PREFERENCES AND REVEALED PREFERENCES: EVIDENCE FROM CONSUMERS HOUSEHOLD BEHAVIOUR APPROACHES

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Abstracts: **This is reviewed study on preference and revealed preference: evidence from consumers' household behavior approach with objective to study consumers in choice of commodities for satisfaction and the consumers' behavior in the market situation base on his budget constraints. It showed some assumption about preference and revealed preference, the use of indifference curve to depict difference kind of preference and behaviors of preference in relation to indifference curve. It also explained the marginal rate of substitution in terms of preference, substitution effect under revealed preference and it has proved from revealed preference theory that the substitution effect is negative. The illustrative use of reveal preference in market structures, and the study concluded on the consumers household behaviors on preferences and revealed preferences as ordinal introspective household behaviors' on consumption of commodities and as an alternative on ordinal consumers behaviors in the markets subjects to budgets constraints.**

Keywords: **preferences, revealed preferences, household and utility.**

1. INTRODUCTION

The neo-classical utility analysis refers to the theory of consumer demand as built by Marshall, Pigou, and others. The theory is based on the cardinal measurement of utility and rests upon certain hedonistic or utilitarian premises. The word utility denotes the want satisfying power of a commodity or service. A commodity may be frivolous, injurious or even pernicious, but if it satisfies an economic want it possess utility. Wine and cigarette are dangerous for health. Persons who are aware of it may not use them. These things do not posses utility for them. Since they are wanted by others they have utility. Utility is thus subjective and does not carry any ethical connotation. The Marshall demand analysis is based on the concept of cardinal utility which assumes that utility is measurable and additive. It is expressed as a quantity measured in hypothetical units which are called 'utils. If a consumer imagines that one mango has 8 and 4 utils, it implies that the utility of one mango is twice that of an apple. The entire Marshall analysis comprising the law of diminishing marginal utility, the law of maximum satisfaction, the concept of consumer's surplus and the law of demand is based on these assumptions. Professor Hicks, Professor Samuelsson and others opposes the cardinal measure of utility in an ordinal measures that consumers utility is immeasurable. Professor Hicks explained the consumers' behavior in terms of preference or ranking for the different combination of two goods while Professor Samuelsson based his hypothesis on consumers buying combination of commodities in the market which is basically on the axioms called revealed preferences hypothesis base on the market behavior of the market force of demand and supply. The objective of this study is behavior of the consumer in choice of commodities for satisfaction and his behavior in the market situation subject to his budget constraints. Theory of consumers behavior is the study of individual or household or groups or organization that are involves in using specific products or service within a specified period of time. It is also the processes that are used to selects, secure and dispose of products or service, experience or idea to satisfy needs. It is include the assessment of the impacts that these processes have on the consumers' behaviors and the society.

2. PREFERENCE

Preference is a geometrical device that has been used to measures utility as ordinal as replaced in neo-classical cardinal utility approach. Prof. Hicks presented its comprehensive version as preference or ranking for different combination of two goods (Jhingan, 1970). The concept of preference is objectives of consumer choice consumption bundles. This is a complete list of the goods and services that are involved in the choice problem that are investigating. When analyzing consumer choice at the broadest level, we would want not only a complete list of the goods that a consumer might consume, but also a description of when, where, and under what circumstances they would become available. After all, people care about how much food they will have tomorrow as well as how much food they have today. A raft in the middle of the Atlantic Ocean is very different from a raft in the middle of the Sahara Desert. And an umbrella when it is raining is quite a different good from an umbrella on a sunny day. It is often useful to think of the "same" goods available in different locations or circumstances as different goods, since the consumer may value the good differently in those situations (Varian, 1987).

Assumptions about Preferences

Economists usually make some assumptions about the "consistency" of consumers' preferences. For example, it seems unreasonable not to say contradictory to have a situation where $(x_1, x_2) > (y_1, y_2)$ and, at the same time, $(y_1, y_2) > (x_1, x_2)$. For this would mean that the consumer strictly prefers the x-bundle to the y-bundle . . . and vice versa. So we usually make some assumptions about how the preference relations work. Some of the assumptions about preferences are so fundamental that we can refer to them as "axioms" of consumer theory. Here are three such axioms about consumer preference.

