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RESEARCH ON CHINA'S FINANCIAL DIGITIZATION DEVELOPMENT

Research article

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Abstract

In today's era, the digital economy generated by digital technology, which has brought a new round of technological revolution to the world and is also a key area of international competition, has also driven industrial transformation. With the continuous development of finance and technology, financial digitization has become an important trend for the future development of the financial industry. China is the world's second-largest economy, and the digital economy is increasingly supporting its economic growth. Finance is the core of the modern economy, and the development of financial digitization is related to the overall development of the Chinese economy. Therefore, it is of great significance to research China's financial digitization development (CFDD). This article first briefly introduces the definition, roles, applications, and international and domestic development processes of financial digitization; then, it analyzes the background, benefits, and challenges of China's financial digitization development; and finally, it proposes relevant suggestions, aiming to help financial researchers and enthusiasts better understand the development of financial digitization and to provide suggestions within my capabilities for CFDD, which are only for reference by relevant units to promote its better development.

Keywords: financial digitization, digital economy, digital technology, development.

ИССЛЕДОВАНИЕ РАЗВИТИЯ ЦИФРОВИЗАЦИИ ФИНАНСОВОЙ СФЕРЫ КИТАЯ

Научная статья

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Аннотация

В современную эпоху цифровая экономика, сформированная цифровыми технологиями, которые привели к новому витку технологической революции в мире и являются ключевой областью международной конкуренции, также стала движущей силой промышленной трансформации. В условиях непрерывного развития финансов и технологий оцифровка финансовой сферы стала важной тенденцией для будущего развития финансовой индустрии. Китай – вторая по величине экономика мира, и цифровая экономика все больше поддерживает его экономический рост. Финансы – основа современной экономики, и развитие финансовой цифровизации связано с общим развитием китайской экономики. Поэтому исследование развития финансовой цифровизации Китая (CFDD) имеет большое значение. В этой статье дается краткое описание определения, роли, применения, международных и внутренних процессов развития финансовой цифровизации; затем анализируются предпосылки, преимущества и проблемы развития финансовой цифровизации в Китае; и, наконец, предлагаются соответствующие предложения, чтобы помочь исследователям и специалистам в области финансов лучше понять развитие финансовой цифровизации и дать предложения в рамках моих возможностей для CFDD, которые предназначены только для использования соответствующими подразделениями для содействия лучшему ее развитию.

Ключевые слова: цифровизация финансов, цифровая экономика, цифровые технологии, развитие.

Introduction

Currently, there are a plethora of studies related to CFDD, mainly examining the influence of digital finance on other kinds of affected factors, investigating China's financial digitization transformation, or analyzing related problems and corresponding countermeasures. However, they are not sufficiently systematic and exhaustive, with a relatively narrower focus. This article enriches the contents of existing research and addresses its deficiencies by employing literature review, induction, historical analysis, comparative analysis, thinking, qualitative analysis, and other methodologies to induce and summarize, beginning with the definition of financial digitization, to conduct more systematic, profound, and comprehensive research into various facets of CFDD.

1.1. The definition of financial digitization

Financial digitization is the process of transforming and upgrading financial businesses, encompassing both financial products and services. Through integration with information technology and digital methods, financial businesses can attain efficiency, convenience, and intelligent functioning.

1.2. The roles of financial digitization

Financial digitization can enhance the pace at which financial businesses are processed, boost effectiveness, deliver customers with financial products that are simpler to customize and tailor to their needs, render financial services more inclusive and convenient, diminish the costs and risks associated with financial businesses, and propel the innovation and advancement of finance and related technologies.

1.3. The applications of financial digitization

Financial digitization, whose applications ultimately form digital finance, is widely employed in various financial sectors like banking, insurance, securities, funds, and payments. Its essence is utilizing emerging technologies to transmit, receive, analyze, and process financial information [1]. It can transform complex and changeable financial information into measurable numbers and data by leveraging digital technology to reconstruct the financial industry, which encompasses all the data related to commodity flow, fund flow, and information flow, as well as the mastery of core financial business domains like payment, financing, and investment [2]. Specifically, its applications include: Alipay, WeChat payment, mobile banking, online banking, online lending, internet insurance, intelligent financing, intelligent risk control, online fund sales, digital currency, and so on.

