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The analysis of fintech integration and financial performance in Chinese commercial banks

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Abstract. Recent research in financial technology (fintech) have significantly transformed the structure and operations of the global banking industry. In China, the rapid development of mobile payments, online lending platforms, digital currencies, and wealth management technologies has challenged traditional banking models, and the existing regulatory framework struggles to keep pace with these innovations. This study explores the impact of fintech integration and the regulatory environment on the financial performance of traditional commercial banks in China. Focusing on key areas such as payments, online lending, digital currency projects, and wealth management services, the study analyzes the significant differences in efficiency, profitability, and risk exposure across various fintech applications. This research, through the method of literature review, assesses how technological innovation is reshaping banking operations, customer behavior, and the competitive landscape within the Chinese financial system. The findings highlight the increasingly important role of a balanced regulatory approach in supporting innovation while maintaining financial stability and provide insights into the ongoing transformation of the Chinese banking sector.

Keywords: financial performance, fintech, regulation, banking sector

1. Introduction

The outbreak of the global financial crisis in 2008 was the Lehman Brothers bankruptcy. Meanwhile, the defects of Basel I and II were perfectly presented in the same year, resulting in many long-established banks with sufficient funds suffering bankruptcy due to a lack of liquidity. After the financial crisis, the Basel Committee decided to establish Basel III as the core macroprudential regulatory framework to increase the capital regulatory standards to address the issue of insufficient capital in commercial banks in 2008. Basel III introduced the Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR) to regulate the liquidity of commercial banks. Basel III had been well established to respond to the financial technology appearing in the market. In 2008, financial technology (fintech) did not develop well. But nowadays, financial technology, such as Artificial Intelligence (AI), is capturing significant growth, with an estimated size of USD 12.61 billion by 2024 [1]. Such technology has also brought both advantages and disadvantages to the global financial system and commercial banks, but they are not involved in the range of Basel III. On the other hand, the growing market of financial technology will be developed rapidly to be used by a wider range in the market. Considering the impact of fintech on commercial bank financial management and risk is particularly

important, as Basel III did not previously take this into account. Given the limited number of articles on Basel III and fintech, this paper delves into this issue, focusing on the Chinese fintech sector as a case study.

2. The performance of fintech in China

Financial technology refers to the integration of finance and information technology, including functions such as payment settlement, risk management, network infrastructure, and resource allocation [2]. In recent years, total investment in financial technology has doubled compared to that in 2018, reaching a total of $55.3 billion globally [3]. Furthermore, it is believed that other types of financial technologies will gradually integrate into the financial system in the near future. For example, applying blockchain to finance is not impossible. Bitcoin is popular in the United States, but its use is prohibited in China. The core technology behind Bitcoin is blockchain, which allows access to all historical transaction records through public dissemination on its global network [4]. Research shows that blockchain can effectively help banks provide highly accessible and low-cost financing services to businesses in the supply chain while controlling risks. Through authentic information and transparent transaction records, information manipulation and malicious fraud that harm the moral standard can be prevented [5]. With advancements in digital technology, blockchain can become a financial method that helps banks provide more inclusive and efficient financial services.

3. The impact of fintech on businesses

3.1. Mobile payment

In the payment sector, mobile payment refers to the process of completing transactions anytime, anywhere, using only mobile devices without physical currency [6]. With the widespread adoption of mobile devices, daily life and payment channels are closely linked, leading to a gradual decline in the use of physical cash in China. According to Figure 1, from 2014 to 2025, the number of mobile payment users has shown a steady upward trend, growing from an initial 217 million users to 1.022 billion users [7]. This growth not only signifies the rapid rise of mobile payments globally but also highlights China's leading position in this field, with its usage scale reaching five times that of other regions [8].

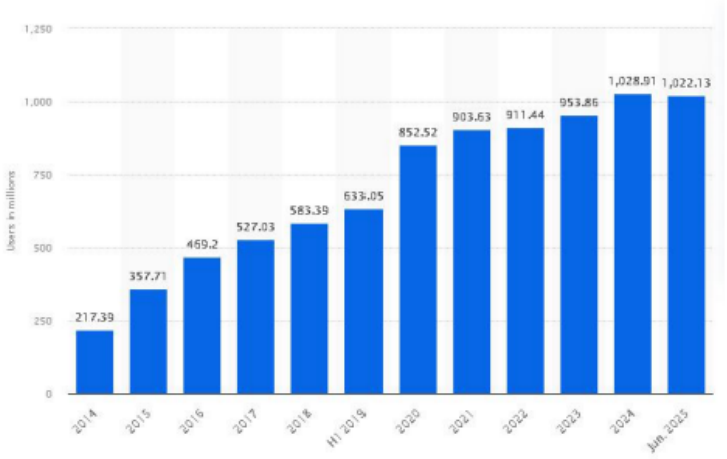

Figure 1. Number of mobile payment users in China from 2014 to June 2025 (in millions) [7]

