

Problems and Measures in the Transformation and Development of P2P Online Lending Platforms in Hebei Province under the Background of Big Data--Based on the Perspective of the Difference among Beijing, Shanghai and Guangzhou

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Abstract:

In the big data era, the openness and sharing of data provides opportunities for the development of P2P online lending platforms. P2P online lending platforms have become an important financing channel for small, medium and micro enterprises. However, due to economic, geographic, historical and other factors, there is still a big gap in the development of platforms in various regions. Based on the analysis of the differences among P2P online lending platforms in Hebei Province, Beijing, Shanghai and Guangzhou, it is found that there are some problems in the P2P online lending platforms in Hebei Province, such as weak foundation, insufficient supervision, low recognition, poor industry development environment and low talent support. Therefore, in order to promote the platform transformation and high-quality development, this paper proposes that not only the relevant departments need to innovate the cooperation mechanism, improve the laws and policies system, and strengthen the industry management, but also need to vigorously consolidate the foundation and enhance the connotation of the P2P online lending platforms from the aspects of strategic planning and talent training.

Key words: P2P online lending platforms; Big Data Era; Hebei Province

I. INTRODUCTION

The era of big data is not only a concentrated expression of information technology and network technology, but also an important force to promote social change. In the big data environment, P2P online lending platforms use Internet technology to cooperate with the traditional financial industry to provide customers with investment and financing services, which is an important part of Internet finance. P2P lending platforms have the characteristics of high returns and fast approvals, so they are highly respected by many investors and fund needs. China's P2P lending platform started in 2007. The development of the

industry reached its peak in 2017, with a trading volume of RMB 2,804.849 billion, a cumulative trading volume exceeding RMB 6 trillion, and a total number of borrowers close to 40 million, showing strong market competitiveness. However, during 2017-2019, China's P2P lending platform experienced many problems. A series of risk events broke out in the industry. This brings major hidden risks to financial security and social stability. Especially in 2019, most of the P2P lending platforms are developing towards exit and transformation. The China Banking and Insurance Regulatory Commission issued a number of documents, the content of which is to carry out in-depth special rectification of Internet financial risks and promote the benign exit of non-compliant online lending institutions. As of June 2020, due to multiple pressures such as the epidemic and industry supervision, there are only 330 normal operating platforms left, and the industry survival rate is only 5%. The situation of P2P lending platforms has become increasingly severe. While the demand for China's real economy is still huge, how to guide the healthy and orderly development of the online lending industry and seize the development opportunities in the era of big data is crucial. Therefore, helping the platform to transform and develop, formulating clear and feasible transformation countermeasures, and promoting the scientific and standardized management of the online lending industry are practical problems that urgently need to be solved in China's P2P industry.

At present, many scholars' research on P2P online lending platforms is mostly focused on the platform's lending risks and regulatory systems. Du Yonghong et al. (2016) proposed that the main risks of China's P2P platforms are credit risk, illegal operation risk, market risk and information leakage risk. It is recommended to use big data to innovate risk prevention and supervision [1]. Zhang Chunhui (2019) proposed to build a risk management framework from the three perspectives of borrowers, investors, and the platform itself [2]. Wang Bingbing (2015) and Zhang Huiping (2015) proposed that the platform faces legal risks such as illegal absorption of public deposits, illegal operations, fund-raising fraud, and misappropriation of funds. It is proposed to take effective risk prevention measures, such as establishing a P2P online lending legal system [3, 4]. Regarding the supervision of online lending platforms, Ye Wenhui (2018), Shi Jun (2020) and others proposed relevant measures from an external perspective, such as improving industry access and exit mechanisms, standardizing information disclosure systems, introducing third-party agencies, strengthening credit investigation, and developing differentiated supervision [5, 6]; Zeng Guirong (2018) conducts research from an internal perspective. It is proposed to optimize the internal risk control mechanism and strengthen internal supervision from the business and organizational levels [7]. But overall, as the industry clears up and the transformation deepens, most of the above studies are aimed at industry supervision, and relatively few studies promote the benign exit and transformation and upgrading of platforms.

Since the industry has developed, China's P2P platforms have the characteristics of regional agglomeration, that is, platforms are mainly active in Beijing, Shanghai, Guangzhou and its surrounding areas. Beijing, Shanghai, and Guangzhou are the first-tier cities in China. P2P online lending platforms started early and have a huge number of platforms, so they have a good development trend. It can make up for the shortcomings of traditional bank lending and ease the financing difficulties for many small, medium and micro enterprises. However Hebei Province is an underdeveloped region. It is at a disadvantage in the coordinated development of Beijing-Tianjin-Hebei. There is a big gap between the

development of P2P platforms in Hebei Province and Beijing, Shanghai, and Guangzhou. Therefore, the paper of the difference between the platforms in Hebei Province and the Beijing, Shanghai and Guangzhou regions can find out the lack of Hebei platforms and solve the shortcomings in a timely manner, thereby promoting the transformation and upgrading of the industry and achieving the healthy and sustainable development of the platform. At the same time, the Internet financial industry should also play the role of big data and effectively combine big data with the P2P industry to achieve the goal of preventing risks and promoting the healthy development of the industry.

