



# The Analysis on the Endowment Effect

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**Abstract.** The endowment effect is very common in real life, and it can affect people's life in many aspects. It can affect the market efficiency, causing the consumers to have an extra cost and an opportunity cost, which will have a bad effect on society, and influence the government in making decisions. So in order to solve these problems, studying the endowment effect seems very important. And these experiments will mainly focus on how the endowment effect may affect the people. This paper will mainly focus on three experiments, and they all show that when people once own an object, the value of the object in their opinion will increase a lot, but that object needs to be an item with real value, not like currency or voucher that kind of thing which does not have a real value.

**Keywords:** Endowment effect · Coase Theorem · Value

## 1 Introduction

The endowment effect is the tendency for people to ascribe more value to items that they own to compare to equivalent items that they do not own [1]. The endowment effect is proved to be pertinent to the Coase Theorem, the Coase Theorem [1] says that the allocation of resources to individuals who are free to bargain and transact at no cost should be independent of initial property rights. If the endowment effect holds, then? the Coase Theorem is impossible to happen. Economists find that endowment effect will make people be content with the status quo, and not make any change, also endowment effect will make people have loss aversion. And how to prevent endowment effect become an important issue which is very hard to solve yet, because endowment effect is hard to avoid, it will not eliminate as experience growth. In this paper the author is going to discuss how endowment effect can affect people, and how to prevent these possibilities to make endowment effect happen. The researcher is going to discuss three experiments that are already done and proven by the economists before, analyse these experiments carefully and find out how endowment effects work and how to solve these problems. By analyzing these experiments, researchers can know how endowment effect works on people, and can prevent people from contenting with the status quo, and the government can achieve their final goal, which is the highest efficiency for the market. So doing this experiment is very meaningful, which will be very beneficial to society. It helps individuals avoid extra cost and opportunity cost in the consumption, and make government achieve the highest market efficiency. The paper proceeds as follows. In Sect. 2 the author described the effects and causes of endowment effect, and how to solve it. Section 3 give out a conclusion of all the paper.

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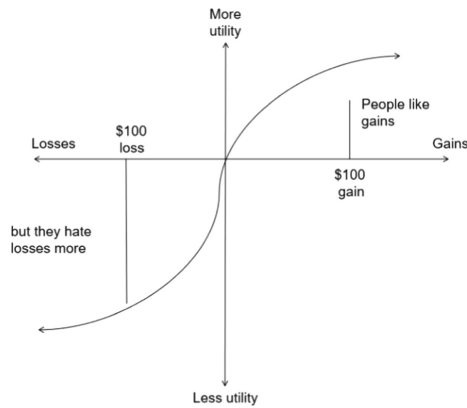


Fig. 1. The value function

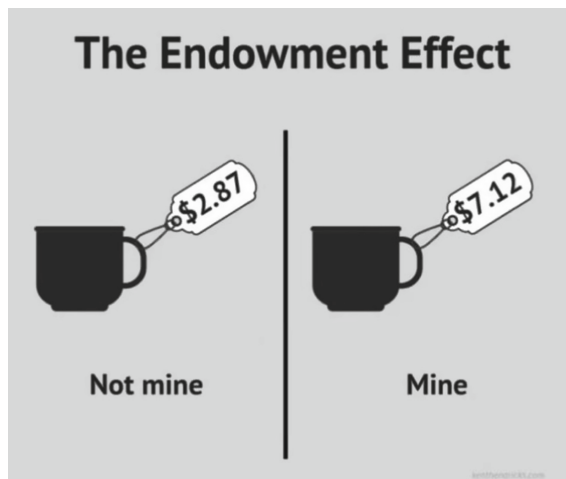


Fig. 2. The Endowment Effect

## 2 Application

### 2.1 Application 1

So firstly, the author is going to talk about the first experiment, which is about the voucher, cups and pens. In 1990, Kahneman, Knetsch and Thaler do an experiment together. They tested 44 college students, and separate them into two groups [2].

1. The first group was given a voucher and a specification. The specification mainly told them the value of their voucher- $x$  dollars (the value of  $x$  is different to each people).
2. They were told that vouchers can be traded into real money after the experiment, the basis of price will be determined by the transaction.

3. They were asked to choose the price they would like to sell the voucher, from 0–8.75 dollars.
4. The second group who didn't get the voucher was also told the value of the voucher as  $x$  too. And they were asked to choose a price they would like to sell the voucher, from 0–8.75 dollars.
5. The experimenter gathers the price that they would like to sold the Voucher, and calculate the clearing price and the quantity traded.
6. Then they repeat the experiment three times.
7. After three times, the experimenter does replace the voucher with the cup, and the experiment is repeated three times.
8. After that, the cup is replaced by a pen, and the experiment is repeated again for three times.

The result is obvious that the voucher market is a lot different to the pens and cups market. In the voucher market, the expected price for the buyers and the sellers is almost the same, integrate the three experiments, the ratio of actual turnover against the expected turnover is equal to 1. But comparing it, in the pen and the cup market, things are quite different, in the pen market the ratio of actual turnovers and the expected turnover is 0.41, and the ratio for a cup is only 0.2. Although the experiment is repeated many times, the consumption of these goods still does not increase, which shows that the testee is not likely to reach the same dealing price in order to achieve the highest market efficiency. But this does not happen in the voucher market, because the value of voucher is already known, and the precisely known the value of the voucher will lead to a vague favour to consumers about this item. So when consumers are selling these things, they are not willing to use it, but to sell it at a higher price in order to earn more, there won't be an endowment effect. So the expected turnovers are same in the voucher market, but different in the cups and pens market. This experiment shows that once people get an item that is available for their consumption, the value of the price will grow dramatically. These non-rationality behaviour always cause a reduce inefficiency of the market, and this phenomenon will not eliminate as experience grow. So the endowment effect will be very hard to prevent, and will viscosly affect the market.

