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METHODOLOGICAL ASPECTS OF THE USING TURBULENT APPROACH IN ECONOMIC RESEARCH

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МЕТОДОЛОГІЧНІ ЗАСАДИ ВИКОРИСТАННЯ ТУРБУЛЕНТНОГО ПІДХОДУ В ЕКОНОМІЧНОМУ ДОСЛІДЖЕННІ

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МЕТОДОЛОГИЧЕСКИЕ АСПЕКТЫ ИСПОЛЬЗОВАНИЯ ТУРБУЛЕНТНОГО ПОДХОДА В ЭКОНОМИЧЕСКОМ ИССЛЕДОВАНИИ

This article describes the basics of using methodological approach in the turbulent economic study. In particular, it concretized the essence of this approach, identified the main components of methodological concept of its application to the knowledge of the economic systems of different nature. This is done through the definition of the principles (objectivity, cooperation and interdependence, dynamics, subjectivity, systemic), the functions (informative, descriptive, resultant) and the methods (observation, measurement, analysis, comparison, modeling) of this approach, their content and relevance in the context of its application were justified.

***Key words**: method, the scientific method, turbulence, economic turbulence, turbulent approach, methodology, function, principle.*

Fig.: 1. Bibl.: 5.

Описано методологічні засади використання турбулентного підходу в економічному дослідженні. Зокрема, конкретизована сутність зазначеного підходу, ідентифіковано основні складові методологічного концепту його застосування до пізнання економічних систем різної природи, що реалізовано через визначення принципів (об'єктивності, взаємодії та взаємообумовленості, динамічності, суб'єктності, системності), функцій (пізнавальна, описова, результуюча) та методів (спостереження, вимірювання, аналіз, порівняння, моделювання) цього підходу, обґрунтовано їхній зміст та важливість у контексті його застосування.

***Ключові слова**: метод, науковий метод, турбулентність, економічна турбулентність, турбулентний підхід, методологія, функція, принцип.*

Рис.: 1. Бібл.: 5.

Описаны методологические основы использования турбулентного подхода в экономическом исследовании. В частности, конкретизирована сущность указанного подхода, идентифицированы основные составляющие методологического концепта его применения к познанию экономических систем различной природы. Это реализовано через определение принципов (объективности, взаимодействия и взаимообусловленности, динамичности, субъектности, системности), функций (познавательная, описательная, результирующая) и методов (наблюдения, измерения, анализ, сравнение, моделирование) данного подхода, обосновано их содержание и значимость в контексте его применения.

***Ключевые слова**: метод, научный метод, турбулентность, экономическая турбулентность, турбулентный подход, методология, функция, принцип.*

Рис.: 1. Библ.: 5.

JEL Classification: A 10; B 40; B 41.

Problem setting. Science is a sphere of human society which is by its nature constantly developing and influencing such society functioning. In general, science – system of knowledge that present by their own combination of the theories, theorems , hypotheses, laws, regularities and other elements that are accepted by be considered as the scientific objects and consider them to be the part of the science . That's why, the science is not a static phenomena in the society, and is constantly in the process of own development, producing new knowledge and information. Science development is an indivisible part of any society moving and its transformation on qualitatively new stage of its development. Improvement of the methodological principles of the science, deepening its fundamental provisions by new concepts and theories is always an important component of this sphere development. Over time suggested concepts are adapted and used in the real facts of our life and find their position in its structure.

In the process of the economic systems cognition, that are important part of social development of any society, in the scientific sphere there have been already worked out theoretical and methodological basis of the economy as an individual science. In particular, the concept of the economic science itself is grounded by the classics of the economic theory

and has found its reflection in the created during the last two centuries economic theory that comprised the most important and supported by the practice concepts that were introduced by the scientists. However, even nowadays, the defined sphere of the scientific cognition is constantly in the process of its development, adapting to the new outer challenges of the modern economic system development. That's why the issue of improving already created system of the scientific methods of the economic systems investigation at the present moment is urgent and demand the new scientific investigations implementation, considering changeability of the environment of the economic systems of different nature functioning under the pressure, first of all, of complicated exogenous factors.

