DISTORTIONS IN THE EMPIRICAL INVESTIGATION OF ECONOMIC PHENOMENA

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Abstract

Study of the economic phenomena is a common practice, resulting in the need for understanding the complexity of the economic realities that are in a continuous process of expansion. This is possible by specific analysis, able to synthesize and explain the economic phenomena, even that the investigation is whether vertically or horizontally. In the empirical analysis of the economic phenomena should be taken into account some stages, and the distortions that can occur for various reasons. Paper aim is to bring some of those distortions that, once known, allow modeling the real data as close to the essence of economic phenomena.

Keywords: economic phenomenon; distortion; measurement; analysis; diagnostic; modeling.

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Studying the current economic phenomena is a concern that arose from the need of understanding the economic reality and find levers, instruments with which to intervene for the control of this dysfunction. The current activity of economic factors has led, over time, to the development and the complexity of the economic activities by their diversification and multiplicity. As a result, the economic reality is extremely complex fact that requires much more research to know its operating mechanisms, causes and factors that determine and find solutions to problems in business processes. They will provide the most accurate approximation of the true meaning of the economic phenomena.

Understanding the economic phenomena as economic activities manifestations (Dinga, 2004) is possible only through specific analysis able to explain what happens in the national economy, whether the investigation is on vertically or horizontally plan, and allow solving the economic problems of the moment through: i) provide solutions using a sustainable mix of policies and their effects; ii) the scenarios formulation taking into account the reality and dynamics of the economy; iii) making predictions, allowing

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anticipation of the national economic development per overall; iv) development of complex models by a simplified transposition of all activities of the national economy (Dobrescu, 2010; Anghelache, Badea, Capanu, Wagner, 2005).

Often, in carrying out research, make their mark a number of factors that cannot be properly identified in order to quantify and obtain relevant results. These factors may cause significant distortions in the process of economic phenomena investigation by altering the signals transmitted by the use of economic instruments.

The paper aims to analyze economic phenomena in terms of implications for the empirical investigation of the distortions that are inventoried. To this end, the paper is divided into four sections. In the second section is defined the economic phenomenon while the third section studies the distortions in the economic phenomena investigation starting from their measurements to their empirical study. Section four is dedicated to the conclusions.

The study proposed in this paper is current, original and of interest to those concerned with investigating various economic phenomena using empirical analysis, since warns of the possible biases in these tests.

Defining the economic phenomena is the first step that must be made when studying it. In order to understand the meaning of this concept it must start analyzing what means each word that forms the concept.

The scientific approach is especially important since it cannot investigate a phenomenon without understanding in depth its meaning. Once know the essence of the phenomenon it can switch to the stage of investigation using specific techniques. More specifically, an analysis of economic phenomena requires three steps: understand the phenomenon; measurement of the phenomenon; empirical investigation of the phenomenon.

The omission of one of these steps may result in the issuance of incomplete judgments, inaccurate, not consistent with the phenomenon being studied and may not correspond exactly to its reality.

Defining the economic phenomenon starts from the meanings attributed to words "phenomenon" and "economic", "economy" in the Romanian Explanatory Dictionary. By joining their significance, the economic phenomenon can be regarded as a manifestation, accessible directly, perceptible to human activities carried out in production, distribution and consumption of goods and services. On the other hand, the economic phenomena are expressions of economic realities generated by economic reality.

These are conceptual or constitutive definitions which capture the essence of the concept "economic phenomenon."

The economic realities are in a continuous dynamic, which leads to economic processes, that means the observable and measurable (qualitative and quantitative) processing of economic phenomena at a time. As a result, at the economic phenomena must be taken into account the space and time dimensions. Manifestations of the economic reality represent also the society ground for a certain period of time.

Structuring the economy on four levels allows in the same time the development of the economic phenomena on vertical plan, namely: i) micro; ii) mezoeconomic; iii) macroeconomic; iv) globaleconomic. At this levels it can be distinguished the measurable

variables at the individual, aggregate (industry, sector, region, etc.) and even global level. Classification of the economic phenomena is useful as facilitates the understanding of economic reality at every level.

