International journal of applied management and economics
Vol : 02 , N° 17, December 2025
ISSN : 2509-0720

Rationality, Intuition, and Behavioral Biases in Investment Decisions: Bridging Classical Finance and Behavioral Finance with Evidence from Morocco.

- **AUTHOR 1 :** EL ASRI Raja,
- **AUTHOR 2 :** MESSAOUDI Abdelaziz,

(1) : PHD Student Laboratory of Research in Entrepreneurship, Finance, and Organizational Management Faculty of Legal, Economic and Social Sciences of Agadir (FSJES Agadir) Ibn Zohr University, Agadir, Morocco.

(2) : Professor – Researcher Laboratory of Research in Entrepreneurship, Finance, and Organizational Management Faculty of Legal, Economic and Social Sciences of Agadir (FSJES Agadir) Ibn Zohr University, Agadir, Morocco.

Conflict of interest: The author declares no conflict of interest.

To cite this article : EL ASRI .R & MESSAOUDI .A (2025) « Rationality, Intuition, and Behavioral Biases in Investment Decisions: Bridging Classical Finance and Behavioral Finance with Evidence from Morocco »,

IJAME : Volume 02, N° 17 | Pp: 167 – 187.

DOI : 10.5281/zenodo.17801304
Copyright © 2025 – IJAME

ABSTRACT:

Financial decision-making has conventionally been conceptualized within the classical framework of rational agents functioning in efficient markets. This theoretical construct, represented by Homo economicus, posits that individuals possess complete information, demonstrate consistent behavior, and are solely dedicated to optimizing expected utility. Nevertheless, enduring market anomalies such as bubbles, excessive volatility, and momentum phenomena have called into question this rationalist perspective. These discrepancies underscore that investors frequently operate under the influence of psychological and social determinants rather than pure rationality. Behavioral finance has emerged as a discipline to bridge the existing gaps by synthesizing perspectives from psychology and sociology. It elucidates how cognitive biases, emotional responses, and heuristics such as overconfidence, loss aversion, and herding behavior consistently influence investment decisions. Prospect Theory, for example, illustrates that investors assess gains and losses asymmetrically, frequently resulting in suboptimal decision-making. Contemporary frameworks, such as Andrew Lo's Adaptive Market Hypothesis, endeavor to reconcile classical and behavioral paradigms by conceptualizing markets as evolutionary systems in which rationality evolves in response to shifting environmental conditions. Evidence from emerging economies, such as Morocco, substantiates these observations. Research indicates that investors in Morocco demonstrate analogous behavioral characteristics, particularly overconfidence, herding behavior, and loss aversion that markedly affect their investment results. Integrating classical finance theories with behavioral finance principles facilitates a more nuanced comprehension of financial behavior. Acknowledging both rational analytical frameworks and psychological inclinations enhances the development of superior financial models, more effective policy formulation, and refined decision-making strategies for both investors and managers.

KEY WORDS: Rationality, Behavioral Finance, Intuition, Cognitive Biases, Efficient Market Hypothesis, Prospect Theory, Investment Decisions, Morocco.

INTRODUCTION

Modern finance has been significantly influenced by a persistent intellectual contention between two theoretical frameworks: the classical finance paradigm that posits the existence of perfectly rational investors operating within efficient markets, and the nascent behavioral finance perspective, which emphasizes the psychological and sociocultural factors that shape investor behavior. The classical paradigm, which has predominated throughout the majority of the 20th century, conceptualizes investors as entirely rational agents, logically coherent, impeccably informed, and unceasingly dedicated to the optimization of their wealth or utility. Within this idealized framework, frequently exemplified by the term Homo economicus, financial markets are presumed to function as highly efficient systems that instantaneously and accurately assimilate all pertinent information into asset valuations (Kamoune & Ibenrissoul, 2022). According to Eugene Fama's seminal definition, an efficient market is one in which asset prices fully reflect all available information (Fama, 1998). In this context, it is virtually unattainable for any investor to consistently achieve returns that exceed the market average, since any mispricing would be promptly corrected by arbitrage.

The objective of this paper is to elucidate the conceptual and empirical gap between the normative theories that stipulate how investors should behave and the descriptive evidence that documents how they actually make decisions in an uncertain context. Synthesizing conventional financial principles and behavioral insights, the study provides an integrative perspective that accounts for the dual impact of rational analysis and psychological biases upon investment behavior.

This advanced theoretical model of rational markets has formed the foundation for several fundamental frameworks in finance. Expected utility theory, modern portfolio theory, the capital asset pricing model, and the efficient market hypothesis all collectively set out a normative vision of how investment decisions should be made under ideal circumstances of perfect rationality and complete information. Expected utility theory (von Neumann & Morgenstern, 1947) formalizes rational choice by asserting that investors evaluate uncertain outcomes through the expected utility and then select the option that maximizes it, thus establishing a benchmark for the optimal decision (Bourezk et al., 2020). Based on this normative premise, Markowitz's modern portfolio theory (1952) demonstrates that diversification among impartially correlated assets allows investors to construct efficient portfolios in line with a chosen level of risk. The capital asset pricing model (Sharpe, 1964; Lintner, 1965) expands on this logic by suggesting a linear link between systematic risk and

expected return, indicating that only market risk is counterbalanced, as idiosyncratic risk can be eliminated through diversification. In addition to these contributions, Fama's (1970) efficient market hypothesis postulates that asset prices fully and instantly incorporate all the available information, regardless of whether it is historical, public or private, thus rendering persistent abnormal returns theoretically impossible. Cumulatively, these models provide normative guidelines on the way rational investors should behave, a distinction that becomes essential when confronted with the descriptive reality of real investor behavior as captured by the field of behavioral finance.