Complete. We assume that any two bundles can be compared. That is, given any x-bundle and any y-bundle, we assume that$(x_1, x_2) > (y_1, y_2)$, or $(y_1, y_2) > (x_1, x_2)$, or both, in which case the consumer is indifferent between the two bundles.

Reflexive. We assume that any bundle is at least as good as itself: $(x_1, x_2) > (y_1, y_2)$

Transitive. If $(x_1, x_2) > (y_1, y_2$ and $(y_1, y_2) > (z_1 z_2)$, then we assume that$(x_1, x_2) > (z_1 z_2)$. In other words, if the 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 good as Z (Varian,1987).

THE USE OF INDIFFERENCE CURVE TO DEPICT DIFERENCE KIND OF PREFERENCES

It turns out that the whole theory of consumer choice can be formulated in terms of preferences that satisfy the three axioms described above, plus a few more technical assumptions. To illustrated consumer preference, let us choose three bundles of goods, X, Y , and Z, such that X lies only on one indifference curve, Y lies only on the other indifference curve, and Z lies at the intersection of the indifference curves. By assumption the indifference curves represent distinct levels of preference, so one of the bundles, say X, is strictly preferred to the other bundle, Y. We know that X ∼ Z and Z ∼ Y and the axiom of transitivity therefore imply that X ∼ Y. But this contradicts the assumption that X > Y (Varian, 1987). This contradiction establishes the result indifference curves representing distinct levels of preference cannot cross.

When the various combination of X and Y are plotted as in the above it will show a locus of point that will indicate the preference of such commodities and such point is tangential to the locus point that is known as when the consumer is indifferent about the combination. When the locus point of the different combination of X and Y at various levels are plotted to represent different preference point or indifference map. From the above assumption preference follows the same characteristics with indifference curve and these include: a high indifference curve to the right of another represent a high level of satisfaction or preferable combination of the two goods; in between two indifference curve there can be a number of other indifference curve, one for every points. The slope of an indifference curve is negative downward sloping and it is from the left to right; indifference curve can neither touch nor intersects each other so that one indifference curve pass through only one point on the indifference map and it is always convex to origin indicating consumer substitute X for Y, indifference curve is not parallel to each other (Jhingan, 1970).

Behavior of consumer Preference in relation to indifference curve

Preferences in general, it will be convenient to focus on indifference curves. This section will describe some more general assumptions that we will typically make about preferences. This assumption is sometimes called monotonicity of preferences. As suggested in the discussion of satiation, more is better would probably only hold up to a point. Thus the assumption of monotonicity is saying only that we are going to examine situations before that point is reached before any

satiation sets in while more still is better. Economics would not be a very interesting subject in a world where everyone was satiated in their consumption of every goods. What does monotonicity imply about the shape of indifference curves? It implies that they have a negative slope. At a bundle (X and Y) and move anywhere up and to the right, we must be moving to a preferred position. If we move down and to the left we must be moving to a worse position. So if we are moving to an indifferent position, we must be moving either left and up or right and down: the indifference curve must have a negative slope (Varian, 1987).

Averages are preferred to extremes, which are, if we take two bundles of goods (X_1, X_2) and (Y_1, Y_2) on the same indifference curve and take a weighted average of the two bundles then the average bundle will be at least as good as or strictly preferred to each of the two extreme bundles. This weighted-average bundle has the average amount of good 1 and the average amount of good 2 that is present in the two bundles. It therefore lies halfway along the straight line connecting the X bundle and the Y bundle (Varian, 1987).

The Marginal Rate of Substitution in terms of preference

Marginal rate of substitution, the name comes from the fact that the MRS measures the rate at which the consumer is just willing to substitute one good for the other. Suppose that a little of good 1 is taken ΔX_1, away from the consumer. Then give out ΔX_2, an amount that is just sufficient to put back on the indifference curve, so that consumer is just as well off after this substitution of X_2 for X_1 as he was before. The ratio $\Delta X_2/\Delta X_1$ as being the rate at which the consumer is willing to substitute good 2 for good 1. One slightly confusing thing about the MRS is that it is typically a negative number. We've already seen that monotonic preferences imply that indifference curves must have a negative slope. Since the MRS is the numerical measure of the slope of an indifference curve, it will naturally be a negative number. The marginal rate of substitution measures an interesting aspect of the consumer's behavior. Suppose that the consumer has well-behaved preferences, that is, preferences that are monotonic and convex, and that he is currently consuming some bundle (x_1, x_2). It will now offer a trade: exchange good 1 for 2, or good 2 for 1, in any amount at a rate of exchange (Varian, 1987).

