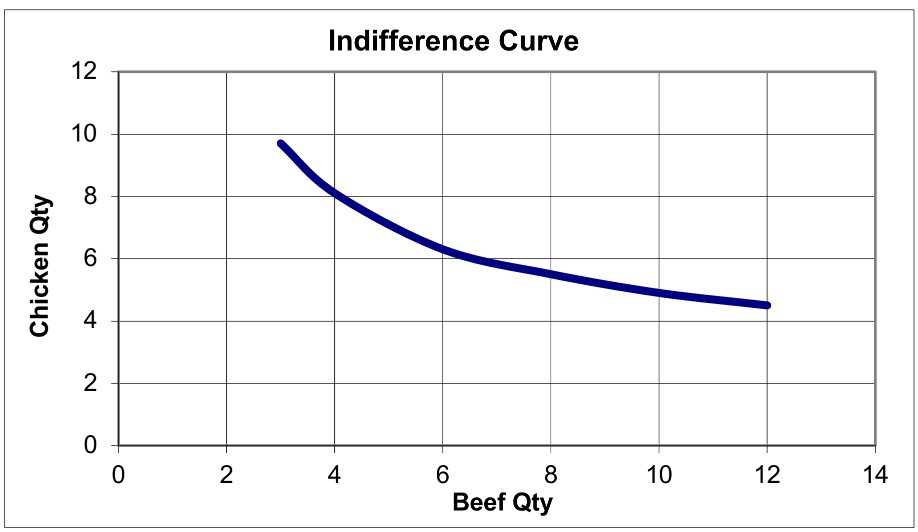
CHAPTER 2

UNDERSTANDING DEMAND

The basis for demand is satisfaction. Satisfaction is why consumers demand goods, and the measure of this satisfaction is utility. Every individual wishes to get maximum satisfaction from the goods or services they consume. However, the law of diminishing marginal utility states that the more of a product we consume, at some point, the satisfaction from one additional unit gives less satisfaction that before. Consumers will them consume one product and combine the consumption of another product to keep their satisfaction high. An example is your lunch that you have today will combine several products. For instance, a pizza buffet would not be as satisfactory if they only had one kind of pizza, or had no salad bar or desert. Consumers that buy meat may buy on average 5 lbs of beef and 2 lbs or pork per week. This exchange of products to meet optimal satisfaction begins the basis for understanding demand.

A. Indifference Curves

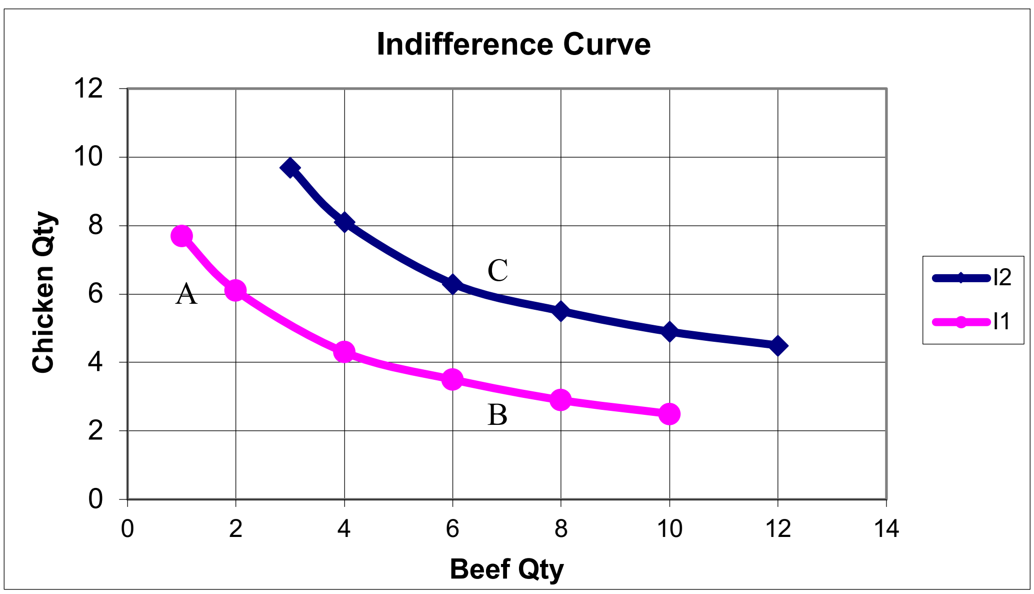
A graphical measure of satisfaction between two products or services is called an indifference curve. Every individual's indifference curve illustrates how indifferent a consumer is to two product choices. Consider another example of a shopper who buys beef and chicken for weekly meat consumption. The following information can be derived from a study on the purchase of beef and chicken.



