

10

>> The Rational Consumer

Section 1: Utility: Getting Satisfaction

When analyzing consumer behavior, we're talking about people trying to get what they want—that is, about subjective feelings. Yet there is no simple way to measure subjective feelings. How much satisfaction do I get from my third fried clam? Is it less or more than yours? Does it even make sense to ask the question?

Luckily, it turns out that we don't need to make comparisons between your feelings and mine. All that is required to analyze consumer behavior is to suppose that each individual is trying to maximize some personal measure of the satisfaction gained from consumption of goods and services. That measure is known as the consumer's **utility**, a concept we use to understand behavior but don't expect to measure in practice. Nonetheless, we'll see that the assumption that consumers maximize utility helps us think clearly about consumer choice.

The **utility** of a consumer is a measure of the satisfaction the consumer derives from consumption of goods and services

An individual's **consumption bundle** is the collection of all the goods and services consumed by that individual.

Utility and Consumption

An individual's utility depends on everything that individual consumes, from apples to Ziploc bags. The set of all the goods and services an individual consumes is known as the individual's **consumption bundle**. The relationship between an individual's

An individual's total **utility function** gives the total utility generated by his or her consumption bundle.



consumption bundle and the total amount of utility it generates is known as the **utility function**. The utility function is a personal matter; two people with different tastes will have different utility functions. Someone who actually likes to consume 40 fried clams at a sitting must have a utility function that looks different from that of someone who would rather stop at 5 clams.

This terminology is closely parallel to the terminology we used to describe producer decisions in Chapters 8 and 9. A producer uses inputs to produce output according to a production function; a consumer uses consumption to “produce” utility according to a utility function.



Obviously, people do not have a little computer in their heads that calculates the utility generated by their consumption choices. Nonetheless, people must make choices, and they usually base them on at least a rough attempt to decide which choice will give them greater satisfaction. I can have either soup or salad with my dinner. Which will I enjoy more? I can go to Disney World this year or save the money toward buying a new car. Which will make me happier?



A **util** is a unit of utility.

The concept of a utility function is just a way of representing the fact that people must make such choices and that they make those choices in a more or less rational way.

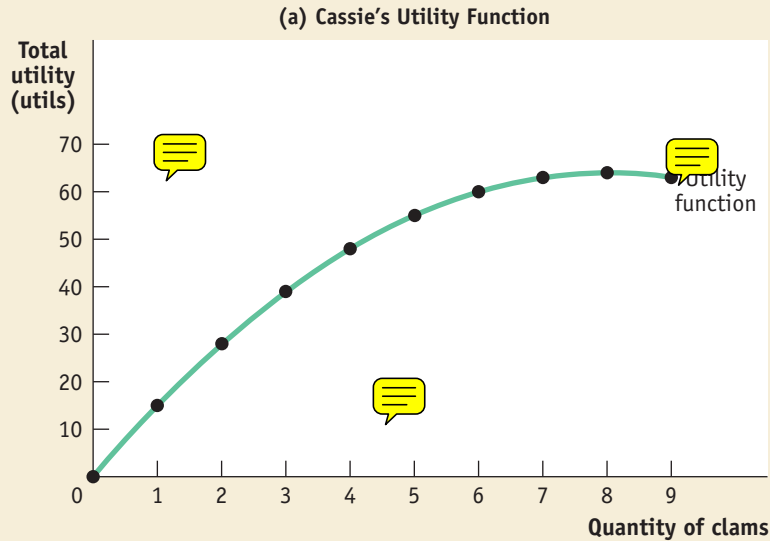
How do we measure utility? For the sake of simplicity, it is useful to suppose that we can measure utility in hypothetical units called—what else?—**utils**.



Figure 10-1 illustrates a utility function. It shows the total utility that Cassie, who likes fried clams, gets from an all-you-can-eat clam dinner. We suppose that her consumption bundle consists of a side of cole slaw, which comes with the meal, plus a number of clams to be determined. The table that accompanies the figure shows how Cassie's total utility depends on the number of clams; the curve in panel (a) of the figure shows that same information graphically.

