

## Research Article

# The Development of Internet Finance under the Background of Sharing Economy

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With the development of science and technology, the rapid rise of multimedia technology has led to significant changes in computer network system, including mobile communication system, and plays a more and more important role in people's life. The shared economy as an emerging business model is rapidly emerging at home and abroad and is strongly affecting and changing the production and lifestyle of people everywhere. The business model of sharing economy promotes the reuse of social resources as multimedia networks in China and has become a prominent highlight of China's economic transformation and upgrading in the new era. Internet finance is a new product, a new form of integration between the sharing economy and the traditional financial industry. Government work reports have repeatedly mentioned the need to promote Internet financial regulation and healthy development. It is especially important to study the new characteristics of Internet finance development under China's shared economy, reveal the development of Internet finance, and understand its development trend. This paper takes Internet finance as the research object, discusses its concept and characteristics, and analyzes the development status of Internet finance under the shared economy, it is found that in 2017, the potential market scale of China's personal credit investigation industry was 26.9 billion yuan, and the actual market scale was 22.2 billion yuan. In this way, problems in the development of the Internet under the Chinese sharing economy were discovered. The purpose of this paper is to explore the development of Internet finance under the sharing economy, to discover its development trends, and to propose improved business models. This paper summarizes the current development difficulties of Internet finance in the sharing economy and puts forward corresponding suggestions for these dilemmas, with a view to have reference value.

## 1. Introduction

In recent years, with the increasing popularity of Internet and the rapid development of web technology, all sectors of society have entered the information age. The rapid development of multimedia network technology and the surge of information have brought great opportunities and challenges to the development of the financial field. The main challenges come from the huge risks of the market, including liquidity risk, credit risk, operational risk, and information security risk.

Finance is the core of economy and the lifeblood of modern economy. Under the background of China's transformation and development, the financial industry is an important support of the national economy [1–3]. Its transformation

and upgrading promote the structural reform on the supply side. Since the reform and opening up, China's financial industry has made remarkable progress; in recent years, breakthroughs have been made in the opening up of China's financial industry. In terms of opening up the financial services industry, foreign financial institutions have made significant progress in entering the Chinese market. For example, UBS's shareholding ratio in UBS Securities was increased to 51%, realizing absolute control; Allianz (China) Insurance was approved to be established, becoming my country's first foreign insurance holding company; American Standard & Poor was approved to enter my country's credit rating market; American Express has initiated the establishment of a joint venture company in my country, and its application to prepare a bank card clearing

institution has been reviewed and approved. In terms of opening up the financial market, in accordance with international standards, China has continued to promote the opening of the bond market, stock market, and financial derivatives market, expanded channels for crossborder investment and financing, and improved relevant institutional arrangements. The degree of openness, competitiveness, and influence of China's financial market has been continuously improved, which has been generally recognized and recognized by the international market. But compared with the mature financial system of western developed countries, there are still many gaps: how to deepen the financial reform, how to break the financial restraint to achieve leapfrog development, how to better support the supply-side reform, and how to better meet the people's yearning for a better life, and Internet finance emerged as the times require. Internet finance has inherited the spirit of the Internet and caused a series of changes. From the initial attempt of commercial banks to the financial Internet, an online banking platform will be established [4]. By 2013, P2P online lending platform will blowout. Electronic commerce has joined the pattern of Internet financial industry. The rapid development of Internet finance has continuously penetrated into all aspects of people's lives. Innovative third-party payment tools provide convenience for users but also affect the payment and settlement of traditional banks, to make the former impossible to achieve wealth management civilians and develop financial needs of long tail customers in the financial market and to provide credit for small and medium-sized enterprises and personal consumption [5, 6]. It also provides an effective solution to the financing difficulties of SMEs. Generally speaking, the Internet industry is developing vigorously, people's consumption and payment habits and financial service concept have undergone tremendous changes, and the future Internet financial industry is full of possibilities. The development of Internet finance in China mainly goes through the following stages. The first stage is before 2005, and there is no real Internet Financial format at present. The second stage is after 2005, China's online loans began to germinate, and the number of third-party payment institutions gradually increased. The starting point of the third stage is the beginning of the balanced rise in 2013. Internet financial users continue to grow, and more and more small and medium-sized investors gradually enter the financial market, resulting in the geometric growth of the Internet financial user base. As of September 2018, there were 6 0316 Internet financial platforms and 16 130 operating platforms in the national Internet financial risk analysis platform. From the perspective of industry turnover, the turnover from January to September 2017 was 2.8 trillion yuan and 1.4 trillion yuan, and the loan balance exceeded 1 trillion yuan.

The word "multimedia" is translated from English "multimedia," which is a media information composed of multiple and media. It usually refers to the combined media of single media such as text, data, graphics, image technology, animation, video, and sound processed by computer. In the media era represented by the Internet, multimedia network, as a rapidly developing new network in the 21st century, can

