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Mengxue Dai

School of Information, Central University of Finance and Economics, Beijing, 102206, China,
linyacufe@163.com

Huaihu Cao

School of Information, Central University of Finance and Economics, Beijing, 102206, China,
linyacufe@163.com

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The Impact of Digital Finance on the Operating Performance of Commercial Banks: Promotion or Inhibition?

Mengxue Dai¹ and Huaihu Cao¹

¹ School of Information, Central University of Finance and Economics, Beijing, 102206, China

linyacu@163.com (Mengxue Dai, Huaihu Cao)

1. INTRODUCTION AND RESEARCH QUESTIONS

The process of deep interaction between digital finance and commercial banks is full of competition and cooperation. On the one hand, with the help of emerging technologies, the operational capacity of banks has been significantly improved. On the other hand, digital finance has also launched fierce competition with commercial banks in traditional financial business.

There are two main points of view on this topic in academia: The first view is that it will improve the performance, and the second view is that it will inhibit the performance. In the first view, by analyzing the problem from the perspective of commercial bank risk-taking, the data results show that digital finance will reduce the systemic financial risk^[1]. Then it is found that it will reduce the credit risk of enterprises by improving the Total Factor Productivity and reducing the degree of Asymmetric Information^[2]. In the second view, digital finance intensifies bank risk-taking by raising management costs^[3]. And it is found that it has impacted the capital side and debt side^[4], and will restrain their operating performance^[5]. To sum up, this impact has both promotion and inhibition effects, and it has not yet reached a consensus conclusion on this issue^[6]. However, through the combing of the literature, we can find that the current research still has shortcomings in the following aspects: The existing research focus more on the profitability side, but ignores the risk side, and does not start with the three major businesses of commercial banks. In addition, since digital finance is still in the process of sustainable development, its impact on the operating performance should change in the dynamic process. However, the academia has not paid attention to the dynamic changes of this impact.

Based on this, this paper will conduct further research on the relationship between digital finance and operating performance of commercial banks. The research questions are as follows: (1) In terms of linear relationship, how does digital finance affect the operating performance of commercial banks. (2) In terms of nonlinear relationship, how does digital finance affect commercial bank performance. (3) How digital finance affects the operating performance of commercial banks through three channels: deposit business, loan business, and intermediate business. (4) Whether there are differences in the impact of different types of commercial banks.

2. THEORY AND RESEARCH FRAMEWORK

Based on the above analysis, the following research framework is proposed (Figure 1).

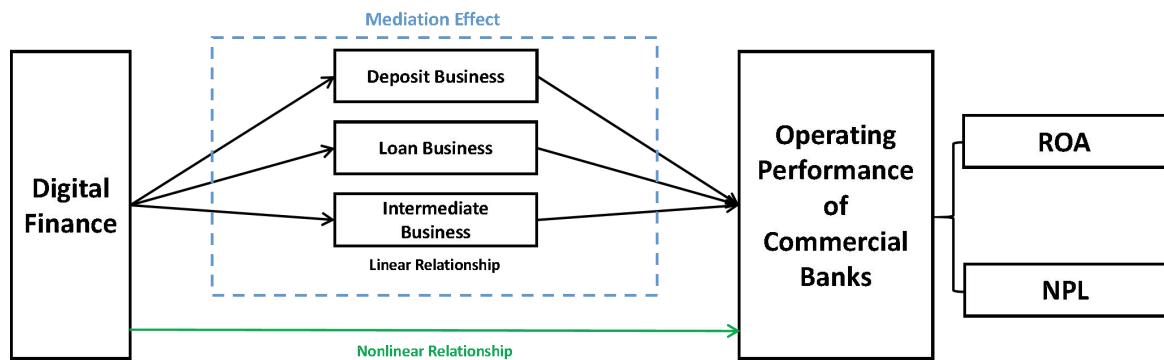


Figure 1. Research framework

The objects of this paper are 42 listed commercial banks in China. The time is from 2011 to 2021, and the sample data mainly comes from the Bankfocus, CSMAR database. In order to avoid the impact of extreme values on the analysis results of the model, this paper eliminates the missing sample data, and winsorize the data by 1% up and down.

3. RESULTS AND MAJOR FINDINGS

The results show that: First, in terms of linear relationship, digital finance reduces the profitability and increases the risk level of commercial banks; Second, as regards nonlinear relationship, there is a U-shaped relationship between digital finance and the profitability of commercial banks, and an inverted U-shaped relationship with the risk level of commercial banks; Third, digital finance inhibits the operating performance by deteriorating the deposit structure, loan structure and increasing the proportion of non-interest income. Fourth, compared with national commercial banks, the inhibitory influence on the profitability of regional banks is more pronounced, but its impact on risk level is not significantly different.

4. CONTRIBUTIONS

The contributions and innovations of this paper are as follows: Firstly, this paper not only pays attention to the basic linear impact of digital finance on the operating performance of commercial banks, but also pays attention to its nonlinear impact. Different from previous studies, this paper focuses more on the dynamic evolution of its impact. Secondly, by building the original thesaurus of digital finance, using crawler technology to crawl Baidu news search index, and synthesizing the digital finance development indicator through Principal Component Analysis, it provides new ideas for the calculation of digital finance indicators. Thirdly, this paper examines the operating performance of commercial banks from the perspectives of profitability and risk level, the analysis is more comprehensive. Fourthly, this paper analyzes the transmission mechanism of the impact of digital finance on the operating performance of commercial banks from deposit business, loan business and intermediate business, so as to provide theoretical reference for the following research.

REFERENCES

1. Berg, T., Burg, V., Gombović, A., Puri, M.: On the rise of FinTechs: Credit scoring using digital footprints. *The Review of Financial Studies* 33(7), 2845–2897 (2020).
2. Beck, T., Pamuk, H., Ramrattan, R., Uras, R. B.: Payment instruments, finance and development. *Journal of Development Economics* 133, 162–186 (2018).
3. Stoica, O., Mehdian, S., Sargu, A.: The impact of internet banking on the performance of Romanian banks: DEA and PCA approach. *Procedia Economics and Finance* 20, 610–622 (2015).
4. Arnold, I. J. M., van Ewijk, S. E.: Can pure play internet banking survive the credit crisis. *Journal of Banking & Finance* 35(4), 783–793 (2011).
5. Jia, D., Han, H. Z.: Fintech, bank liabilities and competition (in Chinese). *The Journal of World Economy* 46(2), 183–208 (2023).
6. Zhang, J. C.: Financial technology, commercial bank competition and risk-taking (in Chinese). *Journal of Henan University of Engineering (Social Science Edition)* 36(4), 34–42 (2021).