TOPICALITY OF SCIENTIFIC RESEARCH AND INNOVATION IN ROMANIAN ECONOMICS

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Abstract: Scientific research and economic innovation represents a fundamental process, meant to contribute to boosting dialectic development of our economy. The main Idea we follow constitutes the relation between accumulating science and the manner of use in present economy. World today accumulated science, though reached a dead end, in the meaning of not knowing to use it efficiently for people are more pressed by the present interest. Immediacy, the short time, exaggerate preoccupation on wealth and power influence negatively the evolution of society on long term and very long term on the basis of powerfully developed science.

We live in an agitated world, in which economic development through science, as an ideal on long term and present reality, direct, immediate and harsh enters in a relation obviously tensed.

Key words: economic scientific research; creativity and intelligence, economic innovation; economic phenomenon; economic process; integrative approach; heuristic function

JEL classification: I2

I. Research and innovation essentiality

Scientific research and innovation are involved organically in conceiving, following, evaluating and use of results of all documents, facts, phenomena and economic processes, understood as fundamental expression of social/human action in all evolution levels.

Our steps pursue two concepts: the filiation of ideas and classical situation. The filiation of ideas reveals the efforts for understanding economic phenomena, for creating, perfecting and reconsideration of economical theory, in an endless process. The classical situation means consolidating, correlating and synthesizing scientific acquisitions to the certain moment, including appreciating present status in the direction of future development in economic science.

In every era, people were preoccupied to understand internal relations of their action for material existence, starting from observing the limitation and rarity of economic resources. The totality of reflections which refer to economic activities in society (ideas, theories, doctrines, ideologies) forms an economic thinking, which has an emphasized historical feature.

Economic reflections can be common and specialized. Common economic knowledge stands in reflections which are possible to be made by all people, as participants to ordinary economic life, without them handling knowledge and necessary instruments to thoroughly understand economic reality. Specialized economic knowledge is the scientific knowledge, consisting in people’s reflections who participate to economic life on the grounds of prior professional training, specialized and having corresponding research instruments for economic problems and showing results of their research and discoveries. Thus, scientific knowledge exists science a long time, science, in economy, in has been made the passage from manufacturing to industrial capitalism. Therefore, we do not consider entirely justified the expression according to which, nowadays, economic life passes to scientific knowledge. Though, actually meaning, the passage to a new stage of scientific knowledge, that of elevated, wise scientific knowledge, which contributes to solving tension shown above.

In such circumstances we emphasize the importance which scientific research and economic innovation have, point out in four dimensions. First dimension considers that scientific research and innovation form an organic logical and historical unity. The second dimension considers that economic phenomena are, in their essence, social phenomena conceived and established always with a precise human finality. The third dimension is in the tension between unlimited human needs, permanent, and limited economic resources, rare, expensive and more difficult to obtain. Thus, the access to natural resources and economic-financial, national and global, is ensured by the context of consolidation tendency on long term of foreign resources dependency. The fourth dimension considers demand of growth and diversification of scientific-innovation exchange of Romania with all countries in the communitarian European area and in extra communitarian.
Economic scientific research means the action of examining thoroughly, of studying, of analysing rationally, at system level, phenomena and economic processes, thus to obtain new elements materialized in novel variants of understanding their essence, of their internal causality and new possibilities of improvement.

Economic innovation represents the action of change, of introducing in a process or a system, an already known novelty which to solve the economic problem, to ensure dynamic optimization of rare and limited resources use.

Understood as such, research and innovation are harmonized in an objective manner, are mutually conditioned, determining the growth of productivity, of systemic economic efficiency. As a consequence, these two concepts exist and function in their unity, ensuring obtaining from a unity of resources spent an economic effect more socially useful.

The distinction between these two notions is realised, especially, by the social need of boosting relational dynamics between research and innovation. Such a dynamics must lead to a new specific human behaviour, of researching by innovation and innovating by research, especially in the conditions of economic-financial resources are rarer, more expensive and more difficult to obtain.

As a consequence, economic scientific research and innovation prove to be an authentic axis of economic development, an anatomic and functional ensemble, which maintains the elements of economic system, defined by own content and permanent dialectic movement. In the presentation of our paper we use with priority the expression of scientific research, understanding, though, its intimate unity with innovation.

Scientific research is materialized nowadays in change tensions, being an expression of rational perceptibility of economic evolution by those who have a creative gift, of inventing and innovating, and, also, have the motivation of being involved in such matters. Research and innovation actors think to their interest, correlated with public agenda inherited from a revolution which, like all the others in history, imply an ensemble of quality transformation from an entire system or from its components, holding an instant and leaving a century.

