温州肯恩大学
WENZHOU-KEAN UNIVERSITY

The Impact of Financial Technology on the Banking Industry and the Countermeasures

——Choose domestic banks as the main research object

In Partial Fulfillment of the Requirements

for the Bachelor of Science in Finance

by

Zhu, Yifei

1098685

December 2021

The Impact of Financial Technology on the Banking Industry and the Countermeasures

——Choose domestic banks as the main research object

December 2021

1098685

Zhu Yifei

Abstract

With the rapid development of financial technology, more and more Internet finance companies have entered our field of vision, shaking the absolute position of traditional commercial banks in the financial market. More and more banks realize that combining financial technology to transform their business methods is an important strategy for the banking industry to maintain rapid development. This article will summarize the two-way impact of the current financial technology level on banking business, and select 16 listed banks as samples to confirm the impact of financial technology level on bank profitability. Then analyzes the degree of influence of financial technology on listed banks of different scales in groups, and provides targeted strategic transformation suggestions for banks of different scales.

Keywords: Fin-tech, commercial banking, internet finance, profitability

Table of Contents

Introduction

Background

Fin-tech has become a buzzword among people in recent years. With the empowerment of big data, cloud computing, Internet of Things, artificial intelligence and other technologies, the development of financial technology has brought unprecedented historical opportunities.

So far this year, the industry's global financing has reached a record 91.5 billion U.S. dollars, which is almost twice its total financing in 2020. According to CB Insights' "Report on the State of Venture Capital in the Third Quarter of 2021", 42 Fin-tech unicorns (startups with a valuation of more than US$1 billion) were born from the second half of 2021, making this field this year The total number of unicorns born reached 200. According to the "China Financial Technology and Digital Financial Inclusive Development Report (2020)", the development of China's financial technology industry is still in the forefront of the world. The revenue of financial technology in 2019 is about 1.4 trillion Yuan, and it is expected to reach 2 trillion yuan by the end of this year In 2019, China's financial technology financing accounted for 52.7% of the world's total. The financial technology development of cities such as Beijing, Shanghai, Shenzhen and Hangzhou ranks in the forefront of the country and still plays a leading and exemplary role.

In order to further enhance the technology application capabilities of the financial industry, realize the in-depth integration and coordinated development of finance and technology, significantly increase the people's satisfaction with digital, networked, and intelligent financial products and services, and make my country's financial technology development at the international leading level. my country has issued many policies to support the development of financial technology and the application of financial technology in banking business, with Beijing, Shanghai, Shenzhen and Guangzhou as the focus, providing a convenient way for banks

to open financial technology pilot projects. In the future to make Internet finance more secure, my country has accordingly issued a series of financial technology regulatory policies, including financial technology supervision and regulation in areas such as lending and Internet platforms. With the continuous improvement of the future regulatory system, financial technology will be used in banks. The industry will reach an unprecedented degree of penetration, which will elevate the development of my country's financial technology to a new level.

Research Objective and Significance

While Fin-tech has injected fresh impetus into the banking industry, it has also brought many shocks. Under the influence of both positive and negative effects, what kind of results Fin-tech will bring to the banking industry is what this study wants to understand. It can also be measured to reflect the degree and level of technologicalization of banking financial services, and how progress has been made on the road to business reform.

And with the gradual support of policies and the gradual completion of the regulatory system, more and more commercial banks have made clear the importance of gradually completing business reforms in conjunction with the development of financial technology. Understanding the mechanism of financial technology's impact on bank profitability is helpful for commercial banks to reflect on their own shortcomings and combine their own advantages to find suitable development paths and strategies. So as to transform the shock into the positive side as much as possible, commercial banks can also maintain sustained and stable development under the new financial market model.

Literature Review

Foreign research status

Bettinger (1972) first proposed the concept of Fin-tech, which is the combination of science and technology applied to modern management and computer and banking expertise. The Wharton School of Business defined Fin-tech for the first time in the last century. The reformed financial sector" .Benamraoui (2004) pointed out that innovative products in the network and financial industry may pose a threat to the banking industry. BANKER, P. (2004). In the research, he systematically explained the competitive influence of Internet finance on banks and put forward the idea of changing the banking business model. Колінець & Радинський (2010). In his research, he proposed the cooperation between Fin-tech in credit and bank credit reporting system. Cuesta, Ruesta, Tuesta, & Urbiola (2015). Explore the feasibility of banks' digital transformation, as well as the challenges and opportunities they face. Boot, AW (2017). Constructed the future banking industry and Fin-tech cooperation model. LIEN, NTK, DOAN, TTT, & BUI, TN (2020). Taking Vietnam Bank as an example, it explained how banks are performing in the context of Fin-tech Technological reform and business model innovation are the only way out for savings development.

