Microeconomics theory: lecture objectives

Economics, Microeconomics

In your elementary microeconomics, the basic principles of consumer behaviour were introduced by laying a strong foundation on the theory of demand on which premise the consumer behaviour is build upon. The consumer behaviour is introduced as a utility maximising behaviour but subject to consumer's ability to purchase. A consumer is portrayed as an agent who goes for the best that he/she can afford. In the intermediate level we describe more precisely what we mean by ' best' and ' I can afford'. In the first section, we will examine how to describe what a consumer can afford; the next section will focus on the concept of how the consumer determines what is best. We will then be able to undertake a detailed study of the implications of this simple mode of consumer behaviour.

The Budget Constraint

Suppose that there is some set of goods from which the consumer can choose. In real life there are many goods to consume but we will consider two. Let the consumer's consumption bundle be where , represents the number of units the consumer chooses of good 1 and is the number of units of good to be chosen by the consumer. Let and represent the unit prices for the two goods respectively; and M to represent the amount of money the consumer has to spend. The budget constraint of the consumer can be written as:

Where P1 X1 is expenditure for good 1 and is expenditure on good 2.

The budget constraint of the consumer requires that the amount of money spent on the two goods is no more than the total amount the consumer has to spend. The consumer's affordable consumption bundles are those that do

not costs any more than M. The set of affordable consumption bundles at prices and income M is called the budget set of the consumer. The set of bundles that cost exactly M is called the budget line.

These are the bundles of goods that just exhaust the consumer's income. The budget is set is shown below:

The budget set consists of all bundles that are affordable at the given prices and income.

Re-arranging equations (2)

This is an equation for a straight line with a vertical intercept of and a slope of The example tells how many units of good 2 the consumer needs to consume in order to just satisfy the budget constraint, if she is consuming units of good 1. The slope of the budget line measures the rate at which the market is willing to substitute good 1 for good 2.

The slope of the budget line is also said to be an opportunity cost of consuming good 1. In order to consume more of good 1, one has to give up some consumption of good 2. Giving up the opportunity to consume good 2 is the true economic cost of more of good 1 consumption, and that cost is measured by the slope of the budget line.

Consumer Preferences

This section is devoted to clarifying the economic concept of " best things" now that the meaning of " can afford" is clear. The objects of consumer choice are consumption bundles. This is a complete list of the goods and services that are involved in the choice problem faced by a consumer.

Suppose there are two consumption bundles and. The consumer can rank them as to their desirability. That is, the consumer can determine that one of the bundles is strictly better than the other, or decide that she is indifferent between the two bundles.

Assumptions about Preferences

1. Completeness: It is assumed that any two bundles can be compared. That is, given any X bundle and any Y bundle, then or or both, in which case the consumer is indifferent between the two bundles. This is to say that the consumer can make a choice. 2. Reflexive: We assume that any bundle is at least as good as itself 3. Transitive: If and then we assume that consumer thinks that X is at least as good as Y and that Y is at least as good as Z, then the consumer thinks that X is at least as Z.

Indifference Curves The whole theory of consumer choice can be formulated in terms of preferences that satisfy the three axioms above. However, it is convenient to describe preferences graphically using indifference curves. Consider a consumer's consumption of goods 1 and 2:

If is a certain consumption bundle, the consumption bundle in the shaded region are weakly preferred to . It is called the weakly preferred set. The bundles on the boundary of this set for which the consumer is just indifferent to from the indifference curve. It consists of all bundles of goods that leave the consumer indifferent to the given bundle.

Shapes of Indifferent Curves

If no further assumptions about preferences are made, ICs can take very peculiar shapes.

1. Perfect Substitutes Two goods are perfect substitutes if the consumer is willing to substitute one god for the other at a constant rate. The simplest care of perfect substitutes occurs when the consumer is willing to substitute the goods on a one to one basis. ICs for such a consumer are all parallel straight lines.

2. Perfect Complements Perfect complements are goods that are always consumed together in fixed proportions, e. g. shoes (left and right). The ICs are L shaped, with the vertex of the L occurring where the number of one good equals the number of the other good.

3. Bad Goods A bad is a commodity that the consumer doesn't like. Suppose that the two commodities are meat and pepper, the consumer loves meat but dislikes pepper. But suppose there is some trade off possible between meat and pepper i. e. there would be some amount of meat in samosa that could compensate the consumer for having to consume a given amount of pepper, if more pepper is given in the samosa, more meat has to be given to compensate for having to put up with the pepper. Thus this consumer will have indifference curves that slope up and to the right.

