



How do reputation, structure design and FinTech ecosystem affect the net cash inflow of P2P lending platforms? Evidence from China

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Abstract

Based on daily data of 749 active online P2P lending platforms in Chinese market, this study explores the key factors affecting the net cash inflow rate of the platform which is vital for its operation and survival from the perspective of reputation, structure design and FinTech ecosystem. Internal governance issues of P2P lending platforms are further discussed according to the model results. A positive U-shaped relationship has been found between the platform duration and its net cash inflow rate which proves the role of reputation in the long-term development of P2P lending platforms. In addition, we demonstrate that both capital and operational structure design of the platform (e.g. shareholders background, credit assignment, trusteeship and guarantee) have a significant impact on the platform's net cash inflow rate. The cash flow level of the platform has also been affected by the regional FinTech ecosystem. Platforms in a medium-developing ecosystem may have the highest net cash inflow rate, while a backward ecosystem will lower the cash flows of the platforms located in this area on average. Some suggestions on cash flow management and internal governance of P2P lending platforms for both platform founders and governments are put forward in the end of the study.

Keywords P2P lending · Cash flow · Reputation · Structure design · Ecosystem

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1 Introduction

FinTech covers digital innovations and technology-enabled business model innovations in the financial sector [1]. As one of the most typical models of FinTech, in recent years, peer-to-peer (P2P) lending has achieved rapid development on a global scale, especially in China and some other emerging markets. In 2017, the transaction volume of China's P2P lending market was the highest in the world, reaching \$548.9 billion, and the market penetration rate in China has also ranked the top.¹ High online penetration rate, large supply of funds and unmet financial demands are considered to be the key drivers of the rise of P2P online lending in China [2].

P2P lending provides an electronic marketplace which replaces banks as the traditional intermediaries and enables the brokerage of consumer loans between borrowers and lenders [3, 4]. In China, P2P lending has been continuously evolved in a distinct and relatively undeveloped regulatory and legal environment. Without a fully developed system of credit referencing [5], in China, P2P lending platforms usually not only work as intermediaries gathering funds from retail investors and loaning the money to small and medium-sized enterprises (SMEs) and individual borrowers, but also provide other value-added services, such as conducting loan rating and borrowers' creditworthiness assessment, offering investment advice and managing repayment [2]. Some P2P lending platforms even work with third-party institutions to provide services such as guarantees and trusteeship for better attracting investors and lowering the operational risk of the platforms [6]. Different from traditional bank loans, high-risk borrowers and non-standard loans are untapped potential for P2P lending [4]. A large number of individual investors are involved as the funds lenders and every loan is underwritten by multiple individual lenders [7].

However, the development of the P2P lending in China is not plain sailing. In 2018, the turnover of China's P2P lending industry decreased by 36.01% compared with that of 2017.² In the only 42 days from June 1 to July 12, 2018, there were 108 P2P lending platforms suffered malignant events including absconding with money, delayed payment and platform suspension, which affected over 10 million investors and put more than 7 trillion assets at risk.³ By the end of 2018, 1219 P2P lending platforms, which accounts for 50% of the total number of platforms, had met operational problems or even ceased their operations for various reasons.⁴ Among all the platforms where problems occurred, the break of cash chain is the main reason for their running away, withdrawal difficulties and closure, which also lead to credit risks, misappropriation of third-party funds, fraud and many other risks [8]. For a platform, if the net cash flow of P2P platform is negative for a long time, it is difficult to maintain its normal operation and the potential risk of funds can increase [9].

For a long time, the cash flow breakage, risk and governance issues of P2P lending platforms have aroused great concern from all walks of life. Chinese government

¹ Source: 2018 P2P Lending Annual Data Report. <http://www.p2p001.com/Report/annual2018.html>.

² Source: WDZJ. <https://www.wdzj.com/news/yc/3719709.html>.

³ Source: ifeng. https://finance.ifeng.com/a/20180719/16393903_0.shtml.

⁴ Source: WDZJ. <https://www.wdzj.com/news/yc/3699010.html>.

and financial supervision department have also explored to strengthen the governance of the industry from the external. In 2016, *the Interim Rules on the Business Activities of Online Lending Information Intermediaries* was issued by the China Banking Regulatory Commission (CBRC), the Ministry of Industry and Information Technology (MIIT), the Ministry of Public Security (MPS) and the Cyberspace Administration of China (CAC). It is the first instrument enacted specifically for the P2P lending market, setting up a regulatory regime in a comprehensive and systematic manner. On August 20, 2018, *the Notice of Compliance Inspection Work for Online Lending Institutions* was announced, which represents the launch of the P2P lending platforms filing system and further improvement of external supervision. In contrast, the internal governance of P2P platforms has not attracted enough attention. We often think about the operational issues and risk control of P2P lending from the perspective of the government and industry organizations, while ignoring the important role that platform managers or platform internal governance should play in this process. Due to the differences in organizational structure and operating model [10], the internal governance methods and experience of traditional banks are not applicable to P2P lending platforms. A large amount of literature has studied on how to identify risky P2P lending borrowers and platforms from the perspective of investors [11–13], while few researches have provided guidance for the founders or managers of P2P lending platforms on how to better establish, organize and operate a platform in order to stay away from the risk of cash chain rupture and achieve long-term healthy development. In practice, the great majority of P2P lending platform managers are from technology sector with very limited knowledge of internal governance and platform management. It is a pity that there is no relevant research and experience can help when P2P lending platforms encounter management and development dilemma from inside and need more professional suggestions at the current stage. The main contribution of this study is to fill the research gap in the cash flow management and risk issues of P2P lending platforms from a new perspective of platform founders and managers, and further apply the traditional theory of internal corporate governance to the research and discussion on the emerging financial market players. This study also has strong practical significance with discussing specific issues such as platform reputation accumulation, structure design and Fintech ecosystem selection in detail, and providing guidance to managers for better cash flow management, internal governance and long-term operations of the platforms.

In this study, taking Chinese P2P lending market as an example, we explore the key factors affecting the net cash inflow of the P2P lending platforms and what platform founders can do to promote the better cash flow management and operations of the platform from three different aspects: reputation, structure design and FinTech ecosystem. Furthermore, we try to shed light on the internal governance issues of P2P lending platforms according to the model results. Following the introduction, we discuss related literature on P2P lending and general internal governance research. Key hypotheses are proposed in the third section. The data source and the model set are described in the fourth part, and we show the analysis of the empirical results in the fifth part. Robust analyses have been conducted in Sect. 6. Finally, based on our study, we summarize and make suggestions on the cash flow

management and internal governance issues of P2P lending platforms to both the platform founders and the government.

2 Literature review

Different from traditional bank lending, P2P lending is based on individual and SMEs who are expected to raise money from the vast number of investors via the online virtual platforms. Scholars are paying more and more attention to this market with lots of researches conducting detailed studies from both borrower and investor side.

Studies on the P2P lending borrowers mainly focus on the success and default probability from perspective of objective information (hard factors) and subjective information (soft factors).

In terms of hard factors, Herzenstein et al. [14] verified borrowers' attributes such as demographic characteristics (race and gender) and financial strengths do work as moderators of the effects of loan decision variables on funding success. Puro [15] also studied the success rate of P2P lending projects of Prosper⁵ and found that the borrower's credit scores, overdue records and repayment ratio of past debts have a direct impact on the success of the loan. Recently, Emekter et al. [11]'s research has shown that credit grade, debt-to-income ratio and FICO score could work as signals in loan defaults, and loans with lower credit grade and longer duration were usually associated with high mortality rate. Some other scholars [16–18] have also proved that race, age, gender, social capital, credit certification and educational background of borrowers have a significant impact on the success rate, default rate and borrowing behavior of P2P lending and several of them [19–21] focused on Chinese P2P lending market.

