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**DISCIPLINARITY OF ECONOMICS AND THE INTERDISCIPLINARY ONTOLOGY:  
CASE OF UKRAINE****Oleh Chorny**

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**Summary.** The current debate over the intersections between academic economics and the theory of interdisciplinary is a complex scientific problem. The first thing to note is that the disciplinarity of economics, like any other academic discipline, cannot be rejected. The disciplinary component of economics is the foundation around which the interdisciplinary environment of economics is built. If we take into account the holistic ontology described by the contemporary science system, then economics correlates with the economic sphere of reality. This sphere of reality consists of economic phenomena and processes, which (in reality) are closely intertwined with numerous phenomena described by other academic disciplines. Taking into account hidden "trade zones" and interdisciplinary links between academic disciplines would probably increase the economic efficiency of these processes.

*Keywords: complexity, disciplinarity of economics, heterodox economics, ontology, transdisciplinarity.*

**Introduction.** The theory of interdisciplinarity concerns mainly the scientific worldview, and therefore it will be useful to describe the limits of the science in terms of philosophy and methodology of science. The scientific worldview correlates with all, without exception, scientific knowledge created by mankind throughout history. Thus, scientific knowledge describes a holistic ontology of the real world using scientific categories.

**Literature Review.** Within the current work it is important to describe the main problem from two academic disciplines: philosophy and economics. The topic of ontology is quite complex in philosophy: it can relate to both metaphysical problems [1] and the science system [2]. Ontological issues are available both to general public [3] and to those who are trying to understand philosophical thinking as a basis for the real world comprehension [4, 5]. A holistic understanding of ontology in a scientific perspective concerns the consideration of all academic disciplines without exception. If we take into account the specific perspective of economics [9], we must also consider its place among other academic disciplines. It should also be remembered that economics is characterized by a strong disciplinary component [7, 8]. In the developed countries, it is learned at the school level [6]. However, within this work, it is especially important that economic theory [10] is not detached from reality. To do this, we will try to describe economics as a component of the scientific system that productively describes the economic sphere of reality and allows to manage it.

**Purpose of the Article.** The main purpose of the article is to describe economics as part of a scientific system, which is characterized by transdisciplinarity. The tasks related to the main purpose of the article

include the following: to analyze the relationship between scientific knowledge and the holistic ontology of the real world; to study the relationship between economic knowledge and the economic sphere of reality; describe the interdisciplinary links of economics with other academic disciplines.

**Results.** Ontology, as a philosophical category, is a productive tool of describing real-world phenomena. The latter is related to very specific scientific knowledge. In essence, there is a direct correlation between scientific descriptions and existing phenomena and processes of the real world. Thus, understanding the ontology of the real world allows us to distinguish the scientific worldview from the artistic, religious or mythological worldview. What is described by scientific means directly relates to the being, as well as the possibility of interaction with it. In this context, we can talk about the ontology (and existence) of medicine, education, agriculture, law and so on. This brief philosophical digression relates to the explanation of the fact that each scientific field describes a certain area of reality and the latter occupies a very specific place in reality among other areas that are described by other scientific fields.

An important part of this investigation, along with the ontology, is the principle of holism (encyclopædism). Holism makes it possible to think about reality in its entirety, so a person can be aware of the being that consists of most phenomena and processes that are real. By following this path, a researcher have the opportunity to understand the relationship between the place of each scientific field and the sphere of reality that it describes. Such work with scientific knowledge is necessary for anyone who wants to understand the peculiarities of the scientific

fields functioning, as well as their usefulness in solving specific problems humanity facing.

