

Traditional Banks' Response Strategies and Digital Transformation Amidst the Impact of Fintech

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Abstract. This study focuses on the impact of fintech on the Chinese traditional banking sector and its strategy, systematically analyzing multidimensional challenges such as revenue declines and weakened customer relationships. Through comparative case studies of Industrial and Commercial Bank of China and China Merchants Bank, coupled with empirical regression analysis of financial data from 14 commercial banks between 2019 and 2024, research reveals a weak positive correlation between the digital investment and bank profitability (measured by ROE). Findings indicate that fintech serves not only as a challenger but also as a crucial driver of transformation for traditional banks. The study further proposes that banks should implement differentiated strategies, enhance technological investments, optimize talent and organizational structures, and expand service scenarios through ecosystem partnerships to achieve competitive repositioning and sustainable development. This paper not only enriches the quantitative analysis of digital investment and the development status of the banking industry, but also provides practical guidance for the digital transformation of traditional banks.

Keywords: Fintech; Traditional Banking; Digital Transformation; Digital Investment; Ecosystem Collaboration.

1. Introduction

In recent years, the development of fintech has become a global trend, reshaping the financial industry ecosystem with unprecedented force. This phenomenon is particularly pronounced in countries at the forefront of global development like China. Advanced technologies such as artificial intelligence, big data, cloud computing, and blockchain have been deeply integrated into the financial services sector, fundamentally disrupting traditional banking models and their positions. Banks previously served only the top 20% of customers due to cost constraints, fintech companies now can utilize artificial intelligence to service customers and intelligent risk management to reach the remaining 80% of the customer base [1]. Fintech is propelling the entire industry toward a new phase of development driven by technology as the core engine.

In China, the pace of fintech development has surpassed the global average, for example, the rise of third-party payment giants, Alipay and WeChat Pay. By 2023, these platforms-leveraging real-time settlement capabilities and rapid convenience-have propelled China's mobile payment substitution rate to approximately 65%. Together, Alipay and WeChat Pay command over 85% of the retail payment market share [2]. These platforms use emerging technologies such as artificial intelligence, big data to redefine the efficiency of payments and settlements. They have made fintech solutions like third-party payments more intelligent and personalized, while also posing a persistent challenge to traditional banks' core strengths in deposits, loans, and remittances.

Although numerous studies have examined the impact of fintech on the banking industry, systematic literature exploring how traditional banks can achieve co-development with fintech through strategic adjustments and digital transformation remains scarce. Empirical evidence indicates that in China, third-party payment systems are strongly associated with enhancing the value creation capacity of traditional financial institutions, and this influence tends to persist in a stable manner over the long run [3]. Existing research predominantly focuses on mobile payments and recommends that banks must accelerate innovation and adopt advanced technologies [4]. Against this backdrop, this study primarily addresses the following questions: In what specific dimensions does fintech pose

challenges to traditional banks? What countermeasures have some banks adopted, and how effective have they been? Is bank profitability correlated with their digital investments? And in this era of rapid fintech advancement, how should banks maintain competitiveness through strategic transformation?

The study employs a mixed-methods approach combining qualitative and quantitative research: On one hand, it selects Industrial and Commercial Bank of China and China Merchants Bank as representative cases to compare how banks with different ownership structures and market positioning respond to challenges due to the development of fintech. On the other hand, it constructs a regression model using banking panel data from 14 major commercial banks between 2019 and 2024 to empirically examine the relationship between digital investment amount and bank profitability (measured by ROE).

Prior to the study, it was hypothesized that there exists a positive correlation between a bank's digital investment amount and its return on equity (ROE). Which means, the greater the amount a bank invests in digitalization, the higher its ROE should be, indicating that such investment can significantly enhance the bank's operational resilience and profitability. At the practical level, this study offers actionable recommendations for banks navigating shocks: avoid homogeneous competition, focus on building differentiated digital strategies, actively pursue ecosystem partnerships, and optimize talent and organizational structures. Ultimately, fintech represents both a challenge and an opportunity for traditional banking. When effectively integrated into banking systems, it can serve as a crucial catalyst for reshaping banks' roles within the digital economy [5].

