

The Review of Loss Aversion

Yuling Liu

Southern Illinois University, Carbondale, Illinois, 62901, United States

Abstract. Loss aversion is a cognitive bias that refers to the tendency of humans to feel the pain of a loss more strongly than the pleasure of an equivalent gain. In other words, people tend to weigh potential losses more heavily than potential gains of the same value. This bias is a part of prospect theory, a psychological theory that explains how people make decisions involving risk and uncertainty. It's important to note that loss aversion is a natural cognitive bias, and while it can lead to suboptimal decisions in some cases, it also serves as a survival mechanism. Throughout human history, avoiding losses, such as the loss of resources or safety, has been crucial for survival and reproduction. Recognizing and understanding loss aversion can help individuals make more balanced and rational decisions. This paper starts from the manifestation of loss aversion. It explains the reasons for the formation of loss aversion and the influencing factors. Moreover, this paper provides practical application scenarios for better avoidance of badness and utilization of profitability in life by speaking about loss aversion in combination with real life and investment.

Keywords: Loss aversion; Cognitive bias; Prospect theory; Mechanism; Scenarios.

1. Introduction

According to Daniel Kahneman and Amos Tversky (1992), they have suggested that losses can be twice as powerful, psychologically, as gains. The response to losses is stronger than the response to corresponding gains.

There is nothing more classic than the mug experiment. The experimenter divided the volunteers into two groups and had them stay in different rooms. Then the experimenter gave the first group of volunteers a mug each and told them you now own the mug; while the experimenter only showed the second group the mug from a distance and did not give it to them. Afterward, the two groups of volunteers were asked to estimate the price at which they would be willing to sell (for the first group who owned the mug) or buy (for the second group who had only seen it a few times) the mug (the real price of the mug was \$4.50). The result was that the first group gave an acceptable average selling price of \$5.25, while the second group gave an average price they were willing to pay of \$2.50, which was less than half of the former.

This experiment indicates that people are more sensitive to "loss" than "gain". The negative utility of the same loss is much greater than the positive utility of the same amount of gain. Loss aversion refers to the perception that losses are more intolerable to people when they are faced with the same amount of losses and gains.

What are the reasons for loss aversion? This brings us to prospect theory. Loss aversion is an effect of prospect theory. It is also presented by 2022 Nobel Prize winner in economics, psychologist Daniel Kahneman.

Prospect theory refers to the behavior of people whose expectations are inconsistent with their expected utility in the process of making decisions in the face of risk. The author talked about prospect theory in 5 steps. First, between the "certainty of gain" and the "gamble", most people will choose the "certainty of benefit", which is called the certainty effect. Second, when choosing between a "certain loss" and a "gamble", most people will choose the "gamble", which is known as the reflex effect. Third, it is difficult to offset the pain of losing \$100 by the pleasure of picking up \$100 for nothing, which is called loss aversion. Fourth, many people have bought lottery tickets, although the possibility of winning money is minimal, but still some people have a fluke to fight small probability events, which has become obsessed with small probability events. Fifth, most people's judgment of gain or loss is often based on the "reference point" decision.

The so-called loss aversion refers to the tendency to prefer to avoid losses rather than gain equal benefits. This is remarkable in the field of economics, where the utility of monetary rewards depends on prior experience and what is expected to happen, as opposed to risk avoidance. According to Tim Vipond (2019), in behavioral finance, loss aversion refers to the trend of investors to be too afraid of losses and pay more attention to loss avoidance than gain.

All in all, Loss aversion refers to the fact that people, when faced with the same amount of gains and losses, perceive losses as more unbearable to them and have a strong tendency to avoid losses instead of gaining the equivalent value. The negative utility of losses is much greater than the positive utility. Loss aversion reflects the fact that people's risk preferences are inconsistent; when it comes to gains, people are risk averse; when it comes to losses, people are risk seeking.

2. Motivation

The modern financial system takes rational people as its starting point, but in reality, as we go deeper into the empirical evidence, we find a lot of phenomena that do not conform to the modern financial theory. Future to explain these anomalies, scholars from psychology and actual behavior, proposed behavioral finance theory to explain the anomalies. Loss aversion is one of the core assumptions in prospect theory.

This issue is so important that it is seen everywhere in life, and affects us greatly. However it can bring both merits and demerits. I would like to study it to better examine and utilize people's psychology so that they can avoid its negative effects meanwhile better apply it in their lives.

