Global Business and Management Research: An International Journal
Vol. 14, No. 3s (2022)

The Impact of FinTech on the Profitability of Traditional banks

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Abstract
Purpose: The purpose of paper is to investigate the innovation and influence of fintech on the earnings of traditional banks.
Design/methodology/approach: The methodology is quantitative analysis, using random model to study the influence of fintech on the revenue of traditional banks in China.
Findings: The research found that the fintech index has a greatly beneficial consequence on net assets of traditional banks. Strengthening the application of fintech can essentially polish the profitability of traditional banks.
Research limitations/implications: The article mainly uses quantitative analysis methods. The data mainly comes from the financial statements of various banks. The amount of data is huge, and data errors may occur.
Practical implications: This paper shows that traditional banks can improve their gains by Internet finance. Therefore, banks can use financial technology to increase operating profits. This article mainly provides a reference for banks to transform Internet finance.
Originality/value: The financial technology model constructed in this paper includes the electronic banking substitute rate, the percentage of technology workers, and the growing rate of automatic machines.
Keywords: fintech, traditional banks, profitability.

Introduction

Internet finance began to develop rapidly since 2012. It mainly focuses on online banking, P2P platforms, crowdfunding, third-party payment and wealth management products (Ping and Chuanwei, 2013). As of 2020, the total number of P2P platforms has reached 1,485. Non-bank payment institutions processed RMB827.297 billion online payment transactions, with an amount of RMB 294.56 trillion in 2020, an increase of 14.9% and 17.88% respectively compare with 2019(Wang, Xiuping and Zhang, 2021). The traditional banking industry is facing greater pressure, and some traditional banking revenues are being weakened. The net profit of the banking industry declined rapidly, and the growth rate dropped from 39% to 2.39% from 2011 to 2015. In 2016, Internet Finance began to be regulated. The after-tax profit growth rate of the banking industry only rose slightly to 6.15% in 2017. Consequently, the net profit rate of traditional banks affected by Internet finance, and customer reliance is declining. Traditional banks are facing severe challenges.

The return of banks mainly depends on intermediate business income such as the difference between deposit and loan income and service fees. In addition, Internet finance has the advantages of advanced technology and analytical information. It can provide a variety of financial products and services, which has seriously affected the number of customers, business scale, operation method of traditional banks (Xu, 2017). Therefore, the emergence of financial technology has reduced the profitability of traditional banks (Wu and Yuan, 2021a). Fintech also helps traditional banks to transform. They can be used for bank loans, payments, fund management, and risk control (Philippon, 2016). It not only helps traditional banks reduce operating costs, but also improves business processing efficiency (Wu and Zhang, 2020). In addition, it also helps to improve customer satisfaction and enhance market competitiveness (Boustani, 2020). Therefore, financial technology not only poses a threat to traditional banks, it also provides advanced technology for traditional banks.

Fintech has reduced the intermediary role of traditional banks and promoted financial disintermediation (Hou, Gao and Wang, 2016). Financial technology promotes the active transformation of traditional banks. It contributes to the intelligent and digital transformation of traditional banks (Xie, Zou and Liu, 2016). Fintech brings opportunities and challenges to traditional banks. At the same time, traditional banks continue to invest in Fintech.

Traditional banks continue to increase their investment in financial technology or information technology from 2018 to 2020. The overall investment of traditional banks in the financial technology field was nearly RMB100 billion in 2018. Large state-owned traditional banks invested in financial technology accounted for 2% of operating income, and some joint-stock banks invested in financial technology accounted for 3% of operating income in 2018. The proportion of traditional banks investing in fintech continues to increase. In 2019, some large state-owned banks' investment in fintech accounted for 3% of operating income. Joint-stock banks have also increased their investment in financial technology. For example, China Merchants Bank's investment in financial technology increased to 3.72% of operating income in 2019. Large state-owned banks and joint-stock banks invested RMB 100.8 billion in financial technology, accounting for more than 2% of operating income in 2019. In 2020, the banking industry invested 207.8 billion yuan in financial technology funds, an increase of 20% compared with 2019.

