

How Anchoring Effect Explains Individual Behaviour and Economic Outcome

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Abstract: The exploration of anchoring effect has developed for a long time in history, and there are many outstanding works. This paper briefly introduces the possible influence of anchoring bias on individual behavior and economic outcomes in behavioral economics, and summarizes the definition, background and significance of this bias. It also uses three applications, including the estimation in the stock market, the retrospective data in the empirical research and the marketing and advertising to prove that the anchoring effect could be important and common both in daily life and economic activities as thinking and decision-making will be affected by this effect. This article finds that the anchoring effect does exist in many economic activities and affects judgments and decisions. This kind of influence sometimes leads to misjudgment and brings negative significance, but sometimes it can be used by people.

Keywords: anchoring bias, behavioral economics, economic activities, judgments, decisions

1. Introduction

According to the definition by Tversky and Kahneman, anchoring effects are disproportionate influences on decision makers that bias their judgments towards the value initially proposed [1]. If decision makers rely too much on information that already exists or the first information they find when making decisions, anchoring bias can occur. That is, they make estimates by starting with an initial value and then making adjustments to arrive at a final answer. The initial value, or starting point, may be suggested by the formulation of the problem they are facing, or it may be the result of a partial calculation [1]. In either case, adjustments are usually insufficient. Different starting points will produce different estimates that are biased toward the initial value.

The following experimental example helps to interpret its definition. The experimenter gave the high school students five seconds to do an estimation of a calculation problem. The first group was given the problem of multiplying one by two by three until they reached eight, while the second group was given the problem written in reverse, starting at eight and multiplying to one. The result is that students assigned to the ascending group were overly concerned with the smaller numbers at the beginning that they saw and gave an incorrect answer, which is too small, and the ascending group gave a larger estimate. This is an example of anchoring bias. Specifically, in this example, the numbers that the students saw at first became their anchors. They were influenced by it and were not able to make sufficient adjustments towards the correct answer. As a result, this anchor leads to their wrong answers.

This essay will focus on this bias and argue that anchoring bias does exist in various economic activities and will affect the behavior of people, including both negative and positive effects. To illustrate this point, the background and significance of this bias will be explained first. Three possible applications in economic activities will then be shown. In this article, it is the main source of theoretical basis to analyze and summarize the outstanding works of other authors. In addition, finding the trace of this effect in real world economic activities is the main research method, including analyzing what are the anchors and insufficient adjustments, how this effect affects decision makers or parties, and what could be the possible outcomes in these specific examples. The main purpose of this study is to provide a conjecture about why people make wrong judgments and decisions because of anchoring bias, and to provide a possible reference for people to make judgments about economic activities in the future.

2. Overview

In view of its relative universality and importance, many scholars have supplemented and developed its theory throughout the ages. Wei argued that the anchoring effect is one of the most robust cognitive heuristic methods [2]. He also mentioned that the earliest proponents of anchoring bias can be traced back to the study of psychophysics, in which the judgments of others' weights are influenced by an extreme weight [2]. Slovic first put forward the concept of decision anchoring, and studied the description of preference inversion [2]. Tversky and Kahneman first proposed that the anchoring deviation was caused by insufficient adjustment, as the final judgment was assimilated as the starting point of judgment deliberation [2]. Unfortunately, even though its theory has been developed for such a long time, many authors still admit that the psychological mechanism of anchoring has long been a mystery [3]. There are theoretical gaps in how the anchoring effect occurs, how to avoid it as much as possible, or how to use it. Therefore, further research on it is more urgent and important.

As for why anchoring bias is important, or why it is worth studying, on the one hand, it is considered to be common, and on the other hand, it will affect the judgement and decision-making process, including both positive and negative influences. Kahneman suggested that anchoring bias is very common and important in daily life [1]. Mussweiler et al. also argue that the anchoring effect has been considered as a truly universal phenomenon, and has been observed in various fields [4]. It has practical significance for various decisions in the real world. According to the authors, anchoring effect is possible to affect pricing decisions, estimate for prime interest rates, and the final agreement of a negotiation, which could be strongly influenced by an initial offer [4]. To take a more specific example, if the decision-makers rely too much on fixed standards or norms for judgments, it will undoubtedly lead to a miscalculation of the status quo. This is like a stock market analyst who excessively refers to the previous standards or the level of their peers when analyzing the status quo of the company, which could lead to wrong estimations. It could be convincing to say that the study of anchoring bias is important and useful precisely because it occurs among people. Not only are individuals affected by it in their daily lives, but people also make mistakes in judgement and decisions in economic activities. Fortunately, Mussweiler et al. comment that the anchoring effect can actually be avoided or at least alleviated by using negative strategies, thereby alleviating anxiety about its negative significance [4]. Additionally, people could benefit from the correct use of the anchoring bias in their economic activities, if it is used intelligently. Examples of using the anchoring effect to gain benefits are also common, such as advertising companies designing advertisements to attempt to attract the desire of customers to buy with a nice first impression.

3. Applications of Anchoring Bias

Anchoring bias has many practical applications in economic activities, and many authors have conducted experimental studies. Next, this paper will choose three representative applications to simply analyze the influence of anchoring effect on economic activities, including both destroying correct judgments and gaining benefits.

