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Institutional Environment of Innovation Market: Structure and Factors of Development

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ABSTRACT

The article is devoted to the research of theoretical approaches to the analysis of institutional factors in the development of innovations. A structural factor model of innovation systems is presented in the article. The key object of factor analysis in the model as well as is the definition of institutional factors of innovation environment is determined. Institutional environment of innovative market is structured. Endogenous and exogenous factors that influence the development of the institutional environment, barriers hindering the development of the innovative environment are identified.

Keywords: Institutional Environment, Innovative System, Institutional Factors, Institutions, Barriers

JEL Classifications: O33, O38, R11

1. INTRODUCTION

An innovative type of sustainable development implies the diversity and constant renewal of forms of activity in accordance with changes in the technological base, values, stereotypes production and consumer behavior of economic agents. Institutions that regulate innovation processes have particular importance in modern economies. Such institutions include the institute of property rights; law institutions; institutions that determine the functioning of the business; competition institute, the institute of knowledge, etc. They are a necessary basis for the formation of the institutional environment and at the same time the institutional factors of development of innovative economy. Institutional aspects of innovation and the analysis of the institutional environment are today crucial in formulating and carrying out innovative policies, both on regional and national levels. A comprehensive vision of the problems of legal gaps to emerging innovative practices helps to understand the vector of the forthcoming changes and take into account the characteristics and trends that have emerged in the field of innovation activities.

2. LITERATURE REVIEW

Modern research suggests that the institutional environment is one of the main factors of development of competitive advantages of the region (Gatina, 2012). The relationship between the institutional environment and innovative activity in the country dedicated to research in three scientific schools. Political science, exploring the issues of industrial policy and competitiveness argues that the institutional framework in the country determines the type of policy instruments that will be used by the state to manage the economy. Sociological institutionalism examines the influence of institutional frameworks on the activities of the enterprise, the role of the state is seen as proactive, if it is engaged in the development of the institutional framework and the development of legal acts, stimulating innovative activity. The tradition of capitalism, combining sociological and neo-institutional approaches, exploring the relationship between innovation strategies of enterprises and the institutional environment of the country (Seliger, 2012).

Ternovsky indicates that the impact of institutional environment on economic growth is possible through the formation and operation of external institutions, and formation of institutional agreements is possible through the “formation and operation of internal ones” (Ternovsky, 2008. p. 50). North proposed to distinguish between “institutional arrangements and institutional environment” (North, 1990. p. 112). The term institutional environment (economic constitution, the institutional structure of the economy, institutional framework) refers to characteristics of the external environment that are important for economic activity, “a set of values, formal and informal norms that affect the ratio of incentives in the activities and contribute to the achievement of a minimum agreement between people” (Oxley, 1999. p. 284).

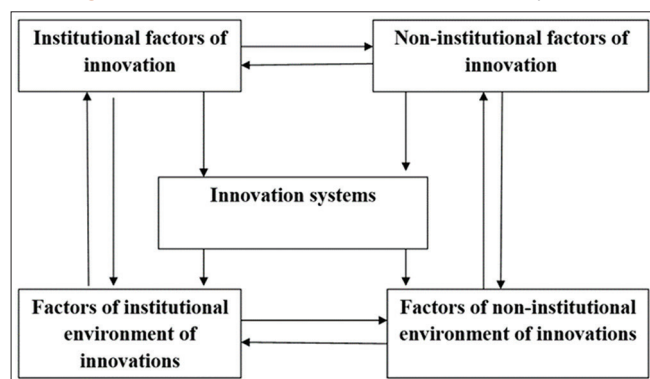
Nelson and Winter (1982) in his study stresses the importance of the influence of the institutional environment on the dynamics of innovation and incentives, exploring the national innovation system (NIS) as an interconnected system all of the elements of economic activity of society. “The institutional environment is the basis for the formation of the NIS” (Nelson and Winter, 1982. p. 145).

The concept of NIS was proposed in 1987 by the English scientist Christopher Freeman (Freeman, 1995). He has identified laws of development of the national economy dependently on the development and implementation of new technologies in the economy of society. The concept of NIS is based on the writings of Schumpeter (1934), Porter (1990), Lundvall (1992) and other eminent scholars. Kondratyeva (2015) in the article: “The national innovation economy: Theoretical concept,” concludes that common to the founders of the concept was the understanding of NIS as the process and outcome of integration of diverse goals and objectives of the entities involved in the production and commercial realization of scientific knowledge and technologies within national borders (small and large companies, universities, research institutes), provide a complex of institutions, legal, financial and social interaction with strong national roots, traditions, political and cultural characteristics.

