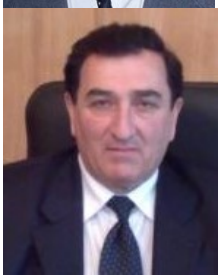

JEL P 400, P 510

Dr hab., professor Vakhtang Burduli [1)]
Dr hab., professor Ramaz Abesadze [2)]

[1)] *Paata Gugushvili Institute of Economics of Ivane Javakhishvili Tbilisi State University (Tbilisi, Georgia)*
vakhtangburduli@gmail.com

[2)] *Paata Gugushvili Institute of Economics of Ivane Javakhishvili Tbilisi State University (Tbilisi, Georgia)*
ramazabesadze@yahoo.com

EXPERIENCE OF TRANSFORMATION OF NATIONAL INNOVATION SYSTEMS IN DEVELOPED COUNTRIES AND DIRECTIONS OF ITS USE IN GEORGIA

DOŚWIADCZENIA TRANSFORMACJI KRAJOWYCH SYSTEMÓW INNOWACYJNYCH W KRAJACH ROZWINIETYCH I KIERUNKACH ICH WYKORZYSTANIA W GRUZJI

ОПЫТ ТРАНСФОРМАЦИИ НАЦИОНАЛЬНЫХ ИННОВАЦИОННЫХ СИСТЕМ В РАЗВИТЫХ СТРАНАХ И НАПРАВЛЕНИЯ ЕГО ИСПОЛЬЗОВАНИЯ В ГРУЗИИ

Abstracts

The article analyzes and systematizes the main trends in the transformation of national innovation systems (NIS) in some developed countries. The main aspects of the NIS development experience in France and South Korea are revealed. Based on the study and structuring of the mechanisms that ensure the innovative development of these countries, it is proposed to borrow and engage in Georgia a number of components of the economic mechanism used in these countries, which will ensure the effective innovative development of its economy.

Dr hab., professor Vakhtang Burduli
Dr hab., professor Ramaz Abesadze
Opublikowany: 2017-06-30
DOI: 10.5604/01.3001.0010.4265
Wydanie: International Journal of New Economics and Social Sciences 2017; 1 (5): 301-311

Key words: *national innovation system, components of NIS structure, technology transfer, innovation financing, regional clusters, forms of borrowing new technologies.*

Streszczenie

Artykuł analizuje i usystematyzuje główne kierunki zmian krajowych systemów innowacji (NIS) w niektórych krajach rozwiniętych. Przedstawiono główne aspekty doświadczenia w zakresie rozwoju NIS na przykładzie Francji i Korei Południowej. Na podstawie analizy i ustrukturyzowania mechanizmów zapewniających innowacyjny rozwój tych krajów, proponuje się stosować i wdrażać różne rozwiązania innowacyjne stosowane w tych krajach, co może w konsekwencji zapewnić skuteczny innowacyjny rozwój gospodarki w Gruzji.

Słowa kluczowe: *krajowy system innowacji, elementy struktury NIS, transfer technologii, finansowanie innnowacji, regionalne klastry innowacyjności, formy komercjalizacji nowych technologii*

Аннотация

В статье проанализированы и систематизированы основные тенденции трансформации национальных инновационных систем (НИС) в некоторых развитых странах. Выявлены основные аспекты опыта развития НИС во Франции и Южной Корее. На основе изучения и структурирования механизмов, обеспечивающих инновационное развитие этих стран, предлагается заимствование и задействование в Грузии ряда используемых в этих странах компонентов экономического механизма, что позволит обеспечить эффективное инновационное развитие его экономики.

Ключевые слова: *национальная инновационная система, компоненты структуры НИС, трансфер технологий, финансирование инновационной деятельности, региональные кластеры, формы заимствования новых технологий.*

Introduction

In modern conditions, sustainable economic development in the country can not be achieved without the existence of an effective national innovation system (NIS) in it. This is why Georgia is now facing the task of forming a full-fledged NIS. In this regard, it is very important to study the experience of building NIS in developed countries (in order to adopt acceptable elements in the conditions of Georgia), including those in small countries that at some stage of development implemented (in different periods) economic breakthrough, allowing them to join the ranks of industrially developed countries (for example, South Korea, Finland, Singapore). The constant development and transformation of NIS is also taking place in the major developed countries.

Basic NIS models

In the economic literature, four main NIS models are identified: "Euro-Atlantic", "East Asian", "Alternative", and now "Model of the Triple Helix".