Domestic research status

Theoretical direction: Xie Ping (2012) published the first financial technology-related research in China, stating that the development of financial technology can make financial market risks exceed the level that can be achieved by traditional financial models, which also means greater profit margins. Jingjing Zhao (2015) studied the impact of financial technology on commercial banks from a positive perspective, and stated that the combination of banking business and financial technology can reduce the operating and management costs of commercial banks to a

certain extent. Kong Fandong (2016) analyzed the impact and contribution of financial technology to the payment system in the era of the interconnected economy, as well as the impact on the payment and settlement business of commercial banks, and proposed that commercial banks should open their minds and seek innovation in business models. Li Ronghua (2016) explored the differences between commercial bank credit business and financial company credit business, as well as the advantages and disadvantages of both parties in his research, and said that once the transformation is completed, commercial bank credit business will give full play to its advantages. Zhou Yu (2017) conceived the possibility of combining financial technology and banking business based on the existing financial technology. Confirmed direction: Since 2018, the domestic research focus on commercial banks and financial technology has become more specific. Chen Xiaoyan (2021) specifically confirmed the impact of financial technology on the credit business of commercial banks, and selected a number of listed banks to start with the loan-to-deposit ratio, confirming that bank credit business has received the competitive impact of financial technology

Zhao Xiaolei (2021) mainly analyzed the level reached by the reform of the banking business model with the continuous development of financial technology, and proposed that banks gradually embark on the road of "disintermediation". Xie Weiqing, Li Shiqi, and Zhang Meixing (2021) quantitatively studied the relationship between bank profitability and financial technology development, and proved through tests that for these two variables, the mixed model is the most random, fixed, and random effect model. Fitting. Li Yiying (2021) constructed a model describing the financial technology development index to digitally measure the financial technology development of commercial banks.

Brief evaluation

From the perspective of theoretical research, the current domestic and foreign research on financial technology has been very clear. The research on the impact of financial technology on commercial banks is relatively comprehensive, and the possibility of commercial bank business reform has been comprehensively analyzed and predicted. The analysis of the current situation in this paper has high reference value. In terms of confirmation research, many scholars use panel data regression methods to confirm and analyze the degree of influence of different banking businesses on the development of financial technology, but there is still a lack of horizontal volatility comparisons among commercial banks.

Methodology

Theoretical framework

6

The structure of the paper can be divided into four parts. The first part is the analysis of the development status, including the definition of financial technology, global development level and domestic development level, and enumerating the current business transformation of banks in conjunction with financial technology. The second part is impact analysis, which mainly talks about the impact of financial technology on commercial banks, which can be divided into two directions: positive effect and negative effect. The third part is the verification part. Samples are selected and classified, volatility analysis and regression analysis are performed on the sample data, and the final results of the above two effects on commercial banks are found. The fourth part combines the confirmed results and the current status of financial technology development, gives overall recommendations from the industry, and proposes corresponding business reform strategy recommendations for banks of different scales.
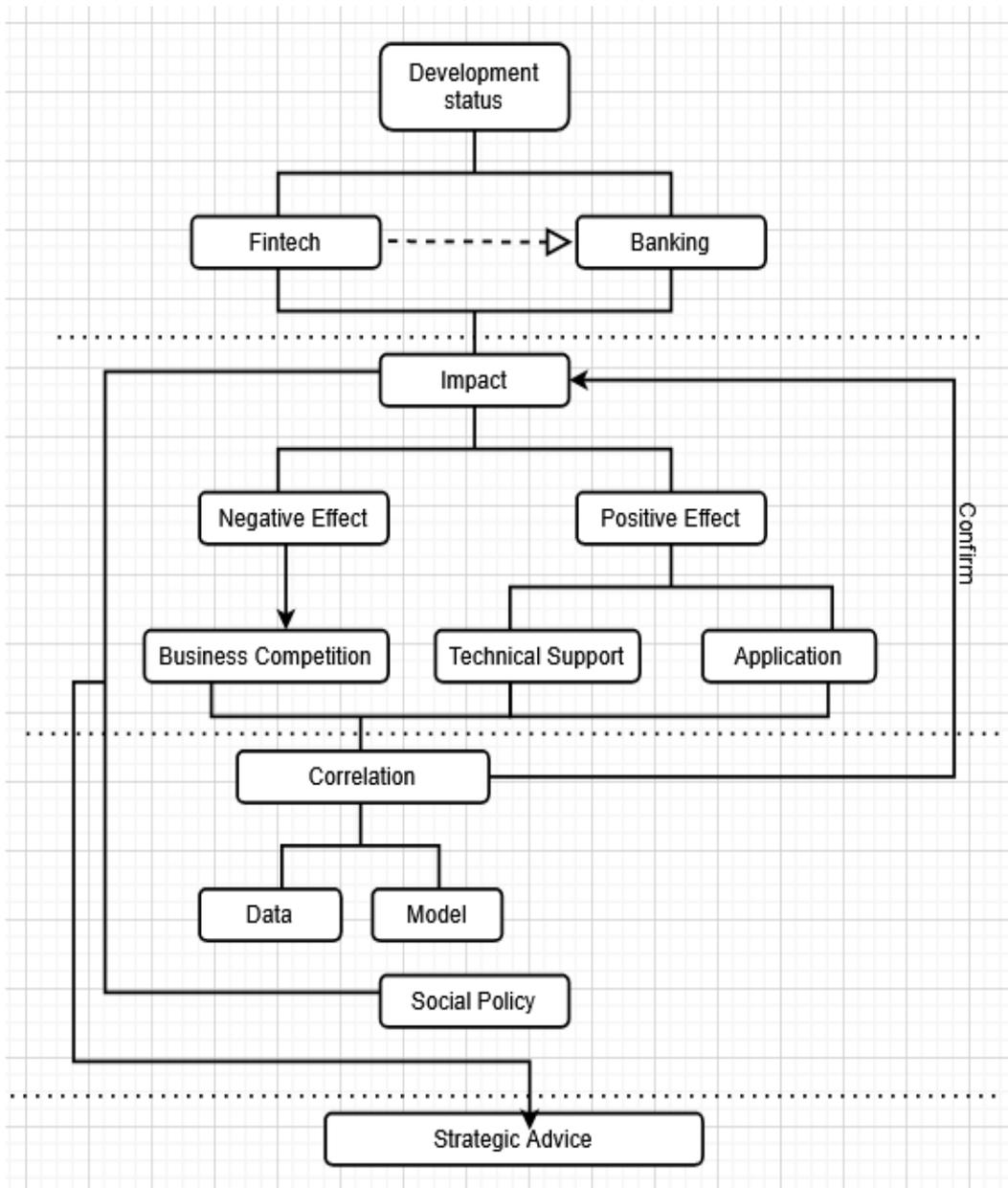
1.1 Schematic diagram of the paper logical framework

