CARDINALIST APPROACH AS A MEASURE OF SOCIAL WELFARE

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Abstract: The paper reviewed approaches to the measure of social welfare. Secondary data was used to review the various measure of social welfare with emphasis on cardinalist approach. From the review it was found that the approach had some obvious flaws such as the assumption of constant marginal utility of money concept defies the current reality since utility of money changes as the value of the money changes and the rather rapidly sometimes. The paper also posits that social welfare analysis can be applied in Policy Evaluation and Social Cost of Living among others.

Keywords: cardinalist approach, social welfare, utility.

1. INTRODUCTION

The measurement of social welfare forms the foundation of public policy analysis. A full consideration of taxes, subsidies, transfer programs, health care reform, regulation, environmental policy, the social security system, and educational reform must ultimately address the question of how these policies affect the well-being of individuals (Daniel, 1998). Over time society is faced with two basic problems: that of ensuring that the alternatives from which a social choice must be made are approximately "maximal" and "sufficiently" varied; and that of choosing from the alternatives, i.e. of effecting a compromise between the conflicting desires of its members. (Murray and Asimakopulos, 2016). Social welfare is concerned with the evaluation of alternative economic situation from the point of view of the society wellbeing. We assumed that the total welfare in a country is W, but given resource endowments and the state of technology, suppose that this welfare could be larger W* (koutsoyiannis, 1979). Social welfare is not the same as standard of living but is more concerned with the quality of life that includes factors such as the quality of the environment, level of crime, extent of drug abuse, availability of essential social services, as well as religious and spiritual aspects of life.It begins with the derivationof a social welfare function, which can then be used to rank economically feasible allocations of resources in terms of the social welfare they entail. Such functions typically include measures of economic efficiency and equity, though more recent attempts to quantify social welfare have included a broader range of measures including economic freedom (Deardorff, 2014). The paper aim to discuss the Cardinalist approach to the measurement of social welfare and thereafter state some implications of the approach. This Neoclassical approach was developedby Edgeworth, Sidgwick, Marshall, Pigou and later Yew-Kwang Ng. It assumes that Utility is cardinal, that is, scale-measurable by observation or judgment, Preferences are exogenously given and stable, Additional consumption provides smaller and smaller increases in utility (diminishing marginal utility)., All individuals have interpersonally commensurable utility functions. Going forward, it is possible to construct a social welfare function simply by summing all the individual utility functions. However, such a measure would still be concerned with the distribution of income (distributive efficiency) but not the distribution of final utilities. Various social welfare functions have been suggested, that are functions of a society's individual level utilities. Utilitarian: One of the utilitarian measures of a society's welfare is the sum of all individual utilities. Alternatively, the utilitarian measure could instead take the average (mean) utility rather than the total. Rawlsian: The Rawlsian measure of society's welfare equals the utility of the individual who is worst off. Bernoulli-Nash: The Bernoulli-Nash Social Welfare Function goes some way to find a mix of the utilitarian and Rawlsian Social Welfare Functions. They are similar to the utilitarian Social Welfare Functions, but are multiplicative rather than additive. Iso-elastic: It is possible to take a more generalized mix of the utilitarian and Rawlsian welfare functions. One way is to use

an iso-elastic welfare function:(Dion Walker, 2014).The conceptual issues underlying the measurement of social welfare are, for the most part, well understood. Consumption behavior reveals consumers' willingness to pay so that demand equations can be used to recover their expenditure functions and measure the equivalent or compensating variations. The focus of attention is not on what concept should be used to measurewell-being but the empirical methods used to model demand behavior. While these welfare estimates are of independent interest, the goal of empirical welfare analysis is often an assessment of the effects of policies on groups of households.

1.1 Problem Statement

From literature various study are available on measurement of welfare including Murray kemp and A. Asimakopulos (1952) wrote A note on "Social Welfare Functions" and Cardinal Utility; Daniel T. Slesnick (1998) wrote on the Empirical Approaches to the Measurement of Welfare; Atsushi Tsuneki (2007): The Measurement of Social Welfare Paul Dolan (1998); The measurement of individual utility welfare and social Welfare. Geir and Wolfgang, (2002); A General Approach to Welfare Measurement through National Income Accounting. Despite some of the above mentioned little or no paper has done thorough work on the Cardinalist approach to social welfare measurement.This paper attempt to review Edgeworth, Sidgwick, Marshall, Pigou and Yew-Kwang Ng assumptions on social welfare measurement and state some implications from the findings.

