

Behavioural Biases Affecting Retail Investors in the Indian Stock Market (NSE/BSE) : A Historical Study (January 2000 to March 2013)

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Abstract

This study provides a historical analysis of the behavioral biases exhibited by retail investors in the Indian stock market, specifically on the National Stock Exchange (NSE) and Bombay Stock Exchange (BSE), from January 2000 to March 2013. This period is significant as it encompasses major market events, including the dot-com bubble burst, the global financial crisis of 2008, and a subsequent period of recovery and high volatility. Departing from the traditional assumption of investor rationality, this research is grounded in the theoretical frameworks of Behavioral Finance, including Prospect Theory. The study employs a mixed-methods approach, combining quantitative analysis of market data (e.g., trading volume, volatility indices, IPO performance) with qualitative content analysis of financial news, investor forums, and SEBI reports. The primary objective is to identify, document, and analyze the prevalence and impact of key biases such as overconfidence, herding, loss aversion, and confirmation bias. Preliminary findings suggest that these biases significantly contributed to sub-optimal investment decisions, market anomalies, and amplified volatility during this period. The study concludes that recognizing these biases is crucial for investor education, regulatory policy formulation, and fostering a more stable financial market.

Keywords

Behavioral Finance, Retail Investors, Indian Stock Market, NSE, BSE, Behavioral Biases, Overconfidence, Herding, Loss Aversion, Market Anomalies, Prospect Theory, Historical Study.

1. Introduction

The Efficient Market Hypothesis (EMH) has long been the cornerstone of classical financial theory, positing that investors are rational and security prices fully reflect all available information. However, empirical evidence, particularly from periods of extreme market volatility, has consistently challenged this view. The Indian stock market, one of the world's most dynamic, witnessed dramatic swings between January 2000 and June 2013. This era, marked by the tech wreck, a massive bull run, the 2008 global financial crisis, and a volatile

recovery, provides a perfect natural laboratory to study investor psychology. This research investigates the role of behavioral biases in driving the investment decisions of retail investors—a segment particularly susceptible to cognitive and emotional errors—during this tumultuous historical window. By examining this period through the lens of Behavioral Finance, this study aims to bridge the gap between theoretical finance and the observable, often irrational, behavior of market participants.

2. Definitions of Key Terms

1. **Behavioral Biases:** Systematic patterns of deviation from norm or rationality in judgment, leading to irrational financial decisions.
2. **Retail Investors:** Non-professional, individual investors who buy and sell securities for their personal accounts, typically in smaller quantities.
3. **Overconfidence Bias:** The tendency for investors to overestimate their own knowledge, ability, and the precision of their information.
4. **Herding Bias:** The tendency of individuals to mimic the actions (buying/selling) of a larger group, often ignoring their own analysis.
5. **Loss Aversion (Prospect Theory):** The tendency for people to prefer avoiding losses rather than acquiring equivalent gains (losses loom larger than gains).
6. **Confirmation Bias:** The tendency to search for, interpret, favor, and recall information that confirms one's preexisting beliefs.

3. Need for the Study

There is a critical need to understand the psychological underpinnings of retail investor behavior in India. While numerous studies exist on market efficiency and macroeconomic factors, a focused historical analysis of behavioral biases during a defined period of extreme events is limited. This study is needed to:

1. Explain market anomalies and excess volatility that classical finance cannot.
2. Empower retail investors by making them aware of their own cognitive pitfalls.
3. Provide insights for financial advisors and institutions to design better products and advisory services.
4. Inform regulators (like SEBI) in crafting policies that protect investors and ensure market stability.

4. Aims and Objectives

Aim: To comprehensively analyze the impact of key behavioral biases on the decision-making processes of retail investors in the Indian equity market from 2000 to 2013.

Objectives:



1. To identify specific behavioral biases (overconfidence, herding, loss aversion, etc.) prevalent among retail investors.
2. To correlate the manifestation of these biases with major market phases (bull runs, crashes, corrections) within the study period.
3. To measure the impact of these biases on trading patterns, volume, and stock returns.
4. To examine the role of media and financial news in amplifying these biases.
5. To provide actionable recommendations for investors, advisors, and regulators.

5. Hypothesis

1. **H1:** Retail investors in the Indian market exhibited significant herding behavior, which was positively correlated with periods of high market volatility.
2. **H2:** Overconfidence bias among retail investors led to excessive trading volume, which negatively impacted their portfolio returns.
3. **H3:** Loss aversion bias caused retail investors to hold onto losing investments for too long and sell winning investments too early (the Disposition Effect).

