A Review of Fintech Brokerage, Social Media, and Concerted Retail Trading

Haoyu Jiang*
School of Public Administration, Chongqing Technology and Business University, Chongqing, China
**Corresponding Author.*

Abstract: Recent advancements in financial technology (fintech) brokerage and social media have significantly transformed the landscape for retail investors, as exemplified by the GameStop short squeeze event. This phenomenon highlighted how the combination of low or zero transaction costs and widespread information sharing on social media platforms can empower individual investors to collectively challenge established market players like short sellers. This paper delves into the study of how fintech brokerage services, social media engagement, and coordinated actions by retail investors interplay to reshape the trading environment. By examining relevant literature, the study aims to shed light on the nuanced effects of technological advancements on the trading dynamics of retail investors. In further discusses, three critical implications touch upon the need for further empirical research in areas such as market efficiency, the roles of market participants, conflicts between profits and responsibilities (for security service providers and social media), regulation adjustments, and information transparency. This exploration contributes to a deeper understanding of the evolving market landscape influenced by technological progress and different market players.

Keywords: Fintech Brokerage; Social Media; Concerted Retail Trading; Short Selling; Information Exchange

1. Introduction

In the digital age, the landscape of retail trading has undergone a transformative shift, marked by the unprecedented integration of financial technology (fintech) brokerage services and the pervasive influence of social media platforms. The GameStop short squeeze serves as a seminal case that illustrates the profound impact of these changes, highlighting how the synergistic interaction between low or zero transaction costs and the rapid exchange of information through social media can empower retail investors. By trading in concert, these investors have demonstrated their ability to challenge traditional market dynamics and even counteract the strategies of established short sellers.

In January 2021, the Reddit community "r/WallStreetBets" orchestrated a short squeeze on stocks like GameStop (GME) by collectively retail buying, driving up prices and forcing hedge funds that had shorted these stocks to buy back at higher prices, leading to substantial losses for the funds and profits for many retail investors. Key figure Keith Gill, known as "DeepF*ckingValue" on Reddit, played a significant role in popularizing GameStop's stock. The event led to brokerage firms like Robinhood restricting trades, drawing public and regulatory attention.

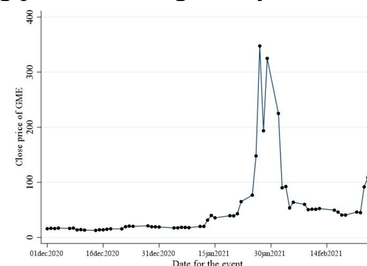

Figure 1. Time Trend for Price of GME

Figure 1 shows the price movement pattern of GME from December 2020 to February 2021. Because high short position before January 2021, the price of GME was steadily below 20 dollars per share. But after 15 January, the price began to increase, and suddenly moved to the peak (about 348 dollars per share) on 27 January, resulting from concerted retail trader buying activities. This situation sparked debates on whether regulatory reforms are needed to restrict short sales, improve information efficiency, and guarantee the adequacy of current market manipulation laws,

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raising concerns that technology and social media might be outstripping regulatory frameworks, posing risks to investors and market stability.

Based on the above background in the U.S., this paper next delves into the literature surrounding fintech brokerage, social media, and the phenomenon of concerted retail trading in the second section, aiming to unpack the complex interplay among these elements. Through a review of important research findings, this study seeks to contribute to understanding how technology advancements and social networking are collectively forging new powers for retail investors. In section 3, this review further explores the critical implications of the nexus for the financial markets and regulators. The last section concludes and suggests that the interaction among regulators, service providers, short sellers, retail investors, and other market participants deserves more empirical tests for future studies.

2. Literature Review

2.1 Fintech Brokerage

Unlike institutional investors, retail investors often trade in small quantity and face relatively high transaction costs, such as commission or service fees paid to the brokerage [1, 2]. The advent of fintech brokerage firms has ushered in a new era for retail investors, significantly lowering the barriers to entry and altering the traditional brokerage operation model [3]. These Fintech brokerages use tools such as algorithmic trading, artificial intelligence, stock inventory management, Apps construction, and fractional trading to reduce the transaction costs for individual clients. For instance, Barber et al., studies such a Fintech brokerage named Robinhood [3]. By offering zero-commission trades and user-friendly interfaces, Robinhood has democratized stock market access and attracts a large volume of inexperienced investors. The authors find that Robinhood investors engage in more attention-induced trading than retail investors who are clients of traditional brokerages. Moreover, the order imbalance of Robinhood users is negative related to future return in 20 days, indicating a relatively poor performance of unexperienced retail investors. Therefore, evidence in previous studies supports although fintech brokerages make retail traders conveniently execute their trading orders, the trading profits for such trades are not satisfactory, especially in the short-term.

