

Influence of Off-Balance Sheet Business on Deposit and Loan Business and Operating Performance of Listed Banks

Yihan Zhong

School of Finance, Nankai University, Tianjin 300350, China.

Abstract: This paper takes 16 listed commercial banks from 2011 to 2020 as the research object to study the impact of off-balance sheet business development on commercial banks' deposit and loan business and operating performance. The empirical results show that the development of off-balance sheet business promotes the growth of bank deposit business, but has no significant impact on the loan business. The development of off-balance sheet business is conducive to the improvement of profit level of commercial banks; Off-balance sheet business development can reduce the non-performing loan ratio and reduce financial risks. Commercial banks should attach importance to the development of off-balance sheet business and improve their internal control system and risk control system. Regulators need to create an environment conducive to the development of off-balance sheet business, improve relevant laws and regulations, and improve the regulatory system.

Keywords: Listed Bank; Off-Balance Sheet Business; Deposit and Loan Business; Business Performance

1. Introduction

The types and scale of off-balance sheet business are expanding day by day, and it has become a new business direction and profit growth point of commercial banks. Together with the asset and liability business, it forms the three pillars of commercial banks. However, off-balance sheet business innovation avoids risks while the business itself also exists risks, which are easy to transfer from off-balance sheet assets to on-balance sheet assets, thus causing a negative impact on our banking industry. Therefore, it is particularly important for commercial banks to use off-balance sheet business to improve income while reasonably avoiding risks.

This paper discusses the influence of off-balance sheet business development on commercial banks from the aspects of traditional deposit and loan business and operating performance of listed commercial banks.

2. Literature review

2.1 Influence of off-balance sheet business on deposit and loan business of banks

Deng Wei and Fu Wenwen (2014) analyzed the data of 15 listed banks and pointed out that the development of off-balance sheet business had a strong spillover effect on traditional business and had a positive impact on the income growth of deposit and loan business. Han Ying (2017) pointed out that when commercial banks carry out off-balance-sheet business, they will impact the traditional deposit and loan business of banks by crowding out human resources, equipment, places and other resources and forming competition with the on-balance-sheet business. resulting in the "cross-selling" effect, broadening the bank's capital source channels and enhancing the connection between commercial banks and customers, thus generating spillover effects on the traditional business.

2.2 The influence of off-balance sheet business on the business performance of commercial banks

2.2.1 Influence of off-balance sheet business on profitability of commercial banks

One group thinks that the development of off-balance sheet business has a positive impact on bank earnings. Theoreticians at Chiorazzo et al. (2008), Calmes and Theoret (2010), Wang Manshu and Liu Xiaobang (2013), Cui Huatai (2017), Xiong Tao (2019) Developing off-balance-sheet activities has a positive impact on bank earnings. The other group thinks that the development of off-balance-sheet activities has a negative impact on bank earnings. Li Quan and Yan Lili (2014) selected the data of 16 listed commercial banks in China from 2005 to 2012, and the research results showed that non-interest income had a significant negative impact on joint-stock commercial banks.

2.2.2 The impact of off-balance sheet business on the risks of commercial banks

Some scholars believe that developing off-balance sheet business can disperse bank risks. Zhang Yu et al. (2010) and Cui Huatai (2017) analyzed the data of Chinese commercial banks and found that non-interest income of commercial banks can significantly reduce bank risks. Others think that the development of off-balance-sheet activities will increase banks' risk. Quan Fei et al. (2018) used the data of 25 Chinese commercial banks from 2009 to 2016 to point out that the off-balance sheet business has high complexity, high leverage ratio, low transparency and liquidity maturity mismatch risks, which will increase the level of banks' risk taking.

3. Research design

3.1 Data sources

This paper analyzes the balance panel data of 16 listed commercial banks from 2011 to 2020. The 16 banks include five large state-owned commercial banks: Bank of China, Agricultural Bank of China, Industrial and Commercial Bank of China, Construction Bank and Bank of Communications; eight joint-stock commercial banks: Ping An Bank, Pudong Development Bank, Huaxia Bank, Minsheng Bank, China Merchants Bank, Industrial Bank, Everbright Bank and CITIC Bank; and three urban commercial banks: Bank of Ningbo, Bank of Nanjing and Bank of Beijing. The data in this paper are from Bankfocus database, Wind database, CSMAR database and annual reports of commercial banks.

