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Foreign Experiences in Risk Management in Financing Social Investment Projects Based on Public-Private Partnerships

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Abstract: This scientific article is devoted to the issues of identifying, assessing and managing risks arising in the process of financing social investment projects (education, healthcare, utilities) implemented on the basis of public-private partnership (PPP) mechanisms. During the study, a comparative analysis of the best practices of the United Kingdom, Australia, Canada and developing countries was conducted. In particular, Value for Money (VfM) analysis, risk allocation matrix and mechanisms for ensuring financial stability were studied. The article develops scientifically based proposals for mitigating demand risk, exchange rate fluctuations and political risks, based on the specific characteristics of projects in the social sector. The results obtained are of great importance for encouraging private capital participation in the development of social infrastructure and minimizing fiscal risks in the conditions of Uzbekistan.

Keywords: Public-Private Partnership (PPP), Social Investment, Risk Management, Project Finance, Risk Allocation Matrix, Value for Money (VfM), Availability Payment, Institutional Investors, Infrastructure

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1. Introduction

In the context of the globalization of the world economy and population growth, the demand for social infrastructure is increasing sharply. Traditional methods of financing from the state budget in many cases cannot fully meet modern requirements, in particular, the need to improve the quality of education, healthcare and social services. Therefore, Public-Private Partnership (PPP) mechanisms are emerging as a strategically important tool in the implementation of social investment projects. According to the World Bank, the gap in financing infrastructure projects in developing countries exceeds 1 trillion US dollars annually [1]. In order to fill this gap, it is important to attract private sector capital and management experience.

In the Republic of Uzbekistan, large-scale reforms have also been carried out in recent years to liberalize the economy and modernize infrastructure. The adoption of the Law of the Republic of Uzbekistan "On Public-Private Partnership" has created a legal foundation in this area. However, projects in the social sector (schools, hospitals, kindergartens) are characterized by a long commercial payback period and relatively low profitability. This increases financial risks for private investors [2].

Risk management in social investment projects is fundamentally different from economic infrastructure projects (roads, airports). While economic projects often rely on user fees for revenue, social projects rely on "availability payments" paid by the

government. This creates a complex system of risks related to credit risk, operational efficiency, and long-term contractual obligations [3], [4].

The purpose of this study is to conduct an in-depth analysis of the experience of foreign countries in risk management in financing social projects based on PPPs and identify effective mechanisms that can be applied to the practice of Uzbekistan [5].

Literature Analysis and Methods

Literature review

The theory of PPP and issues of risk management are widely covered in foreign economic literature. In his fundamental works, ER Yescombe divides risks in financing PPP projects into "construction", "operational", "demand" and "financial" risks and puts forward the "golden rule" of their distribution between the parties: the risk should be assigned to the party that can best manage it [6], [7].

Grimsey and Lewis emphasize the specificity of risk management in social infrastructure projects, justifying the expediency of the public sector to assume more political and regulatory risks, and the private sector to assume design, construction and operational risks [8], [9]. In their opinion, the risk of "service quality" is of paramount importance in social projects.

Irwin et al. focus on fiscal risk management, warning that government guarantees and contingent liabilities can threaten fiscal sustainability. They point to the experience of Chile and Colombia as examples and emphasize the need for a transparent system for accounting for and disclosing PPP liabilities [10].

Asian Development Bank (ADB) studies have noted that currency risk is one of the biggest obstacles in developing countries. Foreign investors want to receive income in hard currency, while social projects generate income in local currency. Various hedging instruments and government subsidies are proposed to manage this imbalance [11].

examined the risk assessment methodology within the UK PFI (Private Finance Initiative) model and demonstrated the effectiveness of using Monte Carlo simulation in quantitative risk assessment [12].

2. Materials and Methods

The following scientific research methods were used in this article:

1. Comparative analysis: By comparing PPP models from countries such as the United Kingdom, Australia, Canada, and South Korea, common patterns and differences were identified.
2. Synthesis and deduction: Conclusions were drawn for Uzbekistan by summarizing theoretical views and practical experiences.
3. Document Analysis (Content Analysis): Reports of international financial institutions, regulatory and legal documents, and scientific articles were studied.
4. Systemic approach: Risks in social investment projects were viewed as a holistic system and their interrelationships were analyzed.

3. Results and Discussion

Risk classification and distribution models in foreign experience

World experience shows that the key to success in PPP projects in the social sector is the correct allocation of risks. The main foreign models are analyzed below.

1. The UK model (PFI/PF2): The UK is a pioneer in the field of PPP. Under the PFI (Private Finance Initiative) model, the private sector assumes all construction and operational risks in the construction of schools and hospitals. The state makes payments based on service quality standards. However, the 2008 crisis and the bankruptcy of Carillion showed that excessive risk-taking by the private sector leads to an increase in the cost of the project. As a result, the PF2 model was introduced, in which the state participates as a shareholder in the capital and assumes some macroeconomic risks [13].

2. Australia and Value for Money (VfM): The Australian experience is characterized by the