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EFFICIENCY FACTORS OF REGIONAL INVESTMENT POLICY

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Abstract

Investments are the main driver of economic growth. The analysis revealed that in the conditions of a general decline of investments of about 10 % in the RF during the crisis of 2014-2016. In a number of regions, investments grew by more than 10%, while in others they fell by more than 40%. This situation is due to the varying effectiveness of the investment policy pursued in the region. The purpose of the study is to systematize the factors and tools that determine regional investment policy efficiency. The number of macroeconomic factors determining the investment intensity includes the level of consumer demand, the stability of the macroeconomic situation and real economy lending terms. At the industry level, investments depend on the industry's financial results, the availability of credit resources, as well as on the technological level of the industry. The work also highlighted the following territorial factors of investment activity. The analysis of program documents showed that regions use a wide range of regional investment policy tools. The evaluation of investment policy efficiency was carried out on the basis of the analysis of the interrelation degree between the dynamics of investment activity indicators and the growth rate of the GRP. The correlation analysis did not reveal any significant interrelations of indicators, that is due to the low efficiency of investments in the development of physical infrastructure and manufacturing industry. The low level of the correlation of investment and innovative activity of enterprises influences negatively on the return on investments.

Keywords: Efficiency factors, innovation, investment, region, tools.

1. Introduction

An important reserve to improve the dynamics of the social and economic development of the Russian Federation is to increase the potential efficiency of regions. The solution of the task requires a boost of the investment process and fundraising in order to implement regional investment projects. Herewith, at present, regions' investment activity is characterized by a high level of differentiation. In the conditions of general decrease in investments by about 10% in the Russian Federation over the period of 2014-2016 investments in such regions as Vladimir, Vologda, Murmansk and Novgorod regions grew by more than 10%. At the same time, in Ivanovo and Ryazan regions, the drop in investment exceeded 40%. A significant difference between regions of the Central and North-Western Federal Districts (CFD and NWFD) also occurs at the stage of post-crisis economic recovery.

Investments are the main driver of economic growth. Theoretical justification of the priority of investment policy comes from well-known models of economic growth. Thus, in the Keynesian model by Domar (1946), developed in the late 1940s, the only factor of the gross output growth (ΔY) is investment (ΔI):

$\Delta Y = \alpha * \Delta I$, where α is the marginal productiveness of capital.

In neoclassical models of economic growth, the most famous of which was the model by the Nobel Prize winner Solow (1956), investment, along with development of technologies and the human capital, act as the main factor of economic growth.

Theoretical models conclusions are confirmed by empirical studies. The analysis of various factors influence on the regional economy growth was carried out in the works by (Nikholaev, 2012; Uskova & Razgulina, 2015). Based on the analysis of economic development dynamics, the authors conclude that the main factors of Russian regions' economy growth are the level of investment activity along with the growth of the number of economically active population.

2. Problem Statement

Thus, in the conditions of negative investment dynamics in the Russian Federation as a whole, regions demonstrated different levels of investment activity. This situation speaks both of different reaction of the regional economy on the fluctuations of the world market situation, and of significant influence of regional factors on the investment process dynamics. The underestimation of the role of regional investment policy, the concentration of investments in a small number of lead regions, and low investment attractiveness in the most of regions result in an inefficient use of regional resources, which is a significant factor in the unsatisfactory dynamics of the national economy. In this context, the timeliness to form investment policy at the level of subjects of the Federation, which presents a system of measures that contribute to the mobilization of investment resources and determining the directions of their efficient use in order to ensure economic growth and improve the quality of life of the population of the region, is increasing.

3. Research Questions

Within the framework of this article, the main research question is the analysis of the factors that determine the investments dynamics, their systematization and identifying macroeconomic, sectoral and territorial factors. It is relevant to consider the matter of the efficiency of investment policy evaluation based on the analysis of the degree of the interrelation of the investment activity dynamics indicators and economic growth, and to perform a study of the factors that have a negative impact on the investments efficiency.