Revealed preference

Revealed preference is a market behaviorist ordinal utility analysis as a distinct from the introspective ordinal utility theory. This theory analyses consumer's preference for a combination of goods on the basis of observed consumer behaviors in the market and postulated by Prof. Samuelsson a consistency theory in 1938. According to Prof. Hicks and Allen when consumer revealed his preference, he does not under strong ordering when the chosen position is shown to be preferred to all others positions. The theory of demand is based on the revealed preference axiom or hypothesis which states that choice reveals preference. The behaviorist utility analysis established the law of demand directly on the basis of his revealed preference hypothesis without the use of indifference curve and the restrictive assumptions with them. When you first encounter this principle, it may seem circular.

If X is revealed preferred to Y, doesn't that automatically mean that *X* is preferred to Y? The answer is no. Revealed preferred just means that X was chosen when *Y* was affordable; preference means that the consumer ranks X ahead of Y. If the consumer chooses the best bundles she can afford, and then revealed preference implies preference, but that is a consequence of the model of behavior, not the definitions of the terms. This is why it would be better to say that one bundle is chosen over another, as suggested above. Then we would state the principle of revealed preference by saying: If a bundle X is chosen over a bundle Y, then *X* must be preferred to Y. In this statement it is clear how the model of behavior allows us to use observed choices to infer something about the underlying preferences. Whatever terminology you use, the essential point is clear: if we observe that one bundle is chosen when another one is affordable, then we have learned something about the preferences between the two bundles: namely, that the first is preferred to the second). If a consumer with concave, monotonic, continuous, non-satiated preferences were to make choices from these two budget sets then those choices must satisfy the Generalized Axiom of Revealed Preference (Beatty and Crawford, 1991). Revealed preferences are tastes that rationalize an economic agent's observed actions. Normative preferences represent the agent's actual interests. It sometimes makes sense to assume that revealed preferences are identical to normative preferences. But there are many cases where this assumption is violated. We identify five factors that increase the likelihood of a disparity between revealed preferences and normative preferences: passive choice, complexity, limited personal experience, third-party marketing, and intertemporal choice. We then discuss six approaches that jointly contribute to the identification of normative preferences: structural estimation, active decisions, asymptotic choice, aggregated revealed preferences, reported preferences, and informed preferences. Each of these approaches uses consumer behavior to infer some property of normative preferences without equating revealed and normative preferences. We illustrate these issues with evidence from savings and investment outcomes (Beshears et al., 2008).

The revealed preference assumption

Modeling and analyzing household consumption behavior is a fundamental research topic in microeconomics since its introduction by for unitary households, i.e., households consisting of a single member. During the last decades, there has been an increasing interest in analyzing consumption behavior of collective households (households consisting of more than one member); and researchers have been focusing on extending well- known revealed preference axioms that were initially developed for unitary households (Samuelson, 1938)

1. Rationality; the consumer is assumed to behaves rationally, in that he prefers bundles of goods that include more qualities of the commodities.

2. consistency; the consumer is assumed to behaves consistency, that is if he choose bundles A in a situation in which bundle B was also available to him he will not choose B in any other situations in which A is also available; symbolically A > B, then B ≠ A.

3. Transitivity; if in any particular situation A > B and B > C then A > C. This revealed preference is when a consumer by choosing a collection of goods in any one budget situation reveals his preference for that particular collection. The chosen bundles are revealed to be preferred among all alternatives bundles available under budget constraints. The chosen "basket of goods maximizes utility of the consumers.

sIt means that when income of elasticity of demand is positive, price elasticity of demand is negative and it can be shown in the rise and falling the price of goods. (Andreoni and Harbaugh 2008) obser ved that

reveal preference restrictions confine a consumer's observed choices to lie in a specific and well defined. If a consumer with concave, monotonic, continuous, non-satiated preferences were to make choices from these two budget sets then those choices must satisfy the Generalized Axiom of Revealed Preference (GARP). Extensions of the generalized axiom of revealed preference (GARP) and of the strong axiom of revealed preference (SARP) have received extensive analysis. Results concerning the complexity of testing these axioms indicate that although testing GARP and SARP on data sets of unitary households can be done in polynomial time, testing their extensions to collective households is complete even for households with two members (cherchye *et al* 2011).

