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Renovation of Capital Structures of Economic Entities under Conditions of Reindustrialisation of Russian Economy

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Abstract: Structural changes in the global and domestic economies both affect qualitative aspects of economic systems transformation and make actual the problems of renewal of traditional conditions of use and renovation of capital as a principal factor of production. Strengthening of the role of sectors with added value, change of quality of labor productivity, growing importance of the role of institutes in the local economic systems development, overriding of sectoral disproportions, inter-regional interaction of economic entities, investments shortfall and limited possibilities of capital to ensure economic growth are an actual tendency of a present-day economic development. The major economic indicators of Russia for the period from 2008-2014 evidence inadequate structure of economy and necessity to develop theoretical and practical conditions for renovation of capital of economic entities in the context of unbalanced environment. The capital growth of which is gained through investments is the main driver of economic development. Under the crisis conditions of the domestic economy development investments in fixed capital had negative value in 2013-2014. Limited proprietary funds of economic entities, high interests on commercial credits, progressive obsolescence of fixed-capital assets still act as the basic reasons restraining the process of capital renovation. Non-renewed fixed-capital assets require additional capital for their maintenance, current and overhaul repairs and cause low labor capacity. Therefore, the capital of an economic entity is "confined" to serve for covering increased costs connected with maintenance of the obsolete assets, electric power, raw and other materials which results in manufacture of low-quality products and does no allow for renovation and manufacture of new products.

Key words: Reindustrialization, capital structure, renovation of capital structures of economic entities, local economic systems, manufacture

INTRODUCTION

Efficient management of structural changes requires such transformations of capital in economy of Russia and its regions which would reconstruct an integral proportion between the economy elements for the community and above all would orient capital of an economic entity towards formation of a potential of knowledge-based economy, i.e., high-technology innovative products, information technologies, bioeconomics, residential construction, effective infrastructure, transport and other spheres of activity which ensure the growth of GDP with lesser investments and high added value. Compared to Russia where the knowledge-based economy share in GDP makes about 15% the same index in the Western Europe makes 35% and in the USA 45%. Such indices in the mentioned countries resulted from the higher (2 or 3 fold) rates of growth of this sphere as compared to the annual average growth of their GDP. Efficient combination of government financing towards priority areas and of private-public partnership is one of the instruments of the current strategy aimed at capital structures renovation in the developed countries. In the context of the Russian economy, it is necessary to consider additionally the issues of economic entities capital formation for the purposes of realization of the Federal Law "On industrial policy in the Russian Federation" as well as of the issues of the policy of reindustrialization, i.e., modernization and renovation of the functioning industries of the real economy sector (military-industrial sector, power engineering, transport, aircraft industry etc.). Capital renovation for the purpose of reindustrialization means also formation of investments for scheduled renewal of an industrial and a technical basis of an economic system along with development of macroeconomic, institutional, organizational, legislative and structured-investment instruments ensuring interaction between the real sector and the financial and banking systems as well as science and education (Table 1).

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Table 1: The major economic indicators of the Russian Federation in 2008-2014 (Federal State Statistics Service, 2014)

Indicators	2008	2009	2010	2011	2012	2013	2014
GDP (growth in %)	5.2	-7.8	4.5	4.3	3.4	1.3	0.8*
Industry	0.6	-10.7	7.3	5.0	3.4	0.4	1.5**
Agriculture	10.8	1.4	-11.3	23.0	-4.8	5.8	3.3**
Consumptive use by households	10.6	-5.1	5.5	6.8	7.8	5.0	1.7*
Investment in fixed capital	9.5	-13.5	6.3	10.8	6.8	-0.2	-2.8**

* I-III quarters of 2014 as compared to I-III quarters of 2013; **January-November 2014 as compared to January-November 2013

MATERIALS AND METHODS

The following foreign and home economists-scientists in their researches covered theoretical aspects of formation of an optimal structure of capital of an economic entity: V.B. Akulov, I.H. Ansoff, I.A. Blank, S.V. Bolshakov, William J. Bernstein, John Brown, Clark Campbell, Gary Cokins, L.Sh. Lozovskiy, S.P. Maltsev, Franco Modigliani and Merton Miller, Patrick Pruitt, B.A. Raisberg, Ye.M. Rogova, N.C. Siropolis, M.V. Solovieva, T.V. Timoshina, Ye.A. Tkachenko, E.A. Fiyaksel, Bryan Ford etc. (Campbell, 2008).

The problems of formation of a capital structure as a basis of financial stability of a business entity are researched by the researches of A.G. Aganbegian, S.V. Bolshakov, A.I. Goncharov, A.A. Zinchenko, V.V. Ivanter, A.F. Ionova, A.A. Kantorovich, Karl Marx, T.V. Kirichenko, V.G. Kogdenko, M.V. Melnik, M.R. Saifullin, N.N. Selezneva, B.I. Sokolov, O.S. Sukharev, V.V. Tsarev, V.V. Chainikova, O.L. Chernozub, S.M. Shvets, A.D. Sheremet, P.N. Shuliak etc. (Kirichenko, 2011; Kogdenko and Melnik, 2012; Marx, 2001).