4. Purpose of the Study

The purpose of the study is to systematize the factors and tools that determine regional investment policy efficiency.

5. Research Methods

The research methodology includes the analysis of science literature, statistical data, as well as regional practice of investment policy implementation. The study used such methods as analysis of various theoretical concepts, a comprehensive analysis of statistical data, correlation and regression analysis, and also research findings systematization.

6. Findings

Improvement of investment process dynamics makes relevant the necessity to analyze the factors that resulted in investment activity decline. In this regard, this issue is given priority in the science literature. In the work by (Frenkel, Tikhomirov, Sergienko, & Roschina, 2016), the authors stated that the consumer demand slowdown, general uncertainty of macroeconomic situation, decline in crediting and reduction of number of investment programs in branches of the real sector of economy are among the main factors of unsatisfactory dynamics of investments.

In the work by (Berezinskaya, 2016), a negative impact of such factor as the loss of an effective channel for investment process support with resources from the world financial markets on the investment process is considered. The consequence of this was a slowdown of investment projects funding by both Russian banks and the State.

We shall further consider the factors that are formed at the sectoral level. The key industry of specialization in most regions of the Russian Federation is the manufacturing industry. In the Central Federal District, the share of manufacturing in the sectoral structure of investment in fixed assets was 14.9% in 2016. Herewith, in some regions this share is significantly higher: Tula region - 58.5%, Kostroma region - 47.8%. A similar situation is typical of the North-West Federal District regions. In general, for the federal district, the ratio of investment in manufacturing is 16.6%. At the same time, in the Vologda Region the indicator is 46.5%.

Thus, investment attractiveness of manufacturing industries is an important component of investment attractiveness of most regions of the Russian Federation. At the same time, during the period

of 2014-2016, the outputs in the industry fell by 2.9%. At this, investments fell by 16.1%. Manufacturing industry problems are largely due to the processes of de-industrialization of the Russian economy, which appears in the decrease of the share of manufacturing in the GRP in almost all Subjects of the Russian Federation as well as in the lack of competitive production capacity. In the work by (Smirnov & Dudko, 2016) the authors point out the limitedness of financial resources and, consequently, the low level of fixed assets renewal as negative factors of the investment process in the industry.

Limitedness of financial resources of manufacturing industries is primarily due to low financial performance of the industry. Indeed, in 2015, assets profitability ratio was only 4.0%. Herewith, the weighted average loan rates in 2015 exceeded 12%. With such proportion of profitability ratio and the cost of borrowed resources, the use of loans is not available for most manufacturing enterprises. The use of borrowed sources to finance investments is also tightened by a high level of companies' debt burden. So, in 2015, the share of own funds in the total amount of sources of financing of manufacturing industries was only 26.7%. Thus, the lack of own financial resources, and the difficulty of attracting borrowed funds are negative factors in the dynamics of investment in the manufacturing industry.

When analyzing sectoral factors, it is also necessary to take into account a negative impact of the macroeconomic factors discussed above. Their effect is seen in the decrease of companies' propensity to invest in real assets. So, in 2012, manufacturing companies doled out 30.9% of cash to invest in fixed assets, and about 60.2% - to purchase shares and debt securities. In 2015, the share of investments in fixed assets fell to 18.9%, and increased up to 71.7% in securities.

Along with manufacturing industry, agriculture is the key industry of the real sector of the economy in many regions. In the CFD, the share of branch, in the sectoral structure of investments in fixed assets is 6.4%. In the Bryansk region it is equal to 51.3%, in the Orel and Kursk regions it is 24.7%. Due to the less favorable natural and climatic conditions in the NWFD, the share of agriculture in the sectoral structure of investments is only 1.7%. Herewith, in the Pskov region the figure is 15.8%. Besides, in the North-West Federal District agriculture has a high level of development in the Kaliningrad and Leningrad regions.