In terms of soft information, Ravina [16] and Duarte, Siegel & Young [22] found that the more attractive and good-looking the borrower looks, the greater the probability of successful borrowing. Gonzalez and Loureiro [23] further examined the "beauty premium" effect in P2P lending market. Freedman and Jin [24] and Lin et al. [25] verified that online social networks could help improve the probability of successful borrowing and reduce the probability of default. Larrimore et al. [26] and Herzenstein et al. [27] discussed the usage of extended narratives, specific on how the construction of narratives would influence lender decisions and funding success. Recently in 2016, taking two leading European platforms as examples, Dorfleitner et al. [28] systematically examined the relationship between the soft factors derived from the description texts and the probability of successful funding and default of P2P lending.

Scholars also have strong interests in the trade behavior of individual investors in P2P lending market. In general, researchers found the existence of herd behavior among P2P investors [29–31] and investors' decisions were not usually

⁵ Prosper is a website where individuals can either invest in personal loans or request to borrow money and America's first peer-to-peer lending marketplace, with over \$7 billion in funded loans.

the most reasonable and optimal [29, 32]. In 2008, Klafft [33] first discussed how can inexperienced investors who operate in a pseudonymous online environment with potentially significant information asymmetries be able to obtain an attractive return on their investment. Following that, several researchers [34, 35] have further explored the information asymmetry problem and how to protect individual investors in P2P lending market.

Regarding the platform, many scholars have emphasized the importance of external supervision for the long-term development of P2P lending industry [36, 37]. Regner et al. [38] and Cohen and Sundararajan [39] have further suggested a possible alternative environment for the governance of digital platforms and described different factors that may induce market failure, providing guidelines for sharing-economy regulation. From the perspective of internal management and governance of P2P platforms, some scholars mentioned the importance of cash flow management for the platforms in their research, but few in-depth study has been carried out. Yan et al. [9] highlighted that net cash flow, as one of the most important financial and credit status of platforms, can play a crucial role in platform operation and gaining investors' trust. And Ma and Wen [40] have also mentioned that P2P lending promoted information flow in the process of cash flow and the break of cash flow would cause the bankrupt of the platform. Also, in traditional financial area, cash flow management has always been a very important issue for all institutions. Since Diamond and Dybvig [41] proposed the D–D model, a considerable number of studies have discussed the cash flow and liquidity risk of commercial banks and other traditional lending institutions. He and Xiong [42] believed that liquidity risk is an important factor leading to bank defaults and Acharya and Mora [43] pointed out that for banks that collapsed during the financial crisis, most were closed down due to liquidity shortage instead of actual default. In practice, net stable Funding Ratio (NSFR) and Liquidity Coverage Ratio (LCR) set by Basel III were often used to measure the cash flow and liquidity risk of intermediary institutions [44].

However, as we mentioned above, since the organizational structures and operating models of P2P lending platforms and the traditional lending institutions (e.g. commercial banks) are totally different, they are facing different problems and challenges. The research methods and conclusions on cash flow and broader governance of banks [45] cannot be directly applied to the P2P lending platforms. For better understanding the operations of P2P lending platforms, some scholars have tried to take some attributes of the platforms such as reputation [46] and shareholder structure [47] into consideration to further analyze lending behaviors from the side of investors. We believe these attributes and some other factors may also influence the platforms in terms of sufficient cash inflows and better internal governance in the long term. Unfortunately, no related research has been studied on this issue yet. Under today's challenging circumstance of P2P industry, cash flow management and internal governance are critical for the stable and healthy development of the platforms. It is also the research gap we are trying to explore and fill in this study.

3 Hypothesis

Cash flow, and its successful management, has long been a focus of the funds research and policy advice [48]. At a time when such a large number of P2P lending platforms fall into operation crisis, it is very important to manage the net cash inflows well for the stable operation and risk prevention of the platforms. Actually, most of the problems occurred in P2P lending platforms, such as withdrawal difficulties and suspension of business, were caused by the rupture of cash flow.⁶ The cash flow management has always been one of the most important part of internal governance [49] and it helps promote the realization of the goal of platform governance. In order to explore which factors may affect the net cash inflow of a P2P lending platform and how can platform managers do to achieve better net cash inflows, we propose the following three hypotheses from the perspective of reputation, structure design and FinTech ecosystem with reference to exist literature and platform practice.

First, reputation is a key factor for P2P lending platforms to attract funds, and the duration of the platform can be used as a key proxy variable for investors to measure the platform reputation in the context of China. Studies have shown that if P2P lending platforms are patient enough and value the future, the reputation mechanism can play a very good role in ensuring its due diligence and no short-term behavior [50]. In real life, we often describe a company or brand as “a century-old store” to prove it a high reputation. The duration of a P2P lending platform being online can be seen as a sign of patience.

Research have also addressed the use of reputation systems to reduce information asymmetry based on individuals within some online markets [46] and Chen et al. [51] have proposed that the network members with a good reputation are more respected by others and their online behaviors are more creditable. In practice, we find that a good reputation usually brings more traffic and volume to a P2P lending platform, with attracting more investors and greater net cash inflow. Investors are more inclined to trust some long-established platforms with stable operations. For a P2P lending platform, the accumulation of reputation takes time and hard work. Rome was not built in a day. Yan et al. [9] have also verified the operating duration of a platform provided the necessary support to increase the number of platform investors. We have reasons to believe that the longer a platform operates, the better reputation it could accumulate, which would bring more stable and greater net cash inflows.

However, it maybe not true for the new-launched P2P lending platforms and the relationship may not hold in the early days of a platform. The indirect network effect [52] encourages platforms to employ strategies to incentivize early usage, such as subsidizing initial user acquisition and providing a referral fee. In China, in order to attract attention from investors and the market, a new P2P

⁶ In practice, some P2P platform are malicious frauds with aiming at deceiving investors. They do not carry out general business activities, thus are not within the scope of consideration of cash flow management and internal governance issues in this study.

lending platform often spends a lot of money on commercial promotion, subsidizing investors and borrowers, or providing extra interest rates in the early stage of its operation. For these platforms, investors also tend to relax the consideration of information asymmetry, and are tempted to invest by higher interest rates. Higher net cash inflows are expected to achieve during the early period. However, with the passage of time and the end of the platform promotion, the net cash inflow of the platform will gradually decrease, and the so-called “rookie halo” will disappear in a short time. Thus, we propose:

H1 There is a positive U-shaped relationship between the duration of a P2P lending platform and its net cash inflow.

For a P2P lending platform, it is important to have a reasonable structure design, including capital structure and operational structure, which has also shown great importance in the internal governance discussion of traditional companies [53]. The capital structure, which usually refers to the shareholder background of the platform in P2P lending research [54] is a key element in the consideration of governance structure. P2P lending platforms supported by banks, governments and other traditional financial institutions have better credit endorsement, professional ability and governance experience. Generally speaking, they are more likely to be favored by investors and get better net cash inflow. Several studies have showed that the shareholders' background of P2P lending platforms [55, 56] could be the signals for investors to alleviate information asymmetry and Xu [57] has verified that the rate discrimination was existing among platforms of different ownership.