The role of capital of economic entities and development of the real sector of economy and entrepreneurship with consideration for uncertainty and risks were studied in the researches of R. Kantilon, Charles F. Knight, A. Smith, J. Thunen; the functions of production factors and re-establishing balance in the market are described in the researches of A. Marshall, J.B. Say; new combinations of resources ensuring creation of product innovations are presented in the researches of P. Drucker and J. Schumpeter.

In the national literature the issues of interrelationship between a state and a private business in the context of functioning of the market of investments and capital, inclusive for the purposes of innovative development are studied by such reseachers as Yu.P. Ammosov, P.G. Gulkin, A.T. Karzhauv, A.I. Kashirin, T.V. Kramin, M.P. Postaliuk, A.S. Semenov, A.N. Folomiev etc. Among the foreign scientists the works of Clark Campbell, John von Brander, Edmind Egan and other are ought to be remarked (Campbell, 2008; Postaliuk and Kwon, 2014).

The analysis of the problems of investment-innovative development, substantiation of necessity of the governmental control over innovative and investment processes is shown in the researches of I.M. Ablaiev, V.V. Baranov, D.M. Babich, V.I. Vagizova, N.V. Vedin, L.M. Gokhberg, J.Galbraith, P. Drucker, V.N. Lapin, D.S. Lvov, V.F. Maksimova, R. Nelson, D. North, A.I. Prigozhin, E.A. Utkin, K. Freeman, F. Hayek, V.V. Zuckerman, J. Chen, Yu.V. Yakovets etc.

The investigations of O.V. Belozerova, N.I. Valentseva, I.I. Garmash, Ye.B. Gerasimov, A.A. Dokunin, A.I. Iyevleva, V.N. Kiselev, A.A. Kochetygov, M.I. Lavrushin, Ye.A. Neretina, M.A. Passel, K.M. Rasporov, I.Yu. Soldatova, E.K. Trutnev, I.A. Filippova are dedicated to the issues of investment quality of credit products.

The scientific researches of N.I. Valentseva, L.T. Giliarovskaya, R.M. Sabirova, N.E. Sokolinskaya, A.M. Tavasiyev reflect the influence of the factors of risk of crediting towards business organizations.

Cluster forms of capital renovation inclusive of economic entities of the construction sector of economy were studied by the researches of G.D. Boush, O.F. Bystrov, V.I. Vagizova, L.A. Voronin, I.V. Dukanova, S.V. Kazakova, T.N. Morozova, V.M. Moskvin, V.V. Pertsov, V.Ya. Pozdniakov, M. Porter, V.M. Prudnikov, S.V. Ratner, O.P. Sukovatova, V.I. Terekhin, etc. (Porter, 2005).

Notwithstanding; considerable number of researches where the theoretical and practical aspects of economic entities capital structures renovation are analyzed, we must admit that there are unsolved problems connected with finding of long-term sources of financing for development of the real sector of Russian economy from a perspective of continuous-cycle productions as well as innovative projects in connection with growth of external environment uncertainty. There exists an intensive need in scientific research in the sphere of a conceptual framework, typologies, analysis of inconsistencies, optimum relationships in the structure of capital in the local economic systems.

RESULTS AND DISCUSSION

In the course of analysis of the problems of renovation of capital structures of economic entities, it is necessary to consider principal inconsistencies occurring in the process of creating conditions for investment. Investment activity of an economic entity derives from generated revenue (savings as a part of revenue) and credit resources and is evaluated through the efficiency

of transformation of resources into a product and revenue. Reduction of the financial and credit markets along with capitals of the economic entities under the conditions of unbalanced environment resulted in restriction of an investment process aimed at development of an economic entity capital. Availability of funds is directly connected with profitability and efficiency of economic entities. The Russian economy demonstrates high risk load in the real sector of economy accompanied by low production profitability (8%) and lesser risk load in the banking sector along with its more high profitability (25%). Such sectoral distortion as well as increase of the credit interest rate level, decrease of the level of profitability in the commodity production sector results in the growth of overdue debts on the part of economic entities due to impossibility of loans servicing with the high interest rates and due to accumulation of "toxic" assets on the banks' balance.

Low availability of long-term bank crediting particularly towards innovative business structures is another problem of capital structures renovation. In this respect, the issue of development of monetary ranges for the banks credit portfolio which would forward credit organizations towards operation in the economy sectors having public importance is of current concern.

Planning of activity of an economic entity within the framework of the local economic systems as well as investment projects implementation is being performed under the limited resources conditions. Due to this capital tends to be a synthesis of own and borrowed funds, at that the issue of their ratio efficiency is of the most critical and urgent importance under the present conditions. During the periods when short-term credit resources were available in the domestic economy, there was observed the situation of structural distortion between own and borrowed capital in favor of the latter and thus of forming of a large extent of basic production assets for the account of credit funds which can not be duly maintained by economic entities under the present conditions.

