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From Market Efficiency to Firm Valuation: The Role of Digital Finance

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ABSTRACT

With the penetration of the digital technology into the financial sector becoming increasingly pervasive, most of the scholarly work has centered on the way this change alters financial service supply models, but have not considered its serious impact on the capital markets and the value of listed companies. With the help of the PKU-DFIIC, A-share listed companies financial report, and exchange trading data, this paper investigates the relationship among these three factors, i.e., the development of digital finance, the efficiency of the market and the valuation of companies. Built upon the consensus and gaps within the current literature it takes apart what digital finance really does in practice regarding information transfer, capital movement and resource distribution and outlines the whole road of how enhanced market efficiency is transmitted to company value. Research has found that digital finance can mitigate information barriers, optimize the overall trading environment, and alleviate the problem of firm value mismatch by improving financing conditions and governance mechanisms. Firms of different sizes and property rights have varying abilities to capture the benefits from digital finance. By analyzing the limitations of the industry reality, this paper provides actionable insights for optimizing the construction of the capital market and managing firm value.

KEYWORDS

Digital finance; Market efficiency; Firm Valuation; Resource allocation; Value transmission

1. INTRODUCTION

Digital finance is the mainstream form of digital operations in the financial industry and a key support for the advancement of inclusive finance. Based on the monitoring data of Peking University's digital inclusive finance over the years, from 2011 to 2023, China's digital finance has advanced steadily, with service coverage extending to counties and rural areas, and the accessibility of grassroots financial services steadily increasing. This index covers all levels of administrative regions across the country and conducts quantitative measurement from three dimensions: coverage breadth, usage depth, and digital maturity. It is the core reference for analyzing the digital maturity of regional finance in the industry.

Classical financial models have been dogged by three fundamental weaknesses historically: there is an information gap between investors and financiers, the barrier to entry is prohibitively high on investors, and there are inflexible credit allocation systems. Not only does this structural friction limit the efficient performance of capital markets, but also has a tendency to cause systematic mispricing of corporate value: good companies are chronically under valued, inefficient companies continue to lock up finance, and production factors get misallocated [1]. Increased financing expenses and slow circulation of capital add another layer to the resource misallocation, which undermines the central role of market-based pricing in capital markets.

Capital markets operation efficiency is the direct factor of fair asset pricing, and it is an underlying force shaping the valuation results of quoted companies. It is found through a review of the available literature that the majority of research articles have been narrow-focusing on the effects of digital finance on corporate financing activities and innovation only, with very few considering the mediating influence of market efficiency. There is still a significant research gap in the entire value transmission structure of digital finance to firm valuation.

An increasing amount of empirical evidence exists to prove that fintech could improve the information environment of capital markets and curb information-induced pricing disparities by means of information governance and optimal allocation of factors of production. The paper will examine the internal connection between digital finance and market efficiency as well as company evaluation against the background of rapid digitization in the financial sphere. The article also systematically outlines the multi-level effects of this relationship and performs an analysis together with the operational restrictions of industry growth. When doing so, it aims at eliminating the shortcomings of the current studies, and offering a guideline to harmonized industrial development.

2. THE INTRINSIC CORRELATION LOGIC BETWEEN DIGITAL FINANCE AND CAPITAL MARKET EFFICIENCY

In contrast to the traditional offline finance business development model, digital finance radically reorganized the basis of its service logic: based on a data-driven core model of operation, it has saturated its market inclusively with its services, and greatly simplified business approval and end-to-end workflow procedures. Digital finance relies on data collection and intelligent analysis technology, breaking through geographical and scenario limitations, widely reaching small and medium-sized business groups and grassroots markets, and continuously eliminating service barriers of traditional finance. Based on the monitoring data of digital inclusive finance from Peking University from 2011 to 2023, digital financial services in China have covered 31 provincial-level administrative regions, over 300 prefecture-level cities, and more than 2800 county-level units. The coverage of grassroots financial services in counties and townships continues to expand. The digital operations of financial services have streamlined cumbersome processes such as approval, trading, and settlement, reducing resource consumption and efficiency losses caused by manual operations, and providing support for the optimization of the financial system.

