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**THEORETICAL ISSUES IN MEASURING
DISTORTIONS IN AN ECONOMY****Akpan H. Ekpo***West African Institute for Financial and Economic Management (WAIFEM)
Central Bank Learning Centre, Satellite Town, Lagos***ABSTRACT**

The paper argues that distortions are deviations from marginal cost pricing and are measurable depending on the type of distortion and the nature of economic activities. Distortions are permanent features in market/capitalist type economies. An alternative view of distortions is examined with the contention that the implementation of a people-oriented economic framework would reduce or minimize distortions.

JEL classification: D4, D6

1. Introduction

ECONOMICS as an inexact science is prone to the use of vague concepts, appealing to intuition and most times possesses weak predictability records. It uses the scientific method which involves using an organized procedure for shifting warranted beliefs. Science moves forward by the dialectic application of the scientific method on a continuous process of stockpiling facts and techniques. Science, therefore, consists of paradigms which are "universally recognized scientific achievements that for a time provide model problems and solutions to a community of practitioners" (Kuhn, 1970). Another perception is that science progresses catastrophically by timely discontinuities, breakdowns and variations in direction. This is often set in motion when problems or anomalies exist in the previous dominant paradigm or model. If the dominant paradigm cannot solve problems persistently then a crisis occurs and the old paradigm is overthrown.

In economic science, there are several examples of old paradigms being 'overthrown' because of the inadequacy or inability of the dominant thought to either solve an existing problem or positively change a persistent economic malaise: the 'Keynesian revolution' is an example of such a change. Today, in all economies, the persistent crises of rising unemployment, declining productivity, inflation, declining social services, among others have resulted in various theoretical revolts against neo-classical, neo-Keynesian, new business cycle, neo-classical, new-Keynesians cohorts and their various derivatives. "The assertion is that new constructs based on realism (accumulation of facts over the years) would assist policy-makers in removing the distortions of unemployment, low productivity, high inflation rates, etc." (Ekpo, 1987).

Most of the scientific evidence within the context of economic theory have centered on the nuances of the market / capitalist system. When the market system is in crisis, short-run solutions are proffered in an attempt to reverse the crisis; in more recent times, long-run solutions have been invoked to mitigate the crises of capitalism yet such economic systems continue to experience recurrent crisis. The present global economic crisis has once again confirmed the inevitability of crisis within capitalist / market dominated economies.

The science of economics allows for the existence of crisis and also proffers possible solutions. The bedrock of the market system is to view the competitive market model as a benchmark for analyzing an efficient economic system, albeit with sweeping generalizations. Therefore, any deviation from marginal cost pricing is pareto sub-optimal reflecting a distortion in the economy. For example, the existence of market failure can be perceived as a distortion which could be corrected. Thus, monopoly, oligopoly, etc market structure are generally not efficient but could be made efficient. The question to address is whether any deviation from marginal cost pricing, that is, from the competitive model can be measured. In addition, if the economy is viewed aggregatively, do distortions exist and if so, can they be measured?

At the level of policy, distortions remain important considering the fact that some economists argue that government participation in an economy is a reflection of attempts to remove distortions of several types (Atoyebi and Odedokun, 1987). It was the attempt to correct for distortions that resulted in the implementation of Breton-Woods type Structural Adjustment Programmes (SAP) in most of sub-Saharan African countries in the 1980s. Can the socio-economic costs of SAP be measured?

The objective of this paper is to examine theoretical issues regarding measuring distortions in an economy. Following the introduction, section 2 discusses conceptual issues while section 3 attempts to bring some empirical evidence to bear on the subject matter. In section 4, an alternative view of distortion is examined; section 5 concludes the paper. It is expected that the analysis will not only shed more light on the subject matter but will also engage further discussion as well as serve as a guide for thinking outside received theories when the matter of distortions in economic science is examined.

2. Conceptual Issues

In a general sense, distortion refers to a marginal divergence involving a discrepancy between marginal private valuation (i.e., cost or benefit) and marginal social valuation. Distortions of this type are seen as natural to an economic system and hence they are often referred to as Endogenous Distortions. On the other hand, distortions caused by government policies are known as policy - imposed Distortions. A policy - imposed distortion can be either instrumental (if it is an outcome of some corrective policy measure) or autonomous (if it results from an irrational policy measure).

Some economists contend that "Distortions exist when the prices of goods and services, as well as capital and labour, do not correctly reflect their scarcity. Distortions may be caused by monopolistic tendencies in the private sector or by government intervention. It is possible for government interventions, if properly designed, to correct distortions. In most instances, however, price distortions are introduced by government directly or indirectly in pursuit of some social or economic objective, sometimes deliberately, sometimes, incidentally."

