Behavioral Finance: Loss Aversion, Market Anomalies, and Prospect Theory in Financial Decision-Making

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Abstract. This paper delves into the intricate world of investor psychology to shed light on the processes that underlie financial decision-making. It focuses on three critical aspects: loss aversion, market anomalies, and prospect theory. These dimensions form the foundation for understanding the psychological factors that influence investors and, in turn, shape their financial choices. Loss aversion, a central theme, underscores the human tendency to fear losses more than they value gains. It explores the emotional aspects that come into play when investors face potential losses and how this can skew their judgment. The essay also examines market anomalies, emphasizing how anomalies in stock and financial markets can lead to deviations from traditional investment strategies, thereby prompting investors to question conventional wisdom. Prospect theory, a fundamental framework for comprehending decision-making, is a key component of this essay. It elaborates on the cognitive biases and emotional responses that guide investors when assessing potential gains and losses. The essay further highlights how recognizing these psychological nuances can empower investors to make more informed, rational choices. In conclusion, the essay elucidates that investor psychology plays a pivotal role in shaping financial outcomes. By acknowledging the intricate interplay of emotions and rationality, investors can make nuanced decisions that align with their financial goals and objectives.

Keywords: Loss Aversion, Market Anomalies, Prospect Theory.

1. Introduction

The COVID-19 pandemic, which emerged in late 2019, was not only about the health of human beings but also had a profound and enduring impact on the global financial markets. While traditional finance theories suggest that market participants typically make rational decisions based on available information, it is irrefutable that the pandemic exposed the importance of behavior factors in shaping investment choices. The study of behavior finance, which consists of emotional and psychological components of decision making, has become crucial for comprehending and interpreting the turbulent events that have occurred in the financial markets during this crisis.

At the beginning of the pandemic, the virus's rapid spread led to government imposing lockdowns, leading to an atmosphere of extreme uncertainty. As a result, a massive market decline was caused by the panic selling of many investors [1]. According to behavioral finance scholars, a number of cognitive, emotional, and social factors influence investors, and it will influence their success in the markets and other areas by making sub-optimal decisions which can be attributed to overreaction and loss aversion. Moreover, there is no denying that social media also impact investors to make irrational decisions. The impact of behavioral variables on financial markets has increased with the emergence of social media platforms. As the pandemic developed, a series of rumors, guesses, and information via social media. Investees frequently made snap decisions without doing in depth study or analysis.

This always leads to herd behavior which widely applied in economics. The irrational and rational views are tow polar view of herd behavior [2]. For one thing, the irrational is based on investor psychology, they always follow others mindlessly and be away of logical or critical thinking. The above epidemic is a typical example on irrational part of herd behavior. For another, the rational approach focuses on externalities, or how informational or incentive problems might skew optimum decision making.

In order to avoid being an irrational investor, the Efficient Market Theory is a fundamental concept in finance which give investor lots of valuable suggestion for those striving to become rational investors [3].

There are some key principles to help investor:

Diversification: the EMT places that diversify one's portfolio among a variety of assets in order to reduce risk. So, diversify your assets among different asset classes, sectors, and regions, according to rational investors is very important.

Passive investing: EMT advises sensible investors to use passive investing techniques rather than actively trying to beat the market through trading or stock selection.

Long-Term Perspective: in the theory of EMT, the stock price in the short-term fluctuations are largely random and unpredictable. Therefore, the rational investor should have the ability to adopt a long-term perspective, avoiding an emotional response to market volatility.

Continuous reading: Rational investors must keep up with market developments. EMT assumes that markets are efficient, however, it does not take behavioral biases into account which might result in short-term mispricing.

Risk Management: rational investors should understand and manage risk effectively.

2. Loss Aversion

Loss aversion is the fundamental concept in psychology and economics, which particularly in behavior finance-related biases and effects in decision making. It refers to the investors prefer avoiding losses rather than equivalent gains. In other words, the feeling of pain in losses is more acutely than the equivalent gains [4]. Emotion while making the decision is essential cause it will influence investors' thinking. The prospect theory and herding behavior are typical behavior biases related to loss aversion. In addition, the sunk cost fallacy and endowment effect are also important.