Beef Qty	Chicken Qty
12	4.5
10	4.9
8	5.5
6	6.3
4	8.1
3	9.7

Combinations of beef and chicken are purchased to satisfy a consumers needs. For example, the above graph illustrates that this consumer either chooses 4 lbs of beef and 8.1 lbs of chicken or 10 lbs of beef and 4.9 lbs of chicken to maintain an equal amount of satisfaction. For the sake of simplicity, we can place a value of satisfaction for this consumer at 10 units of utility all along any combination of the above points on the indifference curve. No matter what point we choose along the curve of product combinations, we have the same amount of satisfaction. The indifference curve, then, illustrates a consumer's willingness to trade quantities of one good for another.

However, we stated above that consumers wish to reach maximum satisfaction, so if the satisfaction is the same along the above curve, how does an indifference curve illustrate other levels of higher satisfaction? The answer is that the product substitution rate (beef exchanged for chicken) remains the same, but the amounts of each increase. Consider the following example that illustrates several indifference curves for the combination of beef and chicken.



The curves illustrate Indifference Curve 1 (I1) as our previous example with Indifference Curve 2 (I2) illustrating the consumer's higher level of satisfaction. Indifference Curve 1 and point A illustrate the combination of 2 lbs beef and 6.2 lbs of chicken. The same satisfaction is found to be at point B, which utilizes 8 lbs beef and 3 lbs chicken. The use of points A or B yield the same amount of utility or satisfaction. Point C on the new IND. 2 would yield higher amounts of utility or satisfaction. Why does it yield more utility? Point C utilizes 8 lbs beef (same as point B) and 5.8 lbs of chicken, which gives consumer more satisfaction than our first indifference curve measured (point B). The first indifference curve using the 8 lbs of beef would give the use of only approximately 3 lbs of chicken. This is less than the chicken available from using IND 2. There are indifference curves all the way from the origin to infinity, with each gaining satisfaction as it moves away from the origin. So then what keeps a consumer from reaching the farthest indifference curve to get the maximum satisfaction? The answer is money, which is illustrated through a budget line.

