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## PROBLEMS OF THE INVESTMENT AND CONSTRUCTION SECTOR DEVELOPMENT IN CONDITIONS OF THE NATIONAL ECONOMY MODERNIZATION

**Abstract.** The distinctive feature of the current state of the Russian economy is its total underdevelopment compared to the growth and development of leaders. Based on the analysis of available resource capacity, it is obvious that modernization of the economy at a time is impossible. It is necessary to determine the breakthrough industrial sectors and the main elements which are able to be as a powerhouse for other sectors. It is necessary not only to focus on the currently-in-fashion sectors of nanotechnology and biotechnology, but to develop traditional business sectors with multiplication properties.

The analysis of modernization programs in foreign countries, such as the USA, Germany, China, demonstrated that in all the cases construction in terms of implementation of major construction projects and programs was considered as a priority – the breakthrough industry able to «bring up» the other sectors of the national economy. Given the social importance of the investment and construction sector and multifunctional of the real estate, it becomes quite obvious that it will be impossible to modernize national economy without solving the problems of capital construction.

**Keywords:** investment; construction sector; modernization; structural change; innovations; subsidy assistance; housing policy.

**JEL Classification:** E62, H68

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### **ПРОБЛЕМЫ РАЗВИТИЯ ИНВЕСТИЦИОННО-СТРОИТЕЛЬНОЙ СФЕРЫ В УСЛОВИЯХ МОДЕРНИЗАЦИИ НАЦИОНАЛЬНОЙ ЭКОНОМИКИ**

**Аннотация.** В статье рассмотрены задачи развития капитального строительства в контексте модернизации национальной экономики. Обоснована необходимость совершенствования политики жилищного строительства как социальной составляющей модернизационного процесса. Определены основные проблемы инвестирования в строительную сферу, тормозящие развитие социальной составляющей этой индустрии. Предложен методологический подход к определению объемов и структуры инвестиций, требующихся для обновления и модернизации материальной базы капитального строительства.

**Ключевые слова:** инвестиции, строительный сектор, модернизация, структурные изменения, инновации, субсидии, жилищная политика.

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### **ПРОБЛЕМИ РОЗВИТКУ ІНВЕСТИЦІЙНО-БУДІВЕЛЬНОЇ СФЕРИ В УМОВАХ МОДЕРНІЗАЦІЇ НАЦІОНАЛЬНОЇ ЕКОНОМІКИ**

**Анотація.** У статті розглянуто завдання розвитку капітального будівництва в контексті модернізації національної економіки. Обґрунтовано необхідність удосконалення політики житлового будівництва як соціальної складової цієї галузі економіки. Запропоновано методологічний підхід до визначення обсягів і структури інвестицій, потрібних для оновлення та модернізації матеріальної бази капітального будівництва.

**Ключові слова:** інвестиції, будівельний сектор, модернізація, структурні зміни, інновації, субсидії, житлова політика.

**Introduction.** The modernization of the national economy is a single option for development of modern Russia, equally supported by all social and political forces and consistently implemented by the President and the Government of the Russian Federation. It is in the context of the modernization that budget and tax processes are developed, financial strategies, inter-regional and inter-industry relationships are adjusted. The messages of the President of the Russian Federation formed in the

community an idea of the composition of powerhouse sectors for modernization. These are the following: aerospace, ship-building, energy, information and medical technologies sectors. Discussion of the problems of «modernization» always involves the characteristics of the modern economy, as the economy of information technology and innovation. The currently existing rhetoric shows quite obviously that the construction has a passive role of a serving sector in these processes, which is con-

sidered by us as significantly reducing the possibility to implement the opportunities for the modernization of the Russian economy in general.

**Brief Literature Review.** Abovementioned problems were considered in papers of scientists like Yaskova N. (2012) and Lukmanova I. (2012). They stressed that the urgency of solving the problem of effectiveness of combining investment resources was not so obvious due to the underdevelopment of the domestic investment market. After formation there was an objective need for further time-development to form approaches to comprehensively address the problem improving the efficiency of investment attraction re-resources of varying quality in a developed market investment and growth in demand for construction products.