Bhagwati (1958a, 1958b) in examining the possibility of immiserizing growth set the stage for the development of the generalized theory of distortions and welfare which constitute the analytical framework for the so-called modern theory of commercial policy. He argued that in the presence of economic distortions, economic growth might cause deterioration in the level of social welfare (Bhagwati, 1958b).

² A situation in which an open economy with an expansion in its productive capacity caused by economic growth or / a technological progress can become worse off if its terms of trade deteriorates sufficiently and offsets the beneficial effects of economic growth (Dinopoulos, 2005).

This analysis sets the pace for discussing and measuring the implications of imperfect market specification, distortionary taxes, deadweight loss, consumer surplus, producer surplus, price discrimination, among others.

Let us consider the issue of taxes in a comparative statics model. In the context of competitive markets, let us see how the equilibrium price and / or quantity would change as some policy variable changes. Using the inverse demand and supply functions, we impose a tax t :

$$P_d(q) = P_s(q) + t \quad (1)$$

or

$$P_s(q) = P_d(q) - t$$

Having solved for the equilibrium prices and quantity, it is straightforward to do the welfare analysis.

The utility of consumption to the consumer at the equilibrium:

$$X^* \text{ is } U(X^*) - P_d X^*$$

The profits accruing to the firm are:

$$P_s X^* - t(X^*)$$

The revenue to the government is shown as:

$$tX^* = (P_d - P_s)X^*$$

The simplest case is where the profits from the firm and the tax revenues both accrue to the representative consumer, showing a net welfare of:

$$W(X^*) = U(X^*) - C(X^*) \quad (2)$$

Equation (2) is the area below the demand curve minus the area below the marginal cost curve (see figure below). The difference between the surplus achieved with the tax and the welfare received in the original equilibrium is known as the deadweight loss (distortion). It measures the value to the consumer of the lost output. It can also be derived through integral calculus (indefinite integral).

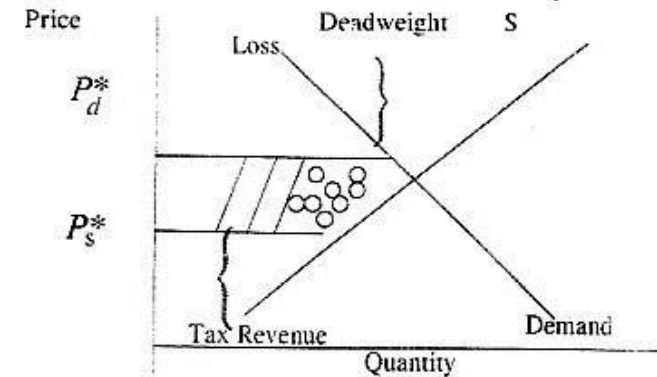


Figure 1. Deadweight Loss

It has been argued elsewhere that disequilibrium within a macroeconomic framework represents a distortion. Broadly, if an economy is not at full employment equilibrium output then unemployment, inflation and sluggish growth would generate distortions in the economy. In the strict Keynesian model, a shift in the aggregate demand function cannot affect prices in the short run because the supply curve is horizontal, that is, prices offered by suppliers are fixed in the short run -this is the fixed-price hypothesis. This hypothesis could be perceived as a departure point for analysing the macro-disequilibrium theory. Adjustment to full employment equilibrium is not instantaneous but takes some time because of wage rigidity, and monopoly elements, among others. Thus disequilibrium connotes distortion which could have adverse repercussion on an economy in terms of employment, price stability, external balance, and economic growth.

The disequilibrium theory involves: (a) the inability of prices (commodity prices, interest rates, wage rate, etc) to vary freely in the short run, (b) necessary adjustments to the conventional general equilibrium theory of market adjustment with the hypothesis of price rigidities, and (c) how it fits into an examination of inflation and unemployment. The theory highlights the challenges facing the Marshallian fixed-supply assumption and the Walrasian tatonnement process. It rejects the Walrasian proposition that transactions are not carried out until short-run market equilibrium prices are established. For example, in a typical Keynesian labour market, as far as there are workers willing and able to work at a wage rate higher than the notional equilibrium wage rate, involuntary unemployment which is measurable would occur; involuntary unemployment reflects a distortion.

The models with multiple Pareto-ranked equilibria, known as coordination-failure models, do not fare better either. "The possibility of coordination failure implies that the economy can get stuck in an under-full-employment equilibrium. That is, output can be inefficiently low just because everyone believes that it will be. In such a situation, there is no force tending to restore output to a potential situation. As a result, there may be scope for government policies that coordinate expectations on a high-output equilibrium; for example, a temporary stimulus might permanently move the economy to a better equilibrium." (Romer, 2001: 318).

