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THE INNOVATION POLICY OF UKRAINE: PRINCIPLES, CONDITIONS, CRITERIA

POLITYKA INNOWACYJNA UKRAINY: ZAŁOŻENIA, UWARUNKOWANIA, KRYTERIA

Streszczenie. Krytyczna analiza doświadczenia zagranicznego, wyświetlenie jego stron pozytywnych, oraz wad, określenie ram jego stosowania w warunkach ekonomii narodowej jest potrzebnym warunkiem do stworzenia adekwatnej strategii rozwoju ekonomicznego Ukrainy. Zdefiniowanie kluczowych faktorów rozwoju innowacyjnego, priorytetów, oraz kierunków jego realizacji jest możliwa dzięki zapoznania się z formacją doświadczenia oraz poszerzenia pracy intelektualnej w tych krajach, co obecnie demonstrują wysokie tempo rozwoju.

Annotation. The article deals with effective state support instruments for intellectual resources development. Author evaluates the level of intellectual resources development in Ukraine and discloses the major problems arising during its application. The main concepts of the work were directed on the effective state policy recommendations, which would improve Ukrainian intellectual resources functioning.

Background. The foreign experience critical analysis, the exposure of its positive aspects and drawbacks, specification the limits of its implication in terms of national economy, are prerequisites for building up an adequate strategy of economic development of Ukraine. The identification of key factors for innovation development priorities and its implementation directions are possible due to analysis

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of experience of the intellectual work formation and expansion in highly developed countries.

Analysis of recent publications. In some extent the intellectualization of economy was studied by economic researchers: D. Helbreyt, P. Drucker, D. Bell, J. S. Mill, E. Denison, M. Delyahin, P. Kruhman, P. Romer, M. Porter, K. Frimen, R. Solou, M. Kastels, F. Fukuyama, V. Inozemtsev, A. Toffler, M. Masuda, F. Mahlup, T. Stouenyer and others.

The issues of innovation-driven economy building up were highlighted by Ukrainian researchers: A. A. Chukhno, Yu. Bazhal, O. Bilorus, A. A. Belyaev, A. Halchynskiy, V. M. Heyets, O. Hrishnova, J. Zhalilo, G. Klymko, V. S. Savchuk, Yu. Zaitsev, A. M. Kolot, D. Lukyanenko, Yu. Makohon, S. Mochernyy, V. Novytskyy, A. Rum'yantsev, L. I. Fedulova, and others.

The purpose of the article is to analyze critically the foreign experience, to highlight its positive aspects and outline the possibilities of its implementation in terms of national economy, to disclose the main concepts of an adequate strategy for economic development of Ukraine.

The main material. The development and growth of Ukraine economic system, as well as any other one, is possible by dint of close interaction among institutional architectonics, market dynamics, economic potential and government actions. Intellectual labor and intellectual capital are the key factors of economic development, however individually, they are insufficient. They can function effectively only under the favorable socio-economic conditions, the appropriate motivation system, the transparent "rules", which should be established by the government. All the institutes of national identity, cultural and mental traditions of Ukraine should be also taken into account. Well-made combination of market instruments and administrative regulations, the activation of innovative potential

of small and middle business, raising the well-being of residents and the middle class formation are the main factors of economic development.

The problem of intellectual work formation could be solved in Ukraine within the process of Schumpeterian creative destruction (restructuring), which is aimed at the complex of new technologies development, the modern achievements of the scientific and technical progress implementation, and the comprehensive human development. These issues of economic policy should be based on the principles of neo-structural, neo-institutional economic theories and Evolutionary economics. They emphasize on the structural differences among the countries and insist on "an independent analysis of each developing economy and its economic and institutional parameters". F. Fukuyama said: "... Americans use the term "building of nations". It reflects the specific American experience of raising a new political order in countries of a new settlement... Nation is a community with common values, traditions, historical memory. Thus, in accordance to this argument, it could not be ever built up. On the contrary, nation evolves during unplanned historical and evolutionary process"¹.

