Research on the Efficiency Mechanism of P2P in China Based on Financial Function

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Abstract. Based on the data of Internet Finance, the paper analyzes the efficiency mechanism of P2P lending from the aspect of financial function. Through comparing and analyzing the data between the P2P lending platforms, combined with China's current economic situation, and expounds the efficiency mechanism of P2P lending from five aspects, including market breadth, market depth, capital utilization efficiency, information asymmetry and risk reducing. On this basis, the current risks of P2P lending platform are summarized, relevant solutions are proposed.

Introduction

In March 2005, the establishment of British company Zopa marks the start of P2P lending platform based on internet technology. In 2007, China’s P2P lending platform began to emerge and develop rapidly. In 2015, the turnover of P2P lending in China exceeded 1 trillion yuan, reached 1 trillion and 180 billion 565 million, an increase of 258.62%, the cumulative turnover 1 trillion and 631 billion 215 million history. Thus P2P shows a rapid growth and a wide popularity.

With the progress of computer technology, in recent years, Internet Finance has been developing rapidly. P2P lending, the third party payment, big data and many financial business like this appear to meet the need of the users, improve the operation efficiency and transparency of information, reduce the transaction cost, and finally realize the social welfare maximization. On the other hand, the Internet banking has some adverse effects, because there is no perfect regulatory system, there is a big risk. P2P lending is a subclass of the Internet Finance, and it includes the advantages and disadvantages of the above. As a new lending business, relevant analysis in this area is very limited, so the research on the financial function and efficiency standards of P2P lending is very necessary.

In this paper, through the existing data and secondary data, the efficiency mechanism of P2P lending in China is analyzed in five aspects, the scope of the market breadth and depth, the fund usage efficiency, information asymmetry and reduces the risk. On this basis, the risk analysis of P2P lending in China is put out, and then I put forward the corresponding settlement mechanism. I hope this paper can make a contribution to the development of China’s P2P lending.

Current Situation of China’s P2P Lending

China's Internet Finance originated in the 1990's, the development process is shorter than the European countries and America. Internet Finance is the combination of Internet technology and financial functions. It is kind of financial industry based on big data and cloud computing. And it has four advantages in terms of low cost, high efficiency, wide coverage and rapid development.

P2P lending is a sub category of Internet Finance which indicated the lending transaction between the individual and the individual, generally need to use professional network platform to help borrowers establish lending relationships and complete the relevant transaction procedures. The borrowers can release lending information on the platform, including the amount, interest, time and method of repayment, and decide on their own lending amount, to realize self—borrowing process. The investors are able to divide their funds into numerous parts so that they can invest more borrowers with lower risk. China's P2P lending helps a large number of small and micro enterprises to achieve the financing needs, and it also reduces investment risk, and makes idle funds available
P2P lending transaction model is mainly divided into three kinds: the offline transaction mode, guaranteed online transaction mode and non-guaranteed online transaction mode [1]. The website of the offline transaction mode only provides transaction related information, and the actual transactions are carried out in lending institutions and borrowers and investors complete the transaction face to face, the proceeds include agency fees, service charges and a significant difference in interest rates, usually the interest rate differential can be more than 10%. Guaranteed online transaction mode is a commitment to protect the principal of the transaction model, P2P website will conduct a credit rating for funding needs of both parties, according to the credit rating outcome to arrange transactions. Once the transaction default risk, P2P lending platform is committed to advance principal for investors. At the same time, as there is no intermediary, investor's rights more clearly, so they can get more revenue. Non-guaranteed online transaction mode does not promise to protect the principal, both borrowers and investors conduct a transaction through the P2P lending website, if there is a default risk, the platform does not advance the principal [2]. Currently, the representative companies of these three modes are Credit Ease, Peer-to-Peer lending and PPDAI.