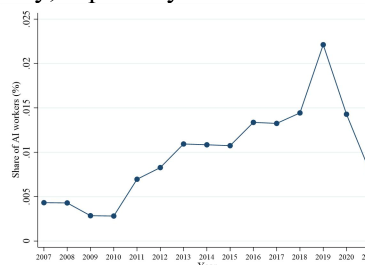

Figure 2. Trend of AI-related Workers for a Fintech Brokerage (E*TRADE)

Using publicly available data from the research paper "Artificial intelligence, firm growth, and product innovation," [4] Figure 2 plots the fraction trend of AI-related employees (workers) in one representative (E*TRADE) of fintech brokerages. Babina et al. identify employees with works related to artificial intelligence (e.g., machine learning, natural language processing, and computer vision) using their resume data. Then, the variable of "share of AI-related workers" is defined as the number of AI-related workers divided by the total number of employees in a firm. From 2007 to 2021, the share of AI-related workers shows an increasing trend, with the peak around 2019. The evidence to some extent supports that fintech brokerages are allocating more labor resources on the artificial intelligence works, with a purpose to improve the service efficiency.

2.2 Social Media

On the one hand, traditional media (such as television, newspapers, and radio) not only provides entertainment value to the public, but also serves as a channel through which people absorb information [5]. First, media outlets play a crucial role in financial markets by quickly spreading new information to a wide audience, a process known as "dissemination." For instance, news services often broadcast summaries of company earnings soon after their release. Second, media compiles and interprets data from various sources, including analysts and journalists, enhancing the depth of information available. Finally, reporters sometimes contribute their own analyses or insights, further enriching the information landscape [6, 7]. These multiple roles suggest the media's potential to increase information flow

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in the market and to reduce the level of information asymmetry across investors.

On the other hand, social media platforms like Facebook, Twitter, Instagram, and Reddit, are studied for their participatory nature, allowing users to create, share, and consume content with unprecedented speed and scope. Blankespoor et al. find that larger scope of information dissemination by twitter reduces information asymmetry [8]. Evidence from Campbell et al. shows that Twitter helps several kinds of earnings information (e.g., with more extreme tone or with less material content) quickly reach the feeds of millions of people [7]. These studies collectively suggest that the democratization of information process hugely changes investing environment of retail investors, who are believed to lack channels to acquire immediate, material, and value-relevant information. The market outcomes are not trivial, since researchers have found that liquidity, trading volume, volatility, order imbalance, and cumulative abnormal return will change after social media take roles.

2.3 Concerted Retail Trading

Unlike institutional investors, retail investors are often small and unsophisticated investors who underperform the standard benchmarks (e.g., the market or low-cost index fund). Barber and Odean conclude that retail investors all over the world have several universal features [2]. First, they are not fully rational, meaning that retail investors may suffer from behavior bias (e.g., overconfidence, herding, sensational seeking, familiarity, and limited attention). Second, retail investors trade in the purpose of liquidity, rebalancing, or tax purposes, thus deviating from the profit maximization. In other words, they do not trade on value-relevant information and exhibit the nature of noisy trading. Third, small investors have limited information access, and are often in the edge of information disadvantage. Sophisticated investors or insiders usually make profits at the loss of retail investors [9], a situation that promotes regulators to actively protect small investor interests.

However, as essential participants of capital market, retail investors can also move the price or the market. In the research of Barber, Odean, and Zhu, retail investors order imbalance is positively related to future return in a short period, suggesting intensive retail buying activities can move price up [1]. The case of GameStop short squeeze also provides evidence that concerted retail buying, showing a high level of positive order imbalance, can move price up and lead short sellers at the edge of loss.

2.4 Discussion of Interaction among Fintech Brokerage, Social Media, and Retail Trading

Reconsidering the case of GameStop short squeeze, social media and fintech brokerage are two necessary conditions for concerted retail trading to take place. Platforms like Reddit, particularly the “r/WallStreetBets” subreddit, played a key role by spreading Keith Gill’s analysis that GameStop was undervalued, attracting a large audience of retail investors. These retail investors, unified in their stance against short sellers, executed their trades quickly, affordably, and efficiently through fintech brokers like Robinhood. This combination of widespread information dissemination through social media and the accessibility of trading platforms made the intensive buying activities that triggered the short squeeze possible.

3. Underlying Implications

The U.S. House Committee on Financial Services held hearing with the topic “Game stopped? Who Wins and Loses When Short Sellers, Social Media, and Retail Investors Collide” on February 18, 2021. Of course, the society, market, and regulators care about what are the implications from this event. This paper gives three discussions below to contribute to the literature and regulation concerns.

3.1 Retail Traders, Short Sellers, and Market Efficiency

Market efficiency is one of the main focuses in the case of “collision of short sellers, social media, and retail traders”. Eugene Fama, a prominent researcher in finance, introduced the concept of market efficiency in his seminal paper “Efficient Capital Markets: A Review of Theory and Empirical Work.” [10] Fama’s definition of market efficiency is centered around the idea that financial markets are “efficient” if they fully and immediately reflect all available information in the prices of securities. Fama outlines three forms of market

efficiency, which differ based on the extent of information reflected in market prices. First, in weak-form efficient market, all past trading information is already incorporated into stock prices. Second, in semi-strong form efficiency, all publicly available information is reflected in stock prices. Last, strong-form efficiency indicates prices reflect all information, including past, public, and private (insider information). The incorporation process of information into price is also called “price discovery process”.

