



Review Article

CONIC ECONOMICS

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Abstract: The current world situation of Covid-19 pandemic has highlighted the need for a model of economics which can address the issues of growing economic inequality, and location specific behaviour and actions of economic entity during normal and emergency times. The present paper is focused towards establishing Conic Economics model as a prospective candidate model. Conic Economics is a point location based model based on consideration that economic agent decision making behaviour is influenced by its own profile and intentions at particular type of location and time. The three stages model of point location oriented economics measure includes location, economic entity and timing as primary stage, behaviour as second stage and the last stage is having infrastructure, presence of government, social and cultural beliefs etc. as economic decision supporting stage. The resulting measure is called as user based Conic Score™ at that point location during a specific time within a region of influence. The score obtained is an indication of level of agreement towards set objective at that point location. The score for multiple point location can be obtained and compared.

Keywords: *Economic entity, Region of influence, Economics Model*

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Introduction

Economics is generally defined as the measurable condition of a region or group with respect to material prosperity. The term is concerned with a large inhabited region for measurable material prosperity, growth and development of citizens residing there. Conventionally and historically, the subject has been presented with a view point of an established government of the region in context. However, today's world is moving towards a technology supported connected region where government as well as different economic entities look for assessment of economic worth of products and services with lot of auxiliary information available to process. Economics as a subject reflects the 'value of life and living a better life'. Literally the subject engulfs all those activities and various dimensions of human life which helps him live a better life. The 'better' word is relative in nature and based on many supporting tangible and intangible components. The tangible components like land, capital, labour, monetary assets and public infrastructure can be assessed in quantifiable terms. But intangible components like social customs and cultural beliefs, relations, creativity, risk taking capabilities of economic entities along with its intentional behaviour which altogether affect decision making are difficult to assess. In addition to these conventional economic activities and thoughts, another two important non-measurable dimensions are spirituality and tribulation. These two plays an important role in decision making process of any economic entity. Together all these dimensions are not static but dynamic over surroundings, time and location. However, available literature on economics merely looks a society in terms of better governance, material comfort, consumerism and currency. So, economics has not been seamless but affected by political boundaries and social structure existing within it. In today's world of rising discontentment due to inequality, religious conflicts and trade wars, it is pertinent to note that the need of the hour is to realize 'economics' as an 'art of living'. It means higher economics shall represent higher 'art of living' and vice versa. Ideally, economics needs to be seamless and unbounded with pure information on resource availability, knowledge processing capabilities and efficient utilization of resources in sustainable way.

In last few decades, the literature on modern economics is observed to be tilting heavily on consumer behaviour, rational choices, information explosion, etc. It is also noted that, many theories of economics have been criticized because of its hindsight approach which assume auto-correlated structure in human behaviour from past. Such theories can be applicable in normal environment and to specific predictable behaviour. But it may fail to assess conditions of behavioural changes especially during creation, destruction, innovations and adoption or rejection of goods or services due to socio-cultural compatibility issues, political upheavals, war emergencies or pandemics like Covid-19 situation. In view of these issues, an economics model is felt today that can assimilate the tangible, intangible and behavioural components of economic entities at a time and location.

Applications of Economics Model

From literature, it has been observed that there are five main reasons for which economic models are used. These are:

- a) For better prediction of economic activities for drawing conclusions based on set assumptions;
- b) For prescribing new economic policies and guidelines that will change future economic behaviours of economic entities;
- c) To support logical defense for justifying economic policies at multiple levels;
- d) To plan and allocate resources; and
- e) For planning logistics and business leadership to guide future trading and investments.

Reviews on Some Economic Models

The discussions on classical and neoclassical theories and its applicability are abundant and unending in the literature. Many other theories viz., Keynes's shifting equilibrium, James Stanford's Computable General equilibrium (CGE), market equilibrium, macroeconomics, behavioural economics, environmental economics, and others have been developed. Classical economics is more empirical and it explains capitalist mode of production through social and historical analysis.

