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M. Odnorog,
Ph.D. in Economics, Associate Professor, Doctoral student Department of theory
of Economics and Finance, Scientific-research financial Institute State educational-scientific
institution "Academy of financial management"

INSTITUTIONAL ASPECTS OF NATIONAL INNOVATIVE SYSTEM DEVELOPMENT

М. А. Однорог,
к. е. н., доцент, докторант відділу теорії економіки і фінансів, Науково-дослідний фінансовий інститут ДННУ
"Академія фінансового управління" Міністерства фінансів України, м. Київ

ІНСТИТУЦІОНАЛЬНІ АСПЕКТИ РОЗВИТКУ НАЦІОНАЛЬНОЇ ІННОВАЦІЙНОЇ СИСТЕМИ

Determined by that innovative activity is characterized by a high degree of uncertainty and risk, so the important principles of development of the financial infrastructure is the diversity of funding sources, flexibility and adaptability to the environment is rapidly changing. Depending on the characteristics of the innovation process generating conditions for the mutual influence of innovation cycles and capital in the process of creating innovation. The necessary conditions are: optimum use of available funds, reduction in the duration of the innovation cycle, the allocation of capital in the phases of the innovation cycle with the purpose of risk sharing. It is shown that the institutional conditions for the development of the national innovation system will require significant changes in order to increase the activity of economic actors in relation to innovation. The main components of the institutional infrastructure of the national innovation system is the financial, personnel, legal, industrial-technological, information, consulting, and sales. Extensive financial component of the infrastructure of the national innovation system will contribute to its progressive development under the condition of smooth functioning of all subjects. A necessary condition for achieving high and stable rates of innovative development of national economy is to increase the share of mixed capital in the implementation of the innovation process. Institutional conditions for the development of the national innovation system, reflecting the organizational and economic relations of the subjects of innovative activities, stimulate innovative activity and is one of the most important tools of modernization of the economy.

Визначено, що інноваційна діяльність характеризується високим ступенем невизначеності і ризику, тому важливими принципами розвитку фінансової інфраструктури є різноманітність джерел фінансування, гнучкість і адаптованість до середовища, що швидко змінюється. Залежно від особливостей інноваційного процесу формуються умови для взаємного впливу інноваційних циклів і капіталу в процесі створення інновацій. При цьому необхідними умовами є: оптимальне використання наявних коштів, скорочення тривалості інноваційного циклу, розподіл капіталу за фазами інноваційного циклу з метою розділення ризику. Показано, що інституціональні умови розвитку національної інноваційної системи потребують суттєвих змін з метою збільшення активності економічних суб'єктів стосовно інноваційної діяльності. Основними складовими інституціональної інфраструктури національної інноваційної системи є фінансова, кадрова, правова, виробничо-технологічна, інформаційна, консалтингова, збутова. Розгалужена фінансова складова інфраструктури національної інноваційної системи сприятиме її поступальному розвитку за умови безперебійного функціонування всіх суб'єктів. Необхідною умовою досягнення високих і стабільних темпів інноваційного розвитку національної економіки є підвищення частки змішаного капіталу в реалізації інноваційного процесу. Інституціональні умови розвитку національної інноваційної системи, що відображають організаційно-економічні відносини суб'єктів інноваційної діяльності, стимулюють інноваційну активність і є одним із найважливіших інструментів модернізації економіки країни.

Key words: innovation system, institutions, institutional aspect, innovation activity, innovation process, innovation.

Ключові слова: інноваційна система, інституції, інституціональний аспект, інноваційна діяльність, інноваційний процес, інновації.

