

Operational Risk Challenges and Coping Strategies for Internet Financial Information Intermediary Platforms Based on Big Data in the Context of Digital Finance

Jiaqi Wang^{1,*}, Yunfeng Zhang², Xiaolong Jiang¹, Ge You³, Chao Deng⁴, Yizhou He⁵

¹Faculty of Logistics, Guangdong Mechanical & Electrical Polytechnic, Guangzhou, Guangdong, China

²Continuing Education College, Guangzhou City Construction College, Guangdong, Guangzhou, China

³School of Literature and Media, Nanfang College Guangzhou, Guangzhou, Guangdong, China

⁴Guangdong Rural Credit Union, Guangzhou, Guangdong, China

⁵School of Management, Jinan University, Guangzhou, Guangdong, China

*Corresponding Author.

Abstract: The research delves into the operational impacts of the digital finance environment on Internet Financial Information Intermediary Platforms in the context of big data. It identifies the sources and characteristics of operational risks within these platforms and proposes tailored risk coping strategies accordingly. Facing challenges such as industry complexity, regulatory shifts, and internal management issues, these platforms encounter significant risks that threaten their stability and long-term growth. To address these risks, specific recommendations are offered, including the establishment of a compliant management system, optimization of fund management and risk control procedures, dynamic strategy adjustments, and the utilization of big data for risk assessment and prevention. These strategies aim to enhance risk prevention capabilities, mitigate economic losses, and strengthen investors' confidence and market competitiveness. By implementing these strategies, the platforms can better navigate the volatile financial environment and achieve sustainable development. This research offers valuable insights for risk management in Internet Financial Information Intermediary Platforms.

Keywords: Digital Finance; Internet Financial Information Intermediary Platforms (IFIIPs); Operational Risks; Big Data; Coping Strategies

1. Introduction

Amidst the wave of Digital Finance, Internet Financial Information Intermediary Platforms (IFIIPs) have gradually emerged as crucial components in the financial ecosystem, leveraging advanced cloud computing and artificial intelligence technologies. These platforms, with their unique business models and immense market potential, facilitate direct and efficient lending bridges between lenders and borrowers through diversified processes such as data collection, publication, evaluation, interaction, and matching using Big Data and machine learning techniques. The rapid enhancement of their innovative iteration capabilities has not only optimized financial service processes but also significantly boosted the activity and inclusivity of financial markets.

However, with the rapid growth of the industry, IFIIPs are also facing increasing operational risks. These risks primarily stem from the complexity and volatility of the internet finance industry, as well as limitations in the platforms' understanding of the transactional environment, business scale, and client needs. Factors such as immature market environments, uncertain regulatory policies, and complex internal management pose potential risks during platform operations. Any misstep in any of these areas could trigger a chain reaction, leading to significant economic losses and reputational damage. For instance, crises at renowned platforms like Lending Club in the United States and Hongling Capital in China serve as powerful

reminders of this reality.

Therefore, a thorough investigation of operational risks within IFIIPs is crucial not only for ensuring the platforms' stable operations but also for providing valuable insights for the stability and development of the entire financial market. Effective risk management strategies can not only mitigate the platforms' economic loss risks but also enhance decision-making efficiency among

management and investors' confidence levels, ultimately strengthening the platforms' market competitiveness and sustainable development capabilities. This study aims to systematically analyze the operational risks of IFIIPs in the digital finance environment, explore corresponding coping strategies, and provide guidance for the platforms' sustainable development.