Therefore, an economic entity capital is a complex of material resources, financial investments and costs of obtaining rights necessary for efficient entrepreneurial business and gaining profit sufficient for a simple and an extended reproduction. The economic theory offers a concept of capital according to which capital in general sense is an aggregate income of society which is a basis of its innovative development. Real capital is externalized by means of material and real-valued goods functioning as production factors (buildings, equipment, transportation means, raw materials, etc.); financial capital is externalized by means of securities and monetary resources. An economic entity in the process of economic activity exchanges a monetary form of capital for a material one which in its turn changes and assumes various forms (raw materials, products, goods, services, etc.). This is the way of capital circulation, i.e., the capital primarily involved in the sphere of entrepreneurial activities in the form of monetary funds later in the process of production and innovative activity will be realized through an innovative product and return to an owner in the form of monetary funds with added value.

We characterize "renovation of capital structure of an economic entity" as an innovative change to economical structure of the capital focused on maintenance of reindustrialization, design and modernization of up-to-date technological production bases which would create new production and consumer use-values ensuring growth of added value or self-expansion of the capital.

We determine the concept of "local economic systems" as an interacting, organized and institutionalized accumulation of casual and functional, traditional and innovative economical relationships of economic entities within a definite spatiotemporal dimension. It exhibits the characteristics of generality and specificity. LES has the following specific forms: a National Economic System (NES), a Regional Economic System (RES), a Local Economic System Itself (LESI), an Individual Economic System (IES). There are industrial, inter-industrial, territorial, domain, sectoral and functional LES. Clusters inclusive of cross-border ones can serve as an example of LES in a narrow sense.

Study of the issues of formation, functioning and reproduction of the capital oriented at reindustrialization and innovative development of economy which suppose brand new purposes of economic activity of economic entities, namely: aggregation of manufacturing assets and capital; growth of the rate of creation of new technologies and creative industries which would improve labor productivity and reduce production costs; growth of the rate of technologies transfer; production intellectualization and robotic automation; intensification of production "individualization", reduction of its serial character; increase of the level of complexity of production of used technologies and of manufactured products; reduction of the share of costs for manufacture of new products with simultaneous growth of costs for their development in the production sector; development of small innovative enterprises; development of the industry of innovative education ("knowledge-based economy") is one of the essential prerequisites of development of advanced economic relationships.

Economic growth retardation in 2012-2014 (growth of GDP by 1.3%) and downward change in the industrial production indices (growth by 8.2% in 2010; by 4.7% in 2011; by 2.4% in 2012; by 1.1% in 2013) is indicative of considerable change of economic situation in Russia and its regions, presence of internal investment pause which preconditions the necessity to revise economic policy towards reindustrialization and the instruments of its implementation (Federal State Statistics Service, 2014). The original volume of investments in the real sector of economy for the period up to 2020 as provided by the governmental programs "Development of industry and its competitive growth" and "On long-range governmental economic policy" makes 440 bln. rubles and provides for investments volume increase of at least 25% of GDP by 2015 (Analytical Bulletin No.19(503) 2013 of the Analytical Department of the Central Office of the Council of Federation of the Federal Assembly of the Russian Federation (Electronic resource) (http://council.gov.ru/activity/analytics/analytical_bulletins/32764).

Here below you'll find a list of instruments for renovation of the reindustrialization-oriented capital: global evaluation of the functioning capitals of economic entities, analysis of elements of the capital structure, adequate assessment of the volumes of borrowings and management of problem credits amount within the capital; intensification of project financing mechanisms; improvement of conditions for obtaining investment loans; reduction in the cost of borrowed capital for the production sector, growth of the banking sector capitalization; provision of governmental guarantees; measures for support import substitution by domestic enterprises capable to manufacture competitive products, a mechanism of support of the enterprises which implement available innovative technologies, annual growth of export of non-energy products by 6%, use of possibilities offered by the international financial organizations. The developed countries (the USA, BRICS countries) started implementation of a reindustrialization plan based on two basic economic policies, namely energy strategy aimed at increased availability and cheapening of energy resources, primarily for the industry and encouragement of processing enterprises. The Russian economy under the present conditions requires orientation at formation of investments and restructuring of the currently functioning capital for renovation of the industrial manufacturing facilities on the whole.

At the same time for renovation of the structure of capital functioning as a financial potential for reindustrialization, it is necessary to take into account business interests, innovative activity and motivation of economic entities in the local economic systems which are driving force of modernization and innovative retooling of economy.

