

Fintech and Commercial Bank Profitability: Evidence from China

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Abstract: Using the empirical research method, this paper uses information of 17 listed commercial banks in China from 2015 to 2021 as research samples to investigate the impact of fintech on the profitability of commercial banks. The study discovered that the fintech index has a significant negative impact on the profitability of commercial banks, which indicates that fintech will inhibit the development of industrial banks to a certain extent. The heterogeneity test and robustness test are carried out, and the conclusion is still reliable. Considering this, this paper believes that commercial banks should increase the investment in financial technology; Actively working with fintech companies; Introducing and cultivating scientific and technological talents; Through strengthening financial innovation and supervision, to establish a sound regulatory system, these suggestions have important reference value for commercial banks to develop financial technology and use financial technology to improve profitability.

Keywords: Digital Finance; Commercial Bank Profitability; Heterogeneity Test; Robustness Test

1. Introduction

Financing and technology integration is an ongoing process of development. The way in which technology is integrated has also changed as a result of its ongoing development. As Internet information technology has advanced quickly, the financial industry's structure has also gradually altered. The publication of the "Fintech Development Plan (2022-2025)" is a step forward for China's financial industry to keep up with the pace of technology and turn to digital development. It proposed a comprehensive strategic deployment and pointed out the specific

direction of progress, and also described a broader development space for the development of China's financial technology industry. Putting the focus of economic development on the real economy, commercial banks, as the core components of my country's financial institutions, also play a vital role in serving the real economy. One of the most important means for commercial banks to realize their profitable development is to combine financial technology. Facing the challenges brought by technology, China's banking industry is also actively exploring with financial technology. Banks can improve in many ways through Commercial banks develop financial technology to realize it. The use of big data can enhance the bank's data analysis capabilities, and can also save costs. Blockchain technology enhances information security and improves the bank's operational efficiency. In today's fast-growing economic era, in order to maintain the vitality of commercial banks and improve profitability, it is necessary to pay attention to the integration of commercial banks in terms of financial technology. Thus, in order to examine the effects of digital development along with finance and contemporary technology on the profitability of commercial banks, as well as to assess the elements that influence this relationship and how much, this article will use data from commercial banks from 2015 to 2021 as a sample.

The development of financial technology has always been a key topic of national concern. Artificial intelligence is a new technology that is still growing, and its effects on the financial sector are profound. In the future, the combination of finance and technology may further change the financial industry and bring unprecedented changes to the development of the national financial industry. Therefore, it is necessary to study the impact between them. At the theoretical level, by consulting and summarizing relevant works and literature, we

can know that financial technology is bound to impact the profitability of commercial banks. The original structure of the banking industry has been significantly altered by the growth of financial technology, as evidenced by a wealth of data and literature, and its former business model and operational philosophy have started to be questioned. This article's main topic is the digital financial inclusion index, which the Digital Finance Center at Peking University developed. It attempts to examine and analyze the advancements and developments in modern financial technology. Furthermore, in order to offer fresh perspectives and suggest new avenues for the advancement of financial technology, this study examines the influence of financial technology on the structure and scope of commercial bank operations using annual data from 2015 to 2021 as a sample. The profitability of commercial banks is, in fact, correlated with the direction of financial technology development. It is suggested that commercial banks that wish to develop financial technology combine their unique advantages and conditions to adopt a variety of development methods in order to continuously improve the level of technological development. This will help to better understand the correlation between the two and support the stable development of the economic market. In terms of supervision, it is essential to enhance the system and foster a positive environment, as this will provide a certain grounded basis for the banking industry's future growth.

2. Literature Review

Definition of fintech. Several professionals defined financial technology as a technology-based financial solution, which is a method of using advanced information technology and network technology to increase the standard of financial services. Wulan (2017) noted that the true characteristic of financial technology is its implementation in the financial sector [1]. Information technology can improve the operational efficiency and customer service level of financial institutions, and can also improve investment returns. Thakor (2020) believes that the core idea of financial technology is to use technology to provide or improve financial services, which can effectively help customers better manage their wealth and better protect their property [2].