II. Analysis of the difference in the development of P2P online lending platforms between Hebei Province and Beijing, Shanghai and Guangzhou

2.1 Strength and qualification

2.1.1 The number of normal operations of the platform

If P2P online lending platforms are concentrated and the number of normal operations is large, it means that the platform development in the region is better. According to the data of Wang Dai Zhijia (the data in this paper comes from here unless otherwise specified), as of June 2020, the cumulative number of platforms in China has reached 6,607 (including closed and problem platforms). From the perspective of regional distribution, the number of platforms in Beijing, Shanghai, and Guangzhou ranks among the top three, with a total of more than 800 platforms, is accounting for 41.43% of the total. The cumulative number of platforms in Hebei Province is only 163, which is at the bottom of the national ranking. Compared with the Beijing, Shanghai, and Guangzhou regions, there is a big gap, such as a small number of platforms and a low market share.

From 2018 to 2020, in the context of the strengthening of platform clearance, the number of operating platforms in China has dropped significantly. The number of operating platforms dropped from 1931 in 2017 to 1021 in 2018. As of June 2020, there are only 330 operating platforms left. Compared with 2017, the number of operating platforms has dropped by as much as 82.91%. The number of operating platforms in Beijing, Shanghai, and Guangzhou also dropped significantly, with the number falling below 100, but still maintaining a strong geographical concentration. There are 91 in Beijing, 29 in Shanghai, and 64 in Guangdong. The three places together account for 55.75% of the total number of platforms in China. However, the Hebei Province ranks at the end and the normal operating platforms have declined year after year, and the number has dropped to zero. All platforms are included in the closed and problem platforms, far behind the developed areas of Beijing, Shanghai, and Guangzhou. P2P industry supervision is becoming stricter, and Hebei platforms are greatly affected and none of them are spared. It shows that there are many non-compliant operations and the platform itself has major problems. And since there was a new platform in 2018, no new platform has been launched. Generally speaking, the overall strength is weak and the level of development is low.

2.1.2 Normal operating hours of the platform

The longer the normal operations time of the platform, the richer the operating experience. This type of platform has strong strength and low transaction risk. It can be seen from Figure 1 that the normal operation time of platforms in Beijing, Shanghai, and Guangzhou is mostly 3-6 years. In this area, there are 68 in Beijing, 21 and 53 in Shanghai and Guangdong respectively. However, as of June 2020, there are no normal operating platforms in Hebei. In addition, the average normal operating time of the platforms in the Beijing, Shanghai and Guangzhou areas are more than 5.4 years, while the platforms in the Hebei area have no normal operating platforms. Compared with platforms in Beijing, Shanghai and Guangzhou, the development of Hebei platforms is relatively backward, such as the obvious gap in normal operation time and lack of relevant experience.

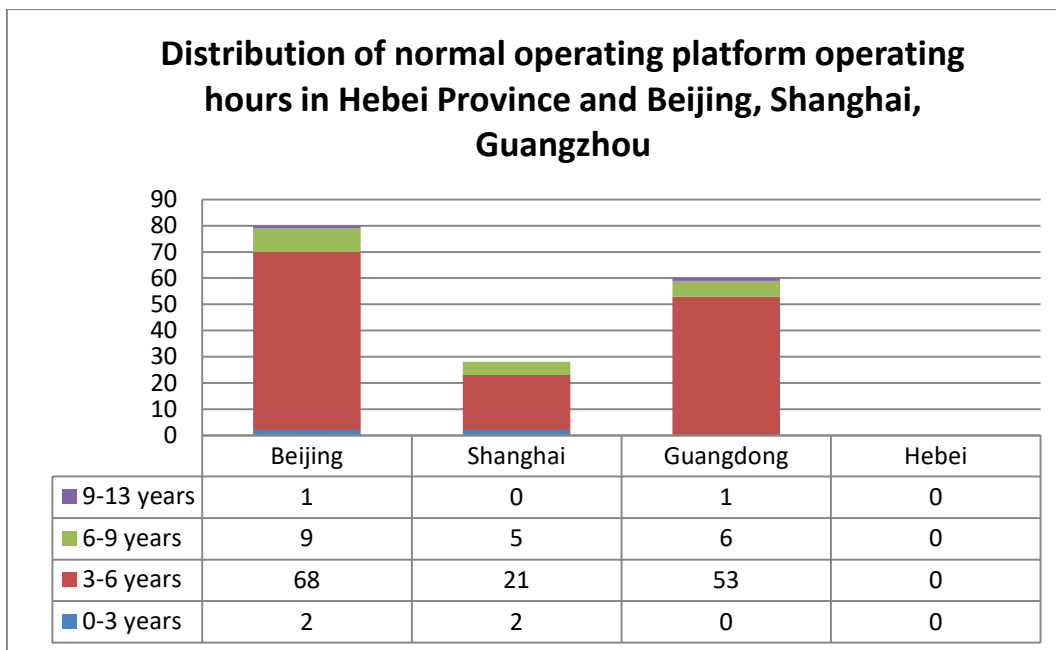


Fig 1: Operating hours of normal operating platforms in Hebei Province and Beijing, Shanghai and Guangzhou