The neoclassical approach is more mathematical with assumptions underlying are based on rational behaviour, and ignores vulnerability and irrationality. Also, its overdependence on complex maths makes the empirical part insignificant. But during the global economic meltdown 2007-09, the existing economic models especially DSGE model was criticised for failing to predict the great depression. The serious questions were raised over the assumptions on which DSGE and other models rest. Also, it was observed that one model does not fit all requirements. For example, market model lack cost of environmental issues and pollution component, and environmental model ignores social and financial impact and financial model are history dependent etc. Other bigger issues challenging economists are related to migrations, dishonest market intentions, market bubbles, black market, anomalous behaviour etc. In addition, it is also noted that there is no scientific methodology available for validating theories and hypothesis. This indicates that economics is certainly not just a science but is an art also. During the financial crisis, the prevailing dynamic stochastic general equilibrium (DSGE) models performed poorly [2] and hence alternative future paradigm needs to be pursued. Many reasons were suggested towards performance of DSGE models. One of them was unappealing assumptions about consumers and firms. Also, the DSGEs model that is based on New Keynesian model is composed of equations describing aggregate demand, price adjustment; and an equation describing the monetary policy rule. For describing the dynamics of country's economic prosperity, the level and rate of growth, which is common measure of socio-economic conditions of citizen of a country does not always reflect the real level of a population's living standards [3]. This model has drawbacks like no account of presence of informal market and amount of time spent on work. Also, the measure does not include the negative processes associated with economic activities. In review of the models of economic growth, the author divides models into two groups: exogenous (external) models and endogenous (internal) models.

The "new growth theories" of economic growth began in 1980s and 1990s when technological progress was regarded as an endogenous factor of economic growth. Here hypothesis on technological innovations was based on investment in technological development and in human capital [1]. The Covid-19 pandemic erupted in China during late 2019 and rapidly affected almost all regions of the world. The disease's impact on human lives and economy has been profound and unprecedented. It was observed that the regional assessment of extent of economic disaster in terms of increased poverty, unemployment and food insecurity is not clearly explained.

The real economic challenge is to face reality and the paper deprecated assumption of rational expectations or reducing uncertainty to stochastic risk [12]. The economists need a better self-understanding and understanding their discipline, including its methods of modeling [5].

Economics Model and Properties

As per literature, an economics model is a theoretical construct that details flow of economic processes. The model rests on assumptions on set of variables, set of logical and quantitative relationships between them. A model is a more applied or empirical representation and we use models to test hypothetical economic theories.

In modern literature of economics, many theories and models have evolved over time that has given direction towards better decision making and managing resources efficiently. However, with evolving technology and AI platforms the environment conscious and market oriented world is striving to find an economic model that fits the structural requirements for the future world needs.

Looking at the present world scenario of serious economic downturn due to coronavirus Covid-19 pandemic, and limitation of presently available economics model in assessment and diagnosis of problems associated with economic agents susceptible to emergency situations, we need to identify again the important characteristics of economics models.

In general sense, the important characteristics of an ideal economics model may be listed but not limited to the following:

a) Tractable and parsimonious: It should be simple in computation and understanding and without heavy underlying assumptions.

b) Empirically consistent: It should be able to assess real economic worth of goods or services used by economic entity in the context, at particular location and time.

c) Conceptually insightful: The model should be able to include the profile of the economic agents under study and its intended behaviour at particular location and time.

e) Empirically consistent and predictive precision: Also, a good economic model needs to possess visual, empirical and simulation aspects for assessing economic process over space and time.

f) Generalizable model: The ideal model should be able to relate at all possible levels of economy with minimum risk arising due to loss of economic details.

Components of Ideal Economics Model

It has been observed that the existing theories and models on economics rest on number of assumptions and restrictions. Moreover, the scientific validation of models is limited due to non-availability of standard methodology. Hence, it is pertinent to note that, for an economics model to be 'robust' and scientifically validate-able, each of its components needs to be enlisted and their inter-relationship to be studied threadbare.