Literature research and publication

This research has reviewed the domestic and foreign academic circles' research on finance, science and technology, and analyzed its relationship with commercial banks. Related literature and reports, these existing academic literature, and market perspectives provide reasonable and feasible theoretical support for this article. After a clear boundary definition of financial technology, analyze the impact mechanism of financial technology on bank profitability from multiple aspects, sort out and summarize the research directions and methods related to this topic, and find innovative research directions and worthy of reference Research Research analysis method.

Confirmatory Analysis

In order to confirm the effect of financial technology on the banking business, we selected 16 listed commercial banks from the data of 33 quarters of the first and third quarters before the 2011-2019 epidemic, and built a hybrid regression model based on the data, talking about ROA and Findex as an explanatory variable for data regression to explore the relationship between the two.

Chapter 1 Analysis of the status of the development of financial technology and banking

Definition of Fin-tech

In the "Fin-Tech Development Plan (2019-2021)", the People's Bank of China defines Fin-tech as: Fin-tech is a technology-driven financial innovation that must adhere to the principle of "keeping integrity, innovation, safety and control, and benefiting the people." The principle of "health, openness and win-win" will give full play to the empowering role of financial technology to promote the high-quality development of my country's financial industry. The definition of the Financial Stability Board (FSB) is that financial technology mainly refers to emerging frontier technologies such as big data, block chain, cloud computing, and artificial intelligence, which have a significant impact on the financial market and the supply of financial services. Business model, new technology application, new product service, etc.

China's current financial technology development level

China has led the world in the development of financial technology, especially in payment and settlement. A number of world-leading financial technology companies such as Ant Financial and JD Finance have emerged. According to the "2018 Global Fin-tech 100" list jointly released by KPMG and H2 Ventures, a well-known Australian financial technology venture capital firm, in October 2018, Chinese companies occupy 11 seats, and 4 of the top 10 are occupied. Ant Jinfu topped the list, and JD Finance ranked second. In addition, Baidu's Duxiaoman Financial ranked fourth, and Lufax ranked tenth. From the perspective of industry distribution, payment and transaction are the leading industries of Fin-tech companies; followed by lending and investment and wealth management industries; insurance Fin-tech companies are growing, and the field of online banking has performed outstandingly. According to the "2021-2027" issued

by Zhiyan Consulting According to the data from the "Report on China's Financial Technology Industry Market Development Survey and Development Trend Forecast in 2012", wealth management, payment, and insurance have become hot spots for financial technology innovation companies. These three areas are also the areas with the largest distribution of financial technology companies, accounting for nearly 60% of the top 50 companies in total.

The development of Fin-tech in the banking industry

In terms of business strategy, as early as 2005, domestic commercial banks began to cooperate with technology companies in terms of products and services; since 2017, major commercial banks have established strategic partnerships with financial technology companies, setting off banks and technology companies. The climax of cooperative marriage.

China Construction Bank signed a strategic cooperation agreement with Alibaba and Ant Financial to cooperate in the fields of electronic payment, cross-border e-commerce, asset custody, etc.; Bank of China joined hands with Tencent to deepen cooperation in cloud computing, big data, block chain, etc. , The establishment of the "Bank of China-Tencent Fin-tech Joint Laboratory"; Industrial and Commercial Bank of China and Baidu have reached a cooperation intent in the areas of map services, online marketing, and life services, and plans to develop in O2O platforms, online payment LBS services, mobile terminal development, etc. Carrying out in-depth cooperation; Agricultural Bank of China and Baidu jointly initiated the establishment of the "Financial Technology Joint Laboratory" to jointly build financial brains, customer portraits, precision marketing, intelligent customer service and other applications, and carry out comprehensive cooperation around financial products and channel users; China Merchants Bank and Huawei Jointly build a distributed database joint innovation laboratory, China Merchants Bank is responsible for providing requirements and program design, and Huawei is responsible for technology implementation and technology R&D and application, effectively complementing each other's advantages.