It means the more unified the world lifestyle gets, the more important the core values (religion, language, art, literature) become. The changes in global values and institutional environment do not allow such countries as Ukraine, Eastern Europe, Turkey, Mexico to learn and adopt the institutional structure of Western society, as far as the last one is to transform.

P. Drucker gave a scientific estimation of contemporary historical period: "We are entering an era of the global economy and technology rupture... we can turn it into rapid economic growth... thus there comes

¹ Fukuyama, F. The End of History? / F. Fukuyama // The National Interest. – Vol.16. – 1989, p. 3-13.

a time when technology and economic policy are reformed, industrial structures, economic theory and knowledge are transformed..."².

Some experts insist, the practical application of western experience of innovative economy formation could be adapted only to a certain extent during the intermediate stage of development. The long term perspective expects Ukraine economy to have its own way of development. Thus, China and other Southeast Asia regions are nowadays engaged in building-up the independent innovative state, however, recently they focused on borrowing the Western countries technology solutions. Western Europe countries and America haven't ever borrowed any experience of economic development; they chose the role of locomotives within each specific region (US – North American, Germany, Britain, France – Europe).

Practical implementation in innovation-oriented economy demands to select the appropriate governmental policy and its specific objectives. Nowadays domestic innovation activity is regulated by numerous legislative acts. The governmental programs make a basis for implementation of industrial sector innovative development. There are legislative, structural and functional institutions, which establish and ensure the rules and regulations compliance within the innovation activity field. These are Cabinet of Ministers of Ukraine, Ministry of Economic Development and Trade of Ukraine, Ministry of Education and Science of Ukraine, State Agency for Investment and National Projects, State Agency for Science. However, in our opinion, in order to come to fruition in science and innovation field, the system of effective practical solutions and objectives should be defined.

Traditional point of view allows for the main measures for the innovative economy development in Ukraine are referred to the changes in educational system, investments in the research projects,

² Друкер П. Ф. Эпохаразрыва: ориентиры для нашего меняющегося общества: пер. с англ. – М.: ООО «И. Д. Вильямс», 2007. – С. 20.

supporting the knowledge-intensive industries etc. It is hard to deny the importance of these factors, however, the experience of foreign countries (including Japan and Western Europe), shows, firstly, that innovations ought to correspond with the social background and relevant socio-economic base; second, innovations must be related closely to industrial sector, business and market, and should create a practical value as well. Thirdly, innovations need an advanced high-tech internal market outlet with consumer segment. Fourth, the focal point and coordinated strategy for science and innovation development are expected to be framed.

Thus, first of all, the "social vacuum", which was generated by limited innovation market outlet, is to eliminate, as well as constantly growing gap among the financially reliable demand and the manufacture potential. Ukrainian state should review the objectives and priorities of development policy in order to withdraw a defective and inefficient export strategy in favor of an import-substitutive policy. Effective export strategy would restrain the diversification of foreign trade structure over the time of its implication. Such a situation is actually compound by traditional Ukrainian policy of metallurgical and chemical industries support, which causes a significant outflow of resources from other industry branches. Economic structure imbalance brings about the restrain in extension of other industries of highest technological mode.

When the budget revenues are in direct dependence on the efficiency of export industries activity, the national economy became sensitive to the external factors and to the world conjuncture, including markets of raw materials and semi-finished products. Such risks are unjustified, as the multiply effect on the economy and state budget is questionable, considering all the money spent on their supporting, insufficient receipt of currency returns and opportunity costs. Despite the favorable situation on the global metal products

market in recent years, export revenues, however, were not directed to modernization and renewal of productive facilities. This is proved by fixed assets wear degree, which is accounted for 60% in mining and smelting complex. The index of **labor cost per unit of manufacturing output** is 3 times higher than in developed countries³. This triggers some doubts about productivity growth of steel manufacture and about state strategy reasonability. Such export-oriented model was reproduced in Latin America countries, where wasn't justified as well.

