An Event Study on Investor Behavior in Digital Collectibles

Honghao Ye

School of Business, University College Dublin, Singapore
yehonghao711@gmail.com

Abstract. In the current financial market, the coexistence of stock volatility and the rapid development of the virtual market is evident. Still, research on the behavioral connection between traditional stock and virtual asset investment lacks clarity regarding the internal mechanisms of cross-market behavioral shifts. Thus, exploring the transformation of cross-market investor behavior is of great significance. Taking Christie's "Basquiat Digital Collectibles Auction" as a major event, this paper applies the event study method, constructing a [-30, 30] day window, collecting stock and digital collectible investors' trading, holdings, and other data, to reveal the characteristics and patterns of cross-market investment behaviour shifts. The study finds: when traditional stock investors participate in digital collectibles, their motivation shifts from "value-investment orientation" to being driven by "IP speculation and novelty-seeking psychology"; risk preference becomes more aggressive, decision-making speeds up, and behavioral finance phenomena such as herding and overconfidence are more prominent in the virtual asset scenario; Christie's brand influence becomes one of the key factors driving investor cross-market behavior transformation. This study supplements the theoretical content of investment behavior in virtual assets and provides practical references for investors to adjust decision-making and for regulators to improve market governance.

Keywords: Event Study, Digital Collectibles, Behavioral Finance, Investor Behavior.

1 Introduction

In a rapidly changing era, global economic uncertainty and instability are intensifying, and financial crises occur frequently and on a larger scale, becoming key factors driving changes in financial markets. Although the stock market has long occupied a core position, its stability is lacking: in 2022, the U.S. Federal Reserve's continuous interest rate hikes pushed up risk-free rates, weakened the attractiveness of stocks, triggered capital outflows, and increased volatility in technology stocks; in 2023, the escalation of the Israel–Palestine conflict amplified geopolitical risk, transmitted through the energy industry chain to the stock market, causing significant turbulence in energy stocks.

Meanwhile, the concept of virtual assets has gradually become popular, and digital collectibles have rapidly risen with the maturity of blockchain technology. In 2023, the

A. J. Moshayedi (ed.), *Proceedings of the 2025 International Conference on Hybrid Commerce, Human Capital, and Economic Dynamics (ICHCH 2025)*, Advances in Economics, Business and Management Research 374,
https://doi.org/10.2991/978-2-38476-585-0_90

global digital collectibles market exceeded USD 50 billion in size, with more than ten million transactions, becoming a new variable in the financial market.

Existing research in behavioral finance has mostly focused on traditional financial market investor behavior. For example, Hao Lanqi studied the influence of social media on investor behavior [1]. Luo Danglun et al. analyzed fund herding and stock price crashes from a behavioral finance perspective [2]. and Xiong Xiong et al. explored the market effects of financial behavioral biases [3]. These studies, based on behavioral finance, reveal how emotions and cognitive biases influence decision-making in traditional markets, but rarely involve virtual asset contexts. Some literature on digital collectibles focuses on blockchain technology [4]. Or legal regulation, but it has not deeply analyzed the logic of investor behavior.

This paper focuses on the changes and internal logic of traditional stock investors migrating into the digital collectibles market. Using the event study method, it selects Christie's "Basquiat Digital Collectibles Auction" in August 2022 as a landmark event. Taking the auction announcement date as the benchmark, it constructs a [-30, 30] day research window, collecting trading data, portfolio changes, and decision response times of stock and digital collectible investors before and after the event. It compares differences in investment motivation, risk preference, and market response speed between the two types of investors, analyzes the volatility characteristics of trading behavior under the shock of this typical event, and verifies the intensity of behavioral finance anomalies such as herding and overconfidence in the virtual asset scenario. The aim is to fill research gaps, provide empirical references for understanding investor behavior in financial digital transformation, and respond to theoretical exploration needs under changing market structures.

2 Theoretical Foundation and Literature Review

This study is based on behavioral finance, focusing on classical behavioral bias theories such as prospect theory, herding effect, and overconfidence to explain investors' decision-making patterns under information shocks. Behavioral finance emphasizes that investors are not fully rational, and their decisions are often deeply influenced by psychological biases, cognitive limitations, and social interactions. Especially under conditions of strong market fluctuations or the rapid emergence of new assets, these irrational behaviors may be further amplified, thereby affecting asset pricing and market stability [5].

At the same time, herding behavior is particularly common in markets with incomplete information, where investors tend to "follow the crowd," ignoring their judgment [6]. The spread of social media and the effect of opinion leaders further amplify this trend in the virtual asset market, accelerating the occurrence of collective irrational trading.

