

Deviation from Rationality: Black Friday Studies and Tesla Stock Price Fluctuations

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Abstract: This paper examines rationality from a behaviour economic perspective, based on the case of consumers' irrationality on Black Friday and investors' irrationality in Tesla's stock fluctuations, constructing an applicable insight into traditional economic theories. This study mainly focuses on three terms: Mental accounting, risk preference, attention theory and relevant social factors among consumers, investors, and market regulators, which results in market inefficiency and disinformation. Traditional theories suggest absolute rationality in decision-making based on perfect information and unchanged preference while the new behaviour theories reveal that humans are controlled by emotion, herding, fear of risk, and many other reasons that push them away from the rational path. In the key findings, consumers are easily overspending due to loss aversion, unjustified mental accounting, and eye-catching advertisement whereas investors in Tesla react overactive to clutter online but not to the financial condition of the enterprise itself, leading to the swing of stock price. Some rational tools like cooling-off periods and regulatory intervention may be suggested in advice. The final section of the paper indicates the future research direction could be on digital techniques and influences on irrational behaviour, accelerating the insights developed in mitigating the biases and instability.

Keywords: Rational, Mental accounting, Risk preference, attention theory.

1. Introduction

Traditional economics was grounded in the premise of absolute human rationality, analyzing society and the economy by processing all known information. It posits that human beings think selfishly, consistently striving for cost minimization and utility maximization [1]. Rather than optimizing, behavioral economics challenges traditional theories by translating them into reality, where human beings are not rational enough and are subjected to psychological as well as neurological disturbances [2]. The decisions rely on mental shortcuts, or heuristics, which can result in systematic biases in judgment. Accordingly, human behaviour deviates from what the economists' theories presuppose [3]. However, as Balawi and Ayoub emphasize, behavioral interventions such as the nudge theory can potentially realign individual behavior closer to rationality, achieving at a low cost and without coercion [4].

The development of behavioral economics runs parallel to traditional economics, though it has only gained prominence in recent decades, especially following the recognition of key contributions

by Daniel Kahneman and Richard H. Thaler through their Nobel Prizes in Economic Sciences. Pioneering work by these scholars illuminated how cognitive biases (Loss aversion, overconfidence, and the status quo bias) lead individuals to make decisions that often contradict the prediction of traditional economic models. Although these deviations are common, existing studies have not explored their impact on macro and microeconomic outcomes. The research purpose of this paper is to systematically analyze how these decision-making deviations affect economic results through behavioral economics models in mental accounting, risk preference, and attention theory, to explain the deviation between individual behavior and the prediction of classical economic theory. This study can not only enrich the theoretical framework of behavioral economics but also provide references for policymakers to better deal with irrational behavior in the market.

Mental accounting, or psychological accounting, is a behavioral model of consumer decision-making developed by Richard Thaler that seeks to explain how individuals mentally organize, evaluate, and track their financial activities. Thaler identified that people segregate their money into different mental accounts such as daily expenses, windfalls, savings, and entertainment, each governed by its own rules [5]. This mental categorization influences spending and saving behaviors, leading individuals to make decisions that deviate from traditional economic rationality [6]. For instance, individuals are more likely to spend windfall gains, such as lottery winnings or gambling rewards, because they are perceived as “house money” rather than earned income [7]. In contrast, money earned through labor is often allocated to savings or essential expenses, demonstrating a more cautious approach. This discrepancy highlights how mental accounting can lead individuals to make irrational financial decisions that contradict basic economic principles.

Risk preference refers to the degree to which individuals are willing to engage with risky options. Traditionally, risk preference is categorized into three types: risk aversion, risk-seeking (or risk-loving), and risk neutrality [8]. While classical economic theory posits that individuals are generally risk-averse and primarily motivated by profit maximization, real-world scenarios reveal that individuals’ risk preferences vary considerably [9]. A risk-averse person seeks stability and avoids uncertain outcomes, often preferring guaranteed returns over potentially higher but riskier rewards [10]. Conversely, risk-seeking individuals are more willing to engage in high-risk activities in pursuit of higher returns, accepting greater potential losses. Risk-neutral individuals, meanwhile, evaluate choices solely on expected outcomes, indifferent to the level of risk involved. The measurement of risk preferences often involves experimental methods such as surveys or incentivized games that simulate real-life financial consequences [11]. These differing risk tolerances significantly influence decision-making under uncertainty, affecting how individuals balance potential gains against perceived risks.