Also, the representation of the economic phenomena can be achieved on horizontal plan, which provides understanding the structure of economic activities. They make it possible to know the institutional, legislative, technological, industrial, land, and to formulate correct solutions aimed to correct the horizontal disparities. The correction of the horizontal disproportions will ensure gradual the correction of the vertical level

Presenting the meaning/ essence of the economic phenomenon in all its aspects is performed by the operational definition based on the characteristics of this concept.

Characteristics of the economic phenomena are: Directly observable manifestation or with specific tools; Diversity in time and space; Continuous transformation; Complex content; Multifactorial determination; Interference with social phenomena which is why it is necessary to separate them, taking into account the influence of these two phenomena in the decision-making; Depends on a variety of the people interests and aspirations and are affected in turn by their behaviour; Stochastic or deterministic nature; Historical nature; Measurement using statistical and mathematical methods; Material, financial, human, and technological constraints.

In the approach of understanding the essence of the economic phenomena should be taken into account: i) the trader, as individuals or collectively, to represent the subject of any economic activity; ii) the relationship between needs and resources as an object of economic activities.

It is well known that limited resources must meet the unlimited needs. It acts as a constraint that leads to the consumption rationalization imposed by the scarcity of resources and the choices of each individual or group of individuals, which are strongly influenced by personal preferences or purposes.

Summary of the economic phenomenon is understood through its mode of expression with regard to its vector and scalar components which varies by time and space. These two components can be supplemented by a further two represented by the temporal and spatial components, which together give the overall picture of the phenomenon.

The four components of the economic phenomena interact in a kinematic and/ or dynamic and deterministic and/or stochastic environment.

Understanding these components and manifestations of economic phenomena is conditioned by their measurement.

The measurement of the economic phenomena is a difficult endeavour given the complexity and characteristics. However, the measurement should be performed to facilitate the research of the economic phenomena in order to explain the causes, factors, dynamics and effects (Pârgaru, Gherghina, Postole, 2009).

Measurement involves determining the economic phenomena using tools, methods, apparatus, gauges, and the value of a quantity. This measurement is done through indicators, whose value is determined by reference to a given unit, often called the measure.

Unlike the measurement of economic phenomena, scaling the economic

phenomena involve indicating a value determined by a unit of measure, and the measure of their intensity. Specifically, scaling is a way of measuring the intensity of expression achieved by playing the phenomena, by ordering a linear space or a graduated continuum (scale), which extends from the extreme positive (positive) to the extreme unfavourable (negative). From the theoretical point of view, scaling involves a procedure for the concept operationalization and a model for quantifying the area studied.

Approaches for measurement-scale (in terms of intensity) the economic phenomena should not be able to neglect the vector component capable to reflect the tendency in terms of a dynamic environment characterized by a high degree of uncertainty.

In the economic phenomena investigation it should be taken into account, after having understood the essence of the phenomena studied the multiple aspects of the measurement (Voineagu, Cara, Dumitrescu, 2010).

First, it must be done to identify the sector/branch in which the economic phenomenon analysis is carried out (Capanu Wagner, Secareanu, 1997). For example, the level of fiscal and budgetary policies can be designed to perform analysis of the state budget, local budgets, and the general government.

The second step is the essence of the phenomenon to be studied to find their correspondence in a number of indicators. These indicators must be known both in structure and method of computation, and also as a database used and the aggregation method. The calculation of indicators is important to choose the most accurate methods, since it is one of the necessary conditions for the empirical analysis results to have different meaning (Voda, Wagner, Isaic-Maniu, Pecican, Ştefănescu, 2003; Gherghina, 2009). For example, for the budget deficit is already developed around 30 of these methods (Stoian, 2009), each serving a particular purpose of the study of fiscal and budgetary policies.