In terms of independent research and development, China Construction Bank established a Financial Technology Innovation Committee to lead the bank's research and strategic layout in the financial technology field; China Merchants Bank allocates financial technology positions in its main business lines, responsible for data mining, scenario design and trend analysis in this field .

Chapter 2 The impact of financial technology on commercial banks

Negative effect

The negative effect mainly comes from the industry competition effect brought by financial technology.

Asset business

Asset business mainly refers to the loan business of commercial banks. The average interest income of banking loans in my country accounts for 70% of total operating income. With the development of financial technology, lending is developing in the field of inclusiveness. Due to the high threshold of bank loans, they usually only benefit some high-credit customers, and it is difficult to achieve effective promotion of inclusive finance. The development of financial technology has made lending easier, more convenient, and more inclusive. For example, P2P companies use online transactions to match buyers and sellers to complete the disintermediation of lending business, which can better make up for areas that cannot be covered by bank loans. The development of financial technology will promote banks to make substantial progress in the field of inclusive finance, accurately identify customer risks through big data, cloud computing and other technologies, and match loan pricing based on risk conditions, so that loans can benefit a wider range of customers.

Liability business

Liability business mainly refers to the deposit business of banks. For investors, there are usually limited investment products that can be selected, mainly including funds, wealth management, deposits, stocks, etc. For most ordinary investors with low risk appetite, bank deposits are the first choice, followed by bank wealth management, and the investment income they receive is often lower. Fin-tech is changing this situation. Equity crowd funding platforms, P2P lending platforms, financial supermarkets, etc. are gradually becoming new choices for investors. The

substitution effect of these high-yield product platforms on bank deposits and wealth management will gradually increase, forcing banks to continue to increase product yields and pushing up the cost of bank liabilities.

Intermediate Business

The trend of financial disintermediation has accelerated, and the overall intermediate income has shown a downward trend. Fin-tech reduces the cost of various financial transactions, improves the efficiency of financial services, and promotes the gradual acceleration of financial disintermediation. In the context of financial disintermediation, the income of banks' intermediary business has shown a clear downward trend. Because intermediary business income is the main financial transaction cost (for example, cross-bank transfer fees and bank card charges, etc.), it is precisely the financial transaction pain point that Fin-tech focuses on solving. Generally speaking, income from intermediary business is an important source of bank income, mainly composed of bank card fee income. With the in-depth development of financial technology, the trend of digitalization of financial services and products has become more and more obvious, which has led to a sharp decline in customer demand for bank cards and bank transfers, resulting in a decline in bank intermediary business income. The payment channels are diversified and highly efficient. With the development of financial technology and the popularization of mobile smart devices, online payments have become ubiquitous. The development of online payment has not only increased the speed and scale of capital circulation, but also increased the unpredictability of the direction of capital turnover, leading to a more complicated capital flow situation faced by banks. This will directly affect the accuracy of bank fund management and increase the difficulty of fund.

Customer Structure Change

With the development of mobile smart device technology and the decline in prices, more and more consumers start to use smart devices and enjoy the convenience brought by the mobile

Internet. Compared with mutual finance companies and financial science and technology companies that rely on the Internet themselves, banks lack the design and implementation experience of the Internet, and it is more difficult to obtain customer-style transformations, and most of the low-efficiency adoption methods are still in the tradition. However, the size of a single branch is limited, the cost of acquiring customers is high and the effect of acquiring customers is not good, and it is difficult to achieve scale effects; In addition, banks are mainly low-frequency services, and users are not active on the platform, such as banks' fixed-term financial products. It is not possible to achieve high-frequency use of the platform by users, and low activity cannot guarantee the survival of customers and the promotion of new products and services. Fin-tech will protect customers from physical factors such as regions and time limits, which will further intensify the fierce competition of financial services and products, thereby driving the decline in bank products and service charges.

In summary, financial technology exerts pressure on commercial banks on both the supply side and the demand side. In this supply and demand gap, the profitability of commercial banks is affected.

The positive effect

The positive effect is mainly that the development of financial technology has also brought core technologies to banks, and provided new possibilities for banks' business models. Improve efficiency and reduce operating and management costs.

The bank has a considerable customer base, technology and financial strength, and has also begun various attempts, such as using its brand advantages to build its own mobile Internet channels, cooperating with Internet scenarios, and generally using face recognition and fingerprint technology in the business process , Big data and other technical tools. Taking China Merchants Bank as an example, the China Merchants Bank APP and Pocket Life APP provide

users with comprehensive financial services including account income and expenditure management, payment and settlement, investment and wealth management, loans, and urban convenience through the mobile terminal. Functions such as smart recommendations and smart reminders have also been improving.

The application of financial technology has penetrated from the bank's new business to the stock business. As of the end of 2018, the total assets managed by domestic commercial banks were close to 210 trillion Yuan, of which traditional businesses accounted for the vast majority. In the process of continuous operation of traditional businesses, it is also necessary to upgrade and optimize new technologies to improve business operation efficiency and enhance risk management capabilities.