(Unless otherwise specified, the relevant data related to P2P network lending in this article is compiled by the author based on the data of Wang Dai Zhijia. For the relevant raw data, please refer to the official website of Wang Dai Zhijia. The website is: <https://www.wdzj.com/>)

2.1.3 Ownership background and platform registration status

The ownership background of the platform is the main factor affecting the degree of platform security. The ownership background of the platform can be divided into state-owned assets, listing, banking, venture capital, and private-owned departments. Among them, platforms with state-owned assets, listing, banking, and venture capital backgrounds have lower risks [8]. According to statistics from Wang Dai Zhijia, as of June 2020, among the operating platforms of China's online lending industry, 24 platforms have received

venture capital support, 28 platforms are listed, 49 platforms are state-owned, and 2 platforms have a banking background. As shown in Table 1, the proportion of platforms with backgrounds of state-owned assets, listing, banking, and venture capital in Beijing, Shanghai and Guangzhou all accounted for more than 30%, and Shanghai accounted for 43%. Platforms with the above four ownership backgrounds have low default and operating risk. This type of platform can provide relatively safe services, so it is easy to get investors' favor. However, the number of platforms that have been supported by four backgrounds in Hebei is only 6, most of them are private platforms. The private platform does not have the support of shareholders' funds and resources, and there are many problematic platforms. And there is no normal operating platform currently, the security of transactions cannot be effectively guaranteed.

Tab.1 As of June 2020, the background of the normal operating platform ownership in Hebei Province and Beijing, Shanghai and Guangzhou

Ownership background	Beijing	Shanghai	Guangzhou	Hebei
(1) Department of State-owned Assets	9	3	9	0
(2) Listed Department	6	5	9	0
(3) Banking department	0	0	1	0
(4) Venture Capital Department	9	4	6	0
(5) Private Department	57	16	37	0
(1)+(2)+(3)+(4) percentage	30%	43%	40%	0

The registration status of the platform's Internet compliance operations can be reflected by whether it has obtained an ICP license. After the P2P online lending platform completes the filing and registration in the place where it belongs, it should apply for a telecom business license in accordance with relevant requirements, that is, an ICP business license [9]. ICP License is also called Internet Information Service Business License. As of June 2020, a total of 88 companies in China have obtained ICP licenses on operating platforms, including 48 in Beijing, 4 in Shanghai, and 8 in Guangdong. Although this data decreases with the decline in the number of operating platforms, it still accounts for 68.18% of the industry, and the situation is relatively good. However, only 14 platforms have obtained ICP licenses in Hebei, accounting for only 8.58% of the cumulative platforms. Through the above analysis, it can be seen that the acquisition of the ICP license by the Hebei platform is not impressive, which further highlights the poor compliance of the platform.

Platform bank filing can be reflected by whether it is connected to the bank depository system in a timely manner. This indicator is also an important evaluation item for the platform's compliance operation. The entry barrier for bank depository is high, the platform has to spend a high one-time access cost, and it needs to pay a service fee to the bank every year [10]. However, filing in the bank can ensure that customer funds are separated from the platform's own funds, avoid illegal misappropriation of customer funds by the platform, and ensure the authenticity of transactions. As of June 2020, there are 158 platforms

registered with banks in Beijing, Shanghai and Guangzhou, including 77 in Beijing, 21 in Shanghai and 60 in Guangdong. In Hebei Province, there are 23 platforms that connect with bank depository, the number is much lower than that of Beijing, Shanghai, and Guangzhou. In addition, based on the analysis of the comprehensive platform ownership background, there is a big gap between the standardization of the Hebei platform and the Beijing, Shanghai, and Guangzhou regions. The Hebei platform has a weak operating background, low strength and lack of industry competitiveness. Moreover, whether the platform joins the association is also an important indicator for evaluating the strength of the platform's background. The platform joining the regulatory association means joining the China or local Internet Finance Association. The platform registered with the association is stronger and more secure in investment. As of June 2020, a total of 86 operating platforms have joined the association, including 19 in Beijing, 10 in Shanghai and 36 in Guangdong. The three regions that joined the association accounted for 73% of the operating platform industry. In contrast to Hebei, none of the platforms has joined the Internet Finance Association and lacks effective external supervision. The overall industry investment risk in Hebei is even greater. The future development is highly uncertain and lacks robustness.