In addition, traditional banks recognize financial technology as a development strategy. At the same time, they actively cooperate with technology companies to strengthen the research and development of financial technology to innovate financial products (Boustani, 2020). The main purpose of traditional banks to increase investment in financial technology is to increase profitability (Chen et al., 2017). This study uses annual data from China's listed traditional banks to explore the consequences of fintech on the return of traditional banks in China.

The business of traditional financial institutions is difficult to meet market demand. Traditional banks believed that 80% of earnings are created by 20% of customers, so they focus on providing financial services to large enterprises and customers with large amounts of funds, ignoring the financial needs of small and medium-sized enterprises and ordinary customers. In addition, traditional banks have low work efficiency, which cannot meet the diverse financial requirements. Concurrently, it provides opportunities for financial technology companies. With the rapid development of smart phones and the Internet, financial consumers, especially young customers, gradually prefer digital products and services.

The present study intends to answer the following questions: (1) How does the Internet + financials affect traditional banks? (2) Is financial technology creating huge competition for banks, or is it promoting the innovation and development of banks? (3) What are the effects of traditional banks investing in financial technology and how does it modify the earnings of banks?

This article mainly explores how traditional banks use financial technology to improve their profitability. Its main purpose is to discover the impact of traditional banks' investment in financial technology on bank profitability. It is divided into three objectives, the first is to explore the competition between financial technology and traditional banks. The second objective is to discover that financial technology promotes the innovation and development of traditional banks. The third objective is to explore the influence of fintech on the return of traditional banks.

The development of Internet finance has severely affected a lot of traditional financial business. It occupies the customer resources of traditional banks and weakens the resources advantages of banks. Simultaneously, fintech is promoting reform of entire financial industry. New technologies such as mobile interconnection, big data, blockchain, cloud computing, and artificial intelligence will bring new changes and opportunities to banks.

Traditional banks have clarified the necessity and importance of reforms driven by financial technology. Traditional banks utilize fintech to meet the demand, and seize opportunities to improve their profitability. Therefore, Commercial banks need to recognize the importance of fintech on the banks' earnings, and knowing how to use financial technology to improve their own profitability is very important for the successful transformation of traditional banks. This article introduced the related concepts of fintech. Then, the article explored the innovation of fintech and the importance of fintech on the earnings of traditional banks.

Literature Review

Introduction to Fintech

Fintech is the use of technology in the financial market for products, services, technology applications, and business models (Xie, Zou and Liu, 2016). With the rapid update of technology, changes in customer consumption awareness and behaviours, the backwardness of traditional banks has promoted the rapid development of financial technology (Dong et al., 2020). Fintech integrates big data technology, AI, blockchain and cloud computing technology (Gai, Qiu and Sun, 2018). Fintech is driven by data and technology, and it requires a large amount of secure data to develop products (Nicoletti, Nicoletti, and Weis, 2017).

Big data gathers, reserves, escapes and analyses specific data, which can provide analysis results for decision-making (George, Haas and Pentland, 2014). The consideration of big data technology is to increase the value-added by managing data (Sagiroglu and Sinanc, 2013).

Artificial intelligence is a technical method for researching, developing, and simulating human thinking and consciousness (McCarthy, 2007). It is to construct intelligent artificial systems by studying human activities and behaviours, and it also studies the theoretical methods of how to use computers to simulate human intelligent behaviours (Nilsson, 2014). The application of artificial intelligence technology has greatly reduced labour costs, and it is faster and more exact than the brain (Russell and Norvig, 2002).

Blockchain is an open distributed database (Gupta, 2017). It is unmodifiable, transparent, open, and independent, and it does not rely on other institutions (Pilkington, 2016). Moreover, it can reduce information asymmetry and provide consistent information for users (Yaga et al., 2019). It is full applied in economic fields, for instance, foreign exchange and securities trading (Zheng et al., 2018).