comprehensively analyze and process Internet financial data; so, it is gradually known to the public and widely used. The application of multimedia technology adds the concept of interaction to the development of Internet finance under the background of sharing economy, by means of mutual communication, and it has become the most powerful data processing mode in this era. To fully study Internet finance, we cannot ignore the huge share economy of Internet finance and put it in the "black box." We need to fully understand the impact of the shared economy on Internet finance. Shared economy is a new economic model based on decentralized surplus value and realizing the sharing of the right of use through the exchange of decentralized point-to-point information. The key of shared economy is to share the right of use through the use of Internet trading platform in order to integrate dispersed resources and information, and to gather individuals with transaction needs, and matching each other to make full use of the surplus value of idle resources [7–9]. Compared with the traditional business model, the shared economy has obvious advantages in the following three aspects: first, it is easier to integrate offline resources. Compared with the traditional model, the enterprise sharing economic model can easily acquire and accumulate idle resource information through online platform and big data system to achieve the optimal match between supply and demand; second, reduce the intermediate link and reduce the cost. As a middleware of shared economy, shared platform has no restriction or dependence on suppliers and consumers. The advantage is that the demand for supply and demand can be matched at the lowest cost, which directly reduces the cost of money. Through technical improvement, the speed of supply and demand matching is accelerated, and the time cost is further reduced. Third, we should promote the development of economy to green. Shared economic model adjusts social stock assets and makes the balanced distribution of products and services a reality, so as to maximize the use value of commodities. Before the sharing economy, the "use-discard" fast consumption mode gradually promotes the change of the closed-loop operation mode of "reuse, recycle and reuse." As far as Internet finance is concerned, shared economy can use mobile communication technology and Internet technology. Build a new industry platform for financial information sharing, channel sharing, and resource sharing on the Internet, so as to accelerate the penetration of financial products. Eliminate improper allocation of funds and resources, guard against financial risks.

## 2. Definition and Theoretical Analysis of Internet Finance under the Sharing Economy Based on Multimedia Network

*2.1. Business Model of Sharing Economy.* According to the theory of transaction cost economics, different combinations of transaction technology structure and organization form will lead to different operation efficiency of economic organizations. The technical structure of transaction refers to the three dimensions of transaction, including asset

specificity, transaction frequency, and transaction uncertainty. Regarding the specificity of an asset, an asset is a resource formed from past transactions or events. Assets must be actual assets, not expected assets. The past transactions or events of the enterprise referred to here include purchase, production, construction, or other transactions or events. Assets must be owned or controlled by the business. Owned or controlled by an enterprise means that the enterprise enjoys the ownership of an asset, or although it does not enjoy the ownership of an asset, the resource can be controlled by the enterprise. The uncertainty of the transaction is due to the diversity of the world and the participation of people, which makes the results of the transaction diverse. To deal with this variety or unknown, it is better to trade and analyze transaction records than to not participate in the transaction; excessive trading frequency may encourage traders to ignore the research on fundamental information, resulting in the inability of trading to reflect more accurate information into prices and reducing the overall information efficiency of the market. In short, low-cost information access in the sharing economy depends on the progress of mobile Internet, communication, computing, and storage technology [10]. The saving of transaction cost brought by Internet will increase people's motivation to participate in sharing and guide the allocation of economic and social resources to the sharing end.

According to transaction cost economics, we can know that when matching the same transaction technology structure with different organizational forms, transactions will show different behavioral tendencies, which will lead to different transaction costs [11]. When the same organizational form and different transaction technology structure match, the transaction cost is also different. When a transaction technology structure matches a special system and organization, transaction cost can be minimized, and resource allocation can be optimized. The change of organizational form enables enterprises to use mobile Internet technology to build a sharing economy business model. Therefore, the fundamental innovation of business model lies in system innovation [12].

*2.2. Definition of Internet Finance in Shared Economy.* By analyzing the recent literature on its definition, we should understand Internet finance in a broad and narrow sense. Widespread Internet finance is divided into the stage of germination and rapid development. It includes financial services provided by traditional financial companies represented by Internet genes such as Alibaba and Internet banks. These can be regarded as Internet financial activities in a broad sense. Beginning to fundamentally change people's concept of financial management, from a narrow financial point of view, Internet finance should be defined at the level related to the credit circulation of currency; that is, the methods and methods of financial integration relying on the Internet can be called Internet finance. Judging from this understanding, in fact, no matter what form of financial integration, direct, or indirect, as long as the Internet technology is used to realize this financing behavior, it is actually Internet finance, including the behavior of traditional finan-

cial institutions to use the Internet to improve their own efficiency, and can be defined as Internet finance.

"Internet Finance" is in the rapid development stage, that is, Internet finance in a narrow sense, that is, economic sharing, which is carried out by a large number of companies with shared economic characteristics represented by Alibaba. 2013 is a milestone year. Internet finance has almost overturned people's ideas and behavior. This is a financial innovation based on traditional finance. Unlike the emerging stage of development, this kind of financial innovation is a challenge to the traditional financial industry posed by Internet companies with shared economic characteristics. The new stage of development is the active expansion and innovation of traditional banking industry dominated by banks [13].

*2.3. Characteristics of Internet Finance in Shared Economy.* It is not just the difference between media and traditional finance. Internet finance has more modern characteristics than traditional finance, including virtuality, efficiency, inclusiveness, risk, and diversity of channels.

Firstly, virtuality: under the condition of network technology progress, the new Internet financial business model has gradually formed. The sale of financial products and the completion of financial transactions are almost completed online by virtue of a large amount of instant information shared on the Internet and virtualization of business places and trading methods. It is very open and informative, and people can get whatever information they want.

Second, efficiency: with the emergence of Internet finance, the allocation of financial intermediaries and financial resources has gradually broken through the original constraints and reduced the information asymmetry of traditional financial industry. At the same time, both sides of the transaction have concluded transactions on the Internet, which can reduce the error rate caused by human activities and improve the efficiency of financial services. In addition, through the application of big data, we can more accurately understand the attractiveness of consumers, perceive the consumer concept of consumer groups, and conduct accurate marketing through market segmentation, so as to reduce costs and increase profits.

Third, inclusiveness: as a new industry, Internet finance has broken through the restrictions of the original financial services and broken the restrictions of the original financial business threshold. Provide resources for all customers in need, effectively, and comprehensively provide services to all sectors of society, such as vulnerable customers excluded by banks in the past can obtain the required financial solutions and services through Internet finance.