1.2 Objective of the Paper

The main objective of the paper is to review the Cardinalist Approach to Measurement of Social Welfare and state some implications of the findings.

2. SOURCE/TYPE OF DATA

Secondary data was used for this study and was gotten from Textbook, publication, Journals, articles among others.

2.1 Method of Data Analysis

The objective was achieved using several literatures gathered from the various sources consulted. A critical review was carried out on the findings of several journals and article and were all discussed as appropriate.

3. RESULT AND DISCUSSION

Cardinal Utility is the idea that economic welfare can be directly observable and given a value. It's based on the cardinal measurement of utility which assumes that utility is measurable and additive.It'san important concept in utilitarianism and neo-classical economics. Jeremy Bentham talked about utility as maximizing pleasure and minimizing pain. The theory was developed by neo-classical economists like Marshall, Pigou, Robertson etc. It is expressed as a quantity measured in hypothetical units which called utils. This is important for welfare economics which tries to put values on consumption. For example, allocative efficiency is said to occur when Marginal cost = Marginal Utility. The assumption includes Rationality, Cardinal Utility, Constant Marginal Utility of Money, Diminishing Marginal Utility, Independent Utilities:

The Marshallian theory of economic welfare is based on his tool of consumer's surplus. He begins with the individual consumer's surplus or welfare and then makes the transition to the aggregate consumer's surplus. To explain the aggregate welfare of the community, he uses his tax-bounty analysis. consumer's surplus refers "the excess of the price he would be willing to pay rather than go without the thing, over that which he actually does pay, is the economic measure of this surplus satisfaction." According to Prof. Hicks, this Marshall's measure of the consumer's surplus "involves noting more introspective or subjective than the demand curve itself." The area under the demand curve after deducting consumer's outlay on the commodity represents consumer's surplus. This is based on the hypothesis of constant marginal utility of money for the consumer. It is thus free from interpersonal comparisons of utility.Marshal assume markets are homogeneous with respect to the income class of the buyers and regards the individual buyer as a model representative of the group.To get rid of the problem of interpersonal utility comparisons and value judgements, Marshall says that for practical purposes the area between the demand curve and the price is taken to be a good approximation of the sum of the individual consumers' surpluses.
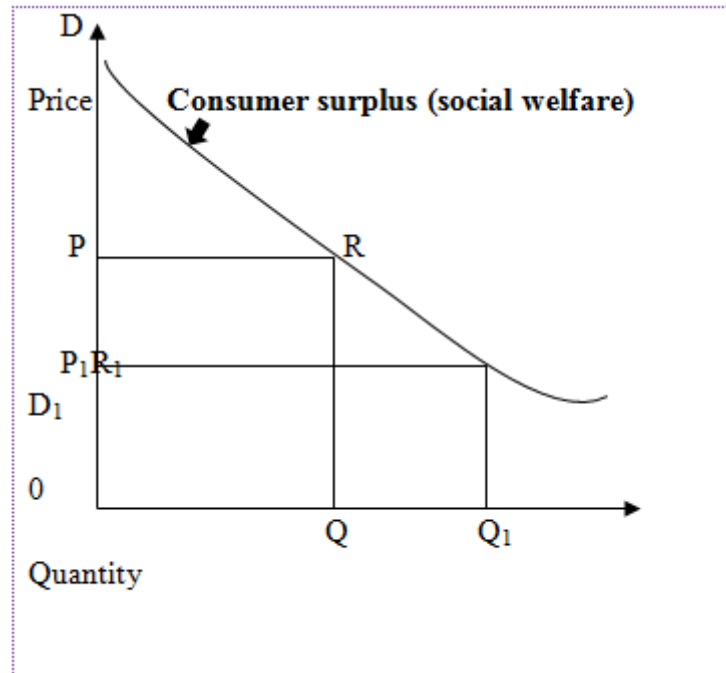
Fig 1

Marshal concept of social welfare is represented diagrammatically in Fig. 1 where DD_1 is the demand curve for commodity. If OP is the price, OQ unitscommodity are purchased and the price paid is $OP \times OQ$ = area OQRP.

