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The Influence of Social Media Sentiment on Investor Behavior: A Case Study of the GameStop Short Squeeze and Behavioral Economic Insights

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Abstract: A short squeeze on GameStop caused its stock price to soar in early 2021, but it was actually coordinated by a group of retail investors from the Reddit community WallStreetBets, who caused a disruption to the stock market. This study uses a behavioral economics lens to investigate how investor behavior is affected by sentiment expressed on social media. We examine the shortcomings of conventional financial theories and discover that theories based on behavioral economics provide a more compelling explanation for investors' illogical actions and sentimental choices. By drawing comparisons between the business models of social media-based shops like PDD and Temu and the collective action of retail investors on social media, the article also emphasizes the significance of social media platforms in driving collective investor activities and altering market dynamics. On this basis, we conclude with recommendations for retail investors, institutional investors and regulators respectively to adapt the impact of social media on financial markets.

Keywords: Social Media, Investor Behavior, Behavioral Economic, Short Squeeze, GameStop.

1. Introduction

In January 2021, GameStop, a video game retailer, witnessed an unprecedented stock price surge, soaring from approximately $17 to $483 within a matter of weeks. This surge was fueled by discussions on the social media platform Reddit, where users on the WallStreetBets forum coordinated a buying spree to counter institutional investors' short positions. The event not only called into question traditional market theories but also underscored the significant influence of social media on modern financial markets. Scholars like Robert Shiller, who criticized the Efficient Market Hypothesis (EMH) in the context of speculative bubbles, found renewed relevance in their critiques. In this paper, we will investigate how, and to what extend does social media sentiment influence the behavior of retail investors, and highlight the limitation of the classical theories of finance.

2. The Applicability and Limitations of Classic Market Theories

2.1. Efficient Market Hypothesis (EMH)

The Efficient Market Hypothesis (EMH), proposed by Eugene Fama in 1970, posits that financial markets are informationally efficient, meaning that asset prices fully reflect all available information. According to EMH, neither technical nor fundamental analysis should enable investors to consistently achieve higher-than-market returns[1].

However, the GameStop short squeeze presents a direct challenge to EMH. Driven by social media sentiment, retail investors were able to manipulate stock prices, creating volatility that could not be explained by underlying fundamentals. In a rational market, GameStop's stock price should have remained close to its intrinsic value, but the power of collective sentiment and coordinated buying led to a massive price surge, illustrating the limitations of EMH in the face of irrational market behavior.

2.2. Random Walk Theory

The Random Walk Theory suggests that stock prices follow a random, unpredictable path, making it impossible to forecast future prices based on past information. This theory assumes that stock price movements are solely driven by new, unpredictable information entering the market[2].

However, the GameStop incident demonstrated that market movements can be heavily influenced by social media-driven momentum, rather than new fundamental information. Retail investors on Reddit collectively decided to buy and hold GameStop stock, causing a rapid increase in price despite the absence of any positive news about the company's financial health. This orchestrated buying undermines the idea of price randomness, as the social media-fueled momentum led to predictable price inflation.

2.3. Capital Asset Pricing Model (CAPM)

The Capital Asset Pricing Model (CAPM) states that investors are compensated for taking on systematic risk, measured by beta, while unsystematic risk can be diversified away. CAPM assumes that markets are rational and investors make decisions based on risk-return trade-offs.

During the GameStop frenzy, investor behavior appeared to contradict the risk-averse assumptions of CAPM. Investors were willing to take extreme risks despite high volatility and the uncertainty of future returns. This highlights a major limitation of CAPM in situations where emotion and sentiment override rational decision-making[3]. The coordinated effort to drive up the stock price, regardless of the underlying risk, was a clear departure from traditional risk-return rationality.

3. Behavioral Economics Insights into Investor Behavior

3.1. Prospect Theory

Prospect Theory, developed by Daniel Kahneman and Amos Tversky, suggests that individuals are more sensitive to losses than gains, leading them to make risk-seeking choices when faced with potential losses[4]. This theory provides insight into the behavior of retail investors during the GameStop event, where many were motivated not by profit but by a desire to inflict losses on hedge funds that had heavily shorted the stock.

The fear of loss drove retail investors to take outsized risks, despite the possibility of financial harm. They were willing to hold onto GameStop shares even as prices became detached from reality, driven by the emotional satisfaction of forcing institutional investors to cover their short positions at a loss.

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3.2. Herding Effect

The Herding Effect refers to the tendency of individuals to mimic the actions of a larger group, often without conducting their own independent analysis. Social media platforms like Reddit acted as a catalyst for herding behavior during the GameStop event. As more users posted their buy orders and shared stories of quick gains, others followed suit, amplifying the momentum.

This collective buying behavior became a self-fulfilling prophecy, as the price of GameStop stock continued to rise, drawing in even more retail investors. The lack of independent analysis and reliance on group sentiment exemplifies how herding can distort market dynamics, driving prices away from their intrinsic value.