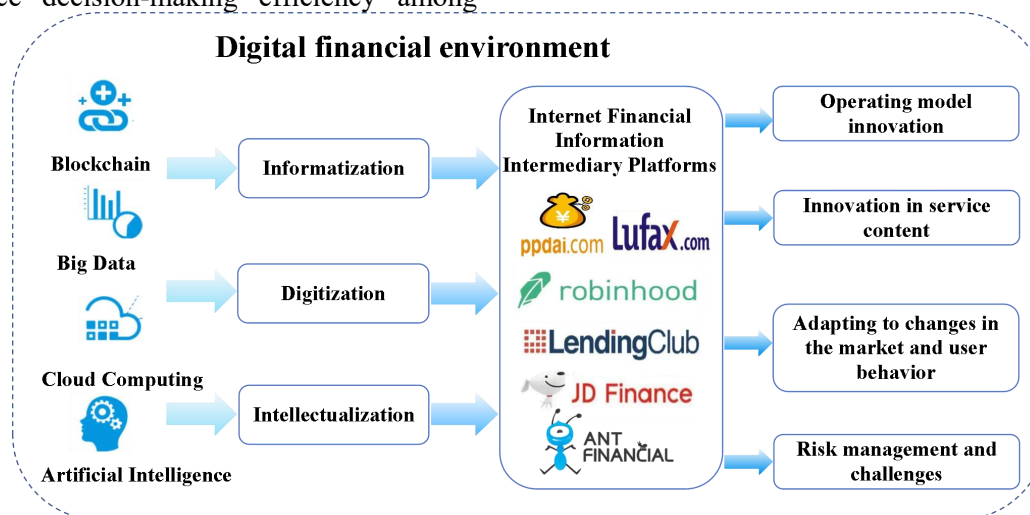


Figure 1. The Impact of the Digital Finance Environment on the Operations of IFIIPs

2. Literature Review

The paper aims to delve deeply into the intricacies of the impact of the digital finance environment on the operations of IFIIPs, analyze the operational risks they face, and propose corresponding countermeasures. Subsequently, we will concentrate on the pertinent research in these domains.

Driven by digital finance technology, IFIIPs have not only upgraded their business models but also significantly optimized their service quality [1]. Meanwhile, digital technology is reshaping the business models of these platforms, offering them infinite possibilities [2]. However, this transformation also brings regulatory challenges, necessitating the establishment of a comprehensive compliance management mechanism to address potential risks [3]. Against this backdrop, operational risk management for IFIIPs is particularly crucial [4,5].

In practice, IFIIPs, essentially function as "information brokers," often undergo alienation and evolve into "credit intermediaries." This transformation, through operations like debt securitization, triggers a series of operational risks [6,7]. Moreover,

factors like poor platform operations, insufficient paid-in registered capital, and a relatively short history make them more susceptible to regulatory policies, thereby increasing the risks of bank runs on the platforms and volatile trading volumes [8,9].

Apart from the operational issues inherent in the platforms, the trading practices of investors and borrowers also exert a profound impact on operational risks. Behaviors such as over-borrowing and multiple borrowing by borrowers, alongside strategic defaults and panic debt evasion, pose severe threats to the stability and sustainability of the platforms [10,11].

In addressing operational risks, both academia and industry are actively exploring innovative methods. Among them, the use of evolutionary game theory in establishing a revenue model for platforms and regulators offers a fresh perspective on platform risk management [12]. Additionally, by mapping internal and external information time series to overall platform risk intelligence, we can more comprehensively reveal the nature of risks, supporting risk identification and assessment [13]. Furthermore, the effective application of system dynamics models can reflect the

dynamic changes of investors, borrowers, and interest rates in online lending platforms, providing a powerful tool for accurately detecting operational risks [14].

Regarding borrower default risk management, academia has proposed various credit scoring models and methods. These models not only effectively measure borrowers' credit scores and ratings, providing quantitative evidence for risk management [15,16], but also offer a scientific reference for effectively addressing platform operational risks through in-depth analysis of borrowers' repayment status from multiple dimensions [17,18].

In conclusion, these theories and methods have not only enriched the theoretical framework for operational risk management of IFIIPs but also provided solid scientific foundation for risk response and decision-making in practice. However, further research is needed to clearly define the impact of the digital finance environment on IFIIP operations, clarify the operational risks faced by these platforms, and propose effective countermeasures.

3. Impact of the Digital Finance Environment on the Operations of IFIIPs

In the digital finance environment, IFIIPs have emerged as a remarkable driving force for innovation within the financial services industry. These platforms efficiently utilize internet technology to facilitate the smooth circulation and interaction of financial information, while simultaneously fulfilling the escalating demand for financial services among consumers through innovations in operational models and service offerings. The digital finance landscape, characterized by its highly informative, digitalized, and intelligent nature, lends substantial technical backup and lucrative market prospects to the growth of IFIIPs. This evolution has led to a reinterpretation of the platforms' operational frameworks and service portfolios, thereby necessitating a close alignment with market shifts and user behaviors to adeptly handle diverse risks and challenges encountered in this endeavor. The influence of the digital finance milieu on IFIIPs' operations is visually represented in Fig. 1.

