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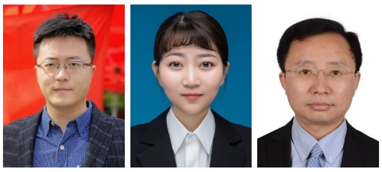
When banks' shadow fades and shadow banking rises: Securitization and loan performance in China*



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JEL codes: G21, D82.

This study investigates the relationship between securitization and loan performance in China. Our analysis of proprietary loans from a sample bank reveals that securitized loans demonstrate lower ex-post default risk and prepayment risk when compared to loans retained on the bank's balance sheet. These findings suggest the absence of adverse selection or moral hazard within the Chinese securitization market. Furthermore, we leverage the introduction of the New Asset Management Rule as a quasi-natural experiment, which significantly alters the business model of banks and eliminates alternative options for credit risk transfer aside from securitization. Our analysis shows a decline in loan performance following the implementation of this new regulation, aligning with the deterioration of the bank's incentive. This unintended consequence of the New Asset Management Rule, which was initially designed to curb banks' shadow, sheds light on the emergence of risk within the securitization sector of the shadow banking.

* This policy brief is based on [BOFIT Discussion Papers 4/2023](). The views expressed in this paper are those of the authors and do not necessarily represent the views of the Bank of Finland.

1. Introduction

Modern banks have switched from the conventional "originate-to-hold model" to an "originate-to-distribute" model. Since the US subprime mortgage crisis, critics claim that securitization dampens originator incentive to properly screen and monitor borrowers. The critics echo the theoretical research which studies information frictions, adverse selection, and moral hazard problems in securitization and loan sales (Pennacchi, 1988; Parlour and Plantin, 2008). While the theoretical importance of information frictions in securitization is well-recognized, empirical evidence is mixed. Most empirical studies use US data and confirm the existence of adverse selection by showing lower lending standards or higher ex-post default risk of the securitized assets in Commercial Mortgage-backed Securities (CMBS) markets (An et al., 2011), secondary loan markets (Berndt and Gupta, 2009), and mortgage markets (Keys et al., 2010, 2012;). On the contrary, Ambrose et al. (2005) and Jiang et al. (2014) document that securitized loans in fact have better ex-post performance (lower default rates) than similar loans held by the lender. In addition, a few studies find no evidence of adverse selection in certain segments of securitization markets. Benmelech et al. (2012) find no robust evidence of adverse selection in the securitization of corporate loans using Collateralized Loan Obligations (CLO) data. Albertazzi et al. (2021) document widespread adverse selection but limited moral hazard confined by lending relationships using Italian data, concluding no lax lending standards with credit risk transfer.

Compared to highly developed markets in US and Europe, the origin of Chinese securitization is relatively late. China first launched a pilot securitization program in 2005. Impressed by the collapse of securitization markets in the US, the Chinese pilot securitization program was halted in the wake of the US subprime mortgage crisis in 2008. In 2012, the securitization program was restarted and has experienced rapid growth since 2014. By the end of 2018, the total value of outstanding securitization products stood at 2.7 trillion yuan ($402 billion), making China the largest securitization market in Asia and the second largest in the world. While little is known about the securitization in the largest emerging market, we ask the following research questions in this study: As a follower in financial innovation, does China avoid the classic problems of adverse selection and moral hazard in the securitization markets? If so, what aligns the issuers' incentives?

We use a proprietary dataset of consumer and small business loans from a Chinese commercial bank between 2015 to 2021. To investigate whether adverse selection and moral hazard exist in loan securitization, we compare the ex-post default risk and prepayment risk of securitized loans with those held by the originator on the balance sheet. We find that loans sold by the bank have significantly lower default and prepayment risk than those retained on the bank's balance sheet, suggesting no evidence of adverse selection and moral hazard in the loan securitization (Table 1).