To master the modern system of science, two general scientific methods are useful: induction and deduction. Although the use of these methods is very common, their exploitation must be approached with care and vigilance. When the object of a study is the ontology itself, there are two ways to perceive it: from general to specific, or from specific to general. Every scientist can separate the essential from the insignificant, and the general from the specific. If the system of science can be taken into account, then everything looks quite simple. Using the method of deduction, we will go down from the whole system of science, to macro-branches of science (social, technical, natural), then to a specific field of scientific knowledge (sociology, economics, engineering, physics, geography), and then - through the use of specific scientific theories and terms (social groups and social prestige, industrial engineering, climatic zones, molecules) to real phenomena and processes. However, the use of the induction method allows the movement from the same type phenomena to their general characteristics and qualities. In any case, this cursory use of philosophical terminology is necessary for the understanding of transdisciplinarity as part of the theory of interdisciplinarity.

Transdisciplinarity can be understood as hyper- or super-interdisciplinarity. Thus, the use of transdisciplinarity as an approach allows to describe a very large part of existing ontology. For example, integration between sociology and economics has clear interdisciplinary character. At the same time, transdisciplinarity is seen as the integration between sociology, demography, civil society theory, law, politics, public administration, economic theory, finance, macroeconomics, agriculture, food industry, international trade, ecology, geography, medicine, psychology, mathematics, etc. Thus, the use of a transdisciplinary approach allows to work with a large amount of scientific knowledge, which corresponds with a large area of reality.

Realism and holism are characteristics of transdisciplinary research. Thus, to understand the possibilities of economics, the place of economic knowledge in the scientific system and the economic reality (as part of the whole reality) we need to develop holistic thinking based on proved facts and reliable knowledge. Thus, we can say that economic reality, given the ontology, exists inseparably from social, cultural, physical or chemical reality. This means that scientists (physicists, geographers, geologists, programmers, financiers, marketers, culturologists) do not just write scientific texts and conduct research, they work with a very specific area of reality, which can be described by the discipline-specific categorical and conceptual apparatus. A real problem that exists as an ontological situation can be effectively solved by joint efforts of disciplinary scientists and other stakeholders with specialized knowledge.

Having briefly considered the problems of ontology, general scientific methods, realism and

holism, we will pay attention to the problems of economics as an academic discipline and the correlation of the latter with the economic situation in the real world.

The complexity of the economic phenomena and processes interweaving with other real phenomena and processes is extra large. In a person's life, economic categories (money, expenses, goods) are intertwined with education, law, computer technology, urban planning, transportation, communications, entertainment, food and so on. Another example may relate to the activities of a trading firm, which in addition to financial knowledge, economics and trade also include the legal features of such activities, management, logistics (transport), international relations, cultural features of a country and international partners, qualitative and quantitative characteristics of goods, etc. These two examples briefly explain the fact that in the real world it is difficult to separate economics from other fields of scientific knowledge. More than this, for the most people they exist as something synthetic. Nevertheless, the conceptual apparatus of economics is quite effective, so professional scientists can effectively describe the economic sphere of reality without the use of other sciences. That is why the disciplinarity of economics is so important. The last one also have its dimensions.

It is important to understand that the complexity and peculiarities of economics in different countries (national traditions) are not the same. It is also worth noting that the complexity and size of economic reality in different countries are not the same. That is why some parallels between national (those that occur within a particular country) economic phenomena and processes and national tradition of economics must be marked. Here is an example of contrasting difference: Ukrainian economics in Soviet times and economics in independent Ukraine. These two periods in Ukrainian economics concerned the description, explanation and formation of the Ukrainian economic system in different periods. Accordingly, in these two historical periods there were two completely different economic systems (planned-centralized and capitalist-market). This means that the connection between science and sphere of realm is strong. Hence, the development of economics can change (complicate, simplify, make effective) economic reality. The last assertion is especially important.

Generally, the dialectic between the development of national economic thought and growing complexity of economic reality is quite complex. On the one hand, the conceptualization of both economic phenomena and the accumulation of economic knowledge is a response to the growing complexity of economic reality, as well as a sign of increased demand for economic knowledge in a given country. On the other hand, the assimilation of global experience in the field of economics can have a positive effect on the purposeful and conscious formation of economic reality, as well as increase the efficiency of economic activities. The results of such a dialectic development over the past 30 years in Ukraine

are contained in the development of trade, establishment of international economic relations, emergence of stock exchanges, establishment of private property, development of intellectual property and so on. Thus, economic sphere of reality is a sphere of human activity that is available for change, adjustment, modernization, improvement and conscious purposeful formation.