Cloud computing mainly provides computing as databases, network software, and intelligent analysis (Dillon, Wu and Chang, 2010). Cloud computing has strong scalability, it can coordinate numerous computer resources, allowing users to obtain unlimited resources through the network (Gong et al., 2010). It can adjust services in time according to business needs and manage data at a lower cost, and it provide data processing and platform services for economic institutions. (Grossman, 2009). It can share network resources, improve work efficiency, and reduce costs (Gong et al., 2010).

Fintech is an Internet business platform model that uses the network to select and match users, which effectively improves efficiency (Nicoletti, Nicoletti, and Weis, 2017). Fintech can enhance and expand financial services. First of all, financial technology contributes to innovative product and reduce the cost, which promotes the development of inclusive finance (Gai, Qiu and Sun, 2018). Second, emerging technologies can accurately analyse customer needs, provide customers with personalized services, and increase customer experience (Philippon, 2016). Third, financial technology includes financial services, financial products, and financial data, which increases transparency (Ping and Chuanwei, 2013). Fourth, advanced technologies such as big data and blockchain can effectively analyse and resolve risks, which ensures the safety and legitimacy of the financial industry (Wang, Xiuping and Zhang, 2021). Fifth, artificial intelligence and data analysis can effectively reduce operating costs and achieve precision marketing (Cheng and Qu, 2020).

The influence of fintech on the benefits of traditional banks

Fintech pays more attention to the construction of financial infrastructure, while Internet finance pays more attention to financing methods and financing channels. Many researchers have studied the effects of Internet finance on the function of traditional banks. It mainly affects the asset-liability business and intermediary function of traditional banks (Dong et al., 2020). Internet finance has affected the traditional business of traditional banks. Fintech can reduce transaction risks, reduce information asymmetry, and threaten the business of traditional banks (Chen, Li and He, 2020). The operating mode of Internet finance can effectively reduce input costs and maximize benefits, which is a challenge to the traditional financial industry (Luo et al., 2018). For example, compared with traditional commercial banking operations, Yu'ebao has diminished operating costs and easy payment systems.

Internet finance can effectively reduce information asymmetry and transaction risks (Chen, Li and He, 2020). Fintech has modified the assets, liabilities, and agent functions of traditional banks. The competition of fintech has a negative importance on traditional banks. Internet finance reduces the non-interest income of banks (Luo et al., 2018). The non-interest income of state-owned banks and joint-stock banks is affected differently by Internet finance. This is mainly because traditional banks are different in customer management, risk management, and technological innovation. In addition, it is optimistic correspondence between Internet finance and commercial bank risks, and a negative correlation with bank liquidity and profitability (Aduda and Kingoo, 2012).

(1)Asset business

China's traditional banks' loan business interest income accounts for 75.5% of operating income from 2015 to 2018, this means that loan business income is the main revenue of traditional banks (Wu and Yuan, 2021a). Traditional banks are traditional financial institutions with a very high reputation. The strict loan approval process has attracted many customers with good credit status, but banks are reluctant to lend funds to some SMEs and single client (Rahim et al., 2021). Fintech loan funds to individual customers through P2P, crowdfunding platforms.

(2)Debt business

The debt business of traditional banks is mainly deposit business, which includes current deposits and fixed time deposits. Third-party payment, P2P and Internet wealth management in Internet finance have the greatest impact on the deposit business (Tanda and Schena, 2019). Due to the low bank deposit interest rate, Internet finance's current deposit interest rate is higher than the bank's time deposit interest rate (Luo et al., 2018). Therefore, the original customers of traditional banks chose to turn their deposits into Internet investments.

Challenges of fintech on the traditional service model for conventional banks

The fintech has affected the traditional service model for banks. Fintech companies distribute more suitable and extreme services to customers than conventional banks (Anagnostopoulos, 2018). Fintech continues to innovate new financial service methods and use technology to complete their transformation (Adewoye, 2013). With the rapid development of technology, the relationship between financial consumers and banks has changed.

Fintech companies have entered the financial sector with convenient and efficient service methods (Chen et al., 2017). They have occupied the market share of traditional banks. At the same time, banks should accelerate digital transformation and provide customers with personalized services (Wu and Yuan, 2021b).

