Malaysian Journal of Social Sciences and Humanities (MJSSH) (e-ISSN : 2504-8562)
2024, Volume 9, Issue 5, e002807
DOI: https://doi.org/10.47405/mjssh.v9i5.2807

RESEARCH ARTICLE

The Impact of Third-Party Payment on The Profitability of Commercial Banks: Evidence from China

Liu Zhou Quan[1*], Nelson Lajuni[2], Rozilee Bin Asid[3]

[1]Faculty of Business, Economics And Accountancy, Universiti Malaysia Sabah, Jalan UMS 88400 Kota Kinabalu, Sabah, Malaysia.
Email: 943223354@qq.com
[2]Faculty of Business, Economics And Accountancy, Universiti Malaysia Sabah, Jalan UMS 88400 Kota Kinabalu, Sabah, Malaysia.
Email: nelsonl@ums.edu.my
[3]Faculty of Business, Economics And Accountancy, Universiti Malaysia Sabah, Jalan UMS 88400 Kota Kinabalu, Sabah, Malaysia.
Email: rozilee@ums.edu.my

CORRESPONDING AUTHOR (*):
Liu Zhou Quan
(943223354@qq.com)

KEYWORDS:
Third-party payment
Commercial banks
Profitability

CITATION:
Liu, Z. Q., Nelson Lajuni, & Rozilee Asid. (2024). The Impact of Third-Party Payment on The Profitability of Commercial Banks: Evidence from China. *Malaysian Journal of Social Sciences and Humanities (MJSSH), 9*(5), e002807. https://doi.org/10.47405/mjssh.v9i5.2807

ABSTRACT

The research aimed to investigate third-party payment's impact on commercial banks' profitability: evidence from China. Drawing upon prior literature review and empirical evidence, this study gathered annual data. In recent years, propelled by the widespread adoption of Internet and information technologies, China's third-party payment sector has undergone significant expansion. The burgeoning array of third-party payment services has begun to exert a discernible influence on commercial banks. This paper synthesizes pertinent theoretical frameworks and research findings concerning the interplay between third-party payment systems and commercial banks' profitability. Drawing on annual data spanning 2013 to 2021 from a sample of 38 commercial banks, we investigate the ramifications of third-party payment on the profitability of these banks. Employing panel data analysis techniques, the empirical findings reveal a negative correlation between third-party payment and commercial banks' profitability, indicating a downturn in profitability associated with the proliferation of third-party payment services. The data from local banks in China, comprising a sample of 38 commercial banks. The dataset spans 2013 to 2021 and was analyzed using a panel data model. The results revealed an overall negative impact of third-party payment on the return on assets of commercial banks.

Contribution/Originality: This study examines the impact of third-party payments on the profitability of commercial banks, which helps existing literature to study the relationship and impact between third-party payments and commercial banks from a macro perspective. This study found that third-party payments have a negative impact on the profitability of commercial banks.

1. Introduction

Third-party payment is an online payment mode in which an independent institution with a specific strength and reputation guarantee facilitates transactions between parties through docking with UnionPay or Internet UnionPay (Gong, 2017). As per Yao et al. (2018), the gross merchandise volume of the Third-Party Payment (TPP) market was RMB2.3 trillion (US$0.35 trillion) in 2011 and surged to RMB24.1 trillion (US$3.65 trillion) in 2015. The swift growth of information technology and the internet has transformed the payment habits of Chinese consumers. In today's rapidly developing high-tech environment, third-party payment methods have improved transaction efficiency and expanded the scale of social fund transactions. However, at the same time, they have also caused significant disruption to the traditional financial industry represented by commercial banks. From the financial system perspective, commercial banks are the primary transmitters of central monetary policy. From the economic system perspective, they are vital hubs for the operation of modern society. Therefore, choosing the impact of third-party payments on the profitability of commercial banks as the research objective and combining theoretical analysis with empirical analysis, studying the impact of third-party payments on their profitability, is of great significance.

