

Why Rational Markets Still Produce Irrational Investors

VARUN GOUDA T H¹, SOUMYA CHIKKAGOUDRA²

¹Student, MBA Programme - Bapuji Institute of Engineering and Technology, Davangere, (An autonomous institute affiliated to Visvesvaraya Technological University – Belagavi Karnataka – India)

²Student, MBA Programme - Bapuji Institute of Engineering and Technology, Davangere, (An autonomous institute affiliated to Visvesvaraya Technological University – Belagavi Karnataka – India)

Abstract- Financial theory has long rested on the premise that markets are efficient — that prices absorb available information quickly and fully, leaving little room for investors to profit from anything other than genuine risk-taking. Yet the same markets built on this premise regularly produce bubbles, panics, herd-driven rallies and stubborn mispricings that persist far longer than rational expectations would predict. This article examines why the Efficient Market Hypothesis and the observed behaviour of real investors so often diverge. It surveys the theoretical foundations of market efficiency alongside the behavioural finance literature that has emerged to explain its recurring failures, drawing on cognitive biases such as overconfidence, loss aversion, anchoring, herd behaviour and confirmation bias. The article argues that markets can be informationally efficient in aggregate while still being populated by individually irrational participants, since price-level efficiency depends on the errors of many investors cancelling out rather than on each investor behaving rationally. Where errors are correlated rather than random — as they are during herding episodes, speculative manias or panic-driven sell-offs — this cancellation breaks down and prices depart from fundamental value for extended periods. The discussion concludes that reconciling rational-market theory with investor psychology requires treating efficiency as a contested, self-correcting process rather than a fixed state, and that recognising predictable behavioural patterns offers both a caution to individual investors and a tool for those designing markets and regulation.

Keywords- *Efficient Market Hypothesis, Behavioural Finance, Investor Psychology, Cognitive Bias, Herd Behaviour, Prospect Theory, Market Anomalies*

I. INTRODUCTION

The Efficient Market Hypothesis has served for decades as the load-bearing wall of modern financial theory, resting on a deceptively simple claim: that asset prices reflect all available information at any given moment, and that no investor can consistently outperform the market except through luck or

additional risk. If markets are efficient in this sense, then bubbles should not inflate, panics should not overshoot fundamentals, and the average investor's best strategy should simply be to hold a diversified portfolio and wait. Much of index investing, portfolio theory and derivative pricing is built on some version of this assumption.

Real markets, however, keep behaving in ways the theory does not anticipate. Prices lurch far above and below any reasonable estimate of fundamental value, retail investors pile into assets precisely when professional judgement would counsel caution, and sharp reversals occur without any correspondingly sharp change in the underlying economic facts. The persistence of these episodes, across very different markets and eras, suggests that the gap between rational-market theory and investor behaviour is not a minor imperfection to be assumed away but a structural feature worth explaining. This article sets out to examine why markets that are, in an important sense, rational in aggregate continue to be shaped by investors who are not rational individually.

II. THE EFFICIENT MARKET HYPOTHESIS: THEORETICAL FOUNDATIONS

The Efficient Market Hypothesis, most closely associated with Fama's foundational work, holds that competition among profit-seeking investors ensures that new information is absorbed into prices almost as soon as it becomes available. The hypothesis is typically presented in three forms of increasing strength: the weak form, in which prices reflect all historical trading information, so that past price patterns cannot predict future returns; the semi-strong form, in which prices reflect all publicly available information, so that fundamental analysis of public data cannot yield a persistent edge; and the strong form, in which prices reflect even private or insider

information, leaving no advantage to any participant regardless of what they know.

The theoretical appeal of this framework is considerable. If enough well-informed, self-interested investors are scanning the market for mispriced assets, then any gap between price and fundamental value should attract capital until the gap closes. Modern Portfolio Theory and the Capital Asset Pricing Model both build on a related assumption — that investors are rational, risk-averse and process information consistently — to derive clean relationships between risk and expected return. These models remain foundational to how professional finance prices assets and constructs portfolios, precisely because they offer clear, testable predictions in a way that looser behavioural accounts often do not.

Yet the hypothesis depends on an assumption that does much of the quiet work in the theory: that errors among investors are independent of one another, so that overreaction by one participant is offset by underreaction elsewhere, and the aggregate outcome still lands close to fundamental value. It is this assumption, more than the idea of information processing itself, that behavioural finance has most directly challenged.

