Sales Strategy, Risk Investment and Property Rights Allocation: Analysis Based on Endowment Effect

Tianlei Hu *

Beijing No.8 High School International Department, Beijing, China

* Corresponding Author Email: htao@pbc.gov.cn

Abstract. The endowment effect suggests that people value what they have now and the status quo, and thereby want to avoid losing what they have or just step out of the comfort zone. Several scholars have identified and demonstrated that people's utility is reduced by a given quantity of loss more than it is increased by an equal amount of gain. Due to the endowment effect, the decision-making process is out of balance, and are more likely to avoid harm rather than pursue profits. This paper reviews the concepts, experiments and applications of endowment effect and loss aversion theory in behavioral economics. Furthermore, it explains endowment effect using three economic applications of sales strategy, risk investment and property rights allocation. In all the three economic applications, people's economic behavior totally conforms to the endowment effect: people buy things that they don't need, make the investment irrationally, or bring trade frictions. Due to its commonness, endowment effect has been widely tested and applied, attracting heated discussion among academia research and policy regulators. In this sense, this paper also provides us a good understanding of endowment effect and behavior economics.

Keywords: Endowment effect, loss aversion, behavioral economics, Coase theorem.

1. Introduction

As an integral and complex component of economics, behavioral economics is not separate from "the conventional ingredients" in the other economics branches [1]. In order to identify flaws or omissions in current economic models, behavioral economics, a subfield of practical economics, organically combines the theory of behavioral analysis with economic operation rules, psychological science, and economic science. In a word, behavioral economics investigates the underlying mechanism of human decision-making and how it works out with economic outcomes. Due to its thought-provoking and instructive characteristics, behavioral economics has been playing an increasingly important role in either academic research or relevant policies. Thus, this paper attempts to explore the charm of the endowment effect with a thorough insight into three economic applications related to the effect, which also provides us with a deeper understanding of the endowment effect and behavioral economics.

Traditional economic theory holds that, the willingness to pay for a good and the need for compensation that people lose the same good they currently own are totally equivalent. But the theory of endowment effect denies this equality principle. The idea is that when people own something, the property of owning will cause the owner to overestimate the value of the good. In other words, after owning an object, people tend to think that the thing they own are more valuable than the same thing that other people own. The theory, proposed in 1980 by Richard Taylor (the winner of the 2017 Nobel Prize in economics), also appears in behavioral finance and can be accounted for by the theory of loss aversion. The theory of loss aversion states that the loss of utility for people will be greater than the increase in utility for the same gain. Therefore, when people make decisions, they are more likely to weigh the interests differently, and the idea of "avoiding the loss" is far more than the consideration of "pursuing the benefit".

As mentioned above, the endowment effect can not only explain various economic phenomena and laws, but also extend to other fields of academic research. Therefore, this paper attempts to take the most basic experiment, the application of endowment effect in behavioral finance, and the application of endowment effect in Coase theorem as examples to describe and explain the

endowment effect. In this way, this paper can not only help us fully understand the widely used and far-reaching endowment effect theory, but also offer us more insights into different perspectives and applications of behavioral economics.

2. Literature Review

2.1. Behavior Economics and Endowment Effect

Behavioral economics employs and fixes three core principles of economics, that is, optimization, equilibrium and empiricism [2]. Traditional economics describes human optimal behaviors, whereas behavioral economics predicts human actual behavior. Describing optimal behavior is a fundamental part of any kind of economic analysis, however, by including viewpoints from other social science disciplines, behavioral economics improves models of human economic actions [3].

Among which, one of the principles is the endowment effect that people tend to more concern about what they have and how their own situation compares to the reference point [4]. The endowment effect is about an assumption about how people behave in daily life. For example, it has been observed in the application of credit cards. It would prefer that any discrepancies between customers who pay with cash and those who use credit cards take the form of cash discounts rather than credit card surcharges because consumers tend to see cash discounts as an opportunity cost of using their credit cards while surcharges are seen as the out-of-pocket expense. Furthermore, it is also widely used in the marketing strategy. If the consumer is fully comfortable with buying, the cost of keeping the good will be viewed as an opportunity cost. In this case, the endowment effect works, and a sale becomes more likely to happen.