Table 1: T-tests of securitized and held loans

Mean	Securitized loans	Held loans	Difference
Default risk	0.080	0.176	-0.096***
Prepayment risk	0.201	0.740	-0.539***

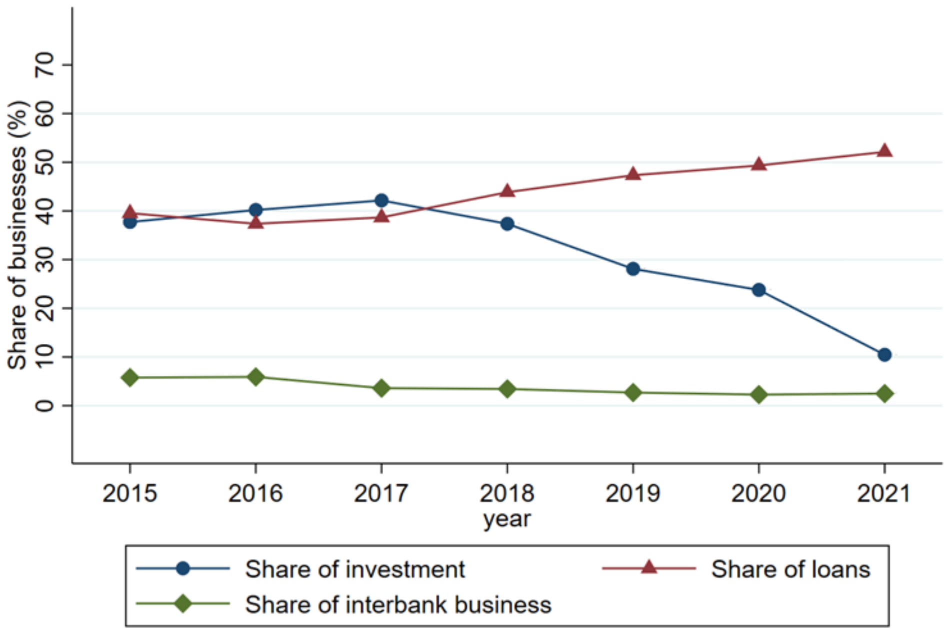
We examine the bank's incentive to issue asset-backed securities (ABS) and motives to avoid dilution in screening and monitoring incentives. Liquidity constraints and credit risk transfer are predominant incentives for issuing ABS. The high share of investment and interbank businesses and rapid asset growth incentivize the bank to securitize some loans to recycle funds. The bank chooses not to cherry-pick loans of inferior quality when liquidity needs are tight. But when liquidity needs are no longer urgent and the bank rebalances its portfolio towards loans, credit risk transfer becomes the dominant incentive for securitization. This effect is more pronounced when the bank faces regulatory pressure. We test the relations between time-varying incentives for securitization and ex-post loan performance and exploit the introduction of the New Asset Management Rule as a quasi-natural experiment.

China has a large and fast-growing shadow banking sector. Moody's Investor Service, in its 'Quarterly China Shadow Banking Monitor' released in January 2016, has estimated that its size is approximately 65 percent of the nation's GDP, nearly RMB 45 trillion through 2015Q1.[1] The shadow banking system is largely composed of wealth management products, which are the target of investment business for small and medium-sized banks such as the bank in our sample. High returns of the wealth management products attract banks' funds moving from lending to real sectors to the investment business. At the same time, off-balance-sheet financial activities funded by largely unregulated asset management products have helped push China's debt-to-GDP ratio to potentially unsustainable levels. Chinese regulators were worried about the systemic risk of the shadow banking system and the excessively high macro leverage ratio. Therefore, People's Bank of China introduced the New Asset Management Rules as a concerted attempt by China's regulators to curtail the shadow banking sector and curb financial risks. In addition, CBRC called on banks to expand lending to real sectors and households.

The new regulation rule has far-reaching impacts on banks like the issuer in our study. First, the market for wealth management products has shrunk remarkably, implying banks have to rebalance asset portfolios from investment business to loans. It also increases the difficulty to expand the asset scale for regional banks. Therefore, funding pressure is no longer urgent for the issuer since the new rule phase in. Second, the New Asset Management Rules have imposed restrictions on most off-balance sheet businesses, but left securitization as the only option to transfer credit risk off the balance sheet. Taken together, we expect the incentive for credit risk transfer to dominate the liquidity needs, and therefore loan quality and ex-post performance might deteriorate since the new rule has been in place.

