



**RESEARCH ABOUT THE IMPACT OF INTERNET FINANCE ON
COMMERCIAL BANKS AND BANKS' CORRESPONDING TACTICS**

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Abstract

Title: Research about the impact of Internet Finance on Commercial Banks and Banks' Corresponding Tactics

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With the rapid development of the Internet industry, the relationship between financial industry and the Internet is more and more close, and Internet finance gradually emerged. Since 2013, the Internet financial model drew the public's attention gradually, and granted the public with new understanding and awareness of the Internet finance. A typical representative is "Yu 'E Bao"; with its low investment threshold, relatively high annual rate of return and the "T +0" transactions mode, "Yu 'E Bao" spread rapidly in financial markets and won the majority of investors. With the popularity of "Yu 'E Bao", a large number of similar Internet financial products emerged in the market. Internet financial products are mainly aimed at the majority ordinary investors whose small and idle funds are usually neglected by commercial banks; but Internet financing platforms may obtain higher rate of return for investors through the accumulation and reinvestment of the idle funds. The birth of the Internet financial products not only wakes up the ordinary people's financial management concepts, but also brings vitality to the small and idle funds in bank accounts. In this paper, the theoretical analysis and empirical research are integrated. This paper first discusses the development process of Internet finance and its operation mode, and then analyzes the impact of Internet finance on commercial banks. In empirical research, this paper selects 12 listed banks to analyze the impact of Internet finance on their profitability. Finally, based

on the analysis of the study done, this paper proposes conclusions and constructive recommendations.

Key words: Internet finance, Commercial bank, Profit model, Corresponding tactics



摘要

题目: 互联网金融对商业银行的影响及应对策略研究

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随着互联网行业的蓬勃发展,金融业与互联网的关系也越来越密切,并逐步呈现出互联网金融这一新的发展趋势。自2013年以来,互联网金融模式逐步受到国人的关注,也使大众对互联网金融产生了新的理解与认知。这其中的典型代表是余额宝,其凭借极低的投资门槛、相对较高的年收益率以及“T+0”的交易方式,在金融市场迅速风靡,赢得了广大投资者的青睐。随着余额宝的风靡,一大批类似的互联网金融理财产品在市场上相继涌现。互联网金融产品主要定位于广大的普通投资者,这一群体及其闲置在银行账户内的小额资金往往被商业银行忽视,而网络融资平台通过小额资金的聚集与再投资,则可以同时为融资平台和投资者带来更高的收益。互联网金融产品的诞生唤醒了普通民众的理财观念,也给银行账户里的闲散资金带来了活力。本文在研究过程中,融合了理论分析与实证研究。本文首先对互联网金融发展历程及其运营模式进行了论述,并在此基础上分析了互联网金融对商业银行的影响。在实证研究阶段,本文选取了12家上市银行,用于分析互联网金融对商业银行盈利的影响。在文章最后,本文依据所做的分析研究,列举了研究结论并给出了具体的建议。

关键词: 互联网金融、商业银行、盈利模式、应对策略

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CHAPTER 1

INTRODUCTION

1.1 Background

Since 2013, the Internet financial model drew the public's attention rapidly, and granted the public with new understanding and awareness of the Internet finance (Hailong, 2013). The reasons why Internet finance quickly got the attention of ordinary people lie in its convenience, personalized services and products and low transaction costs. At the same time, the development of big data, cloud computing and other new technologies has also brought more and more changes to consumer's consumption patterns (Agrawal, 2011). In the past, consumers often need to wait in line in bank branches if he/she wants to handle the business, but now he/she only needs to use the phone or network to conduct corresponding operations. For example, electric & water charge payment, prepaid recharge etc. could be done through the network or mobile phone. Driven by Internet technology, Internet finance would create more and more impact on people's lives. Also, the quick development of Internet finance will have a far-reaching impact on the traditional financial industry and commercial banks (Firth, 2016). China's Central bank's data shows that by the end of Feb 2014, RMB deposits increased by 1.22 trillion Yuan annually, but despite the certain recovery of RMB deposit in February, the new deposits suffered 833.9 billion Yuan decline compared to the same period last year (2016) in the first two months (Central Bank of China, 2016). In contrast, by February 28, 2014, 6 months after the birth of "Yu 'E Bao", its capital size exceeded 500 billion Yuan with more than 81 million users -- more than all Chinese stock market users. The quick development of online banking, mobile payment, mobile banking, and P2P network loan platform etc. created a new kind of innovative finance mode—Internet finance. Internet finance has broken the traditional finance industry's business model and operation pattern in the market. Internet companies make use their own advantages

of large data along with financial institutions to continue to bring business innovation. New-born Internet financial companies would be engaged in fierce competition with traditional financial institutions.

No doubt that Internet finance has changed the traditional financial market, especially the external environment of commercial banks. Some researchers believe that the emergence of Internet finance may make big changes to the commercial banks' traditional business model and market position.

Facing those market environment changes, commercial banks have also taken rapid response measures. After February 2014, three big commercial banks including ICBC, ABC, and CCB won't accept the agreement deposit from the various monetary market funds belonging to "Yu 'E Bao". Meanwhile, major commercial banks launched their own financial products respectively. Then, in response to the rise of third-party payment platforms, the major commercial banks not only actively promote their Internet finance and mobile banking, but also significantly reduced related business fees. Commercial banks' "counterattack" also makes their competition with Internet finance more intensified (Sun, 2016).

1.2 Research purpose

The development of Internet finance has brought very big impact on people's daily life and work, as well as traditional financial institutions like commercial banks. Under such circumstances, a question that has to be pondered also arises: where does the vitality of Internet finance come from? What effect does this new financial model have on traditional finance? How should the traditional finance response to the impact? This paper will explore the development motive and influence of Internet finance through the current development of various Internet finance behind this phenomenon. This paper will anticipate the future development direction of new Internet financial model and the traditional finance, and think of the approaches that commercial banks could adopt to achieve network development. Hope that this research would provide useful help to the development of commercial

banks and even the reform of financial system in the new competitive landscape in China.

1.3 Research significance

In today's rapid economic development in China, the Internet financial model facilitates funds payments, increases the degree of information symmetry and promotes the more direct and convenient transaction between suppliers and demanders. Even if there are no banks, exchanges, brokerages and other financial intermediaries, the purpose of direct and indirect financing is also achievable; so as to greatly optimize the efficiency of resource allocation.

As the financial industry's future development trend and mode, the model not only better solves the current financing problems of SMEs (SMEs), but also regulates the development of the private financial sector to make it more transparent and healthy. Internet finance has brought about a revolution in the financial payments sector. It may also promote innovation in the current financial system and even trigger a huge controversy in the monetary theory system (Sánchez, 2016). At present, for the development of traditional commercial banks, the emergence of the Internet financial model has changed the existing competition pattern in financial system, the changes are mainly reflected in the fund market and credit market where many financial institutions with competitive advantages arises. Those Internet giants with the majority of customers are mining a huge business opportunity through business innovation, bringing huge influence on traditional capital market, financial supervision, financial management, monetary theory, as well as money market and capital market. Thus this problem is very worthy of discussion.

1.4 Chapter summary

This chapter first introduces the background of the research, then the purpose and significance of the research is introduced.

Can Internet finance bring subversion influence to the traditional financial

system as a new thing? How will the competition between Internet finance and commercial banks affect the direction of financial markets? These are the focus of this paper.



CHAPTER 2

LITERATURE REVIEW

2.1 Internet Finance

2.1.1 The connotation of Internet finance

America is the cradle of Internet finance. Gronin (1997) analyzed online transactions, online funds and other online businesses and believes that the Internet finance has strong market competitiveness; its appearance is inevitable.

Berger and Gleisner (2008) believe that the fundamental reason why Internet finance is hindered during its early development lies in customers' lack of trust in the Internet finance business led by high risk of network security (Wang et al, 2016). They believe that in order to get more customers and enhance the popularity of Internet finance, the fundamental approach is to enhance its risk control capabilities.

Zask (2001) and Paranque (2016) believe that the traditional financial industry, such as insurance, banking, securities, etc. would suffer greater impact by the emergence of Internet finance. Therefore, the traditional industry should actively change their operation mode to make a reasonable response to this impact. Heng (2007) pointed out that, compared with the elderly; young people are more familiar with the network, and they have a higher tendency to Internet financial products. Lauri et al. (2010) pointed out that, at present, information asymmetry is more obvious during commercial banks' financial transaction processes, which is a major cause of inefficient allocation of resources, but Internet finance has significantly weaken the information asymmetry. Nikil (2008) proposed that thanks to that both parties can use technical means to query the identity, credit and other information they want to know, network information exchange and the emergence of network technology platform reduces the possibility of the occurrence of moral hazard in transaction process (Chowdhury, 2016).