3.3. Overconfidence Bias

Investors exhibiting overconfidence bias tend to overestimate their knowledge and ability to predict market movements. This bias was clearly visible in the GameStop event, where retail investors believed they had identified a unique opportunity to outsmart institutional investors. Many felt confident in their ability to hold onto the stock, despite warnings from financial analysts about the risks of such a strategy.

This overconfidence led many investors to ignore traditional risk factors, such as high volatility and the potential for a market correction. The belief that they were participating in a movement larger than themselves fueled their willingness to take on extreme risk.

3.4. Anchoring Effect

The Anchoring Effect occurs when investors fixate on an initial price or piece of information and fail to adjust their expectations based on new data[5]. In the case of GameStop, many investors became anchored to the early success of the stock's rise, believing that it could continue indefinitely.

Despite fluctuating prices and warnings from market experts, retail investors continued to hold their positions, anchored to the idea that the stock was destined for further gains. This cognitive bias prevented them from re-evaluating their positions based on new market conditions, leading many to experience significant losses when the stock inevitably corrected.

4. Case Study: GameStop Short Squeeze

4.1. The process of GameStop Short Squeeze

Retail traders "got on" the GameStop roller coaster at slightly under $20 a share in early January 2021 and rode it to approximately $500 by the end of that month, spurred by some users of the "WallStreetBets" subreddit. After that, prices fell to about $30 in February before rising to $200 in March.

JamieRogozinski founded the WallStreetBets subreddit in October 2012. The subreddit was intended to serve as a discussion board for investors with similar interests in high-risk, high-reward methods, where members could share research findings and talk about exciting but dangerous investments that would make a "financial advisor's skin crawl." "YOLO" stood for "you only live once" at first.12 There were 1,557 subscribers at the site's inception. By year's end, WallStreetBets would have more than 773,000 members. It has a million subscribers at the market sell-off in March 2020.

Mr. Gill started sharing his views about why GameStop stock was cheap on social media in the middle of 2019. Mr. Gill began his YouTube channel in the summer of 2020 and has since shared his stock-picking strategies, stock market knowledge, and stock analysis techniques. He spoke in simple

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terms, making jokes and drinking beer, so even non-experts could understand. He explained in these videos why he thought GameStop was a wise investment. Similar discussions regarding stock research and positive reinforcement could be found on the WallStreetBets subreddit.

When short sellers have artificially pushed a stock too low, an appropriate investment tool is a short squeeze. In order for the move to be successful, shorters must either continue funding margin calls as the position becomes increasingly out of the money or close their positions at a loss[6]. Maintaining a squeeze can be challenging, though, because players may leave the game early to profit from the tactic. However, by reducing the incentive to defect, the introduction of nonwealthy investment objectives can aid in successfully maintaining a squeeze. The community, which included "hordes of young online traders" involved in the larger discussion around GameStop as well as Mr. Gill's team, was incensed about the short selling[7].A "fighting the man" mentality spread among Mr. Gill's supporters and other subreddit users as a result of the discovery.

Around the same time, Mr. Gill started to receive more and more attention on Reddit as he talked about the money he made from Tesla and "meme stocks," which are investments that make no sense according to conventional measures but are wildly popular on the internet[8]. By now, WallStreetBets had grown to become a server on the Discord online community platform, where users could have ongoing text, audio, and video chats on several channels related to different themes. According to Goldstein et al[9], crowds are frequently superior to so-called experts at making decisions. Tens of thousands of users will be on the Discord server at any given moment, and seeing over 100,000 users is not unusual. The WallStreetBets community not only has the tools necessary to match hedge funds' analytical prowess, but also the camaraderie required to sustain a short squeeze.

It started to get tight around mid-January 2021. GameStop recruited new directors in January 2021, one of whom had managed a profitable e-commerce company in the past. The beginning of a short-squeeze was caused by this as well as Reddit users witnessing significant institutional investor short-selling activity on GME. The price increase persisted until January 27th, when two significant hedge funds that had been shorted had to liquidate their shares, bringing GameStop to its highest point. Discord banned the WallStreetBets server on January 27, 2021, the first of GameStop stock's three peak days, purportedly for breaking community rules. Because their systems and cash reserves could not support the sudden requests made on them, GameStop trades were prohibited that same day by Robinhood and other brokers; however, they were allowed the following day.

4.2. Analysis on the Influence of Social Media Sentiment

The tenets of classical financial theories frequently include the notions of efficient markets and complete information reflection in stock prices. But the GameStop debacle showed that markets are susceptible to notable irrational behavior, partly because to social media and the herd mentality it may foster. It has been suggested by numerous retail traders that they are purchasing shares in businesses including AMC, Nokia, Blackberry, and Blockbuster Video as "nostalgia plays." Behavioral economics offers a more comprehensive framework for comprehending the GameStop phenomena by merging concepts from psychology and economics. It acknowledges that emotions, social pressures, and cognitive biases can affect an investor's decision-making process and that they do not always act logically. The bandwagon effect—the phenomenon when people are lured to invest because they see others doing the same—and a general desire to upset the status quo in finance were the driving forces behind the GameStop event.