The transition from traditional payment methods to digital payments has proven to improve payment efficiency. The advantages of mobile payments include the ability to handle large transactions and faster payment processes [9]. Data shows that mobile payments have widely penetrated various online and offline transaction scenarios. While bringing significant convenience to people's lives, it also has some negative impacts on the banking industry.

The prevalence of mobile payments directly reduces public demand for cash, thereby reducing the frequency of withdrawing cash from bank ATMs (Automated Teller Machines) [10]. As most merchants prefer to accept mobile payments, cash transaction scenarios are further reduced.

3.2. Current situation and advantages of E-CNY

The central bank has been committed to promoting the E-CNY and has been implementing it through various bank applications. However, its effectiveness has not yet reached a significant level. Currently, China's fintech sector is dominated by two giants, WeChat Pay and Alipay, which together hold the vast majority of the market share. Figure 2 shows that Alipay's market size in 2022 was 1.5 times that of the E-CNY [11], and from Figure 3, we can see that from 2020 to 2025, its user base will continue to grow from 223 million to 234 million, indicating that these two payment platforms have not only steadily expanded their user base over the past five years but have also become the mainstream payment methods in China, holding a monopolistic position in the payment field [12]. In May 2011, the People's Bank of China (PBOC) issued third-party online payment licenses to Alipay and 26 other online financial companies [13]. Alipay thus became one of the first fintech companies officially authorized to operate an online payment system. Therefore, the central bank faces significant challenges in promoting its E-CNY. Currently, the E-CNY only allows residents in 11 pilot areas to use, which are linked to nine major banks, and its application scope and ease of use are still inferior to existing payment tools that have penetrated the public's lives [14].

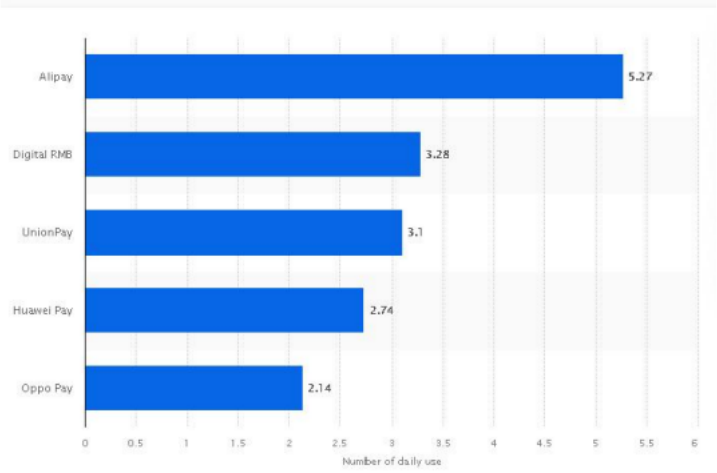

Figure 2. Average daily use of payment apps in China as of March 2022 [11]

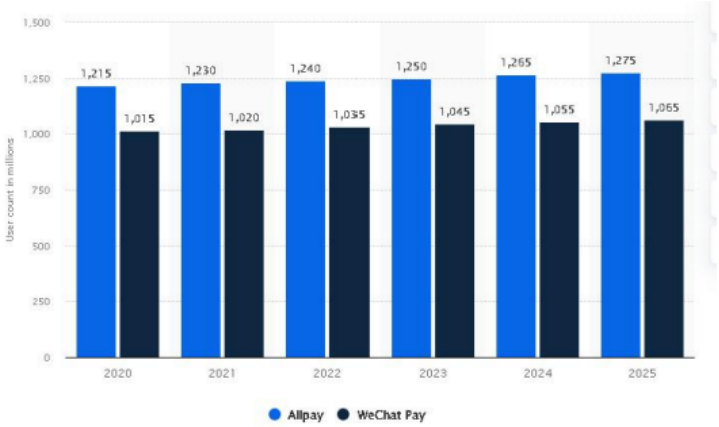

Figure 3. Number of users of Alipay and Wechat Pay in China in 2020, with forecasts from 2021 to 2025 [12]

In the short term, the advancement of the E-CNY will help strengthen financial supervision and policy implementation effectiveness [15]. Its blockchain-like technological architecture allows regulators to access transaction information when necessary, while ensuring data security, thereby enhancing the transparency and controllability of the financial system. In contrast, WeChat Pay and Alipay, as private enterprises, prioritize profit, resulting in relatively limited fulfillment of social responsibility. Most domestic banks, however, are state-owned and bear the mission of maintaining financial stability and social benefits. They must strike a balance between profitability and social responsibility, avoiding the pursuit of excessive commercial interests at the expense of public interests and national financial security.

