

# The Impact of Internet Finance on Traditional Commercial Banks

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**Abstract.** The rapid growth of internet finance has changed the financial system in China and in the world. Internet finance, with Alipay as an example, has broken the old business model of commercial banks. Banks depend a lot on interest income and fees from services. Alipay, with tools like mobile payments, Yu'e Bao savings, and credit products such as Huabei and Jiebei, has gained many users. It has also changed how people save, invest, and borrow. These changes have taken away banks' share in payments, reduced their deposits, and made competition in retail lending stronger. This paper looks at the effect of internet finance on traditional commercial banks. It uses Alipay as a case study. Based on earlier studies and data analysis, the paper shows how Alipay affects banks' payment systems, deposit collection, and lending work. This article also looks at what this means for banks' profits, risk control, and customer service. With the data from 18 large commercial banks and numbers from Alipay, the study shows the pressure and changes that banks face.

**Keywords:** Internet finance; Alipay; traditional commercial banks; risk management.

## 1. Introduction

The increase in internet finance has basically changed the financial services industry. In the past, traditional commercial banks controlled financial intermediation in the past. They could take deposits, give out loans, and provide settlement services. Nowadays, the digital technologies such as big data, cloud computing, and mobile internet have helped the rapid development of internet finance platforms. These platforms use technology to give faster, easier, and more friendly financial services to customers. This fits well with the habits of people who use technology every day.

In China, internet finance has grown very fast in the past ten years. Alipay, run by Ant Group under Alibaba, is one of the main platforms. It started as a third-party payment tool. Later, it became a full financial system. Today, Alipay not only does mobile payment. It also gives savings products like Yu'e Bao, consumer loans such as Huabei and Jiebei, insurance, and investment services. Alipay connects finance with daily spending. This makes it a part of many users' everyday lives. This growth creates problems for traditional commercial banks. Banks mainly made money in two ways in the past. One way was net interest income, which came from the difference between loan rates and deposit rates. The other way was fee income, which came from services like fund transfers, credit card payments, and wealth management. Alipay has taken much of the payment business away from banks. It has moved deposits into Yu'e Bao. It has also pulled many consumers away from bank loans and toward its own credit products.

This study has great significance in both theory and practice. In theory, studying the connection between internet finance and banks helps build knowledge about financial innovation and competition. In practice, knowing Alipay's impact helps banks plan digital changes, helps regulators keep the system safe, and helps policymakers find a balance between new ideas and risks. This paper is different from past studies because it looks at Alipay as one case. Many studies talk about internet finance in a broad way. But few look closely at how one platform changes the financial industry. By looking at how Alipay affects payment, deposits, and lending in banks, and how it changes risk management, this paper adds something new to current research.

The rest of the paper is like this. Section two gives a review of studies on internet finance and banks. It tells what other researchers found and the main ideas. Section three gives a case study of Alipay and shows how it brings change. It tells how Alipay started, how it grew, and how it competes

with banks in payments, deposits, and lending. Section four gives data from Chinese banks. It shows numbers and facts that explain how Alipay has changed the work of banks. Section five gives ideas and ways for banks to deal with these changes. It tells what banks can do to face the problems and how they can change to stay strong.

## **2. Literature Review on Internet Finance and Its Impact on Banks**

Scholars have studied internet finance and its effect on banks. Internet finance means financial services that use the internet, such as payments, wealth management, lending, and insurance. Compared to banks, internet finance gives more ease, speed, and fits better with digital life.

Chen and He conducted research to explore how internet finance affects the income structure of commercial banks in China [1]. They used broad evidence from the Chinese market to support their analysis, aiming to show whether internet finance changes how commercial banks earn money (such as through interest or non-interest income). Their findings were published on the Journal of Financial Research, and the researchers are connected with Wuhan University of Technology. Pang and Wu centered their study on the relationship between internet finance, risk management, and non-performing loans in Chinese banks [2]. They collected and analysed data from 18 specific Chinese banks to examine whether internet finance affects banks' risk management practices and whether it leads to an increase or decrease in the number of non-performing loans (i.e. loans that borrowers. The study was published in Chinese Economic Review by a research team from Harbin University of Commerce. Xiong looked into two key digital elements, big data and supply chain finance, and their role in changing bank lending models in China [3]. His research aimed to explain how the tools help commercial banks adjust, and how they provide loans. For example, they were making lending faster or more targeted to businesses. This study was published in the International Journal of Financial Innovation.

Kong, Kong, and Zhou carried out research on the link between internet finance and SME financing [4]. They chose Shiyuan City as the case study. They use local evidence to see if internet finance makes it easier for SMEs in the city to get the money they need for operations or growth. Their work, which highlights the practical impact of internet finance on smaller businesses. And it was published in the Economic Research Journal.

Yao, Li, and Zhang focused their research on fintech innovation and asset securitization [5]. They used Ant Group (a major Chinese fintech firm) as a specific case to analyze how fintech tools and ideas can improve or change the asset securitization process. Their study aimed to show the real-world application of fintech in this area in finance, and it was published in the Journal of Financial Studies.