Following is the list of ten primary components of an ideal economics model

1. User' of economic data and its profiling: Every economic entity or economic agent has its own capabilities and intentions interlinked with a location and timing. So, it is important component in the model without which the structure does not begin.

2. Location and its type: Every goods and services have its worth based on the type of location it is available. In short, it represents 'where value of goods or services need to be assessed'.

3. Type of timing: The effect of time on transactions matters most but historically had been deprecated to 'conditions out of normal'. So, its high time that type of timing is considered as critical in economic decision making.

4. Intentions of the user of the economic data: Human behavior is considered 'rational' as well as 'irrational' according to existing theories. So 'intentions' which helps in decision making behaviour at particular point location and type of timing needs to be part of economic model that looks for prediction.

5. Region of influence as perceived by the 'user': The economic decision making process of any economic entity is based on its ability to gather information and act accordingly within a region called as 'region of influence'. If, for any agent, the radius is larger, then its need for details on other components grows proportionally.

6. Infrastructure availability in the location within the region of influence: As a component of economic model, information of various infrastructure categories plays a major role. The intentions of economic agent at particular location type and type of timing are greatly guided by existing infrastructure within its region of influence.

7. Social and cultural beliefs and its support in the location towards intentions of the user: The social and cultural beliefs, customs, faith *etc.* of human have never been considered as an important component in economic decision making. But, time and again, it has been proved the other way. The social and cultural believes in the region of influence needs to be considered with utmost diligence for achievable intentions and making better economic decisions.

8. Presence and strength of local government in the location: Generally, the presence of government is assumed to be of cent percent efficient and effective. Most of the economic decision making of economic entities depends on this assumption. However, it is imperative that the presence and strength of local government be made a part of economic model and assessed in qualitative and quantitative terms.

9. Human habitation, natural and man-made resources in the region and its profile: The list of components of ideal economics is incomplete without mention of human habitation in the region of influence, its socio-economic profile and presence of natural and man-made resources *etc.*

10. Technology: The current and future world would certainly depend on technology-at-hand for any decision making. So, any workable economic model in future should have a technology component.

Conic Economics

Based on the characteristics and components enlisted for an ideal economics model, this paper proposes a branch of economics called 'Conic Economics' which is based on 'Conic Economics' model. The Conic Economics is defined as branch of economics that measures extent of 'remoteness' and economic worthiness of goods, services or economic activities at any point location and within region of influence in the eyes of specific user (economic entity) of the economic measure. It is user context and its intended behaviour based economics at point location and at particular time period. 'Remoteness' is an indicator of extent of favourable condition. 'User' represents the economic entity who is supposed to take decision at that point location at specific type of timing.

The model assumes that for every economic measure need to be assessed have a user of it. Also, it is assumed that along with profile of the user, the economic measure is linked to any particular type of location and to a particular type of timing. Type of location includes categories of location which are (un)favourable to specific need of the user and type of timing involves normal, emergency (urgency) or laidback type of timing. For lustration, it is easily observed that during a normal day, morning hours and evening hours are utilized in common transactions and hence working hours are set accordingly. Other type of businesses and commercial activities may require afternoon hours or late night. During emergency period, the night times are considered very critical and worth of goods or services rises sharply.

The model assumes that the intended behaviour of the user at a particular point and during specific type of timing can be of three types: Creation, Maintenance or Destruction. In case of the user behaviour unclassified as per above then the 'Acceptance behaviour' will be taken which means the user will be accepting the prevailing condition and will not invest in maintaining or modifying it.

And lastly, the model assumes that all economic decision making depends on interrelated supporting tangible and intangible components like infrastructure, social and cultural set up etc. within the 'region of influence'.