However, the total amount of money, the individual is prepared to pay for OQ units is OQRD. Therefore, social welfare=OQRD-OQRP = DRP. If the price of the commodity falls to OP_1, the consumer's surplus increases to DR_1P_1 and conversely a rise in price would diminish it.

According to Marshall, aggregate economic welfare can be increased by taxing diminishing returns industries and using the tax receipts to subsidies increasing returns industries.

To get rid of the problem of interpersonal utility comparisons and value judgements, Marshall says that for practical purposes the area between the demand curve and the price is taken to be a good approximation of the sum of the individual social welfare. Marshall uses his tax-boundary analysis to explain the aggregate economic welfare. According to Marshall, aggregate economic welfare g D. can be increased by taxing diminishing returns industries and using the tax receipts to subsidies increasing returns industries.
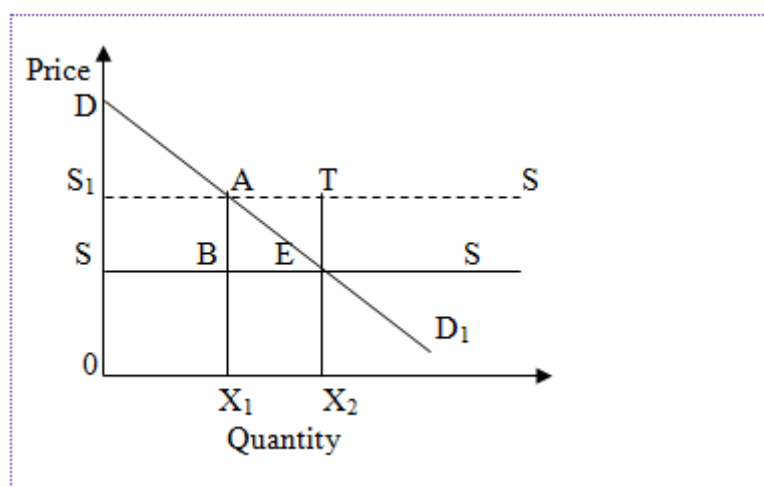

Fig 2

To arrive at this conclusion, he explains the following three possible cases.Constant Returns, Diminishing Returns, Increasing Returns. Marshall concludes that aggregate welfare can be increased if the government imposes a tax on diminishing returns or increasing cost industries (where tax receipts are greater than the loss in consumers' surplus) and spends the proceeds to subsidies increasing returns or diminishing cost industries where the gain in consumers' surplus is more than subsidy payments. Equal sums of money measure equal utilities to all and A fall in the price of the product results in a fall in output and hence loss of satisfaction.Marshall advocated that an industry which is working under increasing returns must produce beyond its equilibrium point and an industry working with diminishing returns should stop producing before their equilibrium output. For this he suggested the policy of giving a bounty to increasing returns industry and levying a tax on the industries subject to diminishing returns. The proceeds of the tax could be used for giving bounties. Arnold Harberger (1971)proposed a set ofguidelines for applied welfare economists.Simply put, consumer's surplusshould be used to measure individualwelfare, and social welfare should bebased on its unweighted sum over thepopulation. Consumer's surplus is the overwhelmingchoice as a welfare indicator,largely probably because it is anintuitive concept with modest data requirements.

