

Resources of Innovative Development of Region in the Conditions of Formation of Knowledge Economy

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Abstract

The article presents the results of a study of the mechanism of development of economic systems and its core resources – labour, land, capital and business ability. Estimates were made while taking into account imposed limitations on market forces' actions, the influence of knowledge as an economic factor was also taken into account. It's also proven the growing influence of intellectual part at knowledge economy and relocation of science and innovation to the center of development's regulation (that covers regions as well). Process of reorganization of sectors around knowledge production and restricting state's and regions' economies around sphere of information distribution is shown. The hypothesis on emerging of contradictions within one factor (labour) in different economic sectors – between labour in real and financial sector – is brought forward. Contradictions inside labour factor are connected to its intellectualization and changed in investments' form - placement of funds into knowledge. The new process of knowledge reproduction is described. Results of this research can be used in processes of economic theory methodology development and in region's economic policy realization.

Keywords: economic resources, knowledge economy, innovation development, region.

1. Introduction

At the turn of the 20th and 21st centuries in the leading countries of the world the basis of the economy based on knowledge was formed. The basis of the changes is innovation, accelerating the pace of investment in knowledge (intangible assets) by government and the private sector and their commercialization. The development of networks and clusters in which the efficiency increases with the growth in the number of users, has the most important manifestations on the knowledge market, combining the various economic subjects. New information and telecommunication technologies and computer technique, in combination with organizational and institutional environment, form new conditions for economic growth.

Essential intellectual component in the economy of this type has led to the displacement of science and innovation at the center of regulation. Systems of education, socio-economic, political, managerial, communication and technology are improved. In the modern economy not only market mechanisms, but also purposeful state policy are the driving force of innovation processes at all levels and in all sectors. Regulatory role in this area takes on a special quality.

The speed and universality of the processes of modern economic development show that it is an economic and industrial breakthrough, revolutionary transition to a new economic structure that will change the ways of production, distribution and use of information (Malykh, Polyanskaya, 2014). New technologies and the new economy require, respectively, new forms of regional development. Accordingly, in this paper we raise the question of the degree of influence of the knowledge economy on the resources of innovative development of regions.

The main feature of the modern economy has been the development of ideas, still Deplete solutions, products, services, production. Knowledge has become the main dominant factor productivity in manufacturing. They become the main subject and the main product of labor. We can observe the reorganization of industries around the production of knowledge and the restructuring of the economy and regions around the sphere of information production. The main development work becomes its intellectualization, and the costs of production and distribution of knowledge is the main form of investment. The boundaries between product and service and between services and the transfer of knowledge between the product and the knowledge that participated in its creation are erased. Today knowledge penetrates in all spheres and stages of the economic process, and they are difficult to separate from the product or service.

The set of actions of the business and the consumer, based on incomplete knowledge, forms the market. The legitimate making of such crucial decisions is outlined by the individualized property rights arising in all sectors of a mixed economy (in appropriate legal forms) (Toffler, 2004). The reasons for all of these changes are rooted in fundamentally new type of technology (relevant social and environmental criteria) – with knowledge as a productive force, a giant accelerating the pace of change in the high level of innovation and domination of the highest quality.

The economic problem of society today is not just a problem of placing "data" resources if "data" refers to the fact that they are given to any one mind, consciously decisive issue raised by these "data." It is rather a problem of how to ensure best use of resources known to every member of society, for ends whose relative importance only known to these individuals. Or, it is the problem of utilization of knowledge, which not given to anyone in its entirety.

The evolution of economic relations that form the basis of any system is related to alterations of the essence and content of the factors of production, which is the basis of the productive forces. It is the objective conditions of development of individual regions and national economic systems.