The operational efficiency of the capital market is a comprehensive evaluation dimension, which generally covers three core parts: information transmission, capital transactions, and resource allocation. A smooth information transmission mechanism can timely reflect key content such as business operations dynamics and industry policy changes in asset price fluctuations [2]; A convenient and low-cost trading model can effectively reduce the trading losses of market entities; Scientific resource allocation methods can help guide idle capital from society to flow towards high-quality real-sector firms and emerging industries with promising prospects. The 2022 special research of the Shenzhen Stock Exchange mentioned that the digital transformation of finance and industry can effectively alleviate the problem of stock price synchronicity and improve market information efficiency. This conclusion is also consistent with the core connotation of the Efficient Market Hypothesis (EMH).

From the perspective of development logic, digital finance is highly compatible with the optimization direction of modern capital markets. Relying on multidimensional data mining capabilities, financial institutions can integrate diversified business information of firms and alleviate information asymmetry between investment and financing parties; Popularize online services throughout the entire process, streamline intermediate links in fund circulation, and reduce unnecessary transaction expenses; The implementation of inclusive financial supply will gradually improve the current situation of excessive concentration of credit resources [3]. Through the combined effects of multiple channels, the longstanding challenges left by traditional capital markets continue to ease,

consolidating the foundation for efficient market operations and creating an enabling and stable external environment for the return of value and reasonable valuation adjustment of listed companies.

3. THE REALISTIC OPTIMIZATION PERFORMANCE OF DIGITAL FINANCE ON CAPITAL MARKET EFFICIENCY

From the development plan of the People's Bank of China (PBC)'s financial technology and the operations data of exchanges, it can be seen that the widespread implementation of digital finance has effectively optimized the information ecology of the capital market. Small and medium-sized firms, as well as light-asset tech startups, generally have practical shortcomings such as non-standard information disclosure and lack of credit information. The conventional credit review system has a strong bias towards collateral assets and standard financial statements, so it is impossible to evaluate the actual operational performance of such companies [4]. In combination with the digital risk control instruments, financial institutions are able to integrate various background data such as the corporate tax files, the daily revenue streams, and the Internet trends of operations across different industries to create a unique evaluation mechanism of credit. This in turn will minimize information barriers between investors and lenders, reduce pricing anomalies caused by information asymmetry and bring asset prices closer with firms valuation.

The shift to digital trading models has made a material reduction in the cost of participation in capital markets and friction in the intermediary transactions. The increasing use of online investment and financing matching platforms has radically simplified inefficient procedures in the conventional offline transactions, mitigated pain points across the industry including layered intermediary margins and long approval times, and significantly increased the pace of capital turnover. Since the digitalization of the securities market intensifies, and exchange-based trading systems are constantly being improved, prices are much more responsive to the direction of policies, industry trends and micro information about individual firms. More efficient transmission of information reduces the time during which asset prices can stray away from their fundamental value, which makes the market pricing more rational and stable.

Viewed in the light of resource allocation, and based on published reports by the People s Bank of China (PBC as well as the financial regulatory authorities), the granting of credit to long-tail segments namely; micro, small and medium-sized enterprises (MSMEs) as well as tech-innovation businesses has been growing steadily since the launch of the digital inclusive finance policies. A large number of manufacturing small and medium-sized firms and science and technology innovation private firms that are limited by traditional credit thresholds are able to obtain sustained financing support. The pattern of excessive concentration of credit resources in traditional industries with heavy assets has gradually improved, and the flow of social capital between different industries and entities of different scales is more balanced and reasonable. Digital finance effectively alleviates the long-standing problem of resource mismatch in the capital market by optimizing the credit allocation structure, guiding funds to flow towards weak links in the real economy and strategic emerging areas, continuously improving the overall resource allocation efficiency of the market, and providing long-term support for the efficient operations of the capital market. Improved market efficiency further feeds through to firm valuation [5].

4. THE CORE TRANSMISSION PATH OF DIGITAL FINANCE AFFECTING FIRM VALUATION

The improvement of market efficiency is the core intermediary connecting digital finance and firm valuation, mainly affecting firm valuation through three paths.