2. Dimensions of Fintech's Impact on Traditional Banking

2.1. Liability-Side Shock

Deposit Diversion and Liquidity Management Challenges. The most significant impact of fintech development on commercial banks is reflected in the liabilities side of their balance sheets. For a long time, the core business of banks has been absorbing public deposits, which not only serve as their primary source of funds but also form the foundation for their lending operations and financial market activities. However, with the introduction of various wealth management products such as funds and other cash management tools by fintech platforms, large amounts of deposits are flowing out of the banking system and into fintech companies. One of the best examples is Yu'e Bao, which was run by Ant Group. This product category has been very popular among customers due to its high liquidity, comparatively excellent returns, and easy redemption process. Furthermore, third-party payment institutions are exempt from maintaining enough reserves because China does not explicitly compel them to do so. This makes it possible for them to compete with banks more successfully, and the practice of "deposit shifting" has significant ramifications for the liquidity management of commercial banks. Conventional banks have comparatively stable but expensive liability structures because they are bound by prudential rules like reserve requirements and liquidity coverage ratios. In addition to a decline in overall bank deposits, the outcome is a fundamental change in the banking system's liquidity structure [5].

Products from the fintech companies have altered the asset allocation preferences of individuals and businesses, and placed higher demands on commercial banks' liquidity risk management capabilities. The diversion of deposits has also consistently compressed the interest rate spread, which banks rely on to survive. As low-cost deposits transition to high-yield fintech products, banks' overall interest expenses grow and net interest income shrinks. To counter this trend, some banks have introduced smart deposits, structured deposits, and T+0 wealth management products to retain customer funds. However, these offerings still struggle to fully compete with internet platforms in terms of yield flexibility and user experience.

2.2. Revenue-side Impact

Beyond the pressure on the liability side, fintech is also steadily eroding banks' fee-based income. Under traditional business models, commercial banks leveraged their branch networks and customer

bases to generate substantial fee and commission income from payment settlements, fund distribution, insurance agency, and other areas. Third-party platforms, utilizing their traffic advantages and technological capabilities, have gradually taken the lead in the distribution of financial products like funds and insurance. This has severely squeezed traditional banks' fee income sources in payment settlement and wealth management. For example, Tencent has achieved comprehensive development in the financial products sector, gradually expanding from its early wallet services into multiple domains including wealth management, blockchain, and digital certificates. By offering zero or relatively low fees in these areas, it has attracted a large customer base. In contrast, while traditional banks have made innovative attempts, their product offerings remain limited and lack comprehensive coverage [6]. Ant Group and other fintech companies have seamlessly integrated financial services into consumer behavior by building ecosystem-based scenarios, severing the direct connection between banks and end customers. This has led to a continuous decline in the proportion of non-interest income for banks.

Data indicate that since 2018, non-interest income has shown an overall downward trend in China's banking sector, reflecting a weakening of its revenue-generating capacity. Emerging third-party transaction platforms are rapidly rising and gradually becoming formidable competitors that traditional banks cannot afford to ignore. Even though this is happening, traditional banks still have a lot to learn about using fintech. They need to invest more in technology and make some changes to the way they are run so that they can deal with the tough competition in the market. Normal banks mostly use manual review processes. This means that it takes a long time to approve financial products and services, and customers have a poor experience. At the same time, the way they are set up to handle information is old-fashioned and not able to keep up with how fast modern financial operations are changing. On the other hand, third-party platforms have become much more competitive in the UK and abroad. Companies like Ant Group have created complete financial service systems that include payments, investments, insurance, and credit. These companies do business in China, Southeast Asia, Europe, and the Americas. Traditional banks often find it hard to match this level of service in other countries straight away. They often need to spend a lot of time and money to be able to do business in other countries.