On the contrary, import substitution strategy provides a wide acceptance of import technologies and their reengineering. This strategy was applied by all developed countries without exception. In case of industrial and scientific immaturity, technological backwardness, though at the same time, strategic priority of leading technology possession, governmental economic policy should take the measures to support the import of advanced technologies. This allows preparing the conditions for the mature form of advanced scientific and technological development.

The policy of import technologies incentive was carried out by the modern world technology leaders - Japan, Republic of Korea, India, the EU and the US⁴. In many countries import of technology came through the various forms of commercial and non-commercial acquirement of technology, including the knowledge community (human capital) encouragement through the programs of highly skilled professionals and scientists immigration.

Imports of technologies are usually stimulated by the tax exemptions. For example, the cost of patents purchase and

³ Структурні зміни та економічний розвиток України: монографія / [Геєць В. М., Артьомова Т. І. та ін.]; за ред. д-ра екон. наук Л. В. Шинкарук; НАН України; Ін-т екон. та прогнозів. – К., 2011. – 696 с.

⁴ Конвергенція економічних моделей Польщі та України: монографія / [Д. Лук'яненко, В. Чужиков, М. Г. Вожняк та ін.]; за наук. ред. Д. Лук'яненка, В. Чужикова, М. Г. Вожняка. – К.: КНЕУ, 2010. – 420 с.

technology import in Japan, Republic of Korea, the US and the EU are not included in tax base as well as revenue from engineering and consulting services in high-tech field.

Economists K. Arystanbekov, Y. Gaidar, B. Erdenbat, J. Kornai, V. Kudrov, V. Mau, L. Chaba consider the development of post-socialist countries and countries of system economy transformation is in the context of the evolutionary development. The approach provides three stages of development: (1) market transformational recession, (2) renewable growth, (3) innovation and investment development, herewith Ukraine is placed on the second stage⁵.

According to economic research, reproductive factors of economic growth are inhibited on the second stage by following factors: old material and technical base, which is equal to industrial stage of development; low level of economy intellectualization initiates inability to transit to a post-industrial development. Generally, the second stage is characterized by:

1. Monetary, fiscal and tax policy reform, which creates a favorable investment climate and antitrust regulation;
2. "Transformation" the hyperinflation into galloping and creeping inflation, reduction the amount of budget deficit to 3% range and its next maintenance, gradual balance of payments activation;
3. Advance economic growth and gross domestic demand increase.

This means Ukrainian economy may apply the innovative model of development on condition that the problems of second phase of transformation are overcome. The dynamic modernization of all sectors of economy is capable to provide the economic growth and welfare through effective demand and "middle class" formation,

⁵ Сем'янчук П. М. Інтелектуалізація праці як визначальна умова інноваційного розвитку економіки України: [монографія] / П. М. Сем'янчук. – Тернопіль.: THEU, 2012. – 235 с.

despite the "one-side" support of mining and heavy industry through import of technologies.

Today's science and innovation state policy – is a set of activities that promote the rapid economic effect achievement. However, the research organizations, which produce such developments, have little interest in their practical implementation. The innovation activity regulation uses an approach, which could be described mostly as "science for science" development. Most Ukrainian legislative instruments include such criteria as: creation the world-class achievements, the budget expenses rate for science researches, special laws on innovations, specified national priorities for research activity.

It is traditional elements of planning and directive system. Such a mechanism worked well enough in terms of available directive plan for science and technology. So it provided the realization of defense, space and other strategic programs. However, it ought to complement an effective mechanism of market competition, and not replace the last one. If the innovation markets don't work or they work within the informal sector, the law will not run their mechanism by itself.