Therefore, the promotion of the E-CNY is not merely a technological upgrade of a payment tool, but also involves deepening the national financial governance structure. Its development must improve payment efficiency while simultaneously considering financial stability, data sovereignty, and social equity, thus forming a complementary and balancing structure with the existing private payment system.

4. The impact of fintech on the management of commercial banks

The development of fintech has brought significant convenience to the public in withdrawing funds and conducting online and offline transactions. Since most transactions can be completed through mobile devices without having to visit physical branches, the frequency with which customers visit bank branches has decreased significantly. This not only weakens the direct interaction between banks and customers but may also affect business opportunities and overall revenue generated through face-to-face services.

4.1. The development of P2P

In recent years, the Fintech sector has undergone rapid and diversified development. Among its various forms, peer-to-peer (P2P) online lending experienced a period of rapid expansion, particularly from 2016 onward, as shown in Figure 4 [16]. During this period, individuals lacking traditional collateral, such as housing assets, increasingly turned to online lending platforms as an alternative financing channel. Without effective regulation, such platforms had the potential to attract an even larger number of borrowers through microfinance institutions. However, despite the continued development of online lending, its overall impact on banks' performance and revenue remains limited. This is mainly because consumer loans account for only a small proportion of total personal credit, while commercial banks' primary source of profitability continues to be corporate lending, which typically involves larger loan sizes and higher returns [17].

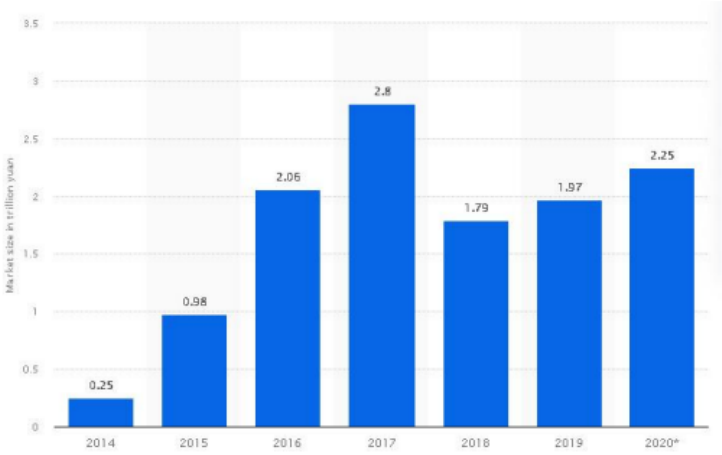

Figure 4. Size of the P2P lending industry in China from 2014 to 2019 with a forecast for 2020 [16]

The key to banks' ability to control credit risk at a low level lies in their professional teams and robust methods to ensure loan recovery. These professional teams rigorously assess borrowers' repayment ability and require fixed assets such as real estate as collateral. Take China Construction Bank mortgage loans as an example, after collecting the down payment, the bank provides 70% of the remaining loan amount, which borrowers must repay monthly. The bank acts as an intermediary, transferring the funds to the real estate company [18]. The significant interest rate spread in these mortgage loans makes them a key profit driver for banks, and real estate companies are willing to deliver property certificates early due to the bank's credit endorsement. Conversely, online lending platforms typically lack such risk control capabilities. In earlier stages, their deviation from the traditional banking system and inadequate risk management exposed them to frequent risk events, including platform failures and investor losses, which in some cases escalated into broader social instability [19]. They lure investors with unrealistic promises of high returns in order to raise funds [20].

Over the past decade, China's P2P lending industry has experienced rapid growth followed by a devastating decline. Of the more than 6,000 platforms established during this period, only about 15% are still alive today [20]. As a regulatory response to these accumulated risks, the online lending industry is now subject to strict supervision, rendering its development more contained and predictable. Many micro-finance companies that have deviated from the banking system have been rectified or withdrawn, and online lending is no longer encouraged or promoted [20]. Overall, while online lending has some impact on the banking industry, it is not a devastating blow. However, without continued regulation, social instability could still result from debt defaults and platform risks.

