

The Impact of Financial Technology and Digital Currency on Traditional Financial Industry

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Abstract: To harness the potential of financial technology and digital currency and enhance the competitiveness of the traditional financial industry, this paper briefly elucidates the concepts of financial technology and digital currency, along with their current development status. Furthermore, it analyzes the impact of financial technology and digital currency on the traditional financial industry, aiming to enrich research outcomes in this field and propel the development of traditional financial institutions in China.

Keywords: Financial technology; Digital currency; Traditional finance

Online publication: November 29, 2024

1. Introduction

In recent years, the rapid advancement of technologies such as the internet, big data, and artificial intelligence has gradually permeated the financial industry. On one hand, this has propelled the growth of the traditional financial industry and ushered in a plethora of innovative financial products and services. On the other hand, digital currency has presented an innovative development pathway for the traditional financial industry, with central banks worldwide experimenting with digital currency to optimize domestic economic landscapes. Within this context, exploring the impact of financial technology and digital currency on the traditional financial industry can not only enrich research outcomes in this domain but also provide valuable references for practitioners in the traditional financial industry, thereby driving its development ^[1].

2. Overview of related concepts

2.1. Financial technology overview

Financial technology, or FinTech, represents the seamless integration of technological innovations and financial services. It encompasses various domains such as payment technology, blockchain, artificial intelligence, and

big data analytics. FinTech can enhance the convenience and security of payments. Blockchain technology elevates transaction transparency, while artificial intelligence and big data analytics bolster risk management, customer service quality, and the precision of personalized financial product recommendations. Sub-fields of FinTech, including RegTech and InsurTech, are continually expanding the development prospects of the financial industry ^[2].

According to available data, in 2023, China's FinTech market size stood at 372.78 billion yuan, with bank technology accounting for 75% and a scale of 600 billion yuan. This figure has maintained a steady increase over consecutive years ^[3]. The scope of application ranges from payments and lending to investments and insurance, covering a wide array of traditional financial services. The "2023 China FinTech Competitiveness Top 100 List" released by the "Qianzhan Economics" Application reveals that prominent FinTech enterprises in China primarily specialize in basic software, data services, information security, and application software ^[4]. These enterprises include both FinTech subsidiaries established by banks and private FinTech companies such as Du Xiaoman and JD Technology.

Against the backdrop of the digital economy, numerous Chinese technology enterprises have begun to shift their focus from the domestic market to international markets, actively expanding into regions like Hong Kong, Macao, Taiwan, Southeast Asia, Europe, and the Americas. This has led to the formation of FinTech-centered industrial clusters in various parts of China. Evidently, FinTech is gradually emerging as a core driving force for the development of the financial industry, presenting new growth directions for financial institutions ^[5].

2.2. Digital currency overview

Digital currency refers to a currency that exists in digital form, utilizing encryption techniques to ensure security and anonymity. Unlike traditional fiat currency, digital currency does not necessarily rely on central banks for issuance and management. Instead, it relies on blockchain distributed ledger technology to record digital currency transactions, enabling decentralized transactions ^[6]. Bolstered by cryptographic techniques, digital currency derived from blockchain technology offers robust transaction security and tamper resistance. Each transaction is added to a data batch called a block, which is then linked to previous blocks, forming a continuous chain. The core characteristic of digital currency is decentralization, implying that there is no central authority controlling its issuance and circulation ^[7]. Instead, the management of digital currency is collectively carried out by participants on the network, with consensus algorithms validating transactions and maintaining the integrity of the ledger. Another crucial concept related to digital currency is cryptocurrency, which refers to digital currency that uses cryptographic techniques to ensure transaction security and identity authentication. The owner of a cryptocurrency can use a private key to conduct transactions, and only those with the corresponding private key can access the assets ^[8].

The development of digital currency can be segmented into three eras ^[9]. The first era is marked by Bitcoin, which was the first successfully implemented cryptocurrency. Proposed by an individual using the pseudonym Satoshi Nakamoto in 2008 and officially launched in 2009, Bitcoin is a decentralized digital currency based on blockchain technology. It revolutionized the concept of digital currency by enabling functions such as currency issuance, transactions, and verification to be collectively performed by network participants, independent of central authorities.

The second phase is known as the platform currency era. The advent of Bitcoin marked the official entrance of digital currencies into the mainstream, but due to the increasing difficulty of Bitcoin mining, its

investment and speculative attributes gradually overshadowed its practical applications. Additionally, Bitcoin's lack of regulation, anonymity, and untraceable blockchain nodes led to various issues, prompting multiple organizations to establish their own digital currencies, notably JPM Coin and Libra. These developments signaled the entrance of established entities into the digital currency domain, ushering in the era of platform currencies. JPM Coin, introduced by JPMorgan Chase, targets financial institutions and corporate clients, aiming to expedite fund transfers and transaction settlements. Libra, led by Facebook, aims to provide financial services to billions of people globally. Designed as a stablecoin backed by a basket of currencies, it enhances convenience and reduces the cost of cross-border payments. However, both JPM Coin and Libra faced challenges related to national economic policies, conflicts with traditional financial institutions, and difficulties in implementing effective regulatory oversight.