In addition, overconfidence, as another typical behavioral bias, often leads investors to overestimate their ability to process information, resulting in frequent trading or overestimating potential returns, which is more evident in emerging markets [7]. Over-

all, these theories not only help explain differences in investor behavior between traditional and virtual markets but also provide a solid theoretical basis for subsequent empirical modeling.

Although existing literature has extensively studied investor behavior in traditional stock markets, it remains unclear whether and how behavior changes when investors shift from traditional financial assets to virtual assets such as digital collectibles, and specifically in what dimensions these changes manifest. Particularly in the context of the rapid development of the digital economy, exploring the behavioral connections between virtual and traditional markets not only aligns with the trend of financial digital transformation but also provides new theoretical support for applying behavioral finance in diverse scenarios, filling research gaps.

Existing studies on digital collectibles mainly focus on their underlying technology (e.g., blockchain ownership mechanisms), market operation mechanisms (e.g., speculation bubbles and IP pricing logic), and legal compliance issues. However, systematic studies on investor behavior remain insufficient, particularly regarding changes in risk preference, information response paths, and irrational behavior patterns, lacking comparative analysis with traditional financial markets.

By contrast, the research system of behavioral finance in traditional stock markets is relatively mature, covering multiple dimensions such as overconfidence, disposition effect, herding, and limited attention, with a solid theoretical and empirical foundation. Comparing the two types of markets helps identify heterogeneity in investor behavior across traditional and virtual markets and provides new perspectives for understanding cross-market behavioral patterns in today's financial ecosystem.

3 Research Design

This study is anchored on Christie's 2022 "Basquiat Digital Collectibles Auction," a landmark event. As one of the world's top auction houses, Christie's launched for the first time a large-scale series of digital collectibles of renowned artist Jean-Michel Basquiat. With its strong art IP background and the authoritative endorsement of a traditional financial institution, the event quickly became a "bridge" connecting traditional stock investors with the digital collectibles market.

The event had inherent cross-boundary characteristics. Before launch, it was promoted frequently in art and financial media such as Art Forum and the Financial Times, and generated more than 100,000 discussions on social platforms such as Weibo and Twitter, covering both art and financial communities. This provided an ideal scenario for observing cross-market investor behavioral transitions.

To conduct the event study, the event date (T0) was set as August 15, 2022 (the auction announcement). The research window spans from T-30 to T+30, covering 61 days, which include the pre-heating stage, outbreak stage, and aftermath stage. Additionally, a 90-day estimation window from T-120 to T-31 was set to calculate baseline investor behavior, representing normal conditions unaffected by the event.

Sample Selection: By matching securities accounts with digital wallet addresses, 217 investors who participated in both stock and digital collectible markets were selected.

These were divided into two groups: Stock-dominant investors (stock assets > 70%).Digital-collectible-dominant investors (digital assets > 70%).

Stock trading data was obtained from the iFinD platform, covering trading frequency, holding periods, stop-loss records, etc. In processing, transactions deviating more than three times the mean were excluded, and missing data were filled using interpolation. In total, 12,864 valid records were retained, forming the foundation for empirical analysis.

4 Results Analysis

4.1 Baseline Characteristics of Investor Groups (Estimation Window)

Table 1. Baseline Characteristics of Investors.

Characteristic Indicators	Stock - Dominant Investors	Digital Collection - Dominant Investors
Average Age	42 years old	31 years old
Average Holding Period	156 days (stocks)	42 days (digital collections)
Stop - Loss Strategy Utilization Rate	76%	29%
Proportion of Single - Asset Position	23%	61%

Table 1 shows significant behavioral differences: stock-dominant investors are older, invest long-term, adopt risk control strategies, and diversify holdings. Digital-collectible investors are younger, take higher risks, pursue short-term speculation, and concentrate portfolios.

4.2 Investment Motivation Shifts (Event Window Comparison)

Table 2 shows that Christie's event significantly influenced investor behavior: stock investors reduced short-term stock trades, while digital investors increased speculative trades. Nearly half of trades were explicitly driven by Christie's brand reputation, reflecting a shift toward IP speculation + brand trust.

Table 2. Comparison of Investment Motivation Across Windows.

Indicator	Estimation Window (Benchmark Value)	Event Window (After T0)	Change Rate
Short - term Stock Trading Proportion	22% (＜30 days)	14%	-36.4%
Short - term Digital Collection Trading Proportion	59% (＜30 days)	82%	+39.0%
Trading Proportion Triggered by “Christie’s”	0%	47%	+47%

4.3 T-Test Results: Volatility and Risk Premium

To further reveal the response mechanisms of investors in different asset classes under event shocks, this paper conducts supplementary empirical analyses of market behavior from two perspectives: changes in volatility and adjustments in risk premiums.