Fintech promotes innovation and development of traditional traditional banks

The digitization of traditional financial institutions can increase revenue (Xu, 2017). Digital banks should provide services based on customer needs, which will help attract customers and increase retention rates (Auer and Böhme, 2020). In addition, compared with traditional finance, the customer churn rate of Internet traditional banks has increased (Japparova and Rupeika-Apoga, 2017). At the same time, reducing the customer churn rate requires the use of new technologies to provide more innovative products and improve service efficiency to enhance customer dependence (Auer and Böhme, 2020).

Financial technology brings challenges to traditional banks, and it also brings opportunities for the development of traditional banks. First, financial technology can effectively reduce commercial bank costs and improve risk control capabilities (Chen et al., 2017). Fintech provides technical support for traditional traditional banks, which can cut down the unbalanced news and shorten threat for traditional banks (Boustani, 2020). The development of network information technology has helped banks reduce the cost of obtaining information, effectively solving the long tail effect of traditional traditional banks (Rahim et al., 2021).

Fintech can reduce costs, so traditional banks have to cooperate with Fintech companies to provide customers with differentiated services (Anagnostopoulos, 2018). Traditional banks use big data to provide services for small and medium-sized enterprises and realize low-cost and high-yield for banks (Wu and Yuan, 2021a). In addition, financial innovation can effectively reduce bank risks.

Methods

The relevant aspects that modify the banks' earnings mainly include Internet finance, money supply, income comparison, deposit-to-loan ratio, and non-performing loan ratio. This article analysed the data of 10 traditional banks in China from 2012 to 2019. The data came from the bank's annual report. This article selects the commercial bank's return on equity (ROE) as the variable, and capital adequacy ratio (CAR), non-performing loan ratio (NPL）, cost-to-income ratio (CIR), non-interest income ratio (NIRR), GDP growth rate (GDP), and loan-to-deposit ratio (LDR) of commercial bank as control variables. At the same time, the asset, non-performing loan ratio, cost-to-income ratio, and non-interest-to-interest income ratio of traditional banks are internal factors that affect bank profitability. GDP growth and M2 growth are exterior elements.

E-banking replacement rate, self-service machine growth rate, and technology employee growing ratio are used as variables, respectively. E-banking is the different ways that traditional banks provide economical services by Internet. The e-banking replacement ratio is the figure of customers using e-banking proceeding to the figure of counter business actions. The higher the replacement frequency of online banking, the greater the figure of e-banking businesses.

The proportion of science and technology employees is the digit of information technology personnel to the whole number of employees. Traditional banks need scientific and

technological talents. The ratio of technology employees can reflect the level of financial technology development of banks.
Self-service machines refer to ATMs of traditional banks, the demand of automatic has fallen. The increase in the figure of self-service kiosks reflects the use of fintech by traditional banks. They make up the fintech index. This article studies the influence of these variables on the earnings of traditional banks.

Empirical Model

The article studied the innovation of fintech and the connection between fintech and the profitability of traditional banks. It selects ten statistical data from traditional banks from 2012 to 2019, and uses STATA software. The model is

$ROEij=\alpha+\beta1FinTechij+\beta2CARij+\beta3NPLij+\beta4CIRij+\beta5NIRRij+\beta6GDPij+\beta7M2ij+\varepsilon ij$

Where ROE is return on equity, CAR is capital adequacy ratio, NPL is non-performing loan ratio, CIR is cost-to-income ratio, NIRR is non-interest income ratio, GDP is GDP growth rate, and LDR is loan-to-deposit ratio. i=1,2,3……9,10; j=2012,2013……2019 and ε is the error term.