Decades of empirical research have illuminated a persistent disparity between the rationalist principles of classical finance and the actual behaviors exhibited by investors. A plethora of anomalies, including the January effect, momentum and reversal phenomena, and the equity premium puzzle, stand in contradiction to the predictions made by models predicated on the assumption of perfect rationality. Historical financial bubbles, exemplified by Tulipmania, the dot-com surge, and the global financial crisis of 2008, alongside the abrupt market downturn during the COVID-19 pandemic in 2020, underscore the propensity for asset prices to diverge significantly from fundamental values, driven by the psychological influences of fear, greed, and herd mentality. As Shiller (1981) demonstrated, stock prices display excess volatility that is incongruous with fluctuations in dividends, thereby indicating that sentiment and psychological factors are integral to the dynamics of the market. These recurring financial crises have exposed the limitations of the Efficient Market Hypothesis and the concept of absolute rationality. In response to these observations, the field of behavioral finance has emerged, aiming to incorporate psychological insights within financial theory, acknowledging that actual investors who are influenced by cognitive biases, emotional states, and social pressures seldom comport themselves as perfect optimizers, thereby providing a more nuanced framework for comprehending decision-making amidst uncertainty.

The emergence of behavioral finance is supported by substantial empirical and experimental evidence indicating that investors frequently diverge from rationality. Investors exhibit behavioral tendencies such as overreaction, underreaction, overconfidence, herd behavior, and loss aversion, reflecting psychological consistencies rather than randomness (Kamoune & Ibenrissoul, 2022). By the end of the twentieth century, this accumulating evidence catalyzed a “behavioral revolution” in economics and finance, framing behavioral finance as a complement to classical theory. This article investigates the reconciliation of classical and behavioral paradigms within an integrative framework for investment decision-making. It analyzes the

principles of rational investing, the psychological underpinnings of behavioral biases, and contemporary synthesis models like the Adaptive Market Hypothesis. Research from Morocco, especially studies involving the Casablanca Stock Exchange, demonstrates that biases such as overconfidence, herding, and loss aversion significantly influence investor behavior, affirming the universal applicability of behavioral insights (Hadbaa & Boutti, 2019) (Benayad & Aasri, 2023). Ultimately, a robust investment theory must integrate rational analysis with the complexities of human psychology, transitioning from the notion of ideal rationality to the nuanced reality of intuitive and behaviorally-driven decision-making.

1. The Classical Paradigm: Foundations of Rational Investment

1.1.rationality as the Norm: An Analytical Introduction

The classical finance framework, anchored in the normative ideal of rationality, postulates that investors possess complete information, exhibit no biases, and engage in consistent optimization behavior aimed at maximizing expected utility through rigorous quantitative analysis. Grounded in Expected Utility Theory (von Neumann & Morgenstern, 1947), this paradigm delineates the manner in which rational agents ought to assess risky alternatives; Modern Portfolio Theory (Markowitz, 1952) elaborates upon this rationale in the context of portfolio selection by pinpointing efficient risk-return trade-offs; the Capital Asset Pricing Model (Sharpe, 1964; Lintner, 1965) systematically codifies the equilibrium dynamic linking risk and anticipated return; and the Efficient Market Hypothesis (Fama, 1970) asserts that asset prices comprehensively embody all accessible information, rendering abnormal profits systematically unattainable. Together, these theoretical constructs form a coherent intellectual framework that perceives markets as self-regulating entities whereby inconsistencies from fundamental values are remedied through arbitrage, thereby establishing the rational foundation for financial decision-making (Lo, Efficient markets hypothesis. , 2018).

A pivotal aspect of the classical paradigm is its characterization of investment decision-making as a meticulously structured and quantitatively rigorous exercise. The procedural approach is deemed as significant as the resultant decision: a rational investor is anticipated to amass comprehensive data, execute meticulous calculations (e.g., projected returns, variances, covariances, Sharpe ratios, etc.), and arrive at decisions that can be analytically substantiated. This paradigm emphasizes the principles of objectivity and consistency positing that, provided with identical information, any two rational investors ought to arrive at congruent decisions. Furthermore, it suggests a level of defensibility and replicability: since the decisions are anchored in transparent criteria (such as maximizing utility or optimizing the Sharpe ratio), they

lend themselves to elucidation and can even be codified into algorithmic frameworks. Consequently, the classical framework has garnered considerable favor within the realm of academic finance and among practitioners engaged in the development of quantitative models or committed to systematic investment methodologies.

Ultimately, the classical paradigm serves as a crucial normative reference point. It delineates the expected conduct of investors under the assumption of complete rationality and elucidates the operational dynamics of markets under such stipulations. It embodies a domain of elegant simplicity and transparent optimality serving as a beneficial ideal for both aspiration and comparative analysis. Indeed, classical finance frequently functions as the "null hypothesis" in empirical research: rationality and efficiency are presumed until empirical evidence indicates a deviation. The subsequent sections will investigate the implications that arise when empirical evidence does, in fact, suggest deviations, and how we may recalibrate the classical paradigm to align more closely with the actualities of investment behavior.

1.2. Rational, Intuitive, and Satisficing Decisions: A Multidimensional View:

Although the traditional paradigm predominantly emphasizes rational analysis, the reality of investment decision-making may be conceptualized as a multifaceted process that encompasses not solely rationality but also intuition and factors pertaining to satisfaction or personal utility. (El Asri & Messaoudi, 2025). We have posited that an investor's decision can be systematically examined through three interrelated dimensions:

1) Rationality (Analytical Dimension): This encompasses the realm of data-driven, quantitative decision-making methodologies. It entails methodical data collection, meticulous evaluation of risks and returns, alongside the utilization of formalized models and optimization strategies. A decision derived solely from a rational framework would be distinguished by objective computations and compliance with normative principles (such as the maximization of expected utility or mean-variance optimization). The merits of the rational paradigm are its consistency and objectivity: when provided with a defined set of inputs, the rational methodology produces a singular "optimal" solution, and disparate analysts employing the identical model are expected to arrive at the same conclusion. Nonetheless, this methodology presumes limitless cognitive capabilities and the perpetual availability of all pertinent data. In practical scenarios, computational intricacy, restricted information availability, and temporal limitations can render purely rational optimization unfeasible a phenomenon referred to as bounded rationality (Simon, 1955). Furthermore, strict rationality may overlook human elements such as emotions or ethical considerations

that, although not financially "optimal," are significant to the individual making the decision.