Attention theory in behavioral economics views attention as a finite resource critical to decision-making. Traditional models like AIDA (Attention, Interest, Desire, and Action) highlight attention as the initial step in influencing consumer behavior, often bypassing rationality [12]. The allocation of attention affects how individuals prioritize information, leading to decisions that deviate from rational choice theory [13]. Selective attention, where consumers focus on salient or emotionally charged data while ignoring less conspicuous but important information, often results in suboptimal outcomes [14]. Understanding attention allocation helps explain the gap between economic predictions and real-world behavior, emphasizing psychological influences on decision-making.

This research examines two distinct cases: the irrational consumer behavior observed during Black Friday and the volatility of Tesla’s share price driven by investor irrationality in response to information. Analyzing these cases allows for a comparative exploration of the behaviors exhibited by consumers, investors, and market regulators in each context. By identifying common patterns across these events, this study aims to provide insights into behavioral economics and offer recommendations for future practice and regulation.

2. Case Description

The Black Friday shopping phenomenon is characterized by an intense consumer frenzy driven by deep discounts and limited time offers, often resulting in overcrowded stores and impulsive buying behaviors. Typical consumer actions include queuing overnight outside retail outlets, engaging in aggressive competition for discounted products, and making unplanned purchases due to perceived scarcity and fear of missing out. In fact, consumers are engaged in impulsive buying driven by psychological biases like mental accounting and cognitive biases, leading them to make purchases they might not need or afford. Mental accounting causes individuals to perceive discounts as savings in separate “mental accounts,” encouraging them to spend more than planned [6]. Furthermore, attention theory suggests that the overwhelming advertising and promotional tactics during Black Friday capture consumer attention disproportionately, enhancing the perception of limited time offers and increasing urgency [15]. This attention manipulation, combined with herd behavior, makes consumers overly focused on short-term gains (e.g., discounts) rather than the long-term value or utility of their purchases, illustrating how cognitive biases can drive irrational economic behavior in everyday situations.

Tesla's stock price has fluctuated wildly. From a price of nearly \$200 per share in May 2021, it soared to an all-time high of over \$407.36 in November 2021. However, after three major fluctuations, it fell back to \$113 at the end of the year 2022. Similarly, the volatility in Tesla's stock price exemplifies irrational investor behavior influenced by psychological factors such as overconfidence, risk preference, and social influence. Investors often display an irrational risk preference when trading Tesla, attracted by the stock's high volatility and potential for significant short-term gains, despite the underlying financial risks [16]. Mental accounting further plays a role as investors often categorize Tesla as a separate “high-risk, high reward” segment in their portfolios, leading them to hold disproportionate positions relative to their overall risk tolerance. Attention theory is also evident in Tesla's stock price fluctuations; the company's extensive media coverage and the CEO's frequent, attention-grabbing social media activity cause investors to react to news and noise rather than fundamentals, contributing to price volatility [17]. These behaviors reflect how cognitive biases and emotional responses can overshadow rational analysis, driving stock prices away from intrinsic values in the figure 1.

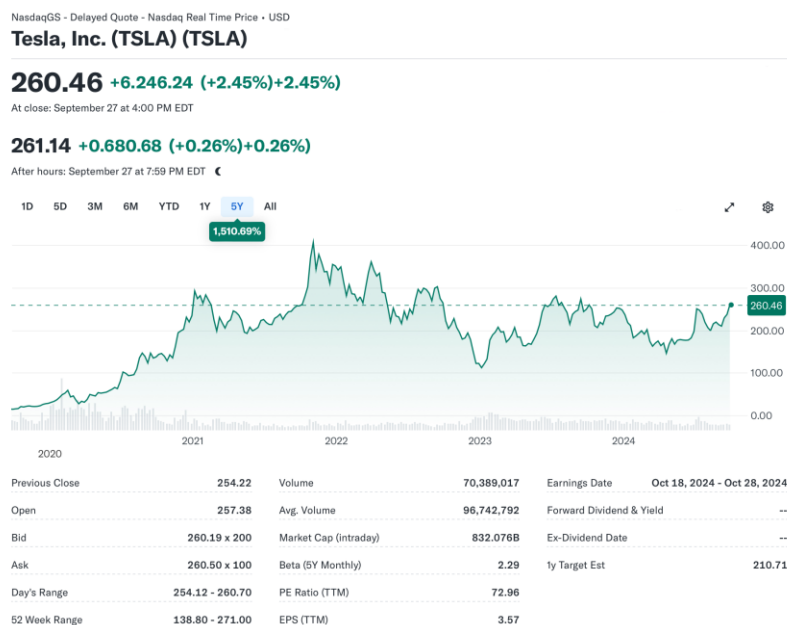


Figure 1: Tesla stock price fluctuation in 5 years.