3. RESEARCH METHODOLOGY

Conceptual analysis of the problem of innovative development acceleration in the frames of national and regional economies allows us to propose the following structural factor model (Figure 1).

Figure 1: Structural factor model of innovation systems



Within this structural factor model, it is necessary to negotiate progressively the interests of macroeconomics and microeconomics, national economy as a whole and its parts, between which, especially in the modern Russian economy, there are sharp contradictions (Lozhnikova, 2011).

The central object of factor analysis is an innovative system of various levels of complexity, its resource, technological and productive parameters in statics and dynamics. The quantity, quality and speed of innovative organizations development are determined by the factors affecting the innovation system. These factors can be divided into two groups: Institutional and non-institutional. The latter group includes all the resource, technological, production, sales (and marketing) factors of the innovation cycle. They can be called the factors of the innovations of the 1st type because they directly create conditions for innovation activities.

Institutional factors include the system of many rules, regulations and laws that create formal legal and informal framework for the implementation of non-institutional factors of innovative activity. Therefore, they are entitled as the factors of the 2nd kind. They can be restrictive or permissive, prescriptive or indicative, stimulating or destimulating profile. Each of these factors has its own functionality, but in the event of loss of any of the functions the factor of the institution becomes dysfunctional in nature. In turn, the institutional environment of the innovation system operates and changes under the influence of its factors, which can be defined as the factors of the 3rd kind.

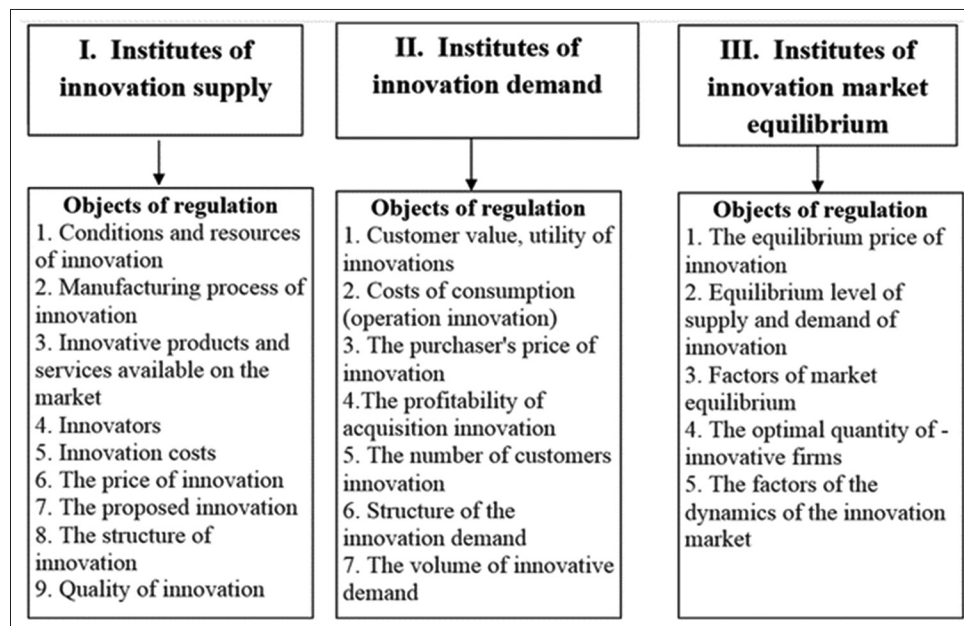
The authors propose a structural model of the innovations on the base of the analysis of institutional factors (Figure 2).

The model includes three main types of institutions that govern demand, supply and equilibrium in the innovative market. Each institute has its own specific objects of the impact on institutionalization. So is the structuring of the institutional environment on the objects of regulation. Furthermore, an appropriate structuring of the environment on the subjects of institutionalization in the innovation market is advisable. These actors, as well as the objects, can be classified, firstly, according to the size (mega-, macro-, meso-, micro-, mini-institutes), and secondly, on the scope of regulation (administrative, network and corporate institutions), thirdly, on the degree of legalization (formal, informal), and fourthly, on the stages of the innovation cycle and its participants, including:

- Institutes of marketing of innovations
- Institutions of inventional stage (research and development)
- Institutions of innovation stage
- Institutions at the stage of diffusion and imitation of innovations.