Cassie's utility function is upward sloping over most of the range shown, but it gets flatter as the number of clams consumed increases. And in this example it eventually turns downward. According to the information in the table in Figure 10-1, nine clams

Figure 10-1 Cassie's Total Utility and Marginal Utility



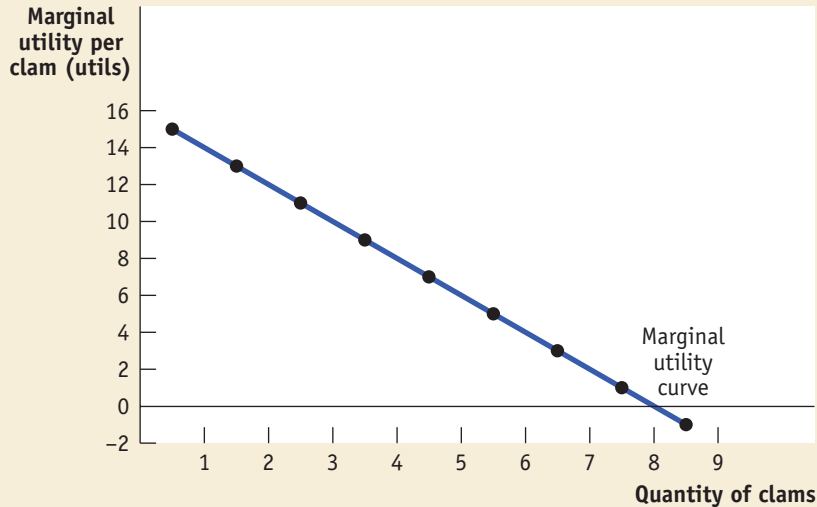
Quantity of clams	Total utility (utils)	Marginal utility per clam (utils)
0	0	
1	15	15
2	28	13
3	39	11
4	48	9
5	55	7
6	60	5
7	63	3
8	64	1
9	63	-1

is a clam too far: adding that additional clam actually makes Cassie worse off. If she's rational, of course, Cassie will realize that and not consume the ninth clam.

So when Cassie chooses how many clams to consume, she will make this decision by considering the *change* in her total utility from consuming one more clam. This illustrates the general point: to maximize *total* utility, consumers must focus on *marginal* utility.

Figure 10-1 Cassie's Total Utility and Marginal Utility (continued)

(b) Cassie's Marginal Utility Curve



Panel (a) shows how Cassie's total utility depends on her consumption of fried clams. It increases until it reaches its maximum utility level of 64 utils at 8 clams consumed and decreases after that. Marginal utility is calculated in the table. Panel (b) shows the marginal utility curve, which slopes downward due to diminishing marginal utility. That is, each additional clam gives Cassie less utility than the previous clam.

The **marginal utility** of a good or service is the change in total utility generated by consuming one additional unit of that good or service. The **marginal utility curve** shows how marginal utility depends on the quantity of a good or service consumed.

The Principle of Diminishing Marginal Utility

In addition to showing how Cassie's total utility depends on the number of clams she consumes, the table in Figure 10-1 also shows the **marginal utility** generated by consuming each additional clam—that is, the *change* in total utility from consuming one additional clam. Panel (b) shows the implied **marginal utility curve**. Following our practice in Chapters 7, 8, and 9 with the marginal cost curve, the marginal utility curve is constructed by plotting points at the midpoint of the unit in intervals.

The marginal utility curve is downward sloping: each successive clam adds less to total utility than the previous clam. This is reflected in the table: marginal utility falls from a high of 15 utils for the first clam consumed to -1 for the ninth clam consumed. The fact that the ninth clam has negative marginal utility means that consuming it actually reduces total utility. (Restaurants that offer all-you-can-eat meals depend on the proposition that you can have too much of a good thing.) Not all marginal utility curves eventually become negative. But it is a generally accepted proposition that marginal utility curves do slope downward—that consumption of most goods and services is subject to *diminishing marginal utility*.



The **principle of diminishing marginal utility** says that each successive unit of a good or service consumed adds less to total utility than the previous unit.



The basic idea behind the **principle of diminishing marginal utility** is that the additional satisfaction a consumer gets from one more unit of a good or service declines as the amount of that good or service consumed rises. Or, to put it slightly differently, the more of a good or service you consume, the closer you are to being satiated—reaching a point at which an additional unit of the good adds nothing to your satisfaction. For someone who almost never gets to eat a banana, the occasional banana is a marvelous treat (as it was in Eastern Europe before the fall of communism, when bananas were very hard to find). For someone who eats them all the time, a banana is just, well, a banana.

The principle of diminishing marginal utility plays the same role in the analysis of consumer behavior that the principle of diminishing returns to an input plays in the analysis of producer behavior. Like the principle of diminishing returns to an input, the principle of diminishing marginal utility isn't always true. But it is true in the great majority of cases, enough to serve as a foundation for our analysis of consumer behavior. ■