Turbulent method of the economic phenomenon cognition can become the component of the scientific methodology of the defined systems study in the conditions of their functioning in not predicted, continuously changeable and not stable conditions. Such precondition can be observed during the last years in the Ukrainian economy development that is provided by the action of the number of internal and external extra complicated factors.

Analysis of the recent researches and publications. Demands of the present time require from the scientists using correspondent to the reality methods of their cognition. Last years in Ukraine appeared quite complicated by their political, economic and social development and to investigate the economic processes and phenomenon that developed in such conditions through the use only the traditional measures is not appropriate and doesn't allow to study in details the regularities of the development of the studied objects. That's why, the turbulent approach as a cognition method during the recent years has being actually used by the scientists with the purpose to study the economic objects and to deepen the methodological concept of the approach itself, its improvement.

Even at the present day to the scientists who used the turbulent approach for understanding the economic objects should be related the following ones: Grosul V.A., Demianchuk I.A., Zhuravliova G.P., Zakharchenko P.V., Kaslione J.A., Masliuk Ye.V., Yaroshenko R.F. and others. Theoretical aspects of using the turbulent approach and basing its essence can be also met in the scientific works of Gerasimov Ye.B., Brlackov V., Trubetskov D.I., Makarova N.N.

Definition of not solved before parts of general problem. However, notwithstanding interests increase of the scientists to use the turbulent approach by cognition the economic phenomenon, there exist definite theoretical and methodological non grounding of the defined approach essence, peculiarities of its use that provides the necessity to implement further implementation of the researches in this direction.

Purpose of the article. The purpose of the article is elaboration and basing the methodological principles of the turbulent approach for cognition the economic process and phenomenon.

Statement of the main material. The turbulent approach as a separate method of the scientific research is the main component of the cognition process of the phenomenon of different nature in changeable, complicated and not predicted conditions and terms of their existence. Understanding of the theoretical essence of this method and peculiarities of its use is a component of creating its methodological bases. Before we focus the attention on the conceptual provisions of the turbulent approach, let's define its essence. We'd like to note that within this article the turbulence phenomena we'll consider as a phenomena, that arioses in the environment of the systems of different nature functioning (technical, economic, social, etc.) that by their nature are not predicted and quick in the development, influences stability of separate systems and lead to arise of the entropy high level within its ranges, that extremely negatively influence their stability and makes the process of predicting and foreseeing of further behavior of such systems impossible.