Findings

Table 1 Descriptive statistics of variables

Variable	Observations	Mean	Std.Dev.	Min	Max
ROE	80	0.1766195	0.0379220	0.1119	0.2667
FinTech	80	0.3863375	0.1177745	0.1985	1.4267
CAR	80	0.1245392	0.0143395	0.1028	0.1738
NIRR	80	0.2436136	0.0839912	0.0750	0.5213
GDP	80	0.0779236	0.0133203	0.0670	0.1072
M2	80	0.1264454	0.0327680	0.0920	0.1980
NPL	80	0.0118853	0.0045923	0.0030	0.0246
CIR	80	0.3027760	0.0420119	0.2163	0.4192

The chart indicated the graphic statistics of 10 traditional banks from 2012 to 2019. The standard deviation of Fintech was 0.1177745, and the highest figure was 1.4267, the smallest figure was 0.1985, which showed that the replacement ratio of e-banking had changed significantly. The average CAR was 0.1245392, the lowest figure is 0.1028. Therefore, traditional banks keep a comparatively elevated capital adequacy ratio, which weaken capital risks and increase capital costs.

Table 2 Correlation analysis

	FinTech	CAR	NPL	CIR	NIRR	GDP	M2
FinTech	1						
CAR	0.0846	1					
NPL	0.1210	0.2231	1				
CIR	-0.2029	-0.2591	-0.3234	1			
NIRR	0.18210	0.2562	0.67720	-0.2673	1		
GDP	-0.2573	-0.2552	-0.6425	0.5452	-0.6231	1	
M2	-0.2732	-0.2976	-0.5642	0.4451	-0.6234	0.8451	1

The table indicated that the rectification between GDP and NPL, CIR, M2, and non-interest income ratio (NIRR) were all greater than 0.5. As a result, it is necessary to exclude the GDP variable and perform regression analysis on the remaining variables.

Table 3 Stationarity Test

Variable	Statistics t	P	Results
ROE	-0.73652	0.001	Stable
FinTech	-0.73165	0.001	Stable
CAR	-0.82351	0.002	Stable
NPL	-0.51773	0.001	Stable
CIR	-0.66872	0.001	Stable
NIRR	-0.87831	0.002	Stable

In this paper, LLC test was used to obtain the statistics and p-value of each variable, which can check the motionless of the figures. The P value of each variable is less than 0.05, and there was no unit root in the time data, which is stable.

Regression Analysis

First of all, this paper uses the F test, and the F value is equal to 12.30, and P>F=0.000. Thus, the fixed effect model is greater than the mixed effect model. In addition, the LM test was performed on the data, and Chibar2 (01) was equivalent to 114.32. The synonymous P value was 0.0000, which displayed that the incidental impression model was better than the diverse impression model. Finally, Hausmann test is used on the data, and the P value is 0.1189, indicating that the incidental impression model is better than the diverse impression model. Therefore, this paper selects an incidental impression model to perform regression analysis on the data.

Table 4 Incidental impression model regression analysis

Variable	Coef.	Std.Err.	z
FinTech	0.0231452	0.0068972	3.38
CAR	-0.7959612	0.3221762	-2.47
NPL	-5.1368730	1.0632110	-4.87
CIR	-0.1886342	0.0824250	-2.31
NIRR	-0.0187772	0.0255169	-0.79
M2	0.2901713	0.1172925	2.53
_cons	0.3271311	0.0751833	4.38
R-squared	0.8198		
Wald chi2(7)	431.7		
Prob> chi2(7)	0.0000		

The data results are significant at 10%, 5%, and 1% respectively. It can be seen from the incidental impression model that R-squared is equal to 0.8198, Wald chi2(7) is equal to 431.7, and the P value is 0, which means that the random effect model is reasonable.

$ROEij$=0.0231452$FinTech_{ij}$-0.7959612CAR_{ij}-5.136873NPL_{ij}-0.1886342CIR_{ij}-0.0187772$NIRR_{ij}$+ 0.2901713$M2_{ij}$+0.3271311

The financial technology index is significant at the level of 1%. Therefore, the proportion of the financial technology index increases by 10%, and the return on net assets (ROE) increases by 0. 23%, indicating that the greater the fintech index, the acuter the bank's earnings. There was optimistic equivalence between the fintech index and the bank's return. In addition, the M2 growth rate has a considerably effective consequences on ROE. The greater the M2 growth rate, the excessively the bank's return on net assets. Capital adequacy ratio (car), non-performing loan ratio (npl), cost-to-income ratio (cir) have pessimistic consequences on ROE. The greater their ratio, the lesser the commercial bank's earnings.