In China, Xie Ping and Zou Chuanwei (2012) proposed the concept of Internet finance first. They believe that it is the development of cloud computing, search engines, mobile payments and other Internet information technology that promoted the birth of the Internet financial mode, but also gave birth to the Internet financial financing model. This kind of financing is not only different from the indirect financing of the traditional commercial banks, but also different from the direct financing in the capital market. To some extent, the Internet financial model belongs to direct financing, but compared to the direct financing of capital markets, Internet financing is distinguished by several characteristics like less degree of participation, a large amount of information, and low intermediate cost etc. Xu Jie, Po BinXian (2014) put forward the definition of Internet finance as well, that is, any Internet products related to the issue of credit currency, exchange, storage, financing activities could be called internet finance, including the P2P platform, the third party payment etc. In view of its direct financing characteristic, compared to commercial banks, not only the transaction cost of Internet financial products is lower, but also individuals' needs are better met. But at the same time, due to the lack of certain risk control experience, coupled with convenient procedures, P2P business is also facing greater risk. Over the past few years, China and other developed countries didn't strictly regulate P2P business; recently, China has introduced a number of laws and regulations for the strict requirements and control of P2P services.

Cao Shaoxiong (2013) summarizes the characteristics of commercial banks and Internet finance, and holds that commercial bank functions have been weakened by Internet finance in many aspects, including the commercial bank's financial intermediary role and status, financing pattern, and mode of value realization and creation etc. Therefore, if the financial banks want to maintain the existing advantages, they must to integrate Internet technology into their existing business.

2.1.2 The Classification of Internet finance

The Internet finance not only reflects the electronization of the

traditional commercial banking business, such as online banking, electronic payment and so on, it is also a new business and profit model that integrates Internet thinking & concepts and the traditional commercial banking business. Tan Zhichao (2014) believes that, in the regard of service model, the Internet finance mainly includes the following three categories, namely the Internet extension, intermediary services, and sales of traditional financial services. This paper mainly studies the impact of Internet finance on commercial banks, so it only involves the narrow sense of Internet finance. Narrow Internet finance includes only the latter two models, namely the financial Internet intermediary services and sales services. Internet finance service model involves a number of aspects, such as P2P net loan platform, the crowd-funding network, third party payment platform etc. The Internet financial sales service mainly refers to some financial products sold by Internet companies.

P2P net loan platform

P2P is the abbreviation of person to person, which refers to a direct lending relationship, just that the relationship is based on the Internet platform. The third party financing intermediary agencies are usually acted by websites with a certain degree of qualification; they have a certain substitution effect to the traditional financial institutions. P2P is a point to point borrowing and lending mode between funding owners and demanders. Funding demanders initiate the application from the platform and reach an agreement with the funding owner in the amount of funds, lending cycle, and interest rate etc., then the owner offer loans. P2P net loan companies are different from the traditional financial institutions; the latter mainly earn spreads, while the former will fully examine the qualification and credit status of the funding owners and suppliers, and charge management and service fees to make a profit (Kang Xinhua, 2014).

The reasons why P2P net loan platform can get rapid development in a short period of time not only lie in the financing difficulties that SMEs and individuals have always been faced with, but also in the high thresholds and the

complex approval processes that commercial banks set for SMEs and individuals. P2P net loan platform plays an intermediary role between the fund supplies and demanders, both sides can reach a consensus on the lending rate and the amount based on their willingness. Thanks to its many advantages, P2P net loan platform received the favor of risk investors and funding demanders once launched. The P2P net loan platform can be traced back to the United Kingdom, a credit company called Zopa, which is also a template that many countries to emulate. Subsequently, P2P net loan platform developed rapidly in developed countries such as the Prosper, Lending Club in the United States, Comunitae in Spain, Profunding in South Korea and Aqush in Japan etc. The development of P2P net loan platform in China almost keep pace with the world, in China, the first P2P net loan platform appeared in 2007, namely “paipai”. After a few years, P2P net loan platforms blossom everywhere in China. By the end of 2014, there exist 1575 P2P net loan platforms in China with more than 252 billion Yuan trading volume. However, there are still many problems in China's P2P net loan platforms, such as the lack of an effective regulatory system, low market access threshold, discrete industry standards etc. These shortcomings and deficiencies also lead to the occurrence of many accidents. By the end of 2014, the number of problem platforms has reached 275.

Third party payment platform

The third party payment platform and e-commerce are closely related. The network trading is different from real life transaction between buyers and sellers, buyers cannot make a direct judgment on the quality of the goods, and the sellers' business reputation. The emergence of the third party payment platform, to a certain extent, solves the problem. It provides credit guarantee for both the buyers and the sellers. With the aid of third party payment platform, buyers deposit their money in the account provided by the third party payment platform, rather than direct remittance to the sellers. Only when the buyers receive the goods and confirm the quality of the goods, will the payment be imported into the seller's account through

the platform. This model can effectively solve the problems that may lie in the quality of goods, the credibility of the two sides etc. In fact, the emergence of the third party payment platform has played a significant role in promoting the development of e-commerce. The rise of the third party payment platforms, not only benefit from its seizing the opportunity to occupy market share, but also benefit from the barriers between commercial banks and the lack of a unified and effective Internet payment system. With the growing scale of the third party payment platform, they began to try to get involved in other directions like life services, financial sales etc. and are no longer limited to provide payment services for e-commerce (Kim Sasa, 2008). In July 2013, third party payment platforms are granted with legal status by the people's Bank of China, by the end of 2014, as many as 269 enterprises obtained third party payment license. Ai Rui consulting's data show that China's third party payment volume exceeded 8 trillion by the end of 2014, with an annual increment of more than 50.3%. Although the third party payment platforms have a rapid development momentum, with a huge amount of money and continued to actively take part in social activities, increasingly serious business homogenization also makes them faced with enormous competitive pressures. In order to meet future challenges, third party companies need to seek innovation to achieve differentiated development.

Internet financial product

The Internet financial product is a kind of investment product that base on the Internet technology and fuse both of the characteristics of financial product and the Internet (Yau Sheng, 2014). The core of this kind of financial product that financial institutions create many products as a "financial products supermarket" with the aid of Internet, by comparing the yields and online search, the uses are able to choose suitable financial products. Compared to the demand account, the Internet financial products have a lower threshold, higher liquidity and higher income rate; investors can access the money at any time according to their own situation, which

enhance the efficiency and income for investors. So many advantages make internet financial products popular once it came out. The well selling of the Internet financial products selling has also become the major threat for commercial banks' deposit business (Lai JiZe, 2014). In June 2013, "Yu 'E Bao" quickly won the attention of a large number of investors, and then a lot of records are bettered. 18 days after it came out, the size of "Yu 'E Bao" reached 6 billion Yuan, after 8 months, the scale has exceeded 500 billion Yuan. The huge success of "Yu 'E Bao" prompted more Internet companies to enter the financial sector. Related data show that by the end of 2014, there were 70 kinds of Internet financial products, the total size exceeded 1.5 trillion. In recent years, the scale of China's Internet finance products showed a rapid upward trend, just in 2013 and 2014, the growth rate was up to 576%. It is worth noticing that, in the fourth quarter of 2014, for the first time the scale of Internet financial products shrieked, which is not unrelated to the decline in the yield of Internet financial products.

2.1.3 The impact of Internet finance on Commercial Banks

Academic views vary on the impact of Internet finance on China's commercial banks. Some scholars believe that the impact of Internet finance on commercial banks is subversive. Eisenmann and Barley (2006) pointed out that compared with commercial banks, Internet finance can greatly avoid the information imbalance during transaction process, so as to reduce the transaction risk, besides, and Internet finance can provide customers with better services. Qiu Feng (2013) believes that Internet finance will significantly weaken the position and role of commercial banks; this is mainly because that the Internet will bring with financial disintermediation, customer disintermediation, information disintermediation, channel disintermediation and technical disintermediation etc. He also believes that if commercial banks cannot take effective response measures, then its intermediary business, deposits and customers will face a certain degree of loss. Therefore, commercial banks should take advantage of their current relatively stable market

position, and take timely and effective measures to carry out business and product design innovation to further enhance the ability of inclusive financial services, and thus better cope with the impact of the internet finance. He Yi (2013) proposed that commercial banks should admit and adapt to the development trend of Internet finance, meanwhile they should further innovate and promote financial product supplement to consolidate their own capital advantage. In addition, they should strengthen the advantages of risk control system, and further optimize credit system.