The ongoing decrease in income for intermediaries is not just a financial problem, it's also a strategic challenge. Banks are more vulnerable during interest rate liberalisation and monetary policy tightening cycles because they rely too much on net interest margin income, which comes from non-interest sources that are not stable. Some banks are actively building open platforms, working together with other companies through open API interfaces. By working with fintech firms, innovative companies, and developers, banks can share resources and work together to create new ideas. This helps them to offer more different types of products and services. This project aims to grow the business, come up with new ideas more quickly, and attract partners. This will make the products better and help the business compete with others [7].

2.3. Deep-seated Challenges: Weakening Customer Relationships and Imbalanced Talent Structure

As well as the financial impacts that can be measured directly, fintech is also having a much deeper and more long-lasting effect on banking. It is affecting customer relationships and talent structures. People are using mobile phones and the internet more and more for their banking, so traditional bank branches are seeing less and less foot traffic and fewer and fewer transactions. There are fewer interactions between banks and customers, which is making relationships more distant. This move towards mobility and digital technology might mean that banks become just "back-end infrastructure", serving only a few people. Meanwhile, fintech companies have lots of users and are worth more. Traditional banks should use fintech to work more with consumer spending, increasing customer engagement through a variety of applications. At the same time, as customer choices become more varied, traditional banks must do more to keep their customers by offering different financial services, or they risk losing more customers. With more and more people using mobile payments and better

technology, banks now have access to more types of customer data. In this situation, traditional banks need to think again about how to get customer data and use it. They do this by using special marketing techniques, making personalised recommendations, and other methods to keep their customers feeling satisfied [8].

But there aren't enough talented people to help with this. Most traditional banks mainly hire employees who have worked in finance, accounting and management. However, they often don't have many people who are good at using technologies like artificial intelligence and big data. In contrast, fintech companies extensively recruit and attract numerous tech professionals skilled in cutting-edge technologies such as artificial intelligence, data science, and cloud computing. Taking 2022 data as an example, technical personnel accounted for only about 8% of Industrial and Commercial Bank of China's workforce, whereas technical employees constituted over 60% of Ant Group's staff [6]. This significant talent gap not only impacts banks' ability to independently develop technology but also constrains their digital operations and agile iteration capabilities.

Moreover, the conservative management practices prevalent within banks-such as hierarchical organizational structures-often hinder technological innovation and operational efficiency. Without driving profound internal structural transformation, even substantial investments of time and money into digital transformation may fail to truly enable banks to compete with fintech companies.

3. Case Study and Quantitative Analysis

3.1. Strategic Level and Case Study

Faced with multiple challenges brought by fintech, China's mainstream commercial banks no longer view digitalization as an optional initiative but have elevated it to a core strategic priority critical to their future survival and development. The core of the banking industry's ecological transformation lies in driving the deep integration of "finance" and "scenarios." Banks must recognize that the operational model of internet finance represents a new, upgraded approach that is fundamentally distinct from traditional financial models yet capable of integrating them. It will remain a dominant trend in the financial industry for the foreseeable future. Therefore, targeted strategies to transform profit models and enhance product innovation are essential to ensure the success of this transition [9]. Banks no longer confine themselves to offering traditional financial products but actively build open, interconnected "super portals." Which means Building a closed-loop ecosystem enables users to conveniently access external resources such as government services, public welfare programs, and supply chains. This initiative can attract more users to a certain extent. In the process, banks are gradually transforming from mere service providers into cross-scenario service integrators, seamlessly embedding financial functions like payments, accounts, and financing into daily life applications such as healthcare, education, and industrial chains. This enables a new model of ubiquitous services where "service is the portal, and scenario is the channel." [2]. Banks are also continuously innovating and introducing products and services with innovative attributes, such as automated teller machines, mobile banking, online banking, and electronic money.

Taking Industrial and Commercial Bank of China (ICBC) as an example, as a representative of large commercial banks, its transformation path demonstrates dual characteristics of "cost reduction and efficiency enhancement". In 2022, ICBC launched its "Digital Employee" initiative, deeply embedding artificial intelligence technology into business processes such as customer service, credit assessment, and transaction monitoring. This approach led to a substantial reduction in operational costs, while concurrently enhancing the consistency of service responses. Furthermore, ICBC has been at the forefront of the exploration of "metaverse bank" branches, leveraging virtual reality technology to deliver immersive financial advisory services. This development has not only resulted in the establishment of a technologically advanced brand image among younger demographics, but has also led to the expansion of the boundaries of customer engagement. As the foremost commercial bank in China, ICBC has effectively executed numerous digital initiatives. These have not only enhanced the bank's profitability but also provided a model for other financial institutions to emulate.