2.1.4 Registered capital

Registered capital refers to the funds used by the platform to operate the platform during business registration, which can be used to analyze whether the platform's capital pool is sufficient. The more platform registered capital, the lower the possibility of risk. This article divides the registered capital of the platform into four levels. As of June 2020, platforms with registered capital of 3-9.99 million yuan in the Beijing, Shanghai and Guangzhou region accounted for the largest proportion, and the platforms in each region accounted for about 40%. The platform registered capital below 9.99 million yuan has the least proportion. In contrast, platforms with registered capital of 10-30 million yuan accounted for the largest proportion of platforms in Hebei, up to 46.26%, and platforms with registered capital of more than 100 million yuan accounted for the least, accounting for 8.16%. The registered capital of the Hebei platform is much lower than that in the developed regions of Beijing, Shanghai, Guangzhou and P2P online lending platforms, and the platform's financial support, popularity and development potential are relatively weak. In the later stage of operation, the platform website is very prone to unmaintained, delayed payment, difficult cash withdrawal, and runaway situations, and there is a greater risk.

Tab. 2 Statistics of accumulated platform registered capital in Beijing, Shanghai, Guangzhou and Hebei

Region	9.99 million or less		10-30 million		30-99.99 million		More than 100 million yuan	
	Quantity	Percentage	Quantity	Percentage	Quantity	Percentage	Quantity	Percentage
Beijing	45	6.19%	184	25.31%	303	41.68%	195	26.82%
Shanghai	28	3.94%	167	23.49%	318	44.73%	198	27.85%

Guangzhou	73	6.86%	365	34.31%	418	39.29%	208	19.55%
Hebei	17	11.56%	68	46.26%	50	34.01%	12	8.16%

2.2 Market risk

2.2.1 Cumulative problem platform

The more problematic platforms there are, the greater the operational risk of the lending industry. As of June 2020, there were 6,277 closed and problem platforms in China, and among them, there are 2,932 problem platforms, an increase of 1,653 compared to 2018. The increase rate is up to 129%. The large increase in the problem platform has a wide impact. The popularity of P2P online lending has dropped significantly, and the number of active lenders and active borrowers has shrunk severely, with a reduction close to 50%. Among them, the number of problem platforms in Beijing, Shanghai, and Guangdong all exceeded 300, and the proportion of problem platforms was 37.69%, 45.63%, and 41.52%, respectively. Although the number and proportion of problematic platforms in Hebei Province is less than that of Shanghai and Guangdong, the proportion of problematic platforms is as high as 38.65%, and the quality of development is not high. Since the development of P2P online lending platforms in Hebei Province, a total of 96 platforms have lost connection, 16 platforms have suspended operations, 14 platforms have difficulty withdrawing cash, 4 platforms have participated in fraud, 4 platforms have been liquidated, 1 has been interfered by the police for illegally absorbing public deposits and 1 platform has been run away. Platform problems are frequent and there is a greater risk of borrowing, which greatly harms the interests of investors and severely reduces the confidence of customers.

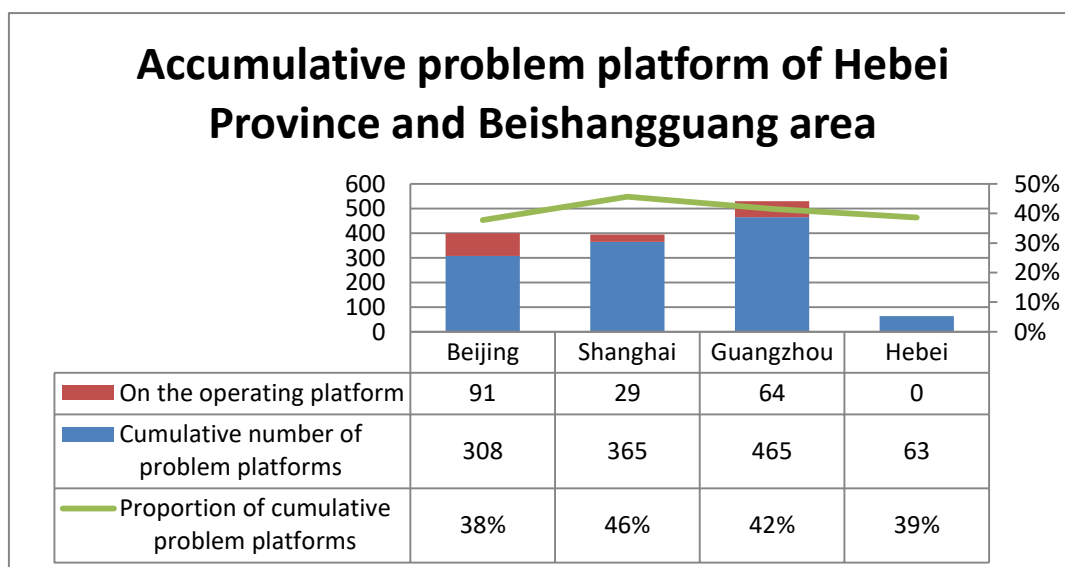


Fig 2: Accumulated problem platforms in Hebei Province and Beijing, Shanghai, Guangzhou as of June 2020