In addition, the operational structure works as important as the capital structure to the development of P2P lending platforms. Guarantee, trusteeship and credit assignment are the three most critical operational structure design considerations for P2P lending platforms and are also the most widely studied by scholars in China. Providing guarantee for investors shows the platform's strong aspiration and ability of risk management, whether it works through the risk reserves of the platform itself or cooperation with third-party institutions. The trusteeship mechanism helps ensure the independence between the funds of investors and borrowers and the funds owned by the platform itself, and further avoids possible disputes over ownership and misappropriation. Whether the platform provides guarantees [58, 59] and trusteeship [60, 61] services has also become important characteristics of the platform structure, and influence the investment decisions of P2P investors. In addition, the design of the creditor's rights assignment [62] enhances the flexibility of investments and provides a secondary market for investors. It reduces the risk of bank runs, thus reducing the possibility of fund shortage on P2P platforms. Such a platform operational function design also helps to attract more investors and more net cash inflow.

Based on both literature and industry practice in China, it is reasonable to believe that the net cash inflow levels of platforms with different capital and operational structure are inconsistent. The different structure design, as different choices of platform entities, may affect the net cash inflow of the platform and further have a profound impact on the overall outcome of platform governance. Thus, we propose:

H2 The capital and operational structure design of a P2P lending platform (such as shareholder background, trusteeship, guarantee and credit assignment) will affect its net cash inflow.

As we mentioned above, for a long time, the external governance and supervision of P2P lending has been continuously strengthened from central government in China. Local governments have also formulated different support and regulatory policies for the development of P2P lending and broader FinTech industry. Under the joint effects of economy, culture, regulation, market and many other external environmental factors, distinct FinTech ecosystem has been formed in various regions of China. Beijing, Shanghai, Hangzhou and Shenzhen have become the leaders and pioneer powers in P2P lending and FinTech development, and gave birth to lots of outstanding FinTech enterprises. A good regional FinTech ecosystem could provide P2P lending platforms with more cooperation opportunities, innovative ideas and products, or even more attentions from investors and the market. Leong et al. [63] and Lee and Shin [64] have discussed the importance of FinTech ecosystem and how to nurture a supportive FinTech ecosystem.

Choosing a city (or an ecosystem) to start a P2P lending platform cannot be regarded as an internal governance issue in a traditional sense, but it does play a crucial role in the long-term operation and development of the platform. It can be seen as the choice of external governance environment through internal governance of the platform. Although the operational and business activities of P2P lending are mainly based on the Internet, geographical factors may still have great influence on the net cash inflow and long-term development of the platforms. It may come not only from the favorable regulatory and tax policies of the local governments, the innovative technology environment and the inclusive markets, but also from some other indirect and implicit factors, such as education, talents and cultural differences. In general, we can assume:

H3 Located in a good regional FinTech ecosystem has a positive impact on the net cash inflow of a P2P lending platform.

4 Data collection and model set

In order to test the hypotheses above, we collected 303,880 daily transaction data of 749 active online P2P lending platforms in Chinese market from September 28, 2015 to January 25, 2019 from CSMAR database.⁷ Part of the defect data was supplemented from WDZJ, WDTY and DaiLuopan.⁸ The samples with missing data

⁷ CSMAR Database is a leading comprehensive database for Chinese business research, covering data on the Chinese stock market, financial statements and China Corporate Governance of Chinese Listed Firms and some new financial markets.

⁸ WDZJ was launched in January 2011 and is a professional third-party information platform focus on P2P lending. Now it is regarded as the largest and most authoritative third-party P2P information and consulting forum in China. WDTY and DaiLuopan are also third-party information platforms in China.

Table 1 Definition of the variables

Variables	Definition
InflowRate	Net cash inflow within the last 30 days of the platform/(Amount due in the next 60 days + 1)
Age	The number of days between the trading day and launch time of the platform
Private	1 if the platform is hold by private capital, otherwise 0
Bank	1 if the platform is hold by bank capital, otherwise 0
PE	1 if the platform is hold by private equity companies, otherwise 0
State	1 if the platform is hold by state-owned companies, otherwise 0
Assignment	1 if credit assignment is available on the platform, Otherwise 0
Trusteeship	1 if the platform cooperates with banks or other third-party institutions to keep funds in trusteeship and custody, otherwise 0
Guarantee	1 if the platform offers guarantees for investors' funds, otherwise 0
CityRank1	1 if the registered place of the platform is in an advanced FinTech ecosystem, otherwise 0
CityRank2	1 if the registered place of the platform is in a medium-level FinTech ecosystem, otherwise 0
CityRankOther	1 if the registered place of the platform is in a not well-developed FinTech ecosystem, otherwise 0
Return	Average return rate of the lending projects on the platform (%)
Term	Average loan term of the lending projects on the platform
Capital	registered capital of the platform
Shibor	Shibor rate with maturity of a month on the trading day

and the recording time less than 30 days were removed, and the Winsorization was conducted for the key variables. Following are the list of variables and their descriptive statistics (Tables 1, 2).

In this study, we construct a variable *InflowRate* to measure the net cash inflow level of P2P lending platform. With reference to the measurements of cash flow level in traditional financial institutions (e.g. NSFR, LCR⁹) and in order to mitigate the impact of platform size differences, we use net cash inflow rate instead of the absolute values as the key explained variable, calculated by dividing the net cash inflow within the last 30 days by the amount to be repaid in the next 60 days (in order to avoid the case where the possible denominator is 0, we have added 1 to the denominator). The net cash inflow within the last 30 days and accumulated repayment due in the next 60 days are the two variables that have often been used to observe the operation situation of P2P platforms both in practice and academic research [65, 66]. As a standardized treatment, taking the amount to be repaid as the divisor mitigates

⁹ The Net Stable Funding Ratio (NSFR) has been proposed within Basel III, seeking to calculate the proportion of Available Stable Funding ("ASF", e.g. customer deposits) via the liabilities over Required Stable Funding ("RSF") for the assets. $NSFR = \text{Available amount of stable funding} / \text{Required amount of stable funding}$. The Liquidity Coverage Ratio (LCR) is calculated by dividing a bank's high-quality liquid assets by its total net cash flows, over a 30-day stress period. $LCR = \text{High quality liquid asset amount (HQLA)} / \text{Total net cash flow amount}$.

Table 2 Descriptive statistics of the variables

Variable	N	Mean	SD	Min	Max	Median
InflowRate	303,880	0.03	0.22	-0.64	1.47	0
Age	303,880	1025.23	447.75	212.00	2532.00	979.00
Private	303,880	0.82	0.38	0	1	1
Bank	303,880	0.004	0.07	0	1	0
PE	303,880	0.03	0.16	0	1	0
State	303,880	0.15	0.35	0	1	0
Assignment	303,880	0.94	0.23	0	1	1
Trusteeship	303,880	0.57	0.49	0	1	1
Guarantee	303,880	0.85	0.36	0	1	1
CityRank1	303,880	0.55	0.5	0	1	1
CityRank2	303,880	0.09	0.28	0	1	0
CityRankOther	303,880	0.36	0.48	0	1	0
Return	303,880	9.5	5.21	0	20.3	10.24
Term	303,880	4.51	5.51	0	30.92	3
Capital	303,880	8.36	0.93	6.21	11.33	8.52
Shibor	303,880	3.48	0.65	2.66	4.7	3.73

the impact of the difference between platform sizes. Such standardization has been widely used in the study of both traditional and emerging finance [67–69].

$$InflowRate_{i,t} = \frac{\text{Net cash inflow within the last 30 days of the platform}}{(\text{Amount due in the next 60 days} + 1)}$$

InflowRate can be seen as a good proxy of the status of platform cash flows and liquidity risk, and further signal the operations and internal governance of the platform. In terms of both intuitive logic and practice, higher net cash inflow rate represents sufficient funds which can be used for loans and paying back. On the contrary, when the net cash inflow rate of a platform is low, the platform would face lower capital inflows, greater liquidity risks and run risks. There will be a higher probability of fund chain rupture on the platform, which could further lead to the difficulties in cash withdrawing, suspension of business or even platform absconding.