Scientific economic research implies essential change in the behaviour, in science and technology, in education or in family, in religion and so on. All these hold in an essential proportion of economic creativity. Creativity means, above all, creation of new, then reception and consumption. In the conditions of very fast technical-scientific progress, with low creativity degree, in economy could not be solved efficiently the complex problems of resent development. As a perspective, heroes of a country will be the authors of most daring and important accomplishments in science, techniques, economy and culture, moving the competition between countries from military environment to in great values human creativity environment. New and original ideas will become decisive, though not by they. It must be known that in their way, multiple blockings appear, determined especially by the system of training and education, as well as the psycho-social climate. Any participant to economic life can be creative, though for this reason multiple conditions are imposed, which are related to the specific person, to creativity levels, to individual structures and creativity group, to identification instruments, to creativity evaluation and so on.

Creativity contents are in its novelty and originality, thus an economic good, as impossible to imitate and with further effects, as harshly judged by contemporaries, being appreciated as fantasy, useless. Though, such a situation does not discourage geniuses to exist and manifest, opening new tracks to technical-economical efficiency.

Specialists appreciate that creative minds always imply: imagination (capacity of accomplishing infinity of new associations, by composition and decomposition of ideas), judgement (combining imagined ideas, reuniting in the same class of those homogenous and rejecting the inappropriate), taste (the internal sense of delimitating aesthetic by unaesthetic, decent by insignificant).

Creativity as a composite element of scientific research, as a psychological formation of great complexity is materialized in many and diverse effects such as: productivity, value, quality, utility and so on. These are not limitative, though they must be connected with many others such as: ingenuity, novelty, originality, dare and so on.

Creativity is, as a matter of fact, a social need, which must ensure economy development, though its accomplishment depends on removing inappropriate mentalities.

We point out, for this matter, that presently in Romania, although in other more developed countries as well, some negative cultural-educational phenomena manifest, such as: preference for a more complete
education than stimulating the development of an original and creative thinking (conformist specialists, with
diverse stereotypes); passive character, non-creative of some actions from free time; priority appreciation of
scholars towards those with original ideas, who are somehow tolerated; many people frustration of creativity
effort; tendency towards multiplication of same modalities of superficial behaviour, inefficient in personal
life and so on.

Profound understanding of essence and scientific research functions and economic innovation
presumes also capturing main tendencies of economic science, as organic part of science in its totality and
coherence, which influences quality development of economy on grounds of an adequate scientific research.

In the frame of science system and, economic science evolutes permanently related to other sciences,
and, especially, with sciences of nature. Revolution in natural sciences, starting with physics, brings back to
exegetes’ attention the concept of perfect prediction, as an object of economic science. For this matter, an
elitist trend of economic thinking accepts the transformation of economic science into an exact science,
as any natural science. Therefore, notions, theories and economic science methodology should be profoundly
restructured. For example, the theory of economic equilibrium, having as a genesis the progress of
mechanical physics of Newton, is about to give way nowadays, on grounds of modern physics revolution, to
disequilibrium, to chaos. Appeal to chaos theory made by various economists is an eloquent proof.

Another tendency of economic science is represented by movement towards interdisciplinarity and
multidisciplinarity. Causes are found in> complexity of analysed object; science insight in every section of
economic life; technicization and instrumentalization of scientific knowledge action; realisation of a tighter
link between raw science and applied science, between fundamental theoretical disciplines and those
experimentally-applied; accentuating historical dimension of science; transition to theories with a high degree
of structural organization, open to natural environment and human created environment and so on.

In such frame emphasizing the importance of social signification which economic phenomenon
holds, social by its essence, is imposed. Therefore, when taking decisions of economic politics, one must
consider the dimension and social impact these are having, thus, generates earlier or later, heavy costs,
economic, social and ecologic imbalance, hard or impossible to manage. Economic science holds, before all,
a powerful social determination. As a consequence, must act in whole society for a rational economy,
grounded on free market mechanisms specific to pluralism of property forms, on honest competition, fair,
legal and allowed, on precise rules and with exhaustive equality, for an economy which does not waste
resources and does not destroy natural environment, an economy which ensures equal chances for all
concerning access to information, culture, markets, technologies, credits and so on. Thus, facts and acts of
economy can satisfy every man’s needs, giving him the dignity and allowing him to fully take advantage of
right and own liberties of human essence.

II. Features of scientific economic research and innovation

A primary feature of research and innovation results from the fact that along with some elements of
“civil global society” brings back the social problem, as opposed to forces behind the globalization process.