Fourth, risk: any financial business, including Internet finance, has certain risks. Because of its rapid development, the quantity and quality of professionals do not match their development speed. The unexpected failure of some new problems not only causes losses to customers and companies but also reduces public trust in the industry.

Fifth, channel diversity: banks and other relevant financial institutions mainly sell traditional financial products, while Internet financial products are rich, flexible, and

diverse. With the gradual opening of the market, all of them have considerable competitive pressure with the Internet economy. In this environment, the financial market has accelerated the transformation and diversified channels.

#### 2.4. The Theoretical Support of Internet Finance in Shared Economy

**2.4.1. Long Tail Theory.** Making use of the advantage of quantity and constantly adding small-scale profits can occupy a large market share. The shortcomings of the lack of monomer theory are offset. Transaction costs will be reduced on average according to the size of user groups. Large user groups and low-cost profits will far exceed mainstream services and commodities. Internet finance fundamentally meets the needs of most people and naturally has this economic effect. The basic principle of the long tail theory is to gather sand into a tower and create a market scale. The purpose of long-tail value reconstruction is to meet individual needs, provide some more valuable content and more personalized things through creativity and the Internet, stimulate their implicit needs when they are recognized by customers, and create a completely different from the traditional popularization. It has a personalized business model for fixed market segments, but it has not changed the rules of the law of the jungle.

**2.4.2. Platform Economy Theory.** Platform can provide trading place for both parties. The general platform only charges a certain service fee to maintain the operation of the platform. Several typical transaction modes of Internet finance, such as P2P online lending and crowd financing, are based on platform economy theory, and Internet finance is also a platform economy.

**2.4.3. Information Asymmetry Supervision Theory.** Although the rise of Internet finance is to solve the shortcomings of traditional financial information asymmetry, in fact, information asymmetry is still widespread in the financial field, and many transactions in the trading market fail due to a large number of risks. Therefore, the external supervision of the government and relevant financial institutions and regulatory bodies can play a role in improving information. By controlling various risks in the industry, we can improve service efficiency and protect the interests of investors.

### 3. Main Business Models and Development of Internet Finance under the Sharing Economy Based on Multimedia Network

**3.1. Internet Finance and Its Main Business Model in Sharing Economy Based on Multimedia Network.** At present, the application based on multimedia network can be analyzed from two aspects: high-end research application and popular application. High end research application refers to the establishment of a new generation of information system. This new information system is based on the Internet. It is a second-generation high-speed Internet. It can not only collect all kinds of media information but also has the ability of high-performance computing and can realize the real-time

interaction between machines and people. Facing the massive data of China's Internet finance, its introduction is of great significance. The main framework of Internet Finance based on multimedia network in China has become more and more perfect. Internet finance has developed in all walks of life, but in the current shared economy, the large-scale business models of Internet finance are as follows: third-party payment, P2P, crowd financing, and big data financing. Third-party payment is based on Internet finance; big data finance is the control guarantee. The development stages and typical representatives of each model industry are shown in Table 1.

It can be said that under the comprehensive utilization of multimedia network, sharing economy and Internet finance are synchronized. The former is the foundation and driving force of the latter. That is the truth. This multimedia network finance is closely related to the sharing economy, which is clearly and concretely reflected in the proportion of transaction volume in the sharing economy market. According to the preliminary estimate of the annual report on shared economic development, China's share economic market turnover reached 4.9 billion yuan in 2018, covering many fields. Among them, the proportion of financial sharing in China's shared economic market transactions is 57%, and non-financial sharing (production capacity, life services, transportation, knowledge and skills) accounts for 43% of the total transaction volume in the economic market. The specific situation is shown in Figure 1.

**3.2. Third Party Payment.** Third-party payment refers to the connection between a large number of consumers and businessmen and banks as a third party other than the trading parties through the Internet platform. In order to provide payment and settlement services to buyers and sellers, third-party payment companies are responsible for credit protection and transactions, including online and offline payment channels. This model refers to some non-banking institutions, which generally have good economic strength and reputation guaranteed by the public. By signing agreements with major banks, their payment and settlement business is connected by the Internet and users. In this way, on the one hand, it can save the marketing cost of the expansion of banking business; on the other hand, they can establish information and business connections for both sides of the transaction, so that both sides can not only reduce transaction costs but also save time costs. It can be said that third-party payment is the cornerstone of the development of Internet financial innovation. In recent years, third-party payment has been developing vigorously, constantly meeting the growing financial needs of users, helping users form new financial consumption habits, and making the products of the market diversified. At present, the central bank has issued nearly 300 payment licenses, of which more than 27 are private. With the increasing number of participants in the payment industry, the differences in capital channels and market services are decreasing, and the products of payment companies tend to be homogeneous, which

TABLE 1: The main models of Internet Finance in shared economy.

