

Development of the construction industry in the context of import substitution: Russian experience

Desarrollo de la industria de la construcción en el contexto de la sustitución de importaciones: experiencia rusa

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Received: 12/06/2017 • Approved: 10/07/2017

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ABSTRACT:

The construction industry is one of the largest key sectors of the Russian economy now. For the last few years domestic companies have had the opportunity to enter global markets with their products, despite the fact that (with rare exceptions) they were made of compilation of imported and domestic raw stuff, materials and technologies in the construction industry. A possible way out could be to increase the export of highly processed commodities and to arrange manufacture of import-substituting products (import substitution) in the construction. However, it is difficult to get access to imported products, materials and equipment now, and it is associated with external transaction costs under the current market conditions in Russia during the period of sanctions and devaluation of the national currency. That is why the term "import substitution" becomes one of the most relevant and used words in the lexicon of economists, politicians and the whole society. An obligatory condition for replacing imported raw stuff, technologies and materials with Russian goods is their competitiveness. To successfully

RESUMEN:

La industria de la construcción es uno de los sectores clave más grandes de la economía rusa ahora. Durante los últimos años las empresas nacionales han tenido la oportunidad de entrar en los mercados globales con sus productos, a pesar de que (con raras excepciones) se hicieron de la compilación de materia prima importada y doméstica, materiales y tecnologías en el industria de la construcción. Una salida posible podría ser aumentar la exportación de mercancías altamente procesadas y arreglar la fabricación de productos de sustitución de importaciones (sustitución de importaciones) en la construcción. Sin embargo, es difícil obtener acceso a los productos, materiales y equipos importados ahora, y está asociado con los costos de transacción externos bajo las actuales condiciones de mercado en Rusia durante el período de sanciones y devaluación de la moneda nacional. Es por eso que el término "sustitución de importaciones" se convierte en una de las palabras más relevantes y usadas en el léxico de los economistas, los políticos y toda la sociedad. Una condición obligatoria para reemplazar materia prima

pursue the import substitution policy, various incentive measures and support mechanisms have been developed and implemented for the Russian production. **Keywords:** import substitution, construction industry, raw materials and equipment for construction, competitiveness.

importada, tecnologías y materiales con bienes rusos es su competitividad. Para llevar a cabo con éxito la política de sustitución de importaciones, se han desarrollado e implementado diversas medidas de incentivos y mecanismos de apoyo para la producción rusa. **Palabras clave:** sustitución de importaciones, industria de la construcción, materias primas y equipamiento para la construcción, competitividad.

1. Introduction

1.1. Analysis of Recent Publications.

The problems of the international economy and protection are studied in the projects of *Luis Eugenio Di Marco* "International Economics and Development 1st Edition", problems of domestic production development — in the projects of *Marconi N., et al. (2016)*, *Pisa N., Rossouw R., et al., 2015*); the theory and practice of import substitution are discussed in the works of *Kishore, G. Kulkarni and Kip Jan Meister (2009)*, *Basu, A. (2005)*, and import substitution in industry is reviewed by *A.Kaukin, P. Pavlov, (2016)*, *Manu, FA (2009)*, *Bisrat, M. (2011)*.

1.2. Purpose of the Research

The goal is to scientifically substantiate the process of import substitution in the context of the building materials industry, as well as to identify conditions for development of the competitive Russian production.

1.3. Main Results of the Research

The "import substitution" concept first appeared in the United Nations (UN) in the 1960s and was applied in the context of the problems of newly liberated colonies with a monocultural economy. Almost all goods needed for life and economic activity were imported to these countries (*Ilina E., 2015*). Import substitution is a form of the national economic strategy and industrial policy which focuses on protecting the domestic manufacturers from expansion by replacing import of manufactured goods with domestic products. (*Henry J. Bruton., 1989*, *Salim A., et al, 2016*, *Sahin O., et al., 2014*).

In the Russian Federation, *import substitution* is understood as substitution of imported goods by goods manufactured by Russian producers, i.e. within the country (*Silva, E., 2007*).