2) Intuition (Heuristic Dimension): This dimension involves the influence of judgment, heuristics, and intuition in decision-making. Investors frequently utilize heuristics when confronted with complex or uncertain situations. Intuition leverages experience, pattern recognition, and subconscious information processing. For instance, an experienced stock trader may intuitively sense market trends, while a venture capitalist may feel instinctively about a founder's reliability. Intuition can enhance decision-making speed and effectiveness in specific scenarios. Research indicates that experienced intuition can yield sound decisions in consistent environments without in-depth analysis. Heuristics may be accurate depending on environmental structure, as noted by Gigerenzer and Gaissmaier (2011). In contexts where heuristics align with environmental conditions, rapid intuitive judgments could surpass elaborate models. For example, in dynamic markets, the affect heuristic can facilitate holistic judgments based on immediate emotional responses. However, intuition is subjective and challenging to articulate. It may also lead to systematic errors due to cognitive biases. An intuitive strategy might overlook critical information or be influenced by irrelevant aspects such as problem framing or recent personal experiences.

3) Satisfaction (Outcome): Investors prioritize personal satisfaction in their decision-making processes and outcomes, beyond mere wealth maximization. This aspect highlights the emotional and value-driven nature of investors, which may diverge from profit-centric goals. Satisficing, a term introduced by Herbert Simon (1955), refers to the approach of achieving a "good enough" solution rather than an optimal one. Investors establish aspiration levels and are content once these are achieved, even if greater returns could have been obtained through higher risk. Emotional outcomes such as pride, regret, contentment, or stress also play a role in satisfaction. For instance, an investor might eschew a volatile stock not solely due to rational risk considerations, but to avoid anxiety that detracts from overall satisfaction. Conversely, an investor may retain a failing investment for reasons of loyalty or hope, finding psychological comfort in not conceding defeat despite rational advice to sell. Regret avoidance significantly influences decision-making, leading to behaviors aimed at minimizing future regret (Bell, 1982), explains tendencies such as prematurely selling "winners" to secure gains or prolonging the holding of "losers" to avert

losses. The satisfaction dimension encompasses a broader understanding of personal utility, integrating emotional rewards and alignment with individual values, such as socially responsible or faith-based investing.

These dimensions: rationality, intuition, and satisfaction interact in decision-making. Rational choices may be influenced by intuition or emotions. For example, an investor may analyze a stock rationally, feel intuitively positive about it, yet have emotional concerns about potential losses. The final decision emerges from the interplay of these factors. Table 1 presents a comparative analysis of these sub-dimensions, elucidating their mechanisms, strengths, and limitations.

In practice, investors integrate various dimensions. For instance, a portfolio manager may employ analytical models to identify undervalued stocks (rationality), utilize intuition regarding industry leaders' credibility (intuition), and account for client preferences or personal comfort (satisfaction) to determine weightings. Similarly, a Moroccan investor might perform fundamental analysis (rationality), be swayed by familial bullish sentiment (intuition/herding bias), and steer clear of sectors that contradict personal values (satisfaction). Understanding these dimensions elucidates why two investors with identical information may arrive at divergent decisions, as they could be utilizing varying proportions of rational analysis, intuitive reasoning, and personal criteria.

***Table 1**: Comparative Overview of Investment Decision Dimensions.*

Decision dimension	Mechanism & approach	Advantages	Limitations	Representative sources
Rationality	In-depth data collection; quantitative assessment of risk-return dynamics (e.g., mean-variance analysis); optimization techniques (maximize expected utility, Sharpe ratio, etc.). Decisions are grounded in formal modeling and rationality.	Impartiality and consistency in the selection process; enhancement of anticipated economic outcomes; a methodologically sound and replicable framework.	Assumes the existence of flawless information and boundless computational capacity; may prove to be impractical owing to its complexity (bounded rationality); overlooks emotional determinants and might inaccurately delineate genuine investor preferences.	***Markowitz (1952); Sharpe (1964); Fama (1970).***
Intuition	Rapid assessments predicated on heuristic processes, experiential knowledge, and emotional responses. Utilizes cognitive shortcuts such as representativeness or availability; the "gut feeling" integrates implicit understanding. Frequently utilized in contexts characterized by temporal constraints or uncertainty.	The speed and efficacy of decision-making processes; draws upon experiential insight and tacit knowledge which may introduce difficulties in quantification; illustrates adaptability in situations where data is lacking. At times, it can surpass intricate models when the heuristic aligns with the contextual environment.	Susceptible to systematic cognitive biases and errors (heuristics may lead to erroneous conclusions in inappropriate contexts); inherently subjective and challenging to substantiate to others (feels correct does not constitute a robust rationale); may disproportionately emphasize recent or salient information.	***Tversky & Kahneman (1974); Kahneman (2011); Gigerenzer & Gaissmaier (2011).***
Satisfaction (satisficing)	Establish a benchmark or aspirational target and select the initial alternative that fulfills or surpasses this criterion. Integrate emotional considerations: foresee feelings of pride or remorse, ensure alignment with individual ethical principles (such as socially responsible investing), and preserve one's psychological comfort zone.	Mitigates indecision and psychological strain (one refrains from obsessively seeking the optimal choice); avoids extreme results that may enhance yields but at the expense of excessive worry; decisions are more comprehensively congruent with the investor's welfare and ethical standards.	May result in inferior financial outcomes due to settling for mediocrity; inherently subjective as aspiration levels vary and are mutable; potential for complacency arises when decisions are not re-evaluated due to existing satisfaction.	***Simon (1955); Bell (1982); Loomes & Sugden (1982); Kahneman & Tversky (1979).***

Source: Authors adapted from literature.

