

# The Rise of Retail Investors: Impacts on Market Volatility and Trading Patterns

Somnath S PG Student  
Master of Business Administration  
K.S.Rangasamy College of Technology  
Kavinaths2002@gmail.com

Dr.M.RAMAKRISHNAN  
Professor of management studies  
Master of Business Administration  
K.S.Rangasamy College of Technology  
ramakrishnan@ksrct.ac.in

**Abstract**—Due to COVID-19 and other factors, the number of retail investors trading in equity markets has become much larger in the past years. The study explores how this increased activity affects the volatility of the market and stock trading in both the United States and India. Examining secondary data and case studies—covering recent events in GameStop/AMC, Zomato/Paytm IPOs and the Adani Group selloff—the study has proved that retail-led speculation increases market turbulence and disrupts its normal balance. Consideration is given to platform games, comments on social media and influences due to herding and the fear of missing out. When transaction levels in retail increase, we see similar behavior patterns in markets that are not related to trends. The study goes on to mention that there should be additional financial literacy and safety measures for trading, along with appropriate regulations. Conclusions underline the way retail movements impact the market and recommend approaches for investigating rules and guidance, sentiment analysis and using AI in retail trading.

**Keywords**—retail investors, market volatility, meme stocks, IPO response, behavioral finance, trading platforms, financial literacy, India, GameStop, Robinhood.

## I. INTRODUCTION (HEADING I)

Lately, capital markets have seen shifts because an increasing number of retail investors are making their own investments in equities, derivatives and different securities. It was made much more clear after the pandemic occurred, largely due to longer periods of social distancing, people saving more at home, increased public budget aid and the rise of digital finances. Because of all these developments, more individuals across the world could more easily enter the stock market.

India's equity market clearly reflects how well the economy is doing. As early as 2025, Zerodha, Angel One and Groww were successful in bringing more clients to demat accounts and increasing their numbers to above 220 million in India. That company, Robinhood, offered an easier trading process for tech-savvy young people by charging nothing and adding some games. They influenced both the quantity of people buying and also their method of shopping. Previously, the primary aim for investors was drawing up a long-term strategy, while now, abbreviated trading, betting on changes and feelings normally matter more.

Because of these changes, the way markets and trading behavior have been deeply affected. Recent examples of these retail actions include the steep rise and fall of GameStop and AMC, the Zomato IPO subscription and listing, the poor performance of Paytm shares after its public issue and the drop in Adani stocks due to the Hindenburg report. In several instances, people talked about these moves together on social media, especially on Reddit, Twitter and Telegram. This paper is dedicated to Economics of Retail and explores how this increase in retail has affected both the larger and smaller aspects of the market. To understand the industry better, we analyze retail participation by reviewing forms filed with regulators, available writings, news articles and financial statements. Examples of herding, FOMO (fear of not getting a chance) and overconfidence are given when discussing trading apps, this kind of platform incentive and trading on margin.

The study explores how the influence of behavior, programs and results of traders can help or hurt the stability of the market. The document also considers the impacts of rules and additional research topics in relation to digital platforms and the buzz they bring to today's financial markets.

## II. LITERATURE SURVEY

### 1. Retail Participation and Market Volatility

More retail traders have contributed to increased changes in the market. The authors delved into the role that retail investors had in destabilizing financial markets during the COVID-19 period. The research suggests that retail investors raise the speed of price changes in markets with a lot of positive sentiment. Meanwhile, Barber and Odean [4] found that people who manage their own funds often act in ways that affect their returns and cause the market to fluctuate more than it should. Data presented by Salvucci [5] reveals that the portion of retail traders in the market increased from under 10% to over 22 % between 2021. All in all, all these studies prove that trades connected to retail participation can lead to more idiosyncratic volatility.

## 2. Retail Trends During the COVID-19 Pandemic

On the basis of their findings, Jones et al. [2] investigated the impact of stimulus checks, cheap trading platforms and isolation on shopping during the pandemic. It was discovered that retail flows saw better forecasting results during this time, with a boost in momentum affecting the market. According to the FINRA Foundation's survey [3], YouTube and Reddit are widely accessed by investors seeking financial information. By changing this behavior, it implies that the pandemic influenced both the number of participants and the methods of influence..