6. Literature Search

A systematic literature review would be conducted, covering:

1. **Foundational Theories:** Kahneman and Tversky's (1979) Prospect Theory, Thaler's work on mental accounting.
2. **Global Empirical Studies:** Shiller (2000) on irrational exuberance, Odean (1999) on overconfidence and trading.
3. **Indian Context:** Studies by Sehgal et al. on herding in BSE, Kumar (2009) on the Disposition Effect, and more recent works linking behavioral finance to Indian market anomalies. Gaps in existing Indian literature regarding a consolidated historical study of this specific period will be highlighted.

7. Research Methodology

1. **Research Design:** Mixed-methods (Explanatory Sequential Design).
2. **Data Source & Period:** Secondary data from January 2000 to June 2013.
3. **Quantitative Data:** Nifty/Sensex index data, trading volume, Volatility Index (India VIX), IPO subscription and listing data, FII/DII flows vs. retail flows.
4. **Qualitative Data:** Content analysis of financial news from *The Economic Times*, *Mint*; archival records of SEBI bulletins; historical threads from investor forums (e.g., Moneycontrol, Traji).
5. **Analytical Tools:**

- A. **Quantitative:** Cross-sectional absolute deviation (CSAD) model for herding, regression analysis to test overconfidence (volume vs. returns), performance analysis of portfolios to test the disposition effect.
- B. **Qualitative:** Thematic analysis to identify narratives of greed, fear, and bias in media content.

8. Strong Points of the Study

This study is exceptionally robust due to a confluence of factors related to its timing, methodology, and relevance. Here are its huge strong points:

1. The "Perfect Storm" Timeframe: A Natural Laboratory for Behavior

This is the study's single greatest strength. The period from January 2000 to June 2013 is not arbitrary; it is a **complete market cycle** that captures extreme human emotions in their purest form.

- 1. **Captures Full Market Spectrum:** It includes a major bubble (dot-com), a brutal crash (2000-2003), a massive, sustained bull run (2003-2008), a global-systemic collapse (2008-09), and a volatile, scam-tainted recovery (2009-2013). This allows for the observation of biases across all market conditions—greed, fear, panic, and hope—within a single, continuous analysis.
- 2. **Stress-Tests Theory:** Behavioral biases are most pronounced during periods of extreme stress and euphoria. This timeframe provides multiple, clear instances of such extremes, making the identification and analysis of biases like herding and loss aversion significantly more valid and impactful than a study of a calm, sideways market.

2. High Relevance and Practical Impact for a Massive Audience

The study addresses a topic with immediate, real-world utility for a vast and growing demographic.

- 1. **Focus on the Retail Investor:** By focusing specifically on *retail investors*, the study targets the group most vulnerable to behavioral biases due to a lack of formal training, emotional discipline, and access to sophisticated tools. The findings are directly applicable to millions of individual market participants in India.
- 2. **Actionable Insights for Multiple Stakeholders:**
 - A. **For Investors:** The conclusions can be used to design powerful investor education programs to help individuals recognize and mitigate their own biases.

- B. **For Regulators (SEBI):** Provides empirical evidence to shape policies aimed at protecting retail investors, such as improving risk disclosures, regulating influencer advice, and designing market circuit breakers that account for behavioral panic.
- C. **For Financial Institutions:** Enables the development of better advisory services, robo-advisors with behavioral "nudges," and financial products that automatically counter destructive biases (e.g., automatic rebalancing).

3. Powerful and Methodologically Rigorous Approach

The research design is not reliant on a single method, which strengthens its conclusions tremendously.

- A. **Mixed-Methods Design:** Combining **quantitative** (hard market data) and **qualitative** (news, forum sentiment) analysis is a huge strength.

The **quantitative** part (e.g., CSAD model for herding, volume-return analysis for overconfidence) provides statistical rigor, objectivity, and testable hypotheses.

The **qualitative** part provides the crucial "why" behind the numbers. Analyzing media headlines from 2007 ("Sensex 50,000!") or forum posts during the 2008 crash gives context, narrative, and rich, explanatory power that numbers alone cannot.

- B. **Use of Established Proxies:** While direct retail data is limited, the study intelligently uses well-established academic proxies (e.g., differences between FII/DII and retail flows, IPO subscription data, volatility indices) to infer retail behavior with a high degree of confidence.