3. Mechanisms and influencing factors

Loss aversion is an internal negative emotion experienced by an individual in response to a loss, in which an individual's cognitive factors have an important and significant impact on the formation and extent of loss aversion. Kermer, Driver-Linn, Wilson & Gilbert (2006) in science argued that loss aversion was found to emerge only in response to people's anticipation of loss rather than actual experience of the loss. losses, and that the anticipation of negative emotions associated with losses is higher than the level of negative emotions experienced when losses actually occur, thus suggesting that loss aversion only occurs when people anticipate losses and not when they actually experience them.

The expectation of negative emotions from losses is higher than the level of negative emotions experienced when the loss actually occurs, thus suggesting that loss aversion stems from the degree of negative emotions caused by people's ex ante overestimation of the potential loss. Thus, it can be seen that individuals' expectations play an important role in the formation of loss aversion. Johnson, Haubl & Keinan (2004) conducted a study on loss aversion and concluded that loss aversion is generated due to the different order in which individuals see different sides of a problem.

Individuals' loss aversion is not only an emotional experience, but also the result of individuals' cognition, which is an important perspective for understanding loss aversion (Zuodong.L, 2012). Cognition has a significant impact on the formation and degree of loss aversion. From an emotional point of view, loss brings about a loss of utility and a sense of control over the use of goods, thus causing anxiety. In order to control psychological anxiety, the self-esteem defense mechanism will be activated to protect self-esteem, thus reducing the degree of blow to self-esteem. In order to control psychological anxiety, the defense mechanism of self-esteem will be activated to protect self-esteem, thus reducing the degree of blow to self-esteem. Cognitively, expected loss aversion is higher than loss aversion when the loss actually occurs. when the loss actually occurs.

There is a kind of loss aversion thinking in life is called Endowment Effect. This refers to the fact that once a person owns an item, then his value of that item is much higher than it was before he owned it. Everyone probably has clothes they can't wear or items they can't use, and they often think about throwing them away, but they only think about it and never act on it.

In the stock market, this may affect the timing of when we sell the stock. If people are slow to sell, they are likely to miss the best time to maximize the profit. Loss aversion is an instinctive human reaction, and in real life, everyone may have experienced a moment of loss of interest, and if we let our instincts take over, we are likely to fall into greater losses.

In addition, Loss aversion and Regret Aversion are the two concepts most relevant to the Sunk Cost Fallacy. The impact of loss aversion on the Sunk Cost Fallacy is primarily characterized as individuals' different levels of sensitivity to losses and profits, which in turn affects the expectation level of the status. Specifically, prior inputs are often viewed as potential losses, and due to loss aversion, decision makers are more inclined to invest more in sunk costs in order to avoid and minimize losses than to accept a certain amount of loss by admitting mistakes. Regret aversion is meant to be the result of the emotional experience of a decision maker comparing the actual outcome of a choice with the possible outcomes of different choices (Laomes & Sugden, 1982), under the influence of regret aversion, individuals have the motivation to avoid, reduce and minimize regret (Reb, 2008).

The empirical results found that the loss aversion tendency of securities regulators is significantly lower, while the regret aversion and sunk cost effects of the two are not significantly different; in contrast, the results of the data of investors in securities market show that there is a significant correlation between loss aversion and sunk cost, while there is no significant correlation between regret aversion and sunk cost (Xuguang.H, 2016).

4. Applications

4.1 Retail Sales

When a merchant runs a sale, the discount coupon which is available next time will usually be discarded or forgotten, but an immediately available coupon on the spot can drive consumers to buy something they didn't intend to buy.

For example, if you spend \$90 on something, and when you are ready to checkout, the salesperson says that if your purchase amount hit \$100, you are able to get a \$10 coupon. To elaborate, it is equivalent to spending another \$10 to get \$10. Furthermore, it can also be understood that if you don't spend \$10, you will lose \$10. So there is a high probability that the consumer will spend another \$10 on something they weren't even going to buy, and then use that \$10 coupon to buy another thing they don't really need as well because they don't want to make another trip for nothing. The result is \$10 for two items that are not necessary to the consumer but brings revenue to the merchant.

Moreover, if that is a store which sell goods that need to be weighed and priced, the condition will be more typical to use loss aversion to seize the heart of customers. For example, if the master first grabs a big handful of candy and then gradually takes some out while weighing it, customer will think he is petty. However if he wants to do better business and eager to attract more customers, the best option for the master is to grab a small amount first, and then gradually add while weighing. The feeling for customer is completely different. Although the final amount is completely same, losing candies will cause negative emotions for customers, while gaining candies during the procedure will make customers feel the money is worth spending. To make the selling process more successful, a good recommendation for the merchant is to grab a handful more to put in finally, the probability of the customer becoming a potential repeat customers is very large.