2. Research Material

The *traditional economic system*, despite the low efficiency and productivity, found in the modern world: not as independently existing system, and as individual inclusions in the economy of different countries. Typically, this is folk (traditional) fisheries, for example, the Northern peoples of Russia or indigenous Indians of the United States. In this case, we are faced with a paradox: the system is inefficient, but still exists. What is the reason for this? The answer, at first glance, is obvious. It is a tradition passed on from generation to generation, from father to son, family ties – all that we can now call implicit, diffuse knowledge - knowledge of how to carry out the production of goods to support themselves and their families, how to use limited resources in accordance with the cycles of nature, how to pass the experience on to the next generations. In the traditional system it is difficult to identify a conflict that is present in the more developed economic systems, due to the fact that the connection of labor and land are the main existence of this system.

The formation of knowledge as a resource at this stage is only the accumulation of information that can "give" the land, must work to feed themselves and family, as well as the ability to transfer this knowledge to their descendants. The owners of the land in the traditional economy were the leading class, and the earth, in turn, is the only source of wealth.

Market system (as, however, and each subsequent) changed the understanding of the essence and opportunities of production and about the source of wealth. The leading class in the social system have become owners of capital (capitalists). During the formation of the capitalist mode of production, the basis of wealth was labour that has become diverse. The division of labor contributed to a substantial increase in productivity. Further development of machine production, the emergence of factories contributed to the highlighting factors such as capital. It becomes the basis and source of wealth at a later time.

Separation of people on the owners of certain factors of production – owners of labor and capital owners has resulted to a conflict between the two leading factors in a market economy, labor and capital. This conflict, as described by Marx, was very hard at the beginning of the emergence of capitalism, but it gradually began to fade by the end of XIX – beginning of XX century (Marx, 1867).

The selection of the "new" resource, such as business ability, helped to explain how people who are not possessed by any known at the time of production factors (land, labor and capital), carried out production activity and earned income.

In turn, at the present stage there is the selection of knowledge as a new resource, yet implicitly. The basis of knowledge is, first of all, the experience, including that was accumulated by previous generations: the experience of new machines and mechanisms, settlement of conflicts (between labor and capital), not such sharp as at the beginning of the market period. In addition, knowledge about the diversity and structure of labor and capital also alleviate conflict situations. Knowledge until it became an independent resource is the basis of the mode of production – his era is still coming. As a consequence, investments continue to be associated almost exclusively with investment in fixed capital.

This foreshadowed the dominance of Keynesian theory in the first place – the theory stimulate aggregate demand and a corresponding investment policy, and explains that the model of economic growth based on increased investments in fixed capital.

Usage, over the centuries, of two main factors – labour and capital – has led to the possibility of obtaining maximum wealth limited. The expansion of capital without extension of the earth (which is impossible due to objective reasons) and labour becomes problematic. The search for new sources of wealth could not be ineffective.

The development of society as a whole led to the identification of a new resource (as previously happened with business abilities) knowledge. But at this stage the main role of knowledge is to promote the development tools, the basis of the same knowledge – experience. Qualitative change of the factor is the evolutionary process leading to the reduction or withdrawal of the main conflict of the current era, but revealing new contradictions, which, as the definition and establishment of a new factor, start to develop more actively.

In terms of the *command-administrative system* the usage of the factors is connected to due to some peculiarities. Land as a factor of production is limited, like all economic systems, work is diverse in form and content, as in a market system, but there is an element of coercion. The activity, which is not decisive in the command-administrative system – business, is considered unlawful. Each citizen is obliged to work, the lack of labour as a factor equates to parasitism and punished.

We know that all factors are constrained to some extent, but in the command-administrative system, it is particularly acute. The deficit of all production factors is chronic and self-perpetuating (Tsaregorodsev, Sarycheva, 2009)

Capital is a determining factor for this system, therefore, all investments are associated only with the main capital. As this system cannot exist without capital, it is based on a specific type of production, the main characteristics are: high level of concentration and specialization mass production on large and mega enterprises, the relative stability of the technology and product range, as well as slow changes in the needs and consumption patterns. Consequently, this system is able to increase the efficiency only in a relatively short period (20-30 years).

3. Results

Business ability in these conditions is not necessary because it is not demanded by the system itself. And if in the leading countries through the application of business skills a huge number of jobs is beginning to develop (e.g. in the USA), and the contribution to GDP of this factor can be up to 40 %, in the framework of the administrative command system, this resource is not used at all or overshadowed.