Various models both static and dynamic may be used for substantiation of balanced structure of an economic entity capital and efficient combination of the sources of its renovation in order to implement reindustrialization and develop innovations. The static models include the models oriented at search of an optimum structure of capital and recommending to form decision on capital strengthening based on the preset optimum structure. If the optimum structure was determined by an economic entity then achievement of such ratio between the capital elements would be an instrument of implementation of the capital renovation strategy. The static approach to determining of a Capital Renovation Model offers two alternative theories: the Modigliani-Miller theory and the traditional approach theory. The theory of compromise supposing the optimal structure of capital to be a compromise between tax advantages in case of capital leveraging and costs of bankruptcy became the most recognized theory under the present conditions. Such approach does not allow a definite economic entity to determine a balanced ratio between its own and borrowed capital and forms instruments for taking decisions in the sphere of capital formation aimed at innovative development. The dynamic models allow for deviation from the existing structure of capital in a definite moment of time with account of cycles of business economic conditions which may include the process of capital renovation and its orientation at innovative development of an economic entity. The dynamic models give consideration to a renewable flow of information received by the market in regard of a definite economic entity, allow applying hybrid instruments for renovation and strengthening of capital for innovations as well as take into account the level of financial market environment.

Under the conditions of reindustrialization and development of innovations the investment activity of capital structure elements of an economic entity is focused on two directions:

- Determination of a "creative component" within the capital structure, the capital strengthening for maintenance of the traditional and development of new productions and technologies (strategic and tactical aspects)
- Carrying out current operations which ensure generation of profit and a possibility of regular economic relationships with resources suppliers with a view of innovative development (operational aspect)

Therefore, adoption of an innovative development strategy, obtaining the necessary assets, interaction with the financial market institutions and instruments as well as with the funds of state support of innovative business development and institutes for development inclusive of local economic systems is the principal aim for which capital renovation and formation of its optimal structure are being performed. Being guided by the researches of A.P. Kovaliov, N.D. Eriashvili, A.I. Blank and other we can determine the following basic principles of an economic entity capital structure renovation for the purposes of reindustrialization and innovative development (Fig. 1).

These principles allow to substantiate a methodological approach to application of the dynamic models of capital structure renovation based on balance between own and borrowed capital, the rate of its renovation and accumulation for the purposes of innovative development:

- Adoption of an innovative development strategy: leveraging of the corresponding investment resources for implementation of long and short-term projects and programs for business development
- Correspondence of the volume of the attracted capital to the volume of innovative assets being formed is assured by preparation of operating and financial budgets as well as by forecasting business portfolio allocation and transactions with innovative products and services
- Ensuring optimal capital structure from the point of view of use of the borrowed innovation capital: supposes maintenance of ratio between the borrowed and own capital; ensuring minimization of costs related to capital formation with use of various sources: supposes estimation of weighted average costs and use of this parameter for evaluation of investments in innovation assets
- Active interaction with institutions of financial and credit markets and investors
- Formation of a "creative" part of capital oriented at interaction between economic entities, the systems of state control over investment and innovative activity as well as between financial and credit institutions in order to implement an efficient system of direct and backlinks related to selection of elements of short and long-term capital renovation sources
- Evaluation of sufficiency of capital for ensuring financial stability, business and market activity of an economic entity

That's why, the tasks of industry modernization require annual growth of investments in real fixed capital at the rate of 20-25%. Analysis of the structure of investments in real fixed capital by the sources of financing in the RF in 2014 showed that own funds of organizations (62.5%) were the principal source of financing of investments in real fixed capital. Total 37.5% of investments were formed by means of the borrowed funds and 9.9% fell at budget resources. The share of banking sphere in investment expenditures made 9.1% (Federal State Statistics Service, 2014).

At the same time, the analysis of innovativeness shows that under the present conditions economic entities do not have enough own resources for capital renovation and development and the external sources in the form of bank credits, issue of bonds, government financing, venture instruments, project financing demonstrate passive character of the mentioned instruments of finance resources accumulation for the purposes of reindustrialization. This is among all other things is conditioned by existence of a serious system of discrepancies overcoming of which would facilitate development of efficient interaction between the real and the financial sectors of the Russian economy.

The first group of discrepancies includes the discrepancies between economic interests of the economic entities dealing with innovative transformations.

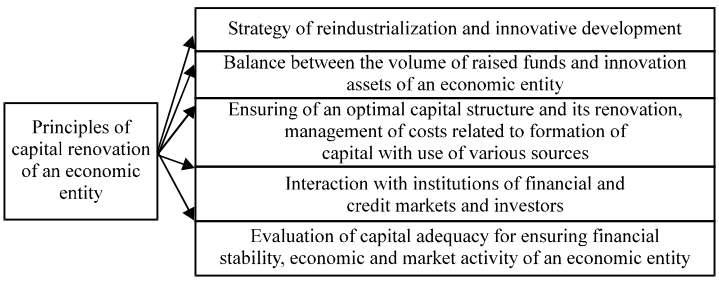

Fig. 1: Principles of capital renovation of an economic entity

The second group includes discrepancies connected with capital renovation which arise in various sectors and spheres of activity. This group gains its highest importance in the process of interaction between the real and the financial sectors with relation to production of innovation values. Such discrepancies in particular may include discrepancies in development of financial and credit as well as of production and technical systems; strategic gaps in development of processing manufactures (products), extractive industries (raw materials) and of the sector of financial and credit services; discrepancies between traditional and innovative combinations of production factors stated by J. Schumpeter.