Each relevant administrative body must have the following strategic goal and tasks to develop and place the productive forces of the building materials industry up to 2030:

- To determine basic development priorities to saturate domestic construction market with high-quality building materials, products and structures capable of competing with products imported from other subjects of the Russian Federation and from abroad,
- To lower the dependence of industries on imports, optimize supplies of domestic building materials and products to external markets in volumes exceeding the imported ones, and
- To reduce construction and operating costs and, at the same time, improve the comfort of living and working in buildings and facilities of necessary reliability and lifetime (*Manu, F., 2009*).

International practices in economic development show that sustainable growth of the economy in a country/region/industry occurs only due to the development of its own domestic industrial production (*Risa, N. et al., 2015*).

In Russia, one of the main factors restraining production activities of manufacturing industries, including developers, is the appreciation of imported materials. Therefore, there is a significant rejection of imports in the construction industry (*Strogonova E.I., Mokropulo A.A., et al, 2016*). Such changes in the structure of purchases are primarily related to the devaluation of the national currency against the currencies of other developed nations and the impact of international sanctions on the Russian economy (*Bisrat, M., 2011*). That is why there is an

2. Method

A matrix method is used to determine the development efficiency for the Russian construction industry in terms of import substitution. Matrix methods are based on linear and vector-matrix algebra and are convenient for analysis. According to the study, a correlation of the volume of shipped construction products with the number of employees in the building materials industry is revealed. This dependence has a correlation nature because it is characterized by the fact that, along with the conditioned factors that were studied, side effects distort the influence of the main factor and affect the final efficiency index.

Thus, using the analytical data to justify the efficiency criteria, Figure 1 shows the matrix of development efficiency for the Russian construction industry.

