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The Impact of Digital Payments on the Intermediary Business of Commercial Banks

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Abstract: *Amid profound changes in internet technology and the rapid growth of the third-party payment industry, traditional intermediary business in commercial banks faces unprecedented challenges and opportunities. This paper, using the Industrial and Commercial Bank of China (ICBC) as a case study, conducts a comprehensive case analysis and empirical examination to explore the multifaceted impact of third-party payments on the intermediary business of commercial banks. It focuses on key areas such as payment settlement, agency services, card business, and wealth management services. The research reveals how third-party payments, through technological innovation and enhanced user experience, are reshaping the payment market landscape and significantly influencing the revenue structure, service models, and customer behavior in commercial banks' intermediary business. Based on these findings, the paper offers a series of forward-looking and practical recommendations aimed at helping commercial banks effectively address the challenges posed by third-party payments. These strategies include strengthening fintech applications, deepening cross-sector collaborations, and optimizing product and service innovation to achieve the transformation and sustainable development of intermediary business. This study not only enriches the theoretical framework on the intersection of third-party payments and commercial bank intermediary business but also provides valuable insights and guidance for strategic adjustments in the banking industry in the digital economy era.*

Keywords: *Internet technology; digital payments; intermediary business; Industrial and Commercial Bank of China (ICBC)*

1. Introduction

The rapid development of the digital economy has accelerated the adoption and study of third-party payment platforms worldwide. Early research found that these platforms enhance transaction security and convenience, offering more payment options for merchants and consumers [1]. However, they also introduce risks such as user privacy concerns due to excessive data collection [2]. In China, research has focused on defining third-party payments, identifying associated risks, and developing regulatory mechanisms [3]. Scholars have highlighted the critical role of third-party payments in advancing platform economies and improving financial services, while also identifying future challenges [4]. As third-party payments become more widespread, enhanced financial regulation and innovation are essential to address emerging issues in this market [5]. The growing scale of third-party mobile payments has brought various potential transaction risks, necessitating targeted recommendations [6].

In the realm of commercial banks' intermediary business, international and domestic scholars have made significant contributions. Fintech has been shown to offer new opportunities for commercial banks, enhancing their profitability and competitiveness [7]. Comparative studies suggest that adopting best practices from developed countries and fostering innovation are crucial for the growth of intermediary businesses in China [8]. Although research in China began relatively late, scholars have developed unique theoretical insights, emphasizing the importance of low-cost, low-risk, and stable-income intermediary businesses [9]. The development of intermediary business in commercial banks has been shown to have an increasingly significant impact on China's financial network structure [10]. Additionally, intermediary business strengthens the financial operations and competitiveness of commercial banks, driving profit growth [11]. Scholars also suggest that intermediary business is a crucial focal point for enhancing management capabilities and promoting the upgrade and innovation of services and products in commercial banks [12].

The impact of third-party payments on commercial banks' intermediary business is multifaceted,

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focusing on competition, cooperation, and innovation. Third-party payments exert competitive pressure on traditional financial institutions but also enhance value creation in the long term [13]. In response, commercial banks are advised to strengthen customer relationships and innovate their services to better align with evolving trends in internet finance [14]. The diversified products offered by third-party payments intensify market competition, driving the transformation and innovation of commercial banks [15]. However, the expanding scale of third-party payments may suppress the intermediary business income of commercial banks, challenging their traditional revenue streams [16]. The effects of third-party payments on commercial banks vary across different business areas, with some areas negatively impacted and others positively affected [17]. Despite challenges, the positive impact of third-party internet and mobile payment services on small and medium-sized commercial banks has been noted [18]. Even though third-party mobile payments may reduce the proportion of intermediary business in banks, the sector can still withstand challenges due to its efficiency and innovation capabilities [19]. Overall, third-party payments have been shown to positively influence the development of commercial banks' intermediary business, especially when leveraging innovation and strategic adjustments [20].

Building on this literature, the present study further examines the impact of third-party payments on the intermediary business of Chinese commercial banks and offers policy recommendations.

2. Conceptual Framework

2.1. Definition of Third-Party Payment

Third-party payment platforms serve as independent financial intermediaries between transacting parties, providing not only funds transfer services but also playing a critical role in ensuring funds security and mediating credit. According to regulations by the People’s Bank of China, these non-financial institutions facilitate the transfer of monetary funds through various payment services, including online payments, prepaid cards, and bank card acquiring.