PROBLEM STATEMENT

The main trends in the development of the world economy confirm that economic growth is only possible through innovation. The modern

theory of innovation management pays special attention to institutional methods and mechanisms of reproduction of innovations. Created in highly developed countries, the institutional mechanisms

and institutional framework for the dissemination and use of knowledge within national innovation systems provide a sustainable economic growth and quality of life of the population. Practice of the reform of macro-systems shows that the absence of institutional component increases informational indefiniteness, raises the risk in the event of the implementation of the processes of exchange and contract, causing an increase in economic, social and transaction costs and higher prices for goods and services. Outside the institutional environment, the market mechanism fails. Ukraine is now urgently needed is the creation of an innovative economic system that will guarantee the long-term nattokinaise the country's economic growth is based on existing capacities: Ukraine has a well developed education system, a significant scientific basis, as well as some technological know-how, successfully embodied in separate spheres. These benefits generally represent a more significant innovation potential than that possessed by other countries with similar GDP. The problem is how effectively Ukraine will be able to use this comparative advantage. In connection with this very relevant is the study and application of experience to create the necessary institutional framework conditions without which any innovation potential can not be realized.

ANALYSIS OF RECENT RESEARCH AND PUBLICATIONS

The question of institutionalism is reflected in the writings of T. Veblen, O. Williamson, V. Hamilton, T. Gaidai, V. Geytsa, A. Gritsenko, G. Kapelushnikov, P. Kirdina, V. Radaev, V. Tambovtseva, M. Tugan-Baranovsky, A. Chuhno, P. Leonenko, A. Shastitko, V. Yakubenko, V.V. Dementiev, P. Proskurin, A. Oleynik, and others. Problems of formation of institutional factors and evaluate their impact on the functioning of economic systems is studied in the works of such scientists as M. Weber, T. Eggertsson, R. Coase, D. North, Th. Schumpeter and others.

The purpose of the article is justification of the institutional aspects of the development of the national innovation system.

THE MAIN MATERIAL

The transition from a linear to a systemic description of the innovation process in practice marked a re-evaluation of determinants of economic growth, focusing on institutions.

The significance of the features of the institutional structure of each particular society to its socio-economic development is well justified by the leaders of the institutional direction of

economic and social theory (D. North, John. Hodgson, John. Commons, V.M. Polterovich, T. I. Zaslavskaya, G.B. Kleiner).

Currently, in the framework of modern institutionalism, the most common is the interpretation of institutions Douglass North: "Institutions are rules, mechanisms for their implementation, and norms of behavior that structure repeated human interactions".

D. North believes that institutions affect the economic system, the way in which the economy is developing, and ask the system of positive and negative incentives, thus reducing the uncertainty of economic development and fulfilling its main function of saving transaction costs. Therefore, the formation and regulation of institutions becomes a factor for economic growth.

Obviously, the institutions is a complex, functionally differentiated systems. In this case the main interest is to identify the stable component of the Institute. With this purpose, we introduce the concept of "core institution" that characterize the historically stable, continuously reproducing the practice of social relations. The Institute forms a basic skeleton of the society, defines the most General characteristics of social situations, determines the direction of collective and individual action.

As the base of the Institute, you can define the state itself. It is responsible for the prevention and relief of the crisis phenomena in the economy, it must assume the functions of normotensive in the broadest sense of the term "norm": and as a legislative act, and as the characteristics of the ordered relationship between socio-economic actors. This concept of the Institute of state suggests that he will be the stabilizer of social development, ensuring the implementation of the rights and duties of legal entities and individuals.

The analysis of the category "institution" in institutional theories allows to identify the dual role of the state:

- a) as an organizational form, it must obey the General rules, norms;
- b) at the same time, the state itself generates, creates rules.

In the context of the national innovation system the main functions of the state are: predictive, analytical, research, regulatory, Supervisory, legislative and regulatory, managerial, economic and foreign policy.

Referring to the works of S. G. Kirdina, highlight the concept of "institutional form". In contrast to the basic institutions that preserve its contents, institutional forms are mobile, plastic, changeable. They represent established patterns,

ways of organization, which reflects the interaction of social and economic actors. These include legislative acts, forms of economic relations, information flows, legal and administrative norms etc.