Features of P2P lending include convenience, transparent and risk diversification. Investors and borrowers will sign the loan contract after a transaction, and they have access to each other's identity information, credit information. Investors can be informed of the repayment schedule in time, they are free to choose the borrowers, so borrowers with higher Credit Rating can get loans in a short time. At the same time, investors can divide fund into many parts, and provide a small amount of loans with different borrowers, so as to reduce the risk of lending.

In the long run, P2P lending in China can help achieve Inclusive Finance [3], optimize the allocation of resources, and improve the financing situation of small and micro businesses and individuals.

Embodiment of China’s P2P Efficiency Mechanism

Market Breadth

Since the establishment of the first P2P lending company called PPDAI in June 2007 in China, the number of Chinese P2P lending company has trend of increasing every year, from 9(2010) to 3015(2015), as of February 2016, the cumulative number of P2P platforms reached 3944. At the same time, the growth rate of P2P lending platform is positive, that is, from 2010 to the present, the annual number of P2P lending platform showing an increasing trend.

Figure 1. P2P lending platform number.
Secondly, P2P lending scale is broader and more flexible, take the guaranteed online company Peer-to-Peer Lending and non-guaranteed online company PPDAI for example, both companies provide personal loans for 30 to 500,000 yuan, the minimum loan amount is relatively small, at the same time, borrowers can choose the amount they plan to lend. But the minimum bank loans are 100,000 yuan, with strict requirements and pay high fees. Therefore, compared with the bank loans, P2P lending can provide services to more customers. Bank loans are only accessible to large enterprises with high credit rating, for small and micro businesses and individuals, there are no proper small loans for them. But P2P lending service can meet the Financing needs of small and micro businesses and individuals.

<table>
<thead>
<tr>
<th>P2P Lending</th>
<th>Bank</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yixin</td>
<td>CCB</td>
<td>100,000-1,000,000</td>
</tr>
<tr>
<td>Peer-to-Peer Lending</td>
<td>ICBC</td>
<td>100,000-30,000,000</td>
</tr>
<tr>
<td>PPDAI</td>
<td>BOC</td>
<td>300,000-10,000,000</td>
</tr>
</tbody>
</table>

Third, P2P lending transaction process is more efficient. The lending process is divided into five steps: Client Application, Material Submission, Examination and Approval, Contract Signing and Loan Payment [4]. Compared links in Client Application and Material Submission with the bank lending, P2P lending with the advanced Internet technology is to build platforms online, customers should submit application materials online, electronic tables are used instead of paper forms, which eliminates the cost of materials and labor. In the process of Examination and Approval, offline inspection and online inspection will be carried out at the same time, through big data to the largest extent to ensure that the information is true and reliable. As for the process of Loan Payment, a P2P lending platform adopts two-way selection, borrowers should publish lending information on the platform, and investors choose investment projects freely, and this way can help reduce the transaction cost.
Market Depth

The use of big data and cloud computing technology can help analyze massive data and improve the discrimination information and pertinence, so as to tap the potential value, and expand the market in depth.

Big data is divided into structured data and unstructured data, accounting for 15% and 85%, respectively, these data exist in the field of social networking, Internet and electronic commerce, etc. With the increase in the number of Internet users, all kinds of audio, text, video, pictures and other unstructured data like that appear, these are the source of large data.

P2P lending platform can use big data locks the user groups. Combined with the technical framework and analysis means, it uses big data to predict people’s investment intentions. In the investor selects the P2P platform, according to the more detailed information from investors, the platform is able to provide more appropriate services.

P2P platform can use big data mining the appropriate qualifications of investors, with the authentication information of borrowers, it can build a huge database, through the database, provide review and forecast more rigorous and efficient for the borrower.

Big data statistics suggests lending area, and the P2P lending Platforms can decentralize loan direction, so as to avoid the concentration of risk. As can be seen from the figure, P2P lending volume of Guangdong, Beijing and Shanghai ranked in the top three, so P2P lending company can maintain existing business in these three regions and further expansion in other areas of China, to achieve a balanced development.
According to the time data for cash flow, P2P lending platforms can adjust the appropriate lending rates. For example, when the total net inflow of funds decreased, you can reduce the interest rate by appropriate, to attract more people to borrow, so that the net inflow of funds can increase again.