Model	Stage	Typical products
Third party payment	Maturity	Paypal, Alipay, Tenpay
P2P	Maturity	Zopa, <a href="https://www.yooli.com/">https://www.yooli.com/</a> , Renrendai
Crowdfunding	Growth	Kickstarter, AngelCrunch
Big data finance	Growth	Ali Credit

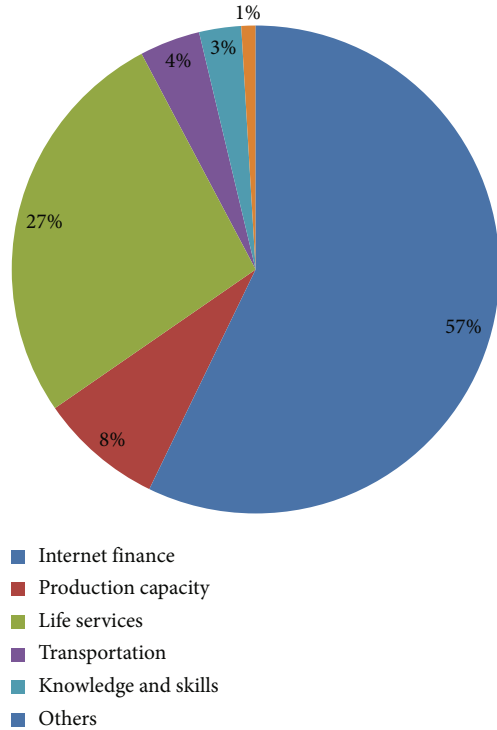


FIGURE 1: Trading volume statistics of China's shared economic market.

means that third-party payment enterprises need to find new innovations. New areas of competition include mobile payment, deep customized services in subindustries, and crossborder payment.

Internet users in China are growing, and Internet users are increasing their demand for online payment through third-party payment platforms. Since 2013, it has been a high-speed development period of third-party payment on the Internet. At present, the top third Internet payment transactions in China are Alipay, fortune pay, and Union-Pay, the top three. At present, the third-party payment on the Internet is moving towards life, mobile, financial, and diversified direction, and the application scenario is also expanding. With the increase of user experience and user stickiness and the increasing proportion of offline payment, mobile payment has become a new battlefield for third-party payment. The massive data accumulated by third-party payment provides the basis for the entry and credit of Internet financial services. At present, the third-party payment industry chain system on the Internet is constantly improving, and the development of Internet finance is constantly advancing.

3.3. P2P. P2P is “individual to individual.” P2P loan refers to the platform provided by the third-party platform (P2P company), which can be tendered freely by both suppliers and demanders of funds. P2P model can be said to be a major change in the traditional financial credit model and generally refers to the completion of capital lending between individuals or between enterprises and individuals on a third-party platform. When enterprises are facing financial crisis, it is obviously more convenient to obtain funds on the P2P platform than on the multilevel approval of banks. Users of P2P network loans are generally recognized as risk users, because banks cannot grant loans to users who cannot pass the asset status and solvency review because of the security of funds. The absence of traditional financial institutions in such loans has made P2P online loans catch the gap in the market and have been widely praised by fund demanders. For P2P companies, after gaining a large number of loyal customers, they have to face the huge challenge of assessing the repayment ability of users, so as to identify and avoid risks.

In terms of transaction scale, P2P has become the biggest cake in Internet finance. P2P undertakes the important task of financial innovation, bringing hope to solve the financing difficulties of small and medium-sized enterprises. As can be seen from Figure 2, P2P online lending platform is in a rapid development stage from 2012 to 2015, and the total number of platforms increased from 951 in 2012 to 5,432 in 2015. The change in the number of platforms after 2015 is mainly due to the increased supervision and introduction of relevant measures in the P2P online lending industry by relevant state departments.

Many P2P online lending platforms continue to seek upgrading and transformation and constantly clean up the market platform that does not meet regulatory requirements. We will further strengthen the concentration of online loans. However, due to the popularity of the concept of online lending and investment and the increase of advertising and publicity, the number of online lending investors has increased rapidly. In the past 18 years, the introduction of the “double-dip” policy by the government regulators has made the enterprises and individuals who want to enter this industry wait and see in the market. Domestic P2P online lending platforms mostly adopt guarantee methods, i.e., promised principal and interest guarantees. This method is not conducive to the development of P2P industry. P2P platform should improve the degree of specialization and risk control. As can be seen from Figure 3, when P2P became popular in China from 2012 to early 2017, the number of problematic P2P platforms was increasing.

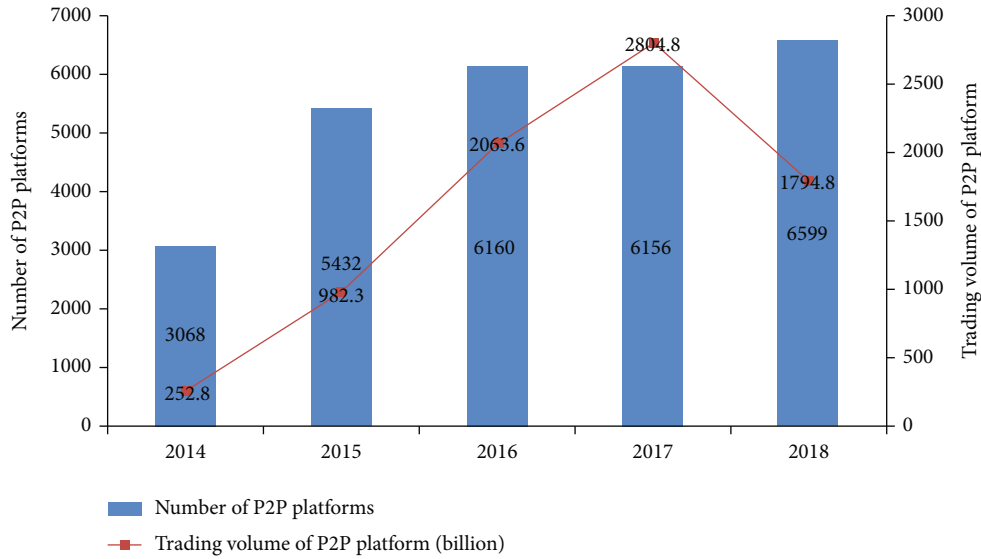


FIGURE 2: The number and trading volume of China’s P2P platforms from 2011 to 2018.