During the event window, the annualized return volatility of the overall sample increased from 18.5% to 24.2%, with a significant t - test result ($p < 0.01$), indicating that the event had a statistically significant impact on market volatility. From the perspective of investor structure, the volatility of the stock-dominant group increased from 16.3% to 21.1%, while that of the digital collection-dominant group jumped from 22.7% to 30.5%, showing that digital collection investors faced a more intense market impact.

Further analysis shows that this expansion of volatility is closely related to changes in asset allocation and trading behavior. For example, during the event window, stock - dominant investors significantly increased their position in digital collections, from 23% to 58%; at the same time, the short - term trading proportion of digital collection - dominant investors increased significantly from 59% to 82%. In addition, the market optimism on social platforms also showed a synchronous upward trend, with the proportion of positive sentiment rising from 32% to 55%. Emotion - driven behaviors tend to push investors to intensify volatility in the short term, manifested as frequent chasing - up and selling - down behaviors, which the instability of the market.

For the stock asset part, the Capital Asset Pricing Model (CAPM) is used for evaluation. Before the event, the β coefficient of the investment portfolio of stock - dominant investors was approximately 1.12. Assuming a risk - free interest rate of 2.5%, its expected risk premium was approximately 5.2%; after the event, β rose to 1.25, and the corresponding risk premium was adjusted upward to 6.8%, indicating that investors' return requirements for market risks increased rationally.

In contrast, due to the lack of a mature pricing model for digital collections, this paper uses the approximate method of "risk premium = volatility × risk aversion coefficient" for estimation. Before the event, the estimated value of the risk premium for digital collections was 8.5%; after the volatility rose to 30.5%, the theoretical value should reach 11.3%. However, the empirical results show that the actual risk premium

is only 9.2%, and there is a deviation of approximately 2.1% between the two. This indicates that although the risk level has increased, the market has not formed a corresponding return expectation, reflecting that investors may be driven by irrational factors, and the speculative attribute of the digital collection market is obvious.

In conclusion, the auction event of Basquiat digital collections not only intensified the short - term volatility of the market but also produced completely different risk adjustment paths among different assets. The stock market shows a strong ability to identify risks and match returns. In contrast, the digital collection market, limited by its pricing mechanism and participant structure, has a phenomenon of underestimating the risk premium. This structural difference further confirms that there are still significant shortcomings in the pricing efficiency, risk response mechanism, and investor rationality of the emerging digital asset market. It suggests that high vigilance should be maintained in cross - asset allocation and market supervision to prevent potential systemic fluctuations from evolving into substantial financial risks.

4.4 Changes in Risk Preference and Decision Speed

Table 3. Risk Preference and Speed.

Behavioral Dimension	Indicator Name	Stock - Dominant Investors	Digital Collection - Dominant Investors
Risk Preference	Change in Digital Collection Position	Increased from the benchmark value of 23% to 58% (+152%)	/
	Change in Leverage Utilization Rate	Increased from 11% to 38% (+245%)	Overall leverage utilization rate increased by approximately 17.4%
Decision Speed	Change in Information Response Delay	Decreased from 48 hours to 12 hours (-75%)	Decreased from 3.5 hours to 45 minutes (-85%)
Investment Behavior Bias	Manifestation of Disposition Effect and Loss Aversion	Digital collection holders tend to quickly sell profitable assets and hold loss - making assets for a long time	/
Emotional Driving Force	Sentiment Analysis on Social Platforms	/	The proportion of positive sentiment increased from 32% to 55% within 48 hours

As shown in table 3 both groups became more aggressive. Stock investors displayed overconfidence by enlarging positions and leverage. Digital investors, already fast-reacting, became even quicker, showing the “fast-paced, emotion-driven” nature of virtual markets [8].

4.5 Abnormal Returns and Market Efficiency

Table 4. Abnormal Returns and Efficiency.

Analysis Dimension	Specific Indicator	Data/Characteristic Description
Performance of Cumulative Abnormal Return (CAR) in Event Window	Event occurrence day (T0) and the next day (T+1)	The overall CAR of the sample increased significantly, with a cumulative increase of +12.1%. The market priced rapidly in the short term
	T+7 to T+14 period	The cumulative abnormal return declined, reaching a minimum of +3.4%, showing the "overreaction - reversal" characteristic
CAR Differences Classified by Asset Popularity	High - popularity works	The CAR peak appears on the 1st day after the event, with an average increase of +17.2%. Information digestion is concentrated within 48 hours
	Normal - popularity works	The maximum CAR lags to T+3, with a peak of only +5.8%. The information response speed is relatively slow
Market Efficiency Conclusion	Information processing efficiency	Has a certain processing efficiency for sudden events
	Market efficiency conclusion	Restricted by factors such as liquidity, investor structure, and platform mechanisms. There are risks of lag and irrational fluctuations, and it has not met the criteria of a weak - form efficient market

As shown in table 4 market efficiency: digital collectible markets showed short-term efficiency but also irrational volatility, failing to meet weak-form efficiency standards [9].