Other scholars believe that Internet finance will not have much impact on commercial banks. For example, Gonzalez et al (2012) pointed out that Internet finance is changing our consumption habits. Despite that the innovative Internet finance business model has a certain impact on traditional banks; it has not fundamentally changed the basic rules of the finance industry. In addition, the core businesses of commercial banks have not suffered a disastrous blow by the Internet finance. At the same time, the commercial banking industry is also actively seeking for changes and enhances informatization level to meet more challenges. With the reform of China's financial system and the liberalization of interest rates, the rapid development of Internet finance momentum would suffer some containment. Wan Limeng (2013) found that Internet finance is not able to reduce transaction risk effectively; in fact, customers are faced with greater investment risk because of the lack of effective supervision. Therefore, the Internet finance would not have too much impact on commercial banks; it would only serve as a supplement to traditional banks instead. However, it should be noted that Internet finance's characteristics that it focus on customers, as well as a wealth of personalized products is worthy of learning for commercial banks.

There are also a class of scholars proposed the expectations to integrate Internet finance and traditional finance model. Zhang Yi (2014) pointed out that further market segmentation is inevitable, so commercial banks should abandon over single financial service mode, because it is difficult to adapt to the development of

society and consumer demand. Therefore, for the commercial banks, it is vital to focus on providing multi-level, dimensional, and personalized financial services. For commercial banks, the development of Internet finance is a powerful opportunity rather than challenge. Gong Xiaolin (2013) discussed the financial impact of the Internet finance on traditional commercial banks in business strategy, financing, pricing, customer channels and financial disintermediation based on the discussion of the concept, features, and functions of Internet finance. In his opinion, although Internet finance will not have much impact on commercial banks' business and profit model in short time, commercial banks still need to learn from Internet financial model in order to obtain the long-term sustained development.

2.2. China's Internet finance development process

Internet finance started much earlier in developed countries than in China with larger scale. As for China, although the birth of Internet finance can be traced back to the beginning of 90s, China's first year of Internet finance has been identified as the year of 2013. Broadly, China's Internet finance can be roughly divided into three development stages (Bai Jie, 2014).

Stage one: Mid 90s to late 90s. In this stage, the Internet is underdeveloped, and the concept of "e-commerce" was not officially formed. Any commercial banks or securities companies that make use of Internet technology in service processes could be considered as Internet finance. For example, commercial banks provide account opening, transfer and other basic businesses through Internet; Security companies provide market analysis, consulting and other consulting services with the aid of Internet etc.

Stage two: The first ten years of 21th Century. During this period, Internet technology obtained rapid development. Internet companies began to collect and analysis customer information to get ready for entering finance industry with the help of search engines, big data, cloud computing and other new technologies. The development of e-commerce promoted third party payment platforms to enter their

budding stage. Companies that obtained profits have launched a variety of Internet based financial products, including online payment, online loaning and online insurance etc.

Stage three: 2012 to date. During this period, Internet finance got rapid development, and the formal definition of Internet finance was established. In 2013 the success of "balance of treasure" led to the emergence of a large number of financial products like "balance of treasure", and it is then that Internet Finance was further known. Survey data show that by the end of 2014, the total size of China's Internet finance has exceeded 10 trillion Yuan; Internet finance is continuing to impact the traditional financial institutions.

2.2.1. The motive force of Internet finance

Rapid development of big data, cloud computing and other Internet technologies

The primary problem in the financial market is information asymmetry. Traditional financial institutions play a financial intermediation role in financing process, and provide a bridge of communication between suppliers and demanders. The continuous development of Internet and mobile phone terminal technology offers technical possibilities for the traditional financial enterprises' transformation and innovation. The entrance of Internet companies into financial industry with their own economic strength and technological advantages makes industry integration possible.

Big data is the name of the mass data generated by a great amount of devices, which includes structured data and unstructured data. The transaction data contains a large number of suppliers, consumers and operations management-related information. With this useful information, Internet companies can more fully understand the market and customers, and build a complete and comprehensive credit information system. Cloud computing is the technology about the collection, statistics, analysis, and screening of data. Only after targeted combing, data could

become a valuable commercial resource. The use of cloud computing for data processing can improve the utilization of information, and reduce business operating costs as well. In addition, the mitigation of information asymmetry in traditional financial field is driven by social platforms like Micro-blog and WeChat etc. The information integration of both of the capital market supply and demand sides would not only reduce transaction costs, but also promote the further optimization of the capital market resource allocation (Yang Jian, 2014).

Transformation of Residents' Consumption Patterns

The large area promotion of mobile networks and smart phones greatly promoted the popularity of the Internet, which has become the main source of the large number of Internet users in China. The development of mobile Internet technology, especially mobile payment, mobile banking, intelligent APP etc. has brought convenience to the users' consumption activities, which also makes more customers favor of online transactions. "The 34th China Internet Development Statistics Report" shows that by the end of 2014, the number of Internet users in China has exceeded 649 million with 47.9% Internet penetration rate, in which 85% of them are mobile phone users.

Internet finance is not only based on the Internet penetration rate increment, but also the formation of the customers' Internet financial habits. For a long time, funds less than 50,000 Yuan are often difficult to find the suitable investment channels due to its small amount. The rising standard of living and the increasing accumulation of wealth have led more and more ordinary people to start focusing more on their finances, and they are not content to deposit funds in traditional financial institutions. In addition, traditional business organizations also exposed more and more shortcomings, such as low business efficiency, long waiting time, and lacking of differences in product types etc. More and more people hope that a convenient operating system and effective investment channels would be able to appear in the market. At the same time, the upgrade of financial depth and breadth

also spawned the diversification and complexity of the public's financial needs, while the traditional financial is difficult to fully meet these needs. Internet companies provide customers with self-service through their own platform advantages. While collecting small idle funds, it sets no financial threshold, no time and space constraints, and provides low-cost, fast payment, immediate redemption services. These strengths helped the Internet innovate finance rapidly win a broad customer base (Zhao Nanyue, 2013). The popularity of Internet equipment along with the rapid increase in the size of China's Internet users founded the base of e-commerce together. In 20 years, the scale of China's e-commerce greatly increased, and exceeded 9.9 trillion Yuan in 2013, accounting for 17% of GDP that year. The flourishing development of e-commerce is a great opportunity for Internet finance. The new e-commerce has got rid of the limitation of time and space, and provided convenience for capital payment and intermediation, thus the traditional financial model becomes increasingly difficult to meet the demand of modern e-commerce. Internet technology has been increasingly penetrated into the lives of residents and business operations, and the rapid development of e-commerce has made enterprises more urgent in the needs of efficient and convenient financial services, all these provide a large user base for the rapid development of Internet finance.

2.2.2 Theoretical support of the development of Internet finance

Platform economic theory

The platform in the “platform economy” refers to a trading field which could be realistic or virtual. Platform itself is only to provide space, but not for production and sales, and the platform benefits from facilitating transactions between customers to charge a certain fee. Bai JinZhi (2014) believed that the platform has network external features in economic activities; other consumer groups' judgments play important roles for potential customers to choose platforms. Specifically: Seller will give full consideration to the number of buyers on the platform, and on the other hand, more sellers attract more buyers in turn. Internet

finance is a typical platform economy, which is mainly owed to its "open, equal, cooperation, sharing" features. As long as the Internet-based platform aggregates one of the two parties, it would aggregate the other party through the aggregation effect. Internet finance, as a typical platform economy, has the following characteristics: (1) obvious scale effect, namely, the increase in the number of users would not only reduce marginal cost but also increase marginal utility. (2) Internet financial model can improve the platform's value and customer viscosity. (3) Multi-point expansion model makes the number of Internet financial customers to grow geometrically.