![Cash Flow Analysis](image1)

Figure 5. Cash flow analysis.

![Average Interest](image2)

Figure 6. Average Interest.

Through the analysis of the user's habits and preferences are conducive to the development of P2P lending companies in line with the wishes of the new product. Compared with the traditional model, the analysis based on big data eliminates the high cost of market research, and big data analysis can be more accurate about the user's preferences.

**Capital Utilization Efficiency.**

P2P lending rate of return on investment is much higher than the bank deposit rate, and P2P borrowing rate is far below the bank loan interest rate. Therefore, through the P2P lending platform for financing and investment, residents can make use of funds more efficiently.

The fund custodian bank of guaranteed online company Peer-to-Peer Lending and non-guaranteed online company PPDAI are China Merchants Bank and Minsheng Bank. The average rate of income was 10.22%, which is much higher than its funds custodian bank Minsheng Bank whose deposit interest was 1.65%. PPDAI’s average rate of return was 20.02%, which is much higher than its funds custodian bank China Merchants Bank whose deposit interest rate was...
2.75%. As for loan interest, the interest of both two P2P lending companies are between 0.55% to 0.88% and minimum lending interest of the Minsheng Bank and China Merchants Bank were 4.35% and 5.6% respectively, interest on bank loans is about ten times as much as the interest of P2P lending companies.

Table 2. Comparison of interest rates between P2P lending and bank loans.

<table>
<thead>
<tr>
<th>P2P lending</th>
<th>Average rate of return</th>
<th>Loan Interest</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAIPAI DAI</td>
<td>20.02%</td>
<td>0.55%-0.88%</td>
</tr>
<tr>
<td>Peer-to-Peer Lending</td>
<td>10.22%</td>
<td>0.55%-0.88%</td>
</tr>
<tr>
<td>Bank</td>
<td></td>
<td>Deposit interest</td>
</tr>
<tr>
<td>China Merchants Bank</td>
<td>2.75%</td>
<td>Minimum interest on bank loans</td>
</tr>
<tr>
<td>Minsheng Bank</td>
<td>1.65%</td>
<td>4.35%</td>
</tr>
</tbody>
</table>

Therefore, through the P2P lending platform for investment and financing, borrowers can pay less, and investors can get more income, people can make full use of surplus funds, which helps improve the efficiency of capital utilization.

Information Asymmetry

P2P lending platform appears to solve the problem of asymmetric information in the bank lending. Banks always loan funds to the borrower without knowing borrower’s internal information and market information, and this leads to the information asymmetry in the credit relationship. P2P platform solves the problem of asymmetric information from three aspects.

First, P2P lending platform has reduced the cost of information, which improves the efficiency of information transmission. P2P lending platform using online transaction mode in the material submitted link which helps save complex process of paper materials submitted. The link of examination is based on big data and cloud computing, so that P2P lending can examine and verify the relevant materials more accurately, thus the cost is much lower than that of the traditional auditing methods, besides that, the audit period is reduced from one month to 3 days.

Secondly, the information collected by P2P lending platform is of wide range, available information can help investors and borrowers to find the most suitable project. Not only does a P2P lending platform will collect borrowers’ personal basic information, but also it will asks for borrowers’ personality, hobbies, etc. To help investors choose the proper borrower. In addition, P2P lending platform allows borrower to set a different amount of lending, while investors can also choose the amount of investment according to their own preferences.

Finally, the progress and elimination of P2P platforms is also a manifestation of information. In the development of P2P lending platforms, many problem platforms have emerged one after another, which is an inevitable process of market development. Through identifying which are problem platforms, people learn how to distinguish between good platforms and bad platforms, is also a kind of information transmission.

Table 3. Problem platforms in three major regions during March 2016.