The phenomena related to transparency and accountability of economic processes become especially important in the era of computer and information technologies spread. On the other hand, work with economic knowledge has some crucial characteristics. These include accessibility, clarity and practicality of national economic thought and economic information. Hence, the efficiency of economic activity in various economic entities, to a large extent, depends on the efficiency of economic scientists, as well as economic government officials. These two actors are the stakeholders that can greatly improve the efficiency of economic activity. At the level of civil society (civil associations), business representatives and international organizations, the aforementioned stakeholders can influence economic phenomena and processes within a particular country. Academic staff should provide qualitative theoretical and practical recommendations for the promotion of a national economic system.

All of the above applies to the achievement of a "disciplinary maturity" by a national economics. This term is used to describe the state of Ukrainian economics (in particular), in which it will be able to influence the formation of Ukrainian economic reality with great efficiency. The latter can be manifested in the following: a high correlation between the form and content of students' education and the employers' needs or requirements; a productive interaction between academic economics and representatives of business and industry; a synchronization and harmonization of Ukrainian economic thought with modern global economic discourses; an ability to build effective economic strategy for the development of the state (5 to 25 years); a conceptual developments of national economics should have a significant impact on a material life improvement of average Ukrainian citizen. Of course, the effectiveness of national economic thought is not limited to what is stated here and the effect of scientists' work in the field of economics is much broader.

The transition from disciplinarity to transdisciplinarity through multidisciplinary and interdisciplinarity has crucial importance. This transition will harmonize the efforts of Ukrainian scientists from various fields in order to improve life of the country.

The first thing to remember is the large size of categorical and conceptual apparatus of each individual scientific field. The number of terms, concepts and categories of a particular discipline can reach tens of thousands units. Therefore, taking into account the existence of hundreds scientific disciplines, the scientific system must consists of hundreds of

thousands specific terms and concepts. It is clear that one scientist can not master all the complexities of science even in a few lives. That is why the division of responsibilities, as well as scientific cooperation are very common in the scientific world. Such a phenomena exist in order to solve complex interdisciplinary problems of reality. In fact, the scientific world has no substitute for the theory of interdisciplinarity, because research in the field of sustainable development or ecology impossible to conduct only by means of one academic discipline. Thus, the modern development of science has faced a very difficult task: finding ways to fruitful understanding of holism and transdisciplinarity.

The main task is to eliminate the "interdisciplinary vacuum" that exists in a national university system. In fact, this is another level of the theory of interdisciplinarity development in Ukraine. So, on a national scale, there is a demand for the production of interdisciplinary texts with varying complexity, but also for the interaction between disciplinary scholars. Thus, interaction between employees of one department and between representatives of different universities can be observed. It is very important that public authorities in the field of education and university management understand funding as the most important factor, when people negotiate about the theory of interdisciplinarity.

Going down to the consideration of economics in the science system we must note that the place of economics among all other scientific fields is the border of economics interdisciplinary understanding. Thus, the disciplinary characteristics of economics explain the scope of reality, which is characterized as economic activity. Whereas, the interdisciplinary connections of economics describe the connections of the economic sphere of reality with other spheres of reality, which are described by other scientific branches. It does not happen that economic reality is isolated from other spheres of reality. That is why ignoring the interdisciplinary component in the education of economic students can lead to frustration and confusion in the latter.

