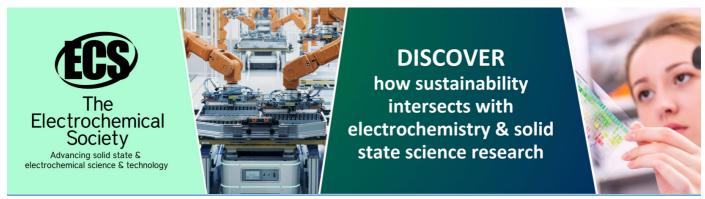**PAPER • OPEN ACCESS**

Success Factors of the Implementation of State Measures of Investments Stimulation in Russian Timber Industry

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Success Factors of the Implementation of State Measures of Investments Stimulation in Russian Timber Industry

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Abstract. Investment activity is critically important for the development of natural resource management industries in Russia. We believe that these significant volumes of natural resources that Russia possesses can be effectively exploited provided that an effective government policy that stimulates investment is formulated and implemented. When forming an effective industry investment policy, it is advisable to consider domestic and foreign experience, which necessitates a comprehensive analysis of existing investment attraction measures. Firstly, this paper provides an overview of the state investments stimulation mechanisms in natural resource sector, in particular, in timber industry. The most common and effective measures are identified, as well as the institutional features of their application environment. Secondly, the mechanism of priority investment projects implemented in Russia in the field of forest development is being examined in detail, a number of problems associated with its implementation are described. An econometric model is developed to grasp the factors determining the successful implementation of priority investment projects in Russia. The research results provide valuable information for decision making at the state level on the selection of investment projects to be supported.

1. Introduction

Investment is one of the key drivers for the development of industrial sectors. There is low investment activity in the Russian timber industry as it is considered risky and low profitable. However, some of the major players in the industry raise significant funds, often with foreign participation [1, 2]. The state seeks to stimulate investments in natural resource sectors, since the development of industrial infrastructure in these sectors will ensure the creation of products with high added value [3]. In this context, the problem of attracting investments in the natural resource sector becomes one of the priorities for the state in the formation of sectoral investment policy. The successful implementation of this task is impossible without a comprehensive analysis of the effectiveness of state incentives measures for investment. It is also advisable to consider the experience of foreign countries in the formation of investment policy in the fields of nature management.

To achieve this goal, a comprehensive review of measures to attract investment in the development of the forest industry, implemented in countries that are world leaders in timber harvesting, was carried out. We also aim to study in detail the mechanism of state support for investment projects implemented in Russia as one of the most promising measures to attract investment in the forest industry. Moreover, we have the goal of identifying the success factors of the implementation of investment projects, since there have been cases of unfair fulfillment of obligations by investors on such projects.

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2. State investment stimulation measures: an overview

2.1. Global experience of stimulating investment in the forest industry

The instruments used in the leading countries in order to increase investment activity are diverse and are largely determined by the institutional environment of their application. Given this circumstance, it should be noted that direct borrowing of the experience of other countries is unlikely to lead to a significant positive result due to the different socio-economic conditions of the implementation of investment incentive measures [4]. The process of introducing mechanisms for increasing investment activity should be carried out taking into account the climatic, natural and socio-economic characteristics of the functioning of nature management sectors. In addition, when developing such measures of state support, it is necessary to take into account the possibility of contradictions between the policy in the field of forest reproduction and other forest, environmental or energy policies of the state, which may impede its successful implementation [5].

A review of the mechanisms for attracting investments in the development of natural resource use sectors made it possible to determine the measures most often used in the leading countries in terms of the reserves of the corresponding natural resources, as well as the criteria for assessing the effectiveness of these measures. Among the most common tools, it is worth noting tax benefits [6-7], as well as government subsidies in various forms [8-10]. Government subsidies are often implemented in the form of cost-sharing programs, which involve government payments to loggers in order to cover part of the costs associated with the use of certain methods or activities.

Among the factors influencing investment activity in the forestry complex, there are the expected standing prices, forest owner costs per forest unit, interest rate, sensitivity of growing stand to forest management measures, and the value of non-timber benefits from forests [11]. Despite the fact that most of these factors are determined by the market, the state can still directly or indirectly influence some of them through the development of appropriate policies, thus creating incentives for forestry development. Also, among the measures to induce forest users to use certain methods or types of activities, in addition to the above, educational programs, price premiums and preferential access to contracts are distinguished [8]. Price premiums here refer to additional payments per unit of output under a contract in exchange for certain practices or activities, and preferential access to contracts refers to a priority status transferred to a forest user in exchange for certain practices or activities. In addition, the institutional environment for the functioning of the forestry complex is of great importance, in particular, the system for protecting property rights to forest lands, which many researchers identify as a key factor in the investment attractiveness of the sector [11-13].

In general, investments in the forestry complex of a country or region are attracted through the application of a combination of state and market incentives, taking into account the characteristics of the institutional environment, as well as restrictions on climatic and natural conditions.

2.2. State investment stimulation measures in Russian forestry

State support programs for the forestry industry in Russia include, mainly, programs for the development of non-resource exports, state support for investment projects for the development of the timber industry, various programs of budget subsidies, as well as programs to support certain areas of industry development - pulp and paper production and wooden housing construction [14]. The instruments of support within the framework of these programs are direct government subsidies, mechanisms for reimbursing costs to investors, incentives on payments for resources and soft loans.

