

Study on Risks and Supervision of P2P Network Lending Platform

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Abstract. In recent years, Internet finance has attracted the attention of the masses of people. As a new type of "micro-finance institution", P2P network lending platform has lower barriers to entry, efficient and fast operation and innovative mode of "financial disintermediation". It has enriched the traditional financial industry, effectively promoted the development of our financial services market. But, as a result of lending to P2P network platform in the initial stage of development, with a large number of platform in the run, the withdrawal difficult, the problem such as collapse, illegal fund-raising, divert client funds, such as a ponzi scheme a serious risk also appeared, this shows fully convincingly that in P2P lending industry in China the lack of regulation, serious impact on the development of the industry and the financial services market. The issue of risk and regulation of P2P lending platform in China is taken seriously. Based on the present situation of the P2P lending platform development in our country, its development in the process of credit risk, transaction risk, legal risk and so on are analyzed, and puts forward the corresponding regulatory measures, to strengthen the development of P2P lending platform in China is of great importance.

Introduction

The concept of P2P comes from foreign countries and the essence of P2P lending is similar to private lending. Lenders provide funds to borrowers through intermediaries. P2P loans are originally intended to help poor people solve short-term capital problems and have a charitable nature. Not for profit purposes, this model make the majority of rural people get out of poverty. Some profitable financial companies see business opportunities and begin to imitate this model, charging certain interest or management fees, which is the origin of P2P lending model. The benefits of advances in internet technology have made it possible to borrow online. The Internet allows lenders to offer loans to distant borrowers via online lending platforms, greatly expanding their scope of business. P2P network lending platform as a new type of financial service institution that integrates the internet, finance, and intermediation. With its own characteristics of efficient and fast operation, low barriers to entry, and the innovative mode of "financial disintermediation", it has played a great role in the field of microfinance, effectively making up for the shortcomings in the traditional financial field. It meets the financing requirements of the traditional financial marginalized groups, improves the utilization efficiency of social idle funds , and perfects the financial service system of our country.

However, the following series risks of the platform are exposed. According to the data from the industrial research institute, 75 P2P network lending platforms experienced problems such as running the road, cash withdrawals difficulty and closing down in 2013. By 2016,1158 P2P network lending platforms had closed down and found it difficult to withdraw money. The risk problems of P2P network lending platforms have been exposed, and the supervision of P2P network lending

industry in China is insufficient, and the problem of its free development is also concerned by people.

Development Status of P2P Network Lending Platforms

Development Status of P2P Network Lending Platform in China. Since the establishment of the first P2P online lending platform, PPDAl in 2007, the P2P online lending platform has been developing rapidly in China, and many P2P online lending platforms have been established successively. By March 2017, there were 6695 P2P network lending platforms in China. The number of online lending platforms is increasing day by day, transaction volume has kept blowout, which reached 2.804938 trillion in 2016, China's P2P network lending scale has been "explosive" growth. However, with the explosion of P2P network lending platform, its problems and risks are gradually exposed. According to data from the industrial research institute show that in 2016, 1158 P2P network lending platforms had closed down and found it difficult to withdraw money. The risk problems of P2P network lending platforms have been exposed, and the supervision of P2P network lending industry in China is insufficient, and the problem of its free development is also concerned by people.

Table 1 P2P network lending platform status quo

Year	Turnover	Number of platform	Number of problem platforms
2007	-	1	-
2008	-	1	-
2009	1.5	7	-
2010	6	16	2
2011	84	34	6
2012	229	101	13
2013	893	531	99
2014	3292	1291	334
2015	11805.65	2567	1254
2016	28049.38	2448	1158

Source: Industrial research institute

The Risk of P2P Network Lending Platform in China. Risks exist in all stages of P2P lending, which together restrict the healthy development of P2P lending industry in the future. The borrower faces the risk of credit and information leakage, the lender faces the risk of anti-fraud and anti-money laundering, the P2P platform itself faces the risk of fund management, the risk of data disclosure and the risk of liquidity.

Fund Management Risks. Under the existing operating mode, investors lend money to borrowers through bidding, the money goes to the platform account, the funds are opaque, and there is the risk of illegal fund-raising. Nowadays, many P2P platforms set up transit accounts in third-party payment companies to realize risk control. On the one hand, for the convenience of accounting, on the other hand, to ensure the security of user funds, but this method is not 100% reliable. First, the third party payment itself is in a weak regulatory environment; second, the third

party only acts as an intermediary, not taking risks, once the capital problems occur, the platform operation will also face problems.

Data Disclosure Risks. The online operation mode connects both the borrowers and lenders completely through the Internet, and investors can hardly know the financial status of the platform, and few platforms actively publish their own financial information. There are a few platforms in advertising claims 1% of the indicator of bad debt, its authenticity is questionable. In addition to the bad debt rate, there is also the capital circulation process, overdue repayment status and other information that plays an important role in decision-making, which is unknown to investors, thus increasing the capital risk.

Liquidity Risks. According to the current mode of operation, whether online or offline, P2P platforms provide borrowers' credit review, capital settlement, payment collection service, platform system maintenance and other services including offline surveys. Depending on the borrower interest fee and investor account management fee or membership fee to maintain the operation. P2P start-up cost is low, but the operating cost is very high. Moreover, according to the liquidity preference of investors, the platform generally provides the function of cash withdrawal at any time. If the management is not good, it is easy to occur similar bank runs, once liquidity risk appears, it may lead to the bankruptcy of the platform and make investors unable to withdraw their loans.