In the **Euro-Atlantic model**, which was realized in different versions in the USA, Canada, developed countries of Europe (including small ones), there are all components of the NIS structure: fundamental and applied science, research

Dr hab., professor Vakhtang Burduli
Dr hab., professor Ramaz Abesadze
Opublikowany: 2017-06-30
DOI: 10.5604/01.3001.0010.4265
Wydanie: International Journal of New Economics and Social Sciences 2017; 1 (5): 301-311

and development, creation prototypes and their introduction into mass production. That is, it is a model of a complete innovation cycle from the emergence of an innovative idea to the mass production of a finished product [Model 2013]. In developed European countries NIS concentrates around the largest universities (but in a number of countries - France, Denmark, Sweden and others, a great role is played by other research institutes and academies of sciences). A major role is played by regional projects in the field of innovation activity, following the example of the US selicic valley, but the principles of their construction and financing vary from country to country. Active participation in the financing of research and development, along with large businesses, takes small and medium-sized businesses. It is noteworthy that in small European countries (Sweden, the Netherlands, Finland) applied research is financed primarily through grants and joint projects with large TNCs (Transnational companies). "At the present time, in the countries of Western Europe, the processes of merging NIS into a unified scientific, technical and innovative space are developing. Towards this end, special mechanisms have been developed (various programs, technological platforms)". The coordinating tools of the pan-European programs are innovative networks, technology platforms, joint technological initiatives, ESFRI "road maps", as well as new types of partnerships. However, national innovation systems continue to be the core [Global 2010; Models 2013].

The **East Asian model** differs from the Euro-Atlantic one in that, firstly, universities as centers of innovation development play a significantly smaller role than research laboratories at corporations, and the NIS of these countries have been completely deprived of fundamental science components, in the second place, these countries, guided by the export of high-tech products, pre-owned technologies from countries with the Euro-Atlantic type of NIS, and thirdly, the overwhelming share of expenses for R&D (Research and Development) was spending in the infrequent sector (Japan, South Korea, Hong Kong, Singapore, Taiwan) [E. Avdokushin 2010; Models 2013]. However, by the middle of 1980s last century, such a system had exhausted itself to a certain extent and since then the gradual transformation of the NIS of these countries began [E. Avdokushin 2010; Global 2010; Models 2013].

The **Alternative model** of innovation development was formed mainly in agricultural countries that do not have a significant scientific potential, as a result of which there is no basic and applied science in their NIS. In the formation of NIS in these countries, emphasis is placed on the development of innovative management of individual industries (for example, agriculture, food industry, light industry, tourism) and the adoption of technologies, rather than their development (Chile, Thailand, Portugal). However, even in these countries, development of some high-tech industries and the formation of the necessary innovation infrastructure, including in the field of fundamental and applied science, began to take place. As this model is based almost entirely on borrowing new technologies - it is less expensive and attractive for countries unable to withstand high financial costs [Models 2013].

The **Model of the Triple Helix** is a product of the development of the Euro-Atlantic model and, in its final form, it does not exist in any country. The greatest development was in the USA, and its

Dr hab., professor Vakhtang Burduli
Dr hab., professor Ramaz Abesadze
Opublikowany: 2017-06-30
DOI: 10.5604/01.3001.0010.4265
Wydanie: International Journal of New Economics and Social Sciences 2017; 1 (5): 301-311

individual elements - in some developed countries of Western Europe, Brazil and Japan. [Models 2013]. In the context of innovative development, the Triple Helix Model describes the interaction of the three institutes (science, state, business) at each stage of creation and introduction into production of an innovative product. In this model, each of the three institutes (universities (science and education), state, business) partially assumes the functions of other institutional spheres, and the ability to perform non-traditional functions by each of these institutions is a source of innovation. "In practice, this is reflected in the fact that universities, doing education and research, are also contributing to the development of the economy through the creation of new companies in university incubators, business is partly providing educational services, and the state is in favor as a public entrepreneur in addition to his traditional legislative and regulating role" [G. Itskovich 2011; D. Katukov 2012; Models 2013]. The actual Model of the Ttriple Helix is based on the interaction of its three participants (the state, science and business) at all levels: regional (or sectoral), national, integral. This approach contributes to the effective development of regional innovation systems, sectoral and intersectoral interaction of different regions. Consequently, the goals of regional and national development are directly interconnected and achieved with the participation of three key players [Yu. Solovyova 2015, p. 133].

