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The Impact and Development of Modern Internet Financial Technology on the Traditional Financial Industry

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Abstract: The financial technology industry has experienced significant growth due to the rapid integration of artificial intelligence, big data, cloud computing, Internet of Things, blockchain, and other information technologies into financial businesses. This growth can be attributed to the emergence of a new wave of scientific and technological revolution and industrial transformation. The integration has facilitated the progress of the financial technology industry. This study employs the Logistic regression model to examine the effects on the conventional financial sector. The author's research provides a detailed examination of the developmental trajectory of Internet finance and financial technology, while also assessing the present challenges faced by Internet finance and its repercussions on the conventional financial sector. Through a comprehensive examination of the text in its entirety, a concise overview of the historical and prospective financial environment might yield a more perceptive comprehension of the ramifications of emerging technologies on the conventional financial sector. The present study aims to provide a thorough examination of the paper, with the expectation that it will enable individuals to get a more lucid understanding of the overarching circumstances.

Keywords: fintech, logistic regression model, internet finance, traditional fintech industry

1. Introduction

In the contemporary era of scientific and technological advancements and industrial transformations, various information technologies such as artificial intelligence, big data, cloud computing, Internet of Things, and blockchain have been extensively incorporated into financial business operations. This integration has significantly accelerated the growth and progress of the financial technology industry [1]. In the present societal milieu, science and technology have emerged as the predominant drivers of productivity. Furthermore, within the framework of ongoing reforms and the process of opening up, the convergence of research and technology with the financial industry has emerged as the principal trajectory of development. From the vantage point of the prevailing advancement of financial technology in China, an increasing number of contemporary financial technologies and equipment have been assimilated into routine financial business operations. While this integration has yielded remarkable outcomes, divergent viewpoints on the progress of financial technology persist among various societal sectors, particularly government entities. Hence, it is imperative to conduct a comprehensive investigation into the ramifications of financial technology on the conventional financial technology sector. Subsequently, it is crucial to implement prompt and specific

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measures to mitigate the negative consequences of financial technology. This approach will establish a strong basis for the stable progression of the financial economy industry [1]. Internet finance, also known as online finance, encompasses the financial framework wherein financial institutions and Internet firms leverage communication technology and Internet technology to facilitate capital investment, payment transactions, financing activities, and the provision of precise information intermediary services. Internet finance is not merely a straightforward amalgamation of finance and the Internet; rather, it represents a novel kind of business and a fresh paradigm that relies on mobile and comprehensive network technology. This innovative approach has been embraced, become used to, and ultimately embraced by users due to its adaptability and inherent necessity. The birth of Internet finance in China can be traced back to the 1980s. Since then, it has experienced significant transformations in terms of its initial business model and overall growth. In essence, Internet finance refers to the integration of finance and the Internet. Since its debut, it has gained widespread acceptance and recognition from the general public owing to its notable efficiency and cost-effectiveness. The term "Internet finance" was introduced in 2012, marking the commencement of a phase characterized by swift advancements in this field. Subsequently, in 2016, the establishment of the Internet Finance Association further propelled the growth of Internet finance. During this period, there was a notable trend of product innovation and an increasing influx of investors into the Internet financial market [2]. In the year 2017, the four prominent domestic Internet conglomerates, namely Baidu, Alibaba, Tencent, and JD.com, sequentially forged collaborative partnerships with four key state-owned banks. Collaboratively advocating for the advancement of smart banking infrastructure and the integration of financial technology within government-owned banking institutions. By fostering the development of highly skilled individuals, students can effectively fulfill the requirements of pertinent roles within the financial technology divisions of government-owned banks upon completing their studies. This, in turn, facilitates the assimilation of financial technology into the realm of internet-based financial management [3].

2. Literature Review

Prior studies in the field of financial development have primarily concentrated on the advancement of conventional finance, which pertains to the progress of financial systems primarily based around bank deposits and loans. From both the standpoint of financial development theory and global practice, it is evident that traditional financial development has played a crucial role in fostering substantial economic progress. In theory, a robust financial system has the potential to effectively mobilize societal savings in order to achieve optimal resource allocation, while also mitigating the risks associated with innovation. Empirical research has also provided confirmation that the advancement of conventional finance has the potential to boost research and development activities within enterprises. There are differing viewpoints among experts about the influence of traditional finance on enterprise technology innovation, with some asserting its good impact while others suggesting the possibility of a negative impact. On one aspect, the advancement of conventional finance has the potential to facilitate technological innovation within enterprises, thereby fostering business development and enhancing corporate profitability, thereby establishing a positive feedback loop. Conversely, the progress of traditional finance may result in a greater influx of funds towards large-scale enterprises that rely on monopolistic resources to attain substantial profits and rapid growth. However, as a burgeoning source of innovation, small and medium-sized enterprises, particularly those centered around technology, are susceptible to limitations in accessing financial resources. Consequently, this hampers the enthusiasm of enterprises to engage in innovative endeavors [4].