1.1. Problem Statements

The rapid expansion of third-party payment (TPP) scales has affected commercial bank profitability. Over the past 15 years, TPP has rapidly evolved and expanded in China, gradually supplanting cash and bank card transactions (Xu, 2022). As economic development progresses and Internet technology advances, TPP is reshaping consumer behavior patterns, infiltrating traditional commercial banking sectors such as settlement, consumer credit, investment, and wealth management, thereby influencing commercial bank profitability (Yao et al., 2018).

Regarding deposits, industry research data in the banking sector reveals that the residential deposit balance of commercial banks surged to 111.7 trillion yuan in the third quarter of 2013, marking a prolonged period of growth. However, in the subsequent quarter of 2014, the deposit balance witnessed its initial decline. A detailed analysis unveiled a 2% decrease in the deposit balance of several central state-owned commercial banks and numerous joint-stock commercial banks compared to the preceding quarter. Furthermore, the year-on-year growth rate dwindled to 7.38% (Li & Dong, 2018). This decline in the deposit balance during the third quarter of 2014 marked the first instance since the establishment of third-party payment institutions. Notably, the introduction of various wealth management products by third-party payments in 2013 swiftly captured the market, directly impacting the reduction of banks' current deposits. The advent of Internet financial products further intensified this trend, with China's monetary fund surging from 304.2 billion yuan to 480.2 billion yuan in the third quarter of 2013. "Yu'e Bao" alone contributed nearly 56 billion yuan to this increase. By the end of the third quarter of 2014, its total scale soared to 1,770 billion yuan, marking a year-on-year surge of 2.7 times. These developments underscore the substantial decline in commercial banks' deposit balances in 2014 (Zheng, 2016).

In the credit card domain, third-party payments (TPP) have eclipsed the commercial bank credit card market. China's credit card landscape remains underdeveloped, contributing to the swift rise of TPP in the country, primarily due to its belated entry advantage. China's

limited credit card culture contrasts starkly with the United States. In 2020, the United States issued a staggering 1.256 billion credit cards, averaging 3.9 per person. In contrast, China issued 766 million credit cards, averaging merely 0.56 per person. China's credit card infrastructure lacks maturity, with consumers yet to embrace credit cards for transactions (Shang et al., 2023). Consequently, third-party payments (TPP) emerge as a readily accepted method of consumption.

This study underscores the necessity of understanding the current economic dynamics within the Chinese banking sector and promoting collaboration between financial technology and traditional banks. Such synergy aims to bolster the profitability of conventional banks, align them with contemporary trends, and enhance service accessibility for consumers.

Upon analyzing the impact of third-party payments on commercial bank profitability, this article asserts that bank profitability involves their ability to generate returns for investors through business income and other avenues. This aspect is crucial for the sustained functioning of commercial banks. While various indicators assess bank profitability, Return on Assets (ROA) and Return on Equity (ROE) are particularly noteworthy. ROA reflects banks' asset utilization efficiency and the profit earned per unit of assets, while ROE indicates their effectiveness in leveraging capital to secure net income (Nataraja et al., 2018). The difference between the two is that ROA is the ability of a bank to generate profits using all its assets, while ROE measures the return on shareholders. Based on the profit objectives and methods of banks, this article selects ROA as the research object, which measures the utilization rate of bank assets. The higher the ROA, the higher the utilization rate of bank assets and the higher the profitability. All, the dependent variable of this article is the average return on assets (ROA).

1.2. Objectives

How our commercial banks can better address the difficulties and opportunities presented by the third-party payment industry is a topic deserving of careful analysis and ongoing study in Internet finance and the rapid development of third-party payment firms. These are the objectives of this study:

i. To investigate the impact of third-party payment on the profitability of China's commercial banks.
ii. To Study whether this impact is positive or negative.

1.3. Research Hypotheses

Hypotheses 1: Third-party payments will have a negative impact on the profitability of commercial banks.