In terms of services, Fin-tech can enhance the information collection and production capabilities of commercial banks. The network can be used more widely to quickly collect various data on the behavior, activity content, hobbies, etc. of enterprises and individuals, and through cloud computing and artificial intelligence to sort, process and analyze, gradually improve the customer labeling system to form a comprehensive, in-depth and dynamic Customer puzzles, segmentation and insight into the true financial situation of customers. AI technology can also be combined with big data cloud computing to provide customers with targeted consulting services, such as intelligent customer service.

Chapter 3 Confirmation Analysis

Sample selection

This research selected 16 commercial banks listed on China's A shares, namely 5 large state-owned commercial banks (Bank of China, Agricultural Bank, Bank of Communications, Industrial and Commercial Bank, Construction Bank) and 8 joint-stock banks (China Merchants Bank). , Ping An Bank, Shanghai Pudong Development Bank, Minsheng Bank, Huaxia Bank, China Everbright Bank, China CITIC Bank, Industrial Bank, and 3 city commercial banks (Bank of Ningbo, Bank of Beijing, Bank of Nanjing. The sample is located The time interval is from 2011Q1 to 2019Q3, with a total of 33 quarterly data. Bank data is derived from WIND, and missing data is supplemented by the bank's annual report. The financial technology development index data is derived from the reports of the Peking University Internet Finance Development Index.

Variable selection

Explanatory variable: ROA, ROA is selected as the representative of bank profitability.

FIN-Financial Technology Development Index.

Other variables: CAR: Total return on capital; NPL: Non-performing loan ratio; NIRR: Non-interest income ratio; LDR: Cost-to-income ratio; GDP: cumulative GDP growth rate.

Volatility analysis

3.1 China's Financial Technology Development Index
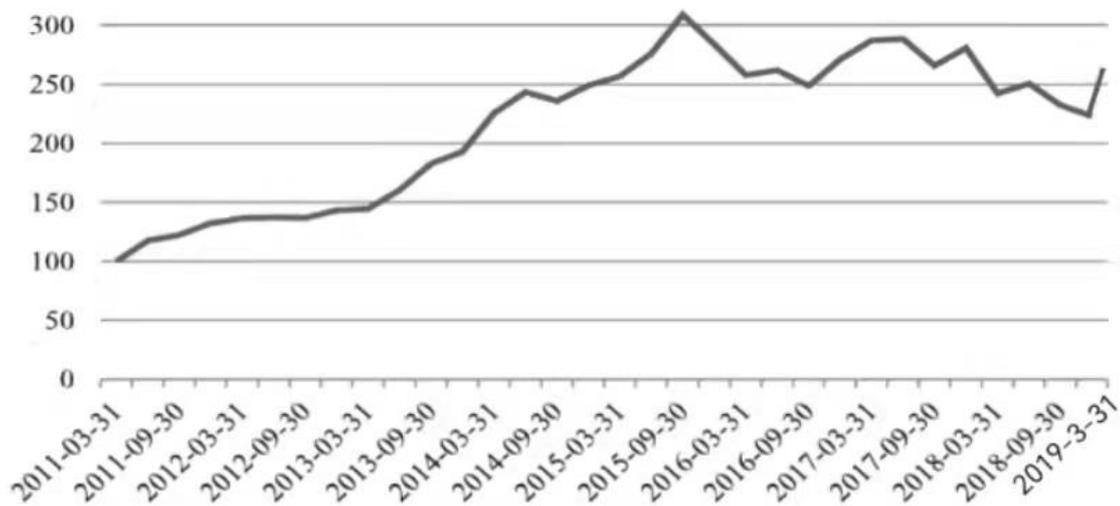
The development of financial technology shows an overall upward trend.

3.2 Average ROA volatility of 16 listed banks
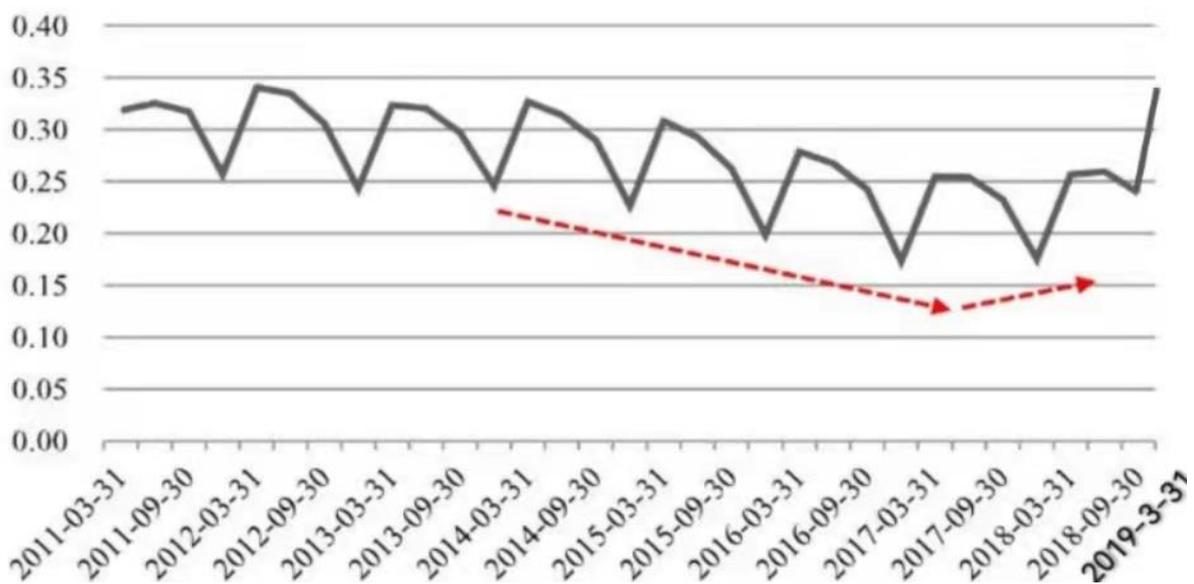
As shown in the figure, on the whole, the ROA of listed banks has experienced a decline and rebounded. From the beginning of 2014 to the third quarter of 2017, it did not rise but fell, and there was a clear upward trend from the end of 2017 to 2019. This coincides with several

