The Study of Internet Finance Regulatory Issues and Governance Model Construction in the Context of AI

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Abstract. As along with the high-speed development of technology, more and more industries have been changed their operational pattern, besides the financial industry. Integrated traditional finance with the internet technology, Internet Finance has become a hot topic in modern economic fields. In this paper, we surveyed the internet financial market and find that there are many supervision problems. So, we aim to explore the reasons of the problems and construct a new supervision model to help the government regulate the market as well as to achieve a win-win cooperation in internet financial market. In this paper, first part is an introduction of the markets and then the special features of Internet Finance are interpreted. The third part shows the major problems in Internet Financial market supervision and last, we design a functional prudential dynamic supervision system with AI and big data technologies. By doing so we hope we can give some suggestions to the market interest parties to take full use of the Internet Finance and achieve a win-win in the market.

Introduction

Big data, cloud computing and artificial intelligence technology have made the revolutionary impact on the traditional finance. Integrated with these new technologies, the "Internet Finance (IF)" is reborn and also has become the focus of the current finance industry. During the development of Internet Finance, new financial products, the change of trading patterns and a variety of new service channels are emerging in endlessly due to the special characteristics of IF which will be introduced in the second part of this paper. However, the coin has two side. The insufficient governance of the "new thing" results in the chaotic development and great damages to investors. Therefore, this paper aims to explore the reasons of these inefficient issues and try to construct a new artificial intelligent governance model to help the government regulate the Internet Finance. The structure of the paper is as follows: first part is to introduce the meaning and characteristics of the Internet Finance; the second part is to explore the problems of the Internet Finance; the third part is to construct governance model of the Internet finance; and the last part is the conclusion of the paper.

The Background of Internet Finance

The Concept of Internet Finance

It is generally believed that the concept of "Internet Finance (IF)" is first raised by Professor Ping Xie (2012) in the domestic studies. He thought that the Internet Finance is neither indirect financing of commercial bank nor the direct financing of capital market, it is the third way of financing [1]. But Professor Chen (2014) objected that the Internet Finance is a kind innovation in marketing channel, other than a kind of new financial entity, for which financial nature of credit and value exchange has not been changed [2]. Both views make some sense; but from the point of current development, there are still some difficulties and uncertainties to change the credit nature of the finance. Quantitative accumulation leads to qualitative transformation. The rapid development of Internet Finance brings large volume of clients may give rise to the nature change of financial transactions in the future.

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The Characteristics of Internet Finance

There are four special characteristics of Internet Finance, which makes the financial investment process simple and flexible, and quickly take up the market.

Decentralization and Sharing.

In the general traditional financial trading pattern, deficit unit obtain credit from surplus unit through the direct or indirect finance, usually from the financial organization. While, Internet Finance, build on the social network of interpersonal relationships, converts the relationship in reality to the network. There is no necessary for financial organization involved and unstructured financial data are transmitted, radiate to the whole public through the network spread spontaneously, which established a decentralized, interactive sharing platform (seen in fig.1). Internet Finance is also can be regarded as a special application of big data technology. The information accumulation will result in a new "data of wealth".

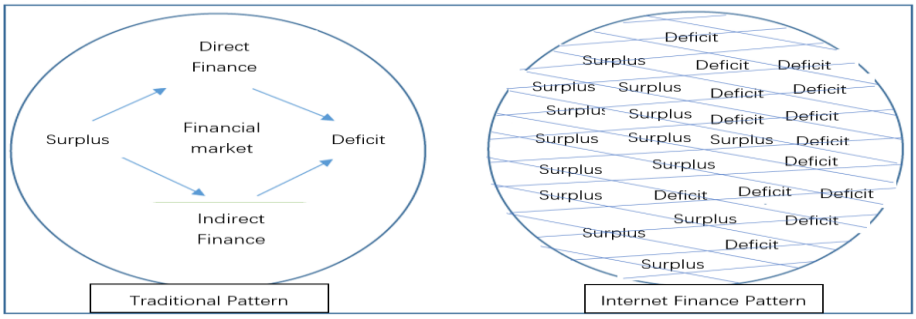

Fig 1. The patterns of traditional finance and internet finance

Open and Publication.