The conflict between the leading factors – labor and capital – in the context of the command-administrative system is manifested in a more covert manner than in the market. Of course, there is no explicit exploitation of labour by capital, as in the period of capitalism. Contradictions are manifested in the possibility of obtaining access to the distribution of factors of production rather than ownership.

Source of wealth in this system are not factors, but access to sources of distribution (due to the deficit). Another source of wealth, illegal, becomes the shadow sector. It turns out that the principles of getting rich got violated, because the source of wealth in a normally functioning economy – labour (although it was true only until the 1960s).

Mixed economy consists of various structures forming a single mechanism with a common goal of development, which involves social orientation with the active role of the state. In these conditions the role of the known factors is changed (maybe excluding land), which is associated with the peculiarities of functioning of a mixed economy:

- the needs of society are to be satisfied at the specified level with minimal loss of resources;
- all three groups of community needs – material, spiritual, and environmental – must be met, not one at the expense of another, and at the same time and together;
- due to limited resources, excessive unreasonable demands should not be encouraged (Toffler, 2004), (Sadovin, Kokotkina, Bepalov, Borisov, & Tsaregorodsev, 2015).

The most distinct factor structure begins to emerge in the postwar years of the last century. The change of the driving force of production from capital to knowledge – has led to significant transformations in the structure of the economy. Knowledge is not only a productive force, but the main subject and the main product of labor. Because of there is the reorganization of industries around the production of knowledge and the restructuring of the entire economy around the production of knowledge and information. The main social conflict differs from the previous, when contradictions arise between the different factors. The essence of this conflict is the contradiction in one factor – labour. The accumulation of knowledge divided the society into highly paid people and poorly trained, underpaid staff. Most clearly this contradiction manifests itself in different sectors of the economy – between work in the real and financial sectors. The contradictions within the labour associated with its intelligence, and with the change in the shape of investments in the

dissemination of knowledge. A systematic, organized application of knowledge in the production of knowledge itself becomes the target of a new science – the science of promoting innovation.

The selection of a new factor – knowledge – has its own specifics. As the labour and business skills, knowledge seems to be inseparable from the person. But if you consider the methods, the types of knowledge production, its division into factors and benefits, it is obvious that this factor, unlike other associated with the person may be separated from it – either in the production process or in the process of consumption.

Changes in the economy are mainly cumulative and evolutionary. Therefore, the changing role of factors – from dominant to minor – happening for centuries. The formation of a new factor responsible for the change in the principles of production and establishment of new relations between economic subjects, is a long time process. If in the early stages of development of economic systems, the earth acted as a factor, without which it was impossible to imagine the production process, at the present time the earth has not determined the basis of production, social status and is not the only source of wealth (Malykh, Polyanskaya. 2011).

The work that was tied to natural cycles and was fairly uniform, today, has many structural features and differences in various fields, which is divided into many specializations and operations. "Binding" nature is preserved only in the field of work related to agriculture.

Evolution capital deserves a separate study. We will restrict ourselves to a simple list of changes. This factor of production won first place in a market economy, as real capital, without which, in principle, it was impossible to produce goods and services. Today, the main role of a fictitious or virtual capital which is not an adequate indicator of developments in the economic system (the so-capitalization companies and their real value is completely different figures, and figures sometimes differ by several orders of magnitude).

Business skills – a factor that was not taken into account in the era of the real domination of capital, but it became a major in the period of formation of fictitious capital. Indeed, if not having land, labour and capital, how is it possible to produce anything? But it is possible if the subject has business abilities. However, there is a caveat. Business skills, like work, are not separable from the person. But if you work can be almost anything, business abilities have a few.

New resource – knowledge, was decisive in the period of the 1960s, This time changing the Keynesian principles of economic regulation, characteristics of the goods consumed by the people, and when changing the characteristics of goods and services, it is necessary to change the production process. This was reflected in economic growth models, in which the emphasis has been placed on investing in people, not in the capital. Initially the person is a carrier of knowledge as a resource, but unlike labour and business skills, knowledge may be transferred from a carrier. Changing the main factor of production is transforming social and political systems following the economic change (Nikolaeva, Antipova, Vasilyeva, Petrova, Moiseyeva, Kiselev, Litvinova, Kamasheva, 2015).