## 3. India's Expanding Retail Base

Although people all over the world participated more, India's growth noticeably increased as well. NSE now counts over 11 crore investors, thanks to its inclusive policies identified by the Economic Times [6]. As claimed by SEBI Chairman Tyagi [7], the growth in demat accounts over the last few years was thanks to the popular mobile brokers Zerodha and Groww. However, [8] SEBI also noted that out of all retail F&O traders, 91% suffered permanent losses and each experienced an average loss of over ₹1.2 lakhs. This means that people in emerging economies do not have equal access to financial services or knowledge.

## 4. Regulatory Focus and Market Infrastructure

Retailers' strong influence led regulators to reconsider how the market is structured. After reviewing the GameStop short squeeze, the Equity Market Structure Report from the SEC [9] finds that the system used by market makers may increase price swings. [10] The agency also noted that U.S. markets have remained strong while acknowledging that gamification can lead to some risks. Trading volumes from FINRA and SIFMA [11] showed that trading off-exchange was mainly carried out by retail firms. They indicate that a shift in policies may happen to allow more people to trade while preventing instability caused by retail trade.

## 5. Media Narratives and Major Market Event

Media reports have helped change the way people invest and their perceptions about investing. In their paper [12], Johnson and Prentice highlighted how the GameStop inquiry revealed how Reddit rallies could cause serious changes in the system. According to Roy and Shetty [13], retail investors caused Zomato's IPO to be oversubscribed almost 40 times over. In a similar way, [14] Hindenburg's allegations against the Adani Group caused social media to stir up panic which helped the strangely large fall of the Adani Group's share prices. [15] Ksheerasagar discovered that the next year, as the market felt a lot of unrest, people shifted into more conservative investment strategies. We can see that public talks about Coca-Cola cause reactions in retailers and also lead to more of these reactions.

## 6. Industry Data and Platform Influenc

The reports produced by brokers and institutions highlight what supports this increase in retail. BusinessofApps [16] revealed that Robinhood's exponential growth showed that having commission-free trading through a mobile platform was popular. In India, [17] the firm Zerodha stated that 1.6 crore

users played an active role in the equity markets, making up 15% of the retail share. [18] According to the JPMorgan Chase Institute, retail portfolios had significantly higher exposure to market risk after 2019 as a result of trading that relies more on guesswork. According to Angel One, as of FY25 there were 192.4 million active demat accounts, demonstrating that the approach to markets is shifting [19].

## 7. Social Media Trends and Finfluencer Dynamics

Social media is having a clear influence on the actions of retail investors. According to Business Insider [20], the Reddit forum, WallStreetBets, had over 11 million members in 2021. Sreekumaran [21] explained how the confidence in Zomato's retail trade dropped after the IPO due to poor performance in the stock market. According to Google Trends, on ScienceDirect [22], search interest for "stock trading" surged five times in March 2020. Medianama [23] reported that SEBI's consultation on finfluencers called for new rules to control finfluencers providing unverified investment guidance. Visits to WSB multiplied by a factor of ten during the January 2021 rally, proving that information goes viral and can impact people's trading decisions. To sum up, online opinions and prominent individuals now make an economic difference.

## 8. Summary and Gaps in Current Literature

Numerous reviews in this area stress that using digital and social technology, retail investors have changed the way financial markets operate. Despite the strong evidence on how investors and traders act, little is known about the effects of volatile market events on their order placements. Data over a long period, showing how much wealth is made or lost in the financial or stock markets by different retail traders, is rare for emerging markets. In the future, studies may examine how retailers across markets adjust to technology and set their strategies. Overall, it is evident that capital markets have changed because of the influence of individual investors.