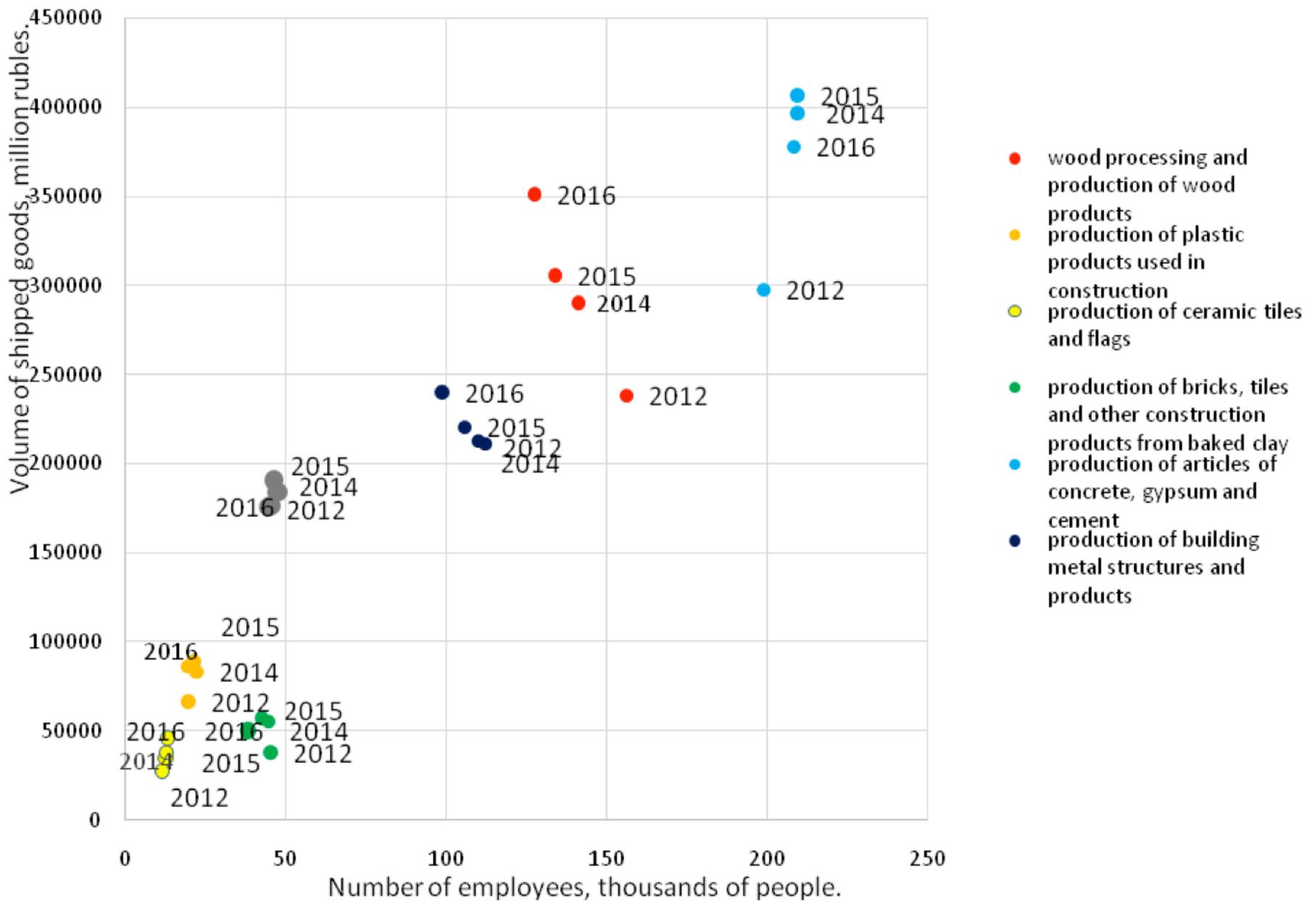
3. Results

The analysis of recent years shows that the Russian construction industry has slowly started to develop — new businesses, additional jobs and quality building materials appear, their volumes have grown considerably under the pressure of the external environment (*Rada, C. et al., 2012*).

The matrix method based on comparison of the volume of shipped construction products and the number of employees in these subsectors has been used to perform comparative analysis of the development efficiency for the construction industry (*Tabatabaeian M.S., 2016*).

Figure 1. Matrix of Development Efficiency for the Russian Construction Industry in Terms of Import Substitution (compiled by the authors)

Matrix of the development effectiveness of the construction industry



Thus, in 2014, after the collapse of the national currency and the introduction of economic sanctions, the Russian building materials industry started to develop considerably. The domestic volume of production has increased, especially in such subsectors as woodworking and production of ceramic tiles and plates. Taking into account that the real GDP of Russia was 43,543.692 and 44,125.83 trillion rubles in 2012 and 2016, it was possible to calculate the share of such output increase for those subsectors in the total GDP.

The share of the Construction Materials in the GDP (2012):

$$\frac{1,054,933}{43,543,692} \cdot 100\% = 2.4\%$$

The share of the Construction Materials in the GDP (2016) after the import substitution:

$$\frac{1,329,462}{44,125,830} \cdot 100\% = 3.012\%$$

Thus, due to the crisis, from 2012 to 2016 the GDP growth was very low (by 1.3%). At the same time, the output growth for the building materials industry was 26% over the same period.

$$\frac{(1,329,462 - 1,054,933)}{1,054,933} \cdot 100\% = 26\%$$

Table 1 shows the Russian building material market (with analysis of main subsectors) in detail.

The building materials and equipment market are analyzed to determine the need for substitution of imported construction products with the domestic ones.

Table 1. Comparative Analysis of Prices for Domestic and Foreign Building Materials and Equipment

