

The Impact of Credit Asset Securitization on Commercial Banks' Profitability

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Abstract: With the development of asset securitization as a financial instrument in China, it has an impact on the liquidity, safety and profitability of banks. This paper selects data of 29 commercial banks in China from 2013 to 2020 to study the impact of credit asset securitization on banks' profitability. The empirical results show that carrying out credit asset securitization has a significant increase on commercial banks' profitability, while the profitability decreases instead of carrying out business with high frequency.

1. Introduction

1.1 Research Background

Asset securitization refers to the process of selling illiquid loans and other bond-like assets to special purpose vehicles, and after packaging and layering measures, making the group of assets generate relatively stable cash flows in the foreseeable future, and on this basis, improving their credit quality or rating through credit enhancement, and finally selling them in the capital market[1]. After more than four decades of development since its birth in the 1970s in the U.S., it has become one of the most important financial innovation tools within the scope of the financial sector. 2005 saw the start of the pilot asset securitization business in China, which was suspended in 2008 due to the impact of the financial crisis and restarted in 2011.

There are three types of asset securitization products in China's capital market, including credit asset securitization, enterprise asset securitization and asset-backed notes. As of December 31, 2020, the cumulative total of the three types of products issued in China was 447,633 million, 511,659 million and 1,027,771 million, with market shares of 42.14%, 48.18% and 9.68%.

The securitization of credit assets refers to the securitization of loans issued by financial institutions for borrowers as underlying assets, and the originator is mainly a financial institution. In 2012, China Development Bank issued the "2012 First Issue of Kaiyuan Credit Asset-Backed Bonds", which marked the reopening of this business. securitization pilot. In 2014, China's bond market developed rapidly, with the total issue size of 101.8 billion yuan in 10 years from 2005 to 2013, and the issue size of over 281.9 billion yuan in 2014, which is about 2.8 times of this decade.

With the continuous expansion of the issuance scale, the scope of the asset pool covered has also been expanded, and now covers a variety of types of underlying assets including home mortgages, auto loans, consumer loans, corporate loans and non-performing asset loans. Among them, housing mortgage loans are the mainstay of credit asset securitization products. With banks urgently dealing with non-performing assets in order to improve asset quality in recent years, non-performing asset securitization products have shown a trend of gradual increase as a new type of non-performing resolution.

1.2 Research Objectives

The active development of asset securitization business requires attention to its impact on the profitability of commercial banks. Therefore, this paper will take into account the current situation of the development of asset securitization in China and select historical data of listed commercial banks

in China for empirical analysis to test whether it significantly raises or lowers the profitability of banks and to analyse its possible causes.

2. Literature Review

At the early stage of the development of asset securitization, the research on its impact on commercial banks' profitability mainly focused on theoretical aspects. Wu Xiangjiang (2001) [2] argues that asset securitization can help solve the problems of heavy burden of non-performing loans, high proportion of loan assets and poor liquidity of assets in the banking industry, while it is conducive to improving banks' capital adequacy ratio and their own profitability. Lin Zhihai (2004) [3] found through his study that the implementation of credit assetization by banks is very beneficial for them to achieve economies of scale and can enhance the operational efficiency of the whole financial system. Shen Bingxi(2006) [4] argues that credit asset securitization can help solve the mismatch between the maturity of commercial banks' assets and liabilities and improve their capital adequacy ratios, both of which are beneficial for reducing banks' risks.

The U.S. was the first country in the world to develop asset securitization products, so such products in the U.S. market are very mature and there are more relevant empirical studies done by scholars based on this. Yao Lushi (2012) [5] selected data of 47 U.S. banks from the first quarter of 2002 to the fourth quarter of 2011 for Granger causality tests and found that credit asset securitization can significantly enhance banks' profitability and can reduce their financing costs. Liu Qilin and Li Fuyou (2013) [6] selected 25 quarters of financial data of 38 U.S. bank holding companies and grouped them according to their size and found that larger companies that undertook higher securitization of assets had lower profitability levels instead, while smaller banks had correspondingly higher profitability levels.