1.4. Significant

This study aims to comprehensively understand the relationship between the network economy represented by third-party payments and the real economy represented by commercial banks. It combines qualitative and quantitative analyses to systematically analyze third-party payments' impact on commercial banks' profitability. The findings can provide targeted recommendations for policymakers in commercial banks to accelerate their transformation and remind policymakers in third-party payments to

regulate their development, establish a sound financial system, and standardize financial market order. Its significance lies in providing a theoretical basis for theoretical advice and policy formulation. Currently, financial technology represented by third-party payments is regarded as the strategic direction of the financial industry, demonstrating its effectiveness in meeting the needs of financial consumers and promoting economic progress in practical applications. Therefore, investigating the operational principles of financial technology in supporting the real economy is of great significance for policymakers, providing theoretical guidance. It helps policymakers understand the development of third-party payments and helps traditional commercial banks better identify their problems in financial business development, improve internal management and market development levels, and enhance bank profitability. Additionally, it provides practical information for many institutions engaged in offline traditional financial businesses to better cope with the impact of third-party payment businesses and adopt proactive strategies for management optimization and business development.

2. Literature Review

After more than a decade of development, third-party payment service providers have become increasingly mature. However, research scholars have conducted studies on this issue, considering whether this will impact the development of commercial banks. Below are some research results from scholars in this regard.

Some scholars believe that the third-party payment industry has positively promoted the profitability of commercial banks. Tobing and Wijaya (2020) believe that third-party payment systems have immense potential for development and powerful demonstration effects. Third-party payment systems can not only drive the development of intermediary businesses within commercial banks but also enhance the efficiency of financial system settlement. Bons et al. (2012) believes that the progress of science and technology can provide technical support for commercial banks to establish lightweight banks and develop intermediary businesses.

Some researchers also believe that third-party payments will reduce the business revenue of commercial banks and weaken their profitability. Lee (2015) points out that internet finance is currently experiencing rapid development. Internet financial products, with interest rates higher than those offered by commercial banks, are attracting more customers. This poses a serious challenge to commercial banks, as they are no longer the leaders in the financial sector. However, the existing issue is that China has not fully established relevant regulatory mechanisms in this regard. Nowadays, China is gradually implementing policies related to third-party payment systems.

Xia and Nada (2018) employed random panel data techniques to analyze the relationship between third-party payments and intermediary business income in commercial banks. They found that higher levels of third-party payments result in increased intermediary business income, while mobile payments inhibit the development of intermediary businesses. Zeng (2020) investigated the impact of third-party payments on the profitability levels of listed banks in China. Using panel data analysis, the study examined data from 31 listed banks in China from 2011 to 2018, exploring the influence of third-party payment on the profitability of listed commercial banks in China. The research indicated that the scale of third-party payment influences both the net asset return rate and the net interest margin of commercial banks.

Some scholars have classified commercial banks for analytical purposes. Tang (2021) The study explored to what extent the development of Internet finance affected the profitability of Chinese commercial banks. He focuses on three independent variables: the third party payment transaction scale (TIT), the Internet fund transaction scale (IFT) and the online consumer finance transaction scale (ICF). These are representative indicators of profitability (PRO) for the dependent variable return on assets (ROA). Through a series of statistical tests on the data of five large state-owned commercial banks and five joint-stock commercial banks in China from 2012 to 2018, it is revealed that for large state-owned commercial banks, the scale of third-party payment transactions is positively correlated with profitability, while the scale of Internet fund transactions and online consumer finance transactions are negatively correlated with profitability. However, joint-stock commercial banks show no sign of any significance to the scale of third-party payment transactions and Internet fund transactions. Only the scale of prior consumer finance transactions has a significant negative impact on the profitability of banks.

2.1. Impact on debt business

Deposit and loan operations have always held a significant position among the various services banks offer, serving as the primary source of bank fund operations. However, in recent years, with the growth of the third-party payment industry, the sources of bank deposits have been significantly affected. Taking Alibaba's Alipay as an example, people have increasingly become accustomed to using Alipay for daily expenditures and are willing to place idle funds into Yu'ebao. According to the annual report released by Tianhong Monetary Fund in 2017, by the end of 2017, the total scale of Yu'ebao had reached a staggering 15.8 trillion yuan (Zhang, 2019). This figure was less than 8.1 trillion yuan at the end of 2016, indicating nearly a twofold increase in scale from 2016 to 2017. By the end of 2017, statistical data revealed that the users of Yu'ebao had reached approximately 474 million, predominantly comprising individual investors whose investments accounted for 99.94% of the total investment, with an average investment amount of approximately 3,329.57 yuan per person. Throughout 2017, users consistently deposited funds into Alipay, yielding substantial profits for Yu'ebao, amounting to nearly 52.4 billion yuan. This equates to an approximate daily profit of 1.44 billion yuan, with the profit rate remaining at around 3.92% (Zhang, 2019).