In general, economic research acts as a part of interdisciplinary real-world research within a transdisciplinary perspective. Thus, interdisciplinary integration can be conceptualized as an initial condition. It can be addressed after a certain study of real-world phenomena or theoretical conceptualization. The center of scientific activity in each academic discipline will manifest itself as disciplinarity (in the form of disciplinary nucleus) and multi-, inter- or transdisciplinarity will be periphery. However, scientists will have to look for effective integration with other disciplines: from their professional fields multidisciplinary and interdisciplinarity to transdisciplinarity.

There are numerous spheres of reality that, from the scientific point of view, are interdisciplinary and understudied. Such spheres of reality, in the context of philosophical phenomenology, require a usage of scientific and categorical apparatus of two or more

academic disciplines. Further, we will consider possible options for describing such complex phenomena, as well as effective solutions to problems associated with them.

In order to explain the theory of interdisciplinarity possibilities, multidisciplinary and interdisciplinary approaches will be considered in the following paragraphs. A multidisciplinary approach to is evaluation of complementary scientific perspectives without integration. For example, it is possible to assess the life of an individual country in the context of demography, economics, culture, geography without "mixing" terms, concepts and methods. The discussion of scientists from different fields, which is aimed at explaining and solving the real problem can be the basic form of cooperation. This stage of problem solving is aimed at complexity conceptualization. It should be used when different disciplinary scholars are not yet ready to integrate disciplinary areas, or when they believe that each area (taken separately) solves a part of a complex problem very effectively. Another type of multidisciplinary is the work of scientists from different departments, chairs and colleges within one university. For example, in an agricultural university, the departments of crop, livestock, chemistry, biology, agricultural machinery, management, law, economics, finance, marketing, computer science function as separate divisions and perform their part of common work aimed at development and efficiency increase in Ukrainian agriculture. In contrast, an interdisciplinary approach could be considered when the efforts of different departments representatives are integrated to solve a common problem (for example, research in the development of new fertilizers for cereals in order to minimize real costs of the product).

Interdisciplinarity refers to the integration of terms, concepts, theories or methods from at least two branches of scientific knowledge (academic disciplines). Thus, an interaction between different disciplinary perspectives occurs and the most optimal way to solve a particular scientific problem is established. For example, in the field of computer science, a startup creation related to the development of applications for smartphones often has interdisciplinary character. Creating a startup involves not only work on the product - software (programmers), but also the calculation of economic indicators - costs, income and net profit (economists, financiers). In addition, the work of lawyers on intellectual property rights and patents is important. Interdisciplinary interaction between these professionals will help to determine the optimal correlation between product quality, financial costs and time required to obtain a product patent. Of course, this example uses a simplified model. In reality, the interdisciplinary complexity of such activities is much more complex.

Mentioned above examples show that interdisciplinary cooperation is difficult to avoid in a real situation. Therefore, if an entrepreneur is unfamiliar with jurisprudence, he can turn to a professional lawyer, which can be considered as interdisciplinary cooperation. It is obvious that the

comparison of disciplinary perspectives takes the form of a dialogue between disciplinary branches (academic disciplines). To facilitate understanding of multidisciplinary, it should be noted that it is better to act without integration where it can be avoided and with integration where it brings benefits.

As we have already mentioned, Ukrainian scholars often produce interesting interdisciplinary texts, so there is a significant number of subjects that have an interdisciplinary nature (integration of at least two branches of knowledge). However, the comprehension of such complex texts and subjects by students leaves much to be desired. The main thing that is not taken into account is the considerable scientific and educational experience of university staff. It is clear that if a person studies a certain field for decades - he will be a professional and will know all the details in particular field. However, if the interdisciplinary course (sociology and economics) is studied by first- and second-year students, they will need additional knowledge to understand the complex intertwining of terminology and research methods. Thus, knowledge of the theory of interdisciplinarity brings clarity, lucid and new possibilities for reflection. Thus, the student familiar with the theory of interdisciplinarity will be able to choose where to apply a multidisciplinary or interdisciplinary approach.