## III. RESEARCH METHODOLOGY

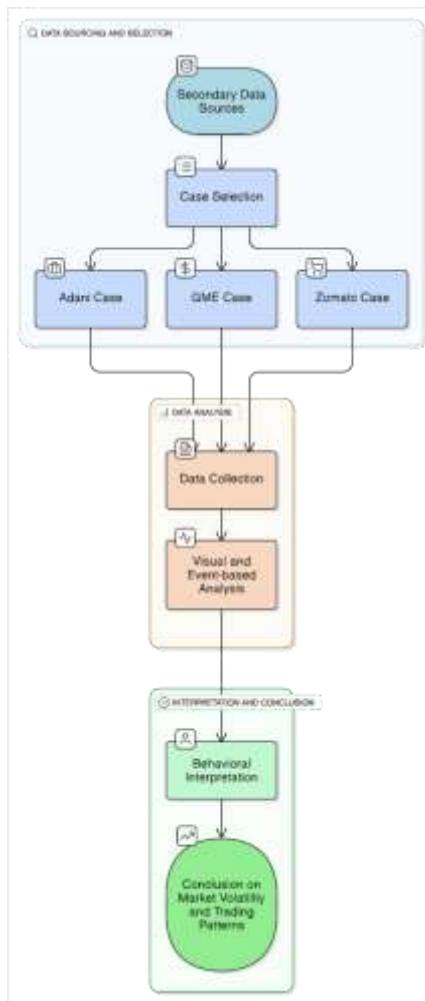
For this study, secondary data were analyzed using a qualitative approach. It aims to study how more people investing in markets is impacting the way volatility and trading develop in both Indian and global markets. Alternatively, this research collects preexisting information from journals, official records, financial websites and media to gain insightful conclusions.

### 3.1 Research Design

This paper uses an approach that does not require experimentation, since retail investing behavior covers many aspects and continually changes over time. The author uses GameStop in the United States, the Zomato IPO and the Adani Group incident in India as examples to explain how retail investors influence the stock market.

Implementing the method, experts observe and understand actual occurrences in the financial world, instead of using hypothesis tests. They were selected because they were heavily reported, featured large numbers of retailers and information

about them could be easily found. All sources of my findings can be located and checked online. The research process followed is outlined below:



*Figure 1. Structured flow of secondary data analysis used in this study, including public domain data, published reports, and event-specific case study selection.*

### 3.2 Data Collection Sources

All the data in this paper comes from secondary sources confirmed as trustworthy:

- Academic Publications: Research articles from SSRN, ResearchGate, PMC, etc.
- Regulatory Bodies: Reports from SEBI, SEC, FINRA, and SIFMA.
- Brokerage & Industry Reports: Angel One, Zerodha, JPMorgan Chase Institute.
- Financial Databases: Yahoo Finance, NSE India, TradingView, Google Finance.
- Media Coverage: Reuters, Mint, Outlook Business, Inc42, Economic Times.

- Social Sentiment Platforms: Reddit (WallStreetBets), Google Trends, YouTube, Twitter.

This wide range of information provides a firm basis and includes fascinating data about results as well as how people behave.

### 3.3 Analytical Methods

The analysis involved deploying the following methods:

- Seeing the fluctuations in price (for example, of Adani and GME)
- You can also visualize the data through stacked barcharts (for example, number of new members at multiple companies).
- Observation of events before and after important public offerings or company report announcement
- Comparing different case studies from both the global market and India
- Understanding investors' behavior by analyzing what they write or post on forums, the trends identified and the information reported in the media

Charts and images are shown from these events in the Data Analysis and Findings section..

### 3.4 Case Selection Justification

Three major events were selected:

- GameStop Short Squeeze (2021) – Showing how social media and memes influenced trading activities in U.S. markets.
- Zomato IPO (2021) – Noting that many retail buyers drove up the demand and that afterwards, we observed shifts in the Indian tech-sector IPO market.
- The decline of Adani Group Stock (2022) – Pointing out that when retail buyers panic and new facts are disclosed by journalists, sharp drops occur.

The cases were specifically picked for being retail-intensive, volatile and influential around the world. All the data was obtained from government platforms and publicly available repositories.

### 3.5 Research Tools and Visual Techniques

No proprietary or statistical modeling tools were required for the research; instead, it made use of:

- I use Microsoft Excel and TradingView to display charts of prices.
- Canva for flow diagram generation
- Google Trends can be used for sentiment analysis.
- Observing Reddit or YouTube videos to learn about behavior

It helps to better see and understand the various patterns hidden in the narrative.

### 3.6 Limitations of the Methodology

- No primary data (e.g., interviews, surveys) were collected.
- Occasionally, the outcome is decided based on things like Reddit trends or the overall level of oversubscription during an initial public offering.
- The data used does not include any algorithmic trading or high-frequency information.
- The findings are descriptive and serve to explore, rather than to calculate or run statistical tests.