Modern financial intermediary theory

The role of financial intermediaries is to achieve the flow of funds between suppliers and demanders, in the real economy, traditional financial institutions usually tend to play this role. Merton (1995) argued that financial intermediation is extremely beneficial for scale economy and can significantly reduce the transaction costs during the flow of funds. In addition, financial intermediaries can establish a bridge of communication between the fund suppliers and demanders. Relying on professional information processing capability, financial intermediaries are able to avoid various problems caused by information asymmetry. Modern financial intermediation theory believes that financial intermediaries can help achieve the following objectives: First, the information asymmetry will lead to cost increment during capital transaction processes, but through effective control on loan projects, loan supervision and recovery stages, transaction cost would be significantly reduced. Second, financial intermediaries' professional data analysis capabilities and its involvement in the transaction process will significantly reduce participation cost. Third, in addition to ensure both sides' demands on liquidity, financial institutions help to reduce liquidity risk as well.

Traditional financial intermediaries mainly include commercial banks and capital markets, the two are mainly used to conduct indirect financing and direct financing. Although these two types of financial institutions are able to help reduce

transaction costs and optimize the resource allocations, there are some transaction costs, such as operating costs, staff salaries as well . However, relying on the Internet platform, the introduction of Internet technology on market risk assessment would significantly reduce the market information asymmetry. Both of the borrowers and lenders are able to match each other according to their needs, and thereby reducing transaction costs.

Financial repression and financial deepening theory

Mckinnon (1973) and Shaw (1973) proposed the financial repression theory and financial deepening theory respectively. Financial repression theory holds that developing countries should not control deposit and lending rates and exchange rates too much, that's because government intervention will lead to distortion of monetary supply and demand relations, thereby inhibiting the market regulation function. At the same time, the residents' enthusiasm for saving will suffer repression but society will show excessive demand for funds, resulting in a fund shortage situation. If the government allocates funds by artificial approaches at this time, rationing funds' lower interest rate will result in that the fund recipients do not need to examine investment projects to obtain high interest rate spreads, and then the whole society investment tide would be formed. In turn, the low interest rate will further widen the gap between the supply and demand, leading to the government's stricter interest rate control; this vicious cycle will reduce the society's economic efficiency and lead to financial repression.

The rise of financial deepening theory aims to solve the financial repression problem, that is, make use of market forces to replace government behavior. Financial deepening theory holds that, for economically underdeveloped countries, government departments should release the control on market interest rates and exchange rate, and give full play to the role of market regulation. In addition, considering financial institutions' functions in reducing information costs, improving investment efficiency and promoting financial intermediation, financial

institutions' the market regulation functions should be fully utilized to reduce financial repression.

The emergence and development of internet finance is a realistic reflection of financial deepening theory. The development of Internet companies broke the traditional pattern of financial industry, so that the financial structure shows diversified characteristics. The Eighteenth National Congress of the Party put forward financial reform policies to implement market-oriented interest rate, perfect modern financial system, and better play the market's role in optimizing resource allocation. The emergence of the Internet financial platform would reduce financial service cost, reduce the threshold to enter the market, and greatly promote China's financial reform.

2.3 Overview of China's Internet financial business model

The definition of Internet finance is not unified in the academic, thus the Internet financial business models are not the same too. Combined with the main categories of Internet finance in China, to specifically analysis China's Internet financial business model, this paper divides Internet finance into three categories -- P2P network loan platform, third-party payment platform and Internet financial product.

2.3.1 P2P network loan platform

In general, there are mainly four types of business modes for P2P network platforms: unsecured online transaction mode, secured online transaction mode, creditor transfer model and O2O mode (Geng Peijun, 2014).

Unsecured online trading model

Platforms that adopt this type of business mode only act as a bridge of communication between supplies and demander to disclose various kinds of information in the financing process, but don't provide any forms of security, so investors need to suffer potential investment risk. This mode depends solely on the two financing sides, and there is no financial guarantee, thus it is difficult to be

accepted by investors. Seldom platforms adopt this mode in China.

Guaranteed online trading model

This mode not only provides appropriate financing information for both of the supply and demand sides, but also introduces third-party security companies to secure funds. Such platforms do not participate in the absorption and payment of deposits, but would strictly investigate the borrower's information, and once the borrower is approved by the platform, he/she is eligible to borrow directly from investors, and sign the loan agreement to clarify the credit and debt relationship between the two sides. If the borrower overdue, the security company's compensatory services would ensure the investors interests to some extent. Borrowers, lenders as well as third-party security companies are required to pay a certain platform fees and service fees, which is also the way that network loan platforms make profits. This kind of transaction adopts the "one-to-many" model, namely a number of investors participate in the completion of a borrower's loan application. Of course, there are "one to one" modes that "Lu Jin Suo" adopts. The advantage of this mode is clear rights and responsibilities.

Credit right transfer mode

Credit right transfer mode means that the contract is not directly signed between the borrowers and lenders, capital demanders would get access to the funds through third-party platform first, and then, the third party platform would divide the credit right into different terms of claims or financial products, and transfer them to the capital owners. After the split, large debt would be divided into multiple small, short-term debts, so the difficulty to sell the claims is reduced. The representatives of this kind of P2P network loan platforms are "YiXinDai" and "YiRenDai".

O2O mode

The O2O mode combine online and offline together, the composition of its structure includes micro-credit companies, P2P network loan platforms, and security companies etc. The borrowers' loan applications are completed on the P2P platform,

but the borrowers' information is audited by a professional microfinance institution offline. Once the borrower is approved, he/she will be secured by the security company. China's current credit system to be further improved, so that the offline investigation is usually face to face verification of the borrower's personal information, identity background etc. to ensure financial security. This is also the mainstream mode that most of the current P2P network platforms adopt.

2.3.2 Third-party payment platform's business model

Third party payment platform's business models mainly include two classifications, namely, secured payment mode and independent third-party payment mode (Wu Peng, 2014).

Secured third party payment mode

This kind of Internet financial platforms are often bundled with some large-scale e-commerce platforms and maintain cooperation relations with commercial banks. They often rely on the Internet, telecommunications and information technology and play the role of intermediary in the process of e-commerce transactions by virtue of their own precipitation funds and credit guarantee, providing financial security for B2C, C2C e-commerce businesses and users. Through this mode, the buyers purchase goods through electronic platforms and complete the payment with the aid of third-party payment platforms. At this time, the buyer's payment would be managed by the third party payment platforms, rather than directly transferred to the sellers' accounts. Only when the buyers receive the goods and confirm the quality, would the third party payment platforms transfer the money to the sellers' account payment. In essence, the third-party payment platform acts as an intermediate credit platform between buyers and sellers to prevent commercial fraud.

Independent third-party payment model

Independent third-party payment platform only provide users with payment services, but not credit guarantee service, this kind of platforms don't depend on

e-commerce sites. They adopt commercial banking settlement systems as a back-end, and customers can choose payment channels according to their own preferences. Independent third-party payment platform has some similarities with payment gateway, but it is not confined to a simple payment gateway. In addition to providing virtual payment accounts, this kind of platform would also accumulate a large number of business and consumer information, which can be provided as base data for off - balance - sheet businesses.

2.3.3 Business models of Internet financial products

Generally speaking, the launch of Internet financial products is completed by third-party payment platform and fund companies together. Third-party payment platform raise funds with financial products with different benefit rates, while fund companies use the pooled funds to invest in financial assets. "Yu 'E Bao" is a typical example; the corresponding third-party payment platform and Fund Company are Alipay and Tianhong Fund respectively (Qiu Xun, 2013).

An important feature of Internet financial product in the business model is that it enables the "T+0" redemption mechanism, which is also the biggest difference between Internet financial products and traditional commercial banks' traditional financial products (Liu array, Wang Xiulan, Luo Zhonghua, 2014). In short, investors can buy, sell and redeem the fund in the same day. In the current monetary market, the "T+0" redemption model is also available, but it's only available after the liquidation, while "Yu 'E Bao" achieves the funds' on-demand access by virtue of its high quality reputation and solid capital, making customers' investment channels more convenient. (Zhang Haichao, Zhang Qiongdan, Zhang Yikui et al., 2013).