A third step in the measurement of economic phenomena is the accuracy and completeness of data used. When choosing databases for the study of economic phenomena it must take into account the research purpose in order to ensure the relevance of time series used. And at this level it may induce some distortions in the empirical investigations results of the economic phenomena, as a consequence of the databases use such as: i) historical, expected or mixed variant; ii) seasonally adjusted or unadjusted; iii) cyclically adjusted or unadjusted. But all these do not correspond in terms of the criteria necessary and sufficient to meet the goal.

Also on the time series are very important details that cannot be overlooked because the nature of the research would lead to erroneous results. For example, it must be considered the data frequency (monthly, quarterly, half yearly, yearly) and how to record data (“cash” or commitments) (Iordan, Florescu, Chilian, Scutaru, Stănică, Nicolae-Bălan, 2002). Frequency data used in empirical analysis is determined by the nature of the phenomenon studied because they are cases that are only relevant the results based on annual data rather than a lower frequency (for instance, the investigation of economic growth).

Also, the data record methods may lead to differences between time series whereas actually depends on national practices and procedures applied for the employment indicators (for example, are known in the Romanian the historical debt

hospitals registration result without their commitments to complete the payments; so in this case, there are no reported expenses incurred in the actual level of payments).

The fourth step in the empirical analysis of economic phenomena is the data aggregation method in conjunction with the choice of the data source supply (Romanian Statistical Review, 2010). The differences arise because the level of computing techniques, and data aggregation applied by national and international bodies. For empirical studies covering different countries, it is recommended to use a single international source to ensure data comparability and to avoid any distortion. For example, in Romania can be use different data sources such as National Institute of Statistics, Ministry of Public Finance, National Bank of Romania, Eurostat, Annual macro-economic data base, International Monetary Fund, European Bank for Reconstruction and Development, World Bank, etc.

Not least it must be taken into account the unit indicators (national currency units, currency, share in GDP, real per capita) that are determined by the specific of the economic phenomenon investigated. For example, today, analyzes on public finances sustainability used cyclically adjusted variables, while for the research on the effects of fiscal and budgetary policy indicators are used in real per capita terms, and download the econometric tests by their logarithms.

All the above can produce a series of distortions in the results of empirical investigations when incompleteness occurs at any level in their calculation methodology, so they must be known, considered and removed.

Also, caution should be exercised in data processing. Many times the desire to achieve results validated by the statistical tests is use different data processing methods which takes us away from the meaning of economic phenomena studied. As Mr. Academician Prof. Emilian Dobrescu stated „do not forget the essence of the economic phenomena" during the macroeconomic modeling Seminar on 8 February 2011.

In addition, distortions in the empirical investigation of the economic phenomena can be caused by other risk factors (Campeanu, 2011a, Zgreabăn, Gherghina, 2009). Many authors have highlighted the importance of the factors that induce distortions in the anticipated effects of policy interventions. These factors include:

- Initial state of temporary equilibrium and unpredictable change (Kitao, 2010);
- Confidence of consumers and businesses. This can be considered as the most important because it generates significant changes in the effects of measures undertaken in the economy (Afonso, 2001);
- Human actions (Pădureanu, 2009a, 2009b; Dinga, Pădurean, Băltăreţu, Chitiga, 2010);
- Time and scope for policy interventions (Auerbach şi Gale, 2009; Kuismanen şi Kämppi, 2009);
- Risks (Anghelache, 2007a);
- The instruments diversity (Anghelache, 2007b);
- Quality and reliability of interventions (Daniel, Davis, Fouad şi van Rijckeghem, 2006);
- Distribution between the intervention effects (Coenen, Mohr şi Straub, 2008);
- Offsetting effects between interventions (Allsopp and Vines, 2005);
- Vertical and horizontal coordination (European Commission, 2009);

- Need, capacity, competence and willingness of the authorities to identify the problems and to react (Allsopp şi Vines, 2005);

- Credibility, reputation and predictability interventions (Allsopp and Vines, 2005);

- Confidence in taking into account the challenges (Romer, 2009);

- Shocks (Pietrowska, 20,010).

The issues mentioned above are cause for reflection and decision-making when engaging in the empirical analysis, regardless of when, how, where and by whom it is made. The study also conducted in this paper highlights the changing process in terms of economic phenomena, their disturbances, measurement or assessment, and concerns for their improvement.