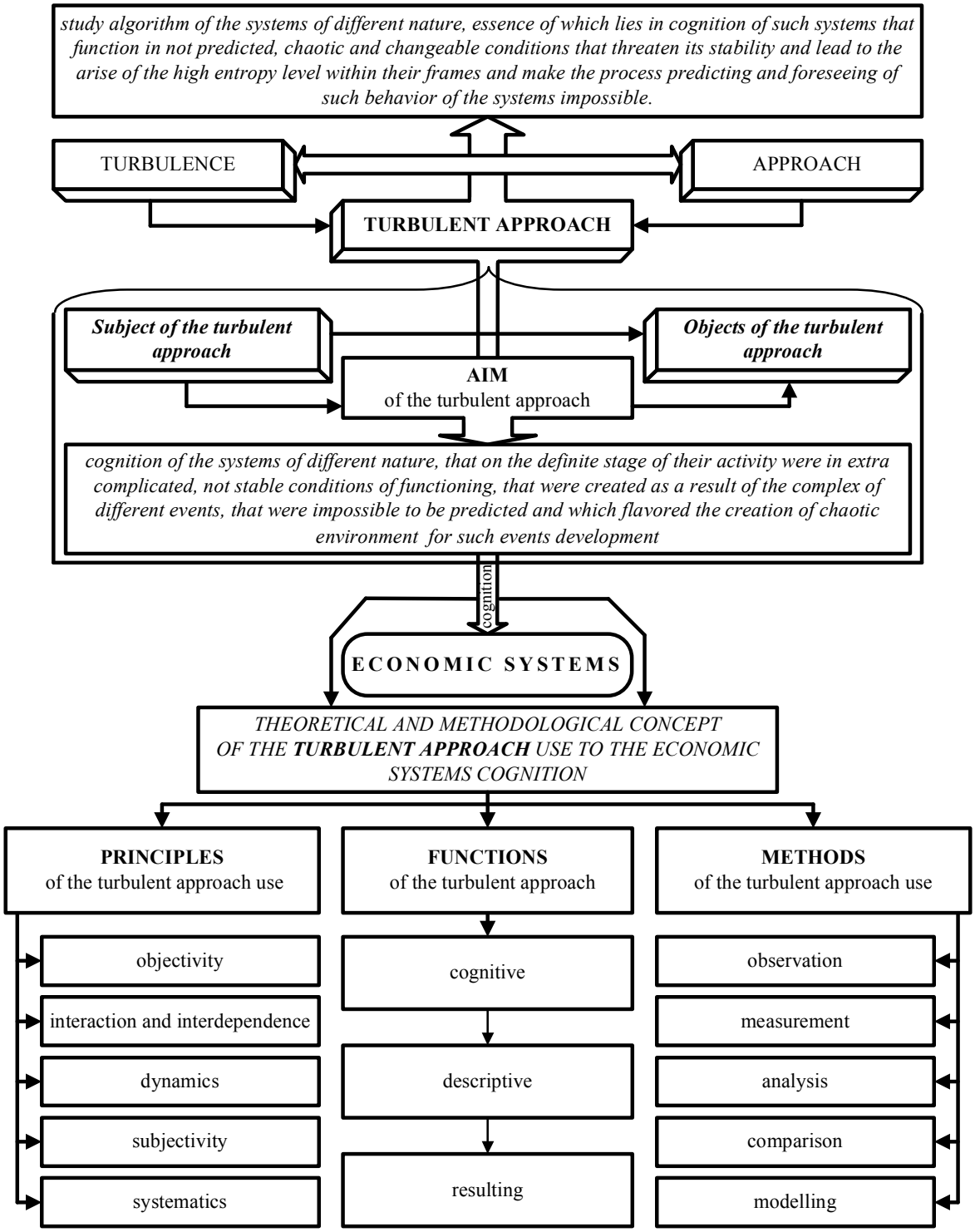
Naturally, if to study the regularities of the turbulence influence on the development of the economic systems themselves, in our opinion, it is appropriate to speak about economic turbulence , the principal peculiarity of which is manifestation of this phenomena in the economic systems. However, considering availability in nature considerable amount of various economic systems that differ among themselves by different peculiarities and characteristics, then manifestation and influence of the turbulence on such systems are not identical. Let's note, that in conditions of the economic turbulence traditional logics and usual consequence of many economic processes are disturbed [3, p. 24].

Considering the essence of the turbulence as a separate phenomena, its characteristics and peculiarities of its arise, we'll consider the turbulence approach as a study algorithm of the systems of different nature, essence of which lie in such systems cognition, that function in not predicted, chaotic and changeable conditions threatening their stability and lead to the high entropy level arise within its ranges and makes the process of predicting and foreseeing of the further behavior of such systems, impossible.

The turbulent approach, in our point of view, allows to create definite theoretical platform of complicated systems study in not stable, and what is more important, difficult for predicting conditions of its functioning. Especially actual becomes use of the defined approach in sphere of the economic systems cognition, behavior of which in majority of cases is described by quantitative indexes, in role of which act statistic data and that are used in normal conditions of such systems functioning for predicting their further development. In the periods of considerable fluctuations that can be observed in society, use of the traditional methods of predicting of the economic systems becomes impossible. This fact demands the search of new methods of scientific researches, borrowing and adaptation already created within the frames of other sciences approaches by the appropriateness of their use with the purpose of cognition the economic systems. It becomes especially possible considering that fact that methodology as a science is universal by its content and potential of use and penetrates all spheres of its scientific knowledge.

