

Zueva O.A., Gorovoy A.A.

## THE ROLE OF INNOVATIONS IN ECONOMIC DEVELOPMENT OF REAL AND FINANCIAL SECTORS OF NATIONAL ECONOMY

O. A. Zueva, Russia, Candidate of Economic Sciences,  
associate professor of business and commercial activity of  
St.Petersburg State University of ITMO

Gorovoy A.A., Russia, Candidate of Economic Sciences,  
associate professor of business and commercial activity of  
St.Petersburg State University of ITMO

### Abstract

In work as authors different approaches to research of a role of innovations in development of national economy and organization of process of interaction of real and financial sectors are systematized: the first approach is based on consideration of innovative activity or subjects of real sector, or financial sector, the second approach – or on research of a problem of economic growth at the expense of innovations taking into account recurrence of development, or on the analysis of a role of innovations in market uncertainty; views of such domestic and foreign economists as A. Gorovoy, K. Zhyuglar, O. Zueva, J. Kitchin, A. Kleinknecht, I. Klyuchnikov, N. Kondratyev, B. Kuzyk, G. Mensh, O. Molchanova, K. Freeman, Y. Shumpeter, Yu. Yakovets, the high rates of economic growth and economic activity of subjects of the studied sectors investigating problems of achievement are analysed at the organization of their interaction thanks to introduction of innovations; different classifications of innovations are considered; are opened essence of such categories as «organizational innovations», «grocery innovations»; need of transformation of subjects of a hi-tech split of Russia and the organization of

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interrelation with subjects of financial sector on an innovative basis, and also development of the theory of innovations is proved.

**Keywords:** methodological approach, traditional approach, innovation, convergence, divergence, interaction, real sector, financial sector, hi-tech split

The analysis of different approaches to research of a role of innovations in development of national economy and organization of process of interaction of real and financial sectors testifies to dependence of value of innovations on a research objective. In this regard it is possible to allocate some approaches to research. First, one economists place emphasis on research of innovative activity of subjects of real sector, others – financial sector, taking away either one, or another the predominating role in system of interrelation of the studied sectors. Secondly, one scientists are based on research of a problem of achievement of high rates of economic growth at the organization of interaction of real and financial sectors at the expense of innovations taking into account recurrence of development, others – on the analysis of a role of innovations in the market uncertainty strengthening a divergence of the studied sectors. According to I. K. Klyuchnikov and O. A. Molchanova, «the first problem is connected with realization of a chain «innovations — investments — the competition»; the second is under construction on a ratio of an equilibrium and non-equilibrium state» [1] in system of the interrelation of the studied sectors including which is based on a hypothesis of convergence [2] and divergence of [3] these sectors.

So, the theory of innovations developed by the Austrian economist Y. Schumpeter in «The theory of economic development» (1911) [4] and «Business cycles» (1939) [5], reflects interrelation between processes of the organization of innovations in real and financial sectors and N. Kondratyev, K. Zhyuglar and J. Kitchin's cycles. During this period its scientific views didn't gain recognition. The main idea of Schumpeter consists that in system of interrelation of the real and financial sectors of the national economy changes occur endogenously systematically «on its own initiative». At the same time, the main subjects in this process is the entrepreneurs engaged in innovation breakthrough, introducing innovations in a state of calm and balance that determine the continuity of the circuit. Along with the temporal dimension of innovation breakthrough in terms of different types of economic systems Schumpeter notes that innovate the subjects of the real sector are associated with a certain degree of risk, the abandonment of the old for the sake of realization of the unknown new features, otherwise placing the means of

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production. Innovative activity of the real sector entities leads to cooperation and interaction with the subjects of credit sub-sector, about the search for sources of funding. Entrepreneurs believe that all factors of production will be directed for the sake of the new, the most effective combination to maximize profits. This facilitates the introduction of innovations. When it first occurs imbalance in the system of relationships studied sectors and the continuity of the circulation of capital, the elimination of outdated production methods in the real sector, and eventually formed a new and improved circulation of capital and restoring balance to a new level under the influence of the processes of economic competition. In the case of the transition of the system investigated sectors the relationship to a new state of equilibrium real sector entity which has carried out the introduction of innovations, gets super-profits, the amount of which is reduced when using this innovation other actors of the real sector. Application of innovation and the forthcoming resumption of economic equilibrium at a new level is uneven economic growth.

However, Y. Shumpeter considered that there are restrictions which constrain introduction of innovations. One of the main restrictions is attachment to traditional thinking, behavior and stereotypes. Therefore process of transformation and a new round of development in system of interrelation of real and financial sectors Y. Shumpeter occurs thanks to the vigorous activity of «innovators» promoting replacement of «conservatives» from it.