III. THE BEHAVIOURAL CHALLENGE TO MARKET RATIONALITY

Behavioural finance emerged from a straightforward observation: real investors do not process information the way the rational-agent model assumes. Kahneman and Tversky's prospect theory showed that people weigh losses more heavily than equivalent gains, a phenomenon known as loss aversion, and that decisions under uncertainty are shaped by reference points and framing rather than by a stable, consistent utility function. This single insight explains a wide range of observed market behaviour, from investors holding onto losing positions far longer than a rational calculation would justify, to panic selling once losses cross a psychologically significant threshold.

Several other biases compound this effect. Overconfidence leads investors, and even professional fund managers, to overestimate the precision of their own judgement and trade more frequently than the evidence supporting their views warrants. Anchoring

causes investors to fixate on a reference price — a recent high, a purchase price, an analyst's target — and adjust their expectations only sluggishly away from it even as new information arrives. Availability bias inflates the perceived likelihood of vivid or recent events, so that a recent crash or a recent boom looms disproportionately large in an investor's expectations of the future. Confirmation bias leads investors to seek out and weight information that supports a position they already hold, while discounting evidence that would suggest they are wrong.

Herd behaviour is perhaps the most consequential of these patterns for market-level outcomes, precisely because it breaks the independence assumption on which market efficiency relies. When investors imitate one another rather than acting on independent analysis — whether from genuine informational cascades, social pressure or simple fear of missing out — errors stop cancelling out and instead compound in the same direction. Speculative bubbles, from historical manias to more recent asset-price surges, and the sharp sell-offs that often follow them, are difficult to explain without some version of correlated, herd-driven behaviour overriding individual judgement.

IV. REVIEW OF LITERATURE

Fama's early work established the empirical case for market efficiency, showing that stock prices adjust rapidly to new information and that historical price patterns offer little predictive power, a finding that shaped decades of subsequent asset-pricing research. Around the same period, Kahneman and Tversky's work on prospect theory and heuristics in judgement under uncertainty provided the psychological foundation later used to challenge pure rational-agent models, showing systematically that people depart from expected-utility predictions in predictable, non-random ways.

Shiller's research on excess volatility argued that stock prices move far more than could be justified by subsequent changes in dividends, suggesting that speculative sentiment, rather than fundamentals alone, drives a meaningful share of price movement, a claim that provoked substantial debate within the efficient-markets tradition. Shleifer and Vishny's work on the limits of arbitrage offered a structural explanation for

why mispricing can persist: rational arbitrageurs who might correct a mispriced asset often lack the capital or time horizon to bet against a persistent trend, particularly when doing so exposes them to the risk that irrational sentiment pushes prices further away before it reverses.

Barberis and Thaler's survey of the behavioural finance field consolidated these threads, arguing that limits to arbitrage combined with well-documented investor psychology together explain many anomalies that pure efficiency theory struggles with, including momentum, reversal and excess volatility. De Bondt and Thaler's earlier study of overreaction found that stocks with extreme past losers tend to outperform extreme past winners over subsequent periods, a pattern consistent with investors overreacting to both bad and good news. More recent work extends these ideas into an Indian context: the National Institute of Securities Markets and independent academic studies of Indian retail investor behaviour have documented similar overconfidence, herding and disposition effects among domestic equity and mutual-fund investors, suggesting that these patterns are not specific to any one market.

V. RESEARCH GAP

Much of the foundational behavioural finance literature was developed using data and experiments from mature Western markets, leaving comparatively less direct examination of how these same biases manifest among retail investors in fast-growing, digitally-mediated markets such as India's, where a large wave of first-time investors has entered equity and mutual-fund markets in recent years through mobile trading platforms. There is also relatively limited work connecting specific behavioural biases to specific, observable market anomalies in a single coherent framework, as opposed to treating market efficiency and investor psychology as separate literatures. This article aims to bring these threads together conceptually, situating well-established biases within the structural reasons markets fail to correct them.

VI. STATEMENT OF THE PROBLEM

If markets are efficient, mispricing should be rare, short-lived and unprofitable to exploit; if investors are systematically irrational, prices should depart from fundamentals often and predictably. Neither extreme description fits observed markets well. The core problem this article addresses is reconciling these two positions: understanding the conditions under which individually irrational behaviour aggregates into inefficient prices, and the conditions under which it does not, rather than treating market efficiency and investor irrationality as mutually exclusive claims.

VII. OBJECTIVES OF THE STUDY

- To examine the theoretical basis of the Efficient Market Hypothesis and the assumptions it depends on.
- To identify the principal cognitive and behavioural biases documented in the finance literature.
- To analyse how these biases translate into observable market-level anomalies such as bubbles, herding and overreaction.
- To assess the conditions under which individual irrationality aggregates into market inefficiency, and when it instead cancels out.
- To draw practical implications for individual investors, portfolio managers and market regulators.

