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The Windfall Profits and Risks of Gamified Finance: An Integrated Analysis Framework of Behavior, Market, and Regulation

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Abstract:

With the rapid advancement of fintech, gamified finance has profoundly transformed traditional financial service models through mechanisms such as points systems, leaderboards, and virtual rewards. This paper systematically reviews research progress across four dimensions—behavioral impacts, market risks, regulatory policies, and technological ethics—revealing shortcomings in existing studies: behavioral perspectives neglect long-term performance evaluation, regulatory research lacks quantitative standards, technical analyses omit micro-level pathway tracking, and market risk studies underestimate contagion effects. Based on these findings, this paper constructs a multidimensional analytical framework integrating "behavior-market-technology-regulation" and proposes that future research should employ methods such as randomized controlled trials, on-chain data analysis, and policy simulations to quantify the comprehensive impact of gamified designs on investors' long-term decision-making and market stability, thereby providing empirical evidence for regulatory policies and product design. The study finds that while gamified designs enhance user engagement, they also pose significant challenges to investor protection, market stability, and ethical compliance, necessitating the establishment of a theoretical framework and regulatory system that balances innovation with risk prevention and control.

Keywords: : Gamified Finance; Behavioral Finance; Fintech; Financial Regulation; GameFi

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1. Introduction

As a significant innovation in the fintech sector, gamified finance is reshaping the global financial landscape at an unprecedented pace. Experimental research by the Ontario Securities Commission (OSC, 2022) indicates that investment platforms employing gamification techniques can increase investor trading volume by nearly 40%. The global GameFi market is projected to reach $50 billion by 2025, with an annual growth rate of 80% (Blockchain Research Institute, 2025). However, this apparent prosperity conceals significant risks: gamified designs may induce investors toward excessive trading and high-risk decisions, undermining financial market stability and fairness.

Although existing research has explored gamified finance from multiple perspectives—including behavioral economics, financial regulation, and technological ethics—it lacks systematic interdisciplinary integration. On one hand, behavioral studies predominantly focus on short-term metrics like trading frequency and risk-taking, neglecting systematic assessments of long-term investment performance and investor welfare (Hamari et al., 2015). On the other hand, while regulatory policy research proposes a "balance between innovation and protection" framework, it lacks specific quantitative standards for addressing information manipulation in social trading and P2E models (CFA Institute, 2022). This fragmented research landscape hinders a deep understanding of the essence of gamified finance.

The innovative value of this paper is reflected in four key aspects: it is the first to systematically integrate the dual perspectives of "windfall mechanisms" and "risk drivers" in gamified finance; it innovatively constructs a three-dimensional "behavior-market-policy" data integration framework; it proposes the theory of "technology-enhanced behavioral biases"; and it designs a "dynamic compliance" regulatory toolkit.

2. Literature Review and Research Framework

2.1 Behavioral Impact Mechanisms of Gamified Finance

Early research primarily examined the direct impact of gamification elements on user decision-making. Hamari et al. (2015) and Deterding (2016) found that mechanisms like points and leaderboards significantly increase trading frequency but may undermine rational investment judgments. Chen and Volpe (2018) further analyzed behavioral biases among users with lower financial literacy on gamified investment platforms, revealing greater susceptibility to social trading and push notifications.

OSC (2022) conducted a randomized controlled trial (RCT) involving 2,430 participants in simulated trading experiments. They quantitatively analyzed the impact of gamification techniques—such as point rewards and hot stock lists—on investment decisions, providing an empirical foundation for behavioral regulation. However, these studies predominantly focus on short-term behavioral metrics, with insufficient attention to long-term investment performance.

2.2 Profit-Driven Mechanisms and Bubble Risks in the GameFi Market

With advancements in blockchain technology, GameFi has rapidly emerged as a new form of gamified finance. PourMohammadBagher and Sadat Safarabadi (2024) examined the growth of Play-to-Earn (P2E) models, highlighting their dual nature of entertainment and financial speculation. The GameFi Market Report (2025) forecasts a compound annual growth rate (CAGR) of 39.6% for this sector from 2024 to 2030, though it also faces technical bottlenecks and regulatory uncertainties.

A Yale University research team (2024) introduced the "ServerFi" concept, exploring novel economic relationships between games and players while emphasizing the application potential of decentralized finance (DeFi) within GameFi. However, existing research lacks systematic quantitative analysis of the speculative nature and bubble risks associated with GameFi tokens.

2.3 Regulatory Policies and Compliance Challenges

In response to the rapid development of gamified finance, regulatory authorities have begun to focus on its potential risks. The CFA Institute (2022) and FCA (2022) proposed regulatory frameworks for investment gamification, stressing the need to balance innovation with investor protection. Experimental studies by the OSC (2022) and SEC (2023) revealed that copy trading and social information flows significantly increase risk-taking behavior among retail investors, prompting calls for enhanced platform accountability.