The balance sheet items plotted in Figure 1 confirm the changes in asset composition for city commercial banks (CCBs). CCBs drastically cut investment business but expanded credit. The share of investment, while the share of loans. Rebalancing the portfolio by switching funds from investment business to making loans helps keep the bank's size stable but at the expense of worsening asset quality. The sample bank shows a similar trend.

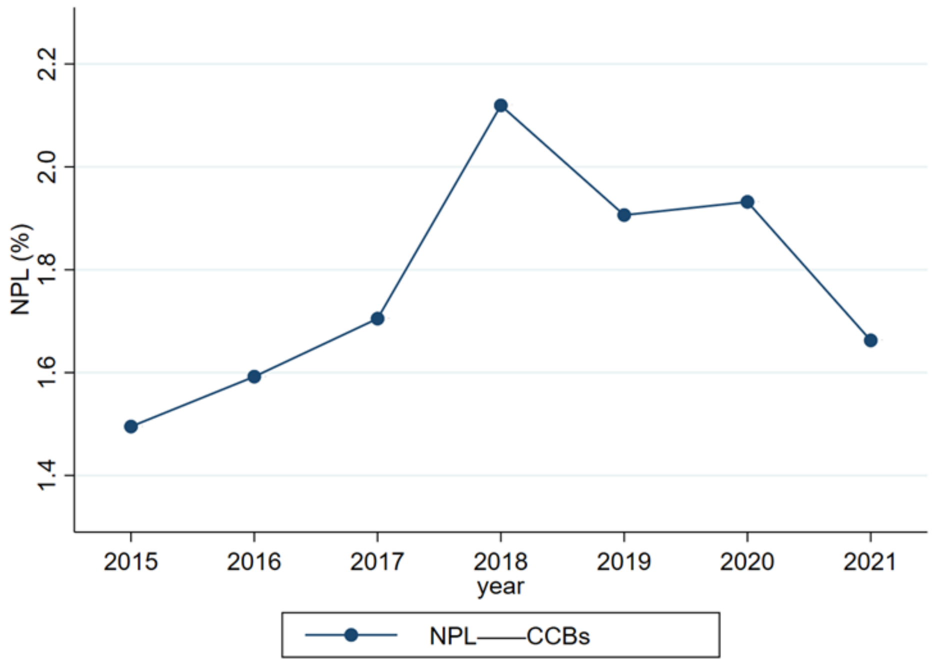
Figure 1: Dynamics of the asset structure of the CCBs



Plotting the dynamics of nonperforming loan ratio (NPL), Figure 2 confirms a rise in credit risk in the sector of CCBs, which is consistent with the patter of the sample bank.

[1] https://www.financierworldwide.com/shadow-banking-in-china-boon-or-threat#.Ys_JQzdBxdg.

Figure 2: NPL of CCBs



To test whether changes in the bank's incentives for liquidity needs and risk transfer influence loan performance, we exploit the introduction of the New Asset Management Rules in 2018 as an exogenous shock to the issuer bank and adopt a difference-in-differences approach. We confirm that default risk for loans securitized increased significantly after the new rule was introduced in 2018. While the incentive to lay off credit risk has been altered by the new rule, the insignificant interaction term in the prepayment risk regression shows no significant changes in the prepayment risk of securitized loans around the shock.

Conclusion

Although being the largest market in Asia and the second largest in the world, the Chinese securitization market remains a black box to outside observers. The lack of investigation into the information frictions, agency issues, and incentive problems limits the policy debate over the development and regulation of the securitization market. We hope our research unfolds the black box of Chinese securitization practices and sheds light on the bank's incentives and loan performance. By examining the relations between securitization and ex-post loan performance, our study offers several interesting implications. First, we document that the quality and performance of securitized loans are not inferior to that of the held ones, suggesting no evidence of adverse selection or moral hazard. Second, the bank's incentive varies with liquidity needs, credit risk transfer, and regulatory pressure. Our study has direct policy implications. The exclusion of securitization from the New Asset Management Rule can potentially be exploited by financial institutions as a risk transfer loophole. Financial regulators should closely monitor risk transfer activities within the securitization market, even though the current securitization business presents a moderate level of risk.

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