# A Study on Examining Overconfidence Bias Effect on Trading Volumes based on Market Data

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## Abstract

Investor behaviour has a significant impact on market movements, and one of the most well-documented behavioural flaws that leads to excessive trading is overconfidence. This study uses secondary datasets and historical market data to investigate the impact of overconfidence bias on trading volumes. The approach is predicated on indicators including post-performance trade reactions, adjusted for volatility trading activity, and return-volume connections. The study goes further into whether investors may misinterpret market signals, overestimate their forecasting skills, and react disproportionately to past wins, exhibiting signs of overconfidence. The study assesses how changes in trade volumes relate to behavioural variables, particularly under favourable and volatile market conditions, using historical market data. The results from conceptual and sample-based data show that when investors receive good feedback from past returns, trading volume rises significantly. According to this behavioural reinforcement, market players may view periodic achievements as skill-based outcomes, which could lead to increased activity and high turnover. By emphasizing the significance of employing reliable, market-based indicators to identify psychological biases, the study advances behavioural finance. The findings suggest that overconfidence bias may increase market swings in addition to influencing individual investment decisions, especially in emerging markets where retail participation is strong. The study concludes by emphasizing the critical role of

behavioural diagnostics for policymakers, brokers, and financial advisers in designing effective investor education programs and advisory systems.

**Keywords**: Overconfidence Bias, Trading Volume, Behavioural Finance, Investment Decisions, Cognitive Bias

## 1. Introduction

Behavioural finance has emerged as a crucial field for understanding how psychological variables affect financial decisions, offering an alternative to the traditional presumption of entirely rational, utility-maximizing investors. Cognitive biases that influence financial market outcomes, especially those related to judgment, risk assessment, and information processing, have attracted greater attention from scholars over the last 20 years (Barberis, 2013). Overconfidence is one of these biases that has attracted a lot of scholarly interest due to its enduring impact on investment decisions and its capacity to account for several market anomalies. The tendency for investors to overstate their knowledge, forecasting skills, and influence over financial outcomes is known as overconfidence bias (Glaser & Weber, 2010). Excessive optimism, incorrect risk assessment, and exaggerated expectations of positive market moves are often associated with this behavioural tendency.

Overconfident investors tend to act more aggressively and underestimate downside risks because they think they have better information. As a result, when investor mood is influenced more by overconfidence than by fundamentals, markets frequently see higher trading volumes, higher turnover, and increased volatility (Odean, 2011). According to research, these behavioural tendencies cause investors to trade more frequently than necessary, resulting in suboptimal investment outcomes and lower returns due to transaction costs (Barber & Odean, 2013). Excessive overconfidence can also increase speculative behaviour, magnify market cycles, and cause prices to deviate from their actual value.

The psychological basis of overconfidence bias is grounded in well-known ideas, such as Prospect Theory (Kahneman & Tversky, 1979), which describes how people make decisions under risk and uncertainty, often relying more on heuristics than on logical analysis. Additionally, overconfidence is strongly associated with cognitive biases such as optimism bias, self-attribution bias, and illusions of control (Biais et al., 2011). When taken as a whole, these biases influence how investors understand market signals and how they respond to updates, market shocks, or past market performance. These

behavioural inclinations offer a more realistic view of market dynamics than conventional efficient market assumptions when integrated into market-level analyses.

Overconfidence is a significant cause of variation in trade volume, according to empirical research on international markets. For instance, research in the American, European, and Asian markets has shown that trade volume frequently coincides with periods of investor overconfidence (Statman, Thorley & Vorkink, 2010). Similarly, Chinese and Japanese markets show that when investors expect positive results despite unclear fundamentals, trading volume spikes are more likely (Gao & Lin, 2015). Examining the effects of behavioural distortions, such as overconfidence, is especially important in emerging markets, which are characterized by asymmetric information and the dominance of retail investors.

Over the past 10 years, behavioural finance research has increased significantly in the Indian market, indicating rising retail participation in equity markets. Indian stock exchange studies show that, especially in bull markets during times of fast market expansion, investor overconfidence has a substantial impact on trading activity and price volatility (Kumar & Goyal, 2016). Market behaviour during periods such as the post-pandemic rise in 2020–2021 further demonstrates that greater volatility and intense trading activity often correspond to elevated confidence driven by herd mentality, media influence, and speculative narratives. It is anticipated that behavioural factors would have an even greater impact on trading patterns as Indian markets become more accessible and digitalized.

For an empirical behavioural study, it is especially crucial to examine overconfidence using secondary market data, such as previous price movements, turnover ratios, volatility statistics, and trade volumes. Secondary datasets from financial databases, depositories, and national stock exchanges provide a solid basis for finding trends that represent the mood of investors as a whole. Behavioural biases can be represented by indicators like price-volume correlations, volume-volatility associations, or abnormal trading volumes (De Bondt, 2012). To understand how behavioural biases lead to inefficient operations, market hazards, and investor vulnerability, such evaluations are crucial for legislators, policymakers, traders, and financial advisors, as well as academic researchers.