important time points in the development of financial technology. In 2013, with the increasing popularity of financial technology, especially Internet finance.

2013 is known as the base year of Internet finance. In this year, Internet thinking has become an impact force that affects and changes the traditional financial format. Banks, brokerage firms, funds, insurance and other traditional financial institutions have all started in this year. E-commerce giants such as Alibaba, Tencent, Baidu, Sina, etc. have begun to show a competitive momentum to create a new industrial chain in the Internet field. Under this kind of competition, traditional commercial banks are facing tremendous operating pressure, and their business income is diverted by other rising financial technology companies. From the end of 2016 to 2017, the government rectified the financial market. The chaos of the barbaric growth of the Internet financial industry increased supervision and improved the supervision system. At the same time, bankers have gradually implemented business reforms based on financial technology, invested in research and use of financial technology, and created landing applications. The subsequent rebound also illustrates the correctness of reforms in conjunction with financial technology, and illustrates that financial technology has brought new profit potential to commercial banks.

Descriptive statistics of each variable

The following table shows the descriptive statistics of all variables. In general, the standard deviation of ROA is smaller than that of other variables, indicating that the volatility of ROA is much smaller than that of other variables and is relatively stable. The volatility of another explanatory variable FIN is greater than that of ROA. In terms of grouping, large state-owned commercial banks have less volatility than joint-stock banks than city commercial banks, and their profitability is relatively stable.

Overall

	Mean	Std.Dev	Min	Max	Observation
ROA(%)	0.2735	0.0629	0.1249	0.427	528
NPL(%)	1.1614	0.4258	0.34	2.4	528
CAR(%)	12.4219	1.3626	8.78	15.74	528
NIRR(%)	2532995	8.6985	7.95	57.17	528
LDR(%)	71.8472	10.4111	42.68	105.65	528
CIR(%)	28.2063	5.0348	15.6	44.85	528
GDP(%)	11.6603	3.4315	6.32	19.53	528
FIN	215.226	62.7183	100	308.8553	528

Large state-owned banks

	Mean	Std.Dev	Min	Max	Observation
ROA(%)	0.2718	0.059	0.1264	0.4098	165
NPL(%)	1.1279	0.435	0.43	2.4	165
CAR(%)	12.0424	1.5532	8.78	15.67	165
NIRR(%)	26.3885	9.2505	10.73	57.17	165
LDR(%)	72.9815	11.4096	42.69	98.12	165
CIR(%)	28.1815	4.7716	18.9	40.77	165
GDP(%)	11.6603	3.4267	6.34	19.53	165
FIN	215.226	62.5824	100	308.8553	165

Joint-stock banks

	Mean	Std.Dev	Min	Max	Observation
ROA(%)	0.2759	0.0642	0.1289	0.4185	264
NPL(%)	1.1383	0.426	0.35	2.39	264
CAR(%)	12.5401	1.2674	10.13	15.65	264
NIRR(%)	25.2843	8.6415	7.59	50.22	264
LDR(%)	71.303	10.2446	46.46	105.65	264
CIR(%)	28.243	5.1202	17.03	42.59	264
GDP(%)	11.603	3.4235	6.32	19.53	264
FIN	215.226	62.5244	100	308.8356	264

City commercial banks

	Mean	Std.Dev	Min	Max	Observation
ROA(%)	0.2737	0.064	0.1351	0.427	99
NPL(%)	1.1414	0.4088	0.4	1.87	99
CAR(%)	12.161	1.2408	9.5	14.92	99
NIRR(%)	24.4505	8.0797	9.54	42.92	99
LDR(%)	71.6651	9.7746	47.1	95.53	99
CIR(%)	28.1615	4.9939	17.22	41.02	99
GDP(%)	11.6603	3.4315	6.32	19.53	99
FIN	215.226	62.7183	100	308.8553	99

3.3 Descriptive statistic

Table 3.4 shows 3.4 Correlation statistics of various variables. The correlation coefficients of FIN and the control variable are all lower than 0.8. Generally, 0.8 is used as the critical value to determine multiple collinearity. There is no multiple collinearity between FIN and other indicators.