VIII. SCOPE OF THE STUDY

This article is conceptual and analytical in nature, drawing on established theoretical and empirical literature in asset pricing and behavioural finance rather than on primary survey data or a single company case. It focuses on equity markets, since most of the relevant behavioural finance literature and historical episodes of mispricing are drawn from this setting, while noting that similar dynamics extend to other asset classes including bonds, commodities and cryptocurrencies.

IX. RESEARCH METHODOLOGY

The study follows a descriptive and analytical design based on secondary sources, synthesising peer-reviewed literature in asset pricing, behavioural economics and finance alongside documented historical market episodes. It does not test a formal statistical model but instead builds a conceptual framework linking specific cognitive biases to specific categories of market anomaly, evaluated against the conditions — correlated versus independent investor error, and the practical limits facing arbitrageurs — under which these biases do or do not translate into persistent mispricing.

X. DISCUSSION: RECONCILING EFFICIENCY AND IRRATIONALITY

The apparent contradiction between rational-market theory and irrational investor behaviour resolves once efficiency is understood as a statistical property of the market as a whole rather than a description of any individual participant. A market can be efficient in the sense that its price is difficult to beat consistently, even while it is populated entirely by investors who reason imperfectly, provided their errors are diverse and uncorrelated enough to cancel out. Under this view, market efficiency does not require rational investors; it requires only that irrationality be sufficiently scattered.

The trouble is that irrationality is not always scattered. Social media, financial news cycles, and the visibility of others' trading decisions on modern platforms all create channels through which sentiment can synchronise across large numbers of investors simultaneously. Once errors become correlated rather than independent — as in a herd-driven rally or a panic-driven crash — the cancellation that efficiency depends on breaks down, and prices can depart from fundamentals for periods long enough to matter economically, even if they eventually correct. The limits-of-arbitrage literature adds a further layer: even investors who correctly judge an asset to be mispriced may lack the capital, patience or institutional mandate to bet against the crowd, since a correct long-term view can still produce painful short-term losses if the mispricing worsens before it corrects.

This reframing has a practical implication: market efficiency is best understood as a self-correcting

tendency operating with a lag, rather than an instantaneous state. Mispricing is neither the permanent norm that a naive behavioural account might suggest, nor the near-impossibility that a strict efficient-markets reading implies, but a recurring and at times predictable feature of markets populated by psychologically consistent, if imperfect, human decision-makers.

XI. FINDINGS, SUGGESTIONS AND CONCLUSION

Findings

- Market efficiency, properly understood, describes aggregate price behaviour rather than the reasoning of any single investor, and is compatible with widespread individual irrationality provided errors remain uncorrelated.
- A small set of recurring biases — loss aversion, overconfidence, anchoring, availability bias and confirmation bias — account for a large share of the departures from rational decision-making documented in the literature.
- Herd behaviour is the mechanism most directly responsible for converting scattered individual irrationality into synchronised, market-level mispricing.
- Limits to arbitrage mean that even correct, rational judgement is often insufficient on its own to close a mispricing quickly, since correcting it can be costly or risky for the investors best placed to do so.
- These patterns recur across markets and eras, and are increasingly documented among retail investors in newer, digitally-mediated markets such as India's, suggesting they are structural rather than specific to any one market.

Suggestions

- Individual investors would benefit from pre-committing to rules-based strategies — such as fixed asset allocations or systematic investment plans — that limit the scope for loss aversion and overconfidence to drive impulsive decisions.

- Financial education efforts should address specific, named biases directly rather than offering only general advice to 'invest rationally', since naming a bias measurably improves an investor's ability to recognise it in themselves.
- Portfolio managers and advisors should treat periods of unusually synchronised sentiment — sharp increases in trading volume or social-media attention around a specific asset — as a signal warranting extra scrutiny rather than confirmation of a trend.
- Regulators and exchanges can usefully monitor indicators of correlated retail behaviour, such as clustering of new account openings or trading activity around specific assets, as an early signal of herd-driven risk building in the system.
- Further empirical research connecting specific bias measures to specific market outcomes, particularly in fast-growing retail markets, would help move the field from general description toward more actionable, testable prediction.

CONCLUSION

Rational-market theory and the psychology of real investors are not, in the end, opposing accounts of how markets work but complementary pieces of the same picture. Prices can be difficult to beat on average and still be driven, in any given period, by fear, overconfidence or crowd behaviour rather than by careful analysis. What determines whether a market behaves efficiently is not whether its participants reason perfectly — they rarely do — but whether their imperfections happen to offset one another or instead reinforce each other through herding and constrained arbitrage. Understanding markets, and investing within them, therefore benefits less from choosing a side between efficiency and irrationality than from recognising the specific conditions under which one gives way to the other.

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