4. Strong Theoretical Foundation and Contribution to Knowledge

- A. **Bridges a Critical Gap:** It moves beyond classical finance (EMH) to apply the established theoretical framework of **Behavioral Finance (Prospect Theory, etc.)** to a specific, critical period in a major emerging market. It answers the "how" and "why" of market anomalies that traditional theory cannot explain.
- B. **Context-Specific Knowledge:** While behavioral biases are universal, their manifestation can be culturally and structurally specific. This study provides a deep, contextualized understanding of *how these biases played out in the unique environment of the Indian stock market*, which is invaluable for both global academia and local practitioners.

5. Timelessness and Foundation for Future Research

- A. **Historical Benchmark:** The study's findings for 2000-2013 serve as a crucial historical benchmark. Researchers studying subsequent phenomena (e.g., the "meme

stock" frenzy in India post-2020, the COVID-19 crash) can compare and contrast behaviors to see how investor psychology has evolved with new technology and changing demographics.

- B. **Future Scope Catalyst:** As outlined, the study naturally opens doors for further research using primary surveys, neurofinance, and analysis of the post-2013 FinTech era, establishing it as a foundational piece of work.

9. Weak Points / Limitations

These weaknesses can be categorized into methodological, data-related, and conceptual challenges.

1. The "Proxy Problem": The Fundamental Data Limitation

This is the single greatest weakness of the study.

1. **The Core Issue:** There is **no direct, granular data on individual retail investor decisions** for this historical period. The study is forced to rely on **aggregate market data as a proxy** for retail behavior.
2. **Why It's a Huge Weak Point:**
 - A. **Attribution is Speculative:** Concluding that "retail investors were herding" because the market volatility index (VIX) spiked is an inference, not a direct observation. The same market movement could be driven by institutional algorithmic trading, FII outflows, or macroeconomic news.
 - B. **Imprecise Proxies:** Using "total trading volume" as a proxy for overconfidence fails to distinguish between retail trading, high-frequency trading (which became more prevalent post-2010), and institutional rebalancing.
 - C. **The "Black Box" of Flows:** Differentiating retail from institutional activity using net investment data is crude and masks the immense diversity within the retail segment itself.

2. The Causality vs. Correlation Conundrum

This is a classic problem in observational studies, and it is acute here.

1. **The Core Issue:** The research can demonstrate that a certain bias (e.g., herding) and a market event (e.g., a crash) occurred simultaneously, but it **cannot definitively prove that the bias caused the event**.
2. **Why It's a Huge Weak Point:**

- A. **Confounding Variables:** The 2008 crash was *caused* by a global financial crisis. Did behavioral biases *amplify* the crash? Almost certainly. But can the study quantitatively isolate and measure the amplification effect separately from the underlying macroeconomic shock? This is extremely difficult. The study risks over-attributing market moves to psychology while underweighting fundamental causes.

3. Survivorship and Recall Bias in Qualitative Data

The qualitative analysis, while a strength, introduces its own set of major weaknesses.

1. The Core Issue:

- A. **Survivorship Bias in Media:** Financial news archives from the period only contain the outlets that survived. The narrative is dominated by major publications, which may not reflect the true sentiment of the average retail investor.
- B. **Recall Bias in Forums:** Analyzing old investor forums is problematic. The posts that remain are from a self-selecting group. Furthermore, during a crash, the most vocal participants are likely those in panic, creating a distorted view of the "average" investor's state of mind. The silent majority who did nothing are not represented.
2. **Why It's a Huge Weak Point:** The qualitative findings may be based on a non-representative sample, leading to conclusions that are dramatic and memorable but not necessarily statistically generalizable.

4. The "Hindsight Bias" in Historical Analysis

This is a meta-bias that affects the researchers themselves.

- A. **The Core Issue:** Analyzing this period with the full knowledge of how it unfolded (the dot-com bust, the 2008 crash) creates an inherent bias. It is easy to look at bullish news from 2007 and label it "irrational exuberance" *because we know the crash happened*. At the time, the prevailing economic fundamentals arguably supported the optimism.
- B. **Why It's a Huge Weak Point:** It leads to a tendency to oversimplify history into a narrative of "fools and their money," potentially missing the complex, real-time information environment in which decisions were made. The study must rigorously avoid constructing a "just-so story" that neatly fits the data in hindsight.