With the gradual development of the domestic asset securitization market, the domestic research on such business has gradually increased. Chen Lingbai (2014) [7] analyzed 16 listed banks in China and found that opening asset securitization business can effectively reduce the risk level of commercial banks. Cao Bin (2017) [8] selected the data of 14 listed banks from 2012-2016 after the relaunch of asset securitization in 2012, and found empirically by citing the securitization index constructed by Loutschina in 2012 that credit asset securitization has no significant effect on the profitability of larger banks and a significant positive effect on smaller banks. Xing Xueyan et al. (2020) [9] analyzed the data of 141 Chinese commercial banks from 2008-2016, and the test results showed that banks with a high percentage of total asset securitization had a significant increase in profitability. Contrary to the above findings, Song Qinghua and Xiao Xinhui (2018) [10] based on data from 75 Chinese commercial banks that have issued credit asset securitization from 2012-2017 and found that bank profitability declined due to asset securitization business.

The empirical results for the Chinese market show that the results of the impact of asset securitization on bank profitability are again mainly positive, but a different conclusion is reached after expanding the sample size, which also indicates that the asset securitization business in China is not yet mature. But overall, asset securitization has a positive impact on banks' profitability. In this paper, we will study the relationship between these two by selecting relevant indicators and constructing a model for empirical analysis.

3. Research Design

3.1 Data source

The asset securitization business was restarted in China in 2012, and the CBRC issued new capital management measures for commercial banks in 2013, which put forward higher requirements for banks' capital adequacy ratio. To ensure data continuity, this paper therefore selects 29 commercial banks, spanning the period 2013-2020. These include five large commercial banks: ICBC, ABC,CCB,BOC and BCM; nine joint-stock commercial banks: CIB, GDB, SPDB, PAB,CMBC,CMB, China CITIC Bank, CEB and HXB; ten city commercial banks: BOB, Bank of

Shanghai, Bank of Nanjing, Jiangsu Bank of Beijing, Bank of Shanghai, Bank of Nanjing, Bank of Jiangsu, Bank of Hangzhou, Bank of Ningbo, Bank of Zhengzhou, Bank of Qingdao, Bank of Changsha and Bank of Chengdu; 5 rural commercial banks: Bank of Wuxi, Zijin Bank, Changshu Bank, Bank of Suzhou and Zhangjiagang Bank. Relevant data are obtained from CSMAR, Capital Securitization Analysis Network and Financial Reports of banks.

3.2 Variables

(1) Explained variables

There are various indicators to confirm the profitability of commercial banks in financial analysis, among which the most used and widely applied is the return on net assets (ROE).

(2) Explanatory variables

SEC: the bank has credit asset securitization business in the year takes the value of 0, otherwise it takes the value of 1.

FREQ: The number of credit asset securitization issuances by banks in the current year.

(3) Control variables

The profitability of a commercial bank is related to its size, business profile, capital structure, etc. The following indicators were selected.

SIZE: Size of bank assets. The logarithm is taken in the empirical evidence.

CAR: Capital Adequacy Ratio, this indicator measures the ability of commercial banks to withstand risk and is used as a proxy for a bank's capital structure.

NPLR: Non-Performing Loan Ratio, the ratio of non-performing loans to total loans, representing the bank's level of operational safety.

LDR: The ratio of loan balances to deposit balances, representing bank liquidity.

CIR: The ratio of operating costs to operating income, representing the bank's operating efficiency.

3.3 Model Setting

Combining with previous literature, the model shown below is constructed in this paper. ROE_{it} is the explained variable, X_{it} is the explanatory variable, including SEC and FREQ; $ctrl_{it}$ is the control variable, including SIZE, CAR, NPLR, LDR, and CIR. ε_{it} is the random disturbance term.

$$ROE_{it} = \beta_0 + \beta_1 X_{it} + \beta_2 ctrl_{it} + \varepsilon_{it} \quad (1)$$

4. Empirical Results

4.1 descriptive statistics

As shown in Table 1, the mean value of the return on net assets is 14.52%, which is higher than the minimum value of 11% required by regulation. The lowest value in the sample is 6.81%, mainly because China Minsheng Bank accelerated the pace of disposal of problematic assets in 2020 and increased provisioning efforts resulting in lower profits in that year.