For the explanatory variables, *Age* is calculated by the number of days between the trading day and launch time of the platforms. It represents the operational duration of a platform and can be considered to be a great measure of reputation as we discussed earlier. According to Hypothesis 1, we take both its primary and square form into consideration to check the proposed positive-U relationship. Referring to Li [70] and Yan et al. [9], we divide the capital background of P2P platforms into four types and use dummy variables *Private*, *Bank*, *PE*, *State* to depict each. When the platforms are held by any of these four types of capital or institutions, the value of the corresponding dummy variable is 1, otherwise is 0. In China, these four types of capital cover more than 99% of P2P lending platforms. Among all types of platform, more than 82% are private ones. Platforms with state-owned capital accounts

for about 14.7%, and PE capital or bank capital backed platforms adds up to only 3% of the total. As for the operational structures, most platforms (95%) offer credit assignment service for their investors. Some platforms (85%) offer third-party guarantees for their investors, while more than half of platforms (58%) cooperate with banks or other third-party institutions to keep funds in trusteeship and custody.

For measuring the regional development of FinTech ecosystem, we refer to the China FinTech Hub Index (FHI).¹⁰ The Index aims to measure the potential for future Fintech development and governmental attention received on basis of regional economic performance, Research and Development (R&D), supportive policies and social concerns, etc. According to its overall assessment of the status quo of FinTech ecosystem in different cities, we divide Beijing, Shanghai, Hangzhou and Shenzhen into advanced cities of FinTech ecosystem development (*CityRank1*, which is the first tier), and Hong Kong, Guangzhou, Nanjing and Chengdu as the medium level city (*CityRank2*, which is the second tier). The rest of the cities are classified as separate (*CityRankOther*), which can be regarded as regions where the FinTech is not well developed.

In order to further control the impact of some external industry factors and platform differences, we select average P2P loan return rate (*Return*), average loan term (*Term*), registered capital of the platform (*Capital*) and market base interest rate (*Shibor*) as the control variables for the following reasons. First, the interest rate of P2P lending industry [71] and loans duration [72] do significantly affect individual investors' participation and trade behavior in the P2P lending market. The interest rate of P2P lending is regarded as a kind of near-market interest rate, it can also reflect the impact of regulatory policies and economic changes on the P2P lending industry as a whole. For example, after the enactment of the *Notice of Compliance Inspection Work for Online Lending Institutions*, the average expected return rate of P2P lending dropped from 8.39% on August 21–7.39% on August 28 quickly.¹¹ The registered capital measures the scale of a platform, and it may affect the absolute value of the net cash inflow of the platform through scale effect. The Shibor rate measures the base interest rate in the capital market and also reflects the macroeconomic situation at a certain time node.

Considering that the hypotheses tested involves individual differences in the platform, the individual fixed-effect model is not applicable to this study. In order to explore how the variables of reputation, capital and operational structures, and FinTech ecosystem will affect the net cash inflow of a P2P lending platform, we construct a linear mixed-effects model as follows with reference to [73]. Similar linear experimental formula and U-shaped relationship setting were used in Yan et al. [9] research on P2P lending platforms.

¹⁰ China FinTech Hub Index is a authoritative and comprehensive index report released annually by the Academy of Internet Finance, Zhejiang university which evaluates and ranks the development of FinTech in major Chinese cities from the perspectives of industry, experience and ecosystem, and further forms corresponding sub-indexes. In this study, we mainly refer to China FinTech Ecosystem Index which measures the FinTech ecosystem in different cities from five aspects: the economic base, innovation, research strength, regional policy and social concerns.

¹¹ Source: WDZJ. <https://shuju.wdzj.com/industry-list.html>.

$$\begin{aligned} InflowRate_{i,t} = & \beta_0 + \beta_1 \ln Age_{i,t} + \beta_2 (\ln Age_{i,t})^2 + \beta_3 Private_i \\ & + \beta_4 Assignment_i + \beta_5 Trusteeship_i + \beta_6 Guarantee_i \\ & + \beta_7 CityRank1_i + \sum controlvariables + \varepsilon_{i,t} \end{aligned}$$

To avoid the difference in the orders of magnitude and alleviate heteroscedasticity, the variables in absolute value (*Age*, *Term* and *Capital*) are processed in natural logarithm form. Furthermore, the method of OLS and robust standard error is adopted in the analysis to avoid the influence of heteroscedasticity, so that the estimation of coefficient and standard deviation are consistent in the models.

5 Empirical results and analysis

Table 3 shows the results of regression models and give us hints on the above hypotheses. Model 1 is the basic model with only taking the *Age* of platforms and its square form as independent variables. Model 2a–2d respectively take the different shareholders background of P2P lending platform as dummy variables and all dummy variables of capital background are added to Model 2e (in order to avoid the trap of dummy variables, only three types are covered). Similarly, in Model 3a–3d, we respectively add different FinTech ecosystem dummy variables. For all models from Model 2a to Model 3d, explanatory variables measuring operational structure design such as credit assignment, trusteeship and guarantee are included. The coefficients signs and significances of all independent variables in different model settings keep consistent, which also reflects the robustness of the results.

For Hypothesis 1, the one-time coefficients of net cash inflow rate and platform duration (*Age*) are significantly negative in all the models (e.g. the coefficient is -0.5793 and significant at the level of 0.01 in Model 1), while the quadratic coefficient is significantly positive (e.g. the coefficient is 0.0383 and significant at the level of 0.01 in Model 1). According to the quadratic formula $y = ax^2 + bx + c$, there is a positive U-shaped relationship between y and x if $a > 0$. Considering the models in this study, we find that when the platform is at its early age (the value of *Age* is small), the negative effects of the one-time coefficient is greater than the quadratic item (the absolute value of the one-time coefficient, 0.5793, is much larger than that of the quadratic one, 0.0383), thus the platform would face a downward trend of the net cash inflow. Then, when the platform goes mature (the value of *Age* is relative larger), the positive quadratic coefficient of *Age* works more on the explained variable which means the longer the duration of the platform is, the larger the net cash inflow will be. In summary, before a certain time node, the age of a platform has a negative impact on its net cash inflow, while the impact would turn positive after a period of time. This also supports Hypothesis 1 that the relationship between the duration of a P2P lending platform and its net cash inflow is positive U-shaped.

In practice, most platforms have faced bottlenecks in their development with problems of performance getting worse and cash inflow decreasing. At this stage, the platform ends its interest rate subsidies and other commercial activities with