4. FINDINGS AND DISCUSSION

The development of the institutional environment of innovation activity is influenced by exogenous and endogenous factors. Exogenous factors include the political situation in the world market, government regulation, infrastructure, innovation, environmental and technological constraints of production, the emergence of new

Figure 2: Structure of the institutional environment of the innovation market

markets, the degree of market structure maturity. Endogenous factors include: The competence of the heads of enterprises, responsible for R and D; high-quality strategic management of innovative activity; orientation of managers and employees on the development and use of new technologies; creative potential; motivation of personnel for the development and implementation of innovations and other factors. Transition of Russian economy to an innovative path of development requires an appropriate institutional framework, information support, the national system of creation and diffusion of innovation and significant public investments in human capital (Vihoreva and Karlovskaya, 2010).

Studies of factors of innovation demand on the example of the enterprises of the Perm territory showed that demand for innovations is rather low. The causes determining the low demand for innovative products were identified as follows (Lepikhina and Karpovich, 2013):

- Unwillingness of the buyer (fear of new products implementation, high risk) - 24%
- Lack of awareness and weak marketing and advertising - 23%
- Low solvency of buyers - 20%
- High interest rates on loans for the purchase of innovative products - 15%
- Customer loyalty to traditional products, brands, brands - on 14%.

The external factors hindering the development of innovation activities, according to experts' opinion, were:

- High cost of research and their results (patents, licenses) - 17%
- High taxes on the activities of innovative companies - 17%
- The lack of effective federal government programs (12%); weak regional innovation policy (7%) and weak municipal support of innovative-active firms (11%).

In modern conditions the state of the political situation in the world market has a significant impact on the development

of innovations and contributes to the effectiveness of the institutional environment because if the environment is unstable, the political risks are high, which increases the uncertainty of innovation outcomes at all stages of the innovation cycle: The conclusion of contracts, provision of resources, the existence of demand for innovations. Regulating influence of the state should be directed on creation of legislative base, control of execution of normative acts, organizational and financial support of innovative projects. Depending on the general state of the innovative environment the main directions of state regulation of innovation market can be classified as measures implemented under the terms of insufficient, excessive and balanced demand for innovations.

Infrastructure of innovative activity is a system including many institutions, including academic, sectoral and university science, techno parks, incubators of technologies, business incubators, business angels, foundations of promoting innovation and others. The development of the innovative environment of the region is hindered by certain barriers. The main ones include:

1. Economic barriers (weak tax incentives for innovation, tax, credit, investment, pricing policy of the state, the payback period of the investment, defaults, etc.).
2. Administrative barriers (imposed by the executive authorities at all levels of the procedure of business registration, issuance of licenses, provision of premises and land plots, procedure of import and export of products, quotas, etc.).
3. Barriers resulting from the conducting of particular policies by already existing market structures, including vertically and horizontally integrated structures.
4. Barriers related to limited market capacity, demand constraints.
5. Barriers stipulated by underdeveloped market infrastructure.
6. Objectively existing barriers related to limited amount of natural resources and need for conservation activities.
7. Barriers of criminal nature.
8. Industries can be classified into the following types depending

on the level of barriers at the entrance of new firms into the market.

- Industries with free access: Existing firms have no advantages over potential competitors; the price in the industry is set at marginal cost.
- Industries with short-term barriers to entry: Old firms can obtain positive economic profit in the short term due to the short term to prevent new firms to the market, but the advantages of old firms disappear in the long term.
- Industries with a slowed entrance: Old firms have advantages over new firms and conduct pricing policy which prevents the entrance of new firms into the market, as a result old firms obtain positive profits even in the long term.
- Industries with the blocked entry: The entry of new firms is completely blocked by old firms in the short and long term. The number of firms remains stable all the time.
- Barriers to exit the market refer to any factors that hinder or render impossible the termination of this agents activity in the market without major economic losses. Barriers to entry are mainly related to the structural characteristics of a particular type of economic activity: The liquidity of assets; the possibility of diversifying production using existing equipment, technologies, and sources of raw material; the isolation and connectedness of production chains.

5. CONCLUDING REMARKS

There are complex relationships between the economic relations in the process of innovation, the measures of economic regulation and the innovative processes in the national economy. This in turn requires an analysis of the nature and trends of innovative development, finding contradictions having a negative impact not only on the economic results of the direct producers of innovative products, but also on the speed of innovation processes. The contribution of economic science to the innovative development can be carried out in two related areas:

1. Construction of models of innovative activity and innovative growth of this economic entity (agent) in the context of a positive economic theory that ignores any subjective parameters, factors and function of the research object.
2. The formation of models of management of innovation activity agents in the form of policies, programs, projects, plans within the framework of normative economic theory,

in which subjective characteristics and imperatives of human activity are the main contents.

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