1.3.The Limits of Pure Rationality: Market Anomalies and Crises

The classical model of rational investors is an ideal that empirical findings challenge, indicating limitations in the assumption of pure rationality in finance. Researchers have identified market anomalies over decades that contradict classical theory predictions. These anomalies indicate a lack of full rationality among investors, inefficiencies in markets, or a combination of both. Various well-illustrated anomalies comprise:

- ***Seasonal and Calendar Effects:*** The January effect demonstrates that small-cap stocks often yield unusually high returns in January. An efficient market hypothesis suggests that such predictable patterns should not endure due to investor exploitation. However, the January effect has been consistently evident across various markets over extended durations (Kamoune & Ibenrissoul, 2022). Additional calendar anomalies include the "Weekend effect," where stocks typically decline on Mondays, and the "Sell in May and go away" adage, indicating summer underperformance. Although some of these phenomena have diminished recently due to increased awareness, their historical prevalence presents a challenge for the Efficient Market Hypothesis (EMH).
- ***Size and Value Effects:*** Empirical studies, initiated by Banz (1981) and Fama & French (1992), indicate that small-cap stocks outperform large-cap stocks on a risk-adjusted basis, while value stocks surpass growth stocks. According to the CAPM, higher returns should correlate with increased beta risk, but this correlation often fails. These observations imply the presence of omitted risk factors or market mispricing. The value premium, particularly the outperformance of value stocks over growth stocks, may reflect investor overreaction, wherein investors exhibit excessive pessimism towards distressed “value” firms and excessive optimism towards appealing “growth” firms, resulting in subsequent mispricing corrections.
- ***Momentum and Reversal:*** Price momentum indicates that stocks performing well over 3 to 12 months tend to maintain their performance, contradicting the random-walk hypothesis of the Efficient Market Hypothesis (EMH). In contrast, over a longer duration of 3 to 5 years, the overreaction effect emerges, where previous winners underperform while losers outperform. De Bondt and Thaler (1985) demonstrated this phenomenon by evidencing that portfolios of prior losers significantly surpassed those of prior winners over three years. This mean reversion challenges the concept of a stable risk premium and implies the influence of investor psychology, where short-term overreactions to news create momentum, followed by long-term price corrections leading to reversals.

- ***Financial Crises and Panics:*** The 2008 global financial crisis revealed irrational behaviors contrary to the rational model. Investors and institutions engaged in high leverage and complex risks, mistakenly believing in perpetual housing price stability. Psychological influences such as overconfidence, herding behavior among banks, and moral hazard exacerbated systemic vulnerabilities. The crisis led to panic selling, credit freezes, and other phenomena inconsistent with rational price adjustments, highlighting the predominance of fear over reason. This psychological upheaval caused markets to deviate from equilibrium. Government and central bank interventions became necessary to restore market stability. The crisis illustrated that even experts can fall prey to groupthink, excessive optimism, and sudden fear, exemplifying a clear departure from the rational actor model.
- ***Excess Volatility and Bubbles:*** Shiller's research indicated that stock price fluctuations exceed what can be explained by dividend changes, suggesting that many price variations stem from irrational sentiment. This phenomenon facilitates speculative bubbles, wherein asset prices elevate beyond fundamental values due to investor expectations of resale at higher prices (the “greater fool” theory). Bubbles and their subsequent crashes starkly illustrate market inefficiencies. Notable instances include the late 1990s Dot-Com Bubble, characterized by inflated tech stock valuations and an approximately 80% decline in the Nasdaq by 2002. Additionally, the mid-2000s experienced a housing bubble in the U.S. and Europe, with home prices soaring past fundamental indicators, leading to the 2008 financial crisis. These events highlight widespread irrationality in market behavior (Shiller, 2000). In an efficient market, such discrepancies would be corrected, yet practical limitations to arbitrage like risk and managerial concerns impede rational traders from rectifying bubbles. Consequently, prices may persistently diverge from their intrinsic values.
- ***Disposition effect:*** Investors demonstrate a disposition effect selling appreciating assets prematurely while retaining depreciating ones excessively. Shefrin and Statman (1985) identified this behavior as inconsistent with rational investment principles. Ideally, investors should assess an asset's future potential, disregarding its current gain or loss. However, the psychological implications of realizing losses induce regret, prompting irrational avoidance; conversely, selling winners fosters pride. This behavior results in momentum where winning assets continue to perform well due to reluctance to sell, and losing assets persist due to remaining speculative buyers and also causes underreaction to negative information, leading to a slower decline in stock prices than would be rational.

In Morocco, investor behavior deviates from strict rationality. The Casablanca Stock Exchange reflects behavioral patterns akin to those in larger markets. Moroccan investors demonstrate herding behavior, often following group trends instead of independent analysis (Bourezk, Acha, & Barka, 2020). This herding is influenced by social and cultural dynamics, prompting reliance on family or peer decisions. Furthermore, overconfidence and loss aversion biases are prevalent among investors. Research indicates that psychological biases impact Moroccan traders and portfolio managers, affecting their trading and portfolio management (Hadbaa & Boutti, 2019). It has been observed that psychological influences on Moroccan investors can alter financial returns amid skepticism towards the efficient market hypothesis (El ghmari, El ghmari, & M'hamdi, 2024). Additionally, emerging markets like Morocco exhibit market anomalies, such as short-term momentum and long-term reversals, highlighting inefficiencies not exclusive to larger developed markets.