3.1 Operating Model Innovation

The digital finance environment has spurred

IFIIPs to transform their traditional operating models. These platforms no longer exist solely as information intermediaries but are gradually expanding their service scope into broader financial domains. Leveraging big data analytics and artificial intelligence technology, platforms can more accurately assess borrowers' credit status and provide personalized lending solutions. This not only mitigates financial risks but also enhances service efficiency. Such a transformation bolsters the platforms' competitiveness and offers consumers a more convenient and efficient financial service experience. Taking PPDai as an example, its purely online operating model, integrated with big data and AI technology, enables a comprehensive evaluation of borrowers' multi-dimensional data. This improves loan matching efficiency and risk mitigation. This flexible operating model caters to users' needs for rapid fund turnover while providing diverse investment options, thus achieving remarkable results in the market. According to statistics, as of April 9, 2024 (<https://www.paipaidai.com/>), PPDai has been operating for 16 years and 296 days, with a cumulative registered user base of 149.4 million and a total lending amount reaching RMB 692.566 billion. These achievements fully demonstrate the success of PPDai's operating model innovation in the digital finance landscape.

3.2 Innovation in Service Content

Driven by digital finance, IFIIPs continuously introduce novel services to adapt to market changes. These services not only cover traditional lending business but also extend to various financial domains such as payment, investment, and insurance. Through the application of technologies such as cloud computing and blockchain, these platforms are able to achieve cross-temporal and cross-domain integration of financial services, providing consumers with a more convenient and secure financial experience. Lufax.com serves as a prime example. Its service offerings encompass not just traditional lending, but also span areas like payment, investment, and insurance. Furthermore, it employs blockchain technology to ensure transparency, traceability, and tamper-resistance in asset transactions. This diversified approach to service innovation not

only caters to the multifaceted financial needs of users but also opens up a wider range of income streams for the platform.

3.3 Adapting to Changes in the Market and User Behavior

The emergence of digital finance has triggered profound shifts in user behavior and market trends. Influenced by big data and social media, user demands for financial services have become more diversified and personalized. This urges IFIIPs to closely monitor market dynamics and adjust their operational strategies in a timely manner, in order to meet the evolving needs of users. Meanwhile, with the continuous advancement of financial technology, platforms also need to constantly explore new technology applications and business models to maintain their leading positions in the fierce market competition. Taking Robinhood as an example, the platform has attracted a large number of young investors by offering zero-commission stock trading services. As user needs evolve, Robinhood has introduced investment educational tools and social features to satisfy users' needs for knowledge and interaction. Furthermore, the platform has incorporated AI and machine learning techniques to optimize user experience and risk management, catering to personalized financial service needs.

3.4 Risk Management and Challenges

The distinct features of the digital finance environment encompass the digitization of financial services, an immense volume of financial data, and real-time financial transactions. These attributes have transformed both the conventional modalities and workflows of financial services, thereby significantly altering the operational paradigms and risk profiles associated with IFIIPs. Consequently, these platforms must consistently refine their risk management frameworks and bolster their capabilities in risk identification, assessment, and mitigation, to address the intricacies and uncertainties inherent in the digital finance landscape. For instance, Lending Club confronts a multitude of risks, including compliance, business scale, platform transactions, borrower credit quality, and industry correlation. Compliance risks oblige the platform to adhere rigorously to regulatory guidelines. Business scale risks

escalate proportionately with expansion. Platform transaction risks encompass technical security and data safeguarding measures. Borrower credit quality risks have a direct bearing on bad debt ratios and profitability, while industry correlation risks are subject to fluctuations in the financial markets. Hence, platforms must undertake comprehensive risk management endeavors to uphold steady operations.

In essence, the digital finance milieu profoundly influences the operations of IFIIPs. In the face of this evolution, platforms must grasp opportunities and proactively tackle challenges to foster sustainable growth and enhance their service delivery to a broader user base.

4. Analysis of Operational Risks faced by Ifiips

As digital finance gains prominence, IFIIPs have emerged as pivotal conduits for financial intermediation. Nevertheless, despite the convenience and efficiency afforded by technological advancements, these platforms must contend with escalating operational risks. Among these, compliance risk, business scale risk, platform transaction risk, credit quality risk, and industry-related risk constitute the five pivotal risk areas. In the forthcoming sections, a comprehensive analysis of each of these risk factors is presented.