Therefore, the work of scientists and educators in the field of economics is part of scientific activity as a planetary phenomenon. It is important to understand that the comparison and integration of economics with other fields of knowledge (academic disciplines) is an integral part of everyday scientific activity. In our study, the statement that the theory of interdisciplinarity can significantly optimize and improve the relationship between different scientific fields is crucial.

The transition from a theoretical understanding of the interdisciplinarity to the real productive integration and interdisciplinary cooperation between scientists is complex and multilevel. During such integration and cooperation new "trade zones between disciplines" can be identified. The last one further become productive areas of research. This was exactly the situation with sustainable development, ecology or globalization 30 years ago. Conceptualization of such new research areas that have an interdisciplinary nature will create full-fledged university subjects. Given that the relationship between science and education is a top priority for the 21st century, conducting complex interdisciplinary research can have a significant impact on the development of useful students' skills and competencies.

Yet, we believe that interdisciplinarity can not replace disciplinary. Disciplinary, as a characteristic of each independent scientific field, is the conceptual core of an academic discipline, consisting of terms, concepts, theories, methods, principles, functions, approaches and hypotheses. Therefore, the effectiveness of disciplinary in addressing the daily needs of each individual industry can not be rejected. The qualitative increase in knowledge within each

individual academic discipline will continue in the form of proliferation and there are a huge number of problems that can not be effectively solved by any other science. Therefore, there will always be problems that can be effectively solved only by physics, quantum mechanics, astronomy, biology, cytology, endocrinology, family medicine, art, demography or economics separately. However, if the focus completely shifts from disciplinarity to interdisciplinarity, then effective links between disciplines will be impossible at all. Thus, the conceptual core of each academic discipline is the basis both for specific disciplinary problems solving and for interdisciplinarity integration with other disciplines.

Economics is a clear example of "strong" and effective disciplinary and interdisciplinarity components. Strong correlations with dozens of different scientific fields help to solve problems related to the complex and ramified economic realm. Most of the disciplinary economic knowledge is contained in economic dictionaries, economic textbooks, monographs of world-renowned economists, as well as in scientific articles in specialized economic journals. At the same time, no enterprise, organization and even individual can do without the use of economic knowledge in the real world. Human nature, as well as the way of human society is organized, translate some economic categories into the field of ontology.

The most important thing in working with interdisciplinarity issues is to set priorities correctly. The №1 priority is still the development of the disciplinary sphere of a particular discipline. Priority №2 is to clarify and strengthen interdisciplinarity integration between various academic disciplines. If disciplinarity disappears, interdisciplinarity will have nothing to rely on. In addition, it is unlikely that there will be a large number of scholars who believe that interdisciplinarity is more important than their specialization. On the contrary, the self-development of the theory of interdisciplinarity is increasingly conceptualizing "interdisciplinary studies" as a disciplinary field of knowledge and a university subject.

**Conclusions.** Summarizing all the above, we must keep in mind the following: the main task of both

disciplinary and interdisciplinary approaches is to solve real-world problems effectively. To specify, the task of Ukrainian scientists is to solve real problems specific to Ukraine. If we take into account the Ukrainian economics, the high quality of economic research, as well as effective university economic education are the main tasks of academic economists. The interdisciplinarity component of Ukrainian economics will increase the harmony of cooperation and synchronize the efforts of scientists from different fields. In other words, it increase the effectiveness of solving complex real problems that are interdisciplinarity.

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## WAYS TO DEVELOP REAL SECTOR ENTERPRISES THROUGH INVESTMENT PROGRAMS

**Abstract.** This article addresses the issues of increasing the attractiveness of the investment climate in Fergana region and the investment activity of real sector enterprises.

*Key words:* investment activity, investment environment, real sector enterprises, manufacturing,

Uzbekistan is a country with huge economic and investment opportunities. The share of gas condensate reserves is 74%, 31% of oil, 40% of natural gas and

55% of coal in Central Asia. It has a huge potential of hydropower resources and huge reserves of mineral resources.