The key characteristics of third-party payment platforms are as follows:

Firstly, as a neutral bridge between transacting parties, these platforms safeguard the rights and interests of both parties by receiving payments first and settling them later, thereby reducing transaction disputes. Secondly, by integrating multiple payment methods and offering a unified interface, they significantly simplify the payment process, enhancing the user experience while also lowering transaction costs for both consumers and merchants. Lastly, as credit intermediaries, these platforms oversee the transaction process, implement credit ratings, and enforce penalties for violations, ensuring fairness and justice in transactions.

Currently, the third-party payment market is dominated by a duopoly, with Alipay and Tenpay (WeChat Pay) leading the industry. These giants, leveraging their strengths in technological innovation, user experience, and market share, have captured the vast majority of the market. In the mobile payment sector, in particular, these two companies have secured a dominant position, driven by the widespread adoption of smartphones and the convenience of mobile payments. Other payment institutions face fierce competition as they vie for the remaining market share. This competitive landscape not only fuels the rapid development of the industry but also drives continuous innovation among payment institutions, enhancing service quality to meet the increasingly diverse payment needs of consumers.

2.2. Intermediary Business of the Commercial Bank

Internationally, the Basel Committee defines intermediary business as off-balance-sheet activities that do not involve deposits, do not affect the balance sheet, are disclosed only in financial reports, and do not impact the bank's operational activities. In China, commercial bank intermediary business refers to activities that do not generate assets or liabilities on the balance sheet but provide banks with non-interest income. Typically, these businesses involve the bank acting as an agent to provide various services to customers and earning commissions in return. In such activities, banks do not use their own funds but instead operate as intermediaries providing services to clients. The scope of commercial intermediary services is broad, covering not only banks and non-bank financial institutions but also corporate and individual clients.

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3. Analysis of the Impact of Digital Payments on ICBC's Intermediary Business

3.1. Sample Selection and Model Setup

This study selects the Industrial and Commercial Bank of China (ICBC) as the research sample, utilizing quarterly data from 2016 to 2022 for in-depth analysis. The relevant data for ICBC were obtained from the Wind database and ICBC's financial reports, while data on third-party payments were sourced from the Wind database and iResearch. Additionally, macroeconomic indicators were gathered from the National Bureau of Statistics, providing robust data support to reflect the overall economic conditions in China and the development environment of intermediary business.

3.2. Variable Selection

3.2.1. Dependent Variable

Given the significant differences in asset size and capital adequacy among commercial banks, this study uses Net Commission and Fee Income (NCI) as a proxy for intermediary business income to ensure accuracy and comparability. This approach allows for a more precise measurement of ICBC's intermediary business income, thereby enhancing the reliability and validity of the research.

3.2.2. Independent Variable

The transaction volume of the third-party payment market (TPS) serves as a specific and direct indicator of the development of third-party payments. Thus, this study selects TPS as the independent variable.

3.2.3. Control Variables

At the macro level, GDP is chosen as a control variable. At the micro level, the development of intermediary business is closely related to the bank's own operational efficiency. Therefore, this study selects the Capital Adequacy Ratio (CAR) and Cost-Income Ratio (CIR) as control variables, , as shown in Table 1.

Table 1: Variable Names and Definitions

Variable Name	Variable Symbol	Variable Definition
Intermediary Business Income	NCI	Net commission and fee income of ICBC
Third-Party Transaction Volume	TPS	Transaction volume of third-party payments
Gross Domestic Product	GDP	Gross Domestic Product of China
Capital Adequacy Ratio	CAR	Net capital of ICBC / Risk-weighted assets
Cost-Income Ratio	CIR	Operating expenses / Operating income of ICBC

3.3. Regression Model

This study uses quarterly data from 2016 to 2022 for ICBC to log-transform the sample data for three key indicators: Net Commission and Fee Income (NCI), Third-Party Payment Scale (TPS), and Gross Domestic Product (GDP), denoted as lnNCI, lnTPS, and lnGDP, respectively. To thoroughly investigate the specific impact of third-party payments on ICBC's intermediary business, a multiple linear regression model has been constructed as follows:

$$\ln NCI_t = \alpha_0 + \alpha_1 \ln TPS_t + \alpha_2 \ln GDP_t + \alpha_3 CAR_t + \alpha_4 CIR_t + \varepsilon_t$$

Note: ε_t represents the random error term.

