

CHAPTER 12

Consumer Theory

Consumer theory is to demand as producer theory is to supply. The major difference is that producer theory assumes that sellers are motivated by profit, and profit is something that one can usually directly measure. Moreover, the costs that enter into profit arise from physical properties of the production process—how many coffee cups come from the coffee-cup manufacturing plant? In contrast, consumer theory is based on what people like, so it begins with something that we can't directly measure but must infer. That is, consumer theory is based on the premise that we can infer what people like from the choices they make.

Now, inferring what people like from the choices they make does not rule out mistakes. But our starting point is to consider the implications of a theory in which consumers don't make mistakes, but make choices that give them the most satisfaction.

Economists think of this approach as analogous to studying gravitation in a vacuum before thinking about the effects of air friction. There is a practical consideration that dictates ignoring mistakes. There are many kinds of mistakes: For example, "I meant to buy toothpaste, but forgot and bought a toothbrush"—a memory problem; "I thought this toothpaste was better, but it is actually worse"—a learning issue; and "I meant to buy toothpaste, but I bought crack instead"—a self-control issue. All of these kinds of mistakes lead to distinct theories. Moreover, we can understand these alternative theories by understanding the basic theory first, and then we can see where the changes to these theories lead.

1. UTILITY MAXIMIZATION

LEARNING OBJECTIVE

1. How do economists model consumer choice?

Economists use the term utility in a peculiar and idiosyncratic way. **Utility** refers not to usefulness but to the flow of pleasure or happiness that a person enjoys—some measure of the satisfaction a person experiences. Usefulness might contribute to utility, but so does style, fashion, or even whimsy.

The term utility is unfortunate, not just because it suggests usefulness but because it makes the economic approach to behavior appear more limited than it actually is. We will make very few assumptions about the form of utility that a consumer might have. That is, we will attempt to avoid making value judgments about the preferences a consumer holds—whether he or she likes to smoke cigarettes or eat only carrots, watch Arnold Schwarzenegger movies, or spend time with a Hula-Hoop. Consumers like whatever it is that they like; the economic assumption is that they attempt to obtain the goods that they enjoy. It is the consequences of the pursuit of happiness that comprise the core of consumer theory.

In this chapter, we will focus on two goods. In many cases, the generalization to an arbitrary number of goods is straightforward. Moreover, in most applications it won't matter because we can view one of the goods as a "composite good," reflecting consumption of a bunch of other goods.^[1]

As a starting point, suppose there are two goods, X and Y . To distinguish the quantity of the good from the good itself, we'll use capital letters to indicate the good, and lower case letters to indicate the quantity of that good that is consumed. If X is rutabagas, a consumer who ate three of them would have $x = 3$. How can we represent preferences for this consumer? To fix ideas, suppose the consumer is both hungry and thirsty, and the goods are pizza and beer. The consumer would like more of both, reflected

Utility

Flow of pleasure or happiness that a person enjoys.

in greater pleasure for greater consumption. Items that one might consume are generally known as “bundles,” as in bundles of goods and services, and less frequently as “tuples,” a short form for the “ n -tuple,” meaning a list of n quantities. Since we will focus on two goods, both of these terms are strained in the application—a bundle because a bundle of two things isn’t much of a bundle, and a tuple because what we have here is a “two-tuple,” also known as a pair. But part of the job of studying economics is to learn the language of economics, so bundles it is.

One might naturally consider measuring utility on some kind of physical basis—production of dopamine in the brain, for example—but it turns out that the actual quantities of utility don’t matter for the theory we develop. What matters is whether a bundle produces more than another, or less, or the same. Let $u(x, y)$ represent the utility that a consumer gets from consuming x units of beer and y units of pizza. The function u guides the consumer’s choice in the sense that, if the consumer can choose either (x_1, y_1) or (x_2, y_2) , we expect him to choose (x_1, y_1) if $u(x_1, y_1) > u(x_2, y_2)$.

But notice that a doubling of u would lead to the same choices because

$$u(x_1, y_1) > u(x_2, y_2) \text{ if and only if } 2u(x_1, y_1) > 2u(x_2, y_2).$$

Thus, doubling the utility doesn’t change the preferences of the consumer. But the situation is more extreme than this. Even exponentiating the utility doesn’t change the consumer’s preferences because

$$u(x_1, y_1) > u(x_2, y_2) \text{ if and only if } e^{u(x_1, y_1)} > e^{u(x_2, y_2)}.$$

In other words, there are no natural units for utility, at least until such time as we are able to measure pleasure in the brain.

It is possible to develop the theory of consumer choice without supposing that a utility function exists at all. However, it is expedient to begin with utility in order to simplify the analysis for introductory purposes.

KEY TAKEAWAYS

- Consumer theory is to demand as producer theory is to supply.
- Consumer theory is based on the premise that we can infer what people like from the choices they make.
- Utility refers not to usefulness but to the flow of pleasure or happiness that a person enjoys—some measure of the satisfaction a person experiences.
- There are no natural units for utility; any increasing transformation is acceptable.