3. Case Analysis

The case of Black Friday and Tesla stock prices present a prime example of irrational decision-making where consumers' purchasing behaviors often deviate from rational choice theory. Behavioral economics provides insights into these irrational behaviors, highlighting key theories such as risk preference, mental accounting, attention theory, and social influence.

3.1. Risk preference

Risk preference is a key factor influencing irrational decision-making. Shoppers tend to be risk-averse, experiencing the pain of losses more acutely than the satisfaction from equivalent gains. During Black Friday, the fear of missing out on limited-time offers is perceived as a "loss," driving consumers to make impulsive purchases to avoid the regret associated with missing perceived deals. This fear of losing discounts often supersedes a rational assessment of the product's actual need or value, leading to excessive expenditure on unnecessary items. Conversely, many investors are willing to assume higher levels of risk, drawn by the potential for substantial returns. They frequently deviate from conventional risk-return trade-offs, influenced by compelling narratives and the appeal of high-growth companies like Tesla. This distorted risk perception leads to increased trading activity, thereby amplifying price volatility.

3.2. Mental accounting

Mental accounting induces irrationality as a further reason. This idea was first present by Thaler (1985), who suggests that individuals categorize, evaluate, and monitor their financial activities in separate mental accounts, which frequently results in less-than-ideal financial judgements. Consumers may mentally allocate funds specifically for "discount shopping" on Black Friday, perceiving these expenditures as unrelated to their normal budget. This mental segregation makes spending during sales feel justified, even if the purchases are not economically rational. Furthermore, consumers tend to overvalue instant discounts, treating them as "found money", which motivates them to spend more freely, disregarding the true cost or necessity of the purchase. Tesla investors frequently create a separate mental account for their Tesla holdings, viewing them as a high-risk, high-reward portion of their portfolios that stands out from their other, more conservative investments. This categorization often encourages them to accept greater volatility and ignore traditional risk assessments. Also, they often succumb to the "sunk cost fallacy" in mental accounting, where past investments in Tesla are viewed as irrecoverable losses that justify ongoing holding or additional buying to "average down" their cost basis. This behavior is irrational because it ignores current market realities and fundamental evaluations, driven instead by the desire to psychologically "balance" their mental accounts.

3.3. Attention theory

Attention theory also plays a significant role in shaping consumer decisions. This theory suggests that individuals have limited cognitive resources, and their decisions are significantly influenced by what captures their attention at any given moment [16]. Black Friday marketing tactics, including flashy advertisements, countdown clocks, and the strategic placement of "doorbuster" deals, effectively capture consumer attention, creating a sense of urgency. This heightened focus on limited time offers distracts consumers from carefully considering product quality, value, or long-term needs, leading them to make rushed and irrational decisions. Similarly, investor focus is disproportionately drawn to the company due to its high media profile and the constant flow of news. Tesla's frequent headline presence, caused by new product announcements, controversies, or Musk's social media activity,

triggers investor attention and prompts immediate trading reactions. This amplified attention often leads to overreactions, where investors buy or sell based on the latest news rather than long-term considerations, resulting in erratic price swings.

3.4. Other factors

The last factor is herd behavior and overconfidence. The sight of crowded stores, long queues, and the phenomenon of other shoppers grabbing deals create a powerful social proof effect, where individuals feel pressured to participate in the buying frenzy. This aligns with the concept of herding behaviour, where people tend to mimic the actions of others, especially in uncertain situations. The desire to conform to the group often overrides rational decision-making, pushing consumers to purchase items they would otherwise ignore. Black Friday is often framed as an opportunity to win by securing the best deals. This gamification of shopping transforms a routine activity into an emotionally charged experience, which is independent of the value or utility of the purchased items. In investment markets, herding refers to the tendency of investors to follow the actions of others rather than making independent, rational decisions based on known information. This behavior is particularly prevalent in Tesla's stock, where investors often buy or sell shares simply because others are doing so, without conducting thorough analyses of the company's financial health or long-term prospects. Meanwhile, many investors in Tesla are not just financially invested but emotionally tied to the company's mission and its visionary leadership. This overconfidence leads them to overestimate their ability to predict market movements or the company's future success, often holding on to the stock during price surges in anticipation of even greater returns. This collective action amplifies price movements, creating feedback loops where rising prices attract more buyers, and falling prices trigger mass selloffs, increasing the stock's volatility beyond what is justified by its intrinsic value.

