Research on the New Mechanism of Accounting Information Disclosure in Financial Market Pricing Driven by Financial Technology

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Abstract: This paper focuses on the reshaping of the accounting information disclosure mechanism by financial technology and its impact on financial market pricing. The study shows that financial technology promotes a full-process reform of accounting information disclosure, covering information production, transmission, interpretation, and feedback, thereby forming a new mechanism characterized by real-time dynamics, precise matching, intelligent objectivity, and proactive immediacy. This mechanism effectively improves the efficiency of financial market pricing, enhances pricing fairness, increases pricing accuracy, and strengthens pricing stability, solving problems such as disclosure delays and information asymmetry in traditional practices. In response to the challenges in the operation of the new mechanism to propose countermeasures, including improving institutional regulations, enhancing technological application capabilities, strengthening risk prevention and control, and promoting collaborative development. This study provides a reference for enriching the theory of the relationship between accounting information disclosure and financial market pricing and for guiding the practices of market participants.

1. Introduction

1.1. Research Background

In recent years, financial technology, with big data, artificial intelligence, blockchain, and cloud computing as its core technological carriers, has achieved deep penetration in the financial field. Its influence has extended to areas such as the automated collection of corporate financial data and the diversification of investor information acquisition channels, resulting in a fundamental transformation of the information circulation model in financial markets. Traditional accounting information disclosure, centered on periodic reports, has obvious timeliness delays: disclosure formats such as annual and quarterly reports often span several months, making it difficult to reflect the real-time operational dynamics of enterprises, thereby causing frequent information vacuums in financial market pricing.

In addition, as financial market participants continuously increase their requirements for the accuracy of asset value assessments, issues such as information asymmetry, high interpretation costs, and untimely feedback under the traditional disclosure model further exacerbate pricing deviations, such as short-term abnormal fluctuations in stock prices and misvaluation of asset values. In this background, exploring how financial technology reshapes the accounting information disclosure mechanism and further influences the logic of financial market pricing has become a key issue in meeting the current development needs of financial markets.

1.2. Research Significance

1.2.1. Theoretical Significance

Existing studies mostly focus on the static relationship between traditional accounting information disclosure and financial market pricing, or discuss the application of financial technology in the financial field in isolation, but rarely conduct systematic analysis on the

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reconstructive effect of financial technology on the transmission chain between accounting information disclosure and market pricing. This study, by sorting out the new mechanisms of accounting information disclosure driven by financial technology, such as real-time production and precise transmission, can fill the theoretical gap between technology-enabled information disclosure and the optimization of market pricing mechanisms.

On the one hand, it can expand the technical dimension of accounting information disclosure theory and enrich its theoretical connotation in dynamic and intelligent scenarios; on the other hand, it can provide a research perspective on information mechanism upgrading for financial market pricing theory, improve the theoretical framework of information elements affecting pricing efficiency, and provide basic logical support for subsequent related research.

1.2.2. Practical Significance

From the perspective of market participant needs, the practical value of this study is reflected in three aspects. For enterprises, it can clarify the application directions of financial technology in information disclosure, such as dynamic data collection and intelligent feedback adjustment, helping enterprises reduce disclosure costs, enhance the value of information for investors, and further optimize their pricing image in the market. For investors, it enables a clear understanding of the convenience brought by financial technology in information acquisition, such as precise push and intelligent interpretation, reducing decision-making errors caused by information asymmetry or insufficient interpretation ability, and supporting rational investment. For regulatory institutions, the research conclusions can provide references for formulating technology-adaptive disclosure rules, such as clarifying real-time disclosure standards and regulating the application of intelligent tools, thereby preventing information falsification, curbing market speculation, and promoting financial market pricing toward fairness, efficiency, and accuracy.

2. Manifestations of the New Mechanism of Accounting Information Disclosure Driven by Financial Technology

2.1. Information Production: From Post-Event Static to Real-Time Dynamic

Traditional accounting information production mainly follows a post-event static model, relying on manual collation of enterprises' periodic operating data, which is ultimately disclosed through periodic reports such as annual reports and quarterly reports. The entire process is time-consuming and difficult to synchronize with daily operational changes of enterprises. Supported by financial technology, information production shifts to a real-time dynamic model.

Big data technology can collect high-frequency operational data in real time, such as production, sales, and supply chain, covering dynamic information not included in traditional disclosure. Automated tools replace manual input and verification, greatly shortening the information production cycle and reducing time loss caused by human operations. This transformation enables accounting information to reflect enterprise operations instantly, breaking the time constraints of traditional periodic disclosure and allowing the market to quickly access the latest financial and operational information of enterprises.