2.2.2 Regional loan balance and transaction volume

As of December 2019, the transaction volume of China's P2P platform was 964.911 billion yuan, a 46.24% decrease from the 2018 transaction volume of 1,794.801 billion yuan, which is the lowest value in five years. It shows that investors have been more cautious in recent years. The loan balance is the principal that has been loaned out by the platform but has not yet been repaid. The higher the loan balance, the more transactions on the platform and the larger transaction amount. This type of platform has good development prospects and low transaction risk, which is easily favored by investors. In terms of regional distribution, the loan balance in Beijing ranks first, far surpassing other regions, up to 270 billion yuan, accounting for more than 50% of the turnover in China. Shanghai and Guangdong followed closely behind with 111.838 billion yuan and 57.692 billion yuan respectively, ranking among the top three in the industry. Taken together, Beijing, Shanghai, and Guangzhou accounted for 89.59% of the national loan balance. By comparison, the loan balance in Hebei ranks lower. Hebei platform has a low proportion of transactions in China, and platform lending is small. Among the top 100 platform loan balance statistics in 2019, none of the Hebei platforms are on the list. There is a big gap between the platforms in the Beijing, Shanghai, and Guangzhou regions, and the scale of operation is small.

2.2.3 Regional average loan period

In 2019, the average loan period in Beijing, Shanghai, and Guangzhou was 14.78 months, which was close to the average loan term of the Chinese platform 15.42 months. The average loan period of Hebei platform is less than 4 months, which is only 1/3 of that in Beijing, Shanghai and Guangzhou. It is much lower than the Beijing, Shanghai, and Guangzhou areas. There is an inverse relationship between the loan period and operating pressure. The longer the period, the more conducive to capital turnover, and the lower the operating pressure. The average loan period is too short, and loans tend to be concentrated in a short period of time. If the borrower's funds are not repaid in time or insufficient, it will increase the short-term repayment risk of the P2P platform [11]. The Hebei platform has a short loan period, which is not conducive to capital turnover and high operating pressure. The platform does not have a strong ability to defend against risks and faces greater risks.

III. Analysis of problems existing in the development of P2P online lending platforms in Hebei Province

3.1 Weak foundation for platform construction in Hebei

Compared with Beijing, Shanghai and Guangzhou, the P2P online lending platform in Hebei Province has a weak foundation due to its late start and poor strength. At the same time, the development of Hebei big data is slow and lacks advanced technical support. The Beijing-Shanghai-Guangzhou regional P2P platform was established early and has formed a relatively complete operation model, and the industry has already developed on a large scale. Shanghai's first P2P platform Pai paidai was established in 2007 and is also China's first P2P platform. The platform is developing rapidly, and as of the end of 2019, the

comprehensive ranking is firmly in the top four. Beijing's first P2P platform "Ren rendai" was established in 2010, and as of the end of 2019, it ranked first in the comprehensive index. Guangdong's first P2P platform "Hong Ling Venture Capital" was established in 2009. Although the comprehensive index ranking is not on the list, it has been operating for many years and has a good reputation. However, the first P2P platform "Hu Lu Shidai" in Hebei Province was established in 2013. The platform did not disclose product, operation and other information, and the development situation is worrying. In Hebei, most of old platforms registered in the same period have lost connection and difficulty withdrawing cash. In addition, most of Hebei's online loan platforms are concentrated in Shijiazhuang, the provincial capital, with uneven regional distribution. Even other cities such as Cheng De have not yet involved P2P online loan business. The province's resources cannot be efficiently allocated, nor can risks be effectively diversified. Therefore, Hebei platform has poor influence among many platforms, cannot be recognized by the majority of investors, and is in a weak position in the competition.

The economic development speed of Hebei Province is much lower than that of Beijing, Shanghai, and Guangzhou, which is also an important reason for the weak foundation of platform construction. In 2019, the GDP of Beijing and Shanghai were 3.5 trillion yuan and 3.8 trillion yuan respectively. Guangdong's GDP in 2019 was 10.8 trillion yuan, breaking the 10 trillion mark. Hebei Province has a negative economic growth rate compared with 2018. The GDP of Tangshan, the top-ranked city, is only 0.7 trillion yuan, which is much lower than that of Beijing, Shanghai and Guangzhou. The overall scale of P2P online loan platform is small. Such platforms cannot attract the support of large investments, and thus lack the funding base. Therefore, investors lack confidence in the development of the platform, which is not conducive to the stable operation of the platform.

3.2 Incomplete policies and regulations and insufficient supervision

3.2.1 Policies and regulations are relatively lagging and imperfect

External supervision plays an important role in regulating the development of online lending platforms and is an important part of the environment of Internet finance [12]. The platform in Beijing, Shanghai and Guangzhou started early and developed rapidly. The state timely issue corresponding laws and regulations to ensure the standardized operation of the platform. And in the process of development, laws and regulations are continuously refined, forming a relatively complete legal system. The government has also formulated relevant policies to support. Two-pronged policies and regulations to ensure the legal compliance of Internet financial transactions. Shanghai issued China's first "Internet Lending Industry Access Standards" in 2013, and other cities have not yet issued relevant standards [13]. With the in-depth advancement of the platform's withdrawal, many places have issued guidance on the withdrawal mechanism or related regulatory documents in 2019. In March 2019, Shenzhen issued China's first platform exit mechanism "Guidelines for the Benign Exit of Shenzhen Online Lending Information Intermediary Institutions"[14]. The Internet finance industry is becoming increasingly standardized. However, the Hebei government has low recognition of P2P lending platforms and has not issued relevant laws and policies. In addition, Hebei Province has failed to effectively integrate big data with the

formulation of policies and regulations, nor can it release policy and regulatory documents based on platform operations. It is difficult to provide standardized guidelines for the P2P industry. Platform operation violations often occur, the compliance construction process is slow, and the operation risk is relatively high. In addition, Hebei Province issued an announcement in 2019 that none of the platforms in its jurisdiction passed the inspection and announced the ban on all online lending platforms in the province. It is difficult for platforms to seek transformation and development.