For example, financial services such as remittance and payment are improved through mobile payment technology. In the research on the impact of financial technology on the profitability of commercial banks, some professionals analyzed the panel data of 67 commercial banks in China and flexibly used today's digital financial technology to obtain more accurate results. He thinks that the growth of financial technology benefits large and medium-sized commercial banks' ability to generate profits more than it does small-scale commercial banks. A few professionals argue that the combination of financial technology and banking products and services improves banks' profitability, operations, and risk management. Some experts believe that financial technology integrates traditional financial services and digital information technology. It has not only achieved innovation at the technical level, making the traditional financial industry develop and leap forward qualitatively, but also broke the original order of the environment and the financial sector. Bömer and Maxin (2018) analyzed the data of Commerzbank and found that financial technology can promote the innovation ability of commercial banks, thereby increasing their profitability [3]. Cheng and Qu (2020) found that state-owned banks developed fintech faster than other banks [4]. Yao and Song (2023) found that compared with small and medium-sized banks, large state-owned commercial banks have advantages in terms of scale, capital and experience [5]. The scale of assets of commercial banks is negatively correlated with economic capital. Research has found that financial technology reduces the information cost of both sides of the transaction, improves the transparency of market information, and reduces the market risk economic capital of commercial banks. Zhao et al. (2023) Fintech pairs are positively correlated with bank risk-taking [6].

3. Empirical Research

3.1 Data Source and Model Setting

3.1.1 Data

The relevant data of the bank in this paper are obtained from the annual reports of listed commercial banks, the value change of the macro data comes from the National Bureau of

Statistics, and the Fintech index comes from the digital inclusive finance index. The primary sources of study data are 17 domestic banks, comprising 4 city commercial banks, 8 joint-stock commercial banks, 5 sizable state-owned commercial banks, and so on. These banks' information is comprehensive, accessible, and representative.

3.1.2 Model Setting

The primary focus of this research is to examine how fintech affects the profitability of commercial banks in China. The model is constructed as follows:

Where, is the explained variable, namely, the total return on assets, which represents the profitability of commercial banks; Explanatory variables represent the level of fintech; The control variables represent the cost-income ratio, the capital adequacy ratio, the non-performing loan ratio, the loan-to-deposit ratio and the economic growth rate.

$I = 1, 2, 3, \dots, 17$. $j=2015, 2016, \dots, 2021$; ij represents the financial statistics of the i bank for the j year; Alpha, beta1, beta2, beta3, beta4, beta5 and beta6 were all data to be evaluated. Otherwise, it is a random disturbance term.

3.2 Overview of the Variables

3.2.1 Explanatory Variable

The Fintech Index is measured using the Digital Financial Inclusion Index developed over the years by Peking University's Digital Finance Research Center. The index is obtained from many aspects, so in order to reduce the error, logarithmic processing is carried out.

3.2.2 Explained Variables

The impact on commercial banks' profitability is examined in this article. Most of the existing literatures choose ROA and ROE to measure the profitability of banks, but because ROE has certain limitations, ROA is chosen to represent the profitability of commercial banks in this paper.

3.2.3 Control Variables

Controlling other profitability-related variables is important to more intuitively represent the influence of financial technology on commercial banks. With reference to existing literature, this paper sets indicators from the bank level and macro level.

Macro level. Growth rate: The development level of the country's total industry is reflected

by the macro economy. A high GDP value indicates that the macro-economic momentum is vigorous, which plays an indirect role in promoting the income growth of banks.