The process of knowledge reproduction based on the use of information that may either be taken into account by economic agents (into acc.), or is not of interest to them (not acc.). If the information is of practical interest for the subject, he is using her, receives information of a different quality (Inf*) or larger volume. The result will be the creation of new knowledge (Knw*) (see Fig.1).

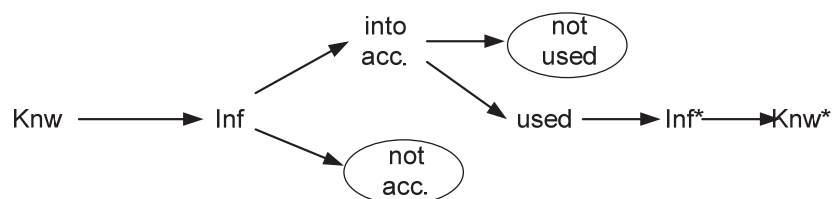


Figure 1. The reproduction of knowledge

Initial knowledge of the business entity is of great importance for the reproduction of knowledge. Thus, the firm, that engaged in the development of perpetual motion, is unlikely to be able to assess the significance of the theory of long waves. Economic knowledge is for the technician insignificant. Thus, the process of knowledge reproduction (Fig. 2) may be made only in the appropriate environment. The result of the reproduction process will be either new fundamental knowledge or practical implementation – the product or service.

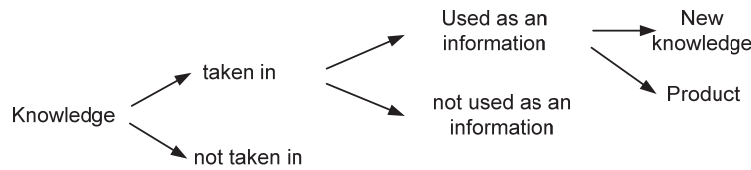


Figure 2. The specificity of knowledge reproduction

In the ideological and theoretical issues about the nature and role of innovation in modern society the concept of innovation complement the interpretation of the role of knowledge in the transformation of economic relations. In the field of innovation an increasing number of economic agents are involved, and more requirements are claimed to the quality of relevant infrastructure. Accordingly, changing of the characteristics of the economic policy of the region, aimed at innovative development. The essence of this requirement is that as much as possible to use the methodological principles of the knowledge economy.

Currently in Russia innovative infrastructure means the totality of organizations contributing to the implementation of innovative projects, including the provision of administrative, logistical, financial, information, personnel, consulting and organizational services.

The classification of the infrastructure of innovation activities developed by the Ministry on the basis of international experience. It can be augmented or reduced as the development of innovation policy in focus of public attention. Moreover, each of the elements correlated with the stages of the process of knowledge reproduction.

4. Conclusion

Knowledge are proliferating and becoming more diverse. They occur in households, firms of all sizes, in every region and every industry, not just in a "natural" for this type of activity fields of science and education.

Emerging new industries and sectors are the engines for the widespread dissemination of knowledge. Although they constitute a relatively small share of GDP of leading countries, however, particularly in these areas the new generations of people will be occupied in this century.

At the same time, policies aimed primarily at the development of high technology industries, may be left without a future such important directions of increase of competitiveness of the country, as the development of traditional industries. These industries have been and remain the main source of the welfare of the people, catering to their needs and creating jobs.

Knowledge is created by research and development, but also implemented in the form of investments in fixed assets and expenditure on education as investment in human capital. Even in high technology industries such as electrical and electronics, expenditure on research and development (R & d) comprise only 27% of the total costs of innovation. Therefore, effective and innovative growth in the region is possible only in the conditions of balance of all the resources and mechanisms of the innovation process.

All the above allows us to verify the proposed hypothesis of a significant degree of influence on the quantity and quality of resources for innovative development of regions of knowledge economy.

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