During the crisis of 2014-2016, agriculture turned out to be one of the few well-off sectors. The output of the industrial products for this period increased by 11.3%. In addition, agriculture joined the number of industries that achieved real success in the policy of import substitution (Gnidchenko, 2016). At the same time, investment processes in the industry have negative dynamics. The index of the investment volume in fixed assets was only 87.8% for the period of 2014-2016.

Among the main factors that make negative dynamics of investment in the industry there are, first of all, low financial results. The assets profitability was 6.9% in 2015. It should be noted that the restrictions imposed on the import of agro-industrial products within counter-sanctions made possible to improve the financial situation in the industry somewhat. In 2012 the assets profitability indicator was only 3.5%. Agriculture also depends to a large extent on borrowed sources of funding, and their share is over 60% in the structure of source of funding in the industry.

In the work by (Kuznetsov, Iurkova, Shibaykin, Novikova, & Sadovnikova, 2016) a number of factors that cause inadequate level of investment activity in the agro-industrial complex along with low

financial results and difficulty to attract credit resources include new technologies insufficient use and a high level of state subsidies dependence.

Thus, at the sectoral level, low investment attractiveness is due to both the unsatisfactory financial situation and the low technological level of the real sector industries in the regions.

We shall further consider the territorial factors that determine the intensity of the investment process. The specialization of regional economies is determined by enterprises' location factors in various sectors of the economy. The economic factors of enterprises location are natural resources availability, population, labor resources, existing business potential, and the infrastructure development level. High concentration of these factors on the territory creates an agglomeration effect, which plays an important role at selecting the location of company's production capacity in modern conditions.

The role of the agglomeration factor is emphasized in the work (Rastvortseva & Ternovskii, 2016). This paper presents that agglomeration effects arise in more successful regions, stimulating concentration of resources, manufacturing enterprises and services, skilled workers, scientific and technical knowledge. In addition, investment in fixed assets also has a propensity for concentration.

The statistical data confirm the significance of the agglomeration factor. So, in 2017 in CFD Moscow had 47.3% of investment volume in fixed assets. In the NWFD it was 35.2% accounted for St. Petersburg.

In the work by (Gainanov, Biglova, & Ataeva, 2017), the availability of financial and labor resources, as well as the level of innovative activity, are considered as the main factors of territorial economic development. Regional infrastructural potential plays an important role in the rise of investment activities, as well as in the growth of region's economy. At this, the dependence between the investment in infrastructure and economic indicators are not always unambiguous. According to Crescenzi, Di Cataldo, & Rodriguez-Pose (2016), regional management quality has a significant impact on this relationship. In weak institutional conditions, massive investments in road infrastructure do not always provide the necessary return. Investments in physical infrastructure development have a big ratio in the structure of investment in fixed assets. On the whole, in the regions of the CFD the ratio amounted to 35%, and in the regions of the NWFO - 44%. The analysis did not reveal a significant impact of investments in physical infrastructure on the regions' economy growth. The correlation coefficient between the indicators was only minus 0.17. Thus, the dependence is weak and negative, which may speak of poor performance of such investments.

A region is an open system that intensively interacts with the outside world. Interregional cooperation has a special importance when solving such problems as infrastructure development, optimal allocation of production capacities, large-scale investment projects implementation, and the progressive experience extension in the field of innovative development. In the paper by Sarafopoulos & Ioannidis (2015), using the game theory methodology, the authors conclude that regions' economic activities to a large extent depend on their cooperation, and interregional negotiations on economic and social issues can improve the processes of social and economic development for each region. Interregional cooperation also contributes to the formation of cooperation of networks in various fields: economy, culture, education, etc. In the modern economy networking is becoming an important factor in regional development. Cross-border territories have great opportunities to develop interregional cooperation.

Regions make special economic zones that have necessary production infrastructure with the purpose to effectively use the potential of the cross-border situation (Uttama, 2014).