2.2. Impact on Asset Business

Third-party payments have diverted individual small loan and credit card users away from commercial banks. With the development of Internet finance and the gradual maturation of third-party payment systems, third-party payment platforms are also vigorously expanding into asset management, significantly impacting commercial banks (Zhao et al., 2021). These platforms are gradually leveraging online lending platforms to enter the lending sector. Thanks to their substantial customer base, precise marketing facilitated by data analysis, and the advantage of quick and flexible lending, they have swiftly penetrated the market, attracting many customers with small and medium-sized capital needs.

As interest rate marketization has progressed and financial market competition has intensified, commercial banks have gradually entered the small and micro-enterprise loan market in recent years. Faced with intense competition, Chinese commercial banks have universally introduced various credit products tailored to small and micro enterprises, vying for their business. However, commercial banks enforce strict risk control measures,

have high customer qualification requirements, and involve complex loan approval procedures, making attracting small and micro enterprises challenging. Third-party platforms seize market opportunities by offering various products with flexible terms and low-interest rates to entice customers. Leveraging their large customer base and technological advantages, third-party payment platforms better cater to the financing needs of small and micro enterprises, swiftly capturing a significant portion of the market share in this segment.

Before the rise of third-party payments, non-cash transactions mainly relied on bank cards. With the support of government policies, third-party payment systems have been authorized to engage in lending activities, contributing to the recent surge in online lending popularity (Cao, 2015). By the end of 2018, data disclosed by Online Loan Home indicated that the cumulative transaction volume of P2P online lending platforms had exceeded 8 trillion yuan (Huang, 2018). Third-party payment platforms primarily offer small credit products, utilizing data and traffic analysis to assess customer credit needs quickly and efficiently. These products are known for their fast approval process, flexible repayment terms, and lenient eligibility requirements, making them highly attractive to consumers. The impact of third-party payment platforms on commercial banks' lending business has steadily grown, leading to a significant erosion of market share for commercial banks in lending, a trend that continues to expand.

2.3. Impact on Intermediary Business

The intermediary business of commercial banks mainly refers to those operations that do not constitute on-balance sheet assets and liabilities but contribute to the non-interest income of commercial banks. Therefore, an intermediary business is also known as an off-balance sheet business. Commercial banks' intermediary business encompasses settlement services, bank card operations, letter of credit transactions, agency services, and more. While the proportion of intermediary business income in China's commercial banks is increasing, there remains a significant disparity compared to developed countries (Allen et al., 2017). The interest rate marketization has narrowed the interest margin of commercial banks, leading to a decline in traditional interest income. Consequently, commercial banks vigorously expand their intermediary business and augment the share of non-interest income. Third-party payment platforms have exerted a partial substitution effect on intermediary businesses. Following the principle of substitution, consumers are inclined to choose third-party payment platforms offering competitive pricing and superior services. The development of third-party payment has impacted the intermediary business of commercial banks, particularly in payment settlement and agency services.

Although the proportion of intermediary business revenue in commercial banks has been increasing steadily, the growth rate has been sluggish due to intense competition from third-party payment platforms and within the banking sector. The products and services offered by third-party payment platforms are flexible and come in diverse forms, attracting a substantial customer base and infringing upon the market share traditionally held by commercial banks. Commercial banks are compelled to reduce fees and enhance services to remain competitive and retain customers, resulting in a reduction in intermediary business income, an escalation in service costs, and, consequently, a further dent in profitability.