In contrast, China Merchants Bank (CMB), another leading commercial bank, has opted for a strategy of "open integration" and "ecosystem co-creation." CMB's establishment of an API-based open platform signifies a pivotal integration of its financial capabilities, encompassing domains such as payments, wealth management, and credit services, with third-party platforms. This facilitates the integration of the bank's multifarious services into a range of lifestyle contexts, including transportation, healthcare, and e-commerce. This approach aims to reclaim customer touchpoints previously obstructed by internet platforms, rendering banking services pervasive, convenient, and efficient.

It is evident that, in addition to technological collaboration and ecosystem development, a profound transformation is occurring within financial institutions. It is evident that a number of financial institutions are implementing organisational restructuring initiatives with the objective of dismantling departmental silos and establishing more agile and efficient teams. This has been demonstrated to accelerate decision-making processes and foster the integration of business operations with technology. Concurrently, banks are increasingly prioritizing the recruitment and cultivation of tech talent. They are addressing gaps in digital capabilities by establishing technology subsidiaries, launching innovation labs, and increasing investments in information technology infrastructure.

Ultimately, comprehensive digital transformation extends far beyond technological upgrades. It signifies that bank must undertake systematic renewal and innovation across their value propositions, customer relationships, operational models, and even organizational cultures. The disruption brought by fintech is compelling banks to reimagine their role in the digital economy.

3.2. Empirical Link Between Digital Investment and Bank Performance

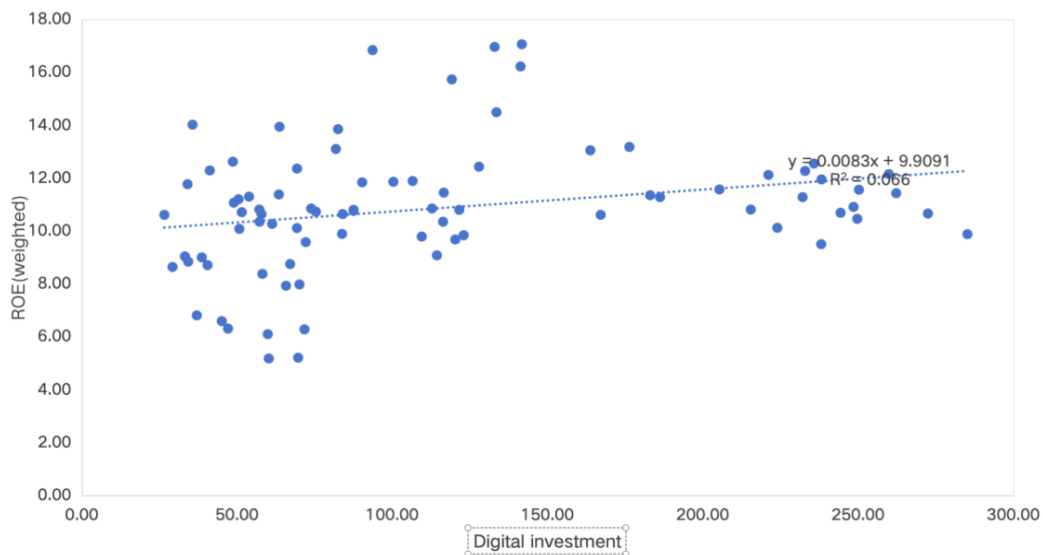
To investigate the impact of digital transformation on bank performance, this study utilizes data from 14 major Chinese commercial banks spanning the years 2019 to 2024. The following table presents relevant data, digital investment (Table 1.) and ROE (weighted) (Table 2.), for these 14 commercial banks from 2019 to 2024, compiled from information disclosed in each bank's annual reports.