The development processes of financial digitization

The attention towards digital finance was sparked by the emergence of PayPal, an online payment tool in the United States, in 1998. Globally, the process of finance and technology integration can be categorized into three distinct periods. The initial period, 1866–1966, saw the analog industry as the key driver for the fusion of finance and technology. The laying of undersea cables across the Atlantic facilitated the connection between finance and modern technology. This was followed by the introduction and progression of credit cards, telephones, and fax machines [3], which contributed to a gradual acceleration of financial digitization. The second period, from 1967 to 2008, was characterized by the transmission of discrete binary values [3]. Barclays Bank's introduction of the automatic teller machine (ATM) in Britain in 1967 marked the beginning of the second phase of financial digitization. As the internet continued to advance, financial institutions enthusiastically explored and developed online financial businesses, thus promoting the electronization of financial services, resulting in the emergence of electronic banks. The third period, spanning from 2009 to the present, witnessed the flourishing development of fintech and supply chain finance. Fueled by innovative technologies such as the internet and artificial intelligence, finance experienced unparalleled digitization, propelling the financial industry towards high-quality development. During this period, an increasing number of non-financial enterprises began to participate in financial businesses, creating revolutionary financial products with novel technologies and concepts, which changed the traditional service model of the financial industry.

In contrast, CFDD is significantly later than that of developed nations. The pace of CFDD was accelerated with the launch of Yu'e Bao businesses by Alipay in 2013. The process of CFDD has also undergone three distinct stages. Initially, between 1988 and 2004, there was a transition from traditional financial institutions to internetization, also known as electronic finance, launching landmark products such as credit cards, ATMs, and online banks. Simultaneously, Chinese commercial banks embraced the internet and information technology to shift from a manual business processing model to a computerized one, transforming traditional financial services such as payments, storage, wealth management, and consulting. For instance, in 1988, the Industrial and Commercial Bank of China launched its first ATM, while the Bank of China began promoting online banking services in 1997, greatly improving efficiency while disrupting traditional financial business models. The second stage, from 2005 to 2017, is the development stage of internet finance [4], represented by fintech enterprises. With the proliferation of smartphones, both traditional financial institutions and fintech enterprises began vigorously developing financial businesses, including internet banking, mobile payments, internet insurance, and online lending. Internet terminals or smartphones have gradually become the primary platforms for conducting financial businesses, eliminating the limitations of traditional financial services in terms of time and space [5]. This advancement significantly enhances the convenience and accessibility of financial services. During the third stage, starting from 2018 until now, traditional financial institutions are transforming towards digitization and wholeheartedly embracing it. Both traditional financial institutions and fintech enterprises have been deeply involved in information and digital technologies while progressively integrating and developing intelligent, platformized, mobile-oriented, and scenario-based comprehensive financial services. At present, depending on the demographic dividend, advanced new infrastructure, and widespread penetration of mobile internet, China has emerged from behind in the global competition for digital finance, maintaining an absolute leading position.

The background of CFDD

CFDD has been facilitated by the diverse needs for financial services, the advancements in emerging technologies, the development of the digital economy, and the promotion of inclusive finance.

3.1. The diverse needs for financial services

The diverse needs for financial services have driven CFDD. The surge in demands for diverse financial services is a direct result of China's economic progress, the improving living standards of Chinese people, and their aspirations for a better quality of life. Facing the growing, diversified needs for financial services, financial institutions have had to adopt information technology and digital advancements to disrupt traditional models of service provision. By embracing financial digitization, these institutions are now capable of offering customers online financial services that are not only efficient and convenient but also possess unique features, which can not only meet customers' diversified needs for investment and financing but also effectively mitigate the risks and costs associated with financial services [6].

3.2. The advancements in emerging technologies

The integration of technology and finance is rapidly advancing due to the emergence of new technologies. This has led to the emergence of various financial products and services, as well as the thriving of fintech enterprises. By leveraging information technology and digitization, the combination of technology and finance can enhance the quality and convenience of financial products and services. Besides, it can decrease the costs and hazards associated with financial services while enhancing the security of financial data. The financial sector is in need of these emerging technologies, and with their support, CFDD has experienced significant acceleration.