Table 5 Robustness test

Variable	Coef.	Std.Err.	z
FinTech	0.0010367	0.0003193	3.25
NPL	-0.248954	0.0414823	-6.02
CIR	-0.0093544	0.0027293	-3.54
NIRR	-0.0008024	0.0018724	-0.48
M2	0.0113821	0.0039213	2.93
_cons	0.0156025	0.0013672	11.52
R-squared	0.6657		
Wald chi2(7)	817.83		
Prob> chi2(7)	0.0000		

This article used return on assets (ROA) as the explained variable to confirm the robustness and consequence of the regression model. The value of R-squared is 0.6657. The model fits well. The connection coefficient of the Fintech is forward-looking, the outcome is noteworthy The Fintech and the return on assets (ROA) have a significant positive correlation, which is the same as the outcome of the primitive model. In addition, the regression outcome of non-performing loan ratio (NPL) and cost-to-income ratio (CIR) are impressive, and they are pessimistic on the return on net assets (ROA). The coefficient of M2 is worthwhile and the result is considerable. They are the same as the regression result of the original model. It can be seen that the regression model set up is credible.

Discussion and Conclusion

The replacement rate of e-banking reflects the achievements of traditional banks using financial technology. On the one hand, e-banking improves the efficiency of customer service, enabling customers to use the Internet to conduct business without leaving their homes. On the other hand, it also reduces the demand for service personnel, which reduces bank costs and improves customer satisfaction.

The ratio of the number of technology employees reflects the bank's use of financial technology. The extreme proportion of the quantity of high-tech employees indicates that the bank has enhanced its investment in the field of fintech. The fintech has replacement impression on automatic and service employees, which can essentially cut down bank operating costs and boost gains. This paper found that fintech had considerable beneficial consequences on the ROE. Therefore, traditional banks should strength investment in the fintech field, instruct more professionals, and embellish financial technology management.

The expansion scale of M2 has worthwhile consequences on earning, which shows that the excessive the M2 expansion scale, the powerful the earning of traditional banks. As the expansion scale of M2 increases, the amount of capital in the market increases, and the scale of commercial bank assets expands, which improves revenue.

The CAR has a negative correlation with the return on net assets. Therefore, a greater CAR will cut down the gains of traditional banks. It has an inhibitory feeling on the expansion of traditional banks' credit business and modify the bank's earnings. Thus, traditional banks should comprehensively consider risks and returns, constantly optimize their capital structure, and retain pertinent CAR.

The NPL is pessimistic associated with the gains, which shows that the growth in the non-performing loan ratio will weaken the revenue of traditional banks. The excessive the non-performing loan ratio of commercial banks, the bank losses and profits will drop. In addition, the volume of non-performing loans enlarged, and the volume of reserves heighten, which affected traditional banks to create profits. Consequently, traditional banks should ameliorate

their threat control capacity, inaugurate a reasonable credit threat control system, and encourage the operation of non-performing assets.

The CIR has a pessimistic interrelationship with the earnings, it shows that the growth in the cost-to-income ratio of traditional banks will shorten the bank's gains. The excessive the cost-to-income ratio, the greater the bank's cost per unit of revenue, and the lower the profitability of traditional banks. Therefore, traditional banks must reduce expenditures, increase revenue, and reduce cost-to-income ratios.

Financial technology has impacted the asset business, liability business and intermediary business of traditional banks. It has revised the sources and methods of traditional banks' profits. At the same time, the use of financial technology by traditional banks can alleviate the asymmetry of information, which helps the bank's precise marketing. Fintech helps reduce the bank's operating costs and improve the bank's work efficiency. It strengthens the bank's risk control and promotes the intelligent and digital transformation of traditional banks. Therefore, the use of financial technology by traditional banks can improve competitiveness and profitability.

Recommendations

Combination of traditional banks and big data

With the rapid development of financial technology, information technology can concentrate huge amounts of customer information. Banks have a large number of customers, long operating hours, and rich business types, which have stored a large amount of data. At the same time, traditional banks have sufficient funds and strong brand influence. Therefore, traditional banks should integrate data, platforms, products and services to improve their operational management processes. In addition, traditional banks should integrate information resources and analyse data to make strategic decisions and risk control.