2.2. Information Transmission: From One-Way Push to Precise Matching

Traditional accounting information transmission adopts a one-way push model. After enterprises release disclosure information uniformly, investors must filter out their focus content from a large amount of general information, which is not only inefficient but also prone to information mismatches. Financial technology promotes the transformation of transmission models toward precise matching.

Artificial intelligence technology can analyze investors' risk preferences, investment areas, and types of information needs, generate personalized demand labels, and then direct the disclosed information of enterprises to the corresponding investors. Blockchain technology ensures the integrity and immutability of information during transmission, preventing information distortion.

This model reduces investors' information filtering costs while ensuring the relevance and reliability of information transmission.

2.3. Information Interpretation: From Manual Subjectivity to Intelligent Objectivity

Traditional accounting information interpretation relies on manual work. Professionals must spend considerable time analyzing financial statement data and notes, and the results are easily influenced by personal experience, emotions, and other subjective factors. Ordinary investors, due to a lack of professional competence, find it difficult to accurately understand complex information. Financial technology promotes the shift of interpretation models toward intelligent objectivity.

Natural language processing technology can automatically parse unstructured information such as financial statement notes and operating announcements, extracting core data and key conclusions [1]. Intelligent analysis tools can further transform interpretation results into simple forms such as visualized charts and risk warning prompts, lowering the threshold for understanding. This transformation not only improves interpretation efficiency but also reduces subjective bias, enabling investors with different professional levels to efficiently capture the core value of information.

2.4. Information Feedback: From Delayed Passivity to Instant Proactivity

Traditional accounting information feedback shows characteristics of delayed passivity. Enterprises must wait until the release of periodic reports to obtain market responses through indirect channels such as stock price fluctuations and investor inquiries. The feedback cycle is long and it is difficult to accurately capture investor needs, making subsequent disclosure adjustments lack specificity. Financial technology facilitates the transformation of feedback models toward instant proactivity.

With the help of real-time monitoring tools, enterprises can dynamically track market data after information disclosure, including stock price changes, trading volume variations, and investor discussion hotspots, quickly identifying market concerns and questions about the disclosed information [2]. Based on this real-time feedback, enterprises can promptly supplement relevant information and respond to market concerns, making information disclosure more aligned with market needs and forming an interactive cycle of disclosure, feedback, and adjustment in real time.

3. The Impact of the New Mechanism on Financial Market Pricing

3.1. Improving Pricing Efficiency: Real-Time Dynamic Information Shortens the Pricing Adjustment Cycle

In the traditional pricing model, accounting information is disclosed in the form of periodic reports. The lag of information makes it difficult for the market to quickly capture changes in enterprise operations, and pricing adjustments often require waiting for a full reporting cycle, which may last for several months [3]. Under the new mechanism, real-time dynamic information can synchronize high-frequency data in enterprise operations, including daily sales, cash flow changes, and supply chain stability.

Once this instant information enters the market quickly through automated tools, investors can promptly update their judgments on the value of enterprise assets without waiting for periodic reports. For example, if an enterprise's core business revenue in a given quarter exceeds expectations, real-time data can be immediately transmitted to the market. Investors can then adjust their valuation models accordingly, pushing the stock price to quickly approach its real value and avoiding pricing stagnation caused by the information vacuum in the traditional model. This instant response greatly shortens the pricing adjustment cycle, enabling financial asset prices to respond more sensitively to changes in actual business conditions, significantly improving the efficiency of financial market pricing.

3.2. Enhancing Pricing Fairness: Precise Matching Reduces Information Asymmetry

The traditional one-way push model of information transmission causes significant differences in the ability of different investors to obtain effective information. Professional institutional investors

rely on technical and human resources advantages, can quickly extract key content from a large volume of general information, while ordinary investors often struggle to access information suited to their needs due to high filtering costs and limited professional ability. This results in unfair pricing under information asymmetry, with asset prices easily dominated by groups with information advantages.

The precise matching model of the new mechanism generates personalized demand labels for different investors through artificial intelligence algorithms and directs enterprise disclosure information to the corresponding groups [4]. For example, small and medium investors with lower risk preferences receive information on debt repayment ability and cash flow safety first, while long-term value investors focus on data such as R&D investment and market share growth. Blockchain technology ensures that information transmitted is not tampered with or omitted, and all directed information received by investors is based on enterprises' actual disclosures. This model reduces the gap in information acquisition among different investors, mitigates pricing bias caused by information asymmetry, and allows various market participants to engage in pricing within a relatively fair information environment, thereby promoting greater fairness in financial market pricing.