3. Research Method

This study examines third-party payments' impact on commercial banks' profitability. Therefore, commercial banks' return on assets (ROA) is selected as the dependent variable. The explanatory variable chosen in this study is the Transaction Scale of Third-Party Payments (TPP) in China. According to national statistics, the third-party payment variable's statistical data is based on the third-party payments' transaction scale, which has exhibited explosive growth since 2011. Therefore, annual data from 2013 onwards is selected to describe the changes in the transaction scale of third-party payments. Factors influencing the profitability of commercial banks are multifaceted, including the impact of the transaction scale of third-party payments, the bank's operational status, and external macroeconomic conditions. This study selects some influencing factors from both internal and external perspectives. Internal factors mainly include the Capital Adequacy Ratio (CAR) and the Non-Performing Loan Ratio (NPL), reflecting the bank's debt repayment capacity. Additionally, financial indicators such as Bank Asset Operating Scale (SIZE), Cost-to-Income Ratio (CIR), Non-Interest Revenue Ratio (NIR) are included. External macroeconomic factors are measured using Gross Domestic Product (GDP) and Broad Money Growth Rate (M2). Table 1 shows the names and symbol of all variables in this study.

Table 1: Variables design

Variable type	Variable name	Symbol
Dependent Variable	Return on Assets	ROA
Independent Variable	Third-party Payment	TPP
Control Variables	Bank Asset Operating Scale	SIZE
	Non-Interest Revenue Ratio	NIR
	Capital Adequacy Ratio	CAR
	Non-Performing Loan Ratio	NPL
	Cost-to-Income Ratio	CIR
	Broad Money Growth Rate (M2)	M2
	Gross Domestic Product	GDP

3.1. Data Description and Sources

The time of third-party payment in China rose in 2013. Therefore, this study selects the annual data for 9 years from 2013 to 2021 and selects 38 commercial banks with significant assets and long operation time in the industry, including listed commercial banks and non-listed commercial banks, which are divided into four sample types: large state-owned banks, joint-stock commercial banks, urban commercial banks, and rural commercial banks. The statistics of commercial banks come from their annual reports, the statistics of Oriental Fortune Network, and the macroeconomic data mainly come from the wind economic database and the National Bureau of Statistics.

3.2. Dependent Variable (ROA)

The main financial indicators used to measure the profitability level of commercial banks are the Return on Assets (ROA) and the Return on Equity (ROE). The Return on Assets, calculated as the after-tax net profit divided by total assets, also known as asset return rate, is one of the most widely used indicators in the industry to measure the profitability level of banks. A higher Return on Assets indicates better asset utilization by the commercial bank, otherwise the opposite. On the other hand, the Return on Equity, also

known as the Return on Equity, represents the net profit per unit of shareholder equity. A higher Return on Equity indicates a higher return on investment for shareholders.

As a unique type of financial institution, commercial banks not only rely on their own assets but also on deposits held by their customers in the bank to conduct their operations. In addition, since the Return on Equity (ROE) can be influenced by indicators such as the bank's leverage ratio, it is not conducive to horizontal comparisons between banks. Therefore, when selecting a profitability indicator, the Return on Assets (ROA), which measures the efficiency of bank capital operations, should be chosen instead of the Return on Equity (ROE), which measures the level of equity returns. Hence, in this study draws upon the relevant research conducted by Diao et al. (2017), ROA is chosen as the dependent variable.

3.3. Independent Variable (TPP)

Third-party payment involves an online payment method where an independent institution, backed by a certain level of strength and reputation, facilitates transactions between two parties by connecting with UnionPay. In this mode, the buyer selects and purchases goods using an account provided by the third-party platform to initiate payment (to a third party). The third party then notifies the seller to receive payment and arrange delivery. Upon receiving, inspecting, and confirming the goods, the buyer notifies the third party to proceed with the payment, after which the third party transfers the funds to the seller's account. The scale of third-party payment primarily denotes the total transaction volume of internet and mobile payments (Han, 2021).

The profitability of commercial banks has been significantly impacted by the expansion of the third-party payment industry, which has encroached upon commercial banking business, customer bases, and profits. As such, the transaction volume of third-party payments serves as an explanatory variable. However, obtaining quarterly data on the overall transaction volume of early third-party payments is challenging due to issues with data standardization, resulting in incomplete datasets. Nevertheless, detailed and accurate statistics on the transaction volume of third-party mobile payments are available, with annual data accessible from 2011 onwards (Sun, 2020).