Considering the question about the distinction between the definitions of "institution" and "organization" in the literature we can see significant discrepancies in the use of these concepts. Some authors consider organizations as a particular case of formal institutions. Followers of D. North, on the contrary, I believe that the relationship between organizations and institutions is the same as between players and the game rules, in other words, organizations are stakeholders and institutions. Accordingly, it is possible to consider the concept of institution as an organizational form and as a process.

Classification G.B. Kleyner allows you to structure institutions in the innovation system by type of entities that they are designed to reach:

- macroeconomic determining the course of macroeconomic processes in the economy;
- the meso, valid at the meso structure (industry, regions, vertically integrated complexes, etc.);
- microeconomic relating to the activities of organizations, enterprises and interested in their interaction entities;
- nanoeconomics governing socio-economic behavior of individual agents.

The interaction between different institutions as a whole creates, using the expression D. North, the total institutional system inherent to the society.

In the literature allocate the various theoretical models of the development of the research system. Thus, the theoretical model of the "institutional construction" is based on the assertion that the basic elements of the research system are saved but do not work, since there are no communication mechanisms between them.

To create relationships between participants of the innovation system use the following mechanisms:

1. Communication between research organizations and the manufacturing sector:

- research programmes for multiple clients;
- development of the research program representatives of the production sector;
- joint research program;
- joint funding of programmes: the company is partially funding the research in exchange for rights to the results;
- research contract and consulting in the field of technology;

- special schemes technology transfer and technological instruction;

- Advisory councils composed of representatives of the production sector;

- staff mobility between firms and research organizations;

- training of employees of firms;

- the use and transfer of intellectual property rights research organizations;

- licensing of technologies;

- subsidiaries and startups founded by employees of research organizations with their support;

- self-employment of former employees of scientific research organisations;

- conferences, informal contacts and networks.

2. Communication between research organizations and educational institutions:

- cooperation in the training of graduates and postgraduates in the framework of institutionalized joint programs, practices, etc.;

- exchange of individuals, departments, etc.;

- staff mobility between educational institutions and research organizations;

- the use of intellectual property rights, licensing;

- institutionalised joint research programmes;

- joint projects or research consortia (can participate in them and the production sector);

- publications, presentations on scientific conferences;

- informal contacts and networks.

3. Communication between research organizations and the government:

- long-term financing (basic, conditional) on the basis of agreed objectives and strategy;

- research contract and consulting in the field of technology;

- financing of joint research;

- membership of research staff to government Advisory bodies;

- exchange of staff;

- mobility of personnel between government agencies and research organizations;

- maintaining the state of the knowledge base and the implementation of public tasks (for example, participation in the work of standards bodies);

- informal contacts and networks.

Accordingly, the content of this option is the development of missing elements and the spread of new institutional forms: venture capital funds, innovation and research companies and centers, technological parks, transfer centres, technology etc. This option is the most close to the declared

policy in the field of science innovation of the 1990s and beginning of 2000s and, according to many analysts, most likely as a compromise at the present time.

Likely to shape future scientific research system in the event this option is an extension of the innovative infrastructure, the dependence of the research system from state support to will generally increase on the background of low-intense processes of self-development of its institutions, will increase the allocation of budget resources in many new directions, the consequence of which will be the preservation of tendencies to improve the quality of key existing elements of the research system (basic and applied science).

The main disadvantages of the development of this model is a high risk that the mechanical copying of the many existing overseas institutions in the field of innovation does not automatically lead to the formation of a competitive research system due to the low quality of its existing elements, with very limited effect in providing communication between various elements of the research system; the probable error in the determination of the extent of the required building elements of the research system and misalignments in the setup of the functioning of these elements, which will increase the imbalance between research systems; fascination with various new forms can have a negative impact on the task of improving the quality of existing basic elements of the research system and may lead to further degradation of existing its elements.