4.1 Compliance Risk

In the digital finance environment, the compliance risk faced by IFIIPs is particularly prominent, with the tightening of regulatory policies being a core factor. The tightening of regulatory policies signifies that IFIIPs must adhere more strictly to relevant laws, regulations, and supervisory requirements. This mandates that platforms comply with regulatory standards in areas such as business operations, product design, and risk control; failure to do so could result in severe consequences, including legal penalties and market prohibition. For instance, with increasingly stringent requirements regarding capital adequacy ratios, leverage ratios, and information disclosure, platforms must continuously adjust their operational strategies to meet regulatory demands.

Furthermore, the tightening of regulatory policies has led to an increase in compliance

costs. To meet regulatory requirements, platforms need to invest more resources and efforts in compliance management, including establishing compliance teams, improving compliance systems, and conducting compliance training. These increased compliance costs may compress platforms' profit margins and even pose survival pressures on smaller and weaker platforms.

4.2 Business Scale Risks

In the context of the digital finance environment, the correlation between operational risks and business scale becomes increasingly prominent for FIIPs. The digital finance environment, characterized by its efficiency, convenience, and cross-temporal nature, provides fertile ground for the rapid development of Internet finance platforms. However, it also gives rise to new characteristics of operational risks.

Initially, the expansion of business scale poses significant challenges to the risk tolerance of FIIPs. As the business grows, platforms must manage a larger volume of funds and user data, demanding enhanced risk identification, assessment, and control capabilities. However, practical limitations in technology, manpower, and resources often hinder the risk tolerance from keeping pace with business growth, thereby elevating operational risks.

Furthermore, alterations in business scale profoundly affect the operational stability of these platforms. The increasingly volatile and uncertain digital finance environment poses substantial challenges to maintaining operational stability. An enlarged business scale could potentially expose loopholes in fund management and risk control, leading to operational instability or even risk events. Conversely, a reduction in business scale might result in the loss of market share and diminished user trust, both of which undermine the platform's stable operation.

4.3 Platform Trading Risks

In the digital finance environment, FIIPs serve as bridges between lenders and borrowers, and their operational risks are deeply influenced by platform trading risks. These trading risks are closely related to factors such as the number of lenders and borrowers, trading volume, interest rates, and loan terms.

Firstly, the number of lenders and borrowers directly determines the trading activity on the platform. When the number of lenders increases, the supply of funds on the platform increases accordingly, making it easier for borrowers to obtain the required funds. Conversely, if the number of borrowers increases while the number of lenders is insufficient to meet their funding needs, borrowers may face the risk of insufficient fundraising, thereby affecting the trading stability of the platform.

Secondly, trading volume is an important indicator for measuring the trading scale of the platform, reflecting the liquidity and market size of funds on the platform. The trading volume is influenced by the investment interest rate, borrowing interest rate, and loan term. When the investment interest rate rises, lenders may increase their investments in anticipation of higher returns, thereby driving up the trading volume. Similarly, changes in the borrowing interest rate can also affect borrowers' willingness to borrow and the size of their loans, thereby affecting the trading volume.

Furthermore, the interest rate and loan term of the underlying asset are among the most important factors for both lenders and borrowers. The interest rate directly determines the returns for lenders and the costs for borrowers, while the loan term is related to the efficiency of capital use and risk. In the digital finance environment, the investment interest rate, borrowing interest rate, and loan term are interrelated. Maintaining a balance and coordination among these factors is crucial for preserving the trading stability of the platform and reducing operational risks.

Finally, changes in the number of lenders and borrowers not only directly affect the trading volume but also have a chain reaction on the platform's operational risks. When the number of lenders decreases, the platform's liquidity may decrease, potentially leading to a decline in trading volume and an increase in the platform's operational risks. Conversely, if the number of borrowers increases significantly while the number of lenders is insufficient to meet their demands, the platform may face default risks, further exacerbating operational risks.

4.4 Borrower's Credit Quality Risk

In the realm of digital finance, FIIPs bridge the gap between lenders and borrowers, encountering significant challenges related to client quality, especially the credit quality risk posed by borrowers. This credit risk is pivotal in determining the platform's operational stability and is a key aspect in evaluating its overall risk profile.

The creditworthiness of borrowers plays a pivotal role in determining the platform's exposure to non-performing loan risk. If borrowers exhibit poor credit quality, it indicates a heightened risk of default or the emergence of problematic loans, thereby elevating the operational risks faced by FIIPs. The emergence of such loans can lead to financial losses, damage the platform's reputation, and undermine market trust, ultimately impacting its long-term viability.