Development of the NIS of France and the South Korea

Now we will consider the experience of the development of NIS in two countries (France and South Korea), from which it is possible to borrow a lot of useful facts for the use in the formation of NIS of Georgia.

In the late 90's of XXth century **France** faced serious structural problems of the national economy: insufficient level of innovation development of industry and innovative infrastructure (relatively low level of allocations of industrial enterprises in R&D, lagging behind the main competitors in the field of patenting, development of R&D results, venture capital development, as well as the production and use of new technologies, an insufficiently favorable business climate for the creation of new enterprises, a weak level of development with cooperation between enterprises and research laboratories), the weak competitive positions of a number of key high technology industries in the world market, the transfer threat of production capacities to other countries, significant regional disparities in industrial and scientific and technological development, the sharp decline of the interest of young people in engineering specialties and the shortage of highly skilled engineering personnel, the weakness of the institution of public-private partnership, which was one of the main causes of the essence country lags behind the main competitors in the field of industrial development of R&D results [E. Chernoutsan 2010, p. 43-44].

This and other circumstances (challenges) have caused the intensification of the efforts of the French authorities in developing strategies (programs) for industrial (and innovative) policy and strengthening the instruments for its implementation - in 2004 President J. Chirac announced the activation of industrial policy the most important state priority. The main tools for implementing this policy are the mobilization of the country's industrial and scientific and technological potential, stimulating the process of innovation (from creation to

Dr hab., professor Vakhtang Burduli
Dr hab., professor Ramaz Abesadze
Opublikowany: 2017-06-30
DOI: 10.5604/01.3001.0010.4265
Wydanie: International Journal of New Economics and Social Sciences 2017; 1 (5): 301-311

implementation) both at the national and regional levels. Greater importance is paid to the development of various forms of partnership between private and public entities, especially interaction between the spheres of science, education and business. The most important principles of the new industrial strategy of the state are: the course on the development of a large-scale innovation process affecting the entire territory of the country, and stimulating the interaction of the main participants in this process (enterprises, scientific laboratories, higher schools) [E. Chernoutsan 2010, p. 43].

To solve this dual task, the country is creating special regional clusters, the so-called poles of competitiveness, which become a key tool for the new industrial, innovation and regional policy of the country. The definition of these poles is the following (Financial Law 2004 year): grouping in a certain territory of enterprises (from large to small), research laboratories (public and private) and institutions of higher education, which are called upon to work together to implement economic projects development and innovation. For example, for the last four years (2007-2010), these centers have allowed the implementation of projects of more than 4 billion euros, financed by 30% by the state and local governments, and by 70% by the enterprises themselves [E. Kalugina 2010]. There are 71 Polyus competitiveness in France today. The provision of financial assistance to the best **innovative projects** occurs most often through the *Font Unique Interministériel (FUI) - a single interministerial fund*. In addition to a single interministerial fund, the state attracts other institutions to participate in financing interesting projects created in the Poles. For example, Agence Nationale de la Recherche (ANR) - National Research Agency, Caissededépôtetconsignation (CDC) - Deposit and loan office or organization called OSEO. OSEO is a state organization that performs three missions: assistance in the development of **innovations**, guaranteeing bank financing and investments, and, finally, partner financing. This organization most often finances small and medium-sized enterprises [E. Kalugina 2010].

The government of France in the last period actively follows the dirigiste principles of regulation and coordination. So, in March 2010, the government announced new measures in favor of the development of French industry, in which four main directions were outlined: 1. Industrial innovation; 2. Improving the competitiveness of French enterprises; 3. Improve competencies, especially for the development of knowledge and skills in the prospective sectors; 4. Strengthening the structure of production chains [E. Kalugina 2010].

In the relevant documents, much attention is paid to the problems of financing French industry, fiscal and financial incentives, the creation of appropriate coordinating structures (for example, strategic committees on production chains), etc. In particular, in 2008 the Fund of Strategic Investment (FSI) was established with a capital of 35 billion euros, whose official goal was to help prospective French enterprises to increase their own funds. The fund is a part of the capital of various enterprises or it can act as one of the investors [E. Kalugina 2010; V. Kondratiev 2014].