Table 3 Results of the models

Variables	<i>InflowRate</i>										
	Model 1	Model 2a	Model 2b	Model 2c	Model 2d	Model 2e	Model 3a	Model 3b	Model 3c	Model 3d	
<i>InAge</i>	-0.5683*** (-25.0039)	-0.5890*** (-25.9019)	-0.5704*** (-25.0177)	-0.5773*** (-25.2763)	-0.5920*** (-25.9610)	-0.5744*** (-25.0233)	-0.5816*** (-25.5810)	-0.5766*** (-25.3058)	-0.5770*** (-25.3614)	-0.5663*** (-24.6222)	
$(InAge)^2$	0.0376*** (22.6386)	0.0390*** (23.5062)	0.0376*** (22.5820)	0.0381*** (22.8479)	0.0393*** (23.5970)	0.0379*** (22.5719)	0.0385*** (23.1934)	0.0381*** (22.8617)	0.0382*** (22.9656)	0.0372*** (22.1369)	
<i>Private</i>	-0.0181*** (-16.1047)										
<i>Bank</i>		0.0830*** (9.3425)				0.0909*** (10.2268)				0.0868*** (9.6679)	
<i>PE</i>			0.0198*** (7.0733)			0.0261*** (9.3434)				0.0254*** (9.0847)	
<i>State</i>					0.0129*** (10.6305)	0.0151*** (12.5473)				0.0141*** (11.6444)	
<i>Assignment</i>		0.0189*** (10.1224)	0.0200*** (10.7612)	0.0202*** (10.8503)	0.0193*** (10.3627)	0.0189*** (10.1430)	0.0199*** (10.6830)	0.0188*** (10.0893)	0.0185*** (9.8816)	0.0167*** (8.8669)	
<i>Trusteeship</i>		0.0097*** (11.4114)	0.0122*** (14.7088)	0.0112*** (13.3471)	0.0105*** (12.5054)	0.0102*** (12.0652)	0.0115*** (13.7396)	0.0120*** (14.4021)	0.0113*** (13.4770)	0.0101*** (11.9009)	
<i>Guarantee</i>		0.0110*** (10.5670)	0.0114*** (10.8740)	0.0115*** (10.9953)	0.0112*** (10.7682)	0.0109*** (10.4576)	0.0117*** (11.1543)	0.0110*** (10.4952)	0.0116*** (11.0602)	0.0106*** (10.1457)	
<i>CityRank1</i>						0.0038*** (4.6743)				0.0097*** (11.3115)	
<i>CityRank2</i>							0.0194*** (13.2898)			0.0222*** (14.2854)	
<i>CityRankOther</i>									-0.0115*** (-13.8472)		

Table 3 (continued)

Variables	InflowRate										
	Model 1	Model 2a	Model 2b	Model 2c	Model 2d	Model 2e	Model 3a	Model 3b	Model 3c	Model 3d	
<i>Return</i>	0.0026*** (27.7954)	0.0028*** (29.7197)	0.0028*** (29.4071)	0.0027*** (28.8441)	0.0027*** (28.9981)	0.0029*** (30.5239)	0.0027*** (28.7036)	0.0027*** (28.2344)	0.0028*** (29.4571)	0.0029*** (30.9243)	
<i>Term</i>	0.0048*** (41.8352)	0.0045*** (39.3781)	0.0046*** (39.1866)	0.0046*** (39.7554)	0.0046*** (40.3436)	0.0044*** (38.0032)	0.0046*** (39.9338)	0.0047*** (40.4686)	0.0045*** (39.1861)	0.0043*** (37.0087)	
<i>Capital</i>	0.0168*** (36.2892)	0.0140*** (29.8334)	0.0147*** (31.8682)	0.0152*** (32.9237)	0.0148*** (31.1107)	0.0133*** (28.8098)	0.0151*** (31.7366)	0.0154*** (33.0259)	0.0141*** (29.7258)	0.0122*** (25.7020)	
<i>Slitbor</i>	-0.0304*** (-50.1155)	-0.0305*** (-50.3455)	-0.0304*** (-50.3120)	-0.0304*** (-50.1964)	-0.0307*** (-50.6986)	-0.0302*** (-50.0649)	-0.0306*** (-50.6622)	-0.0305*** (-50.3839)	-0.0307*** (-50.7531)	-0.0302*** (-50.2193)	
Constant	2.0748*** (26.6879)	2.1522*** (27.6974)	2.0685*** (26.5791)	2.0869*** (26.7858)	2.1370*** (27.4182)	2.0933*** (26.7323)	2.0987*** (27.0259)	2.0844*** (26.8032)	2.0998*** (27.0382)	2.0733*** (26.4318)	
Observations	303,880	303,880	303,880	303,880	303,880	303,880	303,880	303,880	303,880	303,880	
Adjusted R-squared	0.0573	0.0602	0.0599	0.0595	0.0597	0.0607	0.0594	0.0599	0.0599	0.0614	

Robust *t*-statistics in parentheses, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

being less attractive to investors while the reputation of the platform in the market has not been fully formed due to its short history. The net cash inflow reached the lowest point. As platform managers, it should be understood that this is a common phenomenon that happened on almost all P2P lending platforms. What they need to do is not to take extreme measures to get customers and investors, but to accumulate reputation through continuous good operations and get trust from P2P investors in the market. Both the model results and experience show that the net cash inflows of the platform will grow again. It also confirms an old saying: Time will tell. Platform managers need to have a long-term vision and do not ignore the sustainable development and reputation accumulation of the platform for the sake of short-term performance.

For the capital structure in Hypothesis 2, from Model 2a–2d we can see that platforms backed by banks, private equity companies and state capital could have higher net cash inflows with significantly positive coefficients (0.0830, 0.0198 and 0.0129 respectively), while private platforms which accounts for 80% of all platforms in China have significant lower net cash inflows with a negative coefficient (-0.0181) than the three other types of platforms. Model 2e which all three dummy variables are included shows the consistent result.

To some extent, it proves that the capital structure of a P2P lending platform does have an endorsement effect in this emerging financial market. It is easy to understand that under a long-term control of state-owned economy and the “planned economy¹²”, investors especially the individual investors with less knowledge and experience are more inclined to believe in the endorsement of state-owned capital and big companies. Thus, more people are willing to invest money and participate in the lending activities on such type of platforms. Backed by state-owned companies, banks or PE companies has become a “signal” for investors to alleviate the information asymmetry problem in P2P lending. This kind of endorsement may also improve the reputation of the platforms if we consider from another perspective.

On the other hand, from past practice and experience, no platform with state-owned, bank and PE capital background has ever had a serious operational problem so far. It reversely verifies the choices of investors and encourages investors to continue investing on these platforms. The share percentage of state-owned, bank or PE capital in the platforms maybe not prominent (usually less than 20%), but it has brought better reputation to the platform from the very beginning. More importantly, it could provide external supports and guidance in the operational management, compliance, human resources and other aspects for the P2P lending platform. For the P2P lending platform founders and managers, they should realize that the capital structure does matter a lot and affect the net cash inflows of the platform and it could be a good choice for the development of the platform if external capital from state-owned companies, banks and PE companies can be appropriately introduced at

¹² A planned economy is a type of economic system where investment and the allocation of capital goods take place according to economy-wide economic and production plans. A planned economy may use centralized, decentralized or participatory forms of economic planning.

Table 4 Descriptive comparison of cash inflow rate of platforms in different groups

Group	Number of platforms	<i>InflowRate</i>				
		Mean	SD	Min	Max	Median
<i>CityRank1</i>	416	0.0461	0.2514	-0.5921	1.7486	0.0043
<i>CityRank2</i>	59	0.0549	0.2501	-0.3326	1.8939	0.0035
<i>CityRankOther</i>	274	0.0158	0.1808	-0.6914	0.9252	0.0015

a reasonable time. Of course, it is not easy to get the support from these institutions and it requires strong outreach capabilities and sufficient efforts of the founders.

As for the operational structure mentioned in Hypothesis 2, we can find out from Model 2a–3d that providing credit assignment, trusteeship and guarantee service would all have a positive effect on the platform net cash inflow, which is in line with our expectations. For example, in Model 2a, the coefficients are 0.0189, 0.0097 and 0.011 respectively and all significant at the level of 0.01. It means if P2P lending platforms can provide their investors with credit assignment, trusteeship or guarantee, their net cash inflow will increase by 0.0189, 0.0097 and 0.011 on average compared to platforms without these kinds of operational structure designs. The results keep robust in all the models.

For investors, the credit assignment does provide them with more flexible investments. However, the proportion and motivations of the investors who actually use the transfer of creditor's rights still need to be further studied in the future. The operational structure design of the credit assignment may also bring platforms with other kinds of risks. Similarly, platforms should be extremely cautious when it comes to design guarantee and trusteeship structures and cooperate with third-party institutions. Broadly speaking, the service of credit assignment, trusteeship and guarantee can all be considered as a part of the structure design of operations and loans products on P2P lending platforms. It signals the subjective seriousness, fully consideration and hard work of a platform in its operations and products, and thus objectively can attract more investors and cash inflows.