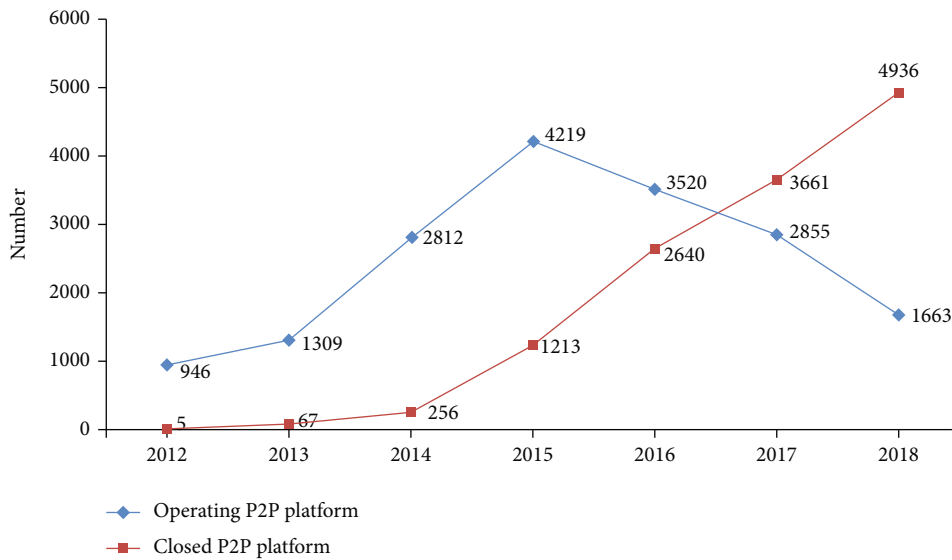


FIGURE 3: Number of P2P platforms operating and closed in China from 2011 to 2018.

3.4. *Crowd Financing.* The purpose of crowd financing is to finance all activities that need financial support, such as the production and operation of fundraisers, and the returns to investors are generally funds, goods, or services. The original sponsors of crowd financing were creative people, such as artists who would attract interested customers to fund their creations by presenting their products online. With the increasing use of crowd financing, its nature has changed from nonprofit to commercialization. Compared with the level of development of European and American countries, it is still in its infancy in our country. To some extent, this model alleviates the financing difficulties of enterprises.

Crowd financing industry is in the initial stage of development from 2011 to 2013, and it is still immature in terms of business model and financing model. From 2014 to 2015,

China’s crowd financing industry has experienced rapid growth, and the scale of the industry is also expanding, which is in a period of rapid development. During this period, because the real-return crowd-financing platform is in its infancy, the return form has not formed a perfect system; so, there will be many restrictive factors. At the same time of rapid development, crowd-financing industry has encountered many difficulties and challenges. This is mainly due to the following two reasons: firstly, in 2016, the number of enterprises pouring into crowd financing industry is increasing, and various Internet companies, financial companies, and other enterprises have launched crowd financing services and achieved crossborder cooperation with crowd financing business; secondly, with the introduction of national policies and the development of the industry, there

is a large number of people. The withdrawal of financing companies from the industry has led to a great reshuffle of the crowd financing industry, and many crowd-financing organizations have been eliminated because their business is not standard enough. In 2018, the crowd financing industry ushered in a new period of development. Although the number of crowd financing organizations has decreased, the remaining crowd financing platforms are constantly standardizing and standardizing market operations, and the quality of crowd financing business is constantly improving. Proportion of various types of crowd financing projects in 2018 is shown in Figure 4. According to the “Report on the Current Situation and Development Trend of Internet Crowd financing Industry in 2019” issued jointly by Zhongguancun Crowd financing Alliance and other units, by the end of 2017, the financing amount of China Crowd financing Industry has exceeded 22.3 billion yuan. Chinese. Among them, the successful financing amount of equity public funds is 14.22 billion yuan, an increase of 300 million yuan over 2017. In 2018, the number of investors participating in crowd financing projects reached more than 27 million and increased by 10 million in 2017. After two years of rectification and reform, crowd financing industry will usher in a critical period of development in 2019, focusing mainly on the ability improvement, technology introduction, risk control, and industry ecology of crowd financing industry and improving the environment of crowd financing industry.

*3.5. Processing of Big Data Finance Based on Multimedia Technology Network.* Financial credit has a long history. As a model of Multimedia Internet finance, big data finance refers to the collection of massive unstructured data. Through real-time analysis, it can provide all-round customer information for Internet financial institutions, grasp customer’s consumption habits by analyzing and mining customer’s transaction and consumption information, accurately predict customer behavior, and make financial institutions and financial service platforms have targeted marketing and wind control. Big data financial model has incomparable advantages over traditional finance because of its huge amount of data, diversity of data, and value of data. At the same time, in the face of complex and diverse financial data, the comprehensiveness and integration of multimedia technology just makes the processing of big data financial data easier. Big data finance breaks away from traditional risk management concepts and tools. It enables Internet financial institutions to accurately quantify risks, enhance risk controllability, discover potential risks in time, and effectively avoid risks. It presents a comprehensive and three-dimensional customer composition and runs through the entire business process. And its “inclusive finance” characteristics make the service boundary of financial companies continue to expand. With the wide application of big data financial model, financial institutions pay more attention to the personalized needs of customers, design personalized financial products, and achieve fine services.