Bank level. Cost-income ratio (CIR): This indicator shows the ratio of capital input to output. If the indicator is too high, the bank's business is not very profitable. Capital adequacy ratio (CAR): This indicator can be shown in the bank's balance sheet and plays a vital role in the normal operation of commercial banks, so it is very important to achieve the required capital adequacy ratio. Non-performing loan ratio (NPL): This index refers to the ratio of all the loans of a bank to the total loans, which can reflect the credit of a bank. A low NPL indicates that there are few loans at risk of recovery, so the operating risk is small. Loan-to-deposit ratio (LDR): This index reflects the operation of the bank's funds. If the ratio between deposits and loans is high, it shows that the amount of loans is more than the amount of deposits, in other words, the income is more than the expenditure, and the profit is optimistic. To sum up, the control variables involved in the model include GDP growth rate, cost-income ratio (CIR), capital adequacy ratio (CAR), non-performing loan ratio (NPL) and loan-to-deposit ratio (LDR). The variables are sorted out in Table 1.

Table 1. Organizes Variables

Variable model	Variable name	Variable symbol
Explanatory variable	Fintech index	<i>FinTech</i>
Explained variable	Return on total assets	<i>ROA</i>
Control variable	GDP growth rate	<i>GDP</i>
	Cost-income ratio	<i>CIR</i>
	Capital adequacy ratio	<i>CAR</i>
	Non-performing loan ratio	<i>NPL</i>
	Loan-deposit ratio	<i>LDR</i>

3.3 Analysis of Empirical Results

3.3.1 Descriptive Statistics

In order to understand the distribution characteristics of data, descriptive statistical analysis of statistical data is needed, as shown in Table 2, which shows the distribution of

descriptive statistical data of 17 commercial banks from 2015 to 2021, and the results derived after descriptive statistics of all variables. On the whole, the highest ROA of each bank is 1.36%, the minimum is 0.5%, the average is 0.917%, and the standard deviation is 0.158%. The standard deviation of the fintech index is 0.199, the highest value is 6.129, and the lowest value is 5.285. It can be concluded that the level of fintech has risen rapidly and remained stable in recent years. The difference between the maximum GDP

growth rate and the minimum GDP growth rate is 16.98, and the standard deviation is 4.059. It's evident that fintech development in China is accelerating. Commercial banks' non-performing loan ratios, which vary from 0.83 to 2.39, show that they can steadily recover loans relative to their total loan volume. The highest input-output ratio of each bank is 35.01, the lowest is 18.93, and the standard deviation is 3.547. It can be seen that there is also a certain gap in the cost and expenditure per unit income in the survey.

Table 2. Results of Descriptive Statistics for Variables

VARIABLES	N	mean	SD	Min	Max
<i>ROA</i>	119	0.917	0.158	0.500	1.360
<i>LnFintech</i>	119	5.795	0.199	5.285	6.129
<i>CIR</i>	119	27.35	3.547	18.93	35.01
<i>CAR</i>	119	13.62	1.724	10.80	18.02
<i>NPL</i>	119	1.477	0.293	0.830	2.390
<i>LDR</i>	119	85.013	17.24	49.82	196.6
<i>GDP</i>	119	9.511	4.059	1.430	18.41

3.3.2 Correlation Analysis

In order to avoid multicollinearity among variables, correlation tests were conducted on explanatory variables, explained variables and control variables involved in this paper. It can be seen that the correlation coefficient between explanatory variable LnFintech and each

control variable is lower than 0.8, and it is generally believed that collinearity problems will occur if the correlation coefficient exceeds the critical value of 0.8 in Table 3. Therefore, it can be concluded that there is no multicollinearity between LnFintech and other control variables.