3.3. Increasing Pricing Accuracy: Intelligent Interpretation Reduces Subjective Bias

In the traditional pricing process, accounting information interpretation relies on manual analysis. Professional analysts' judgments are easily influenced by personal experience, market sentiment, or even interest positions, leading to subjective bias. Ordinary investors may misjudge enterprise value due to difficulties in understanding complex financial data. These subjective factors cause pricing to deviate from the true value of assets. The intelligent interpretation model of the new mechanism automatically extracts key information from financial statement notes and operating announcements through natural language processing technology, removes redundant content, and uses data analysis models to objectively calculate key pricing indicators such as profit expectations and risk coefficients.

For example, when faced with complex consolidated financial statements, intelligent tools can automatically separate the profit contributions of different business segments, generate intuitive visualized charts, and highlight potential risk points such as the impact of declining inventory turnover rates. This avoids overly optimistic or pessimistic tendencies that may occur in manual interpretation. Intelligent interpretation results are presented uniformly to all investors, reducing judgment differences caused by multiple interpretations. This objective and unified interpretation of information helps investors more accurately grasp the true value of enterprises, reduces the interference of subjective bias in pricing, and allows financial asset prices to better reflect their intrinsic value, improving pricing accuracy.

3.4 Strengthening Pricing Stability: Instant Feedback Suppresses Extreme Fluctuations

In the traditional model, enterprises cannot obtain real-time responses from the market regarding disclosed information. The delay in feedback prevents enterprises from responding promptly to market doubts or clarifying misunderstandings. When negative speculation or overly optimistic expectations about enterprises emerge, the lack of timely supplementary information guidance often triggers blind follow-up trading among investors, leading to extreme fluctuations in asset prices. The instant feedback model of the new mechanism allows enterprises to use real-time monitoring tools to track market dynamics after information disclosure, including instant stock price changes, abnormal trading volume fluctuations, and hot topics in investor discussions, quickly identifying misunderstandings or information gaps. For example, when the market misinterprets increased short-term R&D investment as higher profit pressure, enterprises can identify abnormal stock price declines through real-time feedback data and promptly supplement disclosures on the technological breakthroughs and expected future returns from R&D investment, thereby eliminating market misunderstandings in time. This instant interaction of disclosure, feedback, and adjustment can effectively guide investors toward rational judgment, avoiding extreme trading behaviors caused by incomplete or misunderstood information, suppressing sharp fluctuations in asset prices, and

maintaining relative stability in financial market pricing, reducing the impact of irrational volatility on pricing.

4. Countermeasures and Suggestions for Optimizing the Operation of the New Mechanism

4.1. Improving Institutional Regulations: Disclosure Rules Adapted to the New Mechanism

Current traditional accounting information disclosure rules are mostly based on the periodic reporting model and are not well adapted to the new mechanism driven by financial technology. Improvements should be made in three aspects. First, clarify the scope and standards of real-time disclosure, distinguishing the importance of enterprise operating data. For example, key indicators such as core business revenue and cash flow changes should be included in real-time disclosure, while non-core auxiliary data can remain in periodic disclosure, avoiding redundant information and excessive disclosure costs [5].

Second, standardize the application of financial technology tools, requiring enterprises to use intelligent collection and interpretation tools that pass compliance certification, and clarify requirements for algorithm transparency, such as disclosing the core logic and data sources of intelligent tools, preventing information distortion caused by algorithmic black boxes [6].

Third, establish rules for defining responsibility for information quality under the new mechanism, clarifying the responsibility allocation among enterprises and financial technology service providers in the processes of information production and transmission. If disclosure deviations are caused by technical failures or data processing errors, the responsible party must be clearly identified to protect investors' rights and provide institutional safeguards for the operation of the new mechanism.

4.2. Enhancing Technological Application Capabilities: Promoting Market Participants' Adaptation to the New Mechanism

The implementation of the new mechanism depends on the technological application capabilities of various market participants, and specific improvement paths need to be designed for different parties [7]. For enterprises, policies and resources should encourage the deployment of technological tools adapted to the new mechanism, such as supporting small and medium-sized enterprises in accessing third-party financial technology platforms to reduce self-development costs and quickly achieve real-time data collection and automated processing [8]. For investors, technological application education should be strengthened, with regulatory authorities or industry associations building training platforms to popularize the use of intelligent interpretation tools. For example, guiding ordinary investors to identify enterprise financial risks through visualization tools can enhance their ability to acquire and assess information.