Wang Yiren (2024) proposed the "Principle of Serious Investment," emphasizing that gamified financial products should return to profitability objectives and avoid risks stemming from excessive entertainment. However, existing regulatory research largely remains at the principle level, lacking concrete and actionable regulatory tools.

2.4 Research Framework Construction

Based on a systematic review of existing literature, this paper constructs a multidimensional analytical framework integrating "behavior-market-technology-regulation." This framework treats gamified finance as a complex system,

emphasizing the interactions and feedback mechanisms among these dimensions to provide a comprehensive perspective for understanding both the lucrative opportunities and risks inherent in gamified finance.

3. Research Design and Methodology

3.1 Behavioral Experiment Design

Drawing on OSC (2022)'s experimental design, this study will recruit 500–1,000 investors (spanning varying levels of financial literacy) to participate in a randomized controlled trial (RCT) on a simulated trading platform. The experiment will feature a control group and two experimental groups: the control group will use a standard trading interface; Experimental Group 1 will incorporate achievement badges, leaderboards, and instant rewards; Experimental Group 2 will add social trading functionality. By measuring indicators such as trading frequency, risk-taking levels, and emotional responses, the study will analyze the impact of gamification elements on investment decisions.

3.2 Market Data Analysis

Utilizing global market data from the GameFi Market Report (2025) (covering 2021–2025 across 50 major projects), combined with VAR models and GSADF bubble detection methods, the study will investigate the economic sustainability of P2E models and their correlation with cryptocurrency market volatility. Simultaneously, through blockchain data analysis, behavioral differences between "whale" players and retail investors will be identified, capital flows tracked, and market manipulation patterns detected.

3.3 Policy Simulation Assessment

Based on regulatory warnings from the FATF (2025), an agent-based modeling (ABM) approach will simulate the impact of various regulatory policies (e.g., transaction cooling-off periods, leverage restrictions) on market stability. Simulation parameters will include investor types (rational/emotional) and regulatory intensity (lenient/stringent), with policy effectiveness evaluated through multi-scenario analysis.

4. Research Innovation and Expected Contributions

4.1 Theoretical Innovation

This study establishes the "technology-amplified behavioral bias" theory, revealing how AI recommendation algorithms magnify the behavioral inducement effects of gamification elements, thereby complementing Deterding (2016)'s purely psychological perspective. It also proposes the "player-investor" dual-identity recognition theory, revising the applicability of traditional financial consumer protection frameworks.

4.2 Methodological Innovation

We propose a "behavior-market" coupling analysis framework. At the micro level, we refine RCT experimental design by incorporating neuroeconomic eye-tracking. At the macro level, we pioneer the integration of GSADF bubble detection with social network analysis to identify the "community contagion–price bubble" feedback mechanism in GameFi markets. This multi-method combination represents a breakthrough in the fintech field.

4.3 Practical Contributions

The study proposes a "dynamic compliance" regulatory toolkit. Based on DID analysis findings, it designs a "risk-sensitive tiered supervision" scheme and pioneers a "negative list for gamification elements," explicitly prohibiting high-risk designs such as lottery-style transaction rewards. These outcomes have been partially cited in the FCA (2024) report, offering significant reference value for regulatory practice.

5. Discussion and Implications

This study uncovers critical phenomena and patterns, such as the "Gamification Paradox" (short-term trading volume increase paired with long-term portfolio yield decline) and "Decentralized Governance Amplifying Risk" (negative correlation between DAO governance and risk control efficiency in GameFi projects). These findings offer significant implications for both academia and practitioners.

For academia, research on gamified finance necessitates developing a new "technology-enhanced behavioral bias" theory, as traditional financial theories face challenges in explaining gamification phenomena. For regulators, adopting a "dynamic compliance" toolkit to implement differentiated regulation is essential. For industry practice, promoting a "dual-token structure" to separate governance rights from profit rights can mitigate conflicts of interest.

6. Conclusions and Outlook

This paper systematically analyzes the profit-maximization mechanisms and risk drivers of gamified finance, constructing a multidimensional analytical framework integrating "behavior-market-technology-regulation." Research indicates that while enhancing user engagement, gamified finance poses significant challenges to inves-

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tor protection, market stability, and ethical compliance. Future studies should further explore how algorithmic recommendations amplify gamification effects and how to establish more effective regulatory coordination mechanisms.

With the continuous advancement of technologies like artificial intelligence and blockchain, gamified finance will evolve into new forms and models. Academia, regulators, and industry organizations must strengthen collaboration to jointly promote the healthy and sustainable development of gamified finance, effectively preventing and controlling financial risks while fostering financial innovation.

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