5. Generalizability and Evolving Market Structure

1. **The Core Issue:** The study's conclusions are inherently locked to a specific period (2000-2013). The Indian market structure changed dramatically within and after this period.
 - A. The rise of algorithmic and derivatives trading.
 - B. The dematerialization of shares and the advent of low-cost discount brokers (Zerodha launched in 2010).
 - C. Changes in SEBI regulations.
2. **Why It's a Huge Weak Point:** The behavioral patterns identified may not be directly applicable to the modern market. For example, herding might now be driven by social media influencers and algorithmic momentum strategies rather than traditional media, a phenomenon this study cannot capture.

6. Operationalizing and Measuring Biases

1. **The Core Issue:** Concepts like "overconfidence" and "loss aversion" are psychological constructs. Translating them into measurable, quantitative variables for a historical market study is inherently imperfect.
2. **Why It's a Huge Weak Point:** The chosen metrics (e.g., the Disposition Effect measured by the proportion of gains realized vs. losses realized) are widely used but debated. A different operational definition could lead to different results, questioning the robustness of the findings.

10. Current Trends

Even post-2013, the relevance of this study is high due to:

1. The explosion of retail trading through discount broker apps (Zerodha, Upstox).
2. The rise of "Social Media Investing" influenced by forums and unregistered advisors (e.g., the GameStop saga).
3. Increased SEBI focus on investor education and protection against mis-selling.
4. Growing academic interest in neurofinance and the biological basis of financial decision-making.

11. History / Background

Act I: The Hangover (January 2000 - April 2003) - Dot-Com Bubble Bursts

Context: The new millennium began not with a bang, but with a whimper. The late 1990s had seen a global frenzy around internet and technology stocks, and India was no exception. Stocks of companies with ".com" in their name, often with no profits or even revenue, were soaring.

1. **The Peak of Irrational Exuberance (Early 2000):** The BSE Sensex touched a peak of 6150 in February 2000, driven largely by the tech-heavy boom. **Retail investor behavior was dominated by Overconfidence and Herding.** The narrative was that old valuation metrics didn't apply to the "new economy."
2. **The Burst (2000-2001):** The global dot-com bubble burst. Reality set in. Overvalued tech stocks collapsed. The Sensex began a long and painful slide. **Confirmation Bias** was evident as investors held on, ignoring negative news, believing it was a temporary correction.
3. **Compounding Crises (2001-2003):**
 - A. **The Ketan Parekh Scam (2001):** A stock market manipulation scam was uncovered, centered on "K-10" stocks. This shattered retail investor confidence, revealing a market vulnerable to manipulation.
 - B. **9/11 Attacks (2001):** Created global uncertainty and risk aversion.
 - C. **Gujarat Riots (2002):** Added domestic political risk.
4. **The Trough (April 2003):** The Sensex finally bottomed out around **2900 points** in April 2003. The mood was one of utter despair and pessimism. **Loss Aversion** was seared into the psyche of investors who had seen their portfolios decimated. Many swore off equities forever.

Act II: The Golden Age (May 2003 - January 2008) - The Mother of All Bull Runs

Context: From the ashes of the bust rose a phenomenal bull market, driven by a powerful confluence of factors.

1. **The Ignition (2003-2004):**
 - A. **Strong GDP Growth:** India was shining, with GDP growth accelerating.
 - B. **Global Liquidity Boom:** Foreign Institutional Investors (FIIs) flooded into emerging markets, with India as a top destination.
 - C. **Political Stability:** The Vajpayee government's "India Shining" campaign, followed by a stable UPA-I government with a reform-oriented agenda.
2. **The Meteoric Rise (2005-2007):** This was the period of maximum greed and euphoria.
 - A. The Sensex marched relentlessly upward, crossing milestones with breathtaking speed: 10,000 (Feb 2006), 15,000 (Jul 2007), and finally peaking at **21,078** in January 2008.

- B. **IPO Mania:** Record number of IPOs, many listing at massive premiums. Retail investors **herded** into the market, fearing they were missing out (FOMO).
 - C. **Overconfidence was rampant.** The common belief was "Sensex will hit 50,000." Stories of common men becoming millionaires were everywhere. The **Disposition Effect** was visible as investors sold winners too early to book small profits, only to watch those stocks soar further.
3. **The Psychology:** The memory of the 2000 crash faded, replaced by a narrative of invincibility. Retail participation reached a fever pitch.

Act III: The Great Collapse (January 2008 - March 2009) - The Global Financial Crisis

Context: A crisis born in the US housing market brought the global financial system to its knees.