Even so, these shortcomings reflect the nature of MBA applied research and are made up for by analyzing a wide range of practical cases.

## IV. DATA ANALYSIS AND FINDINGS

Let's use the data available to us to highlight how rising numbers of retail investors are impacting both the market's trends and overall volatility. Four charts have been included to explain the main findings seen in Indian and international markets.

### 4.1 Surge in Indian Retail Participation

Over the past five years, the highlight in India's financial markets has been the surge in demat accounts which stands for more investment from ordinary citizens. According to both SEBI and the Economic Times, the number of demat accounts shot up from nearly 3 crore in 2017 to around 11 crore by 2025.

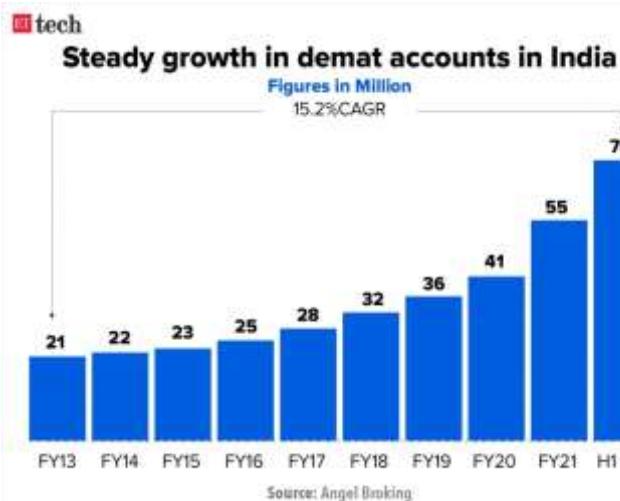


Figure 2. Growth of demat accounts in India (FY13–H1 FY22)

Source: ETtech, SEBI. According to the graph, digital onboarding and fintech brokerage showed steady growth each year.

After 2020, the number of crypto users grew rapidly due to apps that made trading easier, a decline in the cost of starting and increased interest thanks to social media. Companies like Zerodha and Groww helped Indian investors make this transition easier and faster.

### 4.2 Pre- and Post-COVID Demat Account Comparison

To learn how the pandemic contributed to this change, a side-by-side view of demat account numbers from FY11 to FY20 is presented. Before the pandemic, retail industry growth was steady, but as you can see, the graph rises much steeper after 2020 which supports the idea that COVID-19 made retail entry occur more frequently.



Figure 3. Demat Account Growth in India (FY11–FY20)

Source: SEBI Annual Reports. Growth remained modest before the pandemic, but intensified sharply in 2020.

This growth coincides with heightened retail turnover in equities and derivatives, as also cited in SEBI's F&O study (2022), which revealed over 91% of retail derivatives traders faced losses—suggesting increased participation doesn't always align with preparedness.

### 4.3 Meme Stock Volatility: The GameStop Case

In January 2021, investors across the globe were shaken by the GameStop (GME) short squeeze. A well-planned trend within the WallStreetBets community increased GME stock from just under \$20 to more than \$350 in just a few days. As the figure below shows, the obvious jump and pause in trading were a unique event in behavioral finance.



Figure 4. GameStop (GME) Stock Price Chart – Jan 2021 Meme Rally

Source: TradingView. The pattern includes very strong price swings, high daytime volatility and a number of stops for circuit breakers.

As a result, people started arguing about the efficiency of financial markets and the legal framework for trading using social media.

#### 4.4 Panic and Sentiment in Emerging Markets: The Adani Selloff

In the same year, Indian investors faced concerns similar to Wall Street when Hindenburg said the Adani Group might have violated financial and stock trading practices. Adani Enterprises lost more than half of its value in only a matter of weeks. The above graph demonstrates how the share price of Adani dropped after the report.