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3. Advantages of Internet Finance and Its Impact on the Financial Payment Industry

3.1. Advantages of Internet Finance

Internet finance is predicated upon the use of Internet technology. In the contemporary day, the virtualization and openness of Internet finance surpass that of the conventional financial industry. The conventional financial sector operates through physical establishments, serving customers and groups in a tangible manner. In contrast, internet finance focuses on the digital circulation of money, devoid of physical outlets, and offers virtualized services. Leveraging internet technology, internet finance operates with notable speed and efficiency. The traditional financial industry faces limitations in terms of customer information sharing due to physical outlets, resulting in delayed updates and geographical restrictions. In contrast, internet finance resolves these issues by providing a platform where customers can access and update their personal information at any time, regardless of their location. This accessibility and efficiency of information retrieval offered by internet finance also expands the range of choices available to customers.

3.2. The Impact on the Financial Payment Industry

The conventional payment business mostly involves the exchange of physical currency in offline settings, utilizing paper money for transactions. In contrast, Internet finance operates through online platforms to facilitate transactions, wherein money is represented in the form of electronic currency. This paradigm has significantly transformed the manner in which individuals engage in financial transactions. In the conventional financial framework, individuals are required to physically carry a substantial sum of money, resulting in potential issues such as loss and insecurity. Conversely, the internet financial model operates through virtual currency circulation, thereby mitigating the aforementioned concerns. This shift in payment methodology within internet finance effectively addresses the limitations inherent in the traditional financial industry. The proliferation of the Internet has facilitated the rise of numerous third-party payment platforms, leading to a heightened prevalence of electronic money usage. The advent of these third-party payment platforms has significantly transformed individuals' way of life, rendering payment methods increasingly convenient and expeditious. Consequently, customers are now presented with a diverse array of possibilities and a multitude of opportunities. The conventional financial models encounter challenges in effectively addressing the requirements of currency transactions in the context of the Internet. The advent of the Internet has expanded the scope of currency transactions beyond offline channels. As a result, classic financial models face challenges in meeting the demands of contemporary trading platforms. In the contemporary era marked by the proliferation of the Internet, online shopping has emerged as a prominent phenomenon, characterized by a notable departure from the conventional financial model that is seldom employed in this domain. For instance, when shopping on Taobao Tmall, it is worth noting that while certain products offer the option of cash on delivery, this payment method is subject to significant limitations. In contrast, online shopping provides a more convenient avenue for transactions, as it allows for direct online payments through electronic means. This utilization of electronic money has greatly enhanced the ease and quality of people's lives [5].

4. Analysis of the Impact on the Traditional Financial Industry Based on the Logistic Regression Model

The utilization of the Logistics regression model has the potential to improve the interpretability, standardization of probabilities, and stability of risk control levels in financial big data. The risk model associated with this approach is outlined as follows:

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$$P(y=1|x;\theta)=f(x_1+x_2+x_3\ldots+x_n), x\in R^n, y\in\{0,1\}$$

$$f(\chi)=\frac{1}{1+e^{-\theta^T x}}$$

$$g(z)=\frac{1}{1+e^{-z}}$$

$$h_\theta(x)=\theta^T x=\theta_1 x_1+\theta_2 x_2+\theta_3 x_3+\theta_n x_n$$

By choosing a specific number of eigenvalues from the test sample and assigning weights to θ, it is possible to transform the output of linear regression into a range between 0 and 1. This transformation allows for a more intuitive classification of the projected results. When the projected probability value $h\theta(x)$ is equal to or greater than 0.5, indicating that the probability $P(y=1)$ is equal to or larger than 0.5, the model classifies it as a positive class. This classification is based on the related intrinsic function value θTx being equal to or greater than 0, denoted as $z\geq 0$. In contrast, in cases where the predicted probability value $h\theta(x)$ is below 0.5, indicating that the probability of y being equal to 1 $(P(y=1))$ is less than 0.5, the model classifies it as a negative class. This classification is based on the corresponding intrinsic function value θTx being less than 0, which is denoted as $z<0$. The procedure can be depicted by the utilization of the subsequent mappings:

$$y=1 -> \theta^T x\geq 0$$

$$y=0\rightarrow \theta^T x<0$$

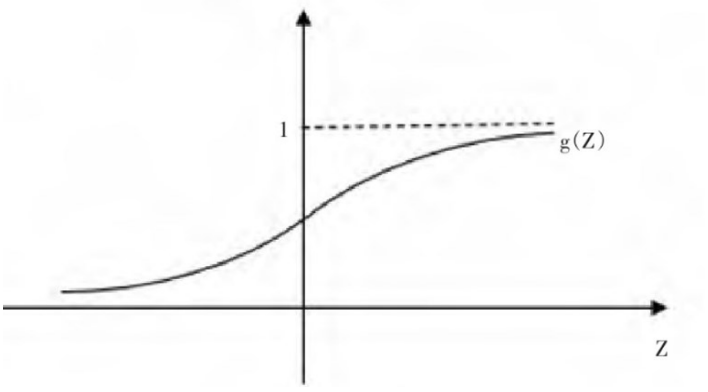

Figure 1: Function image.

Commercial banks primarily cater to a limited customer base, focusing primarily on high-quality customers such as large and medium-sized enterprises. Consequently, the financial services offered to small and micro enterprises are severely limited. This restriction not only hampers the growth of small and micro enterprises but also hinders the expansion of banking operations. The presence of Internet finance challenges this constraint by primarily catering to small and micro firms as well as individual users, hence lowering the barriers to accessing financial services. This phenomenon has significantly accelerated the growth of this particular model. The payment and settlement industry has witnessed significant growth in the adoption of third-party payment systems, such as Alipay. This can be attributed to the inherent convenience and efficiency offered by these systems. Consequently, the extension of traditional online payment services provided by commercial banks has been impacted.

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When it comes to financing businesses, internet enterprises heavily rely on their amassed customer resources and the advantages of big data information. They consistently strive to expand their credit financing services for small and micro enterprises as well as individual users. Notably, Alipay's Huabei and borrowing services have experienced rapid growth due to their low entry requirements and prompt fund disbursement. Consequently, this has significantly affected the loan business of commercial banks. The income generated from Internet finance in the deposit and withdrawal sector surpasses that of bank demand deposits, leading to a significant number of customers shifting their deposits and daily liquidity to Internet accounts, notably Yuebao. This phenomenon has a substantial influence on the deposit and withdrawal operations of commercial banks. The advent of online payment services introduced by internet firms in the intermediate business sector has once again exerted a substantial influence on the operational dynamics of commercial banks, resulting in a notable contraction of their operating profitability. Commercial banks have experienced the need to expedite reform and change; nonetheless, their business models continue to lack competitiveness in terms of ease when compared to Internet finance [6].

5. Discussion

The convergence of Internet finance and traditional finance is anticipated to result in increased proximity. The proliferation of Internet finance has prompted Internet firms to leverage their technological, data, and contextual advantages in order to proactively extend their operations into the realm of traditional financial institutions. In the domain of payment and settlement, there is a growing trend towards more collaboration between third-party payment firms and traditional financial institutions. This collaboration aims to foster comprehensive cooperation, using the respective strengths of each side. Currently, there is a collaboration between internet firms and traditional financial institutions in the domain of credit inquiry. For instance, Ali and Tencent have collaborated with the People's Bank of China credit investigation center and Baihang Credit Information Company to introduce a Chinese iteration of personal credit investigation licenses. In the forthcoming years, Internet firms are anticipated to engage in extensive collaboration with conventional financial institutions across several domains, including financial payment, product sales, securities investing, and financing. This collaboration is expected to foster synergistic benefits through the utilization of complementary strengths.Furthermore, the collaboration model between Internet firms and traditional financial institutions will experience significant enhancement. An instance of collaboration can be observed in the form of a cooperative relationship between banks and Internet firms. This collaboration entails the joint pursuit of business activities within their respective domains of expertise. Additionally, it encompasses strategic cooperation between conventional financial institutions and Internet enterprises. In the future, the connection between Internet finance and the traditional financial industry will transition from a competitive dynamic to one of mutual promotion and integration, as their integration gets ever closer. The field of internet finance is expected to exhibit a diverse trajectory of growth and expansion.Currently, the advancement of Internet finance has reached a novel phase, whereby it is facilitating the conversion and enhancement of the conventional financial sector.