Initially theoretical views Schumpeter were criticized by scholars as the neoclassical and keynesian, in particular, the problem of «creative destruction». However, one of the ideas of Schumpeter about innovation as a factor in the uneven economic growth has become the focus of attention during the global structural crisis of the 1970s.

The subsequent evolution of the concept of Schumpeter was due to the views of G. Mensch. Concept G. Mensch [6] is based on two hypotheses: on the hypothesis of the dominant role of technology and the «hypothesis of depression as a trigger». At the same time, he shared on the basis of innovation and improve. Basic innovations create new branches of the real sector of the industry, and contribute to improving the technical modernization of existing industries. G. Mensch believed that the introduction of basic innovations associated with the cyclical development of the national economy and is uneven, the largest proportion is concentrated in the period of a long wave of depression. With the spread of basic innovations in subsequent periods are beginning to be implemented

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improving innovation actors of the real sector. The period of recession is characterized by introduction of pseudo-innovations. During this period traditional researches become settled, the existing requirements - satisfied, the eventual new technology (i.e. objective opportunities) are uncertain, and the decreasing demand of consumers is maintained, generally due to differentiation of a type of the product creating visibility of novelty which G. Mensch refers to a pseudo-innovation. In his view, the unevenness of the innovative activity of the real sector entities associated with the peculiarities of the functioning of the national economy in market conditions. Many of the subjects of the real sector, including in Russia, guided by the momentary profit, do not account for the opportunity cost of long-term technological development. The introduction of radical innovation actors of the real sector begin in the case of a sufficient reduction in the efficiency of capital investment in the traditional ways. During this period, accumulated sufficient excess capacity and avoid the depression phase is not obtained. During the depression the introduction of basic innovations real sector actors brings almost the only opportunity to maximize profits. From the perspective of G. Mensch, during the depression itself contributes to a synergetic effect in the organization of cooperation in the sectors under study as a sharp increase in the number of innovations by investing, and forms the technological basis for a new long wave.

However, in the 80-ies of XX century. «Hypothesis of depression as a trigger» G. Mensch has been subjected to quite severe criticism, a different hypothesis about the introduction of innovations in the period of revival of long wave was launched. Empirical studies have shown that a period of depression adversely affects the creation of innovation. It was during the long wave of revival are being implemented cluster of innovation, the emergence of which is determined by the introduction of specific complex of basic innovations. Initially, the innovations introduced subjects of the real sector in the new industries, performing carriers wave, which contributes to the emergence of innovation clusters in the old industries of the real sector at a later stage during the wavelength due to the pressure of demand from fast-growing industries. In the period of depression is increasing social tension, the removal of which involves changes in the interconnection system of real and financial sectors. First of all, in a given period of application are favorable for organizational innovation. Organizational innovation, in our opinion, can be implemented not only at the micro-level actors of the real and financial sectors, but also at the macro level: to promote the

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formation of the interaction between the subjects of the real and financial sectors.

At the micro level organizational innovations introduced with the aim of growth of labor productivity of employees and reducing administrative and transaction costs, costs for the procurement of raw materials, etc. For example, the introduction of innovations that contribute to instantly transmit the original documents between different departments of the organization (often "Airmail" is actively used in different regions of the credit sub-sector). In addition, the use in the training of employees of technology consulting companies build presentations in 3D, creation of software, facilitating real-time removal of the main indicators of the departments of banks on plates and top management, etc.

However, organizational innovations not only increase the level of coordination and cooperation in the subjects of the real and financial sectors, and the interaction between them through the use of different IT systems, the action of the major courier companies (DHL, DPN, Pony Express, CPCR-Express, TNT, FedEx , UPS).

Therefore, institutional innovations create the conditions for the formation of relationships studied sectors, including the technological structure of the national economy through the introduction of technological innovations

In contrast to the hypothesis G. Mensch, C. Freeman [7] in its concept put forward «the hypothesis of the pressure of demand», according to a synergetic effect in the study of interaction of sectors occurs in the form of a sharp increase in the number of innovations by investing in a period of revival and boom. Thus, the relationship formed by the investigated sectors contributes to the manifestation of action «multiplier innovations» linking investment with successful innovation and the growth of aggregate demand. At the same time, the main role in the formation of a cluster of basic innovations K. Freeman diverts demand generated by the new actors of the real sector, is the generator of a new long wave, and reaches a sufficiently high growth rate during the depression. Consequently, the period of depression is not conducive to innovation.