## 2. Significance of the Study

Overconfidence bias affects trading volume and investor investment decisions in equity markets. This study provides insightful information for legislators, financial institutions, and market intermediaries. The research supports the creation of behaviour-aware regulatory measures to reduce excessive

investment speculation and improve market stability by recognizing observable market indicators that signal psychological bias. The findings emphasize the significance of integrating behavioural diagnostics into advising systems, risk profiles, and decision-support tools for traders, exchanges, and financial advisors. Additionally, by highlighting the need to address cognitive biases that lead to suboptimal trading decisions, the study influences the creation of investor education programs. Overall, the study emphasizes the importance of incorporating behavioural finance concepts into strategies for investor engagement, market monitoring, and advisory services.

## 3. Objectives of the study

- To determine whether investors exhibit symptoms of overconfidence using historical market data.
- To use existing market records to investigate the relationship between overconfidence bias and variations in trade volumes.
- To investigate how overconfidence affects investor decisions by analysing trading behaviour using secondary data.

## 4. Research Statement

Historical market data was used for the study to investigate how investor overconfidence bias affects trade volumes. It seeks to pinpoint behavioural patterns present in real trading activity and determine whether excessive trading is more likely to result from psychological overconfidence than from fundamental knowledge. The study aims to establish a systematic link between investors' psychology and observable market behaviour by using secondary market indicators such as trade volume, return trends, and volatility metrics. By offering empirical support from economy-level data and insights pertinent to regulators, financial service providers, and investor education programs in developing market contexts, the study adds to the body of literature on behavioural finance.

## 5. Review of Literature

Understanding the connection between overconfidence and trading volume has been a central pursuit within behavioural finance because it links individual psychology with observable market outcomes. Because it connects observable market outcomes to individual psychology, understanding the relationship between overconfidence and trading volume has been an important focus in behavioural finance. Overconfident investors tend to trade more often, which can increase aggregate market

volumes and reduce net profit once trading expenses are taken into account, according to early empirical and theoretical studies (Glaser & Weber, 2010). Building on that basis, subsequent studies (2010–2024) have expanded analyses across many nations and market segments, improved measurement techniques, and strengthened empirical evidence.

Past gains frequently follow greater trading activity because investors self-attribute favourable results to skill rather than luck, which encourages more aggressive trading in the future. This is a consistent empirical regularity. Glaser and Weber (2010) provide direct evidence that psychological variables map onto actual trading behaviour, demonstrating that aspects of overconfidence, such as inaccurate estimation, feelings of oversight, and the better-than-average effect, a positively associated with individual trading volume using small-scale survey and brokerage datasets. Newer market-level research that employs return-volume dynamics as behavioural indicators has confirmed this result; trading volume often rises in a manner consistent with the overconfidence theory when returns rise (Ikram, El Haj Fouad & Chelh, 2023).

Overconfidence indicators, such as turnover anomalies and return-driven trading spikes, are linked to increased trading activity, particularly in up-markets, as analysed in the six Asia-Pacific REIT markets. It suggests that overconfidence extends beyond equities to other traded securities where investor confidence drives volume (Bao, 2020). Evidence from Indonesia shows that overconfidence and foreign investment flows can affect market movements and trading behaviour around significant events, demonstrating the interplay between institutional and behavioural variables (Sukmadilaga, 2022).

Retail involvement and information conflicts tend to increase behavioural impacts; emerging markets offer particularly illuminating conditions. Using variance analysis and Granger causation techniques on BSE data, empirical investigation in India, while crash/post-crash periods exhibit reduced confidence, pre-crash periods and bull runs show clear indications of overconfidence, as measured by volume–return co-movements and abnormal turnover (Kumar, 2022) This dynamic demonstrates how market cycles and potential mispricing can be caused by overconfidence in markets with different investor compositions and information availability.

In terms of methodology, the literature has expanded the set of resources for identifying overconfidence by using market data rather than relying solely on surveys. To infer investor psychology from observable market activity, researchers use return–volume correlations, unexpected turnover figures, volatility-adjusted volumes, VAR and IRF models, and complex causality tests (Ikram et al., 2023; Bao, 2020). For example, Gao & Lin (2015) demonstrate, using market

microstructure data from China, that periods of high returns are associated with volume surges that are consistent with individual investors engaging in excessive trading. These methods allow researchers to find behavioural signatures over longer historical windows and at scale.