The GameStop short squeeze phenomenon illustrates the collision between different trading strategies for the same stock, where short sellers hold substantial short positions, and retail investors collaboratively push the price higher. Whether this conflict will improve or impede market efficiency is under debate. Retail investors prevent the stock price from a crash, leading the price to move around a reasonable level. However, if short sellers have private information and correctively anticipate the dim of the future prospect of GME, then short selling speeds up the price discovery process and improves the market efficiency. Therefore, the retail trading against short selling or against informed trading will impede price discovery.

Further empirical research is necessary to understand the effects of these disputes fully. A longer observation period can help researchers detect the real performance of these “meme stocks” and which party embraces a right expectation. Moreover, regulators need to exercise caution in offering guidance and adequate protection to unsophisticated and young retail investors who are making trading decisions. The quality of information exchanged on social media can be questionable, leading investors towards groupthink or to be swayed by dominant online sentiments.

3.2 Conflicts between Profits and Responsibilities for Securities Service Providers and Social Media

In the context of the transformative landscape highlighted by this paper, where fintech brokerage and social media have significantly impacted retail trading, a pivotal implication arises concerning the conflicts of profits and responsibilities faced by security service providers and social media platforms. These entities stand at the crossroads of leveraging technological advancements for profit maximization and upholding their ethical and regulatory responsibilities towards market stability and investor protection. On one side, the ease of access to trading provided by fintech brokerages and the rapid dissemination of information via social media democratize financial markets, potentially enhancing market participation and efficiency. However, this democratization also introduces vulnerabilities, such as the potential for misinformation, market manipulation, and the encouragement of risky and speculative trading behaviors among unsophisticated investors.

Security service providers, including fintech brokerages, are challenged to balance their innovative service offerings, like zero-commission trades and algorithmic trading platforms, with the need to protect investors from the risks of rapid and uninformed decision-making. Similarly, social media platforms, which have become pivotal in information sharing and collective action among retail investors, must navigate the fine line between fostering open communication and preventing the spread of false or misleading financial advice. The resolution of these conflicts demands a concerted effort from regulators, service providers, and social media companies to establish guidelines and safeguards that promote transparency, ensure the reliability of information, and protect investors. Therefore, the integrity and efficiency of the markets can be sustainable, accompanied by ongoing technological evolution.

3.3 Regulations and Information Disclosure

Short sellers such as hedge funds are often regarded by the market as sophisticated investors since the loss by stupid shorting is detrimental. Previous researches find that short sellers can improve market efficiency while intensive short selling can trigger a stock price crash, which is harmful to investor confidence and market stability [11]. The U.S. government imposed several restrictions on short selling after 1938 (e.g., uptick rule). In the 21st century, Regulation SHO further refined the restrictions on short selling (such the ban of “naked short selling”). Regulators should be more cautious about trade-offs between limits to short selling and the free market.

One way to mitigate the potential negative impact of short selling is to improve the information transparency of short selling information. By providing detailed disclosures on short selling activities, regulatory bodies such as the SEC, FINRA, and various Exchanges can offer a clearer view of market dynamics. Such measures would enable a more comprehensive monitoring of market positions, facilitating early warnings for potential risks and prompting inquiries into transactions deemed hazardous. This approach not only aids short sellers in assessing systemic risks more accurately but also empowers retail investors and the broader market to make informed decisions. In essence, these steps are crucial in nurturing an environment where the strategic benefits of short selling are harnessed, while its capacity to inflict harm is minimized, thereby ensuring a balanced and well-informed market ecosystem.

4. Conclusions

This literature review illuminates how the advent of fintech brokerage and social media has changed retail trading environment, with the GameStop episode serving as a pivotal example. It reveals the profound influence of modern technological tools that enable retail investors to unite and exert significant pressure on traditional financial paradigms. The reduction of transaction costs and the wide spread of information through social media empowers individual investors to counteract professional market participants, challenging conventional market operations and potentially altering market dynamics. The shift prompts an urgent call for ongoing in-depth empirical studies to dissect the multiple effects of interplay of these elements on market stability, market efficiency, investor welfare, and information environment, satisfying the long-term need for market participants and regulator decisions.

Moreover, the paper highlights the importance of addressing potential risks associated with changes in trading environment. As market participants and regulators stand at the intersection of technology and finance, this study advocates for a collaborative effort among stakeholders to ensure the equitable and sustainable development of financial markets. Actions including improving information transparency, stabilizing the market while improving market efficiency, alleviating the conflicts between profits and responsibility, and protecting unexperienced investors deserve more attention from regulators and market participants.

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