Table.1. Descriptive statistics

	ROE	SEC	FREQ	SIZE	NPLR	LDR	CIR	CAR
Mean	0.1452	0.5603	2.4353	28.1128	1.3820	0.7409	0.3000	0.1317
Median	0.1430	1.0000	1.0000	28.3104	1.4200	0.7225	0.2990	0.1306
Maximum	0.2648	1.0000	35.0000	31.1379	2.4900	1.1599	0.4277	0.1752
Minimum	0.0681	0.0000	0.0000	24.8237	0.5300	0.2816	0.1893	0.0900
Std. Dev.	0.0379	0.4974	4.9215	1.6856	0.3768	0.1422	0.0456	0.0160
Skewness	0.4441	-0.243	3.8170	-0.1086	0.4321	0.3258	0.2397	0.3951
Kurtosis	2.6688	1.0591	20.0173	1.9522	3.3147	3.5761	2.8793	2.7681
Jarque-Bera	8.6857	38.701	3362.7040	11.0683	8.1766	7.3116	2.3626	6.5561
Probability	0.0130	0.0000	0.0000	0.0040	0.0168	0.0258	0.3069	0.0377
Sum	33.6875	130.00	565.0000	6522.171	320.6200	171.8918	69.5983	30.5538
Sum Sq. Dev.	0.3324	57.155	5595.0300	656.3128	32.7957	4.6705	0.4795	0.0594
Observations	232	232	232	232	232	232	232	232

A total of 14 large commercial banks and joint-stock commercial banks were divided into group 1, a total of 15 urban commercial banks and rural commercial banks were divided into group 2. The mean ROE of large commercial banks and joint-stock banks is greater than that of city and agricultural banks, indicating their greater profitability, which is mainly due to the broader business scope of the former two. In terms of whether securitization business is conducted and the frequency of securitization, the mean value of group 1 is significantly higher than that of group 2, indicating that large banks are more inclined to conduct asset securitization business. Large banks have a higher degree of securitization of credit assets than local banks.

Table.2. Mean value

mean	ROE	SEC	FREQ	SIZE	CAR	NPLR	LDR	CIR
group 1	0.1466	0.7857	4.4554	29.5537	0.1306	1.4615	0.8116	0.2939
group 2	0.1439	0.3500	0.5593	26.7679	0.1327	1.3078	0.6750	0.3056

4.2 Regression analysis

The regression results show that overall, there is a positive relationship between the return on net assets of commercial banks and the securitization of credit assets. The profitability of commercial banks that carry out credit asset securitization is higher than that of banks that do not carry out such business, and this effect is more significant in urban and agricultural commercial banks. However, the higher the frequency of securitization, the more negative the effect on banks' profitability, which is more significant in large banks and joint-stock banks. The regression results of the control variables show that other factors also affect commercial banks' profitability: the larger the bank's asset size, the higher the credit risk, and the more regulatory capital, the less profitable the bank is.

Table.3. Regression analysis

Variables	Full sample	Group 1	Group 2
SEC	0.0047*	0.0027	0.0118*
FREQ	-0.0007***	-0.0005**	-0.0022
NPLR	-0.0418***	-0.0412***	-0.0303***
LDR	-0.0494***	-0.0776***	-0.1045***
CIR	-0.0636	0.0725	-0.1867***
CAR	-0.3781***	-0.7814**	-0.4769**
SIZE	-0.0468***	-0.0130**	0.0006

4.3 Reason Analysis

Combining the development of China's banking industry and the empirical results, asset securitization has a greater impact on smaller local banks. The first may be due to the fact that for large banks, there is less reliance on asset securitization, while for smaller banks, they need new business to revitalize their bank capital because of their relatively short establishment and small asset size. This has led to a greater impact on their profitability despite the fact that the securitization of credit assets was carried out in fewer years and did not account for a high proportion of credit assets. Secondly, with the gradual expansion of the scope of the underlying assets involved in asset securitization in recent years, it has a greater impact on the profitability of non-traditional business and financial innovation products, while traditional large banks rely more on traditional business, so the asset securitization business has no significant impact on their profitability level. Finally, the market capacity of this type of business is small, and the scale effect has not yet been formed, and the liquidity and activity in the secondary market is poor, and the turnover rate is low, which restricts its profitability role. The lower profitability level of securitization products the more times they are issued may be due to the higher fees banks need to pay in the issuance process and the higher issuance costs, resulting in lower profitability level.

5. Conclusions

Asset securitization has a role in banks' business management. This paper selects data from 29 different commercial banks in China and analyzes its effect on banks' profitability in terms of whether they conduct credit asset securitization and the frequency of credit asset securitization for the sample period of 2013-2020. The paper concludes that credit asset securitization is beneficial to the profitability of the full sample of banks, and this effect is more pronounced in urban and agricultural commercial banks. The higher the frequency of this activity, the lower the profitability of banks, and this effect is more significant in large banks.

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