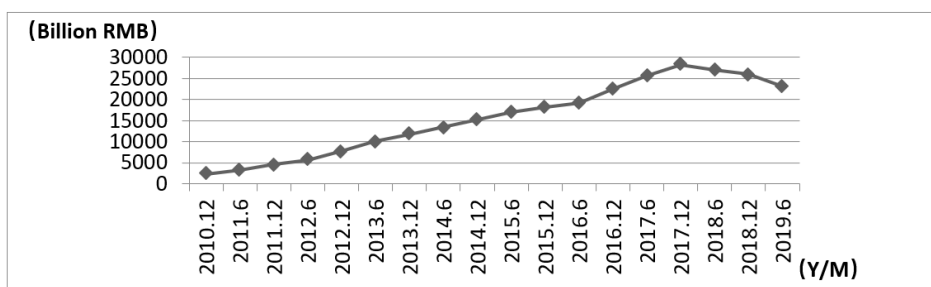


Fig. 9. Shadow Assets (SB₂)

3.4. Total scale of shadow banking in China and data analysis

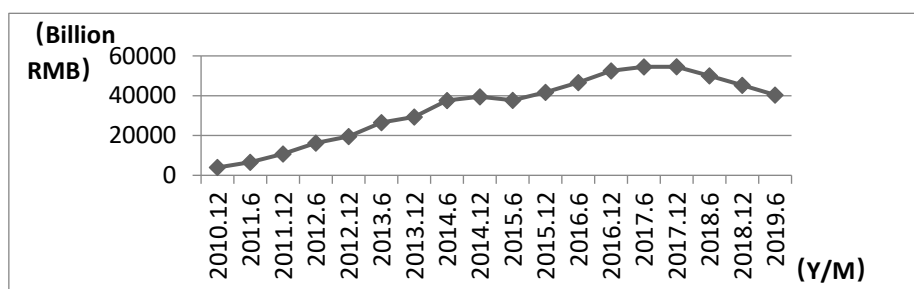


Fig. 10. Total Shadow Banking (TSB)

Figure 10 shows that from December 2010 to December 2014, the overall scale of shadow banking in China experienced a period of rapid increase. In December 2010 was only 3,971.398 billion yuan, but by December 2014 has grown to 3,9462.84 billion yuan, which is 10 times of the end of 2010. After a brief decrease in June 2015, the total size of China's shadow banking reached a high of 545,97.17 billion yuan in December 2017, before falling to 4,030,62.77 billion yuan in June 2019.

4. Conclusion

Since 2017, with the introduction and implementation of new regulatory regulations and the concrete implementation of macro and micro prudential supervision, China's financial regulators have gradually strengthened the supervision of shadow banking, and the financial supervision focusing on "deleveraging" has resulted in the steady progression of shadow banking risk prevention. Through statistics and calculations, it is possible to draw the conclusion that the enormous and unmanageable system of shadow banks in China, which amounted to 54 trillion, has been reduced as a result of the introduction of a number of regulatory policies in recent years. Commercial banks and other financial institutions have gradually begun to adjust their profit models that previously relied on regulatory arbitrage. Since the beginning of 2017, the size of intra-bank shadow banks has significantly decreased, and in late 2017, the size of extra-bank shadow banks also began to decline. The reduction in the size of shadow banking seen above supports the idea that financial deleveraging is successful and that the impact of China's current regulatory framework on shadow banking is relatively large.

References

1. Sun G, and Jia J. (2015). Definition of shadow banking in China and its size measurement - based on the perspective of credit money creation. *China Social Science*, 11, 104-106.
2. Cui J. (2019). Defining Shadow Banking in China. *Modern Marketing*, 11, 156.
3. Chen J, and Zhang X. (2012). The impact of shadow banking on China's economic development--an empirical analysis based on quarterly data from 2000-2011. *Research on Finance and Economics*, 08, 68.
4. Hu L. (2019). Shadow banking, accounting robustness of SMEs and financing constraints (Doctoral Dissertation). Beijing Jiaotong University, China.
5. Hou Z. (2017). Analysis of the impact of shadow banking on the transmission mechanism of monetary policy in China (Doctoral Dissertation). Shanxi University of Finance and Economics, China.
6. Li Q, Guo Y, and Meng F. (2018). Can shadow banking ease SME financing constraints? -An empirical test from cash-cash flow sensitivity and panel threshold models. *Journal of Harbin University of Commerce*. 03, 38-48.
7. Li W. (2019). Economic analysis of shadow banking in China: definition, composition and size measurement. *Financial Research*, 03, 53-73.
8. Ehlers T, Kong S, and Zhu F. (2018). Mapping Shadow Banking in China. *BIS Working Papers*, 701, 10-12.
9. Wang X, and Wei S. (2019). The impact of China's shadow banking on the financing constraints of small and medium-sized enterprises. *Mall Modernization*. 16, 148-149.
10. Zhang L. (2019). Exploring the impact of shadow banking on the financing model of small and medium-sized enterprises. *National Circulation Economy*. 17, 156-158.