The present financing difficulty situation of SMEs

On the view of the structure of Chinese enterprises, the proportion of SMEs accounted for more than 98%, the number of large and medium enterprises are much fewer. SMEs play an irreplaceable role in many aspects, it is not only an important

source of national and local finance, but also promote the development of national economy, scientific and technological progress and ease employment pressure. The data from The National Development and Reform Commission shows that more than 50% of the national tax is contributed by SMEs, and 60% of products and services are provided by SMEs. At the same time, SMEs also occupy a large proportion in invention patent and new product development and other aspects. According to the 2014 China's SMEs development report, SMEs provide more than 200 million jobs for the community. If SMEs want to expand the scale and increase the volume of business transactions, the support of funds is Indispensable, but SMEs have always been faced with financing problems. The traditional financial institutions represented by commercial banks are exclusive and profitable, which make them to maximize their own benefits when choosing customers. In order to avoid investment risk and reduce risk control cost, commercial banks are more willing to choose those large enterprises that have strong financial strength and higher rate of return. However, due to their small operation scale and immature management system, SMEs usually don't have stable income sources. Coupled with asymmetric information, and commercial banks' lack of financing enthusiasm, SMEs' financing costs are further increased (Ye FenFen, 2014). According to related investment analysis report, at present, the number of SMEs that can obtain direct financing only accounts for about 1.3% of the whole number, while the only choice for the rest is to borrowing money from small loan companies or individuals with significantly higher financing costs. Generally speaking, the cost of financing form small loan company is about 12% of the principle, while the interest rate of private lending is as high as 15%-18%. Almost all SMEs want to get financial support from commercial banks, but the relevant survey data show that by the end of 2014, the number of SMEs that can get commercial banks' credit aid only accounts for about 10% of the whole number. SMEs have always been facing financing difficulties, while the commercial banks are limited to their operation modes, so it's necessary to find a new financial form to

alleviate the situation, which provide a huge space and historical opportunity for the development of Internet finance.



CHAPTER 3

RESEARCH METHODS

3.1 Sample selection

Taking data availability into account, when choosing commercial banks' profitability samples, the paper selected 12 listed banks in China. The selected banks are: ICBC(Industrial and Commercial Bank of China), ABC(Agricultural Bank of China), CCB(Construction bank of China), BOC(Bank of China), BOCOM(Bank of Communications), BOB(Bank of Beijing), CITIC(China CITIC Bank), CEB(China EverBright Bank), CMB(China Merchants Bank), CMBC(China MinSheng Bank), CIB(Industrial Bank), and SPDB(Shanghai PuDong Development bank). Considering that Internet finance is a newborn thing, there is no statistical institutions that can provide authoritative analysis report about the overall development of the Internet financial scale in China at present, when choosing relevant analysis samples, this paper selects the P2P net loan platform, third party payment platform and Internet financial products as samples to analyze the impact of Internet finance on the profitability of commercial banks. In addition, all the available data related to Internet finance are after 2013, this is mainly due to the fact that 2013 is actually the first year that Internet finance boom in China. For the above consideration, this paper selects quarterly data as the analysis sample, Ai Rui consulting and commercial banks' quarterly financial statements are the main sample data sources.

3.2 Variable selection and model design

(1) Measurement of bank profitability

The literature shows that there are mainly two indicators (ROA and ROE) to measure the profitability of commercial banks. ROA refers to return on asset, that is, the ratio of net profit to total assets; ROE refers to the return on equity, that is, the ratio of net profit to the average shareholders' equity. Generally speaking, ROA

better reflects the profitability of commercial banks more comprehensively, that's because it shows the profitability of commercial banks' all assets. In addition, Lu Ying (2014) holds that commercial banks achieve profitability mainly through interest rate spread, so, credit assets are essential to commercial banks, from this perspective, ROA is more appropriate when analyzing commercial banks' profit level. More importantly, this paper focuses on the impact of Internet finance on commercial banks, which is not so associated with the return of equity. Therefore, in evaluating the profitability of commercial banks, this paper chooses ROA as the evaluation index.

In the above study, this paper analyzes the possible impact of Internet finance on commercial banks, and believes that Internet finance will affect the commercial bank's interest and intermediate business income to a certain extent. In order to test the scientific rationality of the above analysis, this paper selects the interest and non-interest net income as a measure index to analyze the impact of the Internet finance on commercial banks' profit pattern.

(2) Selection of independent variables

This paper mainly studies the impact of Internet finance on the profitability of commercial banks, which means that the scale of Internet finance should be selected as independent variable. However, during information collection process, it is found that the scale of Internet finance is not an accessible data due to the short existence time of Internet finance. Taking into account that the composition of Internet finance in China mainly consist the P2P net loan platform, third party payment and Internet financial products, this study takes the scale of these three types of Internet financial products as independent variables to measure their impact on the profitability of commercial banks.

This paper adopts 8 quarterly data of the above 12 banks and the Internet finance respectively to conduct subsequent comparative analysis. The general expression of panel data model is:

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In this expression, k represents the number of indicators, n represents the sample size, t is the number of time points, and n represents the number of sections. According to the influencing factors and the selected data types, this paper uses the following model in data analysis.

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Variable symbols and their meanings are shown in table 3.1.

Table 3.1 variable symbols and their meanings

Dependent variables	Variable name	Independent variables	Variable name
ROA	Return on asset	P2P	P2P net loan platform
II	Interest income	TPP	Third party payment platform
NII	Non-interest income	IFP	Internet financial products

CHAPTER 4

RESULTS

4.1 The impact on commercial banks' business mode.

The development of Internet technology has promoted the reform of many industries on development pattern; barriers between Industries are broken, and banking industry is inevitably involved in.

After the financial crisis in 2008, the liberalization of financial markets in developed countries provides good conditions for their banking industry. Comparatively speaking, the commercial banks in China have gone through the process from separated operation to mixed operation and back to separated operation to guard against risk. The split out of HaiTong Securities from BOCOM is a typical example. Apart from being able to prevent the spread of financial risks, separate operation can also promote the stable operation of commercial banks. However, these processes also inhibit financial innovation, which would greatly limit the development of commercial banks (Li Yuwei, 2014).

The rapid development of Internet finance has not only greatly changed the competitive landscape of commercial banks, but also speeded up the pace of commercial banks transforming to mixed operation. In recent years, non-credit financing boomed in China. By 2014, the total social financing scale has been increased by nearly 7 times than that of 10 years ago, from 2 trillion to 15 trillion. Meanwhile, The proportion of non-credit financing also increased to 44%, while the initial proportion was only about 4.5%, increasing by nearly ten times.

The development of mobile communication technology and network technology provides possibility for fast settlement and financing, and play a financial intermediation role in certain situations; commercial banks have also launched mixed operation under this background.

For example, to a certain extent, the P2P net loan platforms can play the

role of commercial banks, and even weaken the functions of banks. It allows borrowers and lenders to complete the rapid docking at low cost. Third party payment platforms also involve in a number of service fields to enhance the convenience of people's lives, for example, train ticket purchasing, interbank transferring etc. In addition, the Internet companies launched a number of network financial products, which not only reduce the financial threshold, but also make the general public's financial behavior more quick and convenient, all these factors led to the loss of the bank's capital precipitation. Moreover, network insurances, network brokerages etc. are also trying to break the financials barriers in the financial sector.

4.2 The impact on commercial banks' profitability.

Although internet finance first appeared in 2011, the concept was not really familiar to the public until birth of "Yu 'E Bao" in June 2013. If the funds are put in commercial banks in the form of demand deposits, the annual interest rate is only about 0.35%, which is even lower than some of these banks' interbank transfer fee. In this context, it was not surprising that the "Yu 'E Bao" was touted by everyone because it provided an annual interest of nearly 7% --20 times more than commercial banks. By June 2014, "Yu 'E Bao" has a capacity of more than 100 million users, and the size of its funds has exceeded 570 billion RMB. "Yu 'E Bao"'s huge success also makes Celestica fund one of China's largest fund. There is no doubt that the large-scale transfer of deposits will bring great pressure on commercial banks. The emergence of Internet finance shook banks' monopoly, and the old business mode that commercial banks only rely on deposit and loan spreads to make profit has also been changed.

1) Internet finance influence commercial banks' interest income

The main assets of commercial banks are personal loans and corporate loans. But the emergence of Internet finance not only has a great impact on commercial banks pricing ability, but also reduces commercial bank's personal loan business, which leads to commercial banks' shrinking profit margins. Commercial

banks generally have a strict control on the loan approval process; they mainly tend to provide financial support for large and medium-sized or state-owned enterprises, thus the industry leading and high-quality enterprises are more likely to get the financial support from commercial banks. But for the SMEs or individuals who do not meet the requirements, the banks are more likely to reject them. However, the size of an enterprise doesn't fully represent its repayment ability, thus SMEs or individuals have become the targeted customers of Internet finance services. In order to maintain the stable income, if the customer is identified as a higher risk level, then he/she would be charged of higher loan interest rates while borrowing money from the Internet financial loan platform. Generally speaking, the annual loan interest rate is between 15%-24%, which is much higher than commercial banks' average loan interest rate. According to the customers' choice, the relationship between P2P platforms and commercial banks is complementary rather than competitive.