| Sub-industries of Building Materials Industry | Name | Manufacturer Country | | Price, rubles | | Description |
|--|------------------|-------------------------|---------|---------------|---------|--|
| | | domestic | foreign | domestic | foreign | |
| Industry of Non-metallic Building Materials | sand | Russia | - | 62 | - | Sand dry, 30 kg |
| | primer | Russia | Germany | 425 | 879 | Primer for interior works, universal, 5 kg |
| | crushed stone | Russia | - | 500 | - | crushed stone of lime fractions 20 40, 1 ton |
| Cement industry, limestone gypsum and other binders | cement | Russia | - | 299 | - | Portland cement, 50 kg |
| | putty | Russia | Germany | 242 | 1595 | putty gypsum, 25 kg |
| | waterproofing | Russia | Italy | 955 | 4,300 | dry waterproofing mixture, 25kg |
| | plaster | Russia | Germany | 225 | 355 | plaster insulating, 25 kg |
| | grouting | Russia | Finland | 319 | 428 | grout for seams, gray, 3 kg |
| | aerocrete blocks | Russia | - | 78 | - | aerocrete blocks YTONG D500 625x250x100 mm |
| | facing tiles | Russia | Poland | 1,183 | 1016 | decorative and facing tiles, m2 |

| | | | | | | |
|---|-----------------|--------|-----------|--------|--------|---|
| Wall materials, brick and prefabricated concrete products | building bricks | Russia | Chuvashia | 15.82 | 19 | building bricks, 250x120x140, pieces |
| | sheet material | Russia | Europe | 461 | 470 | OSB-3 9x1220x2440 mm, pieces |
| | thermopanel | Russia | Germany | 1,450 | 2,200 | facade thermopanel, m2 |
| Materials of internal and external furnish | laminare | Russia | Germany | 549 | 879 | laminare 32 cl., 8mm, light, single-striped, m2 |
| | roof | Russia | Turkey | 446 | 359 | asphalt sheet 0,76x2 m |
| | shingles | Russia | Europe | 631 | 1197 | flexible shingles, 3 m2 |
| | tile | Russia | Ukraine | 742 | 654 | wall tiles, color beige, 25x40 cm |
| | wallpaper | Russia | Germany | 1,499 | 1,999 | wallpaper decorative, gray, 10 m |
| Construction equipment | cutter | Russia | China | 5,399 | 4,917 | electric table tiler |
| | chainsaw | Russia | China | 10,486 | 7,599 | chainsaw, tire 40 cm |
| | concrete mixer | Russia | Germany | 10,200 | 12,900 | concrete mixer, 130 l |
| | generator | Russia | USA | 25,640 | 35,856 | gasoline generator, 25 l |
| | drill | Russia | Germany | 6,949 | 9,390 | cordless drill |

According to buyers and experts, the Russian products are not worse than the imported ones, besides, the prices for the imported analogues are quite high.

Based on the analysis performed (Table 1), the following trends are observed on the building materials and equipment market:

- Non-metal building materials do not need import substitution as the domestic goods are in demand on the market and many imported materials are just absent,
- Production of cement, limestone and other cementing agents — there are both imported and domestic products, but buyers prefer the domestic ones because their prices are an order of magnitude lower than those of the imported analogues of the same quality,
- Wall materials, bricks and prefabricated concrete products — there is a potential for partial substitution in this segment, including development of the equipment with which the product is manufactured,
- Materials for internal and external finishing — this subsector needs substitution as the buyers prefer the imports. A fairly large number of such materials are made in Russia, but on the imported equipment, and
- Construction equipment — this segment is very important. It is necessary to develop own production as there is very little high-quality and affordable domestic equipment on the construction market.

Various incentive measures and support mechanisms have been developed and applied for the Russian production to implement the import substitution policy successfully. At this stage, one of the import substitution priorities for the construction industry is improving the base to reconstruct and reprofile the existing productions, as well as to create new businesses, building materials and structures that meet the current requirements for quality and competitiveness in the market, and introduce building know-how. (*Bakhareva O.V., Romanova A.I., et al, 2016, Zagidullina G.M., Romanova A.I., et al, 2013*).

Certainly, it is impossible to completely abandon the imports in the construction but it is necessary to renew and organize new regional productions and think about the necessity and importance of the import substitution (*Silva, E., 2007*).

According to the Federal Targeted Program "Strategy for the Development of the Building Materials Industry for the Period to 2020 and Further Prospects until 2030", implementation of import substituting projects requires appropriate organizational structures, including those of a coordinating and consultative nature, capable of uniting the efforts of the government and community of construction enterprises engaged in direct production (Fig. 2).