On scheme there is given methodological concept of using the turbulent approach to cognition the economic systems. Thus, the defined approach is appropriate to be used when the specific economic system appears in extremely difficult and quickly changeable conditions of functioning that were impossible to predict or foresee. Actually, the defined approach allows to analyze the current state of the system, identify and group all factors of force majeure character, and make the strategy of further development of the specific object development taking into consideration the influence of these factors and created situation. In our opinion, as a scientific approach this method of cognition different systems performs three main functions , that in general are universal for all methods of the scientific research, since through them the appropriateness and importance of correct scientific approaches is being revealed, that are in the focus of the researcher's attention. Let's consider them in details.

Cognitive function – essence of this function lies in possibility with the help of the turbulent process to cognate the systems of different nature, including economic ones. The efficiency of cognition itself as a process of research the scientific objects in many cases depends on correctly chosen way of their research. In the modern scientific world considerable number of the scientific methods of cognitions have been already created elaborated and based, their spectrum is quite wide. Considerable amount of the general methods of cognition and the results of their synthesis have been created. That's why, the turbulent approach as a method of identification the peculiarities of the researched object functioning in complicated, chaotic and not predicted conditions give the possibility to the researcher to consider such object from the other side, from the side of the outer environment change of its functioning that influences on the internal environment of the definite object functioning and requires the adaptation process.



Scheme. Methodological concept of the turbulent approach use to the economic systems cognition
Source: compiled by the authors taking into consideration [1–2; 4–5].

Descriptive function – the turbulent approach has its algorithm of using , accordingly implementation of each stage of such algorithm leads to information arise about the researched object, gives the possibility to deepen already existing data about the peculiarities and regularities of its functioning. The defined function flavors the creation as a result of the massive information use of the turbulent approach as a result of the object research.

Resulting function – as any method of the scientific research the turbulent approach is directed for receiving general information of the definite quantity and quality and the

researched object. Actually defined approach allows to receive such data and in future use them for elaboration of the measures concerning activating the system development under investigation.

The turbulent approach as a complicated means of the economic systems cognition id based on using number of the methods of the scientific researches, since the use of one of them is not possible for getting necessary and objective information about the researched object. Complicated scientific approaches include number of various methods that by their essence are easier and not so complicated in their use. Actually, in many cases the complex of methods in their combination defines the specifics of the definite scientific approach.

By investigating the turbulent approach and creating its theoretical and methodological concept, in our point of view, the following methods of the scientific research should be used.

1. *Observation* – general, universal method of the scientific research that plays the key role in using the turbulent approach. This method allows the scientists to evaluate intuitively on the base of information about the actual processes in the environment where the defined system functions, i.e. that it is actually in the turbulent conditions and that the macro processes are not predicted and extra complicated for predicting its further behavior and influence. The defined method is the first in the complex of the methods of the scientific researches, that allows to determine the appropriateness of the turbulent approach use in cognition the economic systems.

2. *Measurement* – to cognate, in first turn, the economic systems is possible only through the description of the regularities of their development with the help of quantitate indexes and ratios. That's why after observation and consideration, that can be received by the scientist using this method, it is noteworthy all the hypothesis and assumptions to check with the help of available statistic and informational data that characterize the described process. Measurement as a method of scientific research is very important in this process and allows to receive new information about the researched object.

3. *Analysis* – is a universal and general method of the scientific research, especially in the process of the economic systems cognition. Within the turbulent approach analysis makes possible to identify all changes in the behavior of the researched object through investigation within the process use observation and measurement information, its cognition and acknowledgement. Actually, very often analysis as a method of the scientific research is used by the scientists as well by using other methods on the intuitive level.