Protesting the same alleged Wall Street elitism that spurred the 2011 Occupy Wall Street movement has been a recurring issue for vocal GameStop traders. The political nature of this trading stems from the community's outrage at the actions of large investors over the last ten years, including their bailout of several investors during the financial crisis and their continued profit-making while the coronavirus pandemic ravaged individuals. Expressive traders are aware that the movement in the

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stock price that they cause is not a reflection of the fundamentals of the security and that they stand to lose money if and when the correction occurs. Nevertheless, some believe that the risk of financial loss is worthwhile for the expressive act. They are purchasing stock in these businesses purely to bring back recognizable products and services from their childhood. Institutional investors initially follow their principles and short the stock in response to social media agents because they believe GME is a dying firm. Since prospect theory is used to model their decisions, most funds opt out of their holdings when prices rise exponentially because they believe that predicted losses would exceed gains. Funds, relying on risk-aversion, determine once more that apparent profits from shorting the company outweigh losses when momentum is destroyed and price is pulled towards its true value[10].

Long et al discovered that Reddit mood directly affected GME's daily results. Technology lowers transaction costs and removes competitive obstacles[11]. In this case, a single, well-informed investor might communicate with hundreds or even millions of others through the use of platforms like Reddit, Discord, and other channels[12]. By lowering transaction costs, such technology aggregation achieved a Coaseian goal[13]. This made it possible for a vast number of individual investors to not only locate one another but also to have enough mutual trust to function as a unit without a centralized locus of control.

The social media-driven behavior observed in the GameStop short squeeze is comparable to social media-based retail platforms such as Pinduoduo (PDD) and Temu, even outside of the stock market. Similar to how retail investors influenced one another during the GameStop event, these platforms rely heavily on user-generated content, peer influence, and social connections to drive consumer behavior. Companies like PDD and Temu have embraced social media to transform the retail landscape. They leverage social sharing and group purchasing power to give sales and discounts, and they employ social media not only for advertising but as a fundamental component of their business model. This is comparable to how individual investors came together on social media to carry out their investment strategy during the GameStop scandal.

The influence of group mood and the quick dissemination of knowledge change market dynamics in both the GameStop and social media-driven retail scenarios. Platforms such as PDD in the retail space make use of social sharing and group buying, while social media in the financial markets has given regular investors the ability to act together and change conventional market procedures. Behavioral economics is important in these kinds of situations.

5. Conclusion

Important flaws in conventional market theories including the EMH, Random Walk Theory, and CAPM were shown during the GameStop short squeeze. These models are helpful for understanding some aspects of the market, but they don't take into consideration the irrational behavior of investors who are influenced by emotion from social media. The distinctions between social media, retail, and investing are becoming increasingly hazy as time goes on, and success in the financial and retail sectors will depend heavily on one's capacity to mobilize the masses. On the other hand, behavioral economics offers a more precise framework for comprehending the psychological and emotional aspects of market players.

The GameStop event was greatly influenced by social media, especially sites like Reddit. A locus for organizing investment activity and disseminating a narrative that defied conventional financial wisdom was the WallStreetBets forum on Reddit. As a result of this group effort, trading volume skyrocketed and the stock price increased significantly. However, the strength of social sentiment drove this increase rather than shifts in the company's fundamentals. The flawed character of market mechanisms, however, frequently leads to the dismissal of market self-regulation. However, technology is driving down transaction costs, which is driving up competitiveness.

Market players need to be aware of the opportunities and hazards that social media brings as it continues to shape investor sentiment. Retail investors should steer clear of herd mentality and overconfidence, but institutional investors and regulators need to face the fact that social media may amplify market volatility very quickly. The COVID-19 pandemic and commission-free trading platforms have contributed to the recent surge in retail trading, which has altered the landscape of the markets. Institutional investors, who formerly had a dominant position due to their large trading volume and sophisticated technology, are now compelled to take into account the attitudes and actions of this new, erratic group of amateur investors who aren't just motivated by financial gain. Institutional investors ought to devise tactics aimed at reducing the hazards associated with market fluctuations propelled by social media.

Regulators need to keep in mind that market actors, such as corporations, hedge funds, and SMD traders, are disciplined in their behavior by the decentralized nature of the markets. In order to maintain equitable and open procedures, regulators must put policies in place to keep an eye on and control the effects of social media on the financial markets. But I would caution against it, not just because regulation of expressive trading may violate people's right to free speech in unsettling ways, but also because the long-term effects of expressive trading are probably going to be far less disruptive than the initial outcry. Regulations implemented after the initial disruption frequently go too far.

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