Table 3. Correlation Statistics of Variables

	<i>ROA</i>	<i>LnFintech</i>	<i>CIR</i>	<i>CAR</i>	<i>NPL</i>	<i>LDR</i>	<i>GDP</i>
<i>ROA</i>	1.0000						
<i>LnFintech</i>	-0.4984	1.0000					
<i>CIR</i>	-0.0242	-0.0089	1.0000				
<i>CAR</i>	0.3715	0.2676	0.0354	1.0000			
<i>NPL</i>	-0.1935	-0.0833	0.2353	-0.1565	1.0000		
<i>LDR</i>	-0.2956	0.4028	0.0728	-0.0398	0.3166	1.0000	
<i>GDP</i>	0.0692	-0.0245	0.0689	-0.0092	-0.0001	-0.0244	1.0000

3.3.3 VIF Test

It can be inferred from the VIF test value that the VIF value of each variable is lower than 10, and the Mean VIF value is 1.08, as shown in Table 4. Therefore, the relationship between multiple variables is not much collinearity.

Table 4. VIF Test

Variable	VIF	1/VIF
<i>NPL</i>	1.20	0.831170
<i>LDR</i>	1.11	0.899062

<i>CIR</i>	1.07	0.934429
<i>CAR</i>	1.03	0.969666
<i>GDP</i>	1.01	0.994112
Mean VIF	1.08	

3.3.4 Regression Analysis

First of all, F-test should be conducted on panel data. It can be seen that F-value is equal to 26.63, and Prob>F=0.0000 shows that the fixed-effect model is more obvious than the random effect model. The specific F-test

results are shown in Table 5.

Thirdly, the Hausman test was run on the pertinent values to compare the numerical effects of the fixed effect model with the random random effect model and see whether there were any discrepancies. If there is a difference, it can be deduced that the fixed effects model is a positive solution, and the random effects model is correct. Hausman's test that the P-value shown in the result is 0.0000. If the value is less than 0.05, the original hypothesis can be overturned, and the random effects model is not used.

Table 5. F Test Results

VARIABLES	(1) <i>ROA</i>
<i>LnFinTech</i>	-0.539*** (0.0589)
<i>CIR</i>	-0.000644 (0.00291)
<i>CAR</i>	0.0485*** (0.00613)
<i>NPL</i>	-0.0987** (0.0381)
<i>LDR</i>	0.000537 (0.000690)
<i>GDP</i>	0.00234 (0.00247)
Constant	3.474*** (0.327)
F(6,112)	26.63
Observations	119
R-squared	0.556

Note: Values in brackets are standard errors, ***, ** and * represent significant at 1%, 5% and 10% levels respectively.

The specific fixed effect model and random effect model are shown in Table6.

Table 6. Models of Fixed and Random Effects

VARIABLES	Fe model <i>ROA</i>	Re model <i>ROA</i>
<i>LnFintech</i>	-0.275*** (0.0529)	-0.379*** (0.0624)
<i>CIR</i>	0.00849 (0.00631)	0.00638 (0.00580)
<i>CAR</i>	-0.0151 (0.00981)	0.0107 (0.0114)
<i>NPL</i>	-0.159*** (0.0422)	-0.123* (0.0706)
<i>LDR</i>	0.000553	0.000418

	(0.000546)	(0.000439)
<i>GDP</i>	0.00162 (0.00161)	0.00169 (0.00104)
Observations	119	119
Number of id	17	17
R-squared	0.513	0.4752

Note: Standard error in brackets, ***, ** and * represent significant at 1%, 5% and 10% levels respectively.

According to the comprehensive display in Table 7, the number of values for reference is 119, and the R-value in the group is 0.513, which shows that the model has a harmonious coincidence of the values in the group. The results show that the regression coefficient of *h* is -0.275, demonstrating a substantial inverse relationship at a 1% confidence level, suggesting that the level of fintech is inversely proportional to the benefit level of banks, that is, the impact of fintech on bank profitability is not positive.