There are many similarities and differences to be found in the above consumer and investor behaviours. A key difference lies in their attitudes toward risk: consumers favour conservative cards while investors want higher returns and are willing to take risks. Consequently, consumers and investors manage risk differently within their mental accounts, guided by their respective risk appetites. In the example of Black Friday consumers made irrational extra purchases and Tesla's investors encountered large stock price movements. Also, notable similarities exist. Both groups' behaviors align with attention theory, as they are heavily influenced by prominent advertisements and media coverage, leading to deviations from rational decision-making. Additionally, herd mentality is evident among both consumers and investors, as they tend to follow the crowd—consumers make popular purchases, and investors engage in similar trading behaviors—resulting in more irrational consumption and increased market volatility.

4. Recommendations

Supporting from the above analysis, there are some suggestions or thoughts to assist consumers, investors, and market regulators to better avoid harm or loss due to irrationality.

Consumers should be educated on key behavioral economics principles, such as opportunity cost, prioritizing purchases based on value, and maintaining consistent mental accounting, even when influenced by advertisements or the behavior of others. To support rational decision-making, tools like spending caps and shopping lists can help curb impulsive buying driven by emotional triggers. Avoiding important purchasing decisions at night is advisable, as solitude and silence can heighten emotional fluctuations. Introducing a 24-hour waiting period before finalizing purchases allows for clearer information processing, enabling consumers to make utility-maximizing decisions within their

budget constraints. These strategies can significantly reduce impulsive and irrational purchasing behaviors.

Investors should move away from emotionally driven decisions and diversify their investment strategies accordingly. Rather than concentrating investment in highly volatile stocks like Tesla, they should put the sight on long-term stocks that are volatile but profitable or conservative stocks that are steadily rising in value. Diversification helps to reduce the possible loss due to emotional price swings and improves overall risk management. On the personal level, investors should focus on fundamental analysis (e.g. portfolio review, predefined investment goals) rather than reacting to short-term news or social media influence, shifting from short-term holding to long-term holding theory, therefore reducing the biases induced by temporary herding and overconfidence.

It is more necessary for market regulators to protect the order of the market to intervene in excessive information from disturbing consumers and investors. Regulators should promote transparency in markets, making information more open or easily verifiable. Clearer disclosures and educational resources insist investors from misleading by media-associated unreliable information. Also, they should actively monitor social media and other platforms for potential market manipulation or the spread of misinformation that mainly causes irrationality. Nudge theory, a great design for limiting behaviour, also helps. For example, they can set legislation or fines for the relevant spread of information, warning especially during high-volatile periods, thus correcting the irrational behaviour.

5. Conclusion

Irrational behavior plays a significant role in shaping both consumer and investor decision-making, thereby influencing overall market dynamics. For consumers, psychological biases such as loss aversion, overconfidence, and mental accounting often lead to impulsive purchasing, especially in high-pressure scenarios like Black Friday. These biases cause individuals to focus on immediate gains, such as discounts, while neglecting their long-term financial health, resulting in overspending on unnecessary products. Similarly, investors are influenced by herd behavior, overconfidence, and heightened media narratives, often prioritizing these factors over fundamental analysis. Such irrational actions contribute to considerable market volatility, as seen with stocks like Tesla, where investment decisions are often swayed by social influence and emotional reactions rather than sound financial judgment.

The impact of these irrational behaviors is enormous, leading to market inefficiencies, misallocation of resources, and increased personal financial risk. For example, overconsumption due to impulsive behavior can contribute to personal debt and financial instability. Meanwhile, irrational investor behaviour can amplify market bubbles and crashes, destabilizing the wider financial system. These effects highlight the need to address the underlying cognitive biases that drive irrational decision-making in both contexts.

Targeted strategies have been proposed to address the issues. For consumers, education on behavioral economics principles, such as understanding opportunity costs and maintaining disciplined mental accounting, is crucial. Practical tools like spending caps, shopping lists, and decision delays, such as a 24-hour cooling-off period, can help reduce impulsive purchases. Additionally, consumers should avoid making significant decisions during emotionally vulnerable times, such as late at night, when cognitive biases may be amplified. For investors, recommendations include diversifying portfolios and focusing on long-term investment strategies. Market regulators can support these efforts by enhancing transparency, monitoring market manipulation, and applying the Nudge Theory.

From a future perspective, the effectiveness of these interventions should be further investigated and examined in real-world settings, particularly on how educational initiatives and behavioral

nudges impact consumer and investor behavior over time. Additionally, studying the role of digital platforms in amplifying irrational decision-making, such as checking if the targeted advertising and social media influence could offer insights into new strategies for irrational biases in the digital age. By deepening our understanding of these behaviors and refining interventions, it may be possible to foster more rational decision-making, leading to greater financial stability and efficient markets.

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