4.2. Tools for wealth management

Wealth management, as a crucial form of financial industry, has been widely adopted by a range of market participants, including technology companies such as DeepSeek, commercial banks, securities firms, and some wealth management institutions [21]. BOC robot advisor offers intelligent investment advisory services through applications, assisting clients by providing asset allocation recommendations based on their principal size, risk appetite, and liquidity needs [22]. These recommendations encompass a diverse range of products, including stocks, bonds, time and demand deposits, and government bonds, aiming to preserve and grow wealth. The widespread adoption of such services has expanded professional financial advice, traditionally

reserved for high-net-worth clients, to a broader audience, enhancing the accessibility and convenience of financial services [23].

However, with many institutions entering this field, including bank-developed applications, securities firms, professional wealth management companies, and technology companies, the potential risks to the banking system and financial stability warrant attention. Due to strict regulations, Banks' wealth management business has relatively controllable risks. Currently, funds from wealth management primarily flow into the stock and bond markets, whose overall size remains relatively small compared to the asset size of Chinese commercial banks [24]. According to the People's Bank of China's survey report, in the third quarter of 2025, a questionnaire survey of 20,000 urban depositors in 50 cities across the country was conducted. It is estimated that around 60% to 70% of Chinese residents' wealth is held in the banking system, with only 30% to 40% invested in the capital market, and the majority of this is allocated to lower-risk government and local government bonds [25]. Therefore, even if wealth management businesses guide some funds into the capital market, their fluctuations will have a limited impact on the overall wealth of the banking system.

In the field of regulatory and development, existing research and public awareness in this area are insufficient, necessitating an assessment of the actual risk level of fintech wealth management. If the risks are manageable, innovation should be encouraged within a framework of appropriate regulation to avoid stifling its positive role in improving financial efficiency and inclusive services due to excessive control. First, it's crucial to determine whether this business solves problems that the existing economic system has failed to address; second, it's essential to analyze whether it introduces new risks while solving these problems. For example, online lending overlaps with bank lending and has triggered a series of risk events, thus requiring stronger constraints. Wealth management, however, is different. It improves the accessibility of financial services for low- and middle-income groups. While potential risks exist, these can be mitigated through improved regulations.

Furthermore, the impact of fintech on the banking industry needs to be viewed critically. In the payment sector, while the widespread adoption of WeChat Pay and Alipay may reduce traditional bank transfer revenue, technological advancements could also improve operational efficiency and profitability. From a worldwide perspective, fintech is driving innovation in the UK and European banking sectors, enhancing services and competitiveness, and promoting financial inclusion. It is revolutionizing payments and improving efficiency, while blockchain and cryptocurrencies are providing secure channels for transactions and cross-border remittances [26]. Technologies like blockchain and others aid in risk management, while under the current Chinese legal framework, cryptocurrency-related businesses remain strictly restricted. Overall, the application of big data analytics and machine learning technologies in wealth management is still in its developmental stage, and its long-term impact on bank risk systems requires continued observation and in-depth research.

5. Conclusion

This study aims to explore how the integration of financial technology and regulatory frameworks impacts the financial performance and operating models of traditional commercial banks in China. The findings indicate that the application of financial technology has had a differentiated impact on banking operations, particularly in areas such as mobile payments, online lending, digital currency projects, and wealth management services. The analysis reveals that while some fintech applications have improved efficiency and service accessibility, their impact on profitability and risk exposure varies depending on the business model and regulatory constraints. These findings support the initial hypothesis that financial technology does not uniformly disrupt traditional banking but rather reshapes it in complex and industry-specific ways. This study fills a gap in the

existing literature by exploring the interaction between fintech development and regulatory structures within the context of the Chinese banking sector, thereby enriching the existing body of knowledge. The findings provide new evidence for financial innovation theory, demonstrating that effective regulation can effectively control risks without hindering technological progress.

Although this study makes a valuable contribution, its limitations lie in its primary reliance on a literature review methodology, which may limit the generalizability of the findings and hinder direct causal inference. Future research could address these limitations by incorporating empirical data, comparative international perspectives, or quantitative performance indicators to further explore the long-term impact of fintech on bank stability and profitability. Overall, this study provides new insights into the evolving relationship between fintech and traditional banking institutions and highlights the importance of regulatory adaptability in shaping the sustainable transformation of the banking sector.

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