Sidgwick wanted it all: a rational, orderly universe that unfailingly maximized both collective and individual happiness. Sidgwick's major contribution to this stream of thought is his Methods of Ethics (1874), which was both the capstone work of classical utilitarianism and cemented Sidgwick's place as one of the great philosophers of ethics during the Victorian period. Sidgwick followed Jeremy Bentham and John Stuart Mill in espousing the normative doctrine of "the greatest good for the greatest number." Sidgwick's studies in political economy carried this ethical perspective into the economic realm, as did his influence on economists such as Pigou, whose welfare analysis is very much a restatement of the Sidgwickian view, but undertaken with Marshallian analytical underpinnings. Pigou defined individual welfare as the sum of satisfactions obtained from the use of goods and services. Social welfare is the summation of all individual welfare in a society. Since general welfare is very wide and complicated, he limited his study to economic welfare. He defined economic welfare as that part of social welfare "that can be brought directly or indirectly into relation with the measuring rod of money."Pigou regards economic welfare and national income as coordinate.He lays down two conditions for maximizations of welfare:(i) Given the taste and income distribution, an increase in national income represents an increase in welfare.(ii) For welfare maximisation, the distribution of national income is equally important.If national income remains constant, transfer of income from rich to the poor would improve welfare. With income subject to diminishing marginal utility, transfers of income from the rich to the poor will increase social welfare by satisfying the more intense wants of the poor. Pigou had a dual criterion for detecting the increase in social welfare. First, he measured the economic welfare of the society in money value and thus, given the supply of resources, an increase in national dividend meant an increase in social welfare.Second, Pigou favored an income equalization policy and therefore, reorganization of the economy which increases the share of the poor without offsetting adversely "productive effort enterprise and development of capital equipment was to be taken as a gain in social welfare."

3.1 Implications of cardinalist approach to measurement of social welfare

Several economists proposed the use of the 'law of diminishing marginal utility' as a criterion of welfare. Their argument can be illustrated by the following example. Assume that the society consists of three individuals; A has an income of ₦700 while B and C have an income of ₦350 each. Consumer A can buy double quantities of goods as compared to B and C.However, given the law of diminishing marginal utility, A's total utility is less than double the total utility of either B or C, because A's marginal utility of money is less than that of B or C. Thus $W < W^*$. To increase social welfare income should be redistributed among the three individuals. In fact, cardinal welfare theorists would maintain that social welfare would be maximized if income was equally distributed to all members of the society. The cardinalist approach to welfare has a serious flaw: it assumes that all individuals have identical utility functions for money, so that with an equal income distribution all would have the same marginal utility of money. This assumption is too strong. Individuals differ in their attitudes towards money. A rich person may have a utility for money function that lies far above the utility (for money) function of poorer individuals.

In this case a redistribution of income (towards more equality) might reduce total welfare. Opponents of the cardinalist approach pointed out also that welfare effects of an equal distribution of income cannot be examined in isolation from the effects on resource allocation (which would follow the redistribution of income) and the incentives for work of the various individuals.

An equal income distribution may induce some people to work less, thus leading to a reduction in total GNP. Similarly, equal incomes in all employments may lead to an allocation of resources which produces a smaller total output. In both cases income equality results in (Pareto) inefficiency in the use of resources and a reduction in social welfare.

Going forward the assumption that satisfaction can be objectively quantified with consistence in one individual or across a population of individuals is based on psychological and economic concepts that, when utility theory was founded were then immature and that now inadequately reflect contemporary complexities.

The concept of quantifying a subjective, seemingly impulse-based tendency toward liking or wanting seems poorly founded in scientific understanding (perhaps science and technology have now advance enough to overcome the problem quantification of subjective impulses but if so it seems it will still be long while before such advances make an inroad into everyday economic analysis

The constant marginal utility of money is a concept that defies the current reality since utility of money changes as the value of the money changes and the rather rapidly sometimes.

Marginal utility and diminishing utility are founded upon psychological principles that don't hold up as continuingly valid; new field of psychology, such as psychology of happiness or positive psychology shed new light upon the assumption of marginal and diminishing utility underlying cardinal utility theory.

3.2 Applications of social welfare analysis.

Policy Evaluation. Following Harberger's (1971) lead, the sum of the equivalent or compensating variations is commonly used to represent the change in social welfare. While this has the appearance of being a positive measure of the change in aggregate welfare, it is no less normative than methods based on explicit social welfare functions.

The Social Cost of Living. Estimatesof the cost of living are among the mostimportant statistics produced by thefederal government. They are used toadjust wages, Social Security benefits,

pensions and government transfers inan effort to preserve recipients' standardof living. Tax brackets are indexedto avoid what is commonly known as"bracket creep".

4. CONCLUSION

From the foregoing it can be concluded that Cardinalist approach to measurement of social welfare is not an absolute measure of welfare because of it obvious flaws.

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