	ROA	NPL	CAR	NIRR	LDR	CIR	GDP	FIN
ROA	1.0000							
NPL	-0.3856	1.0000						
CAR	0.1203	0.2387	1.0000					
NIRR	-0.1036	0.6296	0.2057	1.0000				
LDR	-0.2407	0.4741	-0.0205	0.5718	1.0000			
CIR	-0.2502	-0.2034	-0.2583	-0.3312	-0.1375	1.0000		
GDP	0.1434	-0.1774	-0.0207	-0.1941	-0.0640	0.1351	1.0000	
FIN	-0.4293	0.6841	0.1557	0.5480	0.2770	-0.3240	-0.3794	1.0000

3.4 Correlation statistics of various variables

Regression Analysis

Model

$$ROA_{it} = \beta_1 + \beta_2 CAR_{it} + \beta_3 NPL_{it} + \beta_4 NIRR_{it} + \beta_5 LDR_{it} + \beta_6 CIR_{it} + +\beta_7 GDP_{it} + \alpha_1 FIN_{it} + u_i$$

From Table 3.5, it can be found that the P value of each variable is less than 0.05, there is no unit root in the time series, the result is stable, and there is no regression.

3.5 Unit root test of each variable

	t	p	Result
ROA(%)	-14.3138	0	stable
NPL(%)	-6.9475	0.0035	stable
CAR(%)	-9.9881	0.0017	stable
NIRR(%)	-8.7362	0.0002	stable
LDR(%)	-8.5023	0.0237	stable

CIR(%)	-14.7095	0	stable
GDP(%)	-5.5255	0	stable
FIN	-7.15	0.1	stable

Results of mixed regression model for Banks in Different Scale

3.6Large state-owned banks

ROA	Coef.	Std.Err	t	P>|t|
NPL	-0.03784	0.0128607	-2.94	0.004
CAR	0.008791	0.0025304	3.47	0.001
NIRR	0.001913	0.0005956	3.21	0.002
LDR	-0.00152	0.0004431	-3.43	0.001
CIR	-0.003292	0.0008214	-4.01	0
GDP	-0.000982	0.001221	-0.8	0.423
FIN	-0.000391	0.0000843	-4.64	0
F	19.32		P	0
Gof.	0.4792		Adjust Gof.	0.4544

The goodness of fit of the data reaches 45%, indicating that the model fits well. The output

result includes F test. The value of P corresponding to F is 0, which proves that the model

structure is reasonable. The Fin-tech index is significant at the 5% level, a is-0.000391, explain

that the final effect is a negative effect.

3.7Joint-stock banks

ROA	Coef.	Std.Err	t	P>|t|
NPL	-0.0267955	0.0135876	-1.96	0.05
CAR	0.0020589	0.0030253	0.64	0.498
NIRR	0.0022525	0.000617	3.66	0
LDR	-0.0010994	0.000464	-2.45	0.016
CIR	-0.0048327	0.0007631	-6.24	0
GDP	0.00016310	0.0011364	0.15	0.885
FIN	-0.0006050	0.0000894	-6.37	0
F	20		P	0
Gof.	0.4101		Adjust Gof.	0.3811

The goodness of fit of the data reaches 38%, indicating that the model fits well. The output

result includes F test. The value of P corresponding to F is 0, which proves that the model

structure is reasonable. The Fin-tech index is significant at the 5% level, a is-0.000605, explain that the final effect is a negative effect.

3.8City commercial banks

ROA	Coef.	Std.Err	t	P>|t|
NPL	-0.010040	0.0181513	-0.55	0.582
CAR	0.013308	0.0042035	3.23	0.0021
NIRR	0.002168	0.0007654	2.88	0.0056
LDR	-0.001761	0.0005526	-3.21	0.002
CIR	-0.005973	0.0009831	-6.17	0
GDP	-0.001681	0.0016076	-1.06	0.299
FIN	-0.000794	0.000132	-6.01	0
F	17.19		P	0
Gof.	0.5858		Adjust Gof.	0.5575

The goodness of fit of the data reaches 55%, indicating that the model fits well. The output result includes F test. The value of P corresponding to F is 0, which proves that the model structure is reasonable. The Fin-tech index is significant at the 5% level, a is-0.000794, explain that the final effect is a negative effect.

Results of confirmation and conclusions

Through confirmatory research, it can be found that the competitive effect of financial technology on the banking industry is greater than the adverse effect. This also shows that the current financial technology development of commercial banks is still in its infancy. City banks are more impacted by financial technology than joint-stock banks and large state-owned banks. However, even for large commercial banks, their financial technology system is not perfect, and is limited to transferring traditional businesses such as deposits, loans, and investment transactions from offline to online. They have not yet realized the digitization of the entire industrial chain, such as the entire system, customer files, products, and output and personnel's adaptability to business transformation is still at a low level.

Chapter 4 Suggestions for Commercial Banks Business Transformation

Data mining helps bank product marketing and service upgrades.