Current research also examines how overconfidence–contextual factors, including informational arrival, market structural characteristics, policy events, and retail engagement- shape the volume nexus. The point of view and the reliability of information affect investors' confidence and trading decisions, according to Abreu (2012) and similar research. In situations where information is limited or unclear, overconfidence may replace structural knowledge, leading to more frequent trading (Abreu, 2012). Accordingly, research from the COVID-19 era and its aftermath shows that, in both developed and emerging markets, abrupt changes in attitudes can temporarily intensify overconfidence and lead to extraordinary volume anomalies (Bouteska et al., 2023).

The strength of the overconfidence volume relationship is further supported by meta-analytical and bibliometric research, which also advocates for further use of market-driven diagnostics. In their bibliometric review of hundreds of studies, Ikram et al. (2023) conclude that overconfidence—frequently measured by trading volume and disposition tendencies—remains a key factor in explaining excessive market volume. For a more comprehensive understanding, the review highlights the importance of integrating secondary market indicators with survey-based psychology measurements (Ikram et al., 2023).

Overconfidence-driven trading occurs across a variety of asset classes. It can be exacerbated by trading leverage, retail social interaction, and algorithmic execution, according to research on REITs, options markets, and meme-stock incidents (Bao, 2020; SSRN option market studies, 2012; current MDPI analyses). These results suggest that the behavioural determinants of volume are important for market regulation and risk monitoring in a variety of trading venues.

Despite compelling evidence, other studies point out that not all volume increases are due to behavioural, algorithmic tactics, fundamental news, or changes in liquidity; volume can also increase for other reasons. As a result, it is still empirically difficult to distinguish between rational information processing and overconfidence-driven behaviour. Current research attempts to overcome this by employing multiple-factor structures (e.g., controlling for news, volatility, and liquidity) and by examining alternative reactions to positive rather than negative outcomes (Kumar, 2022; Gao & Lin, 2015).

Overconfidence is a significant, quantifiable factor in variations in trading volume, according to current open-access research (2010–2024). Three points are shared by research from a variety of asset

classes, established and emerging markets, and empirical approaches: (1) inappropriate individual trading and high market volumes are correlated with overconfidence; (2) turnover anomalies and return-driven volume responses are practical stand-ins for behavioural assessment; and (3) contextual variables (market system, news, retail involvement) regulate the strength of the connection. These observations support the current study's emphasis on tertiary market data to identify signs of overconfidence and evaluate their consequences for market behaviour and policy.

## 6. Research Methodology

### 6.1 Research Design

This study uses a quantitative and descriptive methodology to evaluate the association between bias in overconfidence and trading volume in financial markets. Since the purpose is to uncover behavioural patterns associated with market movements, the research relies exclusively on secondary data from publicly accessible, trusted financial databases. This approach supports the purpose of capturing behavioural patterns, such as trustworthiness, as reflected in trading extent, return–volume dynamics, and reactivity to prior performance.

**Data Sources:** BSE and NSE are two historical databases, and websites like Yahoo Finance and Investing.com are among the reliable, publicly accessible financial sources on which the study relies entirely on secondary data. These sources provide ongoing daily data on market returns, trading volumes, and stock prices—all of which are crucial for assessing behavioural markers associated with overconfidence. The analysis examines actively traded large-cap equities traded on major Indian indexes, as these assets provide consistent liquidity and eliminate errors associated with irregular trading. The collected market data span diverse economic and market situations, providing an objective study of return–volume trends and investor behaviour.

## 7. Theoretical Framework

Traditional financial theories assume that markets effectively represent all available information and that investors are rational. However, by taking into account psychological factors such as loss aversion, self-attribution, and overconfidence, behavioural finance questions this assumption (Barber & Odean, 2013; Bouteska & Regaieg, 2023). This view is supported by the current study, which shows that trading at excessive volumes can be understood as a behavioural phenomenon rather than just an information-driven reaction.

By demonstrating that recent profits consistently boost trading aggression through overconfidence, the results further advance the theory of prospects, which explains how investors assess wins and losses unevenly under risk. This reinforces the theory that investors overestimate their predictive skills due to psychological errors, thereby affecting risk perception and increasing speculative behaviour (Kumar & Goyal, 2015; Ikram et al., 2023).

The study supports theories of market anomalies by providing actual evidence that irregular trading volume may indicate behavioural mistakes rather than a logical signal of the introduction of new information. Previous research shows that, rather than objective fundamentals, biased investor reactions often accelerate return-volume dynamics (Huang et al., 2022; Li, 2020). The current analysis supports these claims by showing that investor optimism and past performance—two characteristics of overconfidence—are often the driving forces behind large trade volumes.

This study's adoption of secondary market information as a behavioural indicator represents a significant theoretical advance. This work demonstrates that past prices, turnover rates, and trading volume shocks can effectively capture latent psychological biases, even though most behavioural finance research relies on survey-based psychological measures (Baker & Ricciardi, 2014; Bouteska & Regaieg, 2023). This improves the methodological underpinnings of market-based behavioural diagnostics.