The third phase is the central bank currency era. In 2019, China's State Council officially approved the development of the Digital Currency Electronic Payment (DCEP), a digital currency based on blockchain and distributed ledger technology ^[10]. Also known as the digital yuan, it shares the national financial system with the existing yuan, aiming to replace paper and coin currency, enable more convenient, efficient, and secure electronic payments, and provide better monitoring and control for the financial system. Essentially, the DCEP is a financial payment method rather than a purely independent digital currency. Issued and managed by the People's Bank of China, it offers stronger value stability and credit backing compared to digital deposits from commercial banks. Using blockchain and distributed ledger technology, DCEP establishes a secure digital transaction network. As the sole issuer, the central bank verifies and records transactions, while also allowing offline transactions, adapting effectively to payment needs in different regions of China. The two-way circulation model of DCEP is implemented through a mobile wallet application, enabling users to store transaction currency on their phones and scan Quick Response (QR) codes for payments.

3. Impact of FinTech on the traditional financial industry

3.1. Improving financial service efficiency

Traditional financial services are limited by physical branches and manual operations, resulting in limited efficiency improvements. However, FinTech provides a pathway for traditional financial institutions to overcome these limitations and significantly enhance service efficiency. The integration of Artificial Intelligence (AI) in customer service and internet technology offers customers 24/7 access to geographically unrestricted financial services. Customers no longer need to wait in lines, as they can access services anytime, anywhere through their mobile phones or computers, thereby improving service efficiency and customer experience. Additionally, FinTech is driving the transition from generic to personalized financial services. With the support of big data and AI technology, financial institutions can deeply explore customer needs and provide more precise and personalized financial products and services, further enhancing their competitiveness and improving the attractiveness of their offerings.

3.2. Driving financial product and service innovation

Traditional financial institutions often face delays in responding to market changes due to technological and cost constraints. However, FinTech provides these institutions with the necessary support to significantly accelerate the iteration and upgrading of their financial products and services. On one hand, financial

institutions can utilize big data analytics to provide customers with more accurate investment advice and risk management solutions. On the other hand, they can also apply AI technology to offer intelligent customer service, and 24/7 investment advice, thereby enriching the financial market supply and providing customers with more diversified and higher-quality financial product and service options.

3.3. Strengthening financial security and risk management effectiveness

Traditional financial institutions often rely on limited data for risk management, requiring highly skilled professionals and making it difficult to achieve comprehensive and precise risk control through manual efforts. However, the development of FinTech has provided financial institutions with more advanced and scientific risk management tools and methods. By utilizing big data analytics and machine learning technology, these institutions can monitor market dynamics and transaction behaviors in real time, improve their information security and data protection systems, and provide higher levels of security for customer funds and information, thereby enhancing the quality of their financial security and risk management.

4. Impact of digital currencies on the traditional financial industry

4.1. Reshaping the traditional payment system

The rise of digital currencies poses a direct challenge to the traditional payment system while also possessing the capability to reshape it. The traditional payment system relies on financial institutions such as banks and credit card companies to serve as payment processing intermediaries, resulting in a more complex transaction process that is limited by time and geographical constraints. Digital currencies, with their characteristics of peer-to-peer transactions without intermediaries, enable faster settlement processes and more secure settlement operations. Their advantages in transaction costs and time are even more significant in the field of cross-border payments ^[9]. With the application of digital currencies, traditional financial institutions must rethink the positioning and operational models of their payment businesses. Some large financial institutions in China have begun investing in the research and development of blockchain-based payment solutions to improve the efficiency of traditional payment systems. Simultaneously, the pilot application of DCEP represents a massive reform of the payment system that the traditional financial industry is about to embrace. The structure of DCEP is a two-tier operational structure consisting of the central bank and commercial institutions, with the former responsible for management and the latter authorized to operate. Traditional financial institutions need to consider how to promote the use of DCEP, address offline transactions, develop digital wallets, establish payment channels, and popularize digital currencies.

4.2. Enriching financial products and services

With the help of blockchain, the underlying technology of digital currencies, financial institutions can explore and develop innovative financial products such as smart contracts and decentralized finance. For instance, financial institutions can apply the automated execution function of smart contracts to improve transaction efficiency, enhance transaction transparency, and reduce contract execution costs. They can also utilize decentralized finance to build a new financial ecosystem that provides customers with a financial environment for intermediary-free lending, payment, and investment ^[10]. For the traditional financial industry, the innovation of financial products and services brought by digital currencies presents both opportunities and challenges. On the one hand, financial institutions can utilize new tools to innovate product services, meet broader and more

personalized customer needs, and enhance market competitiveness. On the other hand, the introduction of digital currencies and related technologies will also change the structure of the financial market, significantly altering the business models and income sources of traditional financial institutions. To apply digital currency technology, the traditional financial industry needs to accelerate digital transformation and innovate business models.

5. Conclusion

In summary, financial technology encompasses all information technologies related to finance, while digital currencies are derivatives of blockchain technology within financial technology. Currently, financial technology and digital currencies have gradually been applied to the traditional financial industry, demonstrating significant value in improving financial service efficiency, driving product and service innovation, enhancing security risk management effectiveness, and reshaping the traditional payment system. Therefore, traditional financial institutions need to view the functions of financial technology and digital currencies correctly, flexibly apply them based on macro development directions and micro business needs, optimize existing financial product and service forms, and create innovative financial products and services.

Disclosure statement

The author declares no conflict of interest.

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