Although the endowment effect has been discovered more than 30 years ago, it is known as “one of the most powerful findings in decision-making psychology”, and it has been extensively verified and widely adopted in various applications and academic research in more other disciplines [5]. And the endowment effect would vanish in a number of laboratory trials when the experimental procedure was altered, which made the researchers wonder if the effect was actually caused by preferences that are dependent of reference. In addition, experiments conducted outside the laboratory witnessed complex findings, and many theories have been proposed to improve or replace the theory of the endowment effect [6].

2.2. Loss Aversion

Carnerman and Tvorsky (1984) call the manifestation of an asymmetry of value loss aversion, that is, the negative utility of forgoing a good outweighs the benefit of obtaining it [7]. The drawbacks of keeping the status quo outweigh the positives of changing it, and loss aversion is the idea that people have a strong inclination to keep the things as they originally are.

Samuelson and Zeckhauser (1988) have proved loss aversion in an experiment [8]. In this experiment, some subjects were asked to make a hypothetical choice, such as assuming that they will be inherited a large amount of money from their elders and are now considering different portfolios. They can choose from the following options: including medium-risk companies, high-risk companies, short-term treasury bills, and municipal bonds. It has been found that compared with other options, they prefer to maintain the status quo and stay still. Many other scenarios were also studied and the same basic experimental design was used. All of the findings indicate that an option is undoubtedly more preferred by the decision-maker when it is chosen to represent the status quo. And with more options, the benefits of the status quo will become more apparent.

A core conclusion of risk aversion research is that the best way to explain this choice is to assume that the important carrier of utility is not the state of wealth or welfare, but the change relative to a neutral reference point. For another, the change of losses that make things worse are more prominent than the change of improvements or gains. For example, the gain of utility of getting a gift is 1 RMB, but the loss of utility of losing a gift is 2 RMB.

3. Related Classical Experiments

In fact, the earliest experiment about endowment effect was conducted by Knetsch & Sinden (1984) based on the lottery [9]. The judgment of the lottery value of the experimental participants should reflect the experimental participants' risk aversion or self-preference, and this tendency is symmetrical across measurement benchmarks.

The University of New England introduced a preliminary test to assess equality or inequality for 76 students. Two colored lottery tickets were randomly assigned to all participants (76 students). The conditions of the lottery and the other options presented to them were then discussed. The winner could choose between receiving $50 in cash or coupons for local supermarket goods worth $70. For the other half of the participants, keeping their ticket in the drawing for the chance to win one of two color tickets cost $2. The other half of the participants, however, were given $2 each in exchange for giving up their opportunity, or their right to enter the entry, while they were still permitted to enter the draw for free (free entry). In terms of the experiment itself, the proportion of participants who pay $2 should match the proportion of participants who refuse $2. In Table 1, the results show that of the half who were offered the chance to pay $2 to enter the draw, 50% said they thought the chance was greater than $2 by the amount they actually paid; whereas of those who offered compensation, 76 percent believed that the opportunity was worth at least $2 to them by refusing to pay. Apparently, people are more afraid of losing than that of having. In practice, people prefer the status quo to the risk of potentially getting greater benefits.

Table 1. The earliest experiment about endowment effect

Subject group	Value the chance more	Value the chance less
The half who were offered the chance to pay $2 to enter the draw	50%	50%
The half who were offered the compensation $2 to give up the draw	76%	24%

4. Endowment Effect in Sales Strategy

Thaler did an experiment when explained endowment effect. To be specific, the subjects were split into three groups. The first group was tasked with buying a coffee mug from a merchant, the second group was tasked with selling a coffee cup, and the third group had the choice of purchasing a mug or receiving the same amount of money. All three groups were asked to put a price on the mug. As shown in Table 2, the second group of buyers had a median estimate of $2.87, very close to the third group of optional estimates of $3.12. However, the median sellers estimate of $7.12, double of the first two groups.