<table>
<thead>
<tr>
<th>Region</th>
<th>Beijing</th>
<th>Shanghai</th>
<th>Guangdong</th>
</tr>
</thead>
<tbody>
<tr>
<td>Out of Business</td>
<td>13</td>
<td>28</td>
<td>61</td>
</tr>
<tr>
<td>Difficulty in carrying out</td>
<td>17</td>
<td>12</td>
<td>66</td>
</tr>
<tr>
<td>Make off with Money</td>
<td>65</td>
<td>67</td>
<td>134</td>
</tr>
<tr>
<td>Involved in the investigation of economic</td>
<td>2</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>97</td>
<td>108</td>
<td>272</td>
</tr>
</tbody>
</table>

Risk Reduction

In order to integrate the industry's data, such as Wangdaizhijia (WDZJ) platform, a platform of platforms appeared. The emergence of the platform is conducive to reducing the risk.
WDZJ integrates transaction data, industry data and problem platform data of almost all P2P lending platforms, and ranks of P2P lending platforms according to the different indicators.

This website collects and releases information about the volume of each platform, average interest rates, the average loan period and cumulative amount every day, investors and borrowers can query transaction data about any platform at a certain period, so as to choose the appropriate P2P lending platform for transactions.

In addition, WDZJ also includes the basic information of each P2P platform within the industry, including the platform profile, corporate information, website for the record, platform executives and picture information, etc. This site will mark each P2P lending company from the brand, popularity, technology and so on, people can go through the WDZJ to understand the basic information of each P2P lending platform, and choose from them.

Table 4. Data about P2P lending platform displayed by WDZJ.

<table>
<thead>
<tr>
<th></th>
<th>Peer-to-Peer Lending</th>
<th>rank</th>
<th>PPDAI</th>
<th>rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transaction score</td>
<td>85</td>
<td>7</td>
<td>80</td>
<td>11</td>
</tr>
<tr>
<td>Popularity score</td>
<td>80.8</td>
<td>5</td>
<td>75</td>
<td>10</td>
</tr>
<tr>
<td>Technology score</td>
<td>72.9</td>
<td>18</td>
<td>76.4</td>
<td>10</td>
</tr>
<tr>
<td>Operation score</td>
<td>78.8</td>
<td>4</td>
<td>56</td>
<td>29</td>
</tr>
<tr>
<td>Leverage integration</td>
<td>26.8</td>
<td>71</td>
<td>28.3</td>
<td>66</td>
</tr>
<tr>
<td>Brand image</td>
<td>74.6</td>
<td>4</td>
<td>70.5</td>
<td>5</td>
</tr>
<tr>
<td>Transparency</td>
<td>51.8</td>
<td>7</td>
<td>54.3</td>
<td>4</td>
</tr>
<tr>
<td>Distribution</td>
<td>93.4</td>
<td>3</td>
<td>88.5</td>
<td>8</td>
</tr>
<tr>
<td>Liquidity</td>
<td>59.8</td>
<td>71</td>
<td>86.6</td>
<td>19</td>
</tr>
<tr>
<td>Development index</td>
<td>68.98</td>
<td>3</td>
<td>66.26</td>
<td>4</td>
</tr>
</tbody>
</table>

Finally, WDZJ has many different ranking lists, it according to the turnover, net outflow of funds and financial leverage in the last 30 days which includes the existing 3944 P2P lending platforms. And the lists can not only promote the P2P lending company to operate better, but also can provide effective reference for the users.

Existing problems and Solutions

Credit Risks

For the lack of large data docking is a major risk for P2P lending platforms, there is no unified information consulting and audit system, the information between the various sites cannot be communicated. P2P lending platforms have to rely on offline small loan companies and third-party guarantee institutions recommended. At present, there is no platform which has ability to integrate all the net credit and make data analysis professionally, so crimes registering on different P2P lending platforms for swindling happened frequently. As for P2P lending platform, the data model which is set up based on the missing data also exists some problems, a direct consequence caused by this model is the unreliability of credit audit. As credit management is not mature, ratio of non-performing loans and bad debt rate will generally rise, which may causes the business income difficult to cover the cost, and finally leads to a loss.