Comparing the Russian experience with world practices, it is worth noting that the most common measures to stimulate investment in logging countries - government subsidies and concessional lending - are also used in Russia. In addition, the peculiarities of the development of the forest complex determine the existence of measures specific to Russia. This is, first of all, state support for investment projects, since the implementation of projects for the creation and modernization of production facilities is one of the main tasks in the development of the timber industry as an investment attractive industry. The creation and development of large projects in the logging and

timber processing industry provides the region with an inflow of long-term financial resources in the form of state support [15]. This, undoubtedly, determines the need for regional authorities to provide conditions for the actual implementation of such projects, in particular, to effectively counter illegal loggers, monitor forest conservation and reforestation activities, and provide feedback between enterprises and the government.

3. State support of investment projects in Russian timber industry

3.1. Priority investment projects in the field of forest development

Among the measures implemented to attract investments in the forestry sector in Russia there is the mechanism of priority investment projects in the field of forest development. This measure implies the provision of various benefits to investors at both federal and regional levels, including preferential terms for the lease of forest plots, in exchange for an obligation to create or modernize infrastructure facilities of the timber industry complex. Priority investment projects include projects for the modernization of forestry infrastructure facilities, including the processing of wood waste for bioenergy purposes, with a minimum capital investment of at least 2 billion rubles, as well as for the creation of forestry infrastructure and woodworking infrastructure with a minimum volume of capital investments of at least 3 billion rubles [16].

The implementation of this mechanism in Russia is recognized as expedient and necessary [17-19]. We also consider it a highly promising measure to stimulate investments in timber industry. However, in reality it is carried out with multiple disturbances [20-21]. There are also often cases of failure by investors to fulfill their obligations. In this regard, it seems relevant to study the factors that determine the successful implementation of projects in the field of forest development.

3.2. Success factors of the investment projects implementation

Methods. To identify factors that have a statistically significant effect on the project's viability we used econometric model based on a logit regression. The dependent variable reflects the fact of the successful implementation of priority investment project in the field of forest development. A project is considered to be successfully implemented if the project obligations are fully met or if it is actually being carried out at the present time.

Some of the variables used are logarithmic due to the uneven distribution of their values. The presented regression was estimated using 71 observations. The logit model was estimated using the maximum likelihood method. Standard errors are estimated using the quasi-maximum likelihood method (QML).

Results. The results of the regression assessment, presented in Table 1, made it possible to establish a statistically significant relationship between some characteristics of an enterprise that is an applicant for an investment project and the probability of successful implementation of this project.

We assume that the mean revenue of an enterprise can be considered as an indicator of its size. We also hypothesize that larger enterprises are more likely to meet investment project commitments.

The volume of consumed raw materials is declared by the enterprise when submitting an application for the inclusion of an investment project in the priority list. Thus, it reflects the scale of the investment project itself. The volume of investments also expresses the scale of the project, but it determines the amount of financial resources for the implementation of the project, while the volume of raw materials shows how much forest resources the investor expects to receive.

We also consider it necessary to take into account climatic factors. Timber harvesting in Russia is carried out mainly in the winter period, so we included the factor of the average temperature in January in the project implementation region.

Table 1. Regression model estimation results.

Dependent variable: successful implementation of the investment project		
	Coefficient	Marginal Effect
log (Mean revenue)	1.071^{***}	0.263
log (Volume of consumed raw materials)	-1.093^{*}	-0.268
log (Investment volume)	-0.154	-0.038
The average monthly temperature, January	-0.002	-0.0004
const	-5.004^{*}	
Pseudo-R^2	0.3954	
The share of correctly predicted observations, %	81.2	
*** — the estimate is significant at the level of 1 %; * — 10 %.		

Discussion. The coefficient on the mean revenue was found to be statistically significant at the 1% level. The marginal effect of this variable is 0.263, which means that an increase in the average revenue of an enterprise is associated with an increase in the likelihood of successful project implementation. Thus, the obtained estimate made it possible to establish the existence of a statistically significant relationship between the scale of an enterprise that is an applicant for an investment project and the probability of successful implementation of this project. Perhaps, larger enterprises have adequate opportunities for the implementation of large investment projects, which means that the projects announced by such enterprises have a high probability of success.

Furthermore, the estimated coefficient at the logarithm of the volume of consumed raw materials also significantly differs from zero at the level of 10 %. The marginal effect of this variable is −0.268, which means that projects with higher volume of consumed raw materials are less likely to be successfully implemented. Perhaps this dependence is associated with the desire of unscrupulous investors to exaggerate the scale of investment projects, the obligations on which they initially do not plan to fulfill.

4. Conclusion

The low level of investment in Russian timber industry seriously limits its development, since the lack of timber processing infrastructure does not allow to create products with high added value and to compete with world leaders in the forest products market. The analysis of studies has shown that the most common economic measures of state support for the forestry industry are tax incentives, preferential lending and government subsidies. The latter are implemented in various forms in different countries, such as cost-sharing programs in the United States or programs to support investment projects in Russia. Since state support for large investment projects in Russia can be a very attractive initiative, but is actually implemented with a number of disturbances, we considered the possible influence of factors associated with project applicants on their implementation.

The above findings allow us to assume the need to create more stringent requirements for the size of the applicant when selecting investment projects for inclusion in the priority list. Enterprises with stable revenues at a level that allows the enterprise to receive net profit, are probably more conscientious in terms of fulfilling obligations on projects supported by the state.

The prospect of this study is the further search for factors that determine the success of the implementation of priority investment projects in the field of forest development. It is also necessary to increase the size of the sample under study. Thereafter we are going to formulate specific proposals for improving the mechanisms of state incentives for investment in the timber industry based on the results obtained.

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