China’s financial credit development is still in its infancy, and the credit reporting industry is dominated by the central

bank. The basic operation mode of big data finance is to accumulate data through the business platform itself, then mine and analyze the data, and ultimately realize the financing of the business platform users. Internet financial data has great advantages in terms of transaction size and user size. Once these data are mined, they can greatly complement our credit information database. Secondly, the weakness of credit evaluation of Internet financial companies has become the most important driving force for their development. According to Erie Consulting Report, the potential market size of China’s personal credit reporting industry in 2017 is 26.9 billion yuan, and the actual market size is 22.2 billion yuan, as shown in Figure 5. Generate big data in this context, open the credit information system of the central bank, strengthen the credit information sharing mechanism of the Internet financial industry, and construct a perfect credit system of the whole society of the Internet. Finally, exporting credit system to Internet finance and corresponding traditional financial scenarios can create tremendous value. Moreover, big data credit is far more important than credit evaluation.

#### **4. Challenges and Problems of Internet Economy**

From the above discussion on the development of Internet finance, we can see that Internet finance and traditional finance are highly integrated and unique, with the characteristics of internal connection and mutual differentiation [14]. It has hidden traditional financial risk factors but also has its own unique risk characteristics. On the one hand, Internet finance is essentially the upgrading of financial industry brought about by Internet technology, and its essence and function have not changed fundamentally. In the field of Internet finance, it is impossible to avoid the spread of systemic financial risks. On the other hand, some Internet financial industries are greatly different from the traditional financial industry through reform, development, and evolution. It also has some risks associated with the Internet industry or similar risks [15].

*4.1. Market Risk.* There are many factors that can cause risks in the financial market, mainly interest rates, exchange rates, stock prices, and so on. These financial indicators will change dramatically in a short time. The risk of loss caused by these changes is market risk. To be sure, Internet finance is facing greater market risks than ordinary finance. Because Internet finance uses a large number of Internet platforms for transactions, the speed and volume of transactions have increased in geometry. At the same time, there are many Internet financial products, which have prominent characteristics in various industries [16, 17].

*4.2. Liquidity Risk.* In the operation of Internet finance companies, liquidity is in short supply. However, in the short-term, capital returns may not be realized, or cash flows may not be available in time to meet business needs, and there will be a breakdown of the capital chain. This will lead to liquidity risk. Because traditional financial industries such as



FIGURE 4: Proportion of various types of crowd financing projects in 2018.

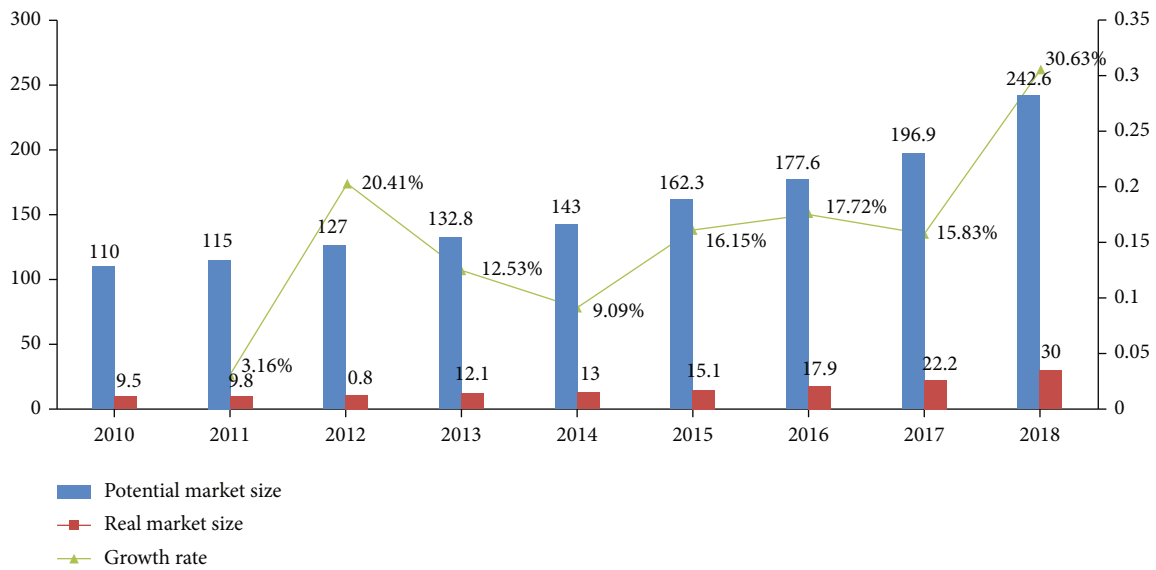


FIGURE 5: 2010-2018 market scale of personal credit reporting industry in China 2010-2018.

banks are not conducive to short-term and medium-term capital lending in the inter-bank lending market and the bank bond market, it can be said that the liquidity risk faced by Internet finance is also greater than that of traditional financial industry. Although the government is making efforts to further strengthen the management of fund payment in Internet financial institutions, it is difficult to obtain liquidity support from the central bank. It is also impossible to participate in

short-term fund lending. Even Internet financial companies such as Yao, once faced with the simultaneous redemption of funds by most users, can easily lead to liquidity risk due to short-term redemption of funds [18, 19].

4.3. *Credit Risk.* Because of its own particularity, Internet finance has a higher requirement for credit and a greater credit risk than traditional financial industry. Traditional



finance usually controls risks by means of mortgage guarantee, while Internet finance pays more attention to the personal credit of lenders and the information disclosure content of enterprises, but this is not the case. In the face of information technology, the security of some data information is difficult to be guaranteed.