Thus, **from the experience of France, we can draw the following main conclusions**: **1.** The role of the state in regulating economic, in particular innovative development, made more

Dr hab., professor Vakhtang Burduli
Dr hab., professor Ramaz Abesadze
Opublikowany: 2017-06-30
DOI: 10.5604/01.3001.0010.4265
Wydanie: International Journal of New Economics and Social Sciences 2017; 1 (5): 301-311

active, on a qualitatively new level, the dirigiste traditions characteristic of the Keynesian model of development regulation revived: the state develops the national and regional development strategy, implements tax incentives for innovative development, creates and uses the means of the Fund of Strategic Investment (FSI) to participate in a public-private partnership (including the creation of venture capital companies), established foundations and other organizations for the provision of financial assistance to the best innovation projects (FUI, ANR, CDC, OSEO). **2.** In the process of coordination of industrial development, a comprehensive approach is used: not only directly innovative processes are supported, but also other measures that contribute to the progressive development of the economy: share participation in enterprises (not always associated with innovative restructuring), strengthening structuring of the production chains (for which the strategic committees on production chains are being set up). **3.** Fortunately, the regional problem in the form of creating poles of competitiveness is non trivially solved, where the goals and instruments for the implementation of regional and national development are directly interrelated and the achievement of the goals is carried out on the basis of well-coordinated interaction of the three key players (science and education, the state, business).

South Korea in the early 60s of the last century began to implement an innovative project in unfavorable starting conditions (a deficit of resource potential, a tough competitive environment, technological backwardness). In this situation, reliance on purely market mechanisms for the advancement of modernization would be fatal. And only a purposeful state policy could accomplish an "innovative miracle". The South-Korean authorities initially made a bet on creating under their patronage large monopolies that are able to make at the expense of their privileged position an innovation spurt [Korean 2008]. Processes of concentration and centralization of capital in the economy of the country led to the creation of large financial and industrial groups (chaebols), which arose on the basis of large trading companies and turned into multisectoral conglomerates. A little later, the active development of medium and small businesses began. About five to ten chaebols (Hyundai, Samsung, Daewoo, LG, etc.) play a key role in the economy of the country. Their experience shows how successful investments in science-intensive innovative production can be: they have become multi-profile export-oriented holdings (at first they did not have their own banking structures and received financing from state banks, but later in their composition there were also private banks). The state constantly encouraged structural reforms in industry, in particular, by eliminating import duties on the import of production technologies, an active tax policy of R&D stimulating, etc. [Korean 2008; P. Seleznev 2014].

In the process of innovative modernization in the 60-80s of the last century, the main role was played by the foreign factor. The breakthrough program was originally built on the creative copying of foreign technologies. And there were a lot of such forms of borrowing: "turnkey" contracts, licensing, consulting services. The decisive role was played by the creation of joint venture innovation companies with Japanese partners. Later, the own innovative production technologies began to develop, but also the strong dependence of the state on imported foreign equipment and technologies due to

Dr hab., professor Vakhtang Burduli
Dr hab., professor Ramaz Abesadze
Opublikowany: 2017-06-30
DOI: 10.5604/01.3001.0010.4265
Wydanie: International Journal of New Economics and Social Sciences 2017; 1 (5): 301-311

the underdevelopment of basic technologies inside the country remains. [Seleznev 2014, p.289-290; Reference 2011].

The crisis of the late 1990s forced the leadership of South Korea to force an innovative course, and a special program aimed at accelerating development and innovative breakthroughs was developed and implemented. Within the framework of this program, a project known as the "4+9" scheme (4 - starting entities, 9 - territories that joined the project later) is implemented in the context of the regions. The main idea of the "4+9" initiative was the formation of a series of economic clusters, each of which would have a certain specialization. For example, Mr. Dedjeon was responsible and now is responsible for information technology, bio-production, production of high-tech parts and materials, robotics, and the port city of Busan became the center of logistics and tourism. The new industrial strategy of South Korea was completed in 2004. It relies on the "4+9" project and is closely related to its results. According to this strategy, the Council for Regional Innovations was formed, which included enterprises, research institutes, universities and non-governmental non-profit organizations from each province. The Council has the responsibility to develop a strategy and program of activities, taking into account regional specificities [D. Abdurasulova 2009; P. Seleznev 2014]. On the basis of formulated tasks of reforming the economy, the leadership of the Republic of Korea defined the strategy for the new industrial development of the country [D. Abdurasulova 2009], which primarily provides for the formation of the foundations for the innovative development of the national economy based on the structure of the production and technical base, mechanisms and investment climate for innovative development. Within this framework, the following activities are being implemented: the creation of an innovation system at the regional level, primarily on the basis of industries concentrated on a given territory, and on the basis of stimulating the interaction of enterprises and scientific research organizations for the purposes of implementation of R&D, as well as through the formation of institutional foundations and an enabling environment for the development of innovations at the local level (thereby creating the necessary conditions for the emergence of "growth points" on the local level - technoparks, centers of technological innovation and regional research centers); strengthening of network contacts between industrial enterprises - universities, research institutes as the main participants of the innovation process; development of innovative clusters in the regions through the implementation of pilot projects [D. Abdurasulova 2009; P. Seleznev 2014].