Regarding the control variables, the numerical ratio of input to output has a positive connection with the bank's income, as demonstrated by the regression coefficient of *CIR* of input and output of 0.00849, indicating a positive correlation at 1% confidence level. At the 1% confidence level, the regression coefficient of *CAR* is -0.0151, indicating that the total capital is negatively correlated with the bank's benefit level. The *NPL* regression coefficient of the non-performing loan ratio is -0.159, which is not significant at 1% confidence level, and it can be calculated that the non-performing loan ratio is inversely proportional to the bank's profit level. The *LDR* regression coefficient is 0.000553, indicating that the *LDR* is directly proportional to the bank's benefit level. The *GDP* regression coefficient is 0.00162, indicating that the horizontal fluctuation of macroeconomic variable *GDP* has a great impact on bank profitability.

Table 7. Analysis of Fixed Effect Model Results

VARIABLES	(1) <i>ROA</i>
<i>LnFintech</i>	-0.275*** (0.0469)
<i>CIR</i>	0.00849 (0.00631)
<i>CAR</i>	-0.0151

	(0.0125)
<i>NPL</i>	-0.159** (0.0712)
<i>LDR</i>	0.000553 (0.000338)
<i>GDP</i>	0.00162 (0.00102)
Constant	2.654*** (0.337)
Observations	119
Number of id	17
R-squared	0.513

Note: The regression coefficients reported in brackets in this table are robust standard errors, with ***, ** and * representing significant levels at 1%, 5% and 10% respectively.

The FinTech index has an adverse relationship with the income level of commercial banks, according to the fixed effect regression results of the data from the aforementioned 17 commercial banks from 2015 to 2021. The rising speed of cost-income ratio, loan-to-deposit ratio and GDP is complementary to the bank's income level. As the ratio increases, the bank's income level also increases, while the relationship between non-performing loan ratio and capital adequacy ratio is inversely proportional to the bank's income level, which has a negative impact on the commercial bank's income level.

3.3.5 Heterogeneity Test

Chinese commercial banks come in a variety of shapes and sizes. Commercial banks are grouped and examined to see whether financial technology level affects each bank's income level in order to assess the impact of financial technology level on banks. Regression analysis is performed on each of the two samples sequentially: the first sample consists of all state-owned commercial banks, while the second sample consists of joint-stock and urban commercial banks.

The data in Table 8 shows that the return on total assets is adversely connected with state-owned commercial banks, joint-stock commercial banks, and urban commercial banks, all of which are significant at the 1% level. In sample 1, the coefficient of LnFintech is -0.313, while in sample 2, it is -0.206. The LnFintech regression coefficient of the total sample above is -0.275, which is the same as the regression result of the fixed effect model above. As may be observed, the development level of financial technology has a poor impact on the income level of banks. However, the influence of financial technology level on state-owned commercial banks is less obvious, so it can be concluded that, all kinds of commercial banks are affected by different levels of financial technology.

Table 8. Regression Results of State-owned Commercial Banks, Joint-stock Banks and Urban Commercial Banks

	State-owned commercial bank	Joint-stock commercial bank and city commercial bank
VARIABLES	<i>ROA</i>	<i>ROA</i>
<i>LnFintech</i>	-0.313*** (0.0664)	-0.206** (0.0684)
<i>CIR</i>	-0.00180 (0.0189)	0.00423 (0.00458)
<i>CAR</i>	-0.0172 (0.0150)	-0.00954 (0.0151)
<i>NPL</i>	0.0143 (0.0547)	-0.219*** (0.0629)
<i>LDR</i>	0.000690*** (7.62e-05)	-0.00102 (0.00161)
<i>GDP</i>	0.00169 (0.00186)	0.00325** (0.00128)

Constant	3.024***	2.466***
	(0.520)	(0.371)
Observations	35	84
Number of id	5	12
R-squared	0.778	0.507

Note: The regression coefficients reported in brackets in this table are robust standard errors, with ***, ** and * representing significant levels at 1%, 5% and 10% respectively.

3.3.6 Robustness Test

In order to avoid the influence of the selection of indicators on the results, it is necessary to conduct robustness test on the variables. Due to the statistical lag of the data, there are certain errors in the measurement of ROA. Therefore, this paper conducts a one-stage lag on the explained variable ROA and conducts relevant tests on this basis. After the above

operation on the panel data, Table 9 is the output result obtained by lagging the return on total assets for one period.