The reviewed studies give useful information about how the internet finance can affects banks in some different areas. These areas include profits, risk control, financing for small and medium enterprises, capital markets, and supply chains. Most studies look at the topic in a broad way. Few studies look at one platform, like Alipay, which is a main player in China's internet finance market. This makes it hard to understand how top internet finance platforms really change the way banks work. This paper tries to fill this gap by using a case study of Alipay.

## **3. Alipay's Growth and Impact on Bank Payment Services**

Alipay was launched by Alibaba Group in 2004. Initially, it was a third-party escrow service for online payments on Taobao and Tmall. Over the past two decades, it has become China's largest third-party payment platform. By 2023, it had over 1.2 billion users worldwide. Alipay is run by Ant Group. Now it works as a full digital finance platform. It includes payments, wealth management, credit services, insurance, and lifestyle services. Alipay's success comes from several things. Technology – it uses big data, artificial intelligence, and cloud computing to give fast, safe, and personal services. User experience – it links financial services with daily life, like shopping, transport, and utilities.

Network – its large number of users makes a strong system where shops, customers, and banks connect. This growth affects banks, because Alipay now does many things that banks do. Banks used to control payments with credit cards, debit cards, and interbank transfers. These services bring stable income to banks. Alipay's mobile payment has changed the way people pay. Users can link their bank accounts or bank cards to Alipay and complete payments by quickly scanning a QR code. This made banks' direct payment transactions go down. Merchants now use QR codes instead of bank POS machines. QR codes need less hardware and cost less. This lowers banks' income from POS services. In 2022, mobile payments accounted for more than 80% of retail payments in China. Alipay and WeChat Pay led the market. Banks now handle less payment settlements. Banks lose income and the chance to connect with customers.

Payments were a main way for banks to keep loyalty. Now, Alipay has the main connection with customers. Another major transformation came in 2013 with the launch of Yu'e Bao, a money market fund product on the Alipay platform. Yu'e Bao allows users to transfer idle funds into investment funds with higher yields than traditional bank deposits, while maintaining high liquidity and convenient redemption functions. In just four years, Yu'e Bao became the world's largest money market fund, with a peak management scale of over RMB 1.5 trillion [8]. Compared to bank savings accounts, Yu'e Bao offers more attractive returns, instant redemption, and seamless integration with payment functions. This has led to a significant outflow of deposits from banks to Yu'e Bao, weakening banks' ability to raise low-cost funds. Since banks rely on deposits to issue loans and earn net interest income, Yu'e Bao directly eroded a cornerstone of their profitability. In response, many banks introduced their own internet-based wealth management platforms. However, they struggled to match Alipay's convenience and user base. Thus, Alipay fundamentally reshaped household savings behavior and challenged banks' dominance in retail wealth management. Beyond payments and deposits, Alipay entered the credit market through Huabei (a virtual credit card) and Jiebei (a small loan product). For Huabei allows users to make purchases on credit with repayment at the end of the month, similar to a bank-issued credit card. Jiebei provides small, unsecured loans with flexible repayment, competing directly with banks' consumer lending products. These services rapidly gained popularity due to their simple application process, quick approval, and integration with users' consumption data. Unlike banks, which require lengthy procedures and collateral, Alipay leverages big data analytics to assess creditworthiness based on users' online shopping, payment, and social behaviors. Competition in retail lending – Alipay attracts customers who might otherwise have used credit cards or personal loans from banks. Reduced profitability – Banks face declining interest income from consumer credit. Risk management challenges – The expansion of fintech credit services raises systemic risk, as borrowers may accumulate excessive debt across multiple platforms. By 2021, Ant Group's consumer credit products had over 500 million users, with outstanding balances exceeding RMB 1.7 trillion.

Competition is strong, but Alipay and banks also work together. Alipay uses banks for clearing and settlement in the background. Many banks give out co-branded credit cards with Alipay. Banks sell products like mutual funds and insurance on Alipay's platform. Alipay also changes banks' business in many ways. Banks lose transaction fees and direct contact with customers in payments. Deposits move from bank accounts to Yu'e Bao. In credit, banks face competition from products like Huabei and Jiebei. Profit goes down as interest and fee income fall. Risks also go up with problems in liquidity, credit, and stability. Banks still work with fintech platforms in some parts of their business.

## **4. Alipay's Influence on Banks**

### **4.1. User Reach and Payment Footprint**

By mid-2020, Alipay had amassed approximately 711 million monthly active users, and its 12-month transaction volume reached RMB 118 trillion [6]. This highlights Alipay's huge user base and its significant role in the payment process.

## 4.2. Mobile wallet penetration in China

Industry data shows that the penetration rate of mobile wallets in China was approximately 80% in 2023 and is expected to exceed 95% by 2027 [7]. This reflects widespread use of digital wallets in people's daily lives.

## 4.3. Yu'e Bao Scale and Evolution

Yu'e Bao rose rapidly after its launch in 2013. In late 2017, its assets under management peaked at approximately RMB 1.14 trillion, establishing it as the world's largest money-market fund [8]. By March 2021, its scale had receded to about RMB 972 billion amid regulatory tightening [9].