Moreover, a borrower's credit score serves as a vital metric for assessing their creditworthiness. Within the digital finance landscape, platforms leverage data such as historical overdue payments, total outstanding loans, past successful borrowings, and timely repayments to formulate a comprehensive credit scoring system. This data provides valuable insights into a borrower's repayment capacity and willingness, serving as a foundation for evaluating credit risk.

A robust credit score can significantly influence a borrower's loan terms on the platform. A favorable score may result in more favorable loan conditions, including higher loan amounts, extended repayment periods, and reduced interest rates. Conversely, a lower score may restrict borrowing options or result in less advantageous terms. This system is instrumental in mitigating credit risk but demands sophisticated credit scoring models and robust risk management from the platform.

Nevertheless, managing credit risk in the digital finance sphere presents unique challenges. While advancements in big data and artificial intelligence enhance credit assessment capabilities, they also introduce complexities related to data privacy and security. Additionally, the global and instantaneous nature of digital finance amplifies the contagion and spread of credit risk, potentially impacting the entire platform or even the broader industry in the event of a

risk incident.

4.5 Industry's Related Risks

In the digital finance environment, the operational risks faced by FIIPs not only stem from internal factors within the platforms but are also closely linked to the related risks of the entire Internet finance industry. The formation and evolution of industry-related risks have a profound impact on the operational stability, business scale, and trading activities of the platforms.

Firstly, changes in the number of problematic platforms in the Internet finance industry are one of the important indicators for assessing industry-related risks. An increase in the number of problematic platforms signifies more uncertainty and risks in the entire industry, which may lead to a decline in lender and borrower confidence in the industry, thereby affecting the monthly trading volume and borrowing rates of the platforms. Conversely, a decrease in the number of problematic platforms could indicate an improvement in the overall credit status of the industry, favoring the stable development of the platform's business.

Secondly, variations in the total number of platforms reflect the development trend and competitive landscape of the Internet finance industry. As the total number of platforms increases, market competition may intensify, prompting platforms to adopt more risk-taking behaviors to compete for market share, thereby elevating industry-related risks. Conversely, a decrease in the total number of platforms might suggest industry consolidation and optimization, enhancing the overall operational efficiency and risk management of the industry.

Furthermore, there is a close feedback relationship between changes in the industry's monthly trading volume and monthly borrowing rates, and the operational risks faced by platforms. As the industry's monthly trading volume grows, platforms may encounter more trading opportunities and revenue sources, but they also need to address greater fund flows and risk management challenges. Changes in monthly borrowing rates directly affect borrowers' cost of borrowing and lenders' income expectations, thereby influencing the platform's fund supply and demand balance and operational stability.

In summary, the operational risks of IFIIPs are complex and multifaceted issues. Conducting in-depth research from multiple perspectives and levels can aid in proposing effective coping strategies and methods, providing theoretical support and practical guidance for the steady development of the platforms.

5. Coping Strategies

5.1 Establishing a Compliance Management System: Tackling Regulatory Challenges and Guaranteeing Stable Operations

Faced with tightening regulatory policies and the challenges posed by compliance risks, IFIIPs must devise a range of strategies to ensure compliant operations, reduce risks, and uphold a steady market position.

To begin with, it is imperative for IFIIPs to establish a robust compliance management system. This entails the creation of a specialized compliance department tasked with monitoring and analyzing evolving regulatory policies. Its core objective is to ensure that the platform's operations are always aligned with legal and regulatory mandates. Moreover, IFIIPs need to refine their internal compliance frameworks, outlining clear compliance benchmarks and operational guidelines for various business functions. This standardization aims to regulate employee conduct and prevent any deviations from prescribed norms.

Moreover, fostering stronger communication and collaboration with regulatory bodies is crucial. IFIIPs can stay abreast of policy directions and compliance expectations by engaging in regular reporting and attending regulatory forums. This allows for timely adjustments to operational strategies, ensuring alignment with regulatory policies. Additionally, IFIIPs must proactively respond to regulatory inspections and guidance, promptly addressing any identified issues to uphold compliant operations.

Beyond this, IFIIPs must invest in comprehensive compliance training initiatives. Regular compliance training sessions are essential to elevate employees' understanding of compliance and risk, encouraging them to adhere to compliance standards in their daily tasks and sidestep any violations. Complementing this, a compliance incentive system should be established to recognize and

reward employees who exhibit exemplary compliance practices, fostering a positive compliance culture within the organization. Lastly, IFIIPs must strategically plan their compliance expenditures. While adhering to regulatory requirements, IFIIPs should strive to minimize compliance costs through efficient operational workflows and enhanced productivity. This approach helps to alleviate undue financial pressures on profit margins. Furthermore, seeking external partnerships to share the burden of compliance costs with third-party service providers can foster a mutually beneficial environment.