A. Kleinknecht tried to overcome the opposition of hypotheses that are presented by G. Mensch and K. Freeman. The importance was got by classification of innovations of A. Kleinknecht [8] according to which he divided them into basic innovations which enter a new trend in equipment and are the driver of the supplementing innovations created within the existing trend. The period of depression affects the opposite of these types of innovation, contributing to the creation of the basis for the eventual

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suppression and the introduction of complementary innovations, which is more feasible during the long wave of growth. In this case, the time lag between the introduction of two types of innovation is about 10 -15 years. A. Kleinknecht outlined the relationship between these types of innovations the real sector: basic innovations wave causes a further wave of complementary innovations. Thus begins to act «multiplier innovation», contributing to the growth of aggregate demand. The action of the multiplier determines the organization of interaction between the real and financial sectors. Investments in basic innovations contribute to the growth of the real sector of production, leading to the introduction of complementary innovations that come to replace aging technology. The introduction of secondary innovation is accompanied by attracting capital from its own resources, the subjects of the real sector and sub-sector loan borrowed resources, stimulating the production of the subsequent growth of the real sector. Action innovative multiplier, in the - first, effectively affects not only the growth of the real sector of production and economic growth, bringing the national economy from a period of depression in the long-term recovery phase, in - the second of its value characterizes the effectiveness of the relationship of the real and financial sectors. At the stage of depression over the main objective of the subjects of the real and financial sectors - profit maximization, begins to dominate - to minimize losses in the face of uncertainty. At the same time due to the exhaustion of capacity radical grocery innovation in traditional areas less risky techniques are sweeping food innovations.

At the present time, in our opinion, a grocery innovation real sector innovation should be understood that appear on the market in the form of new or improved goods or services having a new quality and performance. These include improvement in the technical specifications, materials, components, ease of use and improvement of the functional performance of the software.

Product innovations are created through the application of new knowledge and technologies, as well as based on the new application or a set of already used knowledge and technology.

Among the main factors determining product innovation, can be attributed the emergence of advanced technologies, changes in consumer behavior, reducing the life cycle of manufactured products, increasing competition. Now a picturesque example of grocery innovations are smartphones of the American corporation Apple which increased sales volumes by 30% for January, 2016 in comparison with the previous period of 2015 [9]. This innovation includes some gadgets: the computer, phone, a camera, an organizer,

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a stereoplayer, combining functional characteristics at the same time in the smartphone.

According to A. Kleinknecht for product innovation long-wave upswing is less favorable than for technological innovation and improve. During the depression the overall level of risk investment equity and debt capital for real sector entities increases. However, investing in traditional innovation even more risky due to the saturation of the market, than radical innovations as the expected effect of the latter is big enough. Looking radical changes, to obtain new sources of revenue and new eventual growth of high-tech sub-sector entities engaged in research and development activities, reoriented to a more uncertain and risky projects. With the help of marketing, according to A. Kleinknecht can diagnose the time period of the introduction of new products to certain segments of the market, when the traditional segments are saturated, and the deepest recession peak demand has passed. The penetration of basic innovations in the period of revival facilitates the introduction of complementary innovations. Basically, the product innovations introduced in the fast-growing sectors of the real sector, and technological innovation - in the old industries. In part, the introduction of basic innovations carried out in advance, in the period preceding the rise.

After analyzing the different concepts of G. Mensch, A. Kleinknecht, Yu. Yakovets [10], N. Kondratyev [11], B. Kuzyk [12] in their studies an active role to basic and improving innovations, as well as G. Mensch. The first group he includes a new generation of technology (technology), market niches for radically new products, to the second - the new technology modification technology model, the expansion of markets [13].

B. Kuzyk draws attention to the need for the transformation of high-tech sub-sector entities in Russia and organization of the relationship with the subjects of the financial sector. In the innovative development model the active role he assigns to subjects of the real sector. The driver of innovative development of national economy of Russia, including the production of the real sector B. Kuzyk said technological innovations, which are inventions. In his view, the present invention - are products of scientific and technical activities, other than the novelty of the world, and serve a bridge between science and innovation - oriented production [14].

Thus, now, there is no uniform approach to research of a role of innovations in development of national economy, organization of process of interaction of real and financial sectors of

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national economy, a certain classification of innovations. Besides, there are problems of development and deployment of innovations not only at the macrolevel, but also at the mesolevel. So, in Russia at the level of regions «innovations are considered only when they don't contradict established practices» [15].

Having analysed theoretical views of economists during the different periods, it is possible to draw a conclusion on need of intensive economic development of hi-tech splits of national farms, including national economy of Russia. It is achievable thanks to development of a certain strategy of development [17] and to introduction of innovations for the purpose of ensuring economic growth, the solution of crisis problems and safety issues within the organization of interaction of real and financial sectors not only national farms, but also the world economy.

At World economic forums 2011 – 2016 were spent research of a role of innovations in economic development of national farms, hi-tech splits, basic provisions and which conclusions were published in special information reports [17]. His authors paid attention to different questions, but the main of them connected with need of innovations, possibilities of their improvement for the purpose of fuller realization of positive sides, economic development of the countries, the solution of problems of safety. The received results aren't unambiguous. However, in our opinion, they testify to need of an integrated approach to a problem and along with continuation of practical and its empirical decision induce to further researches and development of the theory of innovations.

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