All observations underscore the inadequacy of the pure rationality assumption. They catalyzed the emergence of behavioral finance, discussed subsequently. By the late 20th century, the classical paradigm's sufficiency as a reality description was increasingly questioned. As De Bondt and Thaler noted in 1985, the volatility of stock prices and predictability of returns render the efficient market hypothesis and rational investor model insufficient (De Bondt & Thaler, 1987) (De Bondt W. , 2020). The ongoing presence of anomalies indicated a crisis for classical finance, necessitating either major revisions or the incorporation of new explanatory factors, particularly human psychology.

In conclusion, while the classical paradigm serves as a crucial reference, real markets exhibit systematic deviations. Investors frequently do not behave as rational optimizers, leading to price discrepancies from fundamental values. Acknowledging these limitations paves the way for behavioral finance, which aims to elucidate and model such deviations. The forthcoming section will explore the behavioral paradigm, presenting essential theory that clarifies the reasons behind these anomalies and the decision-making processes of investors.

2. The Behavioral Paradigm: Psychological Foundations of Investor Behavior

2.1 From Homo Economicus to Homo Psychologicus

The empirical critiques of classical finance led to the emergence of behavioral finance, which integrates psychological factors into financial models to elucidate investor behavior and market dynamics. Unlike classical finance's idealized rational investor, behavioral finance focuses on the typical investor characterized by cognitive limitations, emotions, and social influences. This field enhances classical theory by modifying its assumptions and providing a more accurate portrayal of behavior (Kamoune & Ibenrissoul, 2022).

In behavioral finance, irrational deviations are considered systematic tendencies rather than mere random errors. Research by psychologists Daniel Kahneman and Amos Tversky demonstrated that inherent heuristics and biases influence judgments under uncertainty. These biases result in choices that frequently diverge from the optimal decisions anticipated by expected utility theory and rational models. Crucially, such deviations tend to be consistent across individuals, leading to significant aggregate effects in the market, including mispricing and increased volatility.

Behavioral finance emerged to address the limitations of classical models. It recognizes that (1) investors often exhibit irrationality due to cognitive biases, probabilistic errors, overconfidence, and emotional influences. (2) Markets lack perfect efficiency, as real-world arbitrage involves risk and costs, allowing behavioral biases to result in persistent mispricings (Hadbaa & Boutti, 2019). This viewpoint represents an essential advancement to reconcile observed anomalies. By the late 20th century, substantial evidence from various research methods indicated the inadequacy of purely rational models. Consequently, behavioral finance serves as a complement to classical finance: while classical models establish ideal benchmarks, behavioral models depict actual investor behavior.

One of the initial comprehensive articulations of the behavioral approach was presented by Robert J. Shiller in 2003, emphasizing the necessity of incorporating irrational exuberance, fad chasing, and herd behavior to elucidate phenomena such as bubbles. A further contribution was made by Andrei Shleifer and Lawrence Summers (1990), who posited that the presence of “noise traders” and constraints on arbitrage by rational traders can lead to significant price deviations from intrinsic values. These concepts established a theoretical basis for understanding the relevance of behavioral effects at the market level, extending beyond individual decision-making.

In summary, the behavioral paradigm shifts the inquiry from normative investor behavior to actual investor behavior. It utilizes rational models as benchmarks while advocating for descriptive realism through psychological insights. Behavioral finance comprises two principal components :

- ✓ Cognitive Psychology: It examines decision-making processes, particularly under uncertainty, emphasizing heuristics and biases.
- ✓ Limits to Arbitrage: It acknowledges that rational investors may fail to exploit mispricing due to constraints, allowing irrational behaviors to persistently influence prices, contrary to EMH assumptions.

Behavioral finance posits that investors are not irrational or chaotic but are “normal,” as articulated by Meir Statman, striving within their inherent human limitations. The subsequent sections will delve into specific frameworks within behavioral finance that elucidate these limitations.

2.2 Prospect Theory: A New Model of Risk Choices

Prospect Theory, as proposed by Kahneman and Tversky (1979), transformed decision-making studies by disputing the tenets of Expected Utility Theory (EUT) (von Neumann & Morgenstern, 1947). In contrast to EUT, which associates utility with final wealth, Prospect Theory emphasizes reference dependence, where individuals assess outcomes in relation to a reference point (typically the status quo or asset purchase price) rather than on absolute wealth (Tversky & Kahneman, 1991). This reference-dependent assessment elucidates phenomena like the endowment effect (Thaler, 1980), where individuals ascribe greater value to possessions due to the perceived loss incurred from their reference state upon relinquishment.

A key element of Prospect Theory is loss aversion, where losses have a greater psychological impact than gains. Kahneman and Tversky (1979) demonstrated that losses affect individuals about twice as intensely as equivalent gains. The value function illustrates this asymmetry, indicating why investors often refrain from realizing losses, termed the disposition effect (Shefrin & Statman, 1985). Loss aversion elucidates the equity premium phenomenon (Benartzi & Thaler, 1995), as investors seek higher returns due to the greater discomfort of potential losses compared to equivalent gains. Additionally, loss-averse individuals tend to reject equitable gambles and exhibit heightened risk aversion regarding potential negative outcomes (Barberis & Huang, 2001). The S-shaped value function by Kahneman and Tversky (1979) exhibits concavity for gains (indicating risk aversion) and convexity for losses (indicating risk seeking), with a kink at the reference point highlighting heightened sensitivity to losses. This curvature elucidates investors' preference for certain gains while exhibiting risk-seeking behavior in the loss domain often opting to “double down” on losing investments to avoid a guaranteed loss (Barberis & Xiong, What drives the disposition effect? An analysis of a long-standing preference-based explanation. , 2009). This phenomenon parallels the break-even effect, wherein investors persist in risk-taking with the intention of returning to their reference wealth level.