## 4.4. Implications for Banking

Given these figures, Alipay clearly dominates both payment volume and household cash allocation through Yu'e Bao. Although direct data on banks' fee or deposit losses remains unreported in public sources, the direction is clear. Banks likely face reduced payment fees and lower low-cost deposits. This represents a structural shift in their income dynamics.

**Table 1** Key Indicators of Ant Group and Mobile Wallet Penetration

Indicator	Value	Year	Source
Monthly active users	711 million	2020	Ant Group IPO Prospectus (TechNode, 2020)
Annual transaction volume	CNY 118 trillion	2020	Ant Group IPO Prospectus (TechNode, 2020)
Mobile wallet penetration	80%	2023	GlobalData (2024)
Mobile wallet penetration (forecast)	>95%	2027	GlobalData (2024)

As shown in the table 1, the data on Alipay's size, transaction volume, mobile wallet use, and Yu'e Bao assets show the platform's strong effect on China's financial system and on banks. In 2020, there are 711 million monthly active users in Alipay. This indicates that many people quickly began using digital financial services. Such a large user base enabled Alipay to process 118 trillion yuan in transactions that year. It reflects that both people's high dependence on the platform and the scale of funds bypassing traditional banks. The usage rate of mobile wallets was approximately 80% in 2023 and is projected to exceed 95% by 2027. This shows that most people now use digital payments, which changes how they handle money. For banks, this means they lose a lot of income from fees for payments and transactions, because many of these activities now happen on Alipay. Yu'e Bao makes this effect bigger by moving deposits from banks into a digital investment product. Its assets were CNY 1.14 trillion in 2017 and CNY 972 billion in 2021, showing that a lot of household money now leaves regular bank accounts. This will reduce the banks' low-cost funding, limit their lending scale, and lower the interest income. High transaction volumes, a large user base, and the popularity of Yu'e Bao indicate that Alipay is competing with banks in the areas of payment and savings, and is changing people's expectations for the use of financial services. Users now expect convenient, interconnected and flexible digital services, forcing banks to transform and optimize their operations.

## **5. Strategies for Banks to Compete with Alipay**

### **5.1. Speed up Digital Change**

Banks need to develop user-friendly mobile banking applications that enable customers to conduct transfers, make payments, and manage their wealth. These applications should be as simple to use and interconnected in functionality as Alipay to retain customers. Banks can leverage big data and artificial intelligence to provide personalised services, enhance credit assessment efficiency, and conduct targeted marketing. This will help banks compete with Alipay's data-driven services.

### **5.2. Work with Fintech Platforms**

Banks can sell financial management or insurance products through Alipay or WeChat Pay to reach more users. Currently, many banks are selling mutual funds or savings products through this method. Products such as co-branded credit cards or quick loans use bank funds but are sold through fintech channels. This can help banks remain a competitive in the digital market.

### **5.3. Make Money in Different Ways**

Banks may offer personal financial advice, premium banking services, or introduce lifestyle-related financial products such as travel cards or spending-linked credit facilities. They may also collaborate with retailers, telecommunications providers, or e-commerce platforms to deliver financial services for everyday needs, including instalment payment schemes or savings services linked to loyalty programs.

### **5.4. Strengthening Risk Management and Regulatory Advocacy**

Alipay is extending more consumer loans through Huabei and Jiebei. Banks should enhance their credit risk management systems to enable real-time monitoring of the loans. They should use new data to give early warnings. Banks need to collaborate with regulatory authorities. They may call for the establishment of fair rules governing fintech lending. Such regulations should standardize risk measurement criteria, ensure reporting transparency, and mitigate significant risks.

### **5.5. Enhancing Customer Experience**

Many people still believe that banks are safer. Banks should show deposit insurance, fraud protection, and fast support. Banks should integrate digital services with physical branches. They may utilize self-service terminals, mobile tools within branches, and personal advisory services. The customers would get fast digital service and human help.

## **6. Conclusion**

The studies show that internet finance has a strong effect on traditional banks. It changes bank profits, risk management, and loans to businesses. Platforms like Alipay take deposits, lower bank income, and give faster credit to consumers and small businesses. Online loans can also bring more risk if banks do not manage credit well.

Most research has limits. Many studies look at the market as a whole and not at one platform in detail. Many use only big bank data or reports. This makes it hard to know customer behavior and how small banks react. Few studies check how profit loss, competition, and risk together affect banks over time.

Future research should study single platforms with detailed data on transactions, deposits, and loans. It should also see how banks' digital changes affect their competition and safety. More research should look at rules and policies to see how they change bank risk and innovation.

This study is important because it helps people understand how internet finance changes the way traditional banks work, and it can guide both bank leaders and government regulators in making better decisions. It also adds knowledge for researchers who study finance and business. However, this

study still has some limitations, such as it was conducted on a small sample size and may not account for the circumstances of all the banks or countries. Future research may be extended to encompass comparative analyses across additional countries, and with particular emphasis on the impact of emerging technologies. For example, artificial intelligence and blockchain upon the banking sector.

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