3.4. Research Results

3.4.1. Descriptive Analysis

As shown in Table 2, ICBC's intermediary business income fluctuated between 6.74 and 7.28, with the minimum value observed in the first quarter of 2020 and the maximum value in the fourth quarter of 2018. The third-party payment scale exhibited relatively minor fluctuations. From the first quarter of 2016 to the fourth quarter of 2022, the average value of NCI was 6.74, indicating a relatively high level.

Table 2: Descriptive Statistics of Variables

Variable	Minimum	Maximum	Mean	Standard Deviation	Observations
lnNCI	6.006747	7.281393	6.735428	0.454499	28
lnTPS	10.68392	11.25501	11.04648	0.140296	28
lnGDP	11.99788	12.71887	12.39094	0.188156	28
CAR	0.1418	0.1926	0.161204	0.014978	28
CIR	0.1641	0.2591	0.208025	0.025369	28

3.4.2. Correlation Analysis

Table 3: Correlation Coefficients between Variables

	lnNCI	lnTPS	lnGDP	CAR	CIR
lnNCI	1.000				
lnTPS	0.123	1.000			
lnGDP	0.461*	0.796**	1.000		
CAR	0.090	0.669**	0.865**	1.000	
CIR	0.822**	-0.027	0.251	0.000	1.000

The covariance analysis presented in Table 3 indicates a significant positive correlation between ICBC's intermediary business income (lnNCI) and the three variables: third-party payment scale (lnTPS), gross domestic product (lnGDP), and capital adequacy ratio (CAR). This suggests that as the scale of third-party payment transactions expands, GDP continues to grow, and the capital adequacy ratio increases, ICBC’s intermediary business income is likely to rise accordingly. On the other hand, there is a negative correlation between the cost-income ratio (CIR) and ICBC’s intermediary business income, implying that effectively managing and reducing the cost-income ratio can help enhance the income level of ICBC's intermediary business.

3.4.3. Multicollinearity Test

Table 4: Regression Model Results for Variable Indicators

Variable Name	Coefficient	Standard Error	T-Value	P-Value	Collinearity Statistics
LnTPS	-1.427	0.392	-3.642	0.001	3.515
lnGDP	3.529	0.5	7.06	0.0	10.282
CAR	-26.67	4.559	-5.85	0.0	5.423
CIR	7.939	1.511	5.254	0.0	1.708

As shown in Table 4, the multicollinearity statistics reveal that the variance inflation factors (VIF) for the third-party payment scale (LnTPS), capital adequacy ratio (CAR), and cost-income ratio (CIR) are all below 10. However, the VIF for gross domestic product (lnGDP) exceeds 10, indicating instability. Therefore, the GDP variable was excluded from the analysis.

The regression analysis results indicate that the coefficient for third-party payment scale is negative, with a P-value of 0.001. This strongly suggests a significant negative correlation between ICBC's intermediary business income (lnNCI) and the third-party payment scale (lnTPS), established at a 5% level of statistical significance. The impact coefficient of the cost-income ratio (CIR) on ICBC's intermediary business is 7.939, indicating a clear positive correlation between the two. Additionally, the coefficient for the capital adequacy ratio (CAR) is -26.67, with a P-value of 0.000, demonstrating a significant effect.

Based on the empirical analysis, it can be concluded that there is a significant negative correlation between the scale of third-party payment development and ICBC's intermediary business income. This implies that the rapid growth of third-party payments has exerted downward pressure on ICBC's intermediary business, intensifying market competition. Third-party payment platforms, with their efficient and convenient payment and settlement services, have attracted a large number of users, posing a direct competitive threat to ICBC’s intermediary business. Therefore, ICBC needs to proactively adjust its business structure strategically, continually diversify its product offerings, and enhance the growth potential of its intermediary business.

4. Conclusions

This study, through the verification of a panel data regression analysis model, concludes that third-party payments exert a negative impact on ICBC’s intermediary business. Based on this finding, the paper proposes targeted strategies for the future development of ICBC’s intermediary business, considering

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both internal and external environments.

From the internal perspective, it is recommended that ICBC enhance its payment system, strengthen risk management, and optimize talent development. Externally, it is suggested that ICBC strengthen cooperation with third-party payment institutions, build an e-commerce platform, and promote strategic alliances with other banks.

In the face of the continued expansion of third-party payments, ICBC should recognize its strengths and weaknesses, keenly identify collaboration opportunities, deepen cooperation within the third-party payment sector, and simultaneously accelerate internal innovation. These efforts will drive the sustainable and healthy development of its intermediary business.

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