Prospect Theory includes probability weighting, indicating that individuals misinterpret objective probabilities in risky evaluations (Tversky & Kahneman, 1992). The weighting function is typically inverse-S-shaped, leading individuals to overvalue small probabilities and undervalue large ones (Prelec, 1998). This phenomenon elucidates the appeal of lottery-like investments (Kumar, 2009) and the propensity for excessive insurance purchases, as individuals disproportionately emphasize rare occurrences. In financial markets, such distortions lead to speculative trading and the mispricing of low-probability assets, including penny stocks and highly volatile equities (Barberis N. C., 2013).

Prospect Theory provides a psychologically valid framework for understanding investor behavior

anomalies. It elucidates myopic loss aversion, where frequent evaluations increase short-term loss sensitivity and risk aversion. It also clarifies stock price clustering around prior purchase prices or highs, which serve as reference points for investors. By incorporating cognitive psychology into finance, Prospect Theory reconciles classical rational models with empirical investment behaviors, forming a foundation for behavioral finance research.

In the Moroccan market, loss aversion and reference dependence significantly shape investor behavior. Moroccan individual investors establish reference points for their investments, leading to reluctance in selling at a loss despite overvaluation. This dynamic fosters market momentum, as withheld supply can inflate prices while premature selling can exert downward pressure. Furthermore, the endowment effect manifests in Morocco, where individuals retain assets like privatization shares or inherited real estate longer than rationality would dictate, due to ownership biases.

3. Towards an Adaptive View of Financial Markets:

3.1. Bridging Two Paradigms:

The preceding sections depict two divergent perspectives on investors and markets. The classical perspective posits that investors act rationally and markets are efficient, reflecting fundamental values. Conversely, the behavioral perspective suggests that investors exhibit biases, leading to market inefficiencies influenced by sentiment. A pertinent inquiry arises: Is it feasible to integrate these views into a unified framework? Notably, real markets occasionally demonstrate efficiency and align with classical theories during stable periods devoid of bubbles, whereas behavioral influences prevail during crises. It may be essential to discern the conditions that determine the predominance of each paradigm.

One approach to synthesis is conceptualizing financial markets as evolving complex adaptive systems. Markets may fluctuate between efficiency and inefficiency influenced by competitive dynamics and environmental shifts, contradicting classical efficiency assertions and extreme behavioral theories. Rationality and irrationality are thus dynamic tendencies that vary with market ecology.

The amalgamation of classical and behavioral theories necessitates recognition of investors' capacity for learning and adaptation. Behavioral biases can be mitigated through various strategies such as learning from errors and employing cognitive aids. Moreover, markets characterized by rational actors may experience disruptions due to the introduction of novice participants or altered conditions, which can temporarily affect efficiency. Consequently, market efficiency is subject to contextual and temporal fluctuations.

3.2.The Adaptive Markets Hypothesis:

A prominent framework that encapsulates these concepts is the Adaptive Market Hypothesis (AMH), introduced by Andrew W. Lo in 2004. Lo's hypothesis seeks to bridge the Efficient Market Hypothesis and behavioral theories by integrating principles from evolutionary biology and ecology into financial markets. According to AMH, markets are perceived as dynamic ecosystems rather than static equilibria.

The Adaptive Market Hypothesis (AMH), developed by Andrew Lo, integrates classical finance and evolutionary biology. It suggests financial markets function as ecosystems where investors and strategies vie for profit opportunities. In this context, profitable strategies gain traction, while unprofitable ones are discarded or altered. This phenomenon resembles natural selection, where adaptive strategies prevail and maladaptive ones fade. For instance, if investors exhibit underreaction to earnings announcements, rational traders will capitalize on this inefficiency until it is rectified, demonstrating market evolution towards efficiency.

A key implication of AMH is that market efficiency varies with time and context. In competitive environments with ample information, prices adjust quickly and efficiently. However, in emerging markets or after regulatory changes, temporary inefficiencies may arise until corrective forces intervene. Therefore, market efficiency is influenced by environmental and institutional factors, sometimes aligning with the Efficient Market Hypothesis and at other times exhibiting behavioral and structural frictions (Lo, 2012).

Investors exhibit bounded rationality, learning from experience. Feedback from successes and failures informs their future choices. For example, overconfident traders may adopt more cautious strategies after losses. Additionally, generational influences lead to varied behavioral patterns among investors. Consequently, the makeup of market participants is in constant flux, resulting in a dynamic blend of rational, behavioral, and algorithmic decision-makers (Lo, 2005).

Markets resemble ecosystems with diverse strategies coexisting. Various market participants, including arbitrageurs and traders, occupy unique roles. Their interactions shape market dynamics, balancing rational pricing with speculative behavior. The Adaptive Market Hypothesis integrates classical and behavioral theories into a unified model (Lo, 2004).

AMH integrates rational and behavioral elements by positing that markets are generally competitive and adaptive, which frequently results in a state akin to efficiency; however, these markets are not immutable they undergo evolution, as do the behaviors exhibited within them. Anomalies may emerge, vanish, and subsequently re-emerge; strategies that were previously effective may cease to yield results if an excessive number of participants replicate them (for instance, the obsolescence of the January effect or specific arbitrage opportunities), yet should

conditions alter or competitors withdraw, those strategies might regain their profitability.