3.4. Model building

This study uses the panel data regression method for empirical analysis and qualitative analysis is carried out. The model is constructed as follows:

$$\begin{aligned} Y_{it} = \beta_0 + \beta_1 \ln\_TPP_{it} + \beta_2 CAR_{it} + \beta_3 Size_{it} + \beta_4 NI_{it} + \beta_5 CIR_{it} + \beta_6 NI_{it} + \beta_7 NPL_{it} \\ + \beta_8 \ln\_GDP_{it} + \beta_9 M2_{it} + \mu_i + \lambda_t + \varepsilon_{it} \end{aligned}$$

In the model, "t" represents the year, "i" represents the selected commercial bank, "Yit" represents the value of the dependent variable of the data variable in the "i" commercial bank in the "t" year. The dependent variable selected in this paper is the Return on Assets (ROA) of commercial banks. The explanatory variable is the scale of third-party payments (ln_TPP), and the control variables include Capital Adequacy Ratio (CAR), Asset Size (Size), Non-Interest Income Ratio (NI), Cost-Income Ratio (CIR), Non-Performing Loan Ratio (NPL), Gross Domestic Product Growth Rate (ln_GDP), and Broad Money Growth Rate (M2), β_0 is the intercept term in the model, ε_{it} representing the random error term of the model. μ_i is a dummy variable at the commercial bank level, used to control for

unobservable individual differences, and λ_t is a dummy variable for the year, used to control for unobservable time differences. By establishing the linear model of the above equation, we can specifically study the specific impact of the selected explanatory variables on the systematic risk of commercial banks. Subsequently, we will establish relevant models for estimation.

4. Results

4.1. Descriptive Statistics

This study introduced the third-party payment scale (TPP) as an independent variable in the empirical analysis. This variable serves as a standard for measuring the development level of third-party payments. This analysis aims to validate Hypothesis 1, as described in 1.3 research hypotheses. For this purpose, this researcher used four types of commercial banks as sub-samples and conducted empirical estimates on the entire sample. Therefore, Model was designed.

Firstly, Stata16 software was used to analyze the statistical data of independent variables, third-party payment scale, and dependent variable ROA, as well as control variables), Asset operation scale (SIZE), Non-interest income (NIR), Capital adequacy ratio (CAR), Non-performing loan ratio (NPL), Cost-income ratio (CIR), Broad Money Growth Rate (M2), GDP. Descriptive statistical results, including minimum, maximum, average, standard deviation, and median, are shown in Table 2.

Table 2: Descriptive Statistics of Whole Bank

Variable	N	Mean	SD	Median	Min	Max
ROA	342	0.94	0.22	0.92	0.42	1.76
TPP	342	1.25E+06	1.03E+06	1.20E+06	12168	2.59E+06
GDP	342	8413.8	1781.41	8320.36	5929.63	11492.37
M2	342	10.49	2.06	10.1	8.1	13.6
NPL	342	1.36	0.39	1.36	0.39	2.71
CAR	342	13.38	1.67	13.28	8.84	18.94
SIZE	342	12.09	0.73	12.03	10.78	13.5
CIR	342	30.47	6.59	29.69	14.33	66.47
NI	342	20.8	10.26	20.07	-14.62	51.09
ln_TPP	342	13.11	1.84	14	9.41	14.77
ln_GDP	342	9.02	0.21	9.03	8.69	9.35

4.2. The impact of third-party payments on commercial banks

According to the model settings in the previous section, using a bidirectional fixed effects model for analysis results is more reasonable. The estimated results are shown in Table 3. The bidirectional fixed effects model, after controlling for unobservable individual and year differences, has a goodness of fit of 0.730 for the baseline model, with F-statistics greater than the critical value of 1% and a P-value of 0.000. At the 1% level, it rejects the null hypothesis that the coefficient estimates are jointly equal to zero, indicating that the model has passed the joint significance test of variables. This also indicates to some extent that the explanatory power of this model is high, and the model design is reasonable.