3. AN ILLUSTRATIVE APPLICATION

We now turn to a practical application of these ideas. We begin by showing how the proposed measure is useful in interpreting a revealed preference analysis of a heterogeneous sample. We then show how using the smoothed hit rate provides information on the nature of the failures of the theory. Finally, we show how our approach can be used to compare alternative models. We use data from the Spanish Continuous Family Expenditure Survey (the Encuesta Continua de Presupuestos Familiars - ECPF). The ECPF is a quarterly budget survey of Spanish households,

Which interviews about 3,200 households every quarter. Households are randomly rotated at a rate of 12.5% per quarter. It is possible to follow a participating household for up to eight consecutive periods. The data cover the years 1985 to 1997 and the selected sub-sample are couples with and without children, in which the husband is in full-time employment in a non-agricultural activity and the wife is out of the labour force (this is to minimise the effects of nonseparabilities between consumption demands and leisure for which the empirical application does not otherwise allow). The dataset consists of 21,866 observations on 3,134 households. It records household non-durable expenditures aggregated into 5 broad commodity groups ("Food, Alcohol and Tobacco","Energy and Services at Home","Non Durables","Travel" and "Personal Services"). The price data are

National price indices for the corresponding expenditure categories (Beatty and Crawford, 1991).

Substitution effect under revealed preference

It can be proved from revealed preference theory that the substitution effect is negative. Assume that the consumer is forced to move along a give indifference hypersurfsce in n dimension. When price are given by P^0, and purchase batch q^0 rather than batch q^1 which lies on the same indifference hypersurface. Since there is indifferent between q^0 and q^1 and yet purchase q^0, the latter combination must not be more expensive than the former.

$$p^0 q^0 \equiv p^1 q^0 \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots(1)$$

The combination q^1 is purchased at p^1. This implies that q^0 must not be cheaper at the p^1 price than q^1.

$$\mathbf{p^0q^0 \equiv p^1q^0}$$

Moving the right hand term in equation 1 to the left

$$\mathbf{p^0q^0 - p^1q^0 = p^0(p^0 - q^1) = -p^0(q^1 - q^0) \equiv 0 \ldots\ldots\ldots 2}$$

$$\mathbf{p^1q^1 - p^1q^0 = p^1(q^1 - q^0) \equiv 0 \ldots\ldots\ldots\ldots\ldots 3}$$

Add equation 2 and 3 together

$$\mathbf{-p^0(q^1 - q^0) + p^1(q^1 - q^0) = (p^1 - p^0)(q^1 - q^0) \equiv 0}$$

This inequality asserts that the sum of all quantity changes multiple by the corresponding price   change is nonpositive if the consumer moves along a given indifference curve. Assume now that only the price the price of the first commodity changes, all other price remaining constant then

$$\mathbf{(\partial p^1 - \partial p^0)(\partial q^1 - \partial q^0) < 0 \ldots\ldots\ldots\ldots\ldots 4}$$

The strict inequality must hold in equation 4 by the assumption that the price change is nonzero and that $\mathbf{\partial q^1}$ and $\mathbf{\partial q^0}$ are distinct, i.e., that price is a single –valued of demand. If the price increases, the quality bought must decrease and vice versa. This is substation effects is negative (Henderson and Quandt 1980).

4. CONCLUSION

It appears from the above discussion that the revealed preference approach is in no way an improvement over preference approach analysis. It is unable to isolate the substitution effects from the income effects, neglects Giffen's paradox and fails to study market demand analysis. But the facts is that in a singled valued demand function the indifferent behaviors is replaced by the observed market behaviors of the consumers which makes the revealed preference hypothesis somewhat more realistic than the preference technique. Thus the market behaviors ordinal utility analysis is a distinct alternative to the introspective ordinal utility theory.

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