3.3. The development of the digital economy

In the 14th five-year plan, China explicitly stated the need to accelerate the development of digital technology, construct a "digital China," and create new advantages in the digital economy [7]. Being central to the economy, finance is the key impetus for economic progress. The advancement of China's digital economy is inherently intertwined with digital finance, and it is imperative to prioritize and expedite the advancement of financial digitization. The digitization of finance not only empowers

the financial sector but also acts as a catalyst for propelling industrial digitization and the digital economy as a whole. In order to address the developmental requirements of the digital economy, the financial industry needs to provide safe, fast, and efficient investment and financing services for the relevant digital industries. Through building the digital finance infrastructure, it can not only meet the former but also stimulate the development of other associated digital industries. Consequently, due to the needs of the digital economy's advancement, the process of CFDD has also speeded up noticeably.

3.4. The promotion of inclusive finance

In 2005, China initially proposed inclusive finance, that is, high-quality and efficient financial services that can be obtained for all people who are in need on a fair basis at a reasonable price. China proposed the digital transformation strategy for inclusive finance [8] in 2012 and subsequently released the "Plan for Promoting the Development of Inclusive Finance (2016–2020)" in 2016. It provides a new way of thinking about China's economic and social development. Its main goal is to establish an inclusive financial service and guarantee system in line with the comprehensive construction of a moderately prosperous society by 2020, enable more individuals to enjoy a diverse range of financial services with more satisfaction, and make China's inclusive financial development level at the middle to upper international level [9]. In this context, financial digitization can improve the accessibility, affordability, and efficiency of financing, thus fostering inclusive finance. Simultaneously, the promotion of inclusive finance has also stimulated CFDD.

The benefits of CFDD

CFDD is not only mutually reinforcing with the advancements in emerging technologies, the digital economy's development, and the promotion of inclusive finance but also promotes innovation in financing modes, payment methods, and financial regulation. (The latter three benefits are mainly expounded here because the former three were mentioned earlier.)

4.1. Promote innovation in financing modes

In traditional financing modes, the main way in which banks allow their customers to raise funds is through mortgage loans. Private enterprises, small-medium enterprises (SMEs), and individual residents who lack fixed assets as collateral for mortgage loans generally face financing difficulties and high financing costs. Faced with such problems, it is necessary to innovate financing modes, and new financing modes—mainly credit loans—can be achieved through financial digitization. In order to reduce financing costs and lending difficulties, banks can collect and store customers' credit information by establishing financial databases and then utilize emerging technologies to accurately match customers' credit limits and interest rates based on their creditworthiness, which not only achieves risk control but also offers customers a comprehensive online financial service. Financial digitization not only enhances convenience, speed, and efficiency but also elevates customers' creditworthiness, granting them access to credit financing possibilities. This further encourages the transition from mortgage loans to credit loans and fosters innovation in financing models.

4.2. Promote innovation in payment methods

During the era of the underdeveloped internet, individuals primarily relied on physical cash for transactions. However, as the internet advanced and finance gradually digitized, the dominant payment method shifted from physical cash to online transactions. Online payment offers numerous advantages over cash transactions. Firstly, it significantly reduces the need for banknotes and coins, leading to cost savings in both printing and transportation, while also diminishing storage costs and associated risks. Secondly, online payment not only enhances convenience but also improves security by minimizing the chances of receiving counterfeit currency [6]. Thirdly, it facilitates fund collection and enhances the efficiency of fund utilization. The development of financial digitization requires innovative payment methods to take precedence. Currently, mobile payments in China are relatively developed. Through mobile payment applications on their smartphones, people can fulfill the needs of various payment scenarios more swiftly, conveniently, and securely. The development of financial digitization has fostered innovation in payment methods.

4.3. Promote innovation in financial regulatory

Financial digitization can indeed enhance financial innovation and development, but its regulation must keep pace; otherwise, it will easily breed illegal fundraising, financial fraud, and other behaviors, bringing certain risks to the financial industry. Therefore, in order to better prevent and address financial risks, financial supervision needs to embrace the current advancements and innovate the concepts of regulation. There should be a shift from after-the-fact supervision to in-process supervision and prior control. With the advent of financial digitization, regulators must leverage technological means to innovate and achieve technological, digital, and intelligent regulation. By integrating technology with regulation and innovating regulatory methods, financial authorities can effectively monitor dynamic financial data and indicators in real-time, thus enhancing the quality and efficiency of financial supervision. Undoubtedly, the evolution of financial digitization will foster the innovation of regulatory concepts, techniques, and methods.