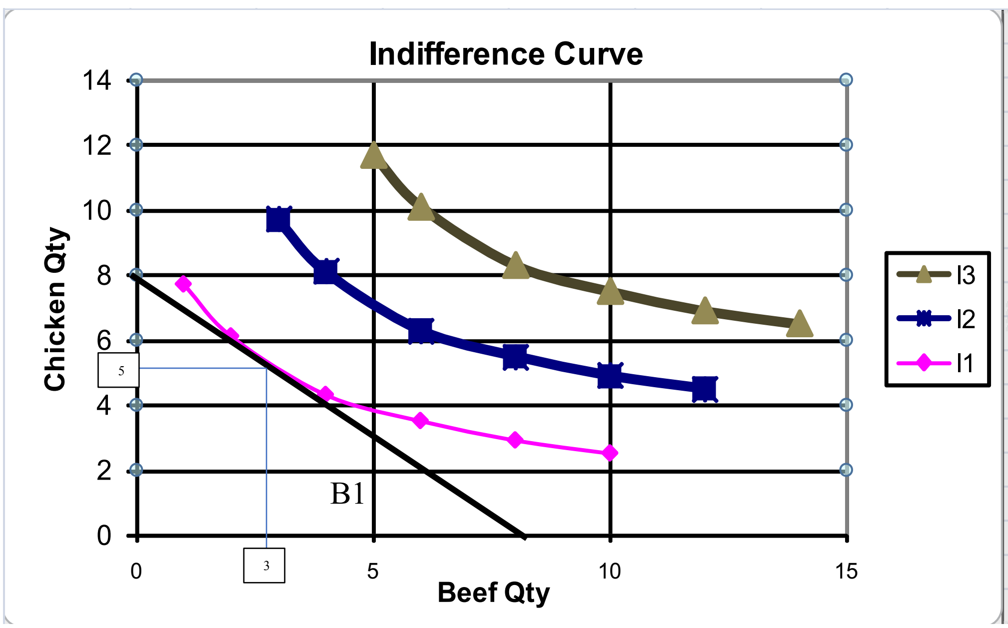
B. Budget Lines

A budget line measures the amount of dollars a consumer has available to spend. Just as when you go to the store, your satisfaction may combine chips and hotdogs, but your quantity of each depends on your total budget, the price of chips, and the price of hotdogs. As before in indifference curves, a graphical example can best illustrate how a budget line works. To graph a budget line, there is a need to find the extreme quantity of each product you can purchase. One you have each extreme of each product, a line is drawn between those quantities to establish a relationship. This straight line is based on prices only, and represents the market's willingness to trade quantities of one good for another.

Consider that we go to the store and again wish to buy chicken and beef for the week to eat. We have a total of $40.00 to spend and the price of beef and chicken are as follows:

Beef $5.00 per lb
Chicken $5.00 per lb

Using these prices, we can determine how much of each product we can buy.



If we buy all beef we can purchase 8 lbs ($40/$5 per lb), and if we buy all chicken we can purchase 8 lbs ($40/$5.00 per lb) (B1 line). However, we don't wish to purchase only beef or chicken, we wish to combine the purchase of the two products to receive more total satisfaction. An illustration of this can be better seen through a graph of this budget line. It will also be beneficial to graph the budget line along with the same graph of indifference curves.

The straight line is the budget line. The budget line labeled B1 illustrates the $40 budget with the price of $5 beef and $5 chicken prices per pound. This looks at the situation as if we bought all chicken or all beef. However, we know that a consumer uses choice to combine their purchase of at least two goods to obtain higher satisfaction. At all points along curve B1 we are spending the total $40 budget. Outside the line B1 (away from the origin) we are spending more than our budget, and therefore cannot get to any higher indifference curve, except I1. We cannot get to all points of I1, but can reach one point that is about equal to 3 lbs of beef and 5 pounds of chicken, which we call the equilibrium quantities.

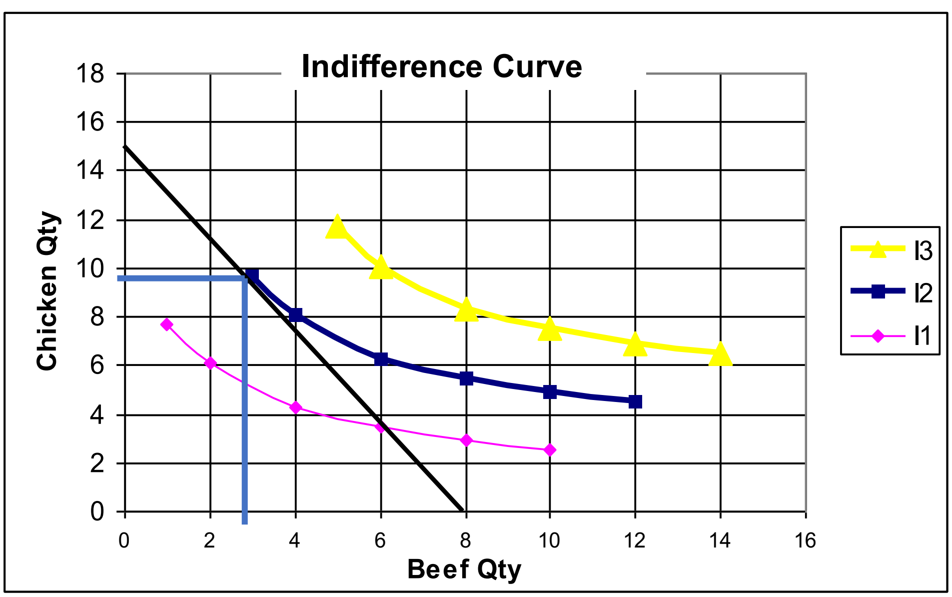
3.00 lbs beef @ $5 per lb =	$15.00
5.00 lbs chicken @ $5 per lb =	$25.00
	Total $40.00