It is visible from the regression results that the R-squared fitting value is 0.588, and the model has a good fitting effect. LnFintech, the core explanatory variable, is still significant and negatively correlated at the 1% confidence level.

Table 9. Regression Results of Robustness Test

VARIABLES	(1) <i>L.ROA</i>
<i>LnFintech</i>	-0.343*** (0.0647)
<i>CIR</i>	0.000473 (0.00557)
<i>CAR</i>	-0.0219** (0.00998)
<i>NPL</i>	-0.141* (0.0719)
<i>LDR</i>	-9.33e-05 (0.00132)
<i>GDP</i>	-0.00237* (0.00112)
Constant	3.460*** (0.427)
Observations	102
Number of id	17
R-squared	0.588

Note: The regression coefficients reported in this table are robust standard errors in parentheses, and ***, ** and * represent significant at 1%, 5% and 10% levels respectively.

4. Conclusions and Policy Recommendations

This article uses data from 17 sample commercial banks from 2015 to 2021 to create a fintech index and draw research conclusions. Financial technology affects commercial banks in specific ways and has a detrimental effect on their profitability. This further demonstrates that China's financial technology market is still developing and that commercial banks have not been able to investigate a range

of profitable financial technology models in the near future. The impact of fintech on bank profitability is more pronounced in state-owned banks, according to heterogeneity study. Consequently, the following policy proposals are made in this article.

First, invest more in financial technology and work to improve relationships with tech companies. Chinese commercial banks ought to put more money into fintech and employ it through joint ventures with foreign businesses

or internal R&D. Banks should combine technology and business, properly solve the obstacles in the business process, and steadily move towards the development goal of service modernization. In addition, banks should strengthen research on fintech related topics, guide practice with theory, and promote commercial banks to realize digitalization as soon as possible, which will play a positive role in improving the operating efficiency and profitability of commercial banks, and help commercial banks to smoothly transform and realize modernization as soon as possible. Commercial banks should also strengthen cooperation with external companies. Despite certain conflicts between external companies and banks, banks can work together to adopt and absorb cutting-edge technology and creative services from financial technology companies, make up for their weaknesses, improve services for various customer groups, and become truly "customer-centric" to meet the unique needs of each individual customer. Secondly, develop professional skills and give personnel in science and technology special attention. If commercial banks want to develop financial technology, they must have human resources as the basis. Only with high-level technical personnel can they understand the real development situation and development needs of commercial banks, understand what enterprises want and need, and check the gaps can they achieve real development. Therefore, commercial banks must recruit high-level scientific and technological talents and be mindful of the cultivation of internal talents. In the recruitment process, welfare benefits are used to attract scientific and technological talents at home and abroad. Regarding employee training, each year industry professionals are asked to lead professional skills training sessions for businesses, aimed at enhancing staff members' comprehension of financial technology and elevating the caliber of work in the relevant areas. Moreover, banks can boost the profitability of commercial banks by rewarding employees for taking the initiative to learn with cash and job promotions, fostering an innovative work environment, and allowing employees' subjective initiative to run wild. Only by providing good service for employees and improving their needs, bank employees can better serve commercial banks.