**Purpose.** To prove this statement we shall consider the classic definition of modernization (from the French «Moderne» – «the newest»). It provides for an improvement, bettering, updating an object, bringing it in line with the new requirements and standards, technical specifications, quality indicators (the modernization mainly relates to machinery, equipment and technical processes); changes in accordance with the requirements of the present time: giving a modern feature to something, adaptation to modern views, ideas and needs; the macro-process of transition from the traditional society to a modern one. Should we try to structure the substantive basis of the concept, the essence of the modernization is to develop and implement structural, technological and institutional changes in all the components of the national economy. The orientation thereof is determined by the increase in systemic competitiveness of the country. Thus, we are talking about all spheres and sectors and not just about information technologies and innovation.

Being the sphere of material production, construction, on the one hand, transforms the material resources at the stage of the innovative ideas implementation. And thus, the final results of the practical implementation of any innovation depend on how the real estate is built and innovation development environment is created. On the other hand, construction itself has a huge innovative potential in terms of the applied materials, technology, financial and institutional mechanisms, etc. At that, the effect of construction innovation has a long-term character, covering the stage of the real estate operation and contributing to the augmentation of the innovation implementation effect during the life cycle.

**Results.** Taking into account the comprehensive character of modernization, its implementation should be based on the development of general, cross-sectional objectives that underpin the diversity of the concomitantly solved and at the same time interrelated problems. That is, the modernization of the economy is the most complex, multidisciplinary problem requiring coordinated actions along with the exhaustive list of issues relating to the forming trend of development, projected to every single sector of the national economy (with the exception of the sectors being replaced by innovative industries and spheres).

The distinctive feature of the current state of the Russian economy is its total underdevelopment compared to the growth and development leaders. Based on the analysis of the available resource capacity, it is obvious that the modernization of the economy at a time is impossible. It is necessary to determine the breakthrough industrial sectors and the main elements which can act as a powerhouse for other sectors. It is necessary not only to focus on the currently in fashion sectors of nanotechnology and biotechnology, but to develop traditional business sectors with multiplication properties.

The analysis of the modernization programs of foreign countries, such as the USA, Germany, China, showed that in all cases, construction in terms of implementation of major construction projects and programs was considered as a priority – the breakthrough industry able to «bring up» the other sectors of the national economy. Given the social importance of the investment and construction sector and multifunctional of the real estate, it becomes quite obvious that it will be impossible to modernize the national economy without solving the problems of capital construction.

Generalization and systematization of the challenges which the capital construction faces in the context of modernization of the national economy reveal the following problems:

- I. Focus and intensification of the processes ensuring the effective functioning of the investment and construction sector.
- II. Development of the basis and creation of (almost from a scratch) the material and technical facilities for the construction complex.
- III. Implementation of technological and specific structural changes in the system of investing in the fixed assets.
- IV. Development and transition to a new effective and efficient public housing policy.
- V. Substantiation and modernization of the housing and public utilities complex of the country, etc.

All these problems are interrelated and address the key issues of the investment and construction sector modernization.

The first problem solution relates to legislative modification of the majority of the currently existing production and economic relations in the sphere of investment and construction activities. Basically these modifications are related to restructuring of the market supply and demand formation at the domestic construction market. Firstly, this concerns the solution to the problem of monopolism, lobbying, misuse of administrative resources in the interests of only some people, inefficient flow of investments, etc. Some of the problems are in the sphere of political decisions, but most of them are essentially economic. Giving the functioning of the investment and construction sector an innovative character is impossible without the participation of the state in all modern formats: ranging from initiation and full or shared participation to patronage, maintenance and support of the adopted measures on modernization of the investment and construction sector, aimed not only at the transition to a new technological level, but at a new type of relations including the contract system.

The second problem is virtually re-development of material and technical facilities for the domestic construction sector. From the point of view of the Institute of National Economic Forecast of the Russian Academy of Sciences, these were given minor investment resources for the development in the past years, and these resources (in the specific correlation of the total investment in the fixed assets per national economy) decreased annually, for example, from 7.2% in 2000 to 5.2% in 2008 [1].

Taking into account the marginal depreciation of the fixed assets of the production facilities for construction, especially the cement industry and the industry for construction and road engineering, the lack of any significant annual qualitative and quantitative growth thereof against the lagging scientific and technological level of the manufactured products, the development of the said facilities required at 2-2.5 times more investments than were actually provided.