In the future, banks can use big data, block chain, cloud computing, artificial intelligence and other technologies to conduct in-depth mining of customer retention and transaction data to understand customers' risk preferences and product needs, so as to recommend suitable financial services to customers in a targeted manner. products and services. Competition in the banking market will become increasingly fierce. The use of financial technology to accurately distinguish customers and strengthen innovation in products and services are important topics that need to be studied for the long-term development of commercial banks.

Build an integrated financial ecological scene.

Fin-tech encourages banks to build an "open, cooperative, and win-win" ecosystem. Strengthen cooperation with third parties to provide customers with a full range of services through platform interconnection, or through the integration of "online and offline" methods to strengthen linkage services and product innovation.

Promote the construction of an intelligent ecosystem for banks.

Integrating various financial products and services into customers' life scenarios, so that they can unintentionally enjoy a full range of financial services, which is the future development direction of smart finance. In order to meet the needs of the development of the times, banks need to increase support for smart financial research and development and applications, fully integrate internal and external resources, embed smart products and services in various application scenarios, promote platform integration, and improve the ability to reach and connect with customers , Carry out customer development and product promotion. Actively explore scene interaction, provide customers with new smart financial scenes, and deepen their experience.

Conclusion

This research analyzes how financial technology affects the business and profitability of commercial banks, and establishes a mixed regression model to confirm the positive and negative effects. The results draw the following conclusions. Fin-tech affects the business and profitability of commercial banks on both positive and negative sides. It not only brings industry competition pressure to banks, but also provides technical support for the intelligent and digitalization of commercial banks. Although the overall effect is still negative, there is still significant progress compared with the banking industry at the beginning of the transition. The reason that the final reversing effect is not greater than the competitive effect may be derived from the fact that the digitalization of my country's commercial banks is still in the preliminary stage, and the development of new systems to adapt to the new model still requires a lot of manpower and financial resources. Under the support and supervision of government policies, state-owned commercial banks can still maintain a relatively stable profitability compared with joint-stock banks and city commercial banks, and should combine their own advantages to carry out more in-depth and integrated reforms. Joint-stock banks and city commercial banks can increase cooperation with financial technology companies and seek a mutually beneficial and win-win path.

Limitation

The study of commercial bank's business transformation strategy is based on the current technical level and theoretically achieves the goal. The difficulty and risks of actual implementation cannot be clearly predicted.

When confirming the correlation between banking profitability and social financial technology development index, there are many influencing factors such as the macroeconomic situation, the bank's loan-to-deposit ratio, bad debt rate and other factors. The goodness of fit of the financial development index is 35%-55%. Because of the large differences in the heterogeneity of panel data, there is no specific standard for acceptable goodness of fit.

Reference

Xie Ping, Zou Chuanwei(2012). Research on Internet Finance Mode [J]. *Financial Research.*

Zhao Jingjing(2015). Analysis on the Necessity and Feasibility of Commercial Bank Transformation under the Background of Mobile Internet [D]. *University of International Business and Economics.*

Kong Fandong(2017). Research on Countermeasures for Commercial Banks to Construct Payment and Settlement Networks under the Background of "Internet +"[J]. *Financial Economics.*

Li Ronghua(2016). a comparative study on traditional banking and Internet financial small and micro financing [J]. *Enterprise Herald*

Chen Xiaoyan. (2021). Research on the Impact of Fin-tech on Traditional Commercial Banks. *China Management Informationization* (17),158-160. doi:CNKI:SUN:GLXZ.0.2021-17-065.

Zhao Xiaolei. (2021). The impact of Internet finance on the intermediary business of commercial banks. *Cooperative Economy and Technology* (16),58-60. doi:10.13665/j.cnki.hzjjykj.2021.16.024.

Xie Weiqing, Li Shiqi & Zhang Meixing. (2021). Research on the Impact of Inclusive Finance on the Profitability of Commercial Banks in the Context of Financial Technology. *Quantitative Economics and Technical Economics Research.* (08),145-163. doi:10.13653/j.cnki.jqte.2021.08.008.

Li Yiying. (2021). Research on the impact of financial technology on the profitability of commercial banks (Master's thesis, Shandong University).https://kns.cnki.net/KCMS/detail/detail.aspx?dbname=CMFDTEMP&filename=1021044892.nh

Benamraoui, A. (2004). The effects of the Internet and financial innovation on the banking industry. *In Second Conference on Accounting Finance in Transition.*

BANKER, P. (2004). Make the Connection.

Колінець, Л., & Радинський, С. (2010). Інвестиційна політика у галузі Fin-tech: вітчизняний та зарубіжний досвід. *GALICIAN ECONOMIC JOURNAL*, 156.

Cuesta, C., Ruesta, M., Tuesta, D., & Urbiola, P. (2015). The digital transformation of the banking industry. *BBVA research*, 1-10.

Boot, A. W. (2017). The Future of Banking: From Scale & Scope Economies to Fin-tech 29. *European Economy*, (2), 77-95.

LIEN, N. T. K., DOAN, T. T. T., & BUI, T. N. (2020). Fintech and banking: Evidence from Vietnam. *The Journal of Asian Finance, Economics, and Business*, 7(9), 419-426.