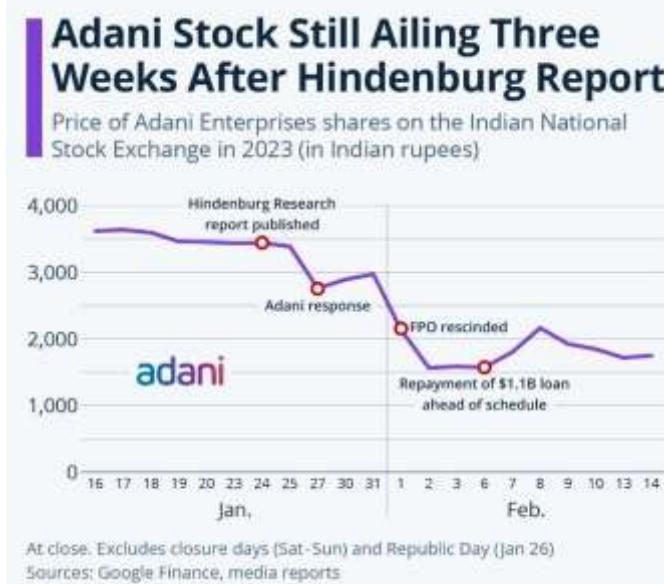


Figure 5. Adani Enterprises Stock Performance During Jan–Feb 2023 Crisis

Source: Reuters. The cause of the sharp decline is panic-based selling by retail traders and the common use of debt.

Analysts say that traders were forced to give up their investments due to huge margin calls and mass liquidations of retail accounts. An example like this reveals that the risk for big market moves exists when sentiment is changed and when many retail traders are interested in the stock.

#### 4.5 Cross-Case Patterns and Observations

Overall, the four visuals and their related cases highlight similar main ideas:

- Retail interest in stock rises in tandem with trends such as discussion on Reddit or IPO news stories.
- Before a volatility spike, there is often excitement across different items or markets and this trend often happens when something is breaking records in value.
- Even though making investing available to more people is a good idea, it is proving to be harmful because of the growing wealth gap caused by low financial literacy, as shown by the SEBI's F&O loss report.

Simply put, now retail investors play a main role in the way markets behave and how prices move on a daily basis.

## V. DISCUSSION

According to the research, retail investors have a major role in renewing the structure of today's markets. Examining events from both India and the world as a whole, the study proves that the retail market now plays a key role in volatility. The conversation relates the facts to behavioral finance, platform economics and market microstructure theory.

### 5.1 Behavioral Dynamics and Investor Psychology

The decisions made by retail investors are strongly affected by their thoughts and feelings. It was clear during GameStop and Zomato investments that retail investors followed herding, FOMO and confirmation bias rather than just calculating the value of the company. Such actions comply with the research by Barber and Odean [4], who proved that most investors are overconfident and end up trading excessively which leads to them performing worse.

Jones et al. [2] explained that the conditions of the lockdown influenced investors, making it easier for them to trade by reducing their time and other expenses. It is clear from looking at the data for both the Zomato and GameStop events. People investing in retail were making their decisions based on the crowd instead of financial reasons.

### 5.2 Platform-Induced Amplification of Retail Activity

Thanks to technology, the industry no longer faces high barriers to participation and its presence has even impacted the outcomes of retail trading. The platforms of Robinhood (U.S.) and Zerodha (India) include elements intended to provoke specific behaviors. According to JPMorgan [18], when people receive these behavioral hints, retail portfolios became 15% more volatile from 2019.

The SEC points out that trading on zero-commission platforms may lead people to engage in speculation which is not always planned for the long term [9]. As you can see from Figure 3, when WallStreetBets members on Reddit worked together, the stock price jumped so much that trading in GameStop shares was temporarily put on hold several times. Volatility across the stock market can now be observed in real time, thanks to the networked investor communities.

“I just like the stock.” – Reddit user Keith Gill, alias Roaring Kitty.

It perfectly captured the idea of coordinated behavior among investors, inspired by their feelings.

### 5.3 Panic Selling and Sentiment Sensitivity

Retail investors are known to react strongly to negative events. Shortly after the Hindenburg Research report, retail investors rushed to sell shares in the Adani case (Figure 4). A report by Reuters indicated that margined accounts are getting liquidated as many people flee the market in fear.

The result is that at the start, many enter because they are excited, while at the end, fear and panic lead them to pull out of the market. According to the report from SEBI, 90% or more of retail traders trading in derivatives markets experienced net losses [8].