Regional economy is a relatively closed part of the national economy, which has a certain number of specialization branches. In this regard, the efficiency factors of regional investment policy can be divided into three levels: national (macroeconomic), sectoral and territorial. The systematization of these three groups of factors is presented in Table 01.

Table 01. Efficiency factors of regional investment policy

Level	Factors
National (macroeconomic)	Consumer demand level, Stability of macroeconomic situation, Terms of credit for the real sector of economy.
Sectoral	Finance results of the industry, Credit resources availability, Technological level.
Territorial	Agglomeration factor; Natural resources, production, labor, finance and innovation potential; Transport infrastructure development level; Interregional interaction; Border position.

A number of tools are used to ensure efficient use of the available investment potential within the regional investment policy. Tax exemptions (Troyanskaya, 2017) should be considered as a traditional tool to attract investments in the region's economy. In most cases, regions grant regional and local taxes exemptions, as well as graded rates on profit tax. Such benefits are valid in the special economic zone of the industrial-production type "Moglino" (Pskov region). For investors, zero tax rates are fixed on property, land tax and transport. The corporate profit tax rate is graded from 0 to 13.5% (exemption- free rate is 18%) depending on the exemption validity.

Clusters (Sarmiento Del Valle, 2017) were widely used as a tool to ensure economic growth and intensify investment process. In the Pskov region as prospective clusters were defined the following: agro-industrial, tourist and electrical engineering clusters, and in the Novgorod region - timber industry and flax manufacture.

Subjects of the Federation pay a great attention to cluster initiatives support. Cluster engineering infrastructure development, tax exemptions, subsidies, investment costs co-financing are among the most common support measures.

On the assumption of region's investment policy priorities, we can single out a number of models of the policy formation. Within the model of the region-quasi-state, the main attention is paid to the formation of regional investment legislation that ensures the balance of interests of regional authorities, population and investors. In accordance with the region-quasi-corporation model, regions become participants in the competition for prospective investment projects and resources. Within this model, the marketing approach to the formation of the investment image of the region has gained development (Budnikevych & Gavrysh, 2017).

Public-private partnership (PPP) is considered as a promising tool of regional investment policy (Uskova & Razgulina, 2015, Tsvetkov, Zoidov, & Medkov, 2017). Almost all regions of the NWFD use PPP to support investment activities. In the work by Sarafopoulos & Ioannidis (2013), the role of such factor as the level of interaction between regional government and a company when making investment decisions, is emphasized. From there, the authors conclude that local companies' strategy should link profit-making with the prosperity growth in the region, and the policy of local governments must be aimed at attracting investments to ensure the growth of the region's welfare.

The analysis of regional program documents showed that the most popular instruments of regional investment policy, in addition to the tax benefits and public-private partnerships discussed above, also include the government order, the provision of state guarantees and sureties, the maintenance of priority investment projects, the provision of land plots to investors with developed infrastructure, provision of subsidies for compensation of part of the cost of paying interest on loans.

The federal level tools also have a significant impact on the regional investment policy efficiency. These include: decline in inflation negative influence on investment processes, upturn in Russian economy business climate, decline in credit resources costs, import substitution support, infrastructure projects public finance, real economy branches soft lending (Berezinskaya, 2016).

Investments are the main factor of regional economic growth. In this regard, a comprehensive assessment of investment policy efficiency is carried out on the basis of the analysis of the relationship between the level of investment activity, which is estimated by the share of investment in GRP, and the GRP growth rate. Regions vary significantly in terms of investment share in GRP. The Komi Republic has the upper bound of the indicator - 36.6%, and the minimum is in Moscow - 12%. The Tula region had the maximum average annual gain in GRP, it was 5.16%. Meanwhile, in the Ivanovo region, the average annual decline in GRP was 4.25%. The qualitative analysis of the relationship between investment indicators and GRP does not reveal a strong relationship between them. Such regions as Belgorod, Moscow and St. Petersburg, despite a small share of investment in GRP, had rather high growth rates of GRP. At the same time, in the Komi Republic and the Tver region, having a sufficiently large share of investments in GRP, there was a decline of GRP. The quantitative analysis confirms this conclusion, the correlation coefficient between the indicators is 0.34, i.e. the indicators interrelation is positive, but rather weak.