5.2 Paid-in Registered Capital and Risk Reserve: Managing Business Scale Risks Under Dual Guarantees

To address business scale risks, the adequacy of paid-in registered capital and risk reserve funds becomes crucial. The amount of paid-in registered capital directly reflects the IFIIPs's capital strength and risk resilience, while the establishment of a risk reserve can provide a certain financial guarantee for the IFIIPs in the event of risk incidents. The adequacy of these two aspects can effectively enhance the operational stability and market competitiveness of the IFIIPs.

Furthermore, the trading volume and its growth trend, as important indicators reflecting the operational stability of the IFIIPs, are closely related to business scale risks. An increase in trading volume signifies the expanding market share and influence of the IFIIPs, but it also brings more operational risks. Therefore, the IFIIPs need to pay close attention to the changing trends in trading volume and adjust operational strategies in a timely manner to ensure operational stability.

Additionally, IFIIPs must refine their fund management and risk control processes. During business expansion, IFIIPs need to prioritize the safety and liquidity of funds, establishing robust fund management systems. Simultaneously, refining risk control processes ensures compliance with regulatory requirements throughout expansion, preventing operational instability or risk events due to management gaps.

Lastly, IFIIPs should devise well-considered business development plans. When pursuing expansion, IFIIPs must carefully assess their risk tolerance and market conditions, shaping

strategies that balance growth with risk mitigation. This approach averts reckless expansion and cut-throat competition, maintaining a harmonious equilibrium between business growth and risk management.

5.3 Platform Trading Risk Management: Dynamic Adjustment Strategies and Risk Early Warning and Response Mechanisms

IFIIPs, which serve as bridges between lenders and borrowers, are profoundly impacted by trading risks in their operations. To address these risks effectively, consider the following strategies.

Dynamic Management of Lenders and Borrowers: IFIIPs can leverage real-time monitoring of changes in lender and borrower counts to adjust their operational approaches, maintaining a harmonious capital supply and demand balance. For instance, in scenarios where borrower counts escalate and lender numbers dwindle, platforms can entice more lenders by tweaking borrowing rates or refining loan offerings, thereby accommodating the financial needs of borrowers.

Enhanced Trading Volume Oversight and Prediction: Trading volume serves as a pivotal indicator in gauging a platform's trading scale and liquidity. IFIIPs can harness mathematical models and analytical tools for real-time monitoring and forecasting of trading volume trends, allowing for timely adjustments in capital allocation and risk management practices. Moreover, platforms must remain vigilant regarding shifts in investment and borrowing rates, alongside their influence on trading volumes, to uphold reasonable interest rates and maintain market competitiveness.

Optimization of Interest Rates and Term Settings: Rates and terms constitute a pivotal aspect for both lenders and borrowers, directly impacting a platform's transactional stability and risk profile. IFIIPs should align their interest rate and term strategies with prevailing market conditions and user preferences, ensuring efficient capital utilization and manageable risks. Additionally, establishing a nimble mechanism for rate and term adjustments proves crucial in adapting to evolving markets and user demands.

Implementation of Risk Early Warning and Response Mechanisms: Through continual

monitoring of fluctuations in lender and borrower counts, trading volume variability, and adjustments in rates and terms, IFIIPs can promptly pinpoint impending risk factors and implement appropriate countermeasures. For instance, in cases where lender counts dip or trading volumes decline, platforms can lure users back via promotional offers or amplified marketing initiatives. Conversely, when borrower numbers surge and lender counts are inadequate, platforms can mitigate default risks by modifying lending policies or engaging guaranty institutions.

5.4 Credit Quality Risk Management: Data-Driven Risk Assessment and Prevention

IFIIPs play a pivotal role in managing credit quality risks. These platforms are encouraged to establish and refine credit scoring mechanisms that leverage big data and artificial intelligence technology. This involves collecting multi-dimensional data, such as borrowers' historical repayment records and borrowing behaviors, to develop a comprehensive and scientifically sound credit evaluation model. By accurately portraying the credit status of borrowers, IFIIPs can provide lenders with reliable credit references, thereby mitigating the risk of non-performing loans.