Another way of identifying distortions concerns the issue of equilibrium real exchange rates. In developing economies, it is important to make sure that the actual real exchange rate does not stray too far from its equilibrium value, often referred to as exchange rate misalignment. Large real exchange rate misalignments can have important costs on the economy. It is necessary to note that economists differ on the definition and measurement of an equilibrium real exchange rate. This in itself reflects some distortion in the economy.

A measure of misalignment is defined as the difference between the actual real exchange rate and its equilibrium value. Concepts of misalignment include short-run misalignment, long-run misalignment and ultra-long-run misalignment. Misalignment can arise from: (i) bubble factors, (ii) transitory policy shocks and slow adjustments of predetermined variables, and (iii) inappropriate policies.

3. Empirics

In a seminal paper on immiserizing growth in expanding economies, Dinopoulos (2005) showed that in the absence of distortions, expansion in an economy's productive capacity stimulates growth and dynamic efficiency. However, the presence of distortions might create the conditions for a negative correlation between long-run economic growth and welfare. The results indicated that the presence of economic externalities and endogenous distortions (associated with imperfect competition) are necessary for the existence of endogenous long-run growth. The growth is driven by positive economic profits which create strong incentives for firms to engage in research and development (R&D) investments so as to discover new products.

Another study on the Asian growth experience (Fernald and Neiman, 2009) indicated that market distortions in theory and practice affect measures of total

factor productivity regarding quantities (the primal approach) and real factor prices (the dual). The distortions reflected intentional government policies, such as capital subsidies or preferential tax treatment for some firms.

Parrino et al (2002) examined distortions in corporate investment decisions when a new project changes firm risk. Using a dynamic model in which a self-interested, risk-averse manager makes investment decisions at a levered firm, the results show that despite potential wealth transfers from debt holders, managers compensated with equity prefer safe projects to risky ones. The factors that influence such a decision include: (i) the expected changes in the values of future tax shields; and (ii) bankruptcy costs when firm risk changes.

It is apparent that within a market/capitalist economy, distortions can be found in foreign trade, consumption side of the commodity market, in the factor market, imperfect market structures, etc. These, more often can be corrected or adjusted to return the system theoretically to optimality and / or equilibrium. Even when distortions occur under comparative statics, they could be corrected by dynamizing the system through shocks / government policies. These distortions can be measured quantitatively but in practice, policies are often needed to aid the measurement.

4. Distortion Ineconomics: Alternative perspective

Because economics is about people and society, some scholars have analysed the issue of distortion outside the sphere of Pareto-optimality, competitive equilibrium, etc. Magee (1973) identified several endogenous types of distortion including: imperfect knowledge, rural-urban dichotomy as examined in the Harris-Todaro model (Harris and Todaro, 1970), ethnicism, racism, monopoly power through strong trade unionism, gender discrimination, and discrimination against children, disguised unemployment, and subsidies of all types. In recent times, it is not uncommon to perceive corruption, lack of transparency and accountability, and existence of poverty as aspects of distortion. Whether these aspects of distortion can be measured is another matter. Sometimes, measurement of these kinds of distortion is subjective depending on the experience, interest and perception of the policy maker. Hence, the policy maker ought to understand the technical issues to enable him or her make a 'reasonable' judgment.

At the macroeconomic level, the capitalist economy, no matter how it is managed, is prone to recurrent crisis of inflation, unemployment, balance of

payments, declining productivity, fiscal crisis, etc. When the crisis is short-lived, it is viewed as a recession; when it is prolonged, it becomes a depression. These crises which themselves reflect a deviation from optimality (distortion) have become permanent features of the market system. Though counter cyclical policies are always put in place to address the crises, sooner than later, another episode of crises sets in. If a capitalist economy could be devoid of crisis, then the economy of the USA would be a very good example. The economy of the USA is one of the best managed with perhaps the best of experts in all fields yet the economy experiences periodic and prolonged crises.

The current global economic crisis is another excellent example of the permanent nature of crises in capitalist economies; even World Bank and IMF economists could not predict the crisis and neither are they able to provide concrete solutions. This is not surprising because based on the laws of capitalist development, the elements of greed, self-interest, profit motive, and competition would always affect the investment pattern in capitalist-driven economies; it is the nature of the business cycle.