2) Internet finance influence commercial banks' intermediary business revenue.

Banks' intermediary business revenue would also be affected by the impact of Internet finance, these effects are mainly reflected in two aspects: the commission income and counter fee (Li Dan, 2014). The following reasons account for this:

First of all, commercial banks' counter fee will be directly affected by the third party payment platform. If a store uses a POS machine, then 1% to 2% of the transaction amount will be treated as a counter fee, 70% of the fee will be paid to the issuing bank, 20% is paid to the receiving bank; the remaining is paid to the UnionPay. So it seems that if merchants use POS machine, the commercial banks can get 0.9% to 1.8% of the transaction amount. But if the stores choose to use the third party payment platform, then merchants need to pay only about 0.3% of the transaction amount as counter fee; and only 70% of the counter fee are handed over to the issuing banks. As a result, the bank's revenue fell significantly.

Secondly, commercial banks' commission income would shrink. For commercial banks, consignment fund and insurance bank are their main commission

income resources. Banks usually charge 0.5%-2% as a commission fee. However, influenced by online direct sales model, only 0.2% -0.5% of the transaction amount will be delivered to commercial banks, thus the commercial banks' commission fee income is significantly reduced.

4.3 The impact on commercial banks' service modes.

1) It has influenced commercial banks' "branching operation" mode

Firstly, commercial banks have always been focused on customer. In order to attract and maintain more customers, commercial banks have been trying to extend physical branches to provide services for more customers. The Internet has made it possible to rely on advanced network technology rather than physical outlets provide financial services. Customers can achieve most of the businesses through the Internet, and no longer need to go to the bank counter waiting in line; this weakens the function of commercial bank branches to a great extent (Yuan Bo, 2013). For example, in the past, the average amount of customers of a BOCOM branch could be more than 200 every day, but with the development of Internet finance over the past two years, the number is less than 80 now. By June 2014, the number of online shopping people has exceeded 300 million in China, this figure exceeded 500 million by the end of December 2015. There would be more and more Internet finance users in the future, which forced the commercial banks to further improve and optimize their branching operation service mode.

Secondly, commercial banks should grant a redefinition to the concept of "customer centered" and "customer first". At present, most of the commercial banks provide customers with services based on their branches, and they pay more attention to enhance the customer experience. The exquisite decoration, the clean and tidy environment, and the services of the lobby manager or the teller have been important parts that commercial banks compete on. But Internet finance is different from traditional banks, it is based on the user interface, and customer's site participations are significantly reduced, yet it provides customers with more

personalized and diverse options. From this point of view, commercial banks should not only devote to continuously improve the original service level, but also put forward innovative reform measures to attract more potential customers.

2) It has influenced the traditional mode that commercial banks act as intermediary

For SMEs and those individuals who have credit demands, Internet finance can provide more effective targeted services. With the above market advantages, a large number of individuals and SMEs have become Internet finance's loyal users, and it's not a small impact the traditional commercial banking service mode (Hu Kangjin, 2014). The main approaches that traditional commercial banks adopt to ensure the fund safety are guarantee and mortgage, but the Internet finance makes use of more advanced cloud computing technology and transparent data processing platform. Facing the present situation that SMEs have more difficulty in financing, the State Council and the people's Bank have always encouraged commercial banks to further enhance their support to SMEs. However, the large state-owned commercial banks always come to a standstill on this issue due to their rigid credit audit mechanism and operating pressure. In contrast, thanks to its "data center", Internet finance analyzes the characteristics of the SMEs' funding demand and is able to provide better financial services. In this way, not only the labor and time cost is reduce in the transaction process, but also the SMEs and individuals blank market is filled. (Wang Jun, 2014).

The impact of third party payment platforms on commercial banks are mainly reflected in two aspects: A. They rise commercial banks' deposit cost. B. They obviously shunt commercial banks' deposit. According to the relevant laws and regulations, the mechanism can be explained as follows: 1; the third party payment and settlement business shall deposit the entire reserve fund to Special deposit account. 2; a third party payment platform can only choose one bank as depository bank; 3; third party payment platform's term of non-current deposit shall not exceed 12 months. The banking system has a large number of small idle demand

deposits, commercial banks only need to provide a small amount of interest to these deposits; however, once these idle funds are gathered up and converted into time deposits by the third party payment platforms, commercial banks would not only lose a large number of deposits, but also need to pay a higher interest. For example, Alipay sets reserve deposit account depository accounts in ICBC and gathers a large number of small deposits into the account, and then Alipay would convert these deposits together into time deposits. Through this way, Alipay's earnings are improved, but ICBC's cost has increased significantly.

The survey data provided by Ai Rui Advisory shows that, by the end of 2014, the total payment amount of third party payment platform has exceeded 8 trillion in China, with a year-on-year growth of 50.3%. Relevant scholars predict that the third payment amount will continue to grow at a rapid rate of 29.8% in the next few years, by 2018, the size may exceed 22 trillion. The transaction amount of e-commerce was around 12 trillion in 2014, if the current deposit interest rate is set to 0.5%, and the shortest trading period is set to 5 days, then the third party payment platforms would reap tens of billion Yuan annually. In addition, third party payment platforms may adopt other form like departmental time deposits or agreement deposit while depositing customer reserve payment. As a result, the situation that commercial banks are faced with would be worse.

4.4 Empirical analysis

Considering the two dimensions -- time series and cross section of the data selected, namely, the data of the 8 quarter and the data of the 12 commercial banks, this paper adopts panel regression analysis method. Due to the limitation of data availability, this paper is only able to access a short time series, so the sample data is short panel data. For the panel data with short time series, the autocorrelation problem could be ignored. As for the model chosen in this paper, the lagged terms of the explained variable are not included in the explanatory variables, thus this paper chooses to establish static panel data model. Static panel model generally includes

the following three types: random effect model, fixed effect model and mixed effect model. The three models have different application occasions, for example, for the researches that have little or no difference between each other, the fixed effect model would be adoptable. The difference between random effect model and fixed effect model is that the average effects of error terms are included in the intercept in random effect model. If the model contains both fixed and random parameters at the same time, then the model would a mixed effect model. This paper will conduct a series of tests to select the appropriate panel model.

Commercial banks' ROA empirical analysis

(1) Panel data's unit root test

In this paper conducted unit root test on the 12 listed banks' profitability index ROA, P2P, TPP and IFP; the test results are shown in table 4.2.

Table 4.2 Panel data's unit root test

	Original sequence			First order differential sequence		
	LLC	ADF	PPF	LLC	ADF	PPF
ROA	-4.90***	21.31	30.87**	-6.38***	27.22**	27.21**
TPP	-3.02***	6.98	14.20	-5.41***	25.31**	30.11**
P2P	19.26	0.002	0.0002	-4.89***	20.01**	24.01**
IFP	0.57	1.67	0.99	-4.14***	21.46	30.88***

According to the test results, the statistical value of first order differential test of the 4 variables selected is below in the 5% significant level, LLC test, ADF test, PPF test and a series of other tests show that the numbers in the table above are first order integrated series. After the F test, the fixed effect model is selected.

The regression analysis results of random effect model are shown in table 4.3.

Table 4.3 regression analysis results

Variable and constant term	coefficient	T statistic value	P	Significance 10%
E	1.28	7.63	0.0000	Yes
TPP	-0.0058	0.34	0.7562	No
IFP	-0.000944	-0.2113	0.8220	No
P2P	-0.00187	0.2449	0.8075	No

According to the table above, independent variables P2P, TPP, and IFP are negatively related to the dependent variable ROA, but it doesn't pass the 10% confidence level significant test. According to the regression results, the regression equation is expressed as:

$$ROA=1.28+(-0.058)*TPP-0.00094IFP-0.00187P2P$$

The results of the above regression analysis show that, although the P2P, TPP and IFP will have an adverse impact on profitability of commercial banks, the negative correlation is not so obvious. Despite the rapid development of Internet finance, empirical results show that commercial banks suffered less adverse impact from Internet than expected. This paper believes that the following reasons may account for this. First, Internet finance is a new thing at its early development stage, while the traditional commercial banks have accumulated for many years. Therefore, despite the good development momentum of Internet finance, it still can't subvert commercial banks' favorable position in short time. In addition, the acceptance degree of Internet finance in the general public has yet to be further improved, in other words, the Omni directional impact of Internet finance on commercial banks need some time to be distinct. Second, Internet finance is a new thing, and related financial statistics mostly begin in 2013. Besides, Internet finance has gradually involved in all aspects of life, which also increases the difficulty to statistics the total size of the Internet finance.