Table 2. Experiment of endowment effect in sales strategy

Subject group	Median self-valuation of the coffee mug
Sell a coffee mug	$2.87
Buy a coffee mug from a seller	$3.12
Own a mug or receive the same amount of money	$7.12

Therefore, endowment effect has been widely adopted in sales strategy. For example, merchants like to use the sales promotion of "after XX time, the price will go up to XX" to create a sense of tension, so that the consumers are afraid of missing out on the offer and rush to buy. At this point, the consumers need to rationally judge whether they really need this product, and the difference between buying it or not buying. If there is no difference or the purchase of goods has no practical significance, then such an unnecessary consumption can be reduced. Second, the endowment effect is also often used as a "free trial" or "use now, buy later" sales mean to encourage the consumers to buy. This is because after a few days of getting along, consumers will have an illusion that they already have the goods, and they are not willing to lose them anymore. Last, the most common 7-day return or

exchange for no reason in e-commerce shopping is not only a guarantee for consumers to receive fake and shoddy products, but also a means for merchants to use the endowment effect. Apparently, the endowment effect can be seen everywhere in sales strategy, encouraging a large number of consumers to keeping the good.

5. Endowment Effect in Risk Investment

Endowment effect is also an important concept in behavioral finance and consumer psychology. It refers to people's evaluation of the value of goods due to the integration of subjective emotions when people have a certain good, and people are more likely to keep the risky portfolio rather than sell it.

There are many reasons for endowment effect in risk investment, and one of the most important reasons is loss aversion. When people have a portfolio and intend to sell it, they often consider the price rise compensation after selling the portfolio, and then add this very vague price compensation expectation to the selling price. Whenever the investors want to sell a stock, they often have a tangle in the mind that the stock will continue to rise after it has been sold. In a word, the endowment effect will have a significant impact on the rational judgment of investors in risk investment. Figure 1 displays that the value is impacted by the profit more than the loss by the same amount. For example, under the influence of the endowment effect, investors tend to obtain the information selectively, and often like to read articles that are consistent with their own cognition, rather than articles that are contrary to their own cognition. And the endowment effect has brought an advantage to the investment target under the influence of personal emotional factors. Also, people often only recognize the positive news of the portfolio, but often ignore its negative new. Moreover, people often see discussions about individual stocks on the internet that the investors participating in the discussions tend to be divided into two groups to attack each other, and neither can listen to the other's views. In fact, the disadvantages and advantages of an investment target are objective, and the endowment effect may hinder the establishment of a correct cognition. Therefore, if the invested company behind the stock from both positive and negative aspects can't be understood totally, a general view of the company is often not comprehensive and can be totally controlled by the endowment effect (shown in Figure 1).