New quality control technologies are difficult to implement in Russia due to the lack of centers that could accumulate the best foreign practice in system analysis of the Russian experience while introducing quality management. The lack of interest in the construction businesses is often the reason of the above, because new technologies and methods lead to the fact that the end product becomes more expensive. Moreover, the use of obsolete equipment, shortage of qualified personnel, high tariffs for energy and rail transportation, lack of up-to-date regulatory and technical documentation, gap between university research and educational processes may be added to the above. In addition, the mentality of domestic builders remains a problem for Russia and does not allow competing on the global level. (*Romanova A.I., 2015*). That is why the problem of construction quality is the main driving force for the strategic development of the construction now (*Lukmanov I.G., Nezhnikova E.V., 2011*), and consequently, implementation of the import substitution.

It is assumed that replacement of the imports in the construction by domestic products should lead to the following results for the population, businesses and the state as a whole:

1. Domestic construction production and exports of goods to global markets, as well as the industrial competitiveness and profits through tax payments to the budget shall increase,
2. Stabilization, direct development of the construction industry and strengthening of the national security — complete independence from other states – will make it possible to plan state incomes and expenditures more accurately,
3. Level and quality of life shall increase due to emergence of new jobs in the building materials industry for the unemployed, which contributes to reducing unemployment and constraints in the labor market, to the emergence of new vacancies that require innovative education, and to the

receipt of stable incomes,

4. Progress in the scientific and educational spheres — there appears a social incentive to get knowledge in order to implement ideas for the further production purposes.

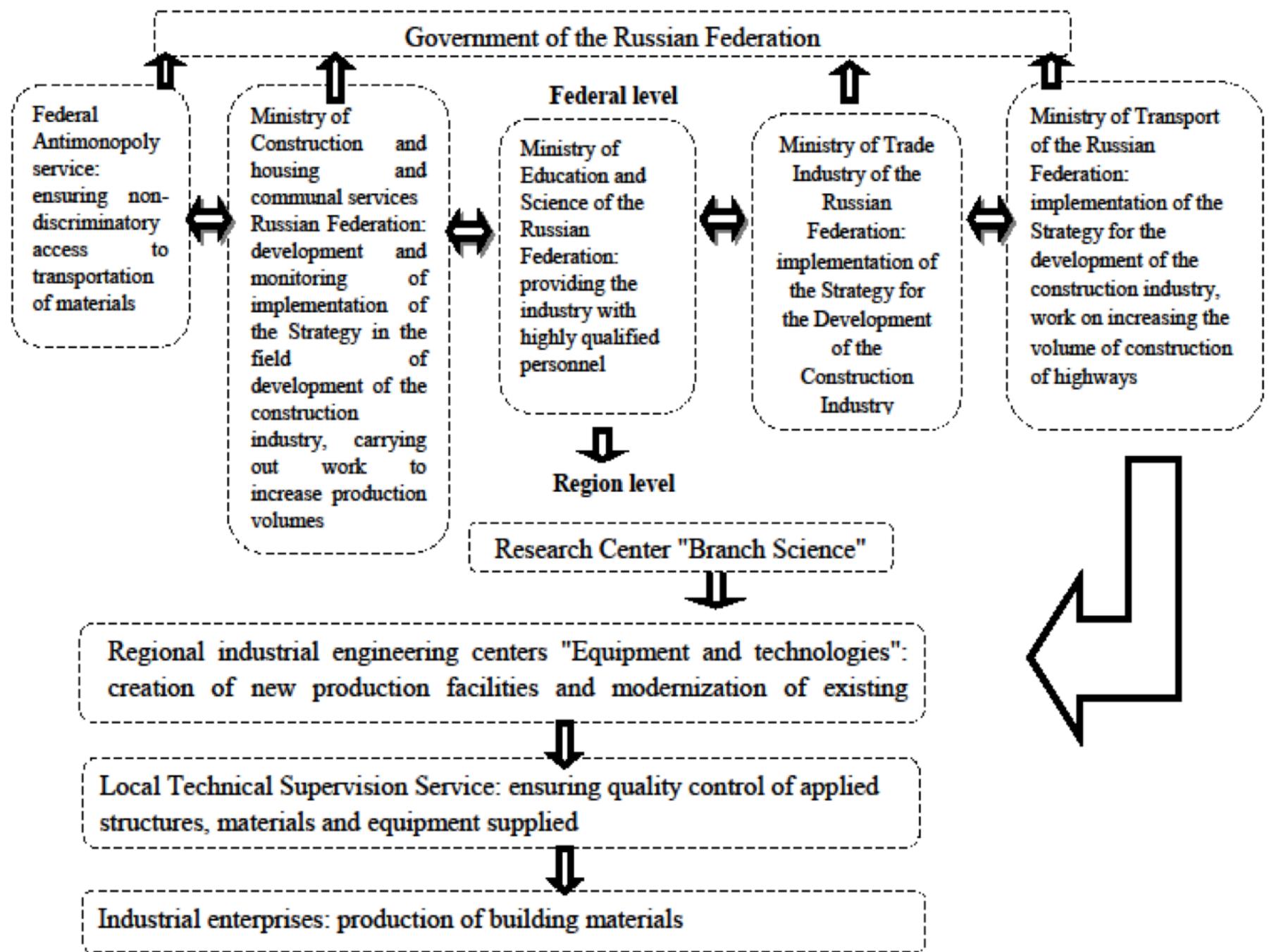
There are a number of problems associated with entering the Russian construction industry to global markets. Insufficiently high level of quality that does not meet the needs of foreign consumers, and high level of competition refer to the above.