Many "charities" were formed in Ukraine by foreign structures. Scientific and technical centers, business incubators amount to informational interest for the national research and innovation system. In addition, Ukrainian scientific resources, which are of high quality and low cost, make for the key factor for foreign companies as well.

Therefore, technologies are transmitted from East to West within many multinationals in Ukrainian market; despite the widespread opinion thereunder technologies are transmitted from West to East. The national science budgeting is often directed at developments of the past, most of them are not to patent, they are published in press and come abroad often.

The technology movement occurs mainly in the form of Western management and business methodologies transfer in accordance with investment projects. Meanwhile the transfer of production process technologies is limited at the present time. In addition, the cases when foreign investors try to accomplish the technology transfer in form of outmoded machinery shouldn't be ignored⁶.

Thus, the state regulation mechanism of international technology transfer ought to be improved. Particularly the technologies, which are bought by public funds and at the businesses' expense, should be inspected scrutinously by public authorities. This tool cannot have any restrictive effects, though the information on the technological level and advantage of such purchases would lead to more efficient use of national resources.

The financing of science alongside with direct budgeting of innovations are significant in scientific and innovation securing of industrial modernization. It is notable that innovative activity draws more attention of entrepreneurs than any other component of the system of economic recovery measures. Though, preferences to the certain innovative activity are still implemented mainly at the individual companies' level. State and local authority scarcely encourages the innovation processes, as evidenced by the unacceptably low innovation budgeting: state budget - 2.8%, local budgets - 0.1% of the total expenses⁷. Domestic and foreign investors lose the interest in financing the innovation activity, their share decreased respectively from 3.7% to 1.4% and from 4.2% to 1.0%⁸. Thus the financial support remains the most critical gap in the innovation policy. The vast majority

⁶ Савчук В. С Соціальні складові сучасного постіндустріалізму: трансформаційна економіка: [навч. посіб]. / В. С. Савчук; за ред.. В. С. Савчука, Ю. К. Зайцева. – К.: КНЕУ, 2006. – 612 с.

⁷ Структурні зміни та економічний розвиток України... С. 98.

⁸ Там само, с. 143.

of businesses consider that financial constraints are the main obstacle in the innovation activity.

The important direction of structural improvement of scientific sector of Ukraine comes down to building the innovation infrastructure. This refers to the organizational and economic formations, which are acting as the most fruitful integration of the scientific knowledge, commercial benefits and reasonable organization of innovation activity, such as: technoparks, science parks, scientific and technological centers and others.

According to the prospects of Ukraine National Innovation System (NIS) promotion, as an organizational form of innovation and manufacture connection, such scientific and technological structures as parks must be employed more effectively.

The education and science integration deserves a special attention from the government as two major components of innovation. International experience shows, the Western science parks, despite some structural differences, have a specific feature – there is some kind of university or other educational institution in its structure⁹. It serves as the nucleus Science Park, which ensures the generation of new scientific ideas, training, provision of scientific advice and pursuing the research to the firms and companies order. Since Ukraine has not had a tradition of research and education integration, the leading Universities and research institutes of academic and industrial sectors could play a major role in creation the scientific and educational association. This academic and sectoral science involvement to the educational process would be an important factor for labor intellectualization, the innovative

⁹ Федорович В. А., Патрон А. П. США: государство и экономика (Институт США и Канады РАН). – М.: Междунар. отношения, 2005. – 386 с.

development promotion, the competitiveness buildup, and it would form the core of the knowledge economy in Ukraine¹⁰.