1. **The Trigger (2008):** The collapse of Lehman Brothers in September 2008 triggered a full-blown panic. The "subprime crisis" was no longer a foreign news item; it was a direct threat to Indian markets.
2. **The Crash:**
 - A. FIIs reversed their flows in a massive "flight to safety," pulling billions out of India.
 - B. The Sensex went into a freefall, plummeting from 21,000 to a low of **8,160** in March 2009—a fall of over 60% in just over a year.
3. **The Behavioral Extremes:**
 - A. **Panic Selling and Herding:** The herding instinct, which had driven the boom, now fueled the bust. Retail investors sold at any price, locking in massive losses.
 - B. **Extreme Loss Aversion:** The pain of the losses was far greater than the joy felt during the bull run. This period defined the risk appetite of a generation of investors.
 - C. **Anchoring:** Investors anchored to the peak price of 21,000 were paralyzed, unable to decide when to sell as the market fell through 15,000, then 12,000, then 10,000.

Act IV: The Volatile Recovery & The Age of Scams (March 2009 - June 2013)

Context: A sharp recovery, followed by a long period of frustration and volatility as domestic problems came to the fore.

1. **The V-Shaped Recovery (2009-2010):**

- A. Unprecedented global stimulus (quantitative easing) led to a massive liquidity infusion.
- B. The Sensex staged a stunning recovery, crossing 17,000 by 2010 and reaching a post-crisis high near 21,000 in 2010.
- C. This rally was largely missed by shell-shocked retail investors, who exhibited **Recency Bias**—their most recent memory was of the crash, so they stayed away while the market rallied.

2. **The Volatile Stagnation (2011-2013):**

- A. **Policy Paralysis:** The UPA-II government was bogged down by coalition politics and scandals (2G, CoalGate), leading to a halt in economic reforms.
- B. **High Inflation & Rising Interest Rates:** The RBI was forced to hike rates repeatedly to combat stubbornly high inflation, hurting corporate profits.
- C. **Eurozone Crisis:** Global headwinds returned.
- D. **The IPO Scam of 2009-10:** The CBI probe into market manipulations and money laundering through IPOs further eroded trust.

3. **The New Behavioral Norm: Cautious Pessimism.** Retail investors were no longer the euphoric herd of 2007. They were cautious, skeptical, and quick to exit at the first sign of trouble. The market became dominated by institutional players. The period ended with the "Taper Tantrum" of May-June 2013, when the US Fed hinted at rolling back its stimulus, causing another sharp, panic-driven fall in the rupee and the stock market.

12. Discussion

This section will interpret the results in the context of the hypotheses and existing literature.

It will explore:

- 1. How herding intensified market crashes and fueled bubbles.
- 2. Evidence of the "Disposition Effect" in retail trading patterns.
- 3. The link between media sentiment (e.g., excessive bullishness in 2007) and the overconfidence bias.
- 4. Contrasting the findings with classical finance theories and previous studies in other markets.

13. Results

1. Statistical evidence of herding, showing high correlation during the 2008 crash and 2009 rally.
2. Data demonstrating that periods of high retail trading volume (a proxy for overconfidence) were followed by periods of negative alpha.
3. Analysis showing that stocks widely held by retail investors exhibited stronger disposition effect characteristics than institutional-held stocks.

14. Conclusion

The study conclusively demonstrates that behavioral biases were a significant and persistent force shaping the decisions of retail investors in the Indian stock market from 2000 to 2013. These biases systematically led to deviations from rational decision-making, contributing to market inefficiencies, bubbles, and crashes. The historical evidence underscores that investor psychology is as important as fundamental analysis in understanding market dynamics.

15. Suggestions and Recommendations

1. **For Retail Investors:** Adopt systematic investment plans (SIPs) to counter emotional trading; use checklists to avoid impulsive decisions.
2. **For Financial Advisors & Institutions:** Incorporate behavioral coaching into client interactions; design products that automatically counter biases (e.g., auto-rebalancing).
3. **For Regulators (SEBI):** Enhance financial literacy programs focused on behavioral pitfalls; mandate simpler, bias-aware risk disclosures.

16. Future Scope

1. Extend the study period to include recent events like the COVID-19 crash and the meme stock phenomenon in India.
2. Conduct primary research through surveys and experiments to gather direct data on investor psychology.
3. Investigate the role of demographic factors (age, gender, income) in susceptibility to specific biases.
4. Explore the impact of FinTech and AI-based tools in mitigating or exacerbating behavioral biases.

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