For financial intermediaries, technological upgrading should be promoted. For instance, accounting firms and securities companies should be guided to develop auditing and analysis tools adapted to real-time information, ensuring the professionalism of information verification and value assessment under the new mechanism, helping market participants better adapt to the new mechanism, and maximizing its effectiveness.

4.3. Strengthening Risk Prevention and Control: Preventing Potential Problems Under the New Mechanism

While improving efficiency, the new mechanism is also accompanied by technological and information risks, requiring the construction of targeted prevention and control systems [9]. First, strengthen data security protection, requiring enterprises and financial technology service providers to adopt encryption technologies to secure data during collection and transmission, especially investors' privacy and enterprises' sensitive operating data. An emergency response mechanism for data leaks should be established to reduce the market impact of data security incidents.

Second, guard against algorithmic bias risks. Regulatory authorities should regularly review the logic of intelligent push and interpretation tools to prevent information partiality caused by

excessive focus on certain types of information, such as tools pushing only positive information while concealing risk warnings, ensuring objectivity and comprehensiveness in information delivery.

Third, control the risk of information overload by guiding enterprises to establish information filtering mechanisms. In real-time disclosure, priority should be given to transmitting core value information, avoiding excessive redundant data that may interfere with investor judgment. Intelligent tools should also provide information categorization functions, helping investors quickly focus on key content. Multi-dimensional prevention and control can ensure the stable operation of the new mechanism.

4.4. Promoting Collaborative Development: Building an Ecosystem with Multi-Party Participation

The long-term effective operation of the new mechanism depends on multi-party collaboration and the construction of a complete ecosystem [10]. First, strengthen collaboration among regulatory authorities, enterprises, and financial technology service providers. Regulatory authorities should take the lead in formulating industry coordination standards and clarifying responsibilities and rights of all parties. For example, enterprises are responsible for the authenticity of information, financial technology service providers for the reliability of technology, and regulatory authorities for supervision and coordination, forming a clear division of labor in collaboration.

Second, promote the participation of industry associations and academic institutions. Industry associations can build exchange platforms to facilitate enterprises and financial technology service providers in sharing technical application experiences and solving common problems in the implementation of the new mechanism. Academic institutions can conduct research on the new mechanism, providing theoretical support for optimization, such as studying the impact of intelligent algorithms on pricing fairness and offering references for policymaking.

Third, strengthen cross-field collaboration, promoting deep integration of financial technology with accounting and regulatory fields. For example, blockchain technology can be applied interactively in accounting auditing and supervision, realizing real-time linkage among information disclosure, auditing, and supervision. By building an ecosystem with multi-party participation and collaborative interaction, sustainable support can be provided for the operation of the new mechanism.

5. U.S. Practice: Institutional Innovation and Market Evolution of Accounting Information Disclosure Driven by Financial Technology

5.1. Dynamic Adaptation of Institutional Norms and Technological Embedding

The United States promotes the deep integration of accounting information disclosure rules and financial technology through regulatory framework iteration. In 2025, the SEC updated the XBRL classification standard, adding Special Purpose Acquisition Company (SPAC) and Cybersecurity Disclosure (CYD) modules, requiring enterprises to tag key financial data in real time with extensible business reporting language, allowing investors to directly retrieve and analyze through the EDGAR system, significantly reducing the cost of information acquisition [11].

FASB issued ASU2023-09 in 2023, requiring enterprises to disclose income tax by federal, state, and foreign jurisdictions, and to list items exceeding 5% statutory tax rate separately, promoting the precision and real-time nature of tax information disclosure.

In the field of crypto assets, SEC regulation shifted from enforcement-based regulation to rule-first. The crypto project launched in 2025 clarified that most tokens are non-securities, allowing decentralized finance (DeFi) projects to test compliance disclosure mechanisms of smart contracts in regulatory sandboxes. For example, Coinbase decentralized derivatives platform used artificial intelligence to generate SEC-compliant legal texts, both protecting investors' rights and leaving sufficient innovation space for the application of blockchain technology.