#### 5.4 Regulatory Friction and Market Microstructure Impact

Swings in retail have brought about changes in the way policies are debated. The SEBI's draft on controlling finfluencers [23] and the SEC's changes in market structure [9] are both examples of steps being taken to avoid manipulative information. Because of the increased influence of WallStreetBets and finfluencers on social media, now there is an overflow of information rather than information scarcity for traders.

It is now up to policymakers to balance access for buyers by introducing slowed or restricted behaviors for unhealthy products. It is being assessed if promoting "waiting periods" or making risk information mandatory can help with problem gambling.

#### 5.5 Synthesis with Literature and Contribution to Knowledge

It makes use of current studies by focusing on two main aspects:

- It looks at how professional understandings of finance can help explain events of volatility from both India and the U.S.
- It accompanies key events with their actual prices so readers can glean facts from the examples in the work.

Both Kurov et al. [1] and Salvucci [5] observed the link between volatility and retail. It goes further by proving that the link is supported by access, by intensifying emotions on social media and by the design of platforms.

## VI. CONCLUSION

I examined in this paper the role retail investors have played in maintaining stability in the market and in trading. It is clear from the study that those investors trading through the internet and following common biases contribute to changes in the market. At GameStop, Zomato and Adani, it became clear that a few events can cause a rise and fall in a group of investors' feelings. An increasing number of people in India are opening demat accounts and trading in derivatives, likely because not everyone knows enough and misunderstand understanding risks.

The research combines key market data with people's feelings and opinions about the market. The results show that a fair market has been challenged lately by retailers who let their feelings affect the situation. Since retail investors have an impact on pricing and market strength, all parties in the market must be adaptable. Since the market always evolves, any educational materials, online systems and rules meant for investors must be regularly modified.

Overall, new retail investors entering the market are shaping the future of finance, as they introduce different participants and new behaviors. New financial systems should help people stay informed and be resistant to volatility caused by collective emotions.

## REFERENCES

[1] A. Kurov, S. Lasser, and M. Wolfe, "Do retail traders destabilize financial markets? Evidence from the COVID-19 pandemic," *Journal of Financial Markets*, vol.54,2022.Available: <https://pmc.ncbi.nlm.nih.gov/articles/PMC9355410/>

[2] C. M. Jones, X. Zhang, and X. Zhang, "Retail Investors Around the COVID-19 Pandemic: A Comprehensive Study," SSRN, 2022. Available: [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=4151106](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4151106)

[3] FINRA Foundation, "2021 National Financial Capability Study: Changing Landscape of Retail Investors," 2021. Available: <https://www.finrafoundation.org/sites/finrafoundation/files/NFCS-Investor-Report-Changing-Landscape.pdf>

[4] B. M. Barber and T. Odean, "The Behavior of Individual Investors," *Handbook of the Economics of Finance*, 2008. Available: <https://faculty.haas.berkeley.edu/odean/papers%20current%20versions%20behavior%20of%20individual%20investors.pdf>

[5] D. Salvucci, "Economic Assessment of the Activity of Retail Investors on the Stock Market," *Economics, Finance and Management Review*, 2023. Available: [https://www.researchgate.net/publication/384721545\\_ECONOMIC\\_ASSESSMENT\\_OF\\_THE\\_ACTIVITY\\_OF\\_RETAIL\\_INVESTORS\\_ON\\_THE\\_STOCK\\_MARKET](https://www.researchgate.net/publication/384721545_ECONOMIC_ASSESSMENT_OF_THE_ACTIVITY_OF_RETAIL_INVESTORS_ON_THE_STOCK_MARKET)

[6] Economic Times, "NSE Registered Investor Base Crosses 11 Crore Unique Investors," Apr. 2025. Available: <https://government.economictimes.indiatimes.com/news/economy/nse-registered-investor-base-crosses-11-crore-unique-investors-market-capitalisation-hits-4251-cr/117453807>

[7] A. Tyagi, "Number of Demat Accounts Have More Than Doubled Since March 2019: SEBI Chief," *Times of India*, Jan. 2022. Available: <https://timesofindia.indiatimes.com/business/markets/sensex/number-of-demat-accounts-have-more-than-doubled-since-march-2019-sebi-chief/articleshow/88718733.cms>