Big data technology can be used to develop products and differentiated marketing. Traditional banks can use digital methods to provide personalized products, and sales employees use digital analysis tools to increase sales. In addition, traditional banks utilize big data to build a credit business system, effectively identify customer information, and automatically estimate key credit indicators for loans.

Combination of traditional banks and blockchain technology

Blockchain can record and store every transaction in the global network. Blockchain is mainly used to transfer currency information and financial information. It can realize payment in different countries, and the funds can be received quickly. Blockchain promotes the application of electronic money, which will help track and record currency transactions and improve the efficiency of capital operations.

Combination of traditional banks and artificial intelligence

Traditional banks use artificial intelligence in language recognition, natural language processing, image recognition, and IT vision technology. Smart customer service helps banks save service costs and quickly solve customer problems. Biometric technology helps customers and employees perform identity authentication, and smart investment advisors can customize different financial management methods for different customers. Traditional banks build intelligent services. Smart machines improve the efficiency of business handling for customers, and smart robots can realize business consultation, business handling, and product sales.

Combination of traditional banks and cloud computing

Cloud computing can integrate and share resources. Banks use cloud computing to implement centralized operations and build new organizational models. The bank headquarters can centrally manage the diversified business of branches, online platforms, subsidiaries and overseas to improve processing efficiency. In addition, traditional banks use cloud computing to build product marketing platforms, and customers can find different financial products in

different channels such as online banking. In addition, banks can use supply chain information to provide customers with financing services, payment settlement, cash management, and tax management.

Conclusion

This chapter uses the incidental impression model to analyse the innovation of fintech and the connection between fintech and the earnings of traditional banks. The research found that the fintech index has a greatly beneficial consequence on ROE. Strengthening the application of fintech can essentially polish the earnings of traditional banks. The financial technology index was constructed by electronic banking replacement rate, the distribution of technology employees, and the rate of automatic machines.

Theoretical Implications

This paper shows that traditional banks can strength their gains by fintech. Therefore, banks can use financial technology to increase operating profits. This article mainly provides a reference for banks to transform Internet finance.

Practical and Social Implications

The combination of finance and advanced computer technology increases the operating profit of the financial industry. It also helps the traditional financial industry to innovate business and improve operating efficiency. This can provide a reference for other industries to combine with computers.

Limitations and Suggestions for Future Research

This article mainly uses quantitative analysis methods. The data mainly comes from the financial statements of various banks. The amount of data is huge, and data errors may occur. The impact of financial technology on traditional banks should focus on banking strategies in the future.

References

Adewoye, J. (2013) 'Impact of mobile banking on service delivery in the Nigerian traditional banks', International Review of Management and Business Research, 2(2), p. 333.

Aduda, J. and Kingoo, N. (2012) 'The relationship between electronic banking and financial performance among traditional banks in Kenya', Journal of finance and investment analysis, 1(3), pp. 99–118.

Anagnostopoulos, I. (2018) 'Fintech and regtech: Impact on regulators and banks', Journal of Economics and Business, 100, pp. 7–25.

Auer, R. and Böhme, R. (2020) 'The technology of retail central bank digital currency', BIS Quarterly Review, March.

Boustani, N. M. (2020) 'Traditional Banks and Fintech: Survival, Future and Threats', in ICT for an Inclusive World. Springer, pp. 345–359.

Chen, Z. et al. (2017) 'The transition from traditional banking to mobile internet finance: an organizational innovation perspective-a comparative study of Citibank and ICBC', Financial Innovation, 3(1), pp. 1–16.

Chen, Z., Li, K. and He, L.-Y. (2020) 'Has internet finance decreased the profitability of traditional banks: evidence from China', Emerging Markets Finance and Trade, 56(13), pp. 3015–3032.

Cheng, M. and Qu, Y. (2020) 'Does bank FinTech reduce credit risk? Evidence from China', Pacific-Basin Finance Journal, 63, p. 101398.