An Empirical Analysis on the Risk of P2P Network Lending Platform in China

Credit Index Design . The original data in this paper are taken from the detailed operating data of 99 P2P network lending platforms in 2017, covering more than a dozen provinces and cities such as Shandong, Beijing, Shanghai, Shenzhen, Jiangsu, etc. The data is based on the data published on the website of online lending tianyan and first online lending before May 5, 2017.

Platform operation index (operation) = average borrowing period/time the platform has been online. This variable is used to measure the operating experience of P2P lending platforms. If platform operation index of the platform is lower, the more times the platform completes the collection of loans and the richer the operating experience of the platform is. Rich operation experience shows that the platform has more mature operation mode, risk control and management. Volume (transact). This variable directly reflects the size of a platform's operation scale, and also reflects the platform's brand, credit, technology and other qualities from the side. The larger the transaction amount, the lower risk problems. The number of investors (lender). This variable directly reflects the popularity of the platform. The higher the number of investors is, the wider the resources the platform has, the less the risks occur. Average borrowing rate. This variable reflects that under normal circumstances, the lower the borrowing rate of the platform, the stronger risk control ability, absorbing capital loan ability. Press = cumulative loan balance/number of borrowers. This variable describes the platform's debt status and brand strength. The more debtors there are, the higher the default rate and the greater the risk.

Model Hypothesis. P2P online lending platform carries out risk assessment based on whether or not it defaults, and the default value is 1 and the non-default value is 0. It uses the latest data of the platform to fit the model, and builds a reduced evaluation model that can be tested, improved and updated:

$$\ln\left(\frac{P_i}{1-P_i}\right) \approx \ln e^{X_i\beta} + \mu_i = X_i\beta + \mu_i$$

Data Regression and Result Analysis. Taking P2P network loan platform as dependent variable, default value 1 and non-default value 0 before May 2017, using five credit indexes as covariable, using Logic regression model to analyze, the final regression results are as follows:

Dependent Variable: Y

Method: ML - Binary Logit (Quadratic hill climbing)

Sample: 1 99

Included observations: 99

Convergence achieved after 9 iterations

Covariance matrix computed using second derivatives

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	-6.994698	1.769735	-3.952398	0.0001
L	-1.64E-05	3.48E-05	-0.470365	0.6381
T	7.81E-06	1.40E-05	0.556255	0.5780
P	0.000945	0.000267	3.533622	0.0004
R	0.359911	0.111533	3.226951	0.0013
Mean dependent var	0.262626	S.D. dependent var	0.442301	
S.E. of regression	0.301545	Akaike info criterion	0.689253	
Sum squared resid	8.547360	Schwarz criterion	0.820319	
Log likelihood	-29.11801	Hannan-Quinn criter.	0.742282	
Restr. log likelihood	-57.00282	Avg. log likelihood	-0.294121	
LR statistic (4 df)	55.76962	McFadden	0.489183	
R-squared				
Probability(LR stat)	2.24E-11			
Obs with Dep=0	73	Total obs	99	
Obs with Dep=1	26			

The final regression model is:

$$\ln\left(\frac{P}{1-P}\right) = -6.99 - 1.64e^{-5}L + 7.81e^{-6}T + 0.0009P + 0.36R$$

The above model is explained in the economic sense: the smaller the number of investors, the weaker the ability to attract capital, and the lower the popularity of P2P online lending platforms; The larger the loan volume, the larger the operating scale of the platform, the smaller the risk; The more the amount to be repaid, the greater the pressure of recourse; The higher the average borrowing rate is, the greater the pressure on the borrower to repay the loan, the weaker the platform's risk control ability, and the risk of moral hazard is easy to occur.

When the covariables such as average borrowing interest rate, investment number, transaction volume, average loan interest rate and maturity are known, the regression equation can be brought into the regression equation to obtain the probability of default on the P2P network lending platform. This decides whether to choose this platform to carry on the loan transaction.

Supervision Suggestions of P2P Network Lending Platforms

Timely Assessment of Risks and Strengthening Precautions. The platform may commission a third party scoring agency to use unified evaluation criteria for comprehensive scoring. The low score platform will give warning, long-term low score, deterioration of risk situation, third party issuing announcements, and investors making sufficient preparations in advance. Step up precautions in advance.

Strengthen the Audit of Borrowers and Develop High-quality Borrowers. The platform can carefully check the qualification of borrowers according to the basic information of borrowers, credit status, financial status, loan conditions and other information, and make full use of effective data to develop high-quality borrowers.

Precision Project Rating, Customer Segmentation. Investors with different risk preferences can customize their investment strategies according to different ratings and interest rates. Provide targeted financing and financial products to different groups of customers.

Perfecting the Supervision Mode. The platform adheres to the principle of transparency, improves the information disclosure mechanism, emphasizes on the limits of illegal fund-raising and entrusts funds to third parties. Platform internal control, industry self-discipline, government regulation, building a platform multi-level supervision system to avoid risks.

Establish a Complete Credit System. China lacks a sound credit system, and the cost of borrower default and repeated default is low. For P2P platforms, once the default occurs, most of the losses are basically digested by itself. Regulators should issue relevant policies to realize data resource sharing and reduce the cost of platform credit costs.

Clarify the Legal Status of the Platform and Establish Various Mechanisms. The lower entry barriers of P2P network lending industry have led to the soaring number of platforms and increased risks. Market access mechanism and industry exit mechanism should be established to clarify the legal status of platforms and strengthen platform management. Laws and regulations are not sound, the lawsuit cost is high, period is long, P2P platform seldom adopt the way of legal proceedings after a borrower default, legal collection is still faced with difficulty in the practice. The laws and regulations of the P2P network lending industry should be established and improved to prevent the platform from running and closing, and promote the healthy development of the platform.

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