[8] SEBI, "Study: Analysis of Profit and Loss of Individual Traders Dealing in Equity F&O Segment," 2022. Available: <https://www.outlookbusiness.com/the-big-story/lead-story/delirium-in-the-markets-7000>

[9] U.S. Securities and Exchange Commission, "Staff Report on Equity and Options Market Structure Conditions in Early 2021," Oct. 2021. Available: <https://www.sec.gov/newsroom/press-releases/2021-212>

[10] SEC, "SEC Staff Releases Market Structure Findings on Meme Stock Volatility," Oct. 2021. Available: <https://www.sec.gov/newsroom/press-releases/2021-212>

[11] SIFMA, "SIFMA Insights: Analyzing Off-Exchange Trading," Sept. 2021. Available: <https://www.sifma.org/wp-content/uploads/2021/09/SIFMA-Insights-Analyzing-Off-Exchange-Trading-09-2021.pdf>

[12] K. Johnson and C. Prentice, "U.S. SEC Praises Equity Market Structure, Absolves Short Sellers in GameStop Report," *Reuters*, Oct. 2021. Available: <https://www.reuters.com/business/us-sec-praises-equity-market-structure-absolves-short-sellers-gamestop-report-2021-10-18/>

[13] D. Roy and S. Shetty, "Zomato's \$13B India IPO Draws Strong Retail Investor Appetite," *Reuters*, Jul. 2021. Available: <https://www.reuters.com/world/india/zomatos-13-bln-india-stock-offering-draws-strong-investor-appetite-2021-07-16/>

[14] S. Dave and J. Kudikayil, "Adani Shares Drop After Hindenburg Allegations," *Reuters*, Aug. 2023. Available: <https://www.reuters.com/markets/asia/indiads-adani-shares-drop-after-hindenburg-allegations-sebi-chairs-past-2024-08-12/>

[15] A. Ksheerasagar, "Indian Retail Investors Turn Cautious Amid Market Volatility," *Mint*, Apr. 2025. Available: <https://www.livemint.com/market/stock-market-news/indian-retail-investors-turn-cautious-amid-market-volatility-should-value-investing-be-the-next-bet-11743574602783.html>

[16] D. Dutta, "Delirium in the Markets: Retail Boom in India," *Outlook Business*, 2023. Available: <https://www.outlookbusiness.com/the-big-story/lead-story/delirium-in-the-markets-7000>

[17] Bloomberg via Yahoo, "WallStreetBets Sees 10x Surge in Traffic During Jan 2021," Feb. 2021. Available: <https://www.bloomberg.com/news/articles/2021-02-05/reddit-documents-a-surge-of-new-users-to-site-and-wallstreetbets>

- [18] BusinessofApps, “Robinhood Statistics (2023),” Available: <https://buybitcoinworldwide.com/robinhood-statistics/>
- [19] Zerodha, “India’s Largest Stockbroker – User Metrics,” Accessed 2025. Available: <https://zerodha.com/>
- [20] JPMorgan Chase Institute, “Market Risk in Retail Investors’ Portfolios During the Pandemic,” 2023. Available: <https://www.jpmorganchase.com/institute/all-topics/financial-health-wealth-creation/retail-risk-investors-portfolios-during-the-pandemic>
- [21] Angel One, “192.4 Million Demat Accounts in FY25,” 2025. Available: <https://www.angelone.in/news/192-4-million-demat-accounts-in-fy25- record-41-1-million-added-in-a-single-year>
- [22] Business Insider, “WallStreetBets Reddit Community Reaches 11M Members,” Dec. 2021. Available: <https://markets.businessinsider.com/news/stocks/wall-street-bets-top-reddit-posts-in-2021-2021-12>
- [24] N. Sreekumaran, “Zomato Crash and Retail Exit Trends,” *Inc42*, 2022. Available: <https://inc42.com/features/is-the-worst-yet-to-come-for-zomato-multiple-headwinds-threaten-stocks-future/>
- [25] ScienceDirect, “Impact of COVID-19 on Stock Trading Search Trends,” 2023. Available: <https://www.sciencedirect.com/science/article/pii/S0167923623001495>