Credit risk is also a traditional financial risk. From a personal point of view, as the current credit system is still under construction, it is difficult for Internet financial institutions to access the credit information center platform. Therefore, it cannot fully grasp the information of Internet financial participants nor can it make a true and accurate judgment to investors. Trading parties often lack direct and comprehensive understanding to increase the likelihood of risk occurrence. Institutionally, due to the asymmetry of network information, investors cannot understand the real credit status of Internet financial institutions, which provides an opportunity for Internet financial institutions. Using false information and debt to deceive investors' funds, investors face greater credit risk. The most typical case is P2P network credit. The main reasons are the loss of platforms, the liquidation of platforms, the difficulty of cash withdrawal, and the expansion of platforms [20].

**4.4. Operational Risk.** Operational risk is mainly caused by improper behavior of investors or Internet service platforms. As the most characteristic risk factor in the Internet industry, operational risk is also the unique risk of Internet finance. Because technology security has a great impact on Internet finance, Internet finance highly depends on data information, and technology security largely depends on operation. Internet has the spirit of open sharing. Users only need to have certain equipment to participate in the field of Internet. Under certain basic conditions, they can access the Internet and carry out network activities. Through the information technology of the Internet, Internet financial institutions can directly connect with the external network and provide a large number of information query and financial transaction services. In this process, both information data and network system security have certain risks. Business activities of Internet finance are often carried out by information technology. When business transactions are carried out through the Internet, internal networks between different devices need to be connected. Traders enter into the internal systems of financial institutions through the Internet. A large number of businesses are stored in the internal network systems and hosts of institutions. Secret and communication data increase the technical risk. Because of the economic value behind the data, the Internet financial network system is easy to attract internal and external virus attacks; so, Internet financial institutions need to design a strict firewall security system to protect the data security of financial institutions. In addition, Internet financial institutions also have potential factors, such as network system downtime, disks being damaged, or virus intrusion. There are technical risks of tampering with software data, data leakage, and infringing on the privacy of others. When hackers invade the internal system of the organization by illegal means, the personal privacy of customers and the data

security of the organization are in danger of being stolen, which seriously affects the confidence of customers in transactions. Therefore, how to solve the technical risks brought by the Internet and ensure the security of transactions is a major problem to be solved [21].

Therefore, the interaction ability and synchronization ability of multimedia technology play a great role, which makes a feedback mechanism to realize the data exchange, media exchange, and control right exchange between employees and computers. In addition, the integrity of Internet financial internal control mechanism and supervision, the professional knowledge of employees, and the integrity of Internet trading system will also directly affect the risk level of Internet financial operation. At the same time, the risk of external operation is inevitable. Individual financial users will inevitably make mistakes in their own operation, including invading investors' computer viruses or implanting Trojan horses and risks of theft, such as customer files theft and fraud risk.

**4.5. Information Security Risk.** Information security is a risk faced by all Internet-related industries, especially in the field of Internet finance. Generally speaking, the risk of information security can be divided into external and internal reasons. External causes mainly refer to the risks caused by natural disasters, accidents, network security public events, or the risk hazards caused by the failure of hardware and software, network infrastructure and disaster recovery system, and other computer infrastructure equipment. These risks are often sudden and unpredictable. Internal reasons mainly refer to the risks brought by the users and managers of information systems to the changes of Internet information systems. The reasons are possible violations, operational errors, subjective intentions, and so on. Generally, information security risks always exist. There is relevant data information of Internet financial institutions in computer networks, such as customer information, platform information, and capital information and credit information. Once data and information problems occur, it will seriously affect the accuracy and fairness of financial transactions and easily lead to disputes and contradictions between the two sides. There are serious consequences such as capital risk [22].

## 5. Strategies for the Future Development of Internet Finance in the Shared Economy

**5.1. Formulating Complete Rules.** The essence of sharing economy is based on multimedia network and mobile information exchange technology and gives full play to the sharing of financial resources, channel sharing, and risk sharing mechanism to achieve the rational allocation of resources. Compared with the closure of traditional finance, Internet finance under the background of shared economy should be a complete trading rule. The "ecliptic circle" of Internet finance has symmetrical information, complete protection, and equality. With the further development of Internet finance, the cost of credit and risk control is the key to the success of the future Internet financial platform.

*5.2. Refinement of the Market.* At present, China's Internet P2P industry mainly acts as a financial intermediary, and its profit model mainly matches the supply and demand of funds, a profit model in which the deducted portion of debited funds are used as commissions. This profit model belongs to the basic profit model of the P2P network-lending platform, and the gains are limited. With the continuous development of economy and the popularization of finance, the demand for financial services in the market will be increasing, and various new financial service modes will be derived. At this time, the P2P network-lending platform should subdivide the platform business on the premise of guaranteeing the original business, provide more accurate financial services for customers, and form a virtuous circle of customers and platforms. For example, the complete business processes on the P2P platform include customer pre-acquisition, credit collection, mid-term loan matching, and postaccount collection. More and more platform sponsors and borrowers will attract more funds to enter the platform, and the scale of platform funds can be doubled. Accelerate the liquidity of platform funds so that it can continue to attract borrowers and form a virtuous circle between the platform and the parties involved in the transaction.

Next, it analyzes the competition of P2P industry in these years. This part uses  $CR_n$  index and HHI index to analyze the data of online lending home from September 2017 to January 2019. Among them,  $CR_n$  is the standard formula for calculating industry concentration rate as follows:

$$CR_n = \sum_{i=1}^n S_i. \quad (1)$$

Among them,  $S_i$  is the market share of the first enterprise, and  $N$  is the largest number of previous enterprises in this industry. The average  $CR_4$  index and  $CR_8$  index are 51.23% and 74.63%, respectively. It can be seen that there is a certain trend of P2P monopoly in China. According to the current policy and market trend, this trend may be further expanded.