Model of Conic Economics

The model is inverted right cone shaped structure with apex is bottom and right circle of base at ceiling. It is a three stages model

Stage 1: Introduction stage

Stage 2: Intended behavioural stage

Stage 3: Economic action supporting stage

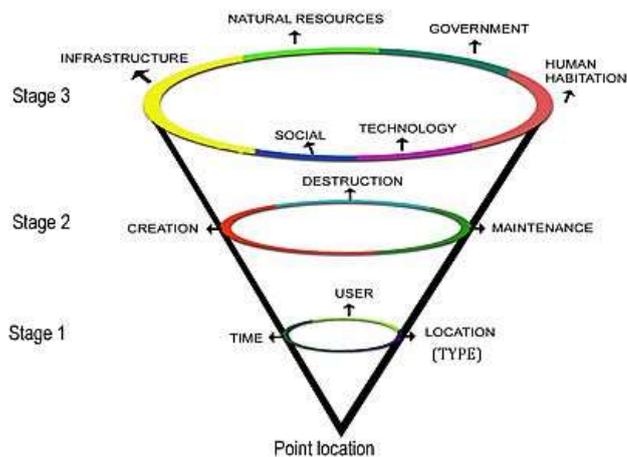


Fig-1 Model of Conic Economics

Model description

First a point location is to be selected where 'economic remoteness' is needed to be assessed. Then all three stages are required to be identified and assessed. The first stage comprises of three components viz., a) User or Economic entity, b) Point location and c) Time period. This stage indicates for 'Who, Where and when'. The components are inter-dependent to each other and information on each of them is required before moving to second stage. The Stage-2 comprise of three components viz., a) Creation b) Maintenance and c) Destruction. This stage together with Stage-1 is considered as 'intended behavioural' stage and primarily

focus on type of user's need at a specific selected point location. The components can be mutually exclusive and independent or interrelated as well. The Stage-3 is multi-component intended behaviour based supporting stage. It includes all tangible and intangible components like infrastructure facilities, Social and cultural beliefs, technology, natural resources, Government presence etc. The components of this stage need to be defined by the user based on intention at that point location. After all the components is identified and assessed using a standard methodology, a relative measurable index called as Conic Score™ is computed based on which a decision can be taken by the user (economic entity). Also, individually, each component of the model a score can be computed and separately studied under standard scientific methodology.

Steps in Conic Score™ Computation

The following steps are undertaken for computation of Conic Score™: Economic entity or User is selected; its profiling is done based on criteria set for a set of similar Users. Then User score is computed based on the set criteria.

A point location 'L' is chosen where user wishes to measure score. The location type is identified based on criteria set by the user. Then location score is computed based on criteria set. A region of influence is selected for studying other stage components. The last part of stage 1 is type of timing that is to be declared by the User as Normal, Emergency or Laid back timing based on the requirement. The scores on three different timings may differ at varying levels depending on the objective of the user. Together with step 1 to 4, Stage 1 score is computed then stage 3 scores are computed skipping the stage 2 at this point. It is because, behaviour of a user is greatly influenced by stage 3 components.

Scores of individual Stage 3 components identified earlier based on stage 2 (behaviour requirement) by the user and then computed. Then Stage 3 score is computed.

Finally Stage 2 (Intended behaviour of the User) is selected and accordingly final Conic Score™ is arrived by simple mathematical calculation.

The conic score™ algorithm is not always a standard mathematical expression but it is to be arrived in such a way that the relative effectiveness in classifying different alternatives of decision is maximized. The score for a point location within a region of influence is a real number value and is a relative in nature. For example: In deciding best location for a user objective, higher the absolute figure of Conic Score™, the 'economic accessibility and economic worth' will be considered relatively higher for that location compared to other point locations under decision making. And lower value of Conic Score™ for a user represents that the point location is 'comparatively remote' than other location points under comparison and decision making.

Application of Research: The conic economics model will support user, location and type of time specific economic decision making process.

Research Category: Economics modelling

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