An adaptive perspective suggests that as Morocco's market matures, efficiency is expected to improve. However, the influence of behavioral biases remains significant due to the presence of inexperienced investors. Evidence indicates that emerging markets can enhance efficiency as they engage with global markets. Nonetheless, local disturbances may temporarily revert the market to behavioral dynamics until adaptation occurs (Lo, 2004).

Conclusion:

The progression from classical finance to behavioral finance and ultimately to adaptive finance facilitates a more nuanced comprehension of market dynamics. The classical framework continues to serve as a vital reference point, establishing the groundwork for rational decision-making, efficient markets, and fundamental concepts such as the risk-return tradeoff, diversification, and market equilibrium. Nonetheless, its exclusively rational premises inadequately account for the behaviors exhibited by actual investors and the reasons underlying the frequent discrepancies between empirical market outcomes and theoretical forecasts (Lo, 2004).

Behavioral finance enhances this framework by elucidating the systematic departures from rational decision-making. It synthesizes knowledge from psychology, sociology, and neuroscience to elucidate cognitive biases such as overconfidence, herding behavior, and loss aversion. These deviations manifest not as random anomalies but as recurring behavioral patterns that possess significant ramifications for portfolio management, policy formulation, and investor education (Kahneman D. , 2011). By acknowledging these cognitive biases, both investors and regulators can devise protective measures such as diversification strategies, pre-commitment frameworks, and decision-making checklists to alleviate irrational behaviors.

The integration of classical and behavioral paradigms through theoretical constructs such as the Adaptive Market Hypothesis facilitates a nuanced understanding of market efficiency. Financial markets exhibit oscillation between rational and behavioral phases, influenced by factors such as competitive dynamics, informational asymmetries, and investor psychology (Lo, 2005). This theoretical amalgamation promotes adaptability: methodologies that are efficacious in stable and efficient market conditions may prove ineffective during periods characterized by emotional volatility or upheaval. Comprehending the transitional dynamics between these market regimes significantly augments both investment strategies and the responsiveness of policy measures.

Empirical observations from emerging contexts such as Morocco substantiate the universality of behavioral inclinations. Investors in Morocco demonstrate phenomena such as loss aversion, herding behavior, and overconfidence paralleling trends identified in developed markets although local cultural factors and market structures may either amplify or mitigate these influences (Hadbaa & Boutti, 2019). Consequently, the integration of paradigms necessitates the contextualization of theories within distinct financial environments.

These findings have practical implications for regulators, portfolio managers, and financial educators. Regulators can enhance market resilience by incorporating behavioral diagnostics into supervisory systems, creating disclosure frameworks that recognize cognitive overload, and promoting financial education programs that explicitly address common biases such as

overconfidence, herd behavior, and loss aversion. Portfolio managers, meanwhile, can improve the quality of their decisions by incorporating behavioral risk indicators into investment processes, adopting structured decision protocols that limit excessive intuitive reactions during periods of volatility, and designing portfolios with safeguards against over-trading or concentrated exposures. Financial educators and training institutions can integrate behavioral modules into their programs, enabling investors to recognize their own limitations and develop skills (such as disorientation techniques, pre-commitment strategies and scenario-based learning) to reinforce their judgement in situations of uncertainty. Together, these practical actions show how classical, behavioral, and adaptive paradigms can be combined into real-world frameworks that support better decision-making and market stability.

In conclusion, the progression from the classical paradigm to the behavioral paradigm and presently towards an adaptive paradigm signifies the advancement of financial intellectual discourse. Rationality and irrationality are no longer perceived as mutually exclusive dichotomies, but rather as components of a continuum representing investor conduct. Financial theory is transitioning from a prescriptive approach of "assuming rationality and solving for equilibrium" to a descriptive and adaptive framework: "observing behavior, comprehending its deviations, and examining how learning and competition influence market dynamics towards or away from efficiency."

As one examines empirical evidence from markets as varied as Wall Street and Casablanca, a singular theme emerges: markets constitute a fundamentally human endeavor. They do not adhere to the immutable principles of physics; rather, they mirror our collective knowledge, our mistakes, our anxieties, and our aspirations. By integrating rationality with intuition, and recognizing both our cognitive frameworks and our behavioral tendencies, we advance toward a more comprehensive theory of finance that can direct us from the theoretical sophistication of rational models to the often-chaotic nature of markets. In this pursuit, we enhance our capacity to effectively navigate these markets whether in the roles of investors, managers, or policymakers within Morocco or in any other global context.

Bibliography

4. Banz, R. W. (1981). The relationship between return and market value of common stocks. *Journal of financial economics, 9(1),* , 3-18.
5. Barberis, N. C. (2013). Thirty years of prospect theory in economics: A review and assessment. . *Journal of economic perspectives, 27(1),* , 173-196.
6. Barberis, N., & Huang, M. (2001). Mental accounting, loss aversion, and individual stock returns. . *the Journal of Finance, 56(4),* , 1247-1292.
7. Barberis, N., & Xiong, W. (2009). What drives the disposition effect? An analysis of a long-standing preference-based explanation. . *the Journal of Finance, 64(2),* , 751-784.
8. Bell, D. E. (1982). Regret in decision making under uncertainty. . *Operations research, 30(5),* , 961-981.
9. Benartzi, S., & Thaler, R. H. (1995). Myopic loss aversion and the equity premium puzzle. . *The quarterly journal of Economics, 110(1),* , 73-92.
10. Benayad, K., & Aasri, M. R. (2023). Behavioral biases and investment decisions of SMEs managers: empirical analysis within the Moroccan context. *International Journal of Financial Studies, 11(4),* , 120.
11. Bourezk, H., Acha, N., & Barka, H. (2020). Factors Influencing Moroccan Individual Investor Behavior: Survey Evidence. *IJBTSR International Journal of Business and Technology Studies and Research, 2(1),* , 13-pages.
12. De Bondt, W. (2020). Investor and market overreaction: a retrospective. *Review of Behavioral Finance, Vol. 12 No. 1*, 11–20.
13. De Bondt, W. F., & Thaler, R. H. (1987). Further evidence on investor overreaction and stock market seasonality. . *The Journal of finance, 42(3),* , 557-581.
14. El Asri, R., & Messaoudi, A. (2025). Interactions entre biais comportementaux, littératie financière et prise de décision d'investissement: une analyse corrélationnelle auprès des investisseurs individuels marocains. *International Journal of Accounting Finance Auditing Management and Economics, Volume 6, N°6.*, 118-137.
15. El Ghmari, O., El Ghmari, I., & M'hamdi, M. (2024). Analysis of the Relationship between Financial Behavior and Short-and Long-Term Returns among Moroccan Investors: A Behavioral Finance Approach. *Salud, Ciencia y Tecnología-Serie de Conferencias, (3), 10*.
16. Fama, E. F. (1970). Efficient capital markets: A review of theory and empirical work. . *The journal of Finance, 25(2),* , 383-417.
17. Fama, E. F. (1998). Market efficiency, long-term returns, and behavioral finance. *Journal of financial economics, 49(3),* , 283-306.