But the  $CR_n$  index cannot show the same  $CR_n$  is worth the market back structure difference, so we need to observe from the HHI index:

$$HHI = \sum_{i=1}^N \left( \frac{X_i}{X} \right)^2 = \sum_{i=1}^{Nn} S_i^2. \quad (2)$$

Among them,  $X$  represents the total size of the market,  $X_i$  represents the size of the first enterprise,  $S_i = X_i/X$  represents the market share of the second enterprise, and  $N$  represents the number of enterprises in the industry. The average HHI index of enterprises calculated is 1013, which shows that not only the monopoly rate of P2P enterprises is higher but also the degree of competition is higher. This also fully reflects the advantages of HHI index in reflecting the overall market situation and the effective calibration of  $CR_n$  index. But at present, the scale of P2P industry has not been reduced, because the internal market segmentation is an effective way.

*5.3. Strengthen Supervision.* As a new industry, while encouraging its development, we should clarify the legal responsibility of Internet financial companies and strengthen the supervision of Internet financial companies. Industry supervision should include government supervision and industry supervision. First, government regulation, as a macroregulator, the government has the responsibility to use government control measures to guide the development direction of emerging industries, for example, establish industry access standards, set up industry access system, resolutely ban non-standard platforms, formulate laws and regulations on P2P network loans, prohibit illegal fund-raising, establish fund pools, illegal platforms guaranteed by platforms, and popularize Internet financial laws and regulations. Second, the platform self-regulation: Internet financial companies should jointly organize an internal supervision alliance to form supervision among Internet financial companies and set up a reward and punishment mechanism. On the one hand, regulatory alliance can form a regulatory mechanism at the lowest cost; on the other hand, it can play a propaganda role in the enterprise by assigning personnel, familiarize itself with current laws and policies, and prevent violations at the source.

*5.4. Perfecting Risk Assessment System.* China's P2P network lending platform is exploding. Because of the low entry threshold, the credit system construction is imperfect, and frequent operational events. At present, the construction of China's credit laws, and regulations is seriously lagging behind, which leads to the crazy and barbaric development of P2P network lending in Internet financial industry. Therefore, the primary task to regulate the healthy and orderly development of P2P network lending is to improve and perfect the relevant laws and regulations on credit construction. China's Internet financial industry should be legally complied with and punished for its involvement in distrust. Second, the government should actively create a good social credit environment and accelerate the cultivation of the main body of the credit market. In addition, the risk prevention mechanism is too simple to make China's Internet financial industry face higher credit risk. There is no scientific introduction of risk reserve system and other risk prevention mechanisms, which can easily lead to road incidents. Therefore, the government needs to establish a mature risk assessment system to promote the healthy and orderly development of China's Internet financial industry by promoting industry self-discipline and market supervision.

This paper uses daily earnings data published by Tian-tian Fund Network from December 2017 to March 2019 as samples and uses ARMA autoregressive moving average model to study earnings volatility. The formula is as follows:

$$Y_t = \phi_1 Y_{t-1} + \phi_2 Y_{t-2} + \dots + \phi_p Y_{t-p} - \theta_1 u_{t-1} - \theta_2 u_{t-2} - \dots - \theta_q u_{t-q} + \mu_t. \quad (3)$$

Among them,  $Y_t$  represents ten thousand earnings of  $E$  in different periods, i.e., the amount of daily earnings of

buying 10,000 yuan of  $E$  financial products (in units),  $Y_{t-p}$  represents ten thousand earnings of  $E$  in earlier time series, and  $\phi_p Y_{t-p}$  represents the function of AR process.  $u_{t-q}$  represents the random error of the preceding time series, and  $\theta_q u_{t-q}$  represents the function of MA process. The AR (1) model of  $\text{Dln}y_{t1}$  and AR (1) model of  $\text{Dln}y_{t2}$  in the first stage are established.

Through model training, the results of the first stage time series model are as follows:

$$\text{Dln}y_{t1} = 1.27 \times 10^{-3} - 0.1389(\text{Dln}y_{t1-1} - 1.27 \times 10^{-3} + \mu_t). \quad (4)$$

The results of the second stage time series model are as follows:

$$\text{Dln}y_{t2} = -1.857 \times 10^{-3} - 0.2733(\text{Dln}y_{t2-1} - 1.857 \times 10^{-3} + \mu_t). \quad (5)$$

Among them, the  $\text{Dln}y_{t2-1}$  coefficient is negative, which indicates that the premarket risk is less than the current risk, and intuitively shows the risk level of balance financial products faced by investors.

## 6. Conclusions

With the rapid development of modern science and technology, multimedia technology will integrate more new technologies, and the future development prospect will be broader and the content will be richer. Now, its technical improvement and innovation are closely related to the development of computer technology. With the continuous development of the Internet data age and the continuous progress of technology, data fusion has important application prospects in multimedia networks. Internet finance derived from shared economy is a way to effectively solve the problem of information asymmetry and improve the efficiency of financing under the new situation. It is not only the product of the times but also the trend of the development of the times. While sharing the traditional economy, the shared economy also creates a huge innovation space for the entire financial system. After several years of development, Internet finance is facing more and more difficulties and challenges. This paper analyses the theoretical nature and conceptual characteristics of Internet finance in the shared economy, and from the development history and current situation of Internet finance, analyses the difficulties faced by Internet finance at present: market risk, liquidity risk, and credit risk, and operational risk. Under the shared economy, the safe and stable development of Internet finance can not only rely on market regulation but also need the policy guidance of the government and the improvement of relevant laws and regulations. From the perspective of the government, this paper puts forward several suggestions for the development of Internet finance under the background of shared economy.

## Data Availability

No data were used to support this study.

## Conflicts of Interest

The author declares that she/he has no conflicts of interest.

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