Digital finance can improve overall financing conditions and effectively reduce financing expenditures during the operational phase of firms. Digital finance expands diversified financing channels and weakens the rigid restrictions of traditional models on collateral assets. The long-term financing difficulties faced by small and medium-sized firms and private firms have been effectively alleviated. According to statistics from the People's Bank of China (PBC), the total amount of loans to small and micro firms maintained stable growth in the first half of 2025. The proportion of credit loans continues to rise, and the difficulty for market entities to obtain funds is gradually decreasing [6]. By holding stable capital reserves, firms can stabilize their cash flow expectations. The intrinsic value of the firm is consolidated, and the valuation level of the secondary market will gradually return to a reasonable range.

Digital finance assists firms in long-term operations and enhances their long-term growth capabilities. Firms can obtain sufficient external financing, sustainably invest in technology research and development, promote capacity upgrading and market expansion [7]. Digital finance relies on technological advantages to increase financial support for science and technology innovation and small and medium-sized manufacturing firms. In 2025, the scale of loans for domestic technology-based small and medium-sized firms will steadily increase, with a year-on-year growth rate of 22.9%. Sustained financing enables firms to complete technological updates and product innovation. Science and technology innovation and growth-oriented firms capture benefits from digital finance to enhance their competitiveness. Investors will adjust their valuations based on their development potential, and companies with outstanding growth capabilities will gain higher valuation advantages.

The requirements for digital supervision and data disclosure will urge firms to standardize financial records and information disclosure. The People's Bank of China (PBC)'s "Financial Technology Development Plan (2022-2025)" clearly requires market entities to do a good job in data governance and compliant operations. Regulatory authorities are improving industry systems, prompting firms to optimize their internal operational systems. Transparent business data facilitates supervision by investment institutions and regulatory authorities. Effectively mitigating agency problems in firms and compliance management can lower various business risks. Investors are more appreciative of companies with standardized governance and sound management models, which can stabilize the valuation of the company's capital market.

5. HETEROGENEITY CHARACTERISTICS OF VALUE TRANSMISSION UNDER DIFFERENT SUBJECTS

Digital finance promotes the upgrading of market efficiency, but there are significant differences in its impact on firm valuation. Differences in firm size, property rights attributes, and regional financial foundations can all alter the valuation enhancement effect of digital finance.

Large firms have mature credit systems, sufficient market financing channels, and traditional financial services can cover their own business needs. Digital finance cannot fundamentally change the financing pattern of large firms, and can only assist firms in streamlining their capital flow processes, with limited actual value enhancement. The pain points for the development of small and medium-sized firms are concentrated in two aspects: incomplete information disclosure and insufficient capital reserves. The traditional credit model is difficult to match the development characteristics of such firms. Digital finance can integrate multi-dimensional business data, build a new credit evaluation system, and effectively alleviate the financing difficulties of small and medium-sized firms. In the first quarter of 2025, the balance of loans for inclusive small and micro firms nationwide was CNY 35.3 trillion, with a year-on-year growth rate of 12.5%, significantly higher than the industry average. The valuation improvement potential of such firms has also increased accordingly [8].

From the perspective of property rights, there are significant differences in the effectiveness of digital finance. State-Owned Enterprises (SOEs) rely on policy support and inherent resources to have stable and sufficient credit guarantees in the long run. Private firms, especially small and medium-sized ones, have long faced the reality of imbalanced allocation of credit resources. Digital finance weakens the mandatory review conditions such as collateral assets and firm size, creating a fair financing environment for private firms. During the same period, the credit loans of private firms increased by 15.4% year-on-year, leading the overall market in terms of growth rate. Correspondingly, the valuation adjustment and value enhancement of firms will show stronger sensitivity.

The gap in financial development between different regions further amplifies the transmission differences. The financial industry in the eastern region is well-developed, the capital market operations mechanism is mature, and digital finance only plays an auxiliary optimization role. The financial resources in the central and western regions are scarce, and the market operations efficiency is low. The market penetration of digital inclusive finance can fill the gaps in local financial services [9]. Although the overall development level of digital finance in the central and western regions is relatively low, the financial support obtained by local firms has a more incremental effect, and the valuation enhancement effect of firms is stronger. It can also quickly drive the overall operational efficiency of regional capital markets.