3.2.2 Incomplete credit reporting system and insufficient government supervision experience

P2P online lending platforms are different from physical financing institutions. While providing enterprises with convenient investment and financing, they also increase risks. The development of big data technology is immature, and the cloud credit system has not been established. Internet finance is not included in the credit investigation system of the central bank. There is also a lack of platforms for sharing credit information among all e-commerce companies, which leads to the credit risk of Internet finance [15]. Faced with this risk, the credit investigation system and punishment policy in Beijing, Shanghai and Guangzhou have become stricter. On December 8, 2015, the "E Zubao" website and its affiliated companies were suspected of illegal business activities in the development of Internet financial services. The company and related personnel involved in the case were sentenced to huge fines. In January 2017, the Shanghai P2P platform "Corn Wealth Management" illegally absorbed public deposits and disrupted market order. Related personnel were sentenced to fixed-term imprisonment and refunded illegal proceeds. The Hebei Provincial Government lacks supervision experience and low penalties have caused some platforms to risk violations. In the past three years, Hebei platform problems have frequently occurred. For example, in August 2017, " Bao Xin Financial Service" went off the road, in June 2019, "Qi Cai Gezi" Hebei Shijiazhuang platform lost contact, and in July 2019, " Ji Jinbao" was suspected of illegally collecting public deposits. The occurrence of these incidents exposed loopholes in Hebei Province's credit investigation and government supervision, which made many institutions and companies lose confidence in the financing environment of Hebei Province.

3.3 Low investment recognition of P2P online lending platforms in Hebei Province

3.3.1 Platform development indicators are below average

The size of the transaction volume reflects the platform's ability to attract investors and borrowers, and is an important indicator of the platform's development prospects [16]. The scale of P2P online lending platforms, the number of borrowers, and the amount of transactions will all affect this indicator. As of the end of December 2019, among the top 100 companies in terms of turnover, there are 35 companies in Beijing, 16 companies in Shanghai, 26 companies in Guangzhou, and no company in Hebei Province. It can be seen that the activity and competitiveness of the Hebei platform is weak, and the development capability of the platform is poor. The analysis shows that the Hebei platform is small in scale, the number of borrowers is small, and the companies that come to trade are mostly small businesses, which are important reasons for the gap. The data sharing mechanism has not yet been established is also a reason,

the lack of effective communication between platforms.

3.3.2 The comprehensive ranking of the platform is low

Generally speaking, the choice of platforms for companies with investment and financing needs depends largely on the comprehensive ranking of the platforms. As of the end of 2019, 9 of the top 10 platforms in the comprehensive index were in Beijing, Shanghai, and Guangzhou. It can be seen from Table 2 that due to the late start and small scale, the top five operating platforms in Hebei Province are at the bottom of the comprehensive ranking. Hebei platform development indicators are below average, and enterprises have low recognition and satisfaction with it. Besides market information and platform information cannot be effectively connected through the big data platform, so the platform provides fewer types of services, poor quality, and lack of competitiveness. These disadvantages lead to the lower comprehensive ranking of the platform, which restricts the further development of the platform.

Tab.3 Comprehensive ranking of Hebei's top five platforms in China

P2P platform	Hebei Province Ranking	National Comprehensive Ranking
En ke Edai	1	193
Ben Baodai	2	214
Xin Tou Zaixian	3	311
Yi Mindai	4	334
Ou ke Puhui	5	375

3.4 The industry development environment is poor and the cooperation mechanism has not yet been established

In 2019, the online lending industry accelerated the withdrawal of problematic P2P online lending platforms, and strictly required all platforms to disclose information to reduce the risk of Internet financial transactions. The development of platforms in Beijing, Shanghai, and Guangzhou is relatively developed, and the industry's compliance and rectification efforts are strong. More than 30% of the platforms can meet the standard, such as obtaining an ICP license for business operation and timely docking with the bank depository system, the platform has a better development atmosphere and can be more recognized by customers. Due to the weak industry supervision and small development opportunities in Hebei Province, the industry development environment is poor, and the actual operating location of the platform registered in Hebei Province is often in the Beijing, Shanghai, and Guangzhou regions. Qing Yidai, the largest platform that once accounted for 90% of the total transactions in Hebei Province, also plans to move to Beijing in 2019 to seek a better development environment.