The challenges of CFDD

CFDD has certain benefits, but there are also some challenges, such as insufficient financial technology talents, financial information security issues, consumers' rights protection issues, and financial regulatory issues.

5.1. Insufficient financial technology talents

According to the analysis report of "China Fintech Talent Cultivation and Development Questionnaire (2021)" (hereinafter referred to as the report), it is concluded that financial institutions have generally increased their emphasis on fintech talents, but there is a general lack of fintech professionals. According to the research data in the report, in 2021, 45.85% of the surveyed institutions had more than 10% of fintech talents, which is a further increase compared with 2020; the business scenario technicians in the surveyed organizations are generally scarce, with 60.69% of the surveyed organizations having less than 5% of them [10].

5.2. Financial information security issues

Financial digitization poses challenges to financial information security. With the rise of new technologies and CFDD, fintech enterprises are growing rapidly. They utilize abundant financial data to effectively address the issue of information

asymmetry between financiers and investors. Nevertheless, there is a potential risk of leaking and selling the financial data collected by fintech enterprises due to the current imperfections in relevant laws and regulations, which may bring great hidden trouble to the security of financial information [6].

5.3. Consumers' rights protection issues

CFDD also brings challenges to the protection of consumers' rights. Firstly, China's current laws and regulations for consumers' rights protection urgently need to be improved. The innovation and development of financial digitization are rapidly changing, while China's existing laws and regulations related to the protection of consumers' rights are relatively lagging behind and can no longer keep up with technological advancements and societal changes. Secondly, it is crucial to enhance educational efforts targeted at safeguarding the rights of financial consumers. Some disadvantaged individuals with low incomes and limited education often lack sufficient knowledge about financial digital products, which makes them less likely to accept these products or vulnerable to being misled into rights violations. This is not only detrimental to the development of inclusive finance but also hinders CFDD.

5.4. Financial regulatory issues

CFDD not only promotes financial innovation and development but also brings certain challenges to financial regulation. There are two reasons to explain. One is that, due to the rise of new technologies and innovative financial businesses, some internet companies or fintech enterprises lack the qualifications to operate financial businesses, but they operate internet financial businesses and play a ball on the sidelines, which may be an area where financial regulation is relatively weak at present. Another is that, with CFDD, some financial businesses have experienced rapid innovation and development, while the measures currently taken for financial regulation are insufficient or relatively lagging behind to meet the needs for real-time, effective regulation.

The suggestions for CFDD

In order to steadily push on the process of CFDD, there are the following suggestions, which are only for reference:

- 1) comply with the relevant trends in financial development;
- 2) cultivate relevant professional talents;
- 3) improve relevant legal systems;
- 4) strengthen the construction of financial infrastructure;
- 5) innovate and improve financial regulation.

6.1. Comply with the relevant trends in financial development

The progress of financial digitization is associated with the advancement of the nation and the advantages it brings to its citizens. It must abide by the principles of practicality and applicability and cannot be disconnected from the policy support offered by the Chinese government. By staying true to the current trajectory of financial development, China's journey towards financial digitization can avoid losing its purpose. Firstly, CFDD still requires a commitment to serving the genuine economy. The primary objective of finance is to support the real economy, and financial digitization merely employs digital technology to transform and upgrade financial businesses, providing enhanced financial services to the genuine economy without altering its fundamental objective. Secondly, the financial industry should actively advance its digitization progress within the context of the digital economy's growth. Financial business innovation should be accelerated to facilitate financial services for the genuine economy and stimulate the digital economy's development. Thirdly, in order to endorse the expansion of inclusive digital finance, it is imperative to emphasize technological innovation, focusing on the strategic objectives of inclusive financial development, because China is currently placing great emphasis on promoting inclusive finance, which can not only drive rural revitalization but also facilitate and benefit the people [6]. Fourthly, the credit system and its management should undergo improvement, and a financial information platform should be established by means of big data and other emerging technologies to gather, handle, and utilize pertinent financial information, as credit lending will become the main financing mode in the future to reduce the difficulty and cost of financing for SMEs.