6. REALISTIC CONSTRAINTS IN THE VALUE TRANSMISSION PROCESS OF DIGITAL FINANCE

In the actual implementation process of digital finance, although it can optimize the operational status of the capital market and adjust the valuation structure of firms, there are multiple limiting conditions in real scenarios that directly restrict the role of digital finance in improving valuation.

There are obvious shortcomings in the firm data management model, which directly affect the actual effectiveness of information utilization. The business data of various industries are stored in a scattered manner, and there is no unified data entry and statistical standard between industries. Most small and medium-sized firms still rely on traditional management models in their daily operations, and the progress of digital transformation is slow. These types of firms are unable to fully retain their operating records and business data, and financial institutions lack sufficient real data as a reference when conducting risk audits and asset pricing work [10]. The accuracy of information judgment will decrease, and the actual efficiency of market information transmission will also be limited. The corresponding industry statistical documents explicitly mention that inconsistent statistical calibers and insufficient disclosure of firm information will directly hinder the precise allocation of financial resources, which are common obstacles to the implementation of digital finance at present.

Financial business innovation continues to accelerate, and the pace of regulatory rule updates cannot be kept up with. Currently, there is a continuous increase in cross-industry and cross-domain financial integration projects, and various new service models are constantly being implemented. Some innovative businesses lack clear regulatory definitions, making it difficult for companies to clearly define the boundaries of compliant operations. The business plans of companies are susceptible to the short-term fluctuation in phases, which in turn destabilize the pricing logic of the capital market that has been previously set. It will finally result in the slow erosion of the valuation benefit that firms would have gained because of improved market efficiency [11]. This imposes a need on regulators to keep abreast with the dynamics of the market by developing new and improving existing regulations based on the market, ensuring that the scope of compliance is evident to the new businesses, and keeping up with the rate at which the industry adopts innovations via active regulation changes.

There is also a very important difference in the capabilities of market entities to accept and use digital technology, which has finally resulted in a significant developmental gap within the industry. Large firms and market entities in the eastern region have complete digital facilities and can flexibly use

digital financial tools to match their business needs. Traditional physical industries, as well as small and medium-sized firms in the central and western regions, are lagging behind in their digital transformation progress, making it difficult to adapt to the new online and data-driven financial services. These types of firms find it difficult to share the development dividends brought about by the improvement of market efficiency.

Only by filling in the gaps in data management, dynamically adjusting regulatory rules, and narrowing the regional digital application gap can we effectively eliminate existing obstacles and ensure the smooth implementation of the service role of digital finance.

7. CONCLUSION

This article focuses on the linkage between digital finance, market efficiency, and firm valuation, and systematically sorts out the value transmission mechanism of digital finance. Research has confirmed that digital finance, with its data-driven, online-channel-based and inclusive features, effectively optimizes the overall operations of the capital market. After the improvement of market operations efficiency, it will directly promote multiple development channels for firm financing, long-term development, and internal governance, thereby promoting the return of firm valuation to a reasonable level.

Different business entities and geographical conditions will directly affect the effectiveness of digital finance implementation. Small and medium-sized private firms, as well as local firms in the central and western regions, are more likely to use digital finance to alleviate their own development pressure, and the practical role of value enhancement is also more evident. Large mature firms and developed markets in the eastern region have complete financial supporting conditions, but the incremental improvement brought by digital finance is relatively limited.

Based on real-life scenarios, there are still objective limitations to this study. At present, the lack of standardization in industry data management, slow pace of regulatory updates, and uneven progress in digital construction across regions will weaken the actual effect of value transmission. This represents a core objective limitation of the present study.

Based on the current level of research and the main results of this paper, subsequent studies along with industry practice will be able to narrow down the main areas of optimization by focusing on the most urgent practical issues in the field that cause pain. The industry needs to concentrate its work on solving loopholes in the regulatory structure, uniforming industry standards regarding data usage, and incrementally eliminating geographical disparities in digital growth. In the context of their own organizations, businesses must take the initiative to change the nature of their business models to match the rate of digitization in finance, adopting new financial products to enhance their key competition in operations. Regarding the capital market, the fundamental logic of pricing should be better developed considering the current development of digitalization, which would lead to better correlation of company values with their actual financial performance Multi-stakeholder coordination can foster a virtuous cycle between financial services, market operations and real-sector firms.

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