3.1. Application 1 - Stock Market

The first application is the anchoring effect in the stock market. Research by Cen et al. found that market participants, such as sellers, analysts, and investors, would be affected by anchoring bias when estimating the future profitability of the company. [5] They constructed a measure of the level of forecast earnings per share (which is denoted CAF). It is the difference between the forecast earnings per share (F_FEPS) of a company and the industry median forecast earnings per share (I_FEPS), measured as the absolute value. Using American data from 1983 to 2005, they found that the earnings forecasts of analysts for companies with high CAF were more optimistic than those for companies with low CAF. Stock market analysts who forecast future revenues based on a common market standard will have their judgement influenced by this standard. Their forecasts may be close to this figure, resulting in an over-or under-estimate. In this example, the standard in the stock market becomes the anchor. The insufficient adjustment here is that analysts do not seem to make sufficient upward or downward corrections when the current forecast earnings per share for a firm is already well above or below the level of its competitors. This is a problem caused by the anchoring bias of analysts to industry norms, which causes analysts to misjudge. This kind of wrong judgment may have a negative impact on companies that want to make profits in the stock market.

3.2. Application 2 - Data Collection

Godlonton et. al. found that retrospective data in self-reports can be affected by anchoring bias [6]. The authors designed three rounds of surveys, at the end of 2011, 2012, and 2013, respectively, in the central United States. A total of 554 people are tested every year. The researchers claim it is important for research in economics to be able to collect accurate data, which includes retrospective data, because it may affect the correctness of the experiment. However, precisely because such data are recalled by the respondents, this is inevitably subject to bias. The experiment used the values from the 2013 survey as an anchor to analyse whether their subsequent recall of the 2012 data would be influenced by the anchor. The results of the experiment showed that the 2013 anchor values strongly influenced the 2012 recall values, meaning that anchoring bias was present. Respondents used the current data as an anchor and did not make sufficient adjustments when recalling past data, which can result in some degree of overestimation or underestimation. Specifically, there is a large bias towards negative changes in objective indicators (income, wages, hours worked) and a bias towards positive changes in subjective indicators (happiness, health, stress). This can lead to inability for researchers to collect accurate data, as well as measurement bias. Maniadis also commented in his article that anchoring bias can lead to false results in some experiments, and perhaps the positive conclusions they get are false [7]. However, researchers could also use it in turn in order to develop better experiments knowing these characteristics, which requires further discussion.

3.3. Application 3 - Marketing

Although anchoring bias can destroy economic activity and have negative impacts on people, understanding its characteristics and using it a little can also bring people a certain amount of wealth. This application also comes from an experiment. In studying marketing communication, Bunčić et al.

found that by exploiting the anchoring effect, businesses could sell more goods and make more money [8]. The purpose of this experiment is to test the use of cognitive bias in advertisements. They designed an experiment that including watching advertisements on eight platforms (some TV stations and some online platforms) in three different time periods over two days in March 2020, including 80 advertising samples broadcast on TV and the Internet. The experimental results show that among the 80 advertisements watched, 63 revealed cognitive bias, accounting for nearly 80%. It is believed by the authors that anchoring bias is used in most advertisements. According to the study, consumers are influenced by personal characteristics, habits, norms, and past experiences. They would be more willing to buy the product described in the advertisement, which showed credible sources and reasonable prices, and they were very familiar with some information in it. Companies can use this feature of consumers to make better advertisements, create effective marketing communications, and attract them. A common example is that businesses let well-known stars or celebrities endorse their products. If these advertisements make people feel that the stars they are familiar with will recommend them, maybe they will be more willing to buy them. Their experiments found that in marketing communications, messages are often deliberately constructed by merchants in a way that stimulates certain cognitive biases, so they can lead consumers to desired outcomes. Customers see an advertisement before they buy something, they use the advertisement they saw as an anchor, and they are more inclined to buy the product if it is to their liking. They are not considering whether they want to buy the product based on its own value or whether they really need it. So in this example, consumers have not made sufficient adjustments after being influenced by the advertisements made by the merchants, and companies could take advantage of this.

4. Conclusion

In general, this article provides a briefly introduction to anchoring bias and further demonstrated its meaning and significance through three specific economic applications, including forecast earnings in the stock market, retrospective data in empirical study, and advertisement and marketing communication. Some researchers believe that the anchoring effect occurs in many scenarios that might affect both daily life and economic outcomes. Sometimes it can be disruptive to life and economic activity, and sometimes it can be used to our benefit. How to avoid the disadvantages of anchoring bias and make full use of its advantages still needs further research and development. It is worth mentioning that it has been documented that the anchoring effect can be alleviated by considering the opposite strategy. When people make choices and decisions, they can try to remind themselves not to be bound by past experiences. As for its positive significance, the anchoring effect also has many application prospects. In addition to the application of merchants in their advertisements mentioned in this article, many authors suggest that it can be used to help make policies and design experiments. Overall, it is precisely because this effect is so important that more attention needs to be paid to it and much work needs to be done. However, although this article summarizes some evidence of the anchoring effect, its shortcoming is that it does not collect data for new experiments and analysis. This article still needs further improvement, but it is hoped it will provide humble reference for people making decisions about economic activities in the future.

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