Assisted by the internet technology and network platform, Internet Finance creates a more dynamic, competitive and diversified financial system. The internet financial participants have become more and more public, which reduces the specialization and financial labor division. Meanwhile this change further increases coverage of in financial sectors and have a positive effect on the development of China's digital finance revolution. According to the official research report, Internet Finance industry still keeps a high-speed growth. By the end of 2018, the amount of internet consumer finance loans has increases up to 9773.7 billion. The growth rate is 122.9% from 2017 to 2018 (seen in fig.2). The data in Figure 3 shows that the number of internet financial clients has been increasing year by year, and still have large amount of potential clients, which may create a great wealth to economy [3].

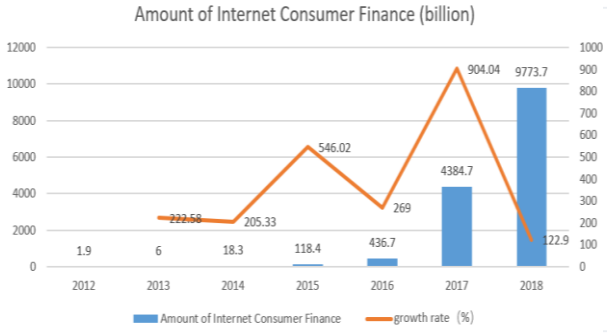

Fig. 2 Amount of internet consumer finance

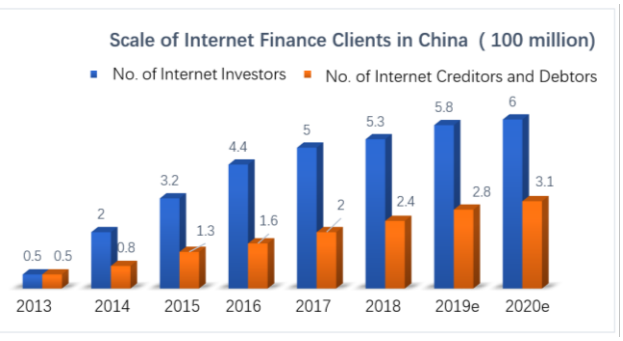

Fig.3 Trend of internet finance client's number

Optimize the Allocation of the Resources

Internet Finance is a concept of spectrum who can be operated without the control of financial intermediation or professional elites. Therefore, the information of supply and demand of loanable fund is directly released and matched through the network, which reduces the information asymmetry, trade friction and optimizes the resources allocation.

Multi-Business and Various Services.

The application of Internet technology links search engine, e-platform, business and socialization together. Acting as the bridge to connect every part, Internet Finance releases the funds, which breaks the boundary of finance and non-finance. Internet financial products are no longer restricted by time and space, that is, owns infinite space to expand trading. In addition, Internet Finance is not only a simple internetization of traditional finance, it also includes many types of products, such as crowdfunding, P2P loans, big data loan credit assurance, the internet securities funds, supply chain finance, third-party mobile payment, digital currency and so on.

The Inefficient Issues in Internet Finance Regulation

On one hand, the characteristics of Internet Finance not only brings the convenience, flexibility and various kinds of new services to the public, but also makes up the vacancy of credit market especially for the small business lending and borrowing. However, on the other hand, internet high transmission speed, wide scope of publicity and large scale of raising fund endow the Internet Finance more potential risks than that of the traditional financial.