To bolster credit risk management, IFIIPs are advised to implement a robust risk management system. This encompasses regular assessments of borrowers' credit risks, imposition of restrictions or adjustments to borrowing conditions for high-risk borrowers, and the establishment of a risk warning mechanism to promptly identify and address potential risks. These measures effectively curtail borrowers' credit quality risks, ensuring the security of lenders' funds.

When utilizing big data and AI technology for credit evaluations, IFIIPs are reminded of the utmost importance of data security and privacy protection. Implementing cutting-edge data encryption technology and stringent access control mechanisms is crucial to guarantee the safety and privacy of borrower information. Additionally, adherence to pertinent laws, regulations, and compliance requirements is essential for the lawful and ethical use and processing of data.

Collaborating with the industry and sharing information prove to be invaluable strategies

in mitigating borrowers' credit quality risks. IFIIPs are encouraged to foster partnerships with other financial institutions and credit reporting agencies, aiming to construct a comprehensive credit information sharing mechanism. This collaborative effort enhances the industry's overall risk prevention and control capabilities, effectively tackling credit risk challenges.

Lastly, elevating user education and risk awareness is paramount. IFIIPs are recommended to enhance financial literacy and risk education amongst lenders and borrowers, bolstering their risk identification and prevention skills. By offering risk warnings, conducting financial knowledge seminars, and adopting similar initiatives, IFIIPs can steer lenders towards rational investments and borrowers towards honest borrowing practices, collectively preserving a robust financial ecosystem.

5.5 Coping with Industry-Related Risks: Monitoring and Strategic Adjustments

Within the realm of digital finance, the operational risks confronted by Internet Financial Information Intermediary Platforms (IFIIPs) are not solely rooted in internal factors but are intricately linked to the industry-related risks inherent in the broader internet finance sector. To adeptly tackle this challenge, IFIIPs can adopt the following strategies:

IFIIPs need to keep a vigilant eye on shifts in the number of troubled platforms within the internet finance industry. Serving as a pivotal indicator for gauging industry-related risks, variations in the count of troubled platforms offer a direct reflection of the industry's overall well-being. In the event of an increase in troubled platforms, IFIIPs are advised to elevate their risk awareness, bolster internal risk management practices, and reinforce liquidity management. This proactive approach will help them brace for potential dips in lender and borrower confidence, as well as fluctuations in monthly trading volumes and borrowing rates. Concurrently, collaborating with industry associations and regulatory bodies can be a fruitful endeavor in jointly fostering the healthy progression of the industry and mitigating industry-related risks. Moreover, a thorough analysis of trends in the total number of platforms is imperative for

IFIIPs. A surge in the total platform count signifies heightened market competition, potentially exposing IFIIPs to augmented pressure in vying for market share. In such circumstances, it is prudent for IFIIPs to devise judicious market strategies that steer clear of excessively pursuing market share while disregarding risk management. Additionally, fostering alliances with other reputable platforms can prove beneficial in collectively elevating the industry's overall operational efficiency and risk management standards, thereby diminishing industry-related risks.

Besides, IFIIPs are urged to maintain a keen focus on shifts in the industry's monthly trading volume and borrowing rates. These metrics serve as vital indicators that reflect the operational risks faced by IFIIPs. Fluctuations in monthly trading volumes and borrowing rates have a direct impact on capital flows and operational stability. Therefore, establishing a robust monitoring mechanism to track these changes in real-time is essential. Based on market shifts, prompt adjustments to business strategies can maintain a harmonious balance between capital supply and demand, ensuring operational stability. Furthermore, enhancing communication with lenders and borrowers, bolstering information transparency, and fostering market confidence are pivotal in mitigating industry-related risks.

6. Conclusion

This study conducted an in-depth exploration of the operational risks faced by IFIIPs in the context of digital finance and proposed corresponding coping strategies. Through systematic analysis of various risks encountered during platform operations, it was found that these risks primarily stem from multiple factors such as industry complexity, regulatory policy uncertainty, and internal management issues. In terms of coping strategies, this study emphasized the importance of risk identification and assessment, the establishment of a compliance management mechanism, and the management of investor and borrower behavior. The proposal of these coping strategies helps reduce the risk of economic loss for the platform, enhances the decision-making efficiency of management, boosts investor confidence, and strengthens the platform's

market competitiveness and sustainable development capabilities. However, with continuous innovations in digital financial technology and adjustments to regulatory policies, platform operational risks will continue to face new challenges. Therefore, future research should continue to focus on the impact of the digital financial environment on platform operations and explore more precise and effective risk management strategies to promote the healthy and sustainable development of IFIPs.