3.2 Definition of variables

3.2.1 Explained variables

In order to study the influence of off-balance sheet business on the traditional business of commercial banks, the ratio of total deposits and loans to total assets (Deposit, Loan) is selected for analysis. In order to study the impact of off-balance sheet business on the profitability of commercial banks, ROA and ROE are selected for analysis. In order to study the impact of off-balance sheet business on the risk of commercial banks, the non-performing loan ratio (NPL) is selected for analysis.

3.2.2 Explain variables

The ratio of off-balance sheet business scale to total assets (OBS) of commercial banks is selected to measure the development of off-balance sheet business of commercial banks. In the robustness test, the value of off-balance sheet business scale (lnOBS) is selected for analysis.

3.2.3 Control variables

Control variables selected in this paper include: (1) variables at the bank level: asset Size (Size), natural logarithm of total assets; Liquidity ratio (liq), the ratio of current assets to total assets; Capital ratio (EA), the ratio of total capital to total assets; (2) Macro-level variable: GDP growth rate (gGDP). In addition, the paper also controls the individual fixed effect and the annual fixed effect.

3.3 Model design

To study the impact of off-balance sheet business on traditional credit business of commercial banks, the following model is established:

$$Deposit_{it} / Loan_{it} = \beta_0 + \beta_1 OBS + \gamma CONTROL_{it} + \varepsilon_{it}$$

To study the impact of off-balance sheet business on profitability and risk of commercial banks, the following model is established:

$$ROA_{it} / ROE_{it} = \beta_0 + \beta_1 OBS + \gamma CONTROL_{it} + \varepsilon_{it}$$

$$NPL_{it} = \beta_0 + \beta_1 OBS + \gamma CONTROL_{it} + \varepsilon_{it}$$

4. Empirical results and analysis

4.1 Regression analysis

Table 1 (1) (2) shows the impact of off-balance sheet business on the deposit and loan business of commercial banks. The results show that the development of off-balance sheet business promotes the growth of bank deposit business, but has no significant impact on loan business. The reason may be that the positive effect of off-balance sheet business on deposit development exceeds the substitute effect of off-balance sheet business such as bank finance management on deposit. At the same time, off-balance sheet business can meet diversified financial service needs to maintain high-quality customers and bring sufficient cash flow to the bank to expand deposits.

Table 1 Influence of off-balance sheet business on deposit and loan business of commercial bankst statistics in parentheses

	(1)	(2)	(3)	(4)	(5)
	Deposit	Loan	ROA	ROE	NPL
OBS	0.380*** (7.460)	-0.005 (-0.139)	0.010*** (8.125)	0.153*** (7.250)	-0.027*** (-10.539)
Size	-0.065*** (-3.098)	-0.042*** (-3.530)	-0.002*** (-7.759)	-0.040*** (-7.557)	0.004*** (4.481)
EA	-1.773*** (-2.685)	3.155*** (7.534)	-0.031*** (-3.680)	-2.444*** (-12.510)	0.144*** (4.408)
liq	-0.072 (-0.987)	-0.154*** (-2.700)	-0.001 (-0.834)	-0.004 (-0.135)	-0.012*** (-3.060)
gGDP	-0.417* (-1.974)	-0.505*** (-2.652)	0.007 (0.911)	0.076 (0.661)	0.047*** (3.254)
Constant	2.579*** (4.350)	1.583*** (4.633)	0.078*** (7.968)	1.407*** (8.909)	-0.107*** (-4.034)
Individual fixation effect	Yes	Yes	Yes	Yes	Yes

Annual fixed effect	Yes	Yes	Yes	Yes	Yes
N	160	160	160	160	160
adj. R2	0.872	0.873	0.851	0.905	0.739
F	142.649	142.570	63.054	90.993	33.859

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 1 (5) shows the impact of off-balance sheet business on the risk of commercial banks. It can be seen from the regression results that the scale of off-balance sheet business is negatively correlated with the non-performing loan ratio of commercial banks. The reasons may be: (1) At present, the off-balance sheet business of listed banks mainly consists of the financial service business which charges commission and commission, and the guarantee business does not directly participate in the issuance of loans. The high-risk off-balance sheet business of financial derivatives is less, so the risk of most off-balance sheet business is lower. The development of off-balance sheet business improves the loan quality of banks to some extent.

5. Research conclusions

This paper takes 16 listed commercial banks from 2011 to 2020 as the research object to study the influence of off-balance sheet business development on commercial banks' deposit and loan business and operating performance. The empirical results show that the development of off-balance sheet business promotes the growth of bank deposit business, but has no significant impact on the loan business. The development of off-balance sheet business is conducive to the improvement of profit level of commercial banks; Off-balance sheet business development can reduce the non-performing loan ratio and reduce financial risks.

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