Table 3: The impact of third-party payments on the overall profitability of commercial banks

	(1) ROA
ln_TPP	-0.055***
	(-2.87)
NPL	-0.198***
	(-9.23)
CAR	0.017***
	(2.99)
SIZE	-0.224**
	(-2.08)
CIR	-0.006***
	(-3.03)
NI	0.001
	(0.97)
ln_GDP	-0.283*
	(-1.85)
M2	-0.046***
	(-3.23)
cons	7.610***
	(5.54)
Individual Effects	Controlled
Year Effects	Controlled
N	342.000
r2_w	0.730
F	60.648

t statistics in parentheses：* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

The coefficient estimate of the Capital Adequacy Ratio (CAR) among the control variables is significant at the 1% level, indicating that the higher the capital adequacy ratio of commercial banks, the stronger their ability to withstand risks and the stronger their profitability. The coefficient estimates of the Cost-Income Ratio (CIR) and the bank's size (SIZE) are significant at the 1% level and negative, indicating that the higher the cost-income ratio of commercial banks, the lower their profitability. The coefficient estimate of the Non-Performing Loan Ratio (NPL) is significant at the 1% level and negative, indicating that the more non-performing loans commercial banks have, the greater the risks they face, and their profitability is also limited. The coefficient estimate of the Broad Money Supply (M2) is significant at the 1% level and negative, indicating that aggressive monetary policies also significantly suppress the profitability improvement of commercial banks.

5. Conclusion

Third-party payments experienced a sudden rise and subsequently underwent rapid development and expansion over the following years. These payment institutions swiftly and effectively-identified customer demands and gained insights into the latest market trends. By leveraging new technologies, they constructed technical platforms under new models and directions to meet the needs of both the market and customers promptly and effectively. Within a relatively short period, they encroached upon certain business areas of commercial banks, steadily increasing their market share and taking the lead in some sectors. While seemingly abrupt, this development is not entirely unexpected. Traditional

commercial banks, facing this new landscape, must adapt and explore new directions for development by drawing on lessons learned, engaging in study and reflection, and navigating the industry's shifting dynamics.

This article is based on theoretical and empirical analysis methods to study and demonstrate the impact of third-party payments' rapid development on commercial banks' profitability.

The theoretical analysis section analyses the relationship between third-party payments and banks regarding their impact on assets, debt, and intermediary businesses. It is argued that third-party payments not only have disruptive effects on the traditional business of commercial banks but also lead to diverting bank customer resources. Additionally, changes in industry development and regulatory policies may bring opportunities for the business development of commercial banks. Overall, this paper concludes that the emergence of third-party payments weakens the overall profitability of commercial banks.

This study constructed a panel data regression model for econometric analysis based on empirical analysis. The research findings indicate that the rapid development of third-party payment businesses has directly encroached upon the business scale of commercial banks, leading to a reduction in business scale and subsequently diminishing profit margins and profitability. This impact represents a direct negative effect. Regression results demonstrate a significant negative impact of third-party payments on the profitability of commercial banks. The research results of this paper support the viewpoints of scholars such as Xia and Nada (2018) and Zeng (2020) while not supporting the research perspectives of scholars like Tobing and Wijaya (2020). The results suggest that the vigorous development of third-party payments has disrupted the stability of commercial bank operations and adversely affected their profitability.

The primary advice for commercial banks is to strengthen their business innovation, improve competitiveness, and strive to obtain a more outstanding market share. We must also consider scenarios, establish new service concepts, meet diverse customer needs, strengthen cost management, save costs, improve management efficiency, and obtain more profit space. Finally, we need to strengthen cooperation with third-party payment institutions, and a long-term adversarial relationship is bound to hurt both parties. We can continue to exist in the market for longer by reaching a consensus and learning from each other's strengths and weaknesses.

It's essential to recognize that the influence of third-party payments extends beyond China's commercial banks. Hence, future studies should consider diverse sectors and international banks to expand or refine their research focus. For instance, examining the effects of third-party payments on intermediary services of commercial banks and incorporating broader metrics could be beneficial. Moreover, extending the research duration would be advantageous if resources were allowed.

Ethics Approval and Consent to Participate

The researchers used the research ethics provided by the Research Ethics Committee of Universiti Malaysia Sabah. All procedures performed in this study involving human participants were conducted in accordance with the ethical standards of the institutional

research committee. Informed consent was obtained from all participants according to the Declaration of Helsinki.

Acknowledgement

Part of this article was extracted from a doctoral thesis submitted to Universiti Malaysia Sabah.

Funding

This study received no funding.