For the platform founders, the operation of the platform is an all-encompassing process. There is no unified standard for the operational structure design of P2P lending platforms, however, details make differences and would further affect the decision-making of investors and the long-term development of the platform. With the empirical results shown in Table 3, we know at least that in the process of platform setting up, it would be beneficial to the net cash inflow of a platform if credit assignment or any other form of credit transfer, trusteeship and guarantee could be considered in the operational structures of the platform.

As for the impact of FinTech ecosystem on net cash inflows of P2P lending platforms in Hypothesis 3, Table 4 first shows a descriptive comparison of cash inflow rate of platforms registered in different FinTech ecosystems. Among all 749 active P2P lending platforms in this study, 416 of them are located in advanced FinTech ecosystems which refer to Beijing, Shanghai, Hangzhou and Shenzhen; 59 platforms registered in medium level cities of Hong Kong, Guangzhou, Nanjing and Chengdu;

274 platforms are located in other areas. We use *CityRank1*, *CityRank2* and *CityRankOther* to represent the different development levels of FinTech ecosystems.

Different from what we expected in Hypothesis 3, descriptive statistics have shown that the platforms in *CityRank2* have an average higher net cash inflow rate (0.0549 compared with 0.0461 of *CityRank1* and 0.0158 of *CityRankOther*). And the results of Model 3a–3c in Table 3 prove it again. The coefficients for *CityRank1*, *CityRank2* and *CityRankOther* are 0.0038, 0.0194 and -0.0115 separately with strong significance at the level of 0.01. The coefficient of *CityRank2* is larger than that of *CityRank1*, which also means that the P2P lending platforms in *CityRank2* are more likely to have higher net cash inflow rate than those in *CityRank1* after accounting for the difference in platform size. And located in *CityRankOther* has a significant negative effect on platforms' net cash inflow rate. The results of Model 3d keep consistent.

For the P2P lending platform founders, it is critical to register their platforms in a good place for promoting better development. In China, the FinTech leading cities such as Beijing, Shanghai, Hangzhou and Shenzhen has attracted a large number of P2P lending platforms with favorable ecosystem of preferential policies, friendly entrepreneurial environments, rich social resources, talents, and broader markets. However, they are facing more fierce industry competition at the same time. It may be one of the reasons why their average net cash inflow rates are a little bit lower than platforms in medium-developed FinTech ecosystem. The number of P2P lending platforms in *CityRank2* is relatively small and most cities belong to the middle level are the second-tier cities with hope to make breakthroughs in FinTech in the future. Therefore, they may be more willing to support and power the existing FinTech enterprises. For example, the Nanjing Municipal Government has established the FinTech Research and Innovation Center jointly with Nanjing university and several other institutions in August 2018 to facilitate the development and innovation of P2P lending platforms and other FinTech enterprises by multiple forces. In the cities of *CityRankOther*, the FinTech ecosystem is quite imperfect and the corresponding supporting policies and infrastructures cannot meet with the requirements of P2P lending development, which may hinder the net cash inflow, the ability to attract investors and the daily operations of the platform.

FinTech ecosystem can be regarded as the external governance environment of the platform, but picking a proper FinTech ecosystem to start the P2P lending business is kind of an internal governance issue for the platforms.

The impact of an ecosystem on a certain platform could also be different due to the characteristics and attributes of the platform itself. The results of the models give us a hint that a moderately developed FinTech ecosystem may provide more possibilities and better operational results for a P2P lending platform, compared with a mature and advanced FinTech ecosystem. However, the platform founders may also face more specific and individualized limitations and preferences when starting their P2P lending platforms. The FinTech ecosystem may have an impact on the net cash inflows and the stable operations of the platforms, but the founders need to take their own needs and situations into account to make appropriate choices.

Table 5 Robust Test of the U-shaped relationship

	Model 4a Shorter than mean	Model 4b Longer than mean
Variables	<i>Inflowrate</i>	
<i>Lnage</i>	−0.0713*** (−56.3633)	0.0991*** (8.7561)
<i>Return</i>	0.0025*** (25.1066)	0.0025*** (11.1012)
<i>Term</i>	0.0053*** (40.6501)	0.0035*** (15.1784)
<i>Capital</i>	0.0175*** (36.4273)	0.0100*** (11.5944)
<i>Shibor</i>	−0.0311*** (−50.4433)	−0.0373*** (−17.2639)
Constant	0.4354*** (43.9017)	−0.7468*** (−8.9851)
Observations	287,969	15,911
Adjusted R-squared	0.0543	0.0927

Robust *t*-statistics in parentheses, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

6 Robust analysis

In order to test the robustness and validity of the model results, three robust analysis were performed as follows.

First, we are going to test the robust of the positive U-shaped relationship between the age of the platform and its net cash inflow rate. In order to verify the U-shaped feature, we divided P2P lending platforms into two groups according to the mean of the operating period of the platform. Results are shown in Table 5. In Model 4a, we only include samples with operating duration shorter than the mean of the age and the coefficient of *Lnage* shows significant negative (−0.0713) to the net cash inflow rate. It means that the net cash inflows to new platforms would decline over time. In Model 4b, we only consider mature platforms with age older than average. On the contrary, the coefficient of *Lnage* is positive (0.0991) at the significance level of 0.01. The results also prove that as the operating time increases, the influence of the age of the platform on its average net cash inflow turns positive from negative, which is in line with our Hypothesis 1 of the U-shaped relationship.

Second, we check the robustness of the regression with taking another measurement of net cash inflow rate as the dependent variable. Instead of the amount due in the next 60 days, we take the cumulative amount to be repaid as the denominator to form the ratio as follows.

$$InflowRate'_{i,t} = \frac{\text{Net cash inflow within the last 30 days of the platform}}{(\text{cumulative amount to be repaid} + 1)}$$

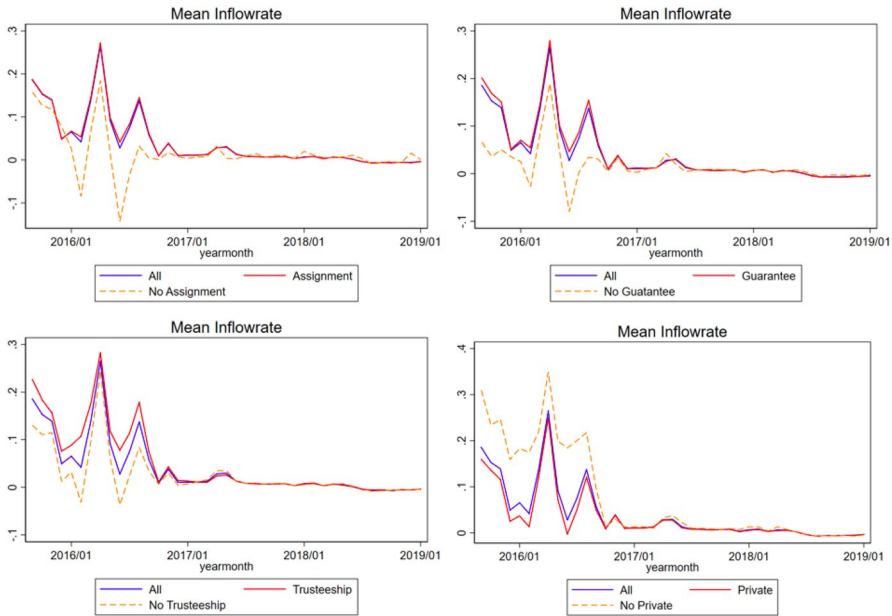


Fig. 1 Mean of net cash inflow rate over time

Just the same as *InflowRate*, *InflowRate'* also been constructed to mitigate the impact of platform size differences. Longer period has been taken into consideration since the cumulative amount to be repaid covers all the needed cash outflows since the establishment of the platform. From the perspective of accounting, there are advantages and disadvantages between these two measurements of net cash inflow. However, the coefficient sign and significance results of all the explanatory variables shows completely consistent (“Appendix 1”), which proves the robustness of the results.