The third group of discrepancies includes differences between the sources of capital renovation aimed at maintenance of traditional activities and the "creative component" of capital which should be diverted for development and formation of competitive advantages of an economic entity in future.

The forth group of discrepancies includes differences between the levels of economic system. Multi-level and mixed nature of economy results in intensification of spatial developmental differences both in individual economic entities and in local economic systems as well as regions, in interaction between regions and the macrosector. Notwithstanding efficient development of local economic systems acting as starting point of innovative growth and reindustrialization of economy where innovative links between economic entities of the real and the financial economy sector are predominant the relative load of local entities in regional economy is quite different. Under present-day conditions it is difficult to determine the level of their innovative activity as well as their contribution to establishment and development of definite innovative systems.

The fifth group includes differences focused within the risks of activity of the subjects of innovative transformations and investors which take decisions of innovation investments reasonability. Such discrepancies can manifest themselves in the processes of determining purposes for capital renovation, distribution of innovation-related profit, innovations commercialization and their further development.

The sixth group of contradictions in regard of capital renovation and accumulation of financial resources for reindustrialization purposes includes existence of considerable gap between capital imports and exports which amounts to 7-10% of GDP of the RF.

Each of the above groups of discrepancies has significant effect on the process of capital renovation. At the same time from our point of view the discrepancies in the system "interest rate business activity profitability business activity risks" have special significance. Disproportions and structural distortions in economy, low profitability of the real sector do not ensure home investments growth which prevents from the necessary substitution of resources and creation of conditions for industrial assets development. As a result products mass in the inner home production market experiences reduction. The situation when the risks of financial and economic activities are identical, the high-yielding sectors are characterized by comparatively lower risks and the low-yielding sectors are characterized by higher risks result in occurrence of discrepancies in interaction between the real and the financial economy sectors and what's more important in decrease of the actual value of capital. The current interests-related policy does not offer opportunities for use of effective financial and credit instruments for capital renovation and allocation of its "creative share" for development of the real sector, knowledge-intensive production and sectors which create an industrial basis of economy. In respect of the same, it would be advisable to consider in detail the issues of development of credit and other sources of economic entities capital renovation for the purposes of reindustrialization and development of innovations.

Self-financing of an economic entity ensures its ability to maintain recovery of its activity costs but limits the possibilities of fixed assets renovation and innovative development which conditions the necessity to cooperate with the institution of the financial sector of economy.

The stability of economic status of the regions may be obtained through renovation of capital of economic entities by means of use of the following instruments of financial and credit leverage: establishment of a network of specialized financial intermediaries focused on investment activity; organization of credit institutions for project financing, construction banks and other institutions focused on funding of the range of essential innovative projects; creation of conditions for use of the modern financial market instruments, i.e., issue of securities, securitization, syndicated lending, issuing instruments, for development of individual instruments for managing problem "toxic" assets (Postaliuk, 2014).

There is a problem of the optimal economic entity capital structure, efficient management and restructuring of the borrowed capital as well as finding sources of innovative development of economy, particularly in the construction sector. Cluster forms of capital formation and renovation play here a specific role. Implementation of the stated directions of development supposes the necessity to establish theoretical and methodological approaches to development of a certain direction of the economic science.

This is due to the fact that construction is an integral part of the real economy (Fig. 2) and represents a part of industry where the processes of reindustrialization and capital renovation have sacrificial urgency.

At the same time, the financial and credit support of innovative activity in any sector of economy, especially in construction is an independent behavior of economic entities in regard to the choice of investments and search of the sources for their realization under the conditions of uncertainty and limited resources. This is a sectoral problem and its solving becomes more complicated due to the current conditions. The analysis of financial statements of the construction sector enterprises showed that an accumulated credit debt burden of the construction organizations' balance (Fig. 3) and the growth of the volume of overdue indebtedness is the main problem here.

The volumes of overdue indebtedness: in 2012-969 bln. rubles in 2013-994 bln. rubles.

In the current context, there occurs a complicated problem related to inefficient structure of capital of organizations functioning in the construction sector of the real economy (negative ratio of the borrowed and own capital) and complicated process of capital renovation for the purposes of reindustrialization and innovative activity development. It is necessary to determine which is the effective way of use of the fixed assets which were created by means of the external financing in order to ensure performance of obligations and further development of the construction sector.

Due to the above, it would be reasonable to adopt a model of sustainable growth of the local economic systems of the Volga region (Fig. 4) which is based on use of an innovative business mechanism of a cross-border cluster which allows joining the capitals of economic entities without loss of ownership of

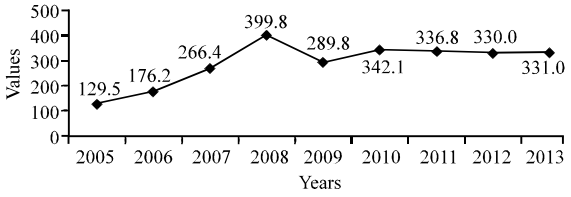

Fig. 2: The volumes of investments in the real fixed capital of the construction sector of the RF, bln. rubles

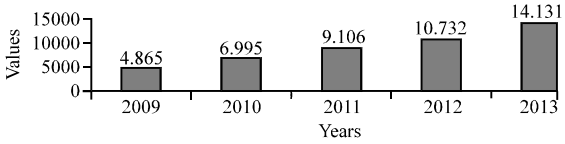

Fig. 3: The overall volumes of bank crediting in the construction sector of the Russian Federation, bln. rubles

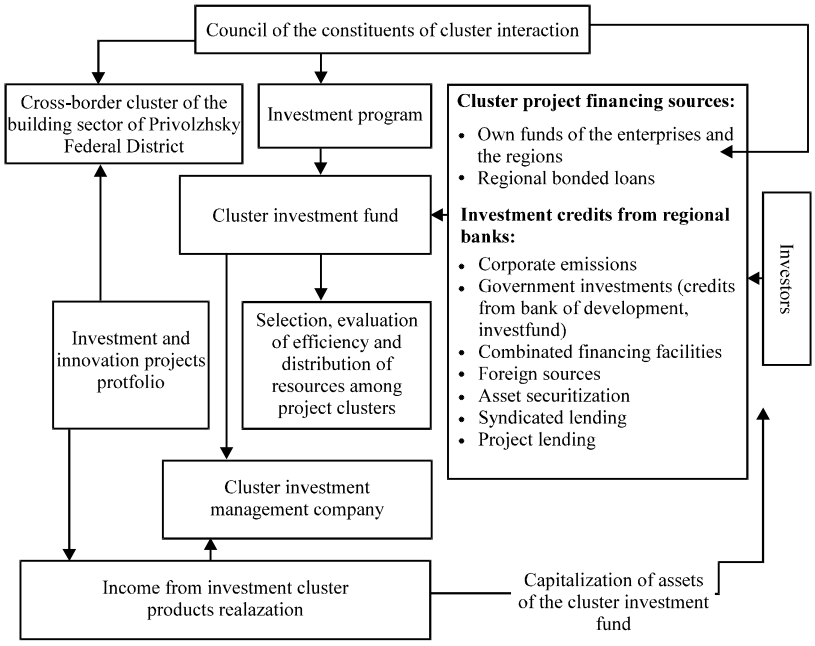

Fig. 4: Cluster system of economic entities capital renovation in the local economic systems for the purposes of reindustrialization and innovative activity intensification with reservation of ownership of capital and management of the same

capital and managing the same by means of various forms of private-public partnership, institutes of development, etc.

Use of the cluster approach is most important for the local economic systems due to required close communication between the cluster members. A cross-border cluster is a perspective mechanism of sustainable development and growth of innovative competitive ability of the Volga region. To our opinion the traditional industries and activities as conditioned by the environmental potential of the territory of Volga region may function as growth areas. In the process of organization of a cross-border cluster of the Volga region, it would be advisable also to take into account scientific and industrial heritage formed in the course of development of territorial production complexes and industrial combinations as well as the existing economics of location. The most efficient use of a cross-border cluster in the Volga region economy can be demonstrated with the enterprises dealing with extraction, benefication and sale of quartz sand in the Privolzhsky Federal District for use by the construction, metallurgical and related industries.

"Sand-related" business community of the Volga region is represented by the following economic entities: OJSC "Quartz" (Ulianovsk region), CJSC "Nebolchinskoye karyeroupravleniye" (Novgorod region), CJSC "Russkaya gornaya kompaniya" (Novgorod region), LLC "Trading House "Quartz" (Ulianovsk region), CJSC "Balasheiskie peski" (Samara region), LLC "Tashlinskiy GOK" (Ulianovsk region), LLC "Lukianovskiy GOK" (Ulianovsk region), LLC "Balkum" (Nizhniy Novgorod region) (Table 2).

The method of G. Lindquist for determining the statistical significance of enterprises and the results of activity of cluster groups allowed to obtain the most significant results during the analysis of investment potential of the domestic quartz sand production market. G. Lindquist establishes the following criteria as the limit values describing important cluster groups in the region (Table 3). Analysis of the results of cluster composition allows to make a range of conclusions:

- The level of clusterization effects innovative activity of the economic entities in the Privolzhsky Federal District
- The level of clusterization has influence on economic well-being in the local economic systems. This conclusion is supported by pair regressions as well as by the results of investigations performed in the regions
- Formation and development of clusters allows to ensure both promotion of innovations and renovation of the capital intended for reindustrialization to find its "creative component" (Fig. 5 and 6)

Table 2: Cross-border specialization of economic entities in the sphere of supply of glass-making sands of the Privolzhsky Federal District

Consumers	Regions	Application
OJSC "Saratovstroysteklo"	Saratov region	1
LLC "Ruscam-Ufa"	The Republic of Bashkortostan	2
OJSC "Svet"	Udmurtskaya region	2
LLC "Zavod stroitelnykh materialov"	Moscow region	4
OJSC "Salavatsteklo"	The Republic of Bashkortostan	1,2
LLC "Keramika"	The Chuvash Republic	3
OJSC "Zavod "Ekran"	Novosibirsk region	2
State Unitary Enterprise of the Republic of Mordovia "Lisma"	The Republic of Mordovia	4
OJSC "Yuzhnouralsky Insulators and Fittings Plant"	Cheliabinsk region	3,4
CJSC "Balakhninskoye steklo"	Nizhniy Novgorod region	2
LLC "Samarskiy Stroyfarfor"	Samara region	3
OJSC "Salavatnefteorgsintez"	The Republic of Bashkortostan	4

Designations: 1-plate glass production; 2-container-glass production; 3-production of ceramics and 4-other

Table 3: Evaluation of important cluster groups dealing with extraction, benefication and sale of quartz sand in the Privolzhsky Federal District

Values	Instrument of evaluations
$LQ = (Emp_{ig}/Emp_g)/(Emp_i/Emp)$	LQ: "location quotient" Emp_{ig}: number of employed in sector I in region g Emp_g: total number of employed in region g Emp_i: number of employed in sector i Emp: total number of employed
$Size = V_{ir}/V_i$	Size: "Size" of cluster group i V_{ir}: volume of innovation products i output in a region V_i: volume of innovation products output in a cluster
$Focus = V_k/V_{kr}$	Focus: "Focus" of a cluster group V_k: volume of capital for assets renovation accumulated in a cluster V_{kr}: volume of capital for assets renovation in a region

1) "location quotient" = 2; 2) a region should be among 10% of the regions holding leading positions in regard of "Size" and 3) a region should be among 10% of the regions holding leading positions in regard of "Focus"

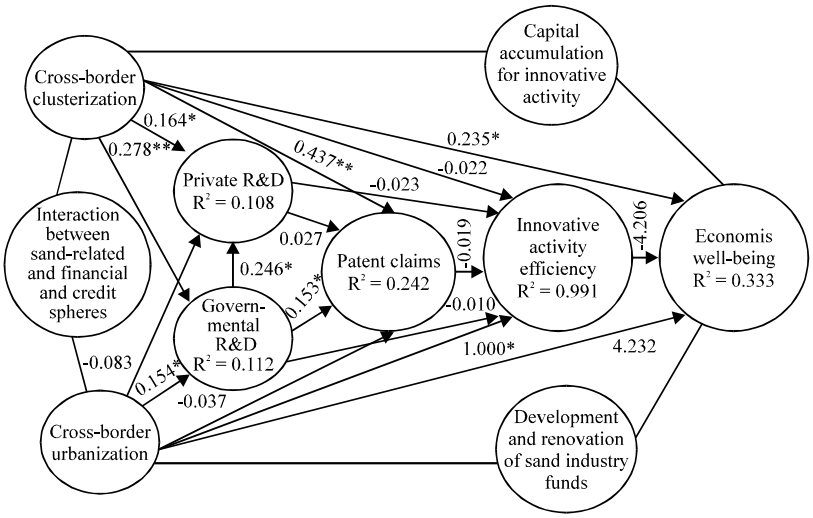

Fig. 5: The results of evaluation of the G. Lindquist model for formation of a cross-border cluster dealing with extraction, benefication and sale of quartz sand (*, ** Relevant if α = 0.05, 0.01)

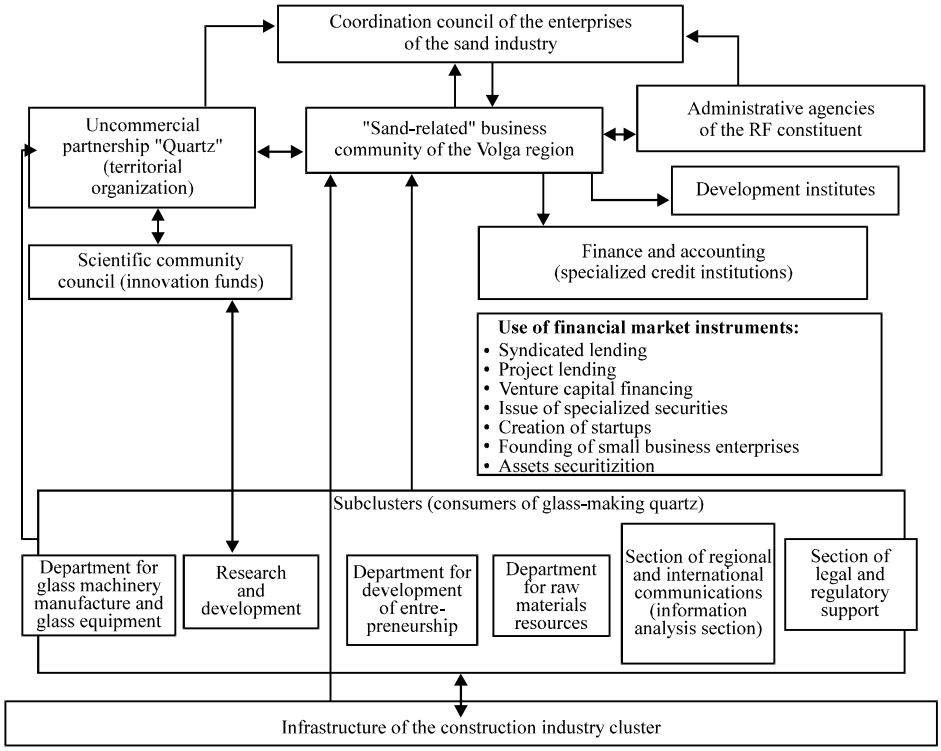

Fig. 6: Organizational structure of the cross-border construction cluster as exemplified by joining the capitals of the economic entities dealing with extraction, benefication and sale of quartz sand in the Privolzhsky Federal District for the purposes of the construction, metallurgical and related industries

With a view to capital renovation and accumulation for innovative activity economic interests of the managerial bodies in the cross-border cluster should be supported by integration of economic entities with the spheres of science and education as well as by interaction between business and the authorities and efficient interaction with the financial market institutions and instruments. Therefore, advanced production facilities,

scientific centers, financial and banking sector, government and the instruments of public-private partnership should be included in the mentioned cluster as its participants.

Presence of interactions represented as a combination of interrelationships aimed at exchange of information related to the sources of capital renovation expressed in the form of open communication and the growth of informational transparency is the main advantage of the offered cluster entities. This results in decrease of asymmetry, possibility to perform complicated transactions in relation to specific assets, optimization of control-related expenses, promotion of business reputation of the participants of the cluster entities. Own funds of the enterprises and regions as well as regional bonded loans; investment loans from the regional banks; corporate emissions; government investments (credits from the institutes of development); combined financing facilities; Foreign sources; securitization of assets; syndicated lending and project lending serve as the capital renovation sources.

Distribution of investment and innovation risks, joint use of technologies, enlargement of the range of products and services due to integration of the same, implementation of technological, managerial and product-related innovations are competitive advantages of a cluster. The offered economic relationships within a cluster initiate profound alterations in the structure of sectoral construction market which in its turn results in raise of competition between the glass industry enterprises inside the cluster itself. The presented model of a cross-border innovative cluster has a clearly marked intersectoral nature. Formation of the capital structure renovation sources with reservation of the rights of ownership and administrative functions, improvement of trade balance of the Privolzhsky Federal District, namely growth of export (both home and international) as well as substitution of import are the principal results of realization of the cross-border cluster project while the volume of gross regional product directly depends on value of investments in real fixed capital, population income per capita and costs related to technological innovations.

Findings: We consider that it would be advisable to focus attention on the following principal issues within the context of the carried out investigation from a perspective of analysis of the capital structure renovation sources through economic relationships with regard to capital renovation and elaboration of financial facilities for promotion of innovative development:

- Use of cluster forms of integrating resources for capital structures renovation with reservation of the right of ownership to such capital
- Improvement of banking crediting instruments as one of the most efficient extrabudgetary sources for promotion of capital renovation and of the processes of reindustrialization in the regions
- Creation of extrabudgetary innovative development funds in the regions for the account of contribution of a part of profits from export of oil, oil products and gas
- Use of regulatory mechanisms on the part of the regional authorities for attraction of the funds of commercial organizations in order to create high-priority sector-specific innovative funds
- Establishment of a regional institute for amortization fund management for the purposes of competitive activities financing and fixed assets renewal
- Elaboration of proposals for change of a tax regulation mechanism which will ensure promotion of innovative activity within the most competitive sectors
- Promotion of activity of a regional institution of leasing which is an efficient financial instrument facilitating innovative activity of economic entities
- Elaboration of the procedures of application of the hybrid instruments for economic entities capital renovation
- Creation of a bank of “toxic” assets in order to perform inventory of the quality of the regional economic entities assets and capitals

CONCLUSION

Search of the ways of solving of the mentioned problems should be performed within the vector of intensification of activity of the real sector of economy which is the basis of reproduction process. The process of capital renovation will naturally result in the growth of tax revenues for the budget and the value of the tax revenues will be able to provide for the reinvestment process. Efficient selection of the sources for capital structures renovation for the purposes of reindustrialization and innovative activity of the economic entities has specific importance for the mentioned processes.

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