The advent of Internet finance has had a disruptive effect on the conventional financial sector, necessitating established financial institutions to adjust to the resultant changes, expedite innovation, and undergo transformation. To begin with, it is anticipated that the Internet finance industry will exhibit a trajectory of diverse growth. In relation to the business model, the conventional financial industry will engage in broader collaborations with internet enterprises and expand its operational reach into additional sectors. Internet finance is expected to facilitate the shift of financial institutions' focus from a "product-centric" approach to a more "customer-centric" approach in terms of business strategies. Regarding risk management, the conventional financial sector will develop and enhance

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the big data credit system as well as the mechanism for risk prevention and control. Regarding the operational model, the conventional financial sector will prioritize technology innovation and its implementation in order to enhance client experience and service quality.Furthermore, the conventional financial sector is poised to expedite commercial innovation. In the current context, the innovation of Internet financial company has evolved beyond the only reliance on Internet platforms or mobile terminals for operation. Instead, it has embraced a fusion with conventional financial products and services. Banks employ Internet technology and big data analysis to perform client stratification, product segmentation, and precision marketing, among other activities. Similarly, insurance companies utilize Internet technology and big data analysis to facilitate new insurance business [7].

6. Conclusion

Commercial banks primarily cater to a limited customer base, focusing primarily on high-quality customers such as large and medium-sized enterprises. However, their provision of financial services to small and micro enterprises is severely limited. This restriction not only hampers the growth of small and micro enterprises but also hinders the expansion of banking operations. The presence of Internet finance transcends this constraint, primarily catering to small and micro firms as well as individual consumers, hence lowering the barriers to entry for financial services. Consequently, this phenomenon has facilitated the expeditious advancement of this model. The growth of third-party payment, exemplified by Alipay, has gained significant traction in the payment and settlement industry. This may be attributed to its inherent convenience and efficiency, which has therefore impacted the growth of traditional online payment services offered by commercial banks. When it comes to business financing, internet enterprises heavily depend on their amassed customer resources and the advantages derived from big data information. They consistently broaden their credit financing services for small and micro enterprises as well as individual users, exemplified by Alipay's Huabei and borrowing services. These services have experienced rapid growth due to their low entry requirements and prompt fund disbursement. Consequently, they have significantly disrupted the loan business of commercial banks. The income generated from Internet finance in the deposit and withdrawal sector surpasses that of bank demand deposits, leading to a significant number of customers redirecting their deposits and daily liquidity to Internet accounts, notably Yuebao. This phenomenon has a substantial influence on the deposit and withdrawal operations of commercial banks. The advent of online payment services introduced by internet firms in the intermediate business sector has once again exerted a notable influence on the operational dynamics of commercial banks, resulting in a substantial contraction of their operating profitability. Commercial banks have been compelled to expedite their reform and transformation efforts; nonetheless, their business models continue to lack competitiveness in terms of ease when compared to Internet finance.

References

[1] *Yu Zeng. Analysis of the impact and countermeasures of financial technology on traditional financial economic industry[J].National Circulation Economy,2022,(30):137-140.)*

[2] *Zhiyun Wang. Analysis of the development of financial technology based on Internet finance[J].Finance and Economics,2022,(36):12-14.)*

[3] *Muqing Huang, Yaorui Zeng, Yiheng Jiang. Research on risk management of Internet financial products under the background of financial technology[J].Hebei Enterprise,2023,(05):104-106.)*

[4] *Chujiang Xue, Bo Pan. Development of traditional finance, financial technology and enterprise innovation[J].New Finance,2023,(02):56-63.)*

[5] *Zelin Ye. Discussion on the challenges and risk prevention of Internet finance to traditional finance[J].Business News,2020,(06):87+94.)*

DOI: 10.54254/2754-1169/58/20230964

[6] Mengsheng Yang. Analysis of the impact of Internet finance model on traditional financial industry[J].Modern Business,2023,(05):101-104.)

[7] Hongyan Jiang. Analysis on the operation mode and development trend of Internet finance[J].Marketing Circle,2023,(12):29-31.)