From the experience of South Korea, the following basic conclusions can be drawn: **1.** In South Korea, an innovative industrial breakthrough and the withdrawal of the country into the ranks of developed countries made it possible to carry out a purposeful state economic policy, that is, the successes of this breakthrough in the 60-80s were achieved thanks to well-established intensive state dirigisme. **2.** The main role in the innovation breakthrough was played by FIGs (financial and industrial groups) (chaebols), in which the banking component in the 60-80s was predominantly state-owned [P. Seleznev 2014; Reference 2011]. **3.** The new industrial innovative economy was built

Dr hab., professor Vakhtang Burduli
Dr hab., professor Ramaz Abesadze
Opublikowany: 2017-06-30
DOI: 10.5604/01.3001.0010.4265
Wydanie: International Journal of New Economics and Social Sciences 2017; 1 (5): 301-311

on the principle of borrowing new technologies in different forms (from countries with the Euro-Atlantic NIS model and from Japan). **4.** An important role in the industrial innovation leap was played by the creation of joint, mainly venture, innovation enterprises together with Japanese partners [P. Seleznev 2014; Reference 2011]. **5.** China, India, Turkey and some other hurry up developing countries began to press some developed countries of Europe and Japan, and also South Korea in the international market of manufacturing products, which forced the leadership of South Korea to force an innovation course: a special program aimed at accelerating development and innovative breakthroughs was worked out, which is carried out by structuring at the regional level (the "4+9" project), the production, technical and innovation base, tools and investment climate for the innovative development.

Conclusions

We summarize briefly what can be taken from the experience of the attempt reviewed for the successful formation of the Georgian NIS.

Carrying out of a successful innovation policy in a country that starts practically from scratch is impossible without strengthening of state dirigisme. In particular, this should happen not only with the help of regulatory instruments, but also with the help of agreements with capable business representatives. So, for example, the "father" of South Korean reforms, President Park JongHi in the early 60's set the task for individual businessmen (mainly engaged in trading) to engage in a completely different business (automotive, shipbuilding, tape recorders and television sets, household chemicals, light industry), while promising financial and other support from the state [Korean 2008]. "Chaebols" were created and in a relatively short time there were many large predominantly export-oriented industries. Such a mechanism of interaction between the state and business should be adopted at the present stage in Georgia.

We also add that the priority task of developing an innovation policy strategy in Georgia should be the issue of designing regional centers of industrial and innovation activity, the structuring of which, in our opinion, is expedient to follow the pattern of the French poles of competitiveness.

From the experience of the examined countries, it is possible to adopt many other things: it is necessary, guided by the experience of South Korea, to create FIGs with the aim of organizing multi-sectoral conglomerates and developing innovative activities in their constituent enterprises, as well as creating of new (including venture) innovative enterprises; to adopt ways of borrowing innovations - acquiring licenses, know-how, construction by foreign firms equipped with new technologies of enterprises and delivering of a "turnkey" object by them; in the sphere of state financing of innovation activity and innovation renovation of enterprises, it is necessary to create national state funds and other institutions such as FSI, FUI, ANR, CDS, OSEO with the appropriate regulation of their activities; in the field of external financing of innovation activities, it is necessary, as in the case of small European countries, to establish appropriate links with certain large MNCs (multinational corporations) in order to interest them in allocating grants to finance innovation development in universities and research institutes, as well as the establishment of joint innovation projects with these MNCs. In addition, the organization of science-

Dr hab., professor Vakhtang Burduli
Dr hab., professor Ramaz Abesadze
Opublikowany: 2017-06-30
DOI: 10.5604/01.3001.0010.4265
Wydanie: International Journal of New Economics and Social Sciences 2017; 1 (5): 301-311

intensive innovative industries (enterprises), together with foreign partners, in itself implies their share in financing their construction.