4. Neutral Goods A good is a neutral good if the consumer doesn't care about it one way or the other. Suppose in the above case the consumer is just neutral about pepper . The IC would be vertical lines as depicted below. The consumer only cares about the amount of and doesn't care at all about how much of he/she has. The more of the better but adding more doesn't affect him.

5. Imperfect Substitutes If the rate at which one good is substituted for another is not constant, but diminishing, then the two goods are imperfect substitutes. As more and more of one good is given up successively larger units of the other good are consumed to compensate the consumer for the loss. Such goods will have indifference curves that are rounded, i. e. the ICs are strictly convex.

The Margncal Rate of Substitution The slope of the IC is known as the MRS. It measures the rate at which the consumer is just willing to substitute one good for another. Suppose that we take a little of good 1, away from the consumer. Then we give him , an amount i. e. just sufficient to put him back on his/her IC, so that he is just as well off after this substitution of for as he was before.

The ratio is thought as being the rate at which the consumer is willing to substitute good 1 for good 2 and is called the MRS. The MRS measures an interesting measure of consumer behaviour. Suppose that the consumer has well behaved preferences, i. e., preferences which are monotonic and convex, and currently consuming some bundle . The consumer is now offered a trade: to exchange good 1 for 2 or good 2 for 1 in any amount at a " rate of exchange" of E. i. e. if the consumer gives up units of good 1, he can get units of good 2 in exchange or conversely, if he gives up , units of good 2, he can get units of good 1.

Geometrically, we are offering the consumer an opportunity to move to any point along a line with a slop E that passes through as depicted.

Moving up and to the left from to involves exchange of good 1 for good 2, and moving down to the right involves exchanging good 2 for good 1. In either movement the exchange rate is E. Since exchange always involves giving up one good in exchange for another, the exchange rate E corresponds to slope at E. The point of tangency between the budget line and the indifference curve is referred to as the consumer equilibrium.

Behaviour of the Marginal Rate of Substitution

Perfect substitute's indifference curves are characterized by the fact that the MRS is constant at -1. The neutral case is characterized by the fact that the MRS is everywhere infinite. The preference for perfect complements are characterised by the fact that the MRS is either 0 or infinite and nothing in between. The assumption of monotonicity implies that ICs must have a negative slope, so the MRS always involves reducing the consumption of one good in order to get more of another for monotonic preferences. The case of convex ICs exhibits yet another kind of behaviour for the MRS. For convex ICs, the MRS decreases as more of X1 is consumed. Thus the IC exhibits a diminishing MRS.

Convexity of ICs implies that the more of a good consumed, the more willing is a consumer is to give some of it up in exchange for the other goods. This seems very natural for a consumer and hence convexity if ICs becomes both necessary and sufficient conditions for consumer equilibrium besides just having a point of tangency between the consumer's budget line and the IC.

The theory of consumer behaviour has been formulated with an objective of utility maximization. Utility refers to the ability of/in a good to satisfy the

consumer. There are several approaches to the study of utility with one theory attaching significance to the magnitude utility and is known as the cardinal utility theory. In this theory the size of the utility difference between the bundles of goods is supposed to have some sort of significance. Another theory formulates the consumer behaviour entirely in terms of consumer preferences and utility is seen only as a way to describe preferences by ranking bundles according to utility derived from each bundle.

The proponents of this theory recognized that all that mattered about utility as far as choice behaviour was concerned was whether one bundle had a higher utility than another but how much higher didn't matter (ranking was the only matter). Because of this emphasis on ordering bundles of goods, this kind of utility is referred to as ordinal utility.

The Utility Function

A utility function is a way of assigning a number to every possible consumption bundle such that more preferred bundles get assigned larger numbers than less preferred bundles. A utility function is a way to label indifference curves. Since every bundle of an IC must have the same utility, a utility function is a way to assign number to the different indifference curves in a way that higher ICs get assigned larger numbers. As long as ICs containing more preferred bundles get a larger label than indifference curves containing less preferred bundles, the labelling will represent the different preferences. However, not all kinds of preferences can be represented by a utility function for example, suppose a consumer had intransitive preferences so that A> B> C> A. Then a utility function for these

preferences would have to consist of numbers U(A), U(B) and U(C) such that

U(A)> U(B)> U(C)U(A), which is impossible.