18. Fama, E. F., & French, K. R. (1992). The cross-section of expected stock returns. . *The Journal of Finance, 47(2),*, 427-465.
19. Gigerenzer, G., & Gaissmaier, W. (2011). Heuristic decision making. . *Annual review of psychology, 62(2011),* , 451-482.
20. Hadbaa, H., & Boutti, R. (2019). Behavioral biases influencing the decision making of portfolio managers of capital securities and traders in Morocco. *Financial Markets, Institutions and Risks, Volume 3, Issue 1*, 92-105.
21. Kahneman, D. (2011). *Fast and slow thinking.* New York.: Allen Lane and Penguin Books,.
22. Kahneman, T., & Tversky, A. (1979). Prospect theory: An analysis of decisions under risk. *Econometrica, Vol. 47, No. 2*, 263-291.
23. Kamoune, A., & Ibenrissoul, N. (2022). Traditional versus behavioral finance theory. . *International Journal of Accounting, Finance, Auditing, Management and Economics, 3(2-1),*, 282-294.
24. Kumar, A. (2009). Who gambles in the stock market? *The journal of finance, 64(4),* , 1889-1933.
25. Lintner, J. (1965). The Valuation of Risk Assets and the Selection of Risky Investments in Stock Portfolios and Capital Budgets. *Review of Economics and Statistics. 47:1,*, pp. 13–37.
26. Lo, A. W. (2004). The adaptive markets hypothesis: Market efficiency from an evolutionary perspective. . *Journal of Portfolio Management, Forthcoming.*
27. Lo, A. W. (2005). Reconciling efficient markets with behavioral finance: the adaptive markets hypothesis. . *Journal of investment consulting, 7(2),*, 21-44.
28. Lo, A. W. (2012). Adaptive markets and the new world order (corrected May 2012). . *Financial analysts journal, 68(2),* , 18-29.
29. Lo, A. W. (2018). Efficient markets hypothesis. . In *In The New Palgrave Dictionary of Economics* (pp. pp. 3543-3560). London.: Palgrave Macmillan,.
30. Loomes, G., & Sugden, R. (1982). Regret theory: An alternative theory of rational choice under uncertainty. *The economic journal, 92(368),* , 805-824.
31. Markowitz, H. (1952). Modern portfolio theory. . *Journal of Finance, 7(11),* , 77-91.
32. Prelec, D. (1998). The probability weighting function. *Econometrica,*, 497-527.
33. Sharpe, W. F. (1964). Capital Asset Prices: A Theory of Market Equilibrium under Conditions of Risk.". *Journal of Finance. 19:3,*, 425–42.
34. Shefrin, H., & Statman, M. (1985). The disposition to sell winners too early and ride losers

too long: Theory and evidence. *The Journal of finance, 40(3),* , 777-790.

35. Shefrin, H., & Statman, M. (1985). The disposition to sell winners too early and ride losers too long: Theory and evidence. . *The Journal of finance, 40(3),* , 777-790.
36. Shiller, R. J. (1981). Do stock prices move too much to be justified by subsequent changes in dividends? *THE AMERICAN ECONOMIC REVIEW*, 421-436.
37. Shiller, R. J. (2000). Measuring bubble expectations and investor confidence. . *The Journal of Psychology and Financial Markets, 1(1),* , 49-60.
38. Shiller, R. J. (2003). From efficient markets theory to behavioral finance. . *Journal of economic perspectives, 17(1),*, 83-104.
39. Shleifer, A., & Summers, L. H. (1990). The noise trader approach to finance. . *Journal of Economic perspectives, 4(2),* , 19-33.
40. Simon, H. A. (1955). A behavioral model of rational choice. . *The quarterly journal of economics,* , 99-118.
41. Statman, M. (2008). What is behavioral finance. . In *Handbook of finance, 2(9),* (pp. 79-84.).
42. Thaler, R. (1980). Toward a positive theory of consumer choice. . *Journal of economic behavior & organization, 1(1),* , 39-60.
43. Tversky, A., & Kahneman, D. (1974). Judgment under Uncertainty: Heuristics and Biases: Biases in judgments reveal some heuristics of thinking under uncertainty. *science, 185(4157),* , 1124-1131.
44. Tversky, A., & Kahneman, D. (1992). Advances in prospect theory: Cumulative representation of uncertainty. *Journal of Risk and uncertainty, 5(4),* , 297-323.
45. Von Neumann, J., & Morgenstern, O. (1947). *Theory of games and economic behavior, 2nd rev.*