If you change the prices, or the budget, you can get a different equilibrium, so therefore that changes what people actually buy. Let's do another example by changing just the price of chicken.

<u>New Budget:</u>
Budget = $40
Price Beef is $5.00
Price of Chicken is $2.67

New Budget Quantities are:
Beef = $40 / 5 = 8 lbs
Chicken=$40 / 2.67 = 15 lbs

The new budget line with indifference curves are shown in this graph:



This creates a new equilibrium of about 3.2 beef and 9 chicken, which is different than when we had the first set of prices, but the only change was the price of chicken. Therefore, the drop in the price of chicken caused people to buy more chicken, and even slightly more beef. The relationship of how much of products are purchased at various prices is called **demand**.

C. Deriving Demand from Indifference Curves and Budget Lines

To review the previous example:

Situation 1	Beef Price	$5 yields equilibrium Quantity	3.00 lbs
	Chicken Pr.	$5 yields equilibrium Quantity	5.00 lbs

(A different equilibrium from a change in one or more prices)

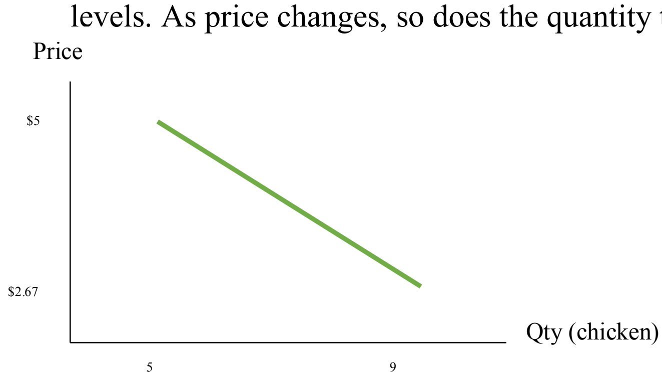
Situation 2	Beef Price	$5.00 yields equilibrium Quantity	3.20 lbs
	Chicken Pr	$2.67 yields equilibrium Quantity	9.00 lbs

Determining demand involves understanding two prices with related quantities. Only one product is graphed with its demand, but the indifference curves illustrate the products' relationships and their effect on price. From our previous example, we used two prices of chicken and it yielded two related quantities demanded at the prices.

To summarize this change in the price and quantity demanded of chicken:

Price 1 $5.00		Quantity 1	5.00 lbs
Price 2 $2.67		Quantity 2	9.00 lbs

From our earlier definitions, the amount demanded is negatively related to its price. To state it another way, if the price drops, quantity demanded rises. Our previous example illustrates this. The next task is to develop a demand curve for chicken purchased weekly considering that a household has a $40.00 budget for spending. The following graph shows the demand for chicken. Remember, demand is the relationship between quantity demanded and price, for various price levels. As price changes, so does the quantity that consumers will purchase.



The relationship of the price of chicken to the quantity demanded allows some insight into how a change in the price of chicken may yield a new demand quantity. For example, a new price of $3.00 would relate to a quantity demanded of 8 lbs. This is determined by starting at the price on the vertical axis, and moving horizontally to the demand curve, and then down to read the quantity demanded.

The demand curve is not always a straight line. The fact is that a consumer makes many choices and tradeoffs in selecting a particular product to purchase. A straight demand curve will not generally represent these variations. However, for simplicity’s sake we will deal with straight demand curves and experiment with price changes and their effect on demand.