One of the reasons for this situation is the low investment efficiency in the development of engineering infrastructure in the regions. Besides, studies have also shown a low investment efficiency level in the manufacturing fixed capital, which is largely due to their low technological level.

Innovation activity level is also a significant factor of the economy growth. In the paper, the indicator "costs of technological innovations in % to GRP" was used to measure this level. In 2016, the average value of the indicator for the regions of the Russian Federation was 1.85%. At that, the value of the indicator was over 3% in Lipetsk, Moscow and Tula regions. At the same time in Ivanovo, Arkhangelsk, Vologda and the Komi Republic, innovation costs are not larger than 0.3% over GRP. The analysis of the relationships between GRP growth rates and level of innovative activity showed weak positive correlation dependence between them, the correlation coefficient is 0.33.

To analyze the reasons why investment costs efficiency is not high enough from the point of view of the GRP growth and technological innovation costs, we shall consider the relationship between them. Table 02 presents the typology of regions according to these indicators. Qualitative analysis gives us an opportunity to conclude that there is practically no relation between the indicators. The quantitative analysis confirms this conclusion, the correlation coefficient between the indicators is -0.1, i.e. there is no relation of indicators.

Investment and innovation activity mismatch should be considered as the reason for the weak influence of investment and innovation indicators on GRP growth rates. Investment costs are mainly directed to modernize out-of-date capacity and do not allow to significantly increase the technological level of production. Herewith, technological innovation costs are not supported with necessary efforts to commercialize innovations.

Table 02. Grouping of regions by the ratio of technological innovations costs and investment share in GRP

Investment share in GRP, %	Ratio of GRP technological innovations costs, %			
	> 2.01	1.51 ÷ 2.0	1.01 ÷ 1.5	< 1.0
1 gr. >30	Tambov			Voronezh Komi Novgorod
2 gr. 25.01-30	Lipetsk Tver			Kursk Leningrad
3 gr. 20.01-25	Kaluga Tula		Smolensk Kaliningrad	Bryansk Orel Arkhangelsk Vologda Murmansk
4 gr. < 20	Belgorod Moscow Saint-Petersburg	Vladimir Ryazan Moscow	Yaroslavl	Ivanovo Karelia Pskov Kostroma

The structure of research and development funding sources should be considered as of the reasons for this situation. For example, in 2012 in the Russian Federation the state share in the structure of funding sources costs for research and development was 67.8%, and the share of business sector - 27.2%. In the states-technological leaders business sector bears the prime costs: Germany - 65.6%, Finland - 63.1, China - 74%, Japan -76.1%, USA - 59.1%.

7.   Conclusion

The systematization of regional investment policy factors is done in the paper, national, sectoral and territorial factors are identified. Such factors as consumer demand level, macroeconomic situation stability, the real sector of the economy terms for credit are among the main factors that are formed at the macro level. The following factors are classified as industry factors: financial results and availability of industry's own financial resources, availability of credit resources, technological level. At a territorial level the following factors are formed: agglomeration, natural resource, industrial, labor, financial,

innovative, transport infrastructure development level, the factor of interregional interaction and border position.

These factors efficient use within investment policy is achieved with the help of the following tools: business climate upturn, tax incentives, clusters, special economic zones, territory marketing, public-private partnerships, and priority (strategic) investment projects support.

Investments are the major factor of economic growth and creation of material conditions to improve living standards. At the same time, the necessary interrelation between the level of investment activity and the economy growth rates is not tracked at the moment. This situation is caused by insufficiently efficient use of investment resources, as well as by weak interaction between investment and innovation activities.

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