Current international statistics, with large amounts of data on scientific and technological development, allows to compare the potential and comparative advantage of any country. Thus, the authors of the ratings of the world economic forum based on the fact that the main vector of modern global competition is in the area of dynamically changing benefits, based on scientific and technical achievements and innovations. Indices of the world economic forum clearly show the most profound problems of innovative development of Ukraine. The country has sufficient in size and quality of personnel potential of the innovation sector, ahead of this option, the world leaders such as UK, Germany, France, Netherlands and many others. At the same time, incentives for innovation activities in the business sector and the quality of public policy are at the level of the indicators specific to the least developed countries of the world.

The comparison of the ratings of Ukraine, even not with the leaders of world development and

countries, especially socialist, which is on a comparable or close level. For all post-socialist countries the General law is a significant gap in the quality of public institutions. The value of this component of the rating is significantly lower totals competitive growth. The poor quality of public institutions does not create incentives for innovative development in these countries, partly kompensiruet or the advantages of technological nature (often by borrowing technologies), or as the macroeconomic environment (especially noticeable in China).

The modern experience of foreign countries in the development of the research system shows that regardless of the national peculiarities of the country carefully considered the authorities of the country the system of measures to create framework conditions for innovative activities and the restructuring of public institutions and links between them often prove to be much more effective than the direct and indirect government subsidies for innovative activities. Thus, the formalization of institutions, research, mediation and business sector and their linkages required for integrated development of the innovation system.

A theoretical model of the "institutional construction" and adaptation to Ukrainian realities already existing positive experience of other countries that have passed the house of trial and error, and a significant part of the way to building a new economy based on innovation, in our opinion, can create an effective research system of Ukraine. Although within the system interact with organizations both private and public and mixed ownership, government bodies play a special role. Through them public policy that affect innovation processes. State policy determines the institutional profile system, which largely depends on such factors specified by the state authorities, as the mode of operation of the business environment, the level and degree of orientation of basic research to the market, the system of motivation of scientific research activity, its orientation towards production, the organization of the higher education sector.

CONCLUSIONS AND SUGGESTIONS

In the formation of effective institutions, it is advisable to consider the following provisions, reasonable R. Boyer, the author of the theory of regulation, one of the directions of institutionalism:

— opportunities and the viability of any institution depends on whether it draws simultaneously on a whole system of rules and mechanisms;

— the mechanism of selection of institutions, rules, and organizational forms does not provide the correspondence between the viability of institutions and their economic efficiency;

— the viability of institutions are largely determined by their complementarity, the contribution to the harmony of the system as a whole;

— intermediate forms of organization between the state and the market largely determine the growth rate, however, the organization of an employment relationship is just as, if not more important than the form of competition or structure of the state;

— methods of regulation act in a historical context, not in abstract time of rational calculation, not in the context of a frozen history.

Comprehensive, reasonable and balanced choice of the optimal model of development of innovation system, ensuring the smooth interaction of all components ensures the creation of the most favourable socio-economic and institutional environment for diffusion of innovations, accelerated introduction of advanced scientific and technical developments and produce the greatest effect.

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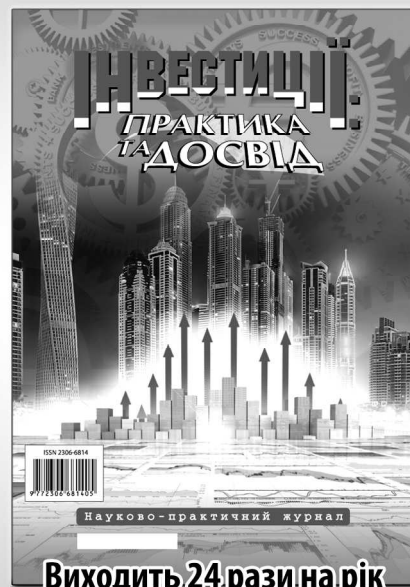
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