6.2. Cultivate relevant professional talents

In order to address the shortage of skilled professionals in the process of CFDD, it is essential to focus on the cultivation of relevant talents. Several solutions can be taken to ensure and enhance. To begin with, higher education institutions should adapt their fintech courses and training programs to keep up with the rapidly evolving landscape, with teaching materials being the top priority for training talents. Furthermore, financial institutions should enhance the competence and practical application of digital financial knowledge and skills among their current workforce. This can be achieved through various forms of training, which play a vital role in equipping employees with the necessary expertise. Additionally, local governments should reinforce their efforts to improve policies that support fintech talent development. This includes establishing an urban fintech talent evaluation system that can effectively evaluate and recognize individuals with exceptional skills. Lastly, industry organizations should play an active role in refining the training system for fintech professionals. They should further facilitate skill training programs and provide qualification certifications to ensure the competence of individuals in this domain [10].

6.3. Improve relevant legal systems

To ensure the sustainable and effective promotion of fintech innovation, it is crucial for China to develop and publish appropriate laws and regulations governing fintech innovation. This will help accelerate the pace of CFDD and guarantee the secure and stable functioning of finance. Firstly, China must enhance the legislation concerning the security of financial information to counter the risk of financial information being leaked and sold. Secondly, it is essential to strengthen the regulatory framework governing digital finance operations and enhance risk control measures for compliant operations and innovative businesses of financial institutions and fintech enterprises [11]. Thirdly, a robust legal system should be established to protect the rights of financial consumers and investors [12]. This should be accompanied by strengthening their education and legal popularization and facilitating their rights protection and litigation channels. The fourth is to improve the relevant legislation on digital financial regulation so that there are laws to follow.

6.4. Strengthen the construction of financial infrastructure

CFDD relies heavily on the enhancement of financial infrastructure. In terms of building financial infrastructure, financial institutions should actively construct advanced financial data centers that are capable of facilitating extensive data collection and centralized storage. This will improve the accessibility of financial services, effectively mitigate financial risks and hidden hazards, and provide a strong digital foundation for financial operations. With regard to industrial development support, the government should offer more policy incentives and financial support to guide more social capital into the field of financial infrastructure construction. Simultaneously, financial regulators need to stay updated and enhance the digital regulatory infrastructure to achieve technological and digital supervision.

6.5. Innovate and improve financial regulation

Ensuring the sustainability and security of CFDD necessitates sound financial regulation. Thus, facing the challenges to financial regulation posed by the advancement of financial digitalization, it becomes imperative to promptly innovate and enhance financial regulation in order to mitigate regulatory loopholes. Primarily, it is crucial to innovate regulatory concepts, technologies, and methods. (Specific details in paragraph "7.3 Promote innovation in financial regulation" should be avoided to prevent repetition.) Secondly, it is essential to promptly address illegal and unqualified operating institutions. In such cases, financial regulatory authorities can appropriately intensify penalties, mandate rectification and trading suspensions, heighten the costs incurred due to illegal behavior, swiftly disclose relevant legal and illegal institutions on relevant websites, and provide necessary risk prevention tips. Thirdly, it is vital to bolster compliance supervision of fintech enterprises' businesses. Financial regulators should pay attention to their financial status and business conditions, especially regarding capital flows and business advertising, while also checking their involvement in illicit activities such as unlawful fundraising, money laundering, deceptive advertising, and fraud. These measures will enable the timely prevention and resolution of potential risks.

Conclusion

Financial digitization is the process of transforming and upgrading financial businesses, which can improve the efficiency, accessibility, affordability, security, and convenience of finance and propel innovation and advancement in finance and related technologies. It is widely applied in banking, insurance, securities, funds, payments, and other financial fields, and its application ultimately forms digital finance.

In contrast, CFDD is significantly later than that of developed countries, but China has caught up and maintained an absolute leading position in the global competition of digital finance due to the demographic dividend, advanced new infrastructure, and widespread popularity of mobile internet. The diverse needs for financial services, the advancements in emerging technologies, the digital economy's development, and the promotion of inclusive finance have facilitated CFDD.

CFDD has certain benefits, it not only complements the advancements in emerging technologies, the digital economy's development, and the promotion of inclusive finance but also promotes the innovation of financing modes, payment methods, and financial regulation. However, it also faces some challenges, such as insufficient fintech talents, financial information security issues, consumers' rights protection issues, and financial regulatory issues. So in order to steadily advance the process of CFDD, the following suggestions are only for reference: comply with the relevant trends in financial development; cultivate relevant professional talents; improve relevant legal systems; strengthen the construction of financial infrastructure; and innovate and improve financial regulation.

Конфликт интересов

Не указан.

Рецензия

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Conflict of Interest

None declared.

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