References:

1. Abesadze R., Burduli V. Innovative Activities and Their Coordination under Advancing Globalization.- The Caucasus & Globalization.Journal of Social, Political and Economic Studies.Volume 3. Issue 4. CA & CCPress. SWEDEN, 2009.P. 68-79. - Electronic resource: http://cyberleninka.ru/article/n/innovative-activities-and-their-coordination-under-advancing-globalization
2. Abdurasulova D. Industrial Policy of South Korea.16.02.2009. - Electronic resource: http://institutiones.com/industry/897-promyshlennaya-politika-yuzhnoj-korei.html
3. Abesadze R. Innovations, innovative networks and general directions of innovative economy formation in Georgia. - In the book: PRZEDSIEBIORSTWOWSTRUKTURACHSIECI. Lublin, WidawnictwoKUL, 2016.
4. Avdokushin E.F. National innovation system of Japan. - J.: Questions of the new economy, Nº 4 (16) 2010.
5. Law of Georgia about innovation. 2016 (in the Georgian language). - Electronic resource: https://matsne.gov.ge/ka/document/download/3322328/0/ge/pdf
6. Global transformation of innovation systems. Ed. N.I. Ivanova, M., IMEMO (The Institute of World Economy and International Relations) RAS (Russian Academy of Sciences), 2010.
7. Zverev A.V. Formation of the national innovation system: world experience and Russian perspectives. The author's abstract of the dissertation is Dr.Sc. M., 2009. - Electronic resource: http://dissers.ru/avtoreferati-dissertatsii-ekonomika/a840.php.
8. Itskovits G. The Model of the Triple Helix. – J.: Innovative Russia, Nº4, 2011.
9. Kalugina E.Yu. Industrial Policy of France. - In: The Industrial Policy of European Countries (Institute of Europe, RAS). M., 2010. - Electronic resource: ieras.ru/doclad/259/259-1%20(1).doc
10. Katukov D.D., Malygin V.E., Smorodinskaya N.V. Institutional environment of the globalized economy: the development of network interactions. M., Institute of Economics, 2012.
11. Kondratiev Vladimir (IMEMO RAS). Fresh breath of industrial policy. - Electronic resource: http://www.perspektivy.info/eng/ekob/svezheje_dyhanije_promyshlennoj_politiki_2014-05-22.htm
12. Korean miracle - lessons for Russia. 20.03.2008. - Electronic resource: http://www.contrtv.ru/common/2641/
13. Models for the formation of national innovation systems. 13.09.2013. - Electronic resource: http://kapital-rus.ru/articles/article/modeli_formirovaniya_nacionalnyh_innovacionnyh_sistem/#
14. National innovation systems in Russia and the EU M.: TSIPRAN RAS, 2006. Edited by Ivanova V.V. (Russia), Ivanova N.I. (Russia), Rozebum J. (Netherlands), Heisbers H. (The Netherlands).
15. National innovation systems of major Western European countries (Great Britain, Germany, France, Italy). Minsk, 2015. - Electronic resource: http://knowledge.allbest.ru/economy/2c0a65635b2ac69b4d43b89421316d36_1.html
16. Seleznev P.S. Innovative policy of the modern state: strategies, models, practice. Thesis for a scientific degree of Moscow, 2014. - Electronic resource: http://www.library.fa.ru/files/Seleznev.pdf
17. Solovyeva Yu. Formation and development of the technology transfer system in Russia and abroad. - J.: Economics. 2015, Nº4.
18. Certificate of international experience of innovative development. Ministry of Economic Development of the Russian Federation. Department for coordination, development and

Dr hab., professor Vakhtang Burduli
Dr hab., professor Ramaz Abesadze
Opublikowany: 2017-06-30
DOI: 10.5604/01.3001.0010.4265
Wydanie: International Journal of New Economics and Social Sciences 2017; 1 (5): 301-311

regulation of foreign economic activity. - Electronic resource: http://economy.gov.ru/minec/about/structure/depsvod/doc20110407_02
19. Chernoutsan E.M., Pole of Competitiveness as a Tool for Implementing France's Innovation Policy in Conditions of Globalization. - In: Global Transformation of Innovative Systems. Ed. N.I. Ivanova, M., IMEMO RAS, 2010. - Electronic resource: http://www.imemo.ru/files/File/ru/publ/2010/10022.pdf

Dr hab., professor Vakhtang Burduli
Dr hab., professor Ramaz Abesadze
Opublikowany: 2017-06-30
DOI: 10.5604/01.3001.0010.4265
Wydanie: International Journal of New Economics and Social Sciences 2017; 1 (5): 301-311