All the governmental measures for labor and economy intellectualization generally come down to next guidelines:

1. To develop the National innovative Strategy along with clearly defined priorities and their innovatization;
2. The prime economic sectors are to be supported financially and informational by the government in accordance to national strategy of economic development. Thus, the state confirms its interest in development of national producers;
3. To create a powerful scientific-industrial complex (like Golden Valley or Silicone Valley) on the basis of high concentration of major business units. It allows the backbone of national innovation system to form, a framework for clustering and innovative solution to provide for a number of social and economic problems;
4. To pursue a national policy of "Porter's diamond" activation, to increase the quantity and quality of aggregate demand, to deep the level of labor intellectualization in allied industries of economy, to develop the foreign economic relations and to develop the opportunity of domestic actors to enter the world market.
5. To ensure a healthy competitive environment by means of legislation;
6. To establish a minimal level of creative and search works testing at the expense of public funding of innovative programs, national and international grants;

¹⁰ Kahler, Miles Orthodoxy and its alternatives Explaining approaches to Stabilization and Adjustment / Miles Kahler // Economic Crisis and Policy Choice. The Politics of Adjustment in the Third World. – Princeton, NJ Princeton University Press, 1990. - P. 33-61.

7. To inspire the credit policy on labor intellectualization and innovation. The interests on the credit are to be as low as possible, if the loans were used for the purpose of intellectualization of labor. State should compensate the earnings lost by credit and banking institutions, which operates with innovative enterprises, by means of: reserve requirements reducing, tax reduction, etc;
8. To ease the tax pressure on businesses, particularly to introduce the differentiated tax rate for enterprises, institutions and organizations in dependence to the volume of innovative component in their gross income, the payroll and income spent on labor intellectualization. To facilitate the customs barriers to foreign partners of domestic business entities that collaborate in sphere of labor intellectualization;
9. To extend the scope of domestic securities market. The issue of securities could become a powerful source of financial innovation support. By means of "synthetic" and "hybrid" derivatives the agreements with innovative risks hedging could be concluded;
10. To promote the insurance market development, including innovative risks insurance and health insurance promotion;
11. To simplify the "administrative and procedure chain" which restricts the economic and innovation processes;
12. To strengthen the control over financial resources flow, aimed at work intellectualization and innovative projects implementation at the public expense;
13. To stabilize the political situation in the country. That would facilitate the long-term economic and innovation planning for both domestic and foreign investors.

The innovative development of the country ought to have a social mechanism for its implementation as well. It refers to the

active interaction among the mature civil society, innovation activity subjects and institutional field of economic policy implementation.

The efficiency of such a mechanism is possible in terms of mutual influence and feedback among its components. An initiative person could emerge in the context of a mature civil society formed. The maturity of civil society (the willingness for positive change through public initiative) occurs under conditions of the society and government relationship, which is of "affiliate" character. Such relationship nature demands the public confidence level increase, the predictability of government actions, which are manifested in all the social spheres¹¹.

The sufficient condition is referred to the state responsibility the confidence in state institutions of power and their functionality. All those are formed due to the institutional and functional maturity of society. Under the institutional and functional maturity of governmental institutions we consider their competencies, which determine their structure, correspond to actual Ukrainian economy needs, and are able to realize their functional potential through the operational projects of national development programs, long-term economic strategy of the institutional environment improving and the overall economic efficiency.

The institutional environment quality and the measure of its increase are determined by the estimation of economic situation improvement. For economic agents and businesses – it means investment climate improvement, fiscal transparency and regulatory policy clarity. That effects on business conditions positively and develops its economic and innovative potential. As for households, the institutional environment quality is determined by the real sense of improvement of every single individual's life.

¹¹ Зайцев Ю. К. Соціалізація економіки України та системна трансформація суспільства: методологія та практика: Монографія. – К.: КНЕУ, 2002. – 188 с.

Conclusions. Thus, consequently ,the following principles of labor intellectualization and innovative economy formation could be distinguished: (1) scientific and technical progress achieving as a base for innovation development of economic system; (2) the multiple productivity increase and overall economic efficiency; (3) the strategic forecasting basis allows for the predictions in priority areas of science, engineering, technology and industry; (4) advance training for sectors of the next technological mode of production; (5) creation the preconditions for satisfaction of new social requirements in the material and lifequality spheres.

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