The sunk cost fallacy is a cognitive bias where investors continue to invest in a decision, project or activity based on the total resources like time, money, or effort they have already committed. However, people rationally will tell themselves that giving up is the best choice because the expected costs in the future will exceed the potential benefits. For example, a streamer on YouTube once initiated a challenge of ten levels, participants will win $100 thousand every time they pass a level, with bonuses in cumulative form. However, they will lose all bonuses if they fail the current level. In this case, we can clearly know that future costs will exceed existing benefits. Under such circumstances, irrational thinking always affects their choices, leading most participants to choose to continue with the next level rather than abandon it [5]. They chose this because they do not want to give up on the time and effort they put in the successful levels of the previous challenges.

The endowment effect is a cognitive bias where investors prefer to place a greater value on the things they own, which is a cognitive bias in behavioral economics and psychology. In other words, how people value their things can be impacted by this bias. This can be exemplified by selling diamonds, imagining you own a diamond ring, but you have had it for several years and want to sell it to somebody else. However, the price you tag on the website may be higher than the price that potential buyers are willing to pay. The reason of this can be written in overvaluation and resistance to letting go. For one thing, as the owner of this diamond, you would place a high value to it because you have a history or a story with it, for instance, a man that you like so many years gave it to you as a birthday gift. Therefore, this diamond has specific emotional value for the owner is the reason for you to tag high price. For another, due to the high price, the potential buyers are unwilling to purchase and negotiate a new price with you. Even if a cheaper offer is made to you, you may be reluctant to accept it because of your emotional relationship and sense of ownership.

Moreover, applying loss aversion in finance is still difficult because it is hard to determine the gains and losses when they need to make assumptions. First, while evaluating their financial investments in numerical assets, how to analyze whether people engage in mental accounting or narrow framing. Then, it is difficult to quantify precisely, because it varies from person to person and

will be influenced by individual risk tolerance, past experience, or personal circumstances. Furthermore, the investment horizontal is also a part of the factors which longer time horizons can explain may be better equipped to overcome short-term losses and recover. At the same time, the short-term investors may be more adversely affected. Last but not least, setting clear investment goals and strategies can be effective for behavior interventions. However, the discipline and ongoing efforts is hard to definite.

3. Market Anomalies

Market anomalies are deviations from the efficient market hypothesis, which holds that asset prices always represent all available information and follow a random walk. It contains a wide range of phenomena, including price reversal, momentum, value, and size anomalies. These anomalies all indicate that it is possible to predicate the price movements over time by non-random patterns.

3.1. Price Reversal

Price reversal means there is a significant and sustained trend before changes of the direction of an asset's price movement. In general, it can be represented by a point at which an asset's price stops moving in the direction it has been going and starts a new opposite direction. Furthermore, the price reversal can be influenced by numerical factors. In behavior finance, market psychology and behavior biases are the root of it.

Overreaction and correction are the key concepts in price reversal. The overreaction occurs by the investors respond excessively to new things, such as information or events leading to the assets price move to extreme levels whether upward or downward [6]. In normal, the mistakes in of most the investors is overvalued the impact of recent development which an example can explain. Investors may frequently overreact when a company releases results that exceed market expectations. At the same time, they may respond with uncontrollably high levels of joy and confidence. That is because of exaggerating the importance of the good news. However, as more and more information become available over a period of time, investors may become to realize that the emotions of the beginning was excessive. They start to correct their overreaction, which is the second part of it called correction, which finally leads to price reversal.

Profit-taking is also a part of price reversal, which can be explained by selling an asset that has experienced a significant rise in values, and locking it in gains. In general, the price has been on an upward trend over a period of time, it may lead to price reversal and affect the price in some way. Among the many ways, what I want to explore the most is the selling pressure, which also the most common factor in our life. When you invest in an antique, one day you want to sell it, which has been sold at a good price in the antique market. In this behavior, other people who also bought similar antiques need to understand why you want to sell the antiques to make profit. They may think that this antique is no longer worth collecting. At this point, there will be selling pressure occurs in the antique market, as more and more people sell it, it may lead to a decrease in prices.

What is more, behavioral biases play a significant role in the occurrence of price reversal such as overconfidence bias and anchoring bias. Firstly, the overconfidence can be explained as investors have an unjustified degree of confidence in their assumptions. These people think that their own predictions are more accurate than they actually are. Also, they may be slow to know that the market sentiment or trend has shifted and they may fail to recognize the full extent of the dangers involved in their assets. Secondly, for the anchoring bias, investors refuse the new price that is more deviate than the recent price. Similarly, these people are reluctant to accept new information and they may actively gain information that confirms their anchor points. This confirmation bias can lead them to forget information that contradicts their anchors.