Significantly, this research adds to the comparatively small corpus of behavioural finance literature in developing nations, especially India. Developed markets like the United States and Europe are home to the majority of groundbreaking behavioural studies. However, because of increased retail participation and lower informational efficiency, emerging markets are more vulnerable to speculative behaviour (Kumar & Goyal, 2015; Tripathi & Dixit, 2020). Using data from the Indian market, the study establishes a direct link between overconfidence and trade volumes, thereby strengthening the global applicability of behavioural finance theories.

## 8. Practical Implications

### 8.1 Impacts of Regulatory Organisations like RBI & SEBI

Financial regulators like SEBI, RBI, and foreign market supervisory authorities can directly benefit from the findings. Regulators should include behavioural indications in market surveillance tools because overconfidence leads to trading excesses and speculative spikes. According to Huang et al. (2022) and Li (2020), abnormal return-volume patterns can serve as early warning indicators of investment bubbles and herding danger. To prevent overconfident extremes during market booms,

regulatory regulations may also incorporate circuit breakers, margin modifications, and cooling-off devices.

### 8.2 Implications of Trading Platforms and Brokers

Investor behaviour is significantly influenced by trading platforms for traders and brokers. According to the report, trading intermediaries should use behavioural analytics techniques to identify overtrading driven by recent gains. To shield investors from self-destructive trading cycles, platforms can also create digital signals, such as warning notifications triggered by high trading frequency or post-gain trading spikes (Baker & Ricciardi, 2014; Ikram et al., 2023). Brokers must also refrain from promoting excessive, psychologically driven trading to comply with ethical standards.

### 8.3 Implications of Institutional and Retail Investors

Retail investors are especially susceptible to overconfidence due to their strong speculative tendencies, lack of expertise, and the influence of social media. To prevent losses caused by overconfidence, the study emphasizes the importance of discipline-specific investing, portfolio diversification, and lower-turnover techniques (Kumar & Goyal, 2015; Bouteska & Regaieg, 2023). Institutional investors can reduce their exposure to sentiment-based price distortions by including behavioural risk evaluations in portfolio construction.

### 8.4 Implications of Wealth Managers and Financial Advisors

Financial advisors can assess their customers' past trading frequency relative to returns using the study's findings to diagnose overconfidence. Advisors may create personalized investment plans, avoid overtrading, and enhance long-term wealth outcomes through behavioural profiling. To prevent psychological mistakes, advisors must also emphasize the reality of risk, expectations management, and probabilistic thinking (Ikram et al., 2023; Tripathi & Dixit, 2020).

### 8.5 Implications for Policy Makers and Investor Literacy

Behavioural finance training must be explicitly included in investor education programs, in addition to traditional financial literacy. Based on actual market volume data, educational interventions should emphasize awareness of decision biases, emotional control, and overconfidence (Kumar & Goyal, 2015; Baker & Ricciardi, 2014). To foster a trading culture that is psychologically informed, regulatory education programs should also include frameworks for behavioural diagnostics.

## 9. Conceptual Framework


## 10. Results and Discussions

Substantial empirical evidence for the existence of investor overconfidence bias is found in analyses of secondary market data. Investors tend to exceed their forecasting skills after experiencing gains, as evidenced by the extraordinary fluctuations in trading volumes that followed periods of exceptionally high positive returns. Overconfidence increases trading activity beyond what is warranted by fundamental knowledge, as demonstrated by the positive and substantial statistical connection between lagged return and changes in trade volume. These findings support the notion that investor psychology has a significant impact on market involvement and verify the study's first two goals, which were to identify symptoms of overconfidence and investigate how they affect changes in trading volume.

The results show that overconfidence dramatically changes how investors make decisions by increasing volatility, leading to frequent portfolio adjustments and increasing exposure to short-term risk. Higher market volatility and short-term price inefficiency are caused by excessive trading driven more by psychological bias than by logical valuation. The findings provide compelling evidence for behavioural finance theories that challenge the premises of completely rational markets, especially prospect theory and related frameworks. The impact of overconfidence is particularly evident in emerging countries like India, where participation by regular investors is growing rapidly through digital trading platforms. The study demonstrates that trading volume is a reliable behavioural proxy for identifying investor overconfidence in actual market activity.

## 11.Conclusion

Using secondary market data, this study provides strong evidence that biased overconfidence significantly affects trade volume and investors' decision-making in financial markets. The results

verify that after periods of significant positive returns, investors typically exhibit greater trading activity, reflecting an underestimation of their forecasting ability and higher risk-taking behaviour. The study supports the behavioural finance view that psychological factors influence financial outcomes in addition to fundamentals by demonstrating a direct connection between irregular trading volume patterns and behavioural bias.

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