P2P online lending platforms in Hebei Province have poor qualifications, high market risks, and lack of a sound cooperation mechanism between platforms. It is difficult to grow quickly in a short time. In

addition, Hebei Province is close to Beijing and Tianjin. With the continuous deepening of regional economic integration policies, the cooperation between Hebei Platform and Beijing and Tianjin should have become closer. However, the actual situation is that the platform moved from Hebei Province to Beijing and Tianjin for independent development, resulting in a significant decrease in the strength of the platform in Hebei Province. In addition, because the P2P industry in Hebei has not yet established a resource sharing mechanism based on big data, the management model is relatively backward. Therefore, the development of the Hebei platform lags behind that of Beijing and Tianjin in terms of platform strength and service scope. There are also certain difficulties in establishing an effective cooperation mechanism and playing the leading role of Beijing-Tianjin radiation.

3.5 Due to the limitation of regional talent training, platform talent support is low

According to the P2P online lending platform executives information disclosed by Wang Dai Tianyan, we sorted out the colleges and universities of the top 10 platform executives in Beijing, Shanghai, Guangzhou and Hebei Province. Among them, there are 62 executives in Beijing, 58 executives in Shanghai, 35 executives in Guangdong, and 31 executives in Hebei. As shown in Table 3, we can see that in the platforms of Beijing, Shanghai, and Guangzhou, most senior executives graduated from 985, 211 or foreign institutions, with a relatively high level of education. However, the senior executives of Hebei platform have low comprehensive strength and low overall education level, and their personnel quality and management level are restricted.

Tab.4 Statistics of top ten platform executives graduated from Beijing, Shanghai, Guangzhou and Hebei Province

Graduated school	Beijing	Shanghai	Guangzhou	Hebei
(1) Graduated from 985 University	32	24	15	3
(2) Graduated from 211 University	1	2	0	2
(3) Study abroad	7	8	5	1
(1)+(2)+(3)Percentage	64.50%	58.62%	57.14%	19.35%

The Hebei platform is in short supply of high-level talents, the demand is large, and the talent supply is insufficient. The primary reason is that the scientific research resources of colleges and universities in Hebei Province are far lower than those in the Beijing, Shanghai and Guangzhou regions, and the talent support is weak. Regional talent gathering will have a positive role in promoting regional economic growth. There are 14 985 colleges and 39 211 colleges in Beijing, Shanghai and Guangzhou, while Hebei Province has only one 211 college with coordinates outside the province. Another reason is that the talent introduction policies of different regions are different. The talent policies of Beijing, Shanghai and Guangzhou mainly include talent introduction, talent training and development, talent incentives, and talent management [17]. The talent introduction policies are more attractive than Hebei Province. In

addition, the financial industry has a strong dependence on big data. There is a gap in Hebei's data analysis talents, and to a certain extent high-level talents are even more in short supply

IV. Measures to accelerate the transformation and upgrading of P2P online lending platforms in Hebei Province

4.1 Innovate cooperation mechanisms and incorporate big data technology

To speed up the transformation and development of P2P online lending platforms in Hebei Province and lay a solid foundation for platform construction, we should seize the opportunities for coordinated development in Beijing, Tianjin and Hebei, and innovate platform cooperation mechanisms. First, we should integrate the advantages of big data technology with all aspects of Beijing-Tianjin-Hebei Internet finance. According to the development status and future plans of the three places, formulate practical cooperation plans to promote the sound development of P2P platforms. Beijing-Tianjin-Hebei joint efforts to build the P2P platform can not only improve the Internet financial industry environment, increase the credibility of the platform, but also improve the ability to deal with financial risks. This can drive the development of the Hebei platform, make up for economic shortcomings, and gradually advance the strategic goal of the integrated development of Beijing-Tianjin-Hebei. Second, the Beijing-Tianjin-Hebei region should strengthen talent exchanges. In Hebei, there is a shortage of information talents. Inviting outstanding talents from the Beijing-Tianjin area and holding regular experience exchange lectures can greatly help the development of the Hebei platform; Finally, the Beijing-Tianjin-Hebei region should firmly grasp the development trend of big data and establish a resource sharing mechanism. This can strengthen the communication and cooperation of the Beijing-Tianjin-Hebei platform and avoid vicious competition. Promoting resource sharing and taking advantage of the platform can promote the common development of platforms in Beijing, Tianjin and Hebei, thereby promoting the coordinated development of regional economies.

4.2 Clever use of big data analysis to improve policies and regulations

The imperfection of relevant policies and regulations in the Internet finance industry restricts the further innovation and development of P2P online lending platforms. Hebei Province needs to pay attention to the above issues. First, in the early stages of improving policies and regulations, big data should be used for research. We should obtain a large amount of P2P platform data, and perform real-time and dynamic analysis of the obtained data to achieve "let the data speak". In this way, policies and regulations can be targeted, and we can implement stricter supervision on the Internet finance industry. Second, we must fully demonstrate legal policies. Reflect equality and justice in all aspects of policy making. And then protect the legal rights of various business entities effectively. Third, senior management should vigorously promote the implementation of laws and policies. Use big data technology to monitor platform operation in real time. For illegal platforms, penalties for violations must also be increased. For platforms that violate the law, penalties for violations should also be increased to create a stable social environment for the development of Internet finance. Finally, credit investigation is an

important cornerstone of the healthy development of Internet finance. To improve the construction of the social credit system, we can use the advanced technology of Internet big data and the cloud to help the construction of the credit system. Use big data to achieve full coverage, interconnection and dynamic management.