The focus of the problem of the construction sector development is given to the cement industry. One should note the factors limiting the increase in cement prices in 2009-2010. The results of the research conducted, in addition to the crisis in the economy in general, these were an unstable demand, flexible pricing of the largest holding («Eurocement Group») as well as the perspective of launching an unprecedented number of cement plants with a total capacity of 20-25 million tons as soon as in 2011-2012 [1].

According to estimates of «Cement-2010» conference, organized by «RUCEM» online magazine, during the period of 2012-2015 the capacities of the cement plants could increase by 30 million tons more, and this can happen despite the fact that over the last 25 years there were only 3.2 million tons of new capacities at the existing plants introduced in Russia, of which only 1.3 million tons corresponded to the modern technologies and the technical requirements to the quality of the cement [4].

All new plants must produce the cement within dry (energy-efficient) mix process. This method involves drying the raw material before pre-mixing of its components and firing, thereby reducing the fuel costs for firing the cement clinker (wet mix process is performed by firing wet mixture in the kiln).

According to expert estimates, the difference in the cost of production per ton of cement produced using dry and wet method can be up to \$20. If the plans on commissioning the facilities are implemented, then, as logically mentioned, the old-technology plants are the first at risk of go bankrupt because they produce cement within the so-called wet, energy-intensive process (this is 87% of the existing domestic plants). Consumption of energy resources at such plants is 1.5-1.9 times higher than at modern plants using the dry process [4]. The same context is applicable to restructuring of other facilities for production of the full range of construction materials. The regulatory role of the state in these processes is not only subsidy assistance to the process of new facilities development, but also initiation of the partnerships pools at mutually beneficial conditions of public-private partnerships.

The third problem is the development and implementation of a new effective and efficient public housing policy, since despite many steps taken by the government for the development of residential housing (Federal Special Purpose Programs «Housing», «My House», «Affordable Comfortable Housing to Russian Citizens», etc.), housing affordability (the ratio of the population income and the price of apartments) during the recent years has consistently declined.

According to the Federal State Statistics Service, a family with a monthly income of \$908 per person has no real chances to purchase a one-roomed apartment at the domestic real estate market. Mainly this is due to the fact that, according to the real estate developers, there is a shortage of land for construction in the country, which is related to many administrative barriers to their integration into the economy, as well as to the fact that currently the land became the subject of uncontrolled profit making. This problem is connected with another extremely unsound necessity for modernization and replacement of worn-out industrial infrastructure of housing and public utilities (heat, gas, water supply and drainage) and reduction of the excessively high price of homes connection to these utilities. Taking the abovementioned into account, a new systematic housing policy with real objectives and appropriate instruments for its implementation in the form of the modern contract system is required.

The most important claimed problem of the state is the problem of achieving the country's annual housing construction in the amount, which would provide access to construction of 1 sq. m of housing per capita in 2020. At that housing commissioning in per capita in Russia amounted to (sq. m): 1992 – 0.280, 1995 – 0.277, 2000 – 0.208, 2005 – 0.307, 2007 – 0.431, 2008 – 0.452, 2009 – 0.425. At the same time, the corresponding figures were: in China – 1.15 sq. m, in the US – 1.35 sq. m (as of 2006) (according to the Federal State Statistics Service 1992-2009 and OECD data).

According to the «Estimated population size of the Russian Federation by 2030» developed by the Federal State Statistics Service, the population of the Russian Federation in 2020 will range from 137,388 thousand people (as per the low forecast alternative) to 143,670 thousand people (as per the high forecast alternative). According to the medium forecast alternative of the Federal State Statistics Service the population of Russia in 2020 could amount 141,480 thousand people [2].

If we take into account that in 2020 in Russia there must be 1 sq. m of housing commissioned per person, the total housing commissioning that year should be approximately 141.5 million square meters. In general, the growth of housing resources in Russia by the end of 2020 in this case could reach 1,060 million square meters, and in view of the existing Russian housing resources (in 2008 – 3060 million sq. m.) it may reach 4,120 million square meters. This would allow bringing the housing per person in 2020 on average to 29.1 square meters that is to improve this figure by 34%, compared to 2008 [2].

The possibility of such determined objective implementation depends on the readiness of the investment and construction sector to solve the established problems. These focus on the determination of the scope and structure of investments for the construction development as well as on the structurally-oriented mechanisms for the implementation of the investment and construction projects. This raises the key question: how can the scope and structure of the investments in demand be determined? The scientific potential, generally, uses the development of mathematical economic models. But in the present case it is hardly possible to achieve the acceptable results due to uncertainty and diversity of probable and random effects on the projected figure. The intensive increase in the housing construction should be consistent with and contribute to the balanced development of the territories.