Competition is a key factor in developing economy, and its support is one of the fundamental principles of developing an innovative economy and import substitution. Today the Russian building materials industry is mainly focused on the domestic market. (*Afanasyeva, A.N., 2015*). However, certain types of building materials are actively exported, mostly to Kazakhstan, Belarus and the CIS. At the same time, Russia is the main exporter of some building materials (e.g. sheet glass and composite materials) to these countries. It should be noted that the Russian building materials industry has not yet reached a high level of competitiveness as compared to the EU, but it has the considerable export development potential based on the availability of natural resources, relatively low costs of energy resources and flexible currency exchange rates.

Even now, according to analytical indicators, the exports in total production of building materials in Russia increased from 3.8% in 2012 to 12% in 2016. (*Order of the Government of the Russian Federation of May 10, 2016*).

Such positive changes are characterized by the provision of favorable conditions in accordance with the customs legislation of the Eurasian Economic Union for the sale of products within a single market; organizational support and assistance in adapting the building materials industry to the world market, as well as provision of consulting and information support to producers for antidumping, special protective or compensatory investigations.

Figure 2. Improving the Activity of Coordination Structures While Managing Import Substitution in the Construction Industry (compiled by the authors)



4. Discussion

Implementing the task will help to strengthen the economic security of the state, to enhance scientific and technical progress and to raise the level of education in construction, to increase the demand for domestic building products, to expand production capacities, to improve the trade balance, to increase the number of jobs, and thereby to improve the living standards in Russia. For the further studies, it is advisable to evaluate the activity of institutional structures in the effective management of import substitution in the construction industry, since coordination of management systems will determine independence of building materials from the imports.

5. Conclusion

The study results show that the ongoing process of import substitution in the building materials industry positively influences the development of the whole industry (Yifu Lin J., Wang Y., 2016). In the context of the national currency devaluation and the current sanctions, the share of the building materials industry in the country's GDP has increased dramatically over the recent years. In addition, it has been revealed that in some subsectors of the construction industry the quality of products is not worse than that of the import analogues resulting in the increased exports of such products.

The need for import substitution until 2020 is conditioned by reduction of the Russia dependence on the EU and USA, development of domestic production, including the

construction industry, equipment and trade, reduction of inflation, increase in the number of plants built and enterprises opened in the industry, and economy growth as a whole.

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Revista ESPACIOS. ISSN 0798 1015

Vol. 38 (Nº 48) Year 2017

Indexed in Scopus, Google Schollar

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