Commercial banks' II empirical analysis

The test here is consistent with above, including unit root test, F test etc.

The regression results are shown in table 4.3.

Table 4.3 Regression analysis Results (II)

Variable and constant term	coefficient	T statistic value	P	Significance 10%
E	531.90	3.49	0.0010	Yes
TPP	-0.1812	0.42	0.6723	No
IFP	-13.232	1.28	0.2064	No
P2P	-0.2052	0.70	0.4891	No

According to the table above, independent variables P2P, TPP, and IFP are negatively correlated to the dependent variable II, but it doesn't pass the 10% confidence level significant test as well, which shows that the 4 independent variables are not significantly negative correlated to dependent variables.

The cross coefficient between Internet financial products and commercial banks spread income is negative, which indicates the IFP's negative impact on commercial banks' spread income aggravate with the expansion of its scale. The emergence of Internet finance shunts commercial banks' deposits, which will reduce the spread of commercial bank earnings. However, empirical study shows that the negative effect is not so significant. This paper believes the following reasons may account for this.

First, although the trading volume of P2P net loan exceeded 250 billion in a short time, it's just a drop in the bucket compared with the entire financial transaction market; it also shows that the development of P2P net loan has just started. SME have huge amount of financing demands, the total financing demands of 0.6 million SMEs is up to hundreds of billions just in ShenZhen. P2P net loan platforms are placed high hopes on easing the financing difficulties of SMEs and

promoting financial market reform. However, since their entering into Chinese market, P2P net loan platforms have not achieve the purpose of inclusive finance. Survey data show that the majority of China's P2P net loan platforms are lack of good operation and risk control mode, which makes P2P net loan platforms always suffer higher operating costs. Take Hongling venture for example, operation costs accounted for about 4% of the loans but the profit is only about 2%; besides, investors will get 16%-18% of the profit, these factors have greatly increased the cost of those who need fund. Up to 20% borrowing costs make P2P no different from usury. With higher financing costs and weaker risk control system, P2P net loan platforms drift away from the inclusive finance objective.

Second, in the face of Internet finance menacing, commercial bank has adopted a series of measures and the four major banks have cut the payment limit for third party payments. For example, BOC provides that the upper limit of online payment amount is 50,000 Yuan per day. Although the bank stated that the purpose of the above measurement is to ensure the safety of customer funds, it is not difficult to see that these actions are the measures banks take to deal with the third party payment platforms. Besides, commercial banks actively promote online banking, mobile banking etc. and lower the relevant fee; these measures have played a certain role in reducing the negative impact of the third party payment.

Finally, the Internet financial products gather small idle funds and make profits in a certain way. But the reason why these idle funds are not used to invest in banks' financial banks lies either in its higher liquidity or in its decentralization. So, the impact of Internet finance products on commercial bank deposits is not as big as expected. In the economic downturn of 2014, the development of Internet financial products also experienced a contraction. With the passage of time, the public would become more rational on the high income and high risk financial products. Commercial banks are more trustworthy with their strong capital and government guarantee.

Commercial banks' NII empirical analysis

The empirical analysis results of Internet finance's impact on commercial banks' NII are as follows:

Table 4.4 Regression analysis Results (NII)

Variable and constant term	coefficient	T statistic value	P	Significance 10%
E	258.74	3.47	0.0011	Yes
TPP	-0.1547	-2.78	0.0075	Yes
IFP	-30.2569	-0.35	0.7314	No
P2P	0.74755	1.30	0.2046	No

According to table 4.4, this paper argues that there is a negative correlation between the independent variable TPP and the independent variable NII, and the negative correlation is significant. In addition, although there is a positive correlation between P2P and NII, it doesn't pass the 10% confidence level significance test. The so called non-interest income refers to the earnings beside interest spread, including intermediate business income and agency or consulting business income, and the later mainly contains commission fee, counter fee etc. Through the empirical analysis in this section, it can be seen that commercial banks' non-interest income is mainly affected by the third party payment platforms, is consistent with the theoretical analysis results in this chapter. The following reasons may account for this. When the customer uses the traditional payment method, 1%-2% of the transaction volume generated by POS will be charged as serve fee. 70% of the fee is paid to the issuing bank, 20% is paid to the receiving bank; the remaining is paid to the UnionPay. So it seems that if merchants use POS machine, the commercial banks can get 0.9% to 1.8% of the transaction amount. But if the stores choose to use the third party payment platform, then merchants need to pay only about 0.3% of the transaction amount as counter fee; and only 70% of the counter fee is handed over to

the issuing banks. In 2014, the total amount of e-commerce transactions exceeded 12 trillion Yuan in China, according to the above calculation, commercial banks and face with significant losses in terms of counter fee, which is the biggest reason that third party payment platforms have adverse impact on commercial banks' NII.



CHAPTER 5

CONCLUSION AND DISCUSSION

5.1 Conclusion

The rise of Internet finance has brought both challenges and opportunities to commercial banks. Internet finance has promoted the innovation and development of commercial banks, accelerated their restructuring and optimized the competitive landscape. Of course, on the other hand, the challenges that internet finance brings to commercial banks cannot be underestimated. The development of Internet finance not only greatly reduced the income of commercial banks but also weakened their traditional position. To a certain extent, the implementation of a series of reform measures of commercial banks is forced by the pressure of Internet finance.

This paper studies the present situation and development of Internet finance at home and abroad, and then analysis and compares Internet finance and commercial banks on the business model, profit model, service model and other aspects. The analysis shows that Internet finance will bring great impact on the development and profit of commercial banks. After that, this paper collects the quarterly profit data of Internet finance and commercial banks in 2013 and 2014, and makes an empirical study on the impact of Internet finance on commercial banks' profitability. Combined with theoretical analysis and empirical research, this paper draws the following conclusions:

First of all, due to the impact of Internet finance, the profitability of commercial banks in China will be weakened to a certain degree, but according to the significance level test results, this effect may not be so significant. The reason may be that the internet financial, as a newborn thing, needs a plenty of time to actually shake the traditional commercial banks' status. In addition, due to the large number of classification of Internet finance, the overall financial data of the Internet finance collected may not be comprehensive, thus the conclusion may be biased with

reality.

Secondly, from the theoretical point of view, the yield spread of commercial banks will be slashed by Internet finance. For example, P2P net loan platform will lead to the increase of commercial banks' storage cost and shunt loan size. However, the empirical results show that the negative correlation is not very significant. The reason may be that the Internet finance aims at individuals and SMEs who are not the target customers of commercial banks. In other words, Internet finance has not yet touched the actual profit source of commercial banks. However, with the further development of Internet finance, the impact may be more and more obvious.

Third, the empirical results show that the third party payment will significantly affect commercial banks' non-interest income, which is consistent with the theoretical analysis.

However, this paper also has some shortcomings, including the following aspects:

- 1). Due to the limited space and paper structure, in terms of Internet finance business types, this paper only introduces three modes including P2P and net loan, but has not yet analyzed other business types like crowd-funding, big data finance etc.
- 2). Due to the short time of Internet financial development, there only exists limited sample data for empirical study, and the lack of sample data leads to the lack of accurate empirical results.

5.2 Discussion and Recommendation

On the basis of the above analysis, Internet financial contains various business and operation modes, and commercial banks' business activities are more or less affected by the impact of Internet finance. Due to the impact of the Internet financial products and net loan platforms, commercial banks must pay more costs to obtain the same saving capitals as before. The shunt effect of Internet finance on loan scale further reduces commercial bank's profit margins. More importantly, the

profitability of commercial banks is also affected. For example, their commission and counter fee are slashed due to the emergence of third party payment platform. Of course, this is not to say that commercial banks have faced no way out of the situation, because the commercial bank has a stable and strong customer base, mature management mode and good reputation guarantee, which are incomparable competitive advantages. Despite the various impacts of Internet finance, the commercial banks still have a strong vitality.