Third, we use the time-fixed effects model to further consider the influence of unknown factors that change over time. In the models, we have already controlled the variations of some macro factors and other variables that may change over time. However, from Fig. 1 we can see, although the mean of net cash inflow rate of P2P lending platforms has remained relatively stable after later 2016, it has experienced a certain degree of turbulence on all types of platforms before 2016. This may have something to do with the increasing strictness of P2P regulation since August 2016 or relates to some other unpredictable factors that change over time.

In the robust analysis, by applying the time-fixed effects model, we intend to incorporate more extensive and unknown time-varying factors into the model and tested the hypothesis results again. Fortunately, when we fix the time, the results also show completely consistent (“Appendix 2”) with we discussed above.

7 Conclusion

In this study, we conduct a study on how reputation, capital and operational structure and FinTech ecosystem affect the net cash inflow of the P2P lending platforms in China. Further, we have a preliminary discussion on the operations and internal governance issues of P2P lending platforms according to the model results. As far as we know, this may be the first research on the internal governance and development of P2P lending platforms from the perspective of platform founders and managers. Several important and interesting results and facts have been found which could guide the platform founders to achieve better cash flow management, internal governance and long-term operations of the platforms. It could also inspire some in-depth thinking on P2P lending platform management from both industry and government side.

First, the accumulation of reputation takes time. The net cash inflow rate of P2P lending platform presented a positive U-shaped relationship with the duration of the platform. After the initial “rookie halo” and promotion period, a P2P lending platform will usually enter into a trough with lower net cash inflows and being less attractive to investors. However, as time goes on, a patient platform will gradually accumulate reputation through its continuous stable operations and regain a large amount of cash inflows, which proves the old saying: Time will tell. As a platform founder or manager, patience, a long-term perspective and reputation management ability are always needed and the keys for the better operation of the platform, and we should keep confident in the future development of the platform if we are doing the right thing. For the governments, investors and other stakeholders, it is also important to give time tolerance to the construction of P2P lending platforms and the development of the whole industry. We should believe that good platforms will drive out bad ones and a healthy P2P lending industry environment will eventually form to meet the needs of both investors and borrowers. It will further promote the better development of the whole finance department.

Second, both capital and operational structures of the P2P lending platform would have influences on the net cash inflow rate of the platform itself. Platforms endorsed by state-owned, bank and PE capital have a better chance of getting higher net cash inflow rate, while the cash inflows of private platforms are generally at a low level. As for the generalized operational structure, providing investors with the service of credit assignment, trusteeship or guarantee would all increase the net cash inflow rate of the platform in a significant way. For the platform founders, the capital and operational structure design of the platform should be carefully and comprehensively considered, and also need to be matched with the status quo and development needs of the platform itself. The results in this study may only provide a possible strategic direction. It would be beneficial for the platforms’ net cash inflows and overall operations if state-owned, bank or PE capital could be introduced properly. Including credit assignment or any form of credit transfer, trusteeship and guarantee into operational structures and products models may also work. For the governments and P2P lending investors, investors education and self-education should be

strengthened to help participants better understanding the operations and risk factors of P2P lending from multiple aspects. It would be great for the long-term healthy development of P2P lending platforms and the whole emerging industry if governments and industry organizations can provide active guidance and supervision in terms of operation, management, strategy and compliance, and even capital supports for the platforms when necessary.

Third, the impact of regional FinTech ecosystem on P2P lending platforms is multifaceted and complex. The empirical results show that platforms in a medium-developing ecosystem have higher net cash inflow rate, while the backward ecosystem will lower the cash flow level of the platforms located in that area. Even in the era of digital economy, geographical, policy and environmental factors still have great influence on the development of FinTech-related industries in different areas. For the platform founders, it is important but difficult to choose a place with well-matched FinTech ecosystem to start their business. It is not a traditional corporate internal governance consideration, but it is important for the future governance of the platform. Industrial clusters, supporting policies and facilities in developed FinTech ecosystem could provide more convenience and better entrepreneurial experiences, but also lead to intensive competitive pressures at the same time. Moderately developed regions may not have the ability to support the platforms with the best hard and soft resources, but breed greater future opportunities and possibilities. P2P lending platform founders should also constantly pay attention to the changes in the external FinTech ecosystem and adjust the operational strategies of the platform according to the changes. For the government, it should ensure the consistency of policies and balance between regions, and construct an inclusive, innovation-encouraging and appropriate FinTech ecosystem to better meet the needs of long-term industrial development.

Compliance with ethical standards

Conflict of interest On behalf of all authors, the corresponding author states that there is no conflict of interest.

Appendix 1

See Table 6.

Appendix 2

See Table 7.

Table 6 Robust results of the models

Variables	<i>InflowRate'</i>									
	Model 1'	Model 2'a	Model 2'b	Model 2'c	Model 2'd	Model 2'e	Model 3'a	Model 3'b	Model 3'c	Model 3'd
<i>InAge</i>	-0.3008*** (-31.0734)	-0.3102*** (-32.0978)	-0.3069*** (-31.7343)	-0.3062*** (-31.6670)	-0.3104*** (-32.1102)	-0.3063*** (-31.6320)	-0.3083*** (-31.8802)	-0.3062*** (-31.6901)	-0.3062*** (-31.6276)	-0.3025*** (-31.1998)
$(\ln \text{Age})^2$	0.0208*** (29.6885)	0.0215*** (30.7087)	0.0213*** (30.3301)	0.0212*** (30.2426)	0.0215*** (30.7309)	0.0212*** (30.1941)	0.0214*** (30.5069)	0.0212*** (30.2512)	0.0212*** (30.2370)	0.0209*** (29.7232)
<i>Private</i>	-0.0043*** (-11.6347)									
<i>Bank</i>		0.0115*** (6.9643)				0.0139*** (8.3452)				0.0119*** (6.9608)
<i>PE</i>			0.0095*** (11.7670)			0.0106*** (13.0276)				0.0103*** (12.6729)
<i>State</i>				0.0024*** (6.1708)	0.0024*** (7.8498)	0.0031*** (7.8498)				0.0026*** (6.4796)
<i>Assignment</i>	0.0091*** (10.6991)	0.0094*** (11.0665)	0.0095*** (11.0852)	0.0095*** (11.0852)	0.0093*** (10.8802)	0.0092*** (10.7653)	0.0093*** (10.9074)	0.0089*** (10.3810)	0.0087*** (10.1331)	0.0082*** (9.4907)
<i>Trusteeship</i>	0.0058*** (17.5599)	0.0064*** (19.3921)	0.0064*** (18.2731)	0.0061*** (18.2731)	0.0061*** (18.4478)	0.0058*** (17.4928)	0.0062*** (18.8681)	0.0065*** (19.5885)	0.0061*** (18.5859)	0.0058*** (17.4158)
<i>Guarantee</i>	0.0026*** (5.6497)	0.0027*** (5.8589)	0.0027*** (5.8592)	0.0027*** (5.8592)	0.0026*** (5.7932)	0.0026*** (5.6234)	0.0027*** (6.0533)	0.0024*** (5.3667)	0.0027*** (5.9401)	0.0024*** (5.2698)
<i>CityRank1</i>						0.0019*** (5.8047)				0.0043*** (11.7908)
<i>CityRank2</i>							0.0083*** (16.3638)			0.0105*** (18.7599)
<i>CityRankOther</i>									-0.0052*** (-14.8714)	