4. *Comparison* – important component of the turbulent approach, since it gives the possibility by comparing both quantitative indexes, that describe the behavior of the definite economic system, and qualitative , theoretical data, and that allows not only to understand intuitively, but as well as on the base of the received confirmed facts to realize the importance of the turbulent approach use, to clarify the actual situation where there is the object of investigation and its further change under the pressure of already active not predicted external events.

5. *Modelling* – as a method of the scientific research gives the possibility by using the turbulent approach to fix definite correlation connections between those processes that have already arisen and the development of the researched objects, to define the influence force of such processes and changes of the objects under their pressure. As well the defined method of cognition allows to model the development of the investigated object not on the base of constantly arising changeable outside factors , but on the investigating the inner stability of such object to such changes, to define the limits of the influence of the destructive factors by which can be realized destroy of the system itself. Modelling as a method of the scientific research includes colossal cognitive potential, since provides the researcher with the powerful tools of the behavior identification not only of the researched object in future, but as well those factors that arose or can arise potentially and negatively influence it. Use of the

mathematical apparatus in modelling allows to formalize the combination of the received models, to deepen the level of the scientific ability of the process itself of modelling and increase the level of management by the investigated objects.

The important element of the methodological component of the turbulent approach is identification and description of the principles of its use that allows to clearly identify the main, the most important rules of the use of the defined approach. To such principles we related the following ones:

1) *objectivity* – essence of this principle lies in the necessity to evaluate the situations that are made as if they are in reality, that makes possible to define clearly the necessity of the turbulent approach for further investigation of the definite system; as well the process requires objectivity in the process of using this method and analysis of the received results , all the mentioned above influence the level of the usability of this approach in the process of cognition objects of different nature;

2) *interaction and interdepenedence* – essence of this principle lies in the necessity of using within the frames the turbulent approach to perform the cognition of the processes of interaction between the individual phenomenon that not always directly influence the development of the researched object; this principle requires the constant definition of the correlation between different phenomenon and cognition their general influence on the researched object;

3) *dynamics* – the turbulent process of the cognition is a dynamic process, since it allows to evaluate influence of different stochastic processes on the definite system functioning; both the defined processes and the object itself of the cognition are statistic, they constantly develop that require by use the turbulent approach to consider this peculiarity constantly;

4) *subjectivity* – this principle within the frames of the turbulent approach use requires considering the specifics of the object functioning under research, different scale volume, complexity, control that are characteristic for the majority of systems can influence quite strongly and demand transformation and adaptation of the methodology of the turbulent approach use for the definite phenomenon cognition, which only strengthens its cognitive ability;

5) *systematics* – the defined principle within the use of the turbulent process lies in two aspects: firstly, the process of cognition should be systematic and implemented by the defined trajectory of the object cognition; secondly, the results that are received in the process of using the turbulent approach should be systematized , grouped and worked through by the most appropriate for further use means; absence of systematics and chaos in conducting the object research under the pressure of also chaotic and changeable processes can lead only to non predictability and doesn't give the awaited results.

So, following the suggested principles of cognition only increases the appropriateness of the turbulent approach use to cognition the economic systems and will allow to receive the awaited results from its use.

Conclusions. So, methodological principles of the turbulent approach in the economic research are described in the article. In particular, the turbulent approach is offered to use as a study algorithm of the systems of different nature, the essence of which lies in such systems cognition, that function in not predicted, chaotic and changeable conditions that threaten their stability and lead to the arise of the high entropy level within the range and make impossible the process of predicting and foreseeing of the further behavior od of such systems.

The main elements of the methodologic concept of the turbulent approach use to the cognition of the economic systems of different nature are also identified that is implemented through the principles definition (objectivity, interaction and interdependence, dynamics, subjectivity, systematics), functions (cognitive, descriptive, resulting) and methods

(observation, measurement, analysis, comparison, modelling) of the defined approach are looked through, their content and importance in the context of this approach use are grounded.

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