

Sustainable Development: Socio-Economic Optimization for the Innovation Systems

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Abstract – Author shown the model of the structural transformation on the basis of the empirical analysis. Its focus is not only on methods of promoting sustainable development and structural change but also on improving the potential for the mass of the population, for example, through health and education and workplace conditions, whether through public or private channels. The result of researches is the identifying of some points of the developing countries and of the countries with economical transformations. Investigation is the peculiarities of structural changes and patterns for sustainable development. The purpose of the current research is to measure and analyze the key points for increasing the efficiency of the economical system development in Ukraine. A research objective is to identify the economic and institutional grounds for sustainable development.

Key words – economic growth, innovation system, sustainable development, , globalization, innovation.

I. Introduction

In the process of the transformation of Ukrainian economical system the structural aspect of sustainable development is becoming very important. It is shown by changes in quantity and quality in economy. Innovation is believed to be the fundamental source of significant wealth generation within an economy. The two ways to increase economic output within an economy are to increase the number of inputs in the productive process, or think of new ways to get more output from the same number of inputs. The latter is the essence of what is broadly meant by innovation, which is defined as the introduction of new or significantly improved products (goods or services), processes, organizational methods, and marketing methods in internal business practices or the marketplace. An important feature of an innovation ecosystem is that the resources available to the knowledge economy are coupled to the resources generated by the commercial economy, usually as some fraction of the profits in the commercial economy. Another feature is that the ecosystem is usually strategically developed around a specific technology.

The usage of the main points of these theories and practical experience can transform the researches of economical systems into the new multi-science level.

II. The main research material

Over the years the Global Innovation Index (GII) has measured the innovation capacity of nations across the world and presented a comparative analysis to help in understanding the variation in national competencies. The findings of the last five years of GII rankings in its

innovation input and output pillars demonstrate that certain countries are consistently doing better than their peers in the same income and region categories [7]. Two high profile examples of focused ecosystems are the Department of Energy’s Innovation Ecosystem Development Initiative which is focused on speeding up the adoption of energy innovations and the European Innovation Initiative’s Digital Ecosystem technologies. These national level strategic initiatives are just two examples; clearly innovation ecosystems can be structured around almost any subject matter. The Engineering Research Centers (ERC) program at the National Science Foundation is an example of smaller scale innovation ecosystems developed to push selected technology niches which are centered on transformative engineering systems. This program, originated more than 25 years ago within the NSF’s Engineering Directorate has been very effective at initiating and maturing ecosystems that are stable enough for the Engineering Research Centers to continue operating after NSF funding sunsets at the end of 10 years.

The current success rate for graduated Engineering Research Centers is 82% [8]. The rise of “micro-multinationals” – start-ups which operate across high- and low-cost locations, delivering to an international customer base – exemplifies the opportunities wrought by globalization, digital communications and the internet. The challenges for business leaders and policymakers are to empower such opportunities for entrepreneurs and to foster domestic and international innovation ecosystems, while mitigating an increasingly dysfunctional global labor market [9]. The global labor market is undergoing massive structural changes that will have potentially far-reaching implications for the workforces of the future.

The structure of the economy can be analyzed according to the production and according to the dividing, exchange and consuming of the product from the point of view of the enterprises, branches, regions and others agricultural elements; separate structure-building factors and processes. In such conditions the industrial structure of the economy characterizes the comparativeness of investments from different industries in the creation of the GDP; the restrictive structure – is the turnover of the production factors; technological – comparativeness functionalized different technologies etc. The researches of the branch structure of the economy of different countries of the world in 2013 shows that the main sphere in the developed countries is the sphere of services, which provides the growth of the economy because of the growth of the workforce and the economy of the natural resources.

Mechanization and technological adaptation by companies are speeding up processes and increasing unemployment and under-employment – something the US writer and ‘futurist’ Alvin Toffler has described as a post-industrial ‘third wave’ of socioeconomic organization.

The type of work people across the world are doing is shifting. While agriculture still dominates in emerging markets such as India and Nigeria and manufacturing has taken hold in slightly more advanced economies such as

China, the proliferation of the service sectors in developed economies such as the US, the UK and France (accounting for almost 80% of GDP in each) stands in stark contrast [9]. However, as the International Labor Organization (ILO) considers a person to be employed if they have worked at least one hour in 'gainful' employment in the most recent week, such figures could considerably underestimate the underemployment rate in many countries. Mature economies where economic growth has been less robust are also dealing with growing ageing populations – making them top-heavy and producing fewer young people to replace the generations who are approaching retirement or are already retired. France and the UK have the highest proportion of over-65s in their population (of the eight countries examined), whereas in fast-growing countries such as Nigeria and Brazil those aged over 65 account for a significantly smaller share – less than half that of France and the UK.

This poses a problem, and identifies a potential opportunity for fast-growing countries; their economies are not maximizing the young and dynamic population available to the workforce, as demonstrated by the low labor participation rates [10]. Foreign Direct Investment Confidence Index, which assesses likely foreign investment decisions by global business leaders, finds that investors are readily looking past emerging countries that boast low labor costs in favor of developed countries that are committed to - and can demonstrably show - continuous innovation. In fact, three-quarters of the top investment destinations are still developed economies [7].

Although multiple factors are involved in this superior innovation performance, policy presents a major differentiating factor in the majority of cases [7].