4.3 Make full use of big data technology and increase platform support

To increase investment recognition, it is far from enough to rely on the platform itself, and the government should also rely on it. The government should strengthen guidance and support for platform operations, and increase support in terms of funding and policies. Doing so can avoid risks to the greatest extent, accelerate the speed of platform transformation and development, and improve the quality of development. First, the government should issue relevant policies as soon as possible, strengthen the guidance of big data technology, provide policy support for the platform, and reduce the burden of platform operation. Second, we should speed up the establishment of a P2P platform big data sharing mechanism and increase the degree of data open sharing. Accelerate the establishment of a platform cooperation mechanism within the province and a Beijing-Tianjin-Hebei platform cooperation mechanism to promote cooperation between all parties. Then, the government should cooperate with the platform to strengthen the cultivation and guidance of P2P online lending platforms in Hebei Province. We can give full play to the advantages of big data technology and effectively connect market information with internal platform information. Encourage platforms to strengthen business innovation, establish industry benchmark platforms, and promote standardized construction of platforms. Finally, the government needs to introduce a third-party depository in the risk management system to separate working capital from borrowing funds [18]. Promote the connection between the platform and bank depository, so that all transactions can be carried out under the supervision of the banking system to ensure the authenticity of transactions. This will directly prevent the platform from running away with funds and avoid the use of deposited funds.

4.4 Use data analysis to innovate management models

It is necessary to encourage platforms to join industry associations, maximize the supervision and linking role of industry associations, and make full use of industry associations for information communication, information transmission and effect feedback between the platform and the supervisory level [19]. First of all, industry associations should innovate management models and closely integrate with big data. We can set up a big data department to improve the efficiency of the use of market information. Only by collecting and sorting out internal industry information in a timely and efficient manner can information sharing between platforms be ensured. Industry management uses big data technology to provide reliable data support for industry operations, thereby improving industry management efficiency and quality. Second, industry associations should deepen cooperation among various stakeholders. For example, promote Hebei platforms, and strengthen strategic cooperation with Beijing and Tianjin. Building an internal network system is also a good way to promote the common development of all parties. We must inject fresh blood into the Internet finance industry in Hebei Province

based on win-win cooperation. Finally, the industry should strictly regulate its own behavior and promote industry self-discipline. Use data analysis to integrate industry finance, products, human resources and other aspects. Standardize the behavior of industry practitioners, give full play to the function of industry self-regulation, and realize the healthy development of the industry.

4.5 Improve the talent incentive mechanism and focus on the training of data management talents

The integration strategy of Beijing-Tianjin-Hebei is prone to uneven distribution of talents. Most high-level talents in the industry choose places where P2P online lending platforms are well developed such as Beijing and Tianjin. In the era of big data, the insufficient supply of high-level talents has seriously hindered Hebei's economy and thus restricted the development of Internet finance. It is also an important reason for the collapse of a large number of platforms. First of all, the P2P platform should focus on the development of human resources. In the context of big data, we need to increase the training of data management talents. Traditional finance disciplines or functions can no longer meet the rapid development of the Internet finance industry. In the era of financial technology, compound financial talents need to have risk awareness, rule of law thinking and Internet thinking [20]. At the same time, the platform also needs to expand the scope of talent introduction. Not limited to 985 colleges, we should also vigorously attract outstanding graduates from double first-class universities to join the work, and jointly contribute to the development of the platform. Second, the P2P platform should improve the talent incentive system. Provide good work and promotion opportunities for data management talents. Because good welfare benefits can enhance employees' sense of belonging and honor. So as to attract more quality talents. Finally, the platform should innovate the talent training model, cooperate with universities, provide internship opportunities for school students, and provide professional training and practical guidance. This can reserve data professionals for the platform and enrich the reserve talents of the P2P industry.

V. Summary and Outlook

From 2017 to 2019, China's P2P platform frequently encountered problems, and its development continued to decline. In addition, since the outbreak of the epidemic in 2020, the Chinese economy has been severely impacted, and the overdue rate of platforms has been increasing. There are high financial risks. Many investors lack confidence in the platform and withdraw or stay away from the P2P platform. P2P platform development is in trouble. This article compares the platform of Beijing, Shanghai, Guangzhou and Hebei based on the data of Wang Dai Zhijia, and analyzes the development status of Hebei platform in detail. Focus on analyzing the problems existing in the development of the platform, and conduct special rectification on it. Using big data to propose clearer solutions for the supervision and development of the Hebei platform to accelerate transformation and upgrading. At the same time, we must also accelerate the improvement of the long-term mechanism for the standardized development of China's P2P online lending industry, so that it can better return to the essence of inclusive finance.

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