In such circumstances, economic science enters more in direct contact with natural sciences, with
juridical sciences, with technical sciences and so on. It must approach the more complex human, in his
quality of consumer, of labour resource, of governor, which opens new tracks of investigation and offers
more refined measurement instruments, of perfecting and capitalization of proper economic analysis.
Experience of totalitarian systems in past century shows us that only in democracy are possible economic
development and plenary affirmation of human aspiration, regarding rights and fundamental liberties of
human being. For such reason, reducing citizen only to his dimension of consumer generates premises of new
type o totalitarianism, overly dangerous.

Thus, economic science includes in research domain also the present role of state. Though, it
concerns the state as an organizer of social cohesion, the regulating state, the judge state and not primarily
state as an economic actor. Such vision above state in actuality rehabilitates the public service and its social
utility, meaning population demands broad and quality public services to international standards and
performances, of health, education, social protection. Health, culture, personal safety can not and must not be
transformed into goods only for market’s sake.
Another feature of economic science, implicitly of economical research, represents the growth of mathematics application in researching economic phenomena and processes. Mathematics proves to be an essential and indispensible instrument for elaboration of models, for analyse and explanation of profound sides of economic processes and phenomena, for their provisioning, for discovering relative truth elements in economy.

Using mathematics in growing proportions in economic research derives from Alexander Rosenberg’s appreciation, renowned specialist, who states that “economic science is not a discipline, though a particular theory, of extreme character and, thus, by its nature, mathematical”\(^1\). Although economy is not in absolute supremacy domain of mathematical instrument. For this reason Anghel Rugina underlined that “in reality, roots of nowadays problems could be expressed only in quantity”\(^2\). By extension, the relation between economic science and mathematics must be understood and applied correctly, as to other science, ensuring necessary unity, implicitly, on communication of rational systems, conceptual, by creative efforts form both ways.

An obvious feature of economic scientific research and innovation regards integrative approach of economic phenomena. This means the transition form classical, analytical model, to the synthetic-integrative of economic thinking model. Thus, integrative disciplines are constituted such as: cybernetics, communication theory, system theory, semiotics and so on, which favour transfer of methods, principles and concepts in science branches.

A movement of science and economic research is established as such, towards logics competence domain, blending with common, empirical, scientific, systematized knowledge. Different logical model are built with the help of generalization of essential aspects, common to a mass of homogenous phenomena. Thus, economic science fulfils more systemic functions such as: methodological function by which critique analysis and methodical evaluations of real facts are accomplished, passing beyond their immediate appearance and manifest, thoroughly, in their essence, which favours the arrangement and systematization of empirical material; heuristic functions, meaning the discovery of new facts and regulations; explicative function, like understanding known facts; prospective or predictive function, which allows anticipating relations between facts, establishing new prediction referring to manner of prefiguration of economic reality in the future.

We reveal, as well, the fact that ideas of causality, of probability and so on, gains space in economic science and research, using, also, insistently, logical methods such as: axiomatization, formalisation, modelling.

From the epistemological standpoint, the most difficult problem facing economic scientific research is testability or verification of results, which means extending experimentation as a modality of verification accepted assumptions. Unlike natural and technical sciences where there are relatively wide testing possibilities, in economic science these are more limited because of the specificity of economic phenomenon, which directly implicates human being, with own system of need and interests, as well as due to study object’s dynamics, risen social cost of experiment and so on. Practically, economists exclude the possibility of laboratory experiment, on people and groups of people. Paul Samuelson, Nobel Prize laureate for economy, reveals that “We can not accomplish controlled experiences of chemist or biologist. Like astronomer or meteorologist, we must, in great measure, be satisfied with observation”\(^3\). Also, Britannica encyclopedia records: “There are no laboratories in which economists to test their hypothesis. Economy is in an essential manner, a moral science.”\(^4\)

We underline other form of experiment such as econometric testing, inquiries and surveys, simulation, scripts, have an important part in investigation and evaluation of economic phenomenon. For such matter, Maurice Allais, another renowned Nobel Prize laureate for economy reveals that “Contemporary literature offers numerous examples of aberration which can appear even from neglecting essential principle that a theory is valuable only in when it agrees observed facts and the only source of truth is experience. The submission of data to experimentation is the golden rule which governs any scientific discipline.”\(^5\) Therefore,

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4 After Daniel, Hausman, “Philosophy of economic science”, Humanitas, Bucharest, 1993

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experiment, despite its critique, is the main procedure of verifying assumptions and fundament scientific conclusions. Absolute and relative progress is exemplified, on one hand, by growth without precedent of possibilities of electronic calculus and modeling techniques of economic phenomena, and on the other hand, by strong diversifying the experiment meets.

It results the essence of scientific research and economic innovation is directly connected to methodology of achievement, contributing to discovering new knowledge and new facts, as an authentic art for discovering truth in economy. Thus, research and innovation favours directly the accomplishment of Romanian economy joint with community economy, in the post-adherence of Romania to European Union.

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