The result of his researches is the identifying of some points of the developing countries and of the countries with economical transformations. Firstly, it is the fundamental research of the structure including the general economy, industrial economy and institutional. Secondly, the growing investment is seen as a necessary but not only condition of the economical growth and development.

On the basis of the differences between the countries in the internal and external factors of the sustainable development there is a substantial differentiation between the developing countries and the countries with the transformation of the economy in the conditions of the economical growth [2]. The structure of the economy can be analyzed according to the production and according to the dividing, exchange and consuming of the product from the point of view of the enterprises, branches, regions and others agricultural elements; separate structure-building factors and processes. In such conditions the industrial structure of the economy characterizes the comparativeness of investments from different industries in the creation of the GDP; the restrictive structure – is the turnover of the production factors; technological – comparativeness functionalized different technologies etc. The researches of the branch structure of the economy of different countries of the world in 2013 shows that the main sphere in the developed countries is

the sphere of services, which provides the growth of the economy because of the growth of the workforce and the economy of the natural resources.

Sustainable development is a branch of economics which deals with economic aspects of the development process in low-income countries. Its focus is not only on methods of promoting economic growth and structural change but also on improving the potential for the mass of the population, for example, through health and education and workplace conditions, whether through public or private channels [1]. Development economics involves the creation of theories and methods that aid in the determination of policies and practices and can be implemented at either the domestic or international level [2]. This may involve restructuring market incentives or using mathematical methods like inter-temporal optimization for project analysis, or it may involve a mixture of quantitative and qualitative methods [3].

Conclusion

So, the choice of the ways of the innovation systems development in Ukraine needs the researches in the domestic practice of the systemic economical transformations, detailed study of the way of world development, generalization of the world experience in the adaptation in the industrially developed countries to the reality of the modern world market. While analyzing the neoclassical definitions are used, such as: the price and the derivation of the resources. The main hypothesis of the structural transformations theory is the development is followed by the growth and different changes that are equal to all countries. But there are some differences between the countries in the speed and forms of the development connected with several specific factors: the natural resources, the area of the country, aims, the ways of the governmental politics, access to the foreign investments and technologies, the external condition of the country. The tools of the modulation are the modern econometric methods.

The mechanism of the sustainable development in the agriculture is motivated now. These two types of the economical development comply with two different functions of the investments.

The process of the structural transformation according to this model is the self-based growth in employment, which is going on till all extra workforces in agriculture will transform into the production industry. On this stage there is a balance between the industry and agriculture, the structural economical transformation ends, the main resource of the local national product creates in production, the other factors of economical growth start working. They are connected with the scientific and technological, modern management, marketing, IT achievements. Development economics involves the creation of theories and methods that aid in the determination of policies and practices and can be implemented at either the domestic or international level. Foreign Direct Investment Confidence Index, which assesses likely foreign investment decisions by global business leaders, finds that investors are readily looking

past emerging countries that boast low labor costs in favor of developed countries that are committed to - and can demonstrably show - continuous innovation. In fact, three-quarters of the top investment destinations are still developed economies. Although multiple factors are involved in this superior innovation performance, policy presents a major differentiating factor in the majority of cases [7]. Sustainable development is among the most important challenges of our time. Striving to lead an environmentally friendly way of life that conserves resources is essential to preserve our world for subsequent generations.

References

- [1] Centre for Human Technologies [Electronic Resource]. – Mode of access: URL: <http://gtmarket.ru/>.
- [2] Bell, Clive. "Development Economics," *The New Palgrave: A Dictionary of Economics*, v. 1, pp. 818, 825, 1987
- [3] The World Bank [Electronic Resource]. – Mode of access URL: <http://data.worldbank.org/>– Title from the screen.
- [4] Chenery, H.B. "Patterns of Industrial Growth," *The American Economic Review*, 50(4), pp. 624-654. American Economic Association, 1960.
- [5] Chenery, H.B. and Taylor, L. "Development Patterns: Among Countries and Over Time," *The Review of Economics and Statistics*, 50(4), pp. 391-416. Cambridge: MIT Press, 1968.
- [6] Todaro, Michael and Stephen Smith. *Economic Development*. 9th ed. Addison-Wesley series in economics, 2006.
- [7] The Global Innovation Index 2015 [Electronic Resource] – Mode of access: URL: http://www.wipo.int/edocs/pubdocs/en/wipo_gii_2015.pdf – Title from screen.
- [8] What is an Innovation Ecosystem? By Deborah J. Jackson National Science Foundation, Arlington, VA [Electronic Resource] – Mode of access: URL: http://ercassoc.org/sites/default/files/topics/policy_studies/DJackson_Innovation%20Ecosystem_03-15-11.pdf – Title from screen.
- [9] Innovation ecosystems empowering entrepreneurs and powering economies [Electronic Resource] – Mode of access: URL: http://www.economistinsights.com/sites/default/files/barclays_1.pdf – Title from screen.
- [10] An Ecosystem of Innovation: Creating Cognitive Applications Powered by Watson [Electronic Resource] – Mode of access: URL: <https://developer.ibm.com/watson/wpcontent/uploads/sites/19/2013/11/An+Ecosystem+Of+Innovation+-+Creating+Cognitive+Applications+PoweredBy+Watson.pdf> – Title from screen.