Table 6 (continued)

Variables	<i>InflowRateⁱ</i>													
	Model 1 ⁱ	Model 2 ⁱ a	Model 2 ⁱ b	Model 2 ⁱ c	Model 2 ⁱ d	Model 2 ⁱ e	Model 3 ⁱ a	Model 3 ⁱ b	Model 3 ⁱ c	Model 3 ⁱ d				
<i>Return</i>	0.0019*** (45.9794)	0.0020*** (47.3859)	0.0019*** (47.0805)	0.0019*** (47.2682)	0.0019*** (47.0955)	0.0020*** (47.5833)	0.0020*** (47.2230)	0.0019*** (46.7342)	0.0020*** (47.9420)	0.0020*** (47.9283)				
<i>Term</i>	0.0003*** (13.4571)	0.0002*** (9.2290)	0.0003*** (10.1292)	0.0002*** (8.4878)	0.0003*** (10.6457)	0.0002*** (7.2190)	0.0002*** (9.8595)	0.0003*** (10.8838)	0.0002*** (8.5283)	0.0001*** (5.6378)				
<i>Capital</i>	0.0059*** (33.9029)	0.0050*** (28.1007)	0.0053*** (29.8441)	0.0052*** (29.8858)	0.0053*** (29.6500)	0.0049*** (27.1611)	0.0052*** (28.7899)	0.0053*** (30.5748)	0.0047*** (26.4353)	0.0044*** (23.5157)				
<i>Slitbor</i>	-0.0072*** (-32.4066)	-0.0073*** (-32.8795)	-0.0073*** (-32.9053)	-0.0072*** (-32.6020)	-0.0073*** (-33.1203)	-0.0072*** (-32.5478)	-0.0073*** (-33.1524)	-0.0073*** (-32.7836)	-0.0074*** (-33.3126)	-0.0072*** (-32.6547)				
Constant	1.0430*** (31.3525)	1.0723*** (32.3376)	1.0555*** (31.8152)	1.0538*** (31.7684)	1.0668*** (32.1619)	1.0569*** (31.8286)	1.0594*** (31.9403)	1.0534*** (31.7812)	1.0600*** (31.9587)	1.0474*** (31.5198)				
Adjusted R-squared	0.0442	0.0471	0.0468	0.0470	0.0469	0.0473	0.0469	0.0475	0.0475	0.0483				

Robust *t*-statistics in parentheses, ****p* < 0.01, ***p* < 0.05, **p* < 0.1

Table 7 Results of the time-fixed effects models

Variables	<i>InflowRate</i>									
	Model 1	Model 2a	Model 2b	Model 2c	Model 2d	Model 2e	Model 3a	Model 3b	Model 3c	Model 3d
<i>InAge</i>	-0.5835*** (-26.4706)	-0.6038*** (-27.3625)	-0.5889*** (-26.6398)	-0.5965*** (-26.9020)	-0.6098*** (-27.5562)	-0.5961*** (-26.7578)	-0.5981*** (-27.1169)	-0.5930*** (-26.8207)	-0.5934*** (-26.8919)	-0.5883*** (-26.3475)
<i>(InAge)²</i>	0.0408*** (25.3537)	0.0421*** (26.1798)	0.0410*** (25.4182)	0.0416*** (25.6913)	0.0427*** (26.4280)	0.0415*** (25.5046)	0.0418*** (25.9641)	0.0413*** (25.5956)	0.0414*** (25.7246)	0.0409*** (25.0550)
<i>Private</i>	-0.0160*** (-14.4907)									
<i>Bank</i>		0.0580*** (6.7680)				0.0643*** (7.4868)				0.0610*** (7.0330)
<i>PE</i>			0.0070** (2.5164)			0.0129*** (4.6508)				0.0121*** (4.3810)
<i>State</i>					0.0141*** (11.9133)	0.0154*** (13.0323)				0.0146*** (12.2524)
<i>Assignment</i>		0.0219*** (11.9164)	0.0230*** (12.5026)	0.0231*** (12.5826)	0.0221*** (12.0434)	0.0218*** (11.8706)	0.0228*** (12.3605)	0.0219*** (11.8681)	0.0214*** (11.5413)	0.0196*** (10.5499)
<i>Trusteeship</i>		0.0108*** (13.1075)	0.0130*** (15.9969)	0.0124*** (15.2453)	0.0113*** (13.7833)	0.0113*** (13.7171)	0.0124*** (15.1003)	0.0129*** (15.8373)	0.0122*** (14.8919)	0.0111*** (13.4470)
<i>Guarantee</i>		0.0054*** (5.1494)	0.0057*** (5.4812)	0.0057*** (5.5093)	0.0054*** (5.1620)	0.0053*** (5.1459)	0.0059*** (5.6374)	0.0052*** (5.0153)	0.0057*** (5.5132)	0.0051*** (4.8938)
<i>CityRank1</i>							0.0051*** (6.3846)			0.0108*** (12.7936)
<i>CityRank2</i>								0.0177*** (12.4701)		0.0215*** (14.1935)
<i>CityRankOther</i>									-0.0122*** (-14.9774)	

Table 7 (continued)

Variables	InflowRate									
	Model 1	Model 2a	Model 2b	Model 2c	Model 2d	Model 2e	Model 3a	Model 3b	Model 3c	Model 3d
<i>Return</i>	0.0018*** (18.6453)	0.0021*** (20.8473)	0.0020*** (20.4749)	0.0020*** (19.8917)	0.0020*** (20.2452)	0.0021*** (21.2987)	0.0020*** (20.1766)	0.0019*** (19.5890)	0.0021*** (20.8120)	0.0022*** (21.9400)
<i>Term</i>	0.0050*** (44.7449)	0.0048*** (42.1924)	0.0048*** (41.9890)	0.0049*** (43.0267)	0.0049*** (43.1145)	0.0047*** (41.2944)	0.0048*** (42.5643)	0.0049*** (43.2196)	0.0048*** (41.8469)	0.0046*** (40.1539)
<i>Capital</i>	0.0164*** (36.2345)	0.0140*** (30.3481)	0.0147*** (32.5466)	0.0152*** (33.5530)	0.0145*** (31.1860)	0.0136*** (29.8486)	0.0147*** (31.6346)	0.0152*** (33.2905)	0.0138*** (29.6928)	0.0123*** (26.3715)
<i>Stiibor</i>	-0.0036 (-1.4432)	-0.0038 (-1.5249)	-0.0037 (-1.4883)	-0.0037 (-1.4934)	-0.0038 (-1.5155)	-0.0038 (-1.5207)	-0.0037 (-1.4991)	-0.0037 (-1.4827)	-0.0037 (-1.5059)	-0.0038 (-1.5279)
Constant	2.0684*** (26.6811)	2.1419*** (27.6297)	2.0713*** (26.7051)	2.0918*** (26.9188)	2.1392*** (27.5231)	2.1051*** (26.9611)	2.0964*** (27.0731)	2.0822*** (26.8478)	2.0975*** (27.0863)	2.0853*** (26.6617)
Observations	303,880	303,880	303,880	303,880	303,880	303,880	303,880	303,880	303,880	303,880
Adjusted R-squared	0.0960	0.0985	0.0981	0.0978	0.0983	0.0987	0.0979	0.0983	0.0984	0.0995
Time	FE	FE	FE	FE	FE	FE	FE	FE	FE	FE

Robust *t*-statistics in parentheses, ****p* < 0.01, ***p* < 0.05, **p* < 0.1

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