Keynesian, neo-Keynesian and new-Keynesian theories comprise a wide range of models, most of which are designed to address specific issues rather than to approximate the behaviour of the economy as a whole. The account of fluctuation by these theories usually ascribe important roles to many different types of shocks, distortions and many different types of market imperfections. "Keynesian models are so vague and so flexible that they are almost impossible to refute ... Keynesian macroeconomics can modify their theories and postulate unobserved shocks to fit the data in almost any situation" (Romer, 2001, p. 322).

Thus, at the macro level, the Keynesian theory is so flexible that it offers solutions to recurrent crises of capitalism. For example, as regards the current global crisis, the theory allows for fiscal stimuli and integrates the financial sector into its modeling and analysis. The theory postulates more regulation of the financial market and short-run direct government intervention in the capitalist type economies. A capitalist economy is full of distortions. It is a distorted economy. Therefore, orthodox economic theory is indeed a theory of distortions; always forcing the system to, at least mathematically, be at competitive equilibrium by fulfilling both first and second order conditions even when the system deviates from temporary optimality (distortion).

Even in these countries (Western Europe, North America and Japan), bourgeois economics has been unscientific in the fundamental sense that it has persistently failed to provide a good reflection of the reality of the capitalist system. (Onimode, 1985: 19)

Are these distortions at the macro level measurable? It is possible to quantify the number of jobs lost, the degree of poverty, the number of those without shelter, the number of those receiving unemployment compensation (in advanced capitalist countries), output loss, number of people who have psychiatric problems due to loss of houses or jobs, crime rate, number of persons out of school, etc. These indices are available in developed market/capitalist economies. In developing capitalist economies such as Nigeria, some of these indices are also available (see the various publications of the National Bureau of Statistics). During recessions and depressions, these indices are usually quite high indicating the inadequacy of the system to cater for the welfare of citizens.

It is clear that a shift in theoretical framework to a people-oriented paradigm would minimize distortions in an economy. We argue that a market socialist economy will be people-oriented and thus would drastically reduce the elements of greed, self-interest, and profit-motive, among others. Such a framework would not negate the market but would rather curb the excesses of the market because the political structure would represent the interest of most of the citizens. The framework would allow markets to work / operate where it is possible as well as ensure that the State plays a developmental role. Under this framework, the State would not be subservient to the private sector but would insist that, for example, workers are not retrenched due to falling rate of profit. Hence, total output in the economy would be influenced mostly by labour and the political structure:

$$Y = f(L, L_T; P_s) \quad (3)$$

where:

Y = aggregate output (wealth)

L = labour force – skilled human beings

L_T = labour necessary time used in production

P_s = political system / structure, e.g. people's oriented party.

In the above specification, emphasis is on the labour force because even machines, ideas, investments, innovations, etc. are created by humans not stones. Since aggregate wealth is produced by labour, the latter would ensure full employment output.

It should be noted that the market socialist economy is not distortion free because markets still exist and will operate under rules of marginal cost pricing. However, the degree of deviation from marginal cost pricing would be minimal. At any point in time, labour would be guaranteed its reward based on production, hence aggregate demand would be sufficiently high to compensate for any loss due to any short-run market failure. After all, under such a system, the means of production are owned, managed and administered by the people while the market is used in production, distribution of resources and economic output.

The market socialist framework would reduce cyclical instability because the state controls savings and investment, invariably eliminating a major source of inefficiency, inequality and social strife that arise because of violent cyclical variations under a capitalist framework. An examination of the recent global economic crisis shows that countries with efficient and qualitative state ownership and management of the means of production, such as China, Singapore, and Sweden were less hit by the crisis than market-dominated countries such as the United States of America and Japan.

5. Conclusion

Distortions within an economy (particularly market / capitalist type) are essentially deviations from marginal cost pricing, Pareto optimality, and / or competitive model. Distortions within an economy can be measured depending on the type of distortion and the commodity involved.

We have posited that situations of disequilibrium can be perceived as distortionary and that the persistent / permanent crisis of inflation, unemployment, sluggish growth, adverse terms of trade, foreign exchange problems, etc. inherent in market/capitalist type economies are indices of distortions which are measurable.

We have discussed alternative perspectives of distortions outside the narrow confines of microeconomic theory to include poverty, corruption, lack of transparency and accountability, discrimination, rural-urban migration, among others. We argued that though no economy is distortion free, a market socialist

economy would be less distorting because of the public ownership, management and administration of the means of production as well as allowing for the market to utilize marginal cost pricing in its activities. The State which would be developmental would represent the majority of the people; this would check the excesses of the market. Because labour creates wealth and therefore dominates capital under a market socialist framework, distortions would be minimal.

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