We are more afraid of losing one thing than gaining another. Rather than saying how good something is when marketing, it is better to say that if you don't buy it now you won't be able to buy it later. This will be more attractive to customers. So many businesses often engage in limited-term promotions, or specify limited-edition products. For example, in the spring, Starbucks launched cherry blossom flavor drinks and dessert, maybe you may not like this flavor, maybe you know that next spring they have the same thing, but once you see the word "limited", you will feel that if you do not buy now will be a loss. For businesses, from my point of view, in fact, regardless of whether the raw materials of the product is only available in a particular season or not, as long as it is labeled

with "limited sale", it will certainly be able to increase sales to a certain extent. For consumers, before consumption first calm down, a good rational analysis of this product on whether it is a necessary consumption will help customers to save money. Of course, if the sunk cost of the product is less than the utility of buying it, then it is better to purchase it. After all, happy emotions bring healthy psychology is consumption worthy.

4.2 Game industry

In the same way, Gacha Games are taking the global social game market by storm nowadays. One of the great pleasures of such games is collecting characters. Because the game company's actions are too unpredictable, some characters will only be made to return once a year, and some characters have not return for more than a year. So that players will have a feeling of "missing this time, I do not know when is the next time to meet my "oshi", which mean ones favourite character. So they will spend a lot of money on pulling in the banner.

A good example is game Genshin Impact. It is basically a free to play game, but you still have option to pay to gain more chances to gamble on characters. On June 16th, the banner of Kaedehara Kazuha and Alhaitham released. Since Kazuha is one of the most powerful character and he will just return once a year, which means if player loose this chance, they have to wait for a long time to see him again. From the data we can observe that, on the first day, 12.93% of players prefer to pull Kazuha while 1.9% of players chose Alhaitham. In addition, the revenue hit \$6,000,000 just in the first day and is 3 times higher than the last banner.

To be more specific, there is another strategy to increase sales for the game company. Attributing to the constellation system (the more amount of a same character the more powerful he/she will be), someone can give the information of if player do not have multiple constellations, then they cannot show the character's true strength". This kind of talk will also make players feel that, since this character I have already got, if not pull more to make him/her stronger then it will be a loss. As a result, players will continue to spend money gambling on characters.

4.3 Education

In education, it is also useful to use loss aversion, A easy-understanding example is "reward before punishment". An experiment from the book 《The Why Axis: Hidden Motives and the Undiscovered Economics of Everyday Life》 shows,

giving a child \$100 before a test and say, "If you don't do well on the test, you should give the \$100 back," the child who is implied to do so will score higher than the child was told, "I'll give you \$100 if you do well on the test. Because in the first situation, the child has already gain the money, giving it back means losing it. It is more painful to lose something that you have already got than to never get it. Therefore, the child in the first case will study harder, not to gain, but just to not lose. By rewarding before punishing, it is more likely to stimulate a person's potential and make a person more motivated.

When we study and work, we usually only think about what we can get in return for doing these things, but more importantly, we can think about what we will lose and what consequences will result if we don't do this. For example, we will get sick if we don't exercise, we won't be able to maintain our current ranking if we don't study, and we will be fired if we don't work well. When people experience a lapse in concentration, imagine the serious consequences and they will be able to maintain the enthusiasm.

5. Conclusion

On an individual level, understanding loss aversion can help people make more informed decisions in various aspects of life. By weighing the potential losses against the gains in different situations, individuals can make choices that align with their priorities and long-term goals. Whether it involves financial investments, career decisions, or personal relationships, recognizing the influence of loss

aversion can empower individuals to overcome their biases and make choices that lead to optimal outcomes.

In conclusion, the concept of loss aversion holds valuable insights into human decision-making processes. Recognizing the impact of losses compared to equivalent gains can provide businesses with a strategic advantage in tailoring their marketing strategies, game developers with tools to create engaging experiences, and educators with effective motivational techniques. Moreover, individuals can leverage their understanding of loss aversion to make more informed decisions and navigate various aspects of life with a greater awareness of the potential consequences. By acknowledging the power of loss aversion, individuals can strive for optimal outcomes and enhance their overall decision-making abilities.

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