Management Risk

Risk control department is the core sector of the P2P lending platform, different risk concepts will lead to different situation. However, most of the P2P platforms are better at marketing than risk management, which will bring investors with risk. Some P2P lending platforms risk control ways are simple, including field trips, requiring borrowers to submit collateral, the introduction of a number of Guarantee Corporation and payment of risk reserves. Each P2P platform does not have a
risk dynamic assessment system and risk quantitative indicators, which lead to the risk management tool is too fragmented and non-systematic. Some platforms do not even set up a risk assessment or legal compliance department, which is likely to cause huge risks.

**Business Risk**

Most of the banks are conservative to the restricted industries with high incidence of non-performing loans when they tend to invest, so many projects have been pushed to the private lending market, P2P lending platform. In this context, the borrowing needs from a large number of small loan companies, financing Guarantee Corporation, non-financing Guarantee Corporation and turned to P2P lending platforms. In addition, most P2P lending platforms are the main capital sources to infrastructure projects, the second and third tier real estate through small loan companies, large security companies and other channels as of the borrowing side, with the economic downturn, more and more project lending risks begin to appear.

**IT Risk**

IT system of P2P lending platforms is not reliable all the time, so information security is not guaranteed [5]. Many domestic P2P platforms exist security vulnerabilities, some vulnerabilities may affect the user's financial security directly, and after discovery of loopholes, some platforms select to response immediately and repair them, while some platforms select ignorance. Validation logic bug or design defects account for the majority of vulnerabilities, attackers who use their own password to reset can obtain verification codes, and then they can use the verification codes to reset other user’s password. And this can harm other users of funds and information security. According to Jinshan chief expert Li Tiejun [6], part of the P2P platforms are built based on a common template, when there are security vulnerabilities, many site will be invaded. This will enable more users’ fund security and information security cannot be guaranteed.

In view of the above four kinds of problems, the following solutions are proposed:

Improve the relevant legal system. Combined with the characteristics of Internet banking, introducing practical approaches of P2P lending management, in the form of law, and make sure the P2P lending company form, organization structure, business scope and business content are well organized [7]. At the same time, to establish index detection system as soon as possible, and carry out detection of all P2P platform business, and guarantee that the information about company initiater and company legal man be fully disclosed, such as financial and operational conditions.

Strengthen the system of credit. Government should support the construction of large data storage and infrastructure in other technical areas, and establish a sound financial credit system of the internet. Thus enabling eligible P2P lending companies have access to the Internet financial credit information database, which can enhance the transparency of the market.

Encourage innovation, support for the steady development of Internet Finance [8]. Promoting innovation of P2P lending platform, product and service. Not only existing P2P lending platforms should be encouraged to innovate of the three aspects, but also traditional financial institutions ought to develop with Internet technology, to realize the transformation and upgrade traditional financial business and service. So that the Small and micro businesses and individuals financing needs can be better met.

**Summary**

All in all, the development of the Internet has led to the development of P2P lending. By the end of March 2016, there have been 3944 P2P lending platforms in China. At present, three types of transaction mode have been concluded: offline transaction mode, guaranteed online transaction mode and non-guaranteed online transaction mode. Through the analysis of the data, we can find the efficiency mechanism of P2P lending is mainly reflected in five aspects.

At the same time, P2P lending exists kinds of risks, this paper illustrates risk from the four
aspects, including credit risk, management risk, operation risk and technology risk. And corresponding solutions are given, which requires the government to perfect the laws and regulations to appeal to industry sound credit system, and P2P lending company and traditional institutions should be encouraged for innovation.

Internet Finance has brought great convenience to the people's life, and P2P lending meet the majority financing needs of small and micro businesses and individual. However, first-hand information about Internet Finance is still not very perfect. The research of the P2P lending is based on the majority of second-hand data in this paper. So that in a few aspects reliability problems exists. To solve this problem, the government should organize to establish a sound information regulatory agencies, to provide a clear and reliable data for researchers.

References