Acknowledgements

The research is funded by Guangdong Province Characteristic Innovation Project for Ordinary Higher Education Institutions (No. 2023WTSCX179). Additionally, it is supported by Guangdong Province Philosophy and Social Science Planning Project (No. GD24CGL35) and the High-level Talent Research Startup Fund Project by Guangdong Mechanical & Electrical Polytechnic (No. Gccrcxm-202308).

References

- [1] K. Fu and H. Zhang. Research on the Risk and Transformation of the Market Access System of P2P Net Loan Platform. *Foreign Economic Relations & Trade*, vol. 09, 2020, pp. 72-74.
- [2] S. Shen. Optimization Strategies for the Operating Model of Digital Financial Platforms. *Foreign Investment in China*, vol. 16, 2023, pp. 57-59.
- [3] X. Xiong. Research on the Transformation and Development of P2P Online Lending Platforms. *Northern Economy and Trade*, vol. 03, 2020, pp. 105-107.
- [4] R. Wang and Z. Wang. The Location Selection of Virtually Agglomerated Financial Platforms. *Journal of Sun Yat-sen University (Social Science Edition)*, vol. 06, 2021, pp. 177-190.
- [5] H. Sun. Digital Transformation of Platform Compliance Mechanisms from the Perspective of Digital Financial Risk Prevention and Control. *Financier*, vol. 10, 2023, pp. 31-33.
- [6] Q. Gong, J. Ma and M. Ban. Risks and Regulatory Implications of Fintech Development in China. *International Economic Review*, vol. 06, 2022, pp. 45-70+5.
- [7] V. Bavoso. The Promise and Perils of Alternative Market-Based Finance: The Case of P2P Lending in the UK. *Journal of Banking Regulation*, vol. 09, 2020, pp. 395-409.
- [8] G. He, X. Yang and J. Pu. Risks and Their Determinants of P2P Internet Lending Platforms in China. *Journal of Quantitative & Technological Economics*, vol. 34, 2017, pp. 44-62.
- [9] Y. Wang, X. Han, Y. Li and F. Liu. "Efficiency and Effect of Regulatory Policies on the Online Peer-to-peer (P2P) Lending Industry. *Emerging Markets Finance and Trade*, 2021. pp. 1882987.
- [10] Z. Li and X. Li. Digital Financial Inclusion and Resilience to Unanticipated Shocks: Theory and Evidence. *Journal of Financial Research*, vol. 06, 2022, pp. 94-114.
- [11] G. You, and S. Deng. Research on sustainable management strategy of microfinance company based on game theory." *Journal of Central China Normal University (Natural Sciences)*, vol. 54, 2020, pp. 1022-1032.
- [12] M. Wei, Y. Zhao and Y. Xia. The Evolution of Online P2P Lending Risk: Game Based on Platform and Supervisor. *Management Review*, vol. 33, 2021, pp. 54-65.
- [13] X. Ding. Research on Construction of Internet Finance Comprehensive Risk Intelligence System: Perspectives from Financial Intelligence Studies. *Journal of the China Society for Scientific and Technical Information*, vol. 41, 2022, pp.1280-1293.
- [14] S. Pang, C. Deng and S. Chen. System Dynamics Models of Online Lending Platform Based on Vensim Simulation Technology and Analysis of Interest Rate Evolution Trend. *Computational Intelligence and Neuroscience*, 2022. Article ID 9776138.
- [15] W. Zhang, Y. Lu and Y. Liu. The borrowers' credit risk assessment in P2P platform based on fuzzy proximal support vector machine and its application. *Systems Engineering-Theory & Practice*, vol. 38, 2018, pp. 2466-2478.
- [16] K. Fang, and Z. Chen. Credit scoring based on semi-supervised generalized additive logistic regression. *Systems*

Engineering-Theory & Practice, vol. 40,
2020, pp. 392-402.

- [17]S. Pang, X. Hou and L. Xia. Borrowers' Credit Quality Scoring Model and Applications, with Default Discriminant Analysis Based on the Extreme Learning Machine. Technological Forecasting and Social Change, 2021, pp. 165.

- [18]S. Pang, J. Wang and X. Yi. Application of Loan Lost-Linking Customer Path Correlated Index Model and Network Sorting Search Algorithm Based on Big Data Environment. Neural Computing and Applications, 2022, doi:10.1007/s00521-022-07189-2.