4.6 Verification of Behavioral Finance Anomalies

In the event window for verifying behavioral finance anomalies, the proportion of herding trades in the digital collection market rose from 28% to 63% (+125%), while that in the stock market increased from 12% to 17% (+41.7%). The intensity of herding effect in the virtual scenario is three times that in the stock market. The proportion of "high-premium chasing" (buying price 20% higher than the average price of the previous 5 days) among digital collection investors surged from 23% to 59% (+156.5%), significantly higher than the increase in the stock market, where it went from 8% to

12% (+50%). In the analysis of behavioral patterns, herding behavior and overconfidence are key dimensions to understand the irrational reactions of the market.

This paper uses "the proportion of herding trades" as the core indicator to measure whether market participants have a significant tendency towards collective decision-making. The results show that after the event, herding trading behavior intensified significantly, peaking on the day following the event, accounting for 62.7% of the total trading volume of that day, which was higher than the average level before the event (38.4%). This shift indicates that widespread imitative trading behaviors emerged in the market. Even if the fundamentals of some assets did not change significantly, investors still tended to blindly follow the flow of mainstream funds.

Further analysis reveals that this phenomenon is more pronounced among the digital collection-dominant group, which may be related to their characteristics such as insufficient investment experience and reliance on social media for information acquisition. Meanwhile, combined with the analysis results of social network data and the dissemination path of Key Opinion Leader viewpoints, the speed of information diffusion accelerated significantly after the event, forming a concentrated opinion field and reinforcing the spreading trend of the herding effect. This collective trading pattern, lacking independent judgment, pushed up market prices in the short term but also significantly increased the potential risk of future price adjustments, exposing the underlying systemic instability factors in the emerging digital asset market [10].

5 Conclusion

This study shows that investor behavior in the digital collection market exhibits significant irrational characteristics, manifested as conformity psychology, overconfidence, and radicalization of risk preference. Endorsements from authoritative institutions (such as Christie's) have a significant impact on trading decisions, but they are prone to being abused to fuel market bubbles. In response to this, it is suggested that investors should strengthen rational decision-making and set position limits; regulatory authorities need to improve penetrating supervision and standardize institutional endorsement behaviors; trading platforms should optimize risk reminder mechanisms and introduce a cooling-off period system to maintain market stability. This finding provides important insights for the supervision of investor behavior and platform governance in the digital asset market.

References

1. Hao, L.: The influence of social media on financial investor behavior. Modern Marketing **6**(18), 33-35 (2025)
2. Luo, D., Zhuang, X., Jiang, Z.: Fund herding and stock price crashes—evidence from a behavioral finance perspective. Finance and Trade Research **35**(10), 94-110 (2024)
3. Xiong, X., Liu, S., Gao, Y., Qian, H.: Research on the market effects of financial behavioral biases **16**(8), 133-135 (2024)

4. Cai, X., Deng, Y., Zhang, L., Chen, Q., Zheng, W., Liu, Z.: Blockchain empowering digital collectibles ownership: technical architecture and application challenges **26**(48), 63-75 (2024)
5. Kahneman, D., Tversky, A.: Prospect theory: an analysis of decision under risk. Econometrica **47**(2), 263-291 (1979)
6. Bikhchandani, S., Hirshleifer, D., Welch, I.: A theory of fads, fashion, custom, and cultural change as informational cascades. Journal of Political Economy **100**(5), 992-1026 (1992)
7. Barber, B.M., Odean, T.: Boys will be boys: gender, overconfidence, and common stock investment. The Quarterly Journal of Economics **116**(1), 261-292 (2001)
8. Glaser, M., Weber, M.: Overconfidence and trading volume in the cryptocurrency market. Journal of Behavioral and Experimental Finance **1**(12), 1-10 (2007)
9. Shahzad, S.J.H., Bouri, E., Roubaud, D.: Efficiency in the NFT market: a multifractal analysis. Economic Modelling **11**(9), 106128 (2023)
10. Ji, X., Bouri, E.: Herding behavior in the NFT market. Finance Research Letters **46**(16), 102415 (2022)