Table 1. Digital Investment (100 million)

Banks	2024	2023	2022	2021	2020	2019
ICBC	285.18	272.46	262.24	259.87	238.19	163.74
China Construction Bank	244.33	250.24	232.90	235.76	221.09	176.33
Agricultural Bank of China	249.70	248.50	232.11	205.32	183.00	127.90
Bank of China	238.09	223.97	215.41	186.18	167.07	116.54
Bank of Communications	114.33	120.27	116.31	87.50	57.24	50.45
China Merchants Bank	133.50	141.26	141.68	132.91	119.12	93.61
Shanghai Pudong Development Bank	71.69	69.66	70.07	67.06	57.15	41.20
China Citic Bank	109.45	121.53	87.49	75.37	69.26	48.94
Postal Savings Bank of China	122.96	112.78	106.52	100.30	90.27	81.80
Industrial Bank	83.77	83.98	82.51	63.64	48.62	35.65
Ping A Bank	50.70	63.43	69.29	73.83	72.10	53.85
China Everbright Bank	65.73	58.15	61.27	57.86	51.50	34.04
Hua Xia Bank	34.25	40.48	38.63	33.19	29.20	26.56
China Minsheng Banking	60.19	59.87	47.07	45.07	37.02	

Table 2. ROE(Weighted)

Banks	2024	2023	2022	2021	2020	2019
ICBC	9.88	10.66	11.43	12.15	11.95	13.05
China Construction Bank	10.69	11.56	12.27	12.55	12.12	13.18
Agricultural Bank of China	10.46	10.91	11.28	11.57	11.35	12.43
Bank of China	9.50	10.12	10.81	11.28	10.61	11.45
Bank of Communications	9.08	9.68	10.35	10.76	10.35	11.20
China Merchants Bank	14.49	16.22	17.06	16.96	15.73	16.84
Shanghai Pudong Development Bank	6.28	5.21	7.98	8.75	10.81	12.29
China Citic Bank	9.79	10.80	10.80	10.73	10.11	11.07
Postal Savings Bank of China	9.84	10.85	11.89	11.86	11.84	13.10
Industrial Bank	9.89	10.64	13.85	13.94	12.62	14.02
Ping An Bank	10.08	11.38	12.36	10.85	9.58	11.30
China Everbright Bank	7.93	8.38	10.27	10.64	10.71	11.77
Hua Xia Bank	8.84	8.71	9.00	9.04	8.64	10.61
China Minsheng Banking	5.18	6.10	6.31	6.59	6.81	

**Fig. 1 The Correlation Between Digital Investment and ROE**

By conducting regression analysis using relevant data disclosed in annual reports, we calculated the relationship with digital investment amount as the independent variable and return on equity (ROE) as the dependent variable (shown as Fig. 1). The results indicate a weak positive correlation between the two ($R^2 = 0.066$), suggesting that increased technological investment can enhance banks' profitability and competitiveness.

4. Research Findings and Policy Recommendations

4.1. Research Findings

This study systematically analyzes the impact and challenges posed by fintech to traditional banking. Through case studies and empirical research, it reveals the positive effects of digital transformation on bank performance. We find that fintech is reshaping the banking ecosystem in three key areas: First, on the liability side, internet wealth management products like Yu'e Bao are diverting deposits, posing new challenges to banks' funding structures and liquidity management; Second, on the revenue side, intermediary services like payments and third-party distribution are increasingly being handled by third-party platforms, undermining banks' traditional non-interest income streams.

Third, at a deeper level, weakening customer relationships, an aging talent structure, and lagging organizational culture are also constraining banks' ability to adapt to change.