Overall, in order to overcome the price reversal, understanding the underlying factors and patterns can help investors navigate the financial market effectively.

3.2. Momentum Effect

Momentum effect refers to the continues trend to the tendency of assets such as stock. In the other word, the assets who have performed well in the recent pass are willing to perform well in the near future, and those who not performed well are willing to continue underperforming well [7]. This phenomenon is on the opposite direction of the efficient market hypothesis because it assumes that the assets price should reflect information and follow random patterns. Moreover, two typed of momentum are cross-section momentum and time-series momentum. The research did by The Adam Zaremba in 2018 clearly shows us the anomalies that performed best over the past half year continue to do so in the future. This was evidenced by choosing 16 significant performance from 40 sample anomalies [8].

By talking about the methods for measuring momentum which can be separate in three parts: calculation of momentum signals, portfolio construction and rebalancing, risk management in momentum strategies. At first, investors can calculate the returns of the assets over half or one years and make a comparison with the related performance of the assets to a same category. And then, using the fundamental financial metrics such as revenue growth to analyze the changing of assets in these metrics. Finally, the investor could choose an asset that performed best or who have the most significant improvements as having positive momentum. For the second part, determining the composition of the portfolio is the most important. Last but not least, the investors should be sensitive to the market conditions and be prepared to exit if the momentum decreases. In sum, investors should have the ability of critical thinking, which could help them a lot when identifying assets.

By contrast, the strategies of momentum could still be challenging. First and foremost, the accuracy and completeness of the pass price are the most essential things, also known as reliable data for momentum strategies. The more data the investors have got the more strategies they can use in a proper way. Moreover, investors could pay more attention to the frequency of trading as commissions will increase the cost.

4. Prospect Theory

The prospect theory is the way that investors make decisions by considering the risk involved and the uncertainty. The fundamentals on prospect theory can be divided into different functions such as value function, S-shape value function and probability weighting function [9]. These functions are going to tell how investor assess to changes their wealth or well-being.

In the value functions, diminishing sensitivity and certainty effect are two things that I am going to talk about. For one thing, in a function, when you move further away from the reference point, your sensitivity of wealth or well-being could decrease because people usually do not pay much attention on a thing that deviates. Which means investor always more sensitive to small changes but near the reference points. For another, in certain effect, a certain gain or loss will give more weight while making the decision than its objective probability might suggest [10].

The decision weights are the key component of the prospect theory which means psychological factors used in analysis the assess probabilities when investors make decisions under uncertainty. Sometimes, people will pay more attention on small probabilities than others which may leading to overestimating the rare events, it is called underweighting small probabilities. By contrast, there is also overweighting large probabilities, for all of them, what investor should do is to consider all probabilities in equilibrium.

An opinion in a book which is called The Persuasion Code clearly shows that the effectiveness of aversion to loss bias is 2.3 times of winning value bias, which means if you lose one dollar, you need to win 2.3 dollar to cancel out this bias [11]. In conclusion, the aversion of people in loss outweighs their desire for equal value rewards. This can lead to the risk aversion when they face potential losses.

5. Conclusion

Behavioral finance is an integral and influential aspect of individuals' financial decisions, revealing that humans are not always the rational agents classical economics assumes them to be. Instead, psychological biases and emotions often wield significant influence over financial choices. Behavioral finance has illuminated numerous cognitive biases that can lead to suboptimal financial decision-making in recent years. These biases, such as overconfidence, loss aversion, and anchoring, underscore the importance of understanding the human element in finance. Furthermore, market anomalies, including price reversal and momentum effects, challenge the efficient market hypothesis. These anomalies suggest that markets are only sometimes as efficient and rational as once believed. They highlight the existence of opportunities for investors to capitalize on mispricing and market inefficiencies, thereby deviating from traditional investment strategies. While the insights provided by behavioral finance and the acknowledgment of market anomalies have greatly expanded our understanding of financial decision-making, it is essential to recognize the limitations of this article. One notable limitation is the need for more actual investigation and evidence collection. Conducting first-hand interviews and gathering primary data can be a time-consuming process. Additionally, the diversity of opinions among investors necessitates a large number of interviews to capture a comprehensive view of their perspectives and behaviors. In conclusion, behavioral finance has revolutionized our perception of financial decision-making by revealing the profound impact of human psychology and emotions. Market anomalies have further challenged traditional theories, emphasizing the need for a nuanced approach to investment. Nevertheless, continued research and data collection are crucial to providing more comprehensive insights into the complexities of investor behavior and financial markets.

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