Dillon, T., Wu, C. and Chang, E. (2010) 'Cloud computing: issues and challenges', in. 2010 24th IEEE international conference on advanced information networking and applications, Ieee, pp. 27–33.

Dong, J. et al. (2020) 'Impact of internet finance on the performance of traditional banks in China', International Review of Financial Analysis, 72, p. 101579.
Gai, K., Qiu, M. and Sun, X. (2018) 'A survey on FinTech', Journal of Network and Computer Applications, 103, pp. 262–273.
George, G., Haas, M. R. and Pentland, A. (2014) 'Big data and management'.
Gong, C. et al. (2010) 'The characteristics of cloud computing', in. 2010 39th International Conference on Parallel Processing Workshops, IEEE, pp. 275–279.
Grossman, R. L. (2009) 'The case for cloud computing', IT professional, 11(2), pp. 23–27.
Gupta, S. S. (2017) 'Blockchain', IBM Onlone (http://www. IBM. COM).
Hou, X., Gao, Z. and Wang, Q. (2016) 'Internet finance development and banking market discipline: Evidence from China', Journal of Financial Stability, 22, pp. 88–100.
Japparova, I. and Rupeika-Apoga, R. (2017) 'Banking business models of the digital future: The case of Latvia'.
Luo, C. et al. (2018) 'How Does Internet Finance Influence the Interest Rate? Evidence from Chinese Financial Markets', Dutch Journal of Finance and Management, 2(1), p. 01.
McCarthy, J. (2007) 'What is artificial intelligence?'
Nicoletti, B., Nicoletti, W., and Weis (2017) Future of FinTech. Springer.
Nilsson, N. J. (2014) Principles of artificial intelligence. Morgan Kaufmann.
Philippon, T. (2016) The fintech opportunity. National Bureau of Economic Research.
Pilkington, M. (2016) 'Blockchain technology: principles and applications', in Research handbook on digital transformations. Edward Elgar Publishing.
Ping, X. and Chuanwei, Z. (2013) 'The theory of internet finance'.
Rahim, N. F. A. et al. (2021) 'Fintech and Traditional banks Development in Malaysia: Continuous Intention to Use Fintech Services in IR 4.0 Environment', in Modeling Economic Growth in Contemporary Malaysia. Emerald Publishing Limited.
Russell, S. and Norvig, P. (2002) 'Artificial intelligence: a modern approach'.
Sagiroglu, S. and Sinanc, D. (2013) 'Big data: A review', in. 2013 international conference on collaboration technologies and systems (CTS), IEEE, pp. 42–47.
Tanda, A. and Schena, C.-M. (2019) FinTech, BigTech and Banks: Digitalisation and Its Impact on Banking Business Models. Springer.
Wang, Y., Xiuping, S. and Zhang, Q. (2021) 'Can fintech improve the efficiency of traditional banks—An analysis based on big data', Research in International Business and Finance, 55, p. 101338.
Wu, G. and Yuan, H. (2021a) 'The impact of fintech on the profitability of state-owned traditional banks in China', in. Journal of Physics: Conference Series, IOP Publishing, p. 012007.
Wu, G. and Yuan, H. (2021b) 'The impact of fintech on the profitability of state-owned traditional banks in China', in. Journal of Physics: Conference Series, IOP Publishing, p. 012007.
Wu, Q. and Zhang, B. (2020) 'The Influence of Internet Finance on the Traditional Business of Traditional banks', in. Proceedings of the 2020 International Conference on Cyberspace Innovation of Advanced Technologies, pp. 570–575.
Xie, P., Zou, C. and Liu, H. (2016) 'The fundamentals of internet finance and its policy implications in China', China Economic Journal, 9(3), pp. 240–252.
Xu, J. (2017) 'China's internet finance: A critical review', China & World Economy, 25(4), pp. 78–92.
Yaga, D. et al. (2019) 'Blockchain technology overview', arXiv preprint arXiv:1906.11078.
Zheng, Z. et al. (2018) 'Blockchain challenges and opportunities: A survey', International Journal of Web and Grid Services, 14(4), pp. 352–375.