## 2.2 Application 2

And then the author is going to talk about the second experiment which is an experiment done by the economist Jack Knetsch in the year 1989, has made an experiment, he choose two items of similar price-a white porcelain coffee cup, and a box of Swiss chocolate which is 400 g weighted [3].

1. He randomly separates the testee into three groups, the first group can choose a coffee cup or a bar of Swiss chocolate they would like to choose, but the second group can only choose a coffee cup. Then the third group can only choose Swiss chocolate.
2. They were asked whether they are likely to exchange the item they have with the other item that they don't own.



**Fig. 3.** The voucher of shops

3. In the first group, 56% of the testee choose a coffee cup, 44% of the testee choose Swiss chocolate.
4. In the second group, only 11% of the testee would like to exchange the chocolate for a coffee cup,
5. In the third group, only 10% of the testee are likely to exchange the coffee cup for the chocolate.

The result shows us that once people own a coffee cup or chocolate, they tend to think that the coffee cup and the chocolate is more valuable than the items they do not own, so they are not likely to exchange. The Coase Theorem says that, if the transaction cost is zero, the allocation of property rights will not affect the market efficiency. But when there is an endowment effect, it will affect the market. Because of the endowment effect, the owner of the item will want to sell the item he has at a very high price, the non-rationality on him will increase a lot. And consumers are not likely to buy the item at this price, for it will have an extra cost and an opportunity cost on consumption. And this will lead to a reduction in the volume of businesses. According to the Coase Theorem, if there is no cost in the transaction, then the resources will be allocated efficiently. But actually, there will often be an endowment effect, so the initial allocation of property rights seems very important. Because the government wants to achieve the lowest transaction cost in order to clear the property rights and highest allocative efficiency. But if there is an endowment effect, then the government should concern about the low efficiency of the market, so they should not depend on the market regulation, but focus on the allocation of property rights. And then, the people are unlikely to change the status quo, for they do not like losing things, and this will lead to a large resistance to the revolution done by governments. At last, the endowment effect will lead to a loss aversion, which may be reflected in the housing market, when governments are making resettlement, the

residents always want the government to give them more money to make them move, and this is an embodiment of loss aversion.

### 2.3 Application 3

And at last, the author is going to talk about the third experiment. The psychologist finds an amnesia patient, and patients like him with amnesia can only remember things that happen 2 or 3 min ago, because they have injured their memory system, so they can not remember things earlier than that [4].

The economist show the patients six pictures, and they were asked to choose from the picture they like the most to the picture they hate the most.

After sorting, the experimenter will ask the experimenter to choose a picture from the third he likes and the fourth he likes, it is obvious that he will like to choose the third one, and the psychologist promises him that he will give it to him three weeks later, and the psychologist leave.

After five minutes, the experimenter comes back, and because the memory of the patient is only about two to three minutes, so they have already forgotten about the pictures now.

The psychologist asked him to choose again from the one he liked the most to the one he disliked the most.

The psychologist repeat the experiment several times.

The result is very striking that the patient's favourite picture this time is the picture that he likes the third one last time, which is the picture that the experimenter promised to give him. But the truth is that he already forget the promise of the experimenter, but they still choose the third picture. So this is an example of endowment effect, it shows that when people's decision making will change as their evaluation change in gain and loss, the memories will not affect them in decision makings. There is also an experiment that is done on monkeys. In 2007, the economist Brosnan did an experiment which use gorillas as the testees [5]. The gorilla was separated into two groups, one group of gorillas were given a jar of peanut butter before the test, and the other group of gorillas were given an orange juice popsicle before the test. The first group was asked to trade the orange juice popsicle with the peanut butter. The second group was asked to trade the peanut butter with the orange juice popsicle. And the results are surprising only 42% of the gorillas in the first group are willing to exchange the orange juice popsicle with peanut butter, and only 11% of the gorillas in the second group are likely to exchange the peanut butter with orange juice popsicle. This shows that the endowment effect not only happens among people, but also among those high intelligent animals, such as the monkeys. So the endowment effect is more like an instinct that requires less or no thinking, which means that it is very hard to avoid only when people's evaluation change in loss or gain we can control the endowment effect.

## 3 Conclusion

In conclusion, the endowment effect will occur once people own it, and will affect the society in many aspects, for instance it will influence the market efficiency and cause

the consumers to spend more money on consumption, which will lead to a reduction in the quantity traded. Also, the endowment effect will affect the Coase Theorem, and make it not work, so the government need to concern a lot in order to achieve the highest efficiency. At last, the endowment effect is very hard to avoid and is due to the evaluation of loss and gain but not the memories of owning it. And it does not only happen among people but also in animals with high intelligence. This paper is lack solutions to solve the endowment effect in these three experiments, and this will be improved next time by searching for more experiments that say how to solve the endowment effect. And I think that the future studies will mainly focus on the measurements in solving endowment effect, because it is very hard to prevent, and have a lot of disadvantages to the society.

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