In the context of marketization of interest rate, Internet finance is both a threat and opportunity for commercial banks. Commercial banks can try to change the operation mode to enhance their adaptability. Based on the research, the following suggestions are given in this paper:

1). Commercial banks should be integrated with the Internet

The empirical analysis shows that the third party payment platform has a greater impact on the non-interest income of commercial banks. The reason is that commercial banks have lost the priority to pay online. In the current situation, commercial banks should further strengthen the cooperation with science and technology enterprises to promote their own development. In essence, there is a consistent goal between commercial banks and Internet finance—sharable resources and good cooperation foundation.

Firstly, it is necessary for commercial banks to do further optimization in the online banking platform to realize the integration of service and platform. The online trading platforms of China's commercial banks are comparatively mature, but their connection with various new web sites is not so close, which makes the commercial banks depend too much on third party payment platforms. In other words, if commercial banks want to yield online transaction fee, the corporation with third party payment platforms is inevitable. In addition, commercial banks' Internet level also needs to be further improved, so as to provide a one-stop service. In other words, commercial banks should ensure that customers can achieve various needs

simply by relying on their own service web site. In this regard, the practice of ICBC is very recommendable. “Rong e Buy” is an electronic commerce platform that ICBC launched; it contains a lot of functions like online shopping, payment and settlement, investment and financial management etc. By the end of 2014, “Rong e Buy” has more than 1,600 sellers and more than 60,000 kinds of goods. It can be said that “Rong e Buy” has penetrated into all aspects of customer life. It integrates the payment, financing, business, information and other four functions, and is a benchmark for commercial banks to take a leap onto the Internet.

Secondly, differentiation is a major trend of market development, so the commercial banks need optimize the financial service model to better meet both of the demands of social development and customers. Faced with the trend of market segmentation, commercial banks should pursue multi-level, dimensional, and personalized financial services, and Internet finance is an important opportunity to achieve this vision. The reason why Baidu, Alibaba, Tencent and other Internet companies have realized the multi-level, dimensional service is that they have grasped a large number of customer data including customer preferences, consumption patterns etc. In fact, commercial banks are not inferior to Internet companies in the accumulation of customer information, commercial banks have their own information data base, but the customer information which should be regarded as critical resources is not fully utilized, resulting in that commercial banks are behind the Internet finance in the grasp of opportunities. Therefore, commercial banks should analyze the existing resources, introduce new technologies on this basis, develop new customers, and develop more financial products to meet customer demands, and finally lead the market.

2). Commercial banks should actively expand customer resources

According to the results of empirical analysis, we can see that the Internet finance has no significant impact on the profitability of commercial banks, but with the continuous expansion scale of Internet finance, the impact may be increasing.

Therefore, although commercial banks have long neglected individuals and SMEs, now this customer base should be given full attention. An important part for commercial banks to expand their business and achieve profit growth is winning more potential customers.

First, commercial banks' service and business model have been relatively mature, if the advanced technologies of Internet companies are introduced, commercial banks can further expand their own advantages. At the same time, commercial banks can make use of big data and cloud computing technology to further refine customer resources, interpret customer needs, and take it as the basis of the design of products and marketing methods. In essence, the Internet technology not makes the business between customers and commercial banks more convenient, but also better meets customer needs. Besides the obvious advantages in capital commercial banks also have better risk management systems, so the commercial banks can refer to the P2P net loan model, and establish loan & financing platforms to achieve business promotion.

Secondly, with the help of Internet technology, commercial banks can realize the rapid acquisition and processing of customer information, and timely response to customer feedback. Customers are the actual demander of business, and their feelings and suggestions play a great role in promoting the business. In order to fully understand customers' specific recommendations for specific businesses, commercial banks should establish a reasonable and effective service feedback mechanism in addition to providing online services only. For example, questionnaire is a good way to understand customer needs, and the issue of financial products and rate of return etc. could be adjusted according to the questionnaires; In addition, in the customer satisfaction survey, commercial banks should understand the customer's overall service environment and service satisfaction rather than their feelings to a specific salesperson.

The rapid development of Internet finance reflects SMEs' desire for funds.

For a long time, China's commercial banks' main income source is interest rate spread, it is an extremely important business for commercial banks to explore more customers and expand the scale of deposits and loans. If commercial banks want to further expand business scale, their attentions should be put on SMEs. The commercial banks have strong capital strength and talent reserves, based on this, commercial banks can introduce Internet technology to collect and evaluate the credit of SMEs and provide online financing platform for them. As a result, commercial banks can ease the financing difficulties of SMEs, and, at the same time, achieve their own profit.

3) Government should strength supervision and deepens financial reform

Internet finance integrates finance and Internet, which not only conforms to the development of the times, but also to meet the market demand. Internet finance in a sense is the innovation of information technology and financial reform. As a new format, Internet finance needs more state supervision to ensure its considerable development. During the collection of data, it is found that there exists a series of problems in Internet finance, and these problems mainly due to its barbaric growth. Referencing to the analyze data provided by “Rong 360”, more than 270 P2P net loan platforms have problems in 2014. In some platforms, it is difficult to withdraw cash due to poor management, some platforms even commit illegal fund-raising or Ponzi scheme, once the capital chain breaks, the relevant staff make off with money. Internet finance has always been a high risk field; the high risk also makes some customers look and step back, which is extremely unfavorable for the development of Internet finance. Of course, there are also many researchers optimistic about the situation, they hold that is a necessary stage for Internet finance as a new thing, as long as the government regulation is reasonable and effective; the Internet finance would surely face a bright future.

First, the construction of the legal system should be further promoted; the approval and supervision of Internet finance sites must be strictly controlled. The

regulator of Internet finance should be clarified. Compared to before, the CBRC (China Banking Regulatory Commission) has opened 6 more regulatory authorities and the number has reached 17. The reason why CBRC do this is to promote a comprehensive and dimensional regulatory system. Moreover, it also avoids the Internet platform to develop towards the direction of private lending platform.

Secondly, the government needs to introduce policies to improve the integrity of the Internet finance's credit system, and crack down or punish illegal acts. For credit rating system and social credit system, government regulators also need to further improve them. Government not only need to implement strict credit registration system, but also should further perfect the SMEs' guarantee business rules. The reason for this is to avoid the financial markets to encounter information asymmetry. In addition, we should further increase the openness channels of the credit system database, so as to ensure the timeliness that the government departments and financial institutions obtain the information they need, and thus guarantee the smooth progress of the assessment. The high risk of Internet finance is determined by its special way of trading. The establishment and improvement of credit system would, to a certain extent, promote the further standardization of the Internet financial markets and avoid some financial risks or network frauds.

Zhang Yi (2014) believes that the fundamental reason why Internet financial business, especially the popular "Yu 'E Bao" recently, can obtain a rapid development in China lies in the high degree of monopoly and interest rate control in the field of finance market in China. Once the government liberalized interest and exchange rate controls, then Internet finance will lose its meaning of existence. Reference to the experience of the international market, the reason why Internet finance develop slow in the United States and other developed countries is that the interest rates have long been liberalized. If the market can completely determine China's interest rates, then Internet financial products like "Yu 'E Bao" would no longer exist. So, we must see the impact of Internet finance on China's financial

industry system and take the right measures.

Interest rate is the price of funds; interest rate marketization is equivalent to that the price of funds is controlled by the market—supply side and demand side jointly determine the level of interest rates. At present, China has basically realized the loan interest rate liberalization, but the marketization of deposit interest rate has always been one of the most important and difficult step in the reform, but the rapid development of Internet finance has greatly promoted the deposit interest rate marketization process. Internet finance lowers the threshold of traditional financial, with the hands of spare cash was higher than bank interest income balance treasure and a series of Internet financial products like “Yu 'E Bao” provides higher deposit interest rate than banks, which greatly inspires ordinary people’s enthusiasm to make use of small and idle funds to participate in financial management. Internet finance’s strength meets China’s long upheld demand of establishing inclusive finance; it get rid of the malpractice that commercial banks pay too much attention to large enterprises, and really brings low income groups and SMEs into the financial system. Interest rate control will lead to commercial banks' monopoly and distort interest rates price, resulting in the failure that financial resources fully play it active role in promoting economic development, and eventually unfavorable for the further development of China’s market economy. However, the interest rate market is also a double-edged sword, it not only promote the competition of commercial banks and furtherance the healthy development of the financial system, but also lead to systemic risk if commercial banks’ business model deviates too much from the interest rate marketization speed. Therefore, in addition to breaking commercial banks’ monopoly and promoting market-oriented interest rates, the government should also establish the relevant supporting mechanisms and introduce deposit insurance system, so as to protect the depositor’s legitimate rights.

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