Third, increase your ability to innovate in financial technology. It is imperative that commercial banks prioritize fintech innovation, integrate it into all facets of business development, and fully leverage the benefits of financial innovation. Implement the innovation model in all sectors and regions, apply its advantages to different sectors, attach importance to the integration of information, and develop more differentiated innovative products. Large state-owned commercial banks have vast scale, many customers and strong data collection capabilities, and they can use these functions to integrate with fintech to expand marketing channels and consolidate their market position. Although joint-stock banks are smaller than large state-owned commercial banks, they can also improve their business through technology companies, or explore transformation options through close ties with outside companies, as a way to promote banking development and improve profitability. City commercial banks have a low level of science and technology, and it is difficult to achieve independent innovation in the short term without a solid foundation to support them. In order to raise the standard of financial technology innovation of urban commercial banks, they can cooperate with technology-related enterprises with high reputation in society, provide innovation opportunities, build innovation platforms, and make use of relatively mature artificial intelligence technology and data processing technology in science and technology enterprises. This approach can reduce the expenditure of commercial banks in the field of research and development, and effectively improve the ability to solve problems. At the same time, when dealing with customer relations, city commercial banks should conduct differentiated management of customers and provide efficient and targeted services according to their assets and liabilities and credit status to prevent customers from being dispersed.

Fourth, enhance the oversight framework and fortify the mitigation of financial technology hazards. Financial dangers in the setting of financial technology are more covert and spread more quickly. Due to information asymmetry, the problems are more serious, so it is necessary to prevent financial risks, use

existing technologies to develop risk prevention models and strengthen risk management. Effective supervision requires the formulation of strict rules and regulations and clear objectives. The first step should be to strengthen the disclosure of information. The department in charge of supervision should grasp the risks related to financial technology within banks, such as business model, investment scope, amount, etc. Only by ensuring comprehensive and true information can risks be identified and risk prevention and control plans be formulated. The second is to strengthen financial supervision, regulatory agencies should improve the regulatory mechanism in a timely manner, increase the supervision of the industry, regularly check whether commercial banks comply with the regulatory system, do a good job of prevention in advance, supervision in the event and settlement after the event, to avoid risks such as financial institutions misreporting information. Finally, it is to establish a sound legal system, establish a risk early warning mechanism, improve the security of commercial banks in practical applications, prevent information leakage, theft and other situations, improve the risk prevention system, and improve the capacity to withstand risk..

Fourth, improve the supervision system and strengthen the prevention of financial technology risks. In the context of financial technology, financial risks are more hidden and spread faster. Due to information asymmetry, the problems are more serious, Thus, it's imperative to avoid financial hazards, use existing technologies to develop risk prevention models and strengthen risk management. Effective supervision requires the formulation of strict rules and regulations and clear objectives. The first step should be to strengthen the disclosure of information. The department in charge of supervision should grasp the risks related to financial technology within banks, such as business model, investment scope, amount, etc. Only by ensuring comprehensive and true information can risks be identified and risk prevention and control plans be formulated. The second is to strengthen financial supervision, regulatory agencies should improve the regulatory mechanism in a timely manner, increase the supervision of the industry, regularly check whether commercial banks comply with the

regulatory system, do a good job of prevention in advance, supervision in the event and settlement after the event, to avoid risks such as financial institutions misreporting information. Finally, it is to establish a sound legal system, establish a risk early warning mechanism, improve the security of commercial banks in practical applications, prevent information leakage, theft and other situations, improve the risk prevention system, and enhance the ability to resist risks.

Fifth, rationally guide the development of financial technology and strengthen prudential supervision. Due to the development of financial technology and the arrival of the digital information age, customer data is more easily obtained, which has formed a "glimpse and know the whole leopard" approach, that is to say, knowing the enterprise on the one hand also knows all aspects of the company's data, for example, some banks have been severely notified of illegal collection of personal information, and the CBRC has also received a huge fine. This has also adversely affected the bank's reputation. In view of this, we need to strengthen the prudential supervision of personal information. The Personal Information Protection Law, which was officially enacted on November 1, 2021 in China, defines sensitive personal information and makes financial accounts more secure on a national level. This presents compliance issues for the banking sector as a whole. Therefore, in order to safeguard the safety of people's personal information, commercial banks should adhere to it scrupulously.

Acknowledgment

This work was supported in part by a grant from the university-level research Project of Guangzhou College of Commerce (No. 2021XJYB02).

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