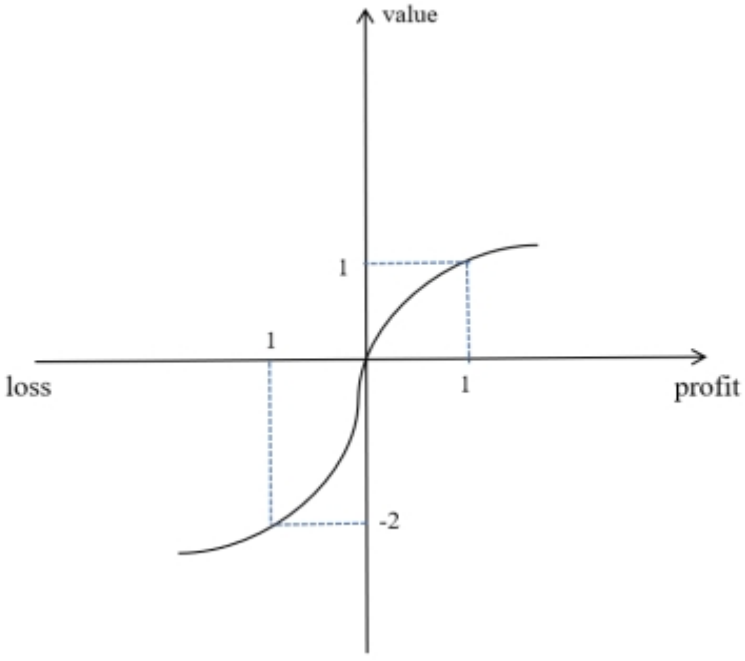


Figure 1. Endowment effect in risk investment

6. Endowment Effect in Property Rights Allocation

The Coase Theorem also appears to emphasize the theory of the endowment effect. If there is no wealth effect or transaction cost, the Coase Theorem generally holds that the initial distribution of property rights should not affect how efficiently the final distribution is distributed because the parties involved will engage in multiple transactions to maximize their own individual surpluses. The experimental findings, however, defy the fundamental presumption that willingness to pay and willingness to accept are unrelated to the initial distribution of ownership rights, implying that the final distribution of ownership rights will be influenced by the initial distribution of those rights. For instance, based on the expectation of the Coase theorem and the endowment effect, Jolls et al. (1998) addressed how individuals might not observe a lot of negotiating surrounding court orders [10]. And mandatory contract provisions may also persist even after enforcement is no longer required because people may become more aware of their own rights after they are considered [11].

In particular, imagine that a plant is adjacent to a residential area and the waste gas it produces has an impact on the inhabitants' health. The Coase Theorem states that by defining the rights, the externality can be resolved. Moreover, the externality can be solved by clarifying property rights without transaction cost or other frictions, and it does not matter how property rights are distributed. In particular, the government can give the factory property right, that is, give the factory the right to pollute the environment, the households must pay a specific charge to the manufacturer in order to receive clean air. On the other hand, if the inhabitants receive the property right, such as the right to breathe clean air, the factory must compensate the locals financially for their contribution to environmental pollution. However, under the endowment effect, the expected prices of buyers and sellers of property rights can be very different.

7. Conclusion

According to conventional economists, people choose the most practical alternative available in an effort to maximize utility. And in interactions with others, people always attempt to choose the most practical option of action, hence empirical economic research based on data analysis is necessary. On this basis, behavioral economics further refines and extends the above principles. As mentioned above, endowment effect plays a prominent role in daily life. To be specific, this paper finds that people's economic behavior conforms to the endowment effect: in terms of the sales strategy, people may buy things and keep what that they don't need; as for the risk investment, people often make irrational investment; for the property right allocations, endowment effect further cause trade frictions.

However, it can also be seen those irrational behaviors of asymmetry value caused by the endowment effect often leads a substantial reduction in the market efficiency, and this phenomenon will not decrease or eliminate even when the individuals' experience increases. Therefore, in market trade, the consumers should avoid unnecessary consumptions. In risk investment, the investors should be aware of endowment effect and give up the irrational investment in time. As for the government, the regulators should not only take the endowment effect seriously, but also formulate reasonable and fair regulations and policies to avoid market inefficiency and high frictions.

References

[1] Laibson D, List JA. Principles of (behavioral) economics. American Economic Review, 2015, 105 (5): 385 - 90.

[2] Acemoglu D, David L, John AL. Economics. Upper Saddle River, NJ: Prentice Hall, 2015.

[3] Thaler RH. Behavioral economics: Past, present, and future. American economic review, 2016, 106 (7): 1577 - 1600.

[4] Thaler R. Toward a positive theory of consumer choice. Journal of economic behavior & organization, 1980, 1 (1): 39 - 60.

[5] Knetsch JL, Tang FF, Thaler RH. The endowment effect and repeated market trials: Is the Vickrey auction demand revealing? Experimental economics, 2001, 4 (3): 257 - 269.

[6] Marzilli E, Fuster A. The endowment effects. Annual Review of Economics, 2014, 6 (1): 555 - 579.

[7] Kahneman D, Tversky A. Choices, values and frames. American psychologist, 1984, 39 (4): 341 - 347.

[8] Samuelson W, Zeckhauser R. Status quo bias in decision making. Journal of risk and uncertainty, 1988, 1 (1): 7 - 59.

[9] Knetsch JL, Sinden JA. Willingness to pay and compensation demanded: Experimental evidence of an unexpected disparity in measures of value. The Quarterly Journal of Economics, 1984, 99 (3): 507 - 521.

[10] Jolls C. Behavioral economics analysis of re-distributive legal rules. Vanderbilt Law Review, 1998, 51: 1653 - 1660.

[11] Knetsch JL, Wong WK. The endowment effect and the reference state: Evidence and manipulations. Journal of Economic Behavior & Organization, 2009, 71 (2): 407 - 413.