5.2. Deep Penetration of Technological Applications and Scenario Expansion

U.S. enterprises widely adopt technologies such as blockchain and AI in accounting information disclosure to reconstruct business processes. For example, ProjectOpen pilot program submitted by Solana Policy Research Organization plans to achieve tokenized issuance and real-time settlement of stock securities through blockchain, shortening transaction confirmation time from traditional T+2 to a few seconds, and ensuring information tamper-proof through distributed ledger. Morgan Asset Management's Spectrum platform uses machine learning and natural language processing (NLP) technology to transform unstructured research reports into quantifiable investment signals, and its AI-driven risk monitoring system can identify abnormal market fluctuations in real time and automatically adjust investment portfolios.

Applications of generative AI in financial reporting have also made breakthroughs. Accenture's generative AI business reached $3 billion in bookings in 2024, and its intelligent system developed for insurance companies can automatically generate claim analysis reports, improving efficiency by 400%. Microsoft Azure's AI tools help enterprises extract key indicators from massive financial data, such as evaluating forward-looking information in Management Discussion and Analysis (MD&A) through sentiment analysis, assisting investors to predict corporate future performance more accurately.

5.3. Technological Empowerment of Market Participants and Behavioral Change

U.S. institutional investors realize intelligent upgrading of information interpretation and pricing decisions through financial technology tools. BlackRock's iShares ETF uses blockchain technology to track underlying assets in real time, and its smart contracts can automatically trigger operations such as dividend reinvestment, reducing management costs while improving transparency. Goldman Sachs' Marquee platform integrates AI algorithms to provide clients with customized risk-hedging strategies, such as generating carbon emission-related pricing models by analyzing corporate ESG data, helping investors capture opportunities in green transformation. Individual investors obtain AI-based real-time market interpretation through platforms such as Robinhood, whose "intelligent warning" function can automatically identify abnormal indicators in financial reports (such as sudden changes in gross profit margin) and push risk alerts.

Corporate disclosure strategies have also changed significantly. Amazon AWS's AI financial system can automatically generate multi-standard reports compliant with IFRS and GAAP, and its "compliance dashboard" monitors cross-border tax risks in real time to ensure disclosure consistency. Google Cloud's Gemini large model is used to analyze competitors' financial report data, helping enterprises dynamically adjust pricing strategies. This "data feedback" mechanism strengthens the effectiveness of market pricing.

5.4. Frontier Exploration of Regulatory Challenges and Risk Prevention

While promoting technology application, the United States actively builds a regulatory system suitable for financial technology. The SEC's "Compliance Mentor" program transforms 40% of the litigation team into technical compliance consultants, helping enterprises understand the interpretability requirements of AI algorithms to avoid disclosure deviations caused by model black boxes. The COSO2023 framework incorporates "digital resilience" into core elements of risk management, requiring enterprises to assess the potential threats of quantum computing to data security, such as protecting the transmission and storage of financial information through quantum key distribution (QKD) technology.

In response to the ethical risks of generative AI, the American Institute of Certified Public Accountants (AICPA) issued the AI Audit Guidelines, requiring auditors to verify the quality of AI model training data and assess the impact of algorithm bias on financial forecasts. For example, an AI credit scoring model of a certain bank was ordered by regulators to be retrained and disclose model limitations due to excessive reliance on racial bias in historical data. In data privacy protection, the SEC and CFTC jointly established an "on-chain data sharing protocol," requiring crypto exchanges to adopt federated learning technology when submitting trading data, meeting

regulatory compliance requirements while protecting user privacy.

6. Conclusion

Financial technology, with big data, artificial intelligence, and blockchain as the core, reconstructs the entire process of accounting information disclosure, promoting real-time information production, precise transmission, intelligent interpretation, and instant feedback, breaking the timeliness and efficiency bottleneck of traditional disclosure, and producing systemic impact on financial market pricing. This impact not only improves pricing efficiency and accuracy, but also enhances fairness and stability of pricing, providing a technological path to solve market information asymmetry and pricing deviation problems.

The practical experiences of the United States in terms of system adaptation, technology penetration, empowerment of entities, and risk prevention have verified the feasibility of integrating fintech with accounting information disclosure. Its dynamic regulatory framework, scenario-based technology applications, and multi-participant collaborative model provide experience for global financial markets. This study, by sorting out the operation logic and impact path of the new mechanism, not only fills the theoretical gap between financial technology empowering information disclosure and optimizing market pricing, enriches the technological dimension of accounting information disclosure and financial market pricing theory, but also provides clear practical guidance for market participants: enterprises can rely on technology to reduce disclosure costs, investors can use tools to improve decision-making rationality, and regulators can balance innovation and risk through rule innovation.

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