Difficulty in Full Supervision for IF Multi-Business

With the network technology, internet financial platforms enhance the integration of financing, the industry chains and personal socialization. Internet financial products provide various services across the banking, insurance, securities, real industry and other business, which, to a certain extent, promote the process of multi-business of financial industry in China. But from the angle of market risk, the low entrance threshold of internet financial platform are easy to be made illegal use of absorbing public deposits or fraud fund-raising etc.. During the 2018, there are more than 2,000 problematic P2P platforms. Studied by the Tencent Lingkun big data financial security platform, 44% existed P2P platforms have middle or high risks among 10,000 platforms in total (seen in Fig.4). Besides, we can see from the Fig.5 that although the rate of problematical platforms is decreasing, the problematical platforms still takes up near 30% [4].

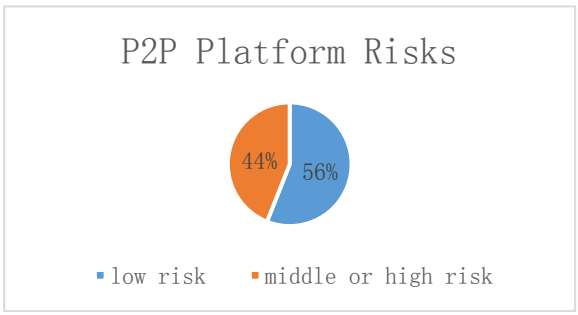

Fig.4 Risk of P2P plarforms

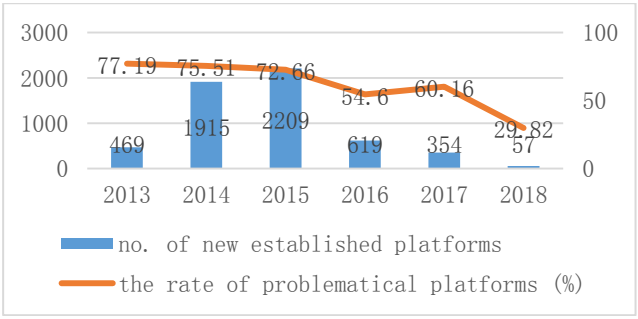

Fig.5 Statistics of problematical platforms

The current financial regulatory system in China is mainly conducted by the central bank, the people's bank of China, the China securities regulatory commission as well as China banking and insurance regulatory commission, and assisted by the specific complementary of supervised financial institutions. Although our country at present has published some decrees for Internet Finance, there is still vacuum in the regulations due to the multi-business. Multi-business internet financial products make supervision department unclear and result in the cross-border enforcement problem.

New Systemic Risk due to IF Disorder Development

Internet Finance helps the small enterprise solve the financing problem. But the brutal and disorder development of IF causes the high risk of market fairness, market credit and consumer's protection. Firstly, the complexity and innovation of the IF will be used for financial fraud, and if it occurs, systemic risks may burst out due to the network spread. Secondly, trading parties are not equal because of the information asymmetry. Lastly, many internet financial clients are lack of rational thinking and misunderstood by the sales staff. At the same time, individual investors are difficult to have enough capacity to carry on the effective supervision on IF investments for their limitation of time, location and amount. Once the risk occurs, individual investors are often faced with difficulties to organize joint-fight against platforms effectively.

Effective IF Governance Model Construction

Over the 70 percent of the information of the whole society is digitized, and it is an irreversible fate to integrated finance industry with community network in the current digital age. The Internet Finance creates a highly innovation and well serves the real economy. It also fills up the blank of financial market: it solves the difficulty of small business financing, which improves the level of financial inclusion and promote the standardization of the individual finance. How to make full use of the Internet financial, meanwhile, maintain the financial stability, financial order, protect the rights and interests of financial consumers are the important topic. In this paper we put forward the following three points of view to construct an effective IF governance model.

The Promotion of Market Self-Discipline Mechanism

The present internet financial regulation is generally postmortem control. Conducted by the bad consequences of internet financial inappropriate behavior or illegal internet financial products, government set the rules to determine the follow-up supervisions and how to regulate [5]. This kind of postmortem supervision are rigidity, but lack of flexibility. In addition, the bad consequences have irreversible impacts on society. So, the government needs to build an innovative financial regulatory system, which strengthens the supervision and balance the flexibility and restrictions.