Conflict of Interest

The authors reported no conflicts of interest for this work and declare that there is no potential conflict of interest with respect to the research, authorship, or publication of this article.

References

Allen, F., Qian, J. Q., & Gu, X. (2017). An overview of China's financial system. *Annual Review of Financial Economics*, *9*, 191-231. doi:10.1146/annurev-financial-112116025652.

Bons, R. W., Alt, R., Lee, H. G., & Weber, B. (2012). Banking in the Internet and Mobile Era. *Electronic Markets*, *22*(4), 197-202.

Cao, F. Q. (2015). The Challenge of Internet Finance to Traditional Finance. *Financial Forum*, 3-6.

Diao, X., Zeng, F., & Ye, D. (2017). Impact of changes in social financing structure on risks and performance of listed banks —— An empirical test based on dynamic panel GMM model. *Southern Finance*, 38-45.

Gong, Y. (2017). *Research about the impact of internet finance on commercial banks and banks'corresponding tactics*. (Doctoral dissertation), Siam University.

Han, S. F. (2021). The Impact and Research of Third-Party Payment on Commercial Banks' Intermediary Business. *Hebei Enterprises*, 11, 42-46.

Huang, R. (2018). Online P2P lending and regulatory responses in China: Opportunities and challenges. *European Business Organization Law Review*, 19, 63-92.

Lee, A. (2015). China Begins Internet Finance Clampdown. *International Financial Law Review*, *34*(31), 11.

Li, P., & Dong, Y. (2018). The impact of internet finance on core business of commercial banks: Based on panel data of major commercial banks in China from 2006 to 2016. *Finance and Accounting Monthly*, 10, 153-161.

Nataraja, N. S., Chilale, N. R., & Ganesh, L. (2018). Financial performance of private commercial banks in India: multiple regression analysis. *Academy of Accounting and Financial Studies Journal*, *22*(2), 1-12.

Shang, Y., Raza, S. A., Huo, Z., Shahzad, U., & Zhao, X. (2023). Does enterprise digital transformation contribute to the carbon emission reduction? Micro-level evidence from China. *International Review of Economics & Finance*, *86*, 1-13.

Sun, L. (2020). *An empirical study on the impact of the development of the third-party payment industry on the profitability of commercial banks in China* [Doctoral dissertation], Zhejiang University. Retrieved from https://link.cnki.net/doi/10.27461/d.cnki.gzjdx.2020.002184doi:10.27461/d.cnki

.gzjdx.2020.002184.

Tang, K. H. (2021). Technological Revolution: The Impact of Internet Finance on the Profitability of Commercial Banks in China. *International Review of Financial Analysis*, 72, 1-12.

Tobing, J. D. T., & Wijaya, C. (2020). The effect of peer-to-peer lending and third-party payments on conventional commercial bank profitability in Indonesia. *International Journal of Management*, *11*(5).

Xia, H., & Nada, C. (2018). Third-Party Payments Impact on Commercial Banks' Non-Interest Income: Evidence from China. *International Journal of Economics and Finance*, *10*(8).

Xu, Y. (2022). The strategy of how to deeply integrate technology and finance in the internet environment. *Journal of Environmental and Public Health*, 5018160.

Yao, M., Di, H., Zheng, X., & Xu, X. (2018). Impact of payment technology innovations on the traditional financial industry: A focus on China. *Technological Forecasting and Social Change*, 135, 199-207.

Zeng, H. B. (2020). *Analysis of the impact of third-party payments on the profitability of listed commercial banks in China* (Xiamen University). Retrieved from https://link.cnki.net/doi/10.27424/d.cnki.gxmdu.2020.003332doi:10.27424/d.cnki.gxmdu.2020.003332.

Zhang, Z. (2019). Measurement analysis of the impact of third-party payment on large commercial banks in China. *Financial World*, 24, 10-11.

Zhao, D., Zhang, W., Zhao, D., & Zhang, W. (2021). Opportunities, Risks, and Breakdowns Brought by AI to Commercial Banks. *Artificial Financial Intelligence in China*, 89-115.

Zheng, X. (2016). Exploring the impact of third-party payments on the profitability of commercial banks in China. *Knowledge Economy*, 09, 24-30.