The quantitative analysis reveals a weak positive correlation between digital investment and bank profitability metrics, ROE, $R^2=0.066$. Although the correlation between the two is relatively weak, this may be attributable to factors such as market fluctuations. Overall, the two are positively correlated. This indicates that fintech is not merely a challenger but can serve as a key catalyst for traditional banks to reshape their value propositions and pioneer new frontiers. Banks that genuinely embrace digitalization at a strategic level and achieve systemic transformation stand poised to reverse competitive dynamics and regain the initiative in future market shifts. In other words, fintech is not a symbol of curbing the development of traditional banks, but rather to foster a more open and integrated new financial ecosystem. Traditional banks must proactively integrate digitalization into their core strategy to transform their current position of merely following fintech companies into independent innovation.

4.2. Policy Recommendations

It is recommended that banking institutions take the findings of this study into consideration, which have been deduced from both theoretical analyses and practical case studies. Firstly, it is imperative to adopt a differentiated approach. It is recommended that banking institutions consider the potential for diversification beyond their customary reliance on interest rate spreads and homogeneous products. Instead, it is recommended that they develop more targeted digital finance strategies by leveraging their unique customer bases and resource characteristics. It is imperative to prioritise areas that are currently underserved by technology platforms, such as small and medium-sized enterprises (SMEs) and inclusive finance. Secondly, it is imperative to fortify fundamental digital competencies by augmenting data integration and analytics. It is imperative to establish a unified data middle platform in order to facilitate the practical application of emergent technologies, including but not limited to artificial intelligence, big data risk management and blockchain, within critical operations. This approach will enable the gradual construction of a technological moat. Thirdly, the advancement of organisational and talent transformation is imperative. This involves the optimisation of structures to enhance cross-departmental collaboration efficiency, thereby creating more agile and flexible operational mechanisms. Concurrently, there is a necessity to intensify the recruitment and cultivation of talent that combines technology and finance expertise, with the objective of sustaining transformation. Furthermore, banks have the capacity to expand ecosystem partnerships by leveraging open APIs and embedded finance to proactively integrate into diverse scenarios, including consumption, industry, and public services. This facilitates the concept of "bank-as-a-service," thereby rendering financial services more seamless and intuitive. Banks must actively fulfill social responsibilities by deeply integrating digitalization with green finance and inclusive finance. Utilizing technology to lower service barriers and costs allows them to create commercial value while simultaneously achieving social value. However, it is important to note that in advancing digital transformation, it is imperative to ensure that the stability of the financial system remains intact. This balancing strategy is crucial for the sustained development of the financial sector [10].

4.3. Research Limitations and Prospects

Although this study strives to comprehensively present the interactive relationship between fintech and the banking industry, certain limitations remain. For instance, the case studies primarily focus on large commercial banks, failing to adequately cover regional banks and rural credit institutions. The data timeframe is restricted to 2019-2024, necessitating future updates. Additionally, the weak correlation between digital investment and ROE in quantitative analysis may stem from the failure to account for market conditions and the unique circumstances of each bank, ultimately resulting in a low correlation between the two variables. Future research could enhance the regression analysis model by incorporating additional variables and considering market factors.

Subsequent research could expand the sample types to include more regional banks, rural financial institutions, and internet banks, comparing the transformation paths and outcomes across different banks. Secondly, evaluation dimensions should be refined. Beyond profitability, metrics such as risk control levels, customer satisfaction, ecosystem integration, and green finance should be incorporated to build a more comprehensive assessment system for transformation effectiveness. Subsequent work should also conduct international comparisons, studying digital models under different financial regulatory environments to distill international experiences that China can draw upon. Finally, long-term tracking is essential. As policies and technologies continue to evolve, sustained observation of the long-term trends in banking digital transformation will provide more forward-looking references for the industry and decision-makers.

5. Conclusion

Overall, the impact of fintech on traditional banking is profound and irreversible, yet the crisis also presents an opportunity. It is propelling banks beyond an era dominated by scale and interest rate spreads, toward a new phase emphasizing data-driven approaches, ecosystem collaboration, and shared value creation. In the future, banks that successfully transition from “traditional financial institutions” to “digital ecosystem nodes” will gain a competitive edge. Thus, fintech is not a flood that will drown the banking industry, but a wave that will propel its evolution. As long as traditional banks embrace change and commit to transformation, they can carve out new growth opportunities amid this revolution.

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