The implementation of the Internet financial regulation needs to develop a hierarchy governance system from loose to strict. If the governance is too strict, Internet Finance will lose the advantage of decentralization and open; On the contrary, excessive laissez-faire market freedom will let the market be out of control and cause systemic financial crisis.

To find a balance, the first level of internet financial regulatory system is to establish proper financial risk inclusion mechanism to guide market self-discipline healthily. Under the law of value, the market self-regulation mechanism will optimize resources and quickly respond to market signals. The nature of internet financial market determines the fast-moving speed of its product information. Associated with the market self-regulation, financial market will have a rapid response to the adjustments and spontaneously release effective signals to the financial sectors. It has the ability to absorb fluctuations of the market and maintain the stability of the market. But the self-regulation mechanism also exists blindness and spontaneity. At this point, industry committee should publish the complementary agreements to develop self-regulation mechanism. Internet financial institutions and platforms take the voluntary implementation to play the positive role of market self-control.

The other level of internet financial regulatory system is to take the functional prudential regulations on both macro-market and micro-market. The aim of the functional prudential regulations is to prevent the nationwide systemic financial crisis. Macro-prudential regulation is the consideration of the financial system and real economy to assure the safety and health of social financial system. Micro-prudential regulation is mainly for the single financial institutions. The functional prudential supervision model should include capital adequacy, asset quality regulation, loss reserves, liquidity, leverage ratio regulation, insurance company solvency regulation, etc.

Dynamic Process AI Supervision and Information Sharing

Cash flows of internet financial products have the vague problems in investment process and destination [7]. Meanwhile, the multi-business characteristic of IF makes the supervision lack of a clear division of jurisdiction. Therefore, making full use of big data and AI technology, the effective dynamic regulation system should give the timely information sharing and clear cash flow supervision.

Government can require the platform to disclosure related data to the supervision system. On the premise of privacy, government takes the advantage of data to dynamically evaluate the development of IF products, the degree of the potential risk as well as to set up the warning benchmark computed by AI and big data analysis. Nowadays, more and more useful storage data is unstructured data. In-depth data mining and data monitoring technique is adopt to forecasting liquidity problems and effectively predicting the financial risk to prevent the happening of the systemic risk. The new governance system switches the postmortem supervision to beforehand supervision, which assesses the whole process constantly, and capture the signs of new risks in time.

Balance the Interest among Financial Sectors

Rational man hypothesis gives equality of opportunity to all market participant, but in fact different market participants have different status, of which special interest groups always grab the interests from others against common interests. In such situation, it is necessary to make effective interference and constraints to these special interest group. On one hand, financial consumers stand on the weak position with restrictions of capital and experience; on the other hand, the internet weakens the supervision of financial institutions. The major form of internet financial supervision should be given priority to the consumer protection. The special features of finance industry determine the different protection laws from the other industries. A special financial consumer protection laws should be enacted as well as special agencies to manage. In addition, protection not only means protection to financial consumers, but balance the interests of financial institutions, non-financial institutions, government and consumers in internet financial market. Financial sectors should get rid of the zero-sum mindset and take the value concept and behavior of win-win cooperation, so as to achieve interest optimization in internet financial market.

Conclusion

Internet financial market is still a new promising market that people need to explore and regulate. To conclude, this paper first explains the reasons why we choose this Internet Finance topic and then introduces the debated concepts of Internet Finance. The four characteristics of Internet Finance not only promotes the financial market freedom and open, but also brings information sharing and enlarge the services of financial market. The current problems of Internet Finance make the market disordered and difficult in governance. In order to better take advantage of internet financial market, we give three suggestions to construct internet finance governance model based on the technology of AI and big data. By application of the technologies, a prudential dynamic beforehand-feedback AI system is constructed to solve the problems and balance the different interest parties. We hope to help the finance sectors to achieve a win-win cooperation in internet financial market.

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