As a result, the economic phenomenon involves investigating the existence and use of scientific methods of study, complete with methods, tools and specific procedures. The scientific method provides the separation processes and tools used in economic reality and the introduction of the regularities in scientific theory, principles and laws that define and govern the economic phenomena.

Moreover, any economic analysis enables economic diagnosis. For economic models that are used statistical and econometric type. Models should be tested for relevance and validity to be used later for simulations (Dobrescu, 2010), forecasts and scenarios (Dobrescu, 2003; Rosca, Stancu, 2007) and the completion of correlations (Anghelache, Isaic-Maniu, Mitut, Voineagu, 2006).

In doing so, a useful tool for investigating the economic phenomena is represented by the econometric methods that allow the quantification of the reality using specific statistical information. As tools, the theoretical techniques for mathematics, statistics and economic indicators work together simultaneously in econometrics. In this case it starts from the theory, which is then modelled (Campeanu, 2011b). After formalizing the theory by modeling it comes to economic estimates by entering data into the model. These data will allow either validate or invalidate the theory. In the latter case we proceed to the model reformulation.

It is becoming increasingly important to establish clearly the limits of the scientific disciplines especially those who study phenomena based on empirical and quantitative methods. According to the empirical principle, the science is based on events that may be observable. Since ancient times, scientists have studied the phenomena, things and their natural environment, using various devices and tools to assure them a good and accurate observation and measuring them. The empirical principle of science was and is a path of scientific knowledge, which was always based on scientific testing methods. The founders of modern science have placed a special emphasis in their investigations on the reality principle can be measured quantitatively. Physicists, in particular, make quantitative measurements in terms such as length, weight, volume, density. On the other hand, the spiritual values of humanity are not measurable, and they are outside the scope of scientific inquiry. We cannot mention, however, concern about the intensity and amplitude measurement of economic phenomena, which can be quantified/measured and using specific tools. The accuracy of these measurements depends, however, the accuracy of the data and the methodology chosen.

Science uses the following means in the process of cognition (Strainescu, 2009,

p. 17): Observation - direct or indirect ability to use perception to analyze the phenomenon; Establishment of the operational definitions - description of aspects and / or processes and activities; Classification - ordering and arranging information into categories based on similar characteristics or otherwise; Preparation of questions and hypotheses - a formulation exposure and some surprising answers that can be tested; Prediction - based on known data anticipated conditions; Measurement - Numerical determination of the dimensions; Testing - examine carefully the terms variables and constants; Interpretation of data - summary of data analysis, events etc.; Communication based on tabular form, prints and oral or written submission determinants; Formulating models - story ideas and conceptual organization of data classes; Review - further evaluate the interpretations of statements and models for correction and improvement.

In the literature it can be found a breakdown of the components of scientific research method, namely: i) fundamental theoretical statements admitted as a reference for the paradigmatic structure of a theory and methodological principles translated into social reality orientation approach; ii) the methods and techniques empirical data collection (observation, experiment, survey, etc.; iii) techniques and processing of data and empirical information by sequencing, systemizing and correlation to base their decisions on their theoretical significance; iv) processes for analysis, theoretical interpretation and construction or reconstruction based on empirical data to develop descriptions, typologies, theoretical explanations and predictions.

All these elements are not universally established as they show significant differences. The main source of variation is the theoretical concept to which the departing and final goal, taken as a reference.

Conclusions

Understanding the complexity of the economic reality is achieved through the study of economic phenomena based on specific analysis. In the course of these investigations it must be pursued the understanding and measuring of the phenomenon. To these are added the necessary identification and consideration of distortions arising in the empirical analysis of economic phenomena, but then proceed to find solutions to correct interpretation of this phenomenon.

The paper proposes and believes that manages to attract a warning on the distortions that can occur if the empirical evaluation process at any stage analysis of economic phenomena. Once known these distortions can be identified ways to avoid their effects so as not to be disturbed results of the investigation of economic phenomena.

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