Based on the abovementioned, it is appropriate to use here the scenario (or regulatory targeted) approach to the development of the forecast. A number of scientists suggest to accept solving the housing problem as such the target, because this is the core of the socio-economic characteristics of the society and of the given above quantitative amounts of housing that is 141.5 million sq. m. The calculations can be based on the following data: investments into the fixed assets, commissioning of the residential housing, investment price per square meter of residential space, the average cost per square meter of residential space for the property developer, construction price indices, and average prices on the primary housing market.

Taking into account the present level of average prices for residential housing, the construction cost of 141.5 million square meters of housing in 2020 in the investment prices of 2008 (19,280 rubles per 1 sq. m of residential space) will amount to 2,728 billion rubles. If the hypothesis is the proportion of investments in 2020 housing construction at the level of 2008, that is in the amount of 14.1%, then the total investments into the fixed capital as per the national economy in 2020 (in 2008 prices) will amount to 19,348 billion rubles. Being aware of the need for investments in the fixed capital in 2020, it is possible to move to the development of their prospective generic structure which reflects the advanced scientific and technological innovation changes in the business practices of the national economy, which is to solving the fourth problem of the construction [1].

With using the scenario (regulatory targeted) approach to forecast the generic structure of the created by 2020 fixed assets it is feasible to carry out an upward adjustment in the share of the active part of the fixed capital in the structure of investments in the fixed capital (machinery, equipment and vehicles) to 48-52% (compared to 35.4% in 2008) with a simultaneous corresponding reduction in the share of the passive part of the fixed capital – buildings (excluding residential houses) and constructions – from 44.3% in 2008 to 27.7-31.7% in the forecast year (Table).

Thus, the amount of industrial buildings space under construction shall decrease dramatically in favor of the active part of the fixed capital in the structure of the used investments in the fixed assets in 2020 within the modernization strategy implementation.

With regard to the structure of the real estate industry, we should note that in the conditions of the coming modernization and innovative renovation of the domestic productive capacity it

Table: Structure of investments into the fixed capital per fixed assets

Type of the fixed assets*	2000	2005	2008	2020 (estimated)**
Investments into the fixed capital, total	100	100	100	100
including:				
residential houses	11.3	12.0	14.1	14.1
buildings (excluding the residential houses) and constructions	43.1	40.4	44.3	27.7-31.7
machinery, equipment and vehicles	36.6	41.1	35.4	48.0-52.0
other	9.0	6.5	6.2	6.2

Notes: \* Figures of 2000-2008 are provided based on the actual prices for that period

\*\* In prices of 2008

Source: [1]



is necessary to carry out the activities on the inventory, write-off and the decommissioning of the obsolete production assets. This will result in a significant amount of the available production space, where during the ongoing modernization new advanced manufacturing process equipment and machinery can be placed. As a result this will provide for a corresponding increase in their share in the structure of investments in 2020.

As for the fifth problem, its research shall be independent. The works of many scientists were dedicated to the problem of modernization of housing and utilities complex, but we are first interested in the organizational mechanisms for implementation of the modernization of housing and utilities objectives in the context of the measures on the state regulation of innovative renovation of the national economy processes.

**Conclusions.** Thus, summarizing the proposed by the Government measures on modernization and improvement of the construction efficiency, we make a fundamental conclusion: all the measures should be based on the gradual change in the targeted rate of growth in the amounts and structure of the investments into the fixed capital. The conducted analysis showed that this should take place at:

1) simultaneous qualitative change in the character, structure, scientific and technological level of the material and technical basis of the construction and the created construction products;

2) satisfaction of the population needs in the affordable comfortable residential housing;

3) rehabilitation and modernization of the previously constructed housing resources, its repair and overhaul;

4) construction of new fixed assets and technical re-equipment and reconstruction of the existing fixed assets (especially the active part thereof), which form the productive sector of the national economy;

5) adjustment of the investment technologies to the requirements of modernization and innovative renovation of the construction sector.

The implementation of this approach is essential to the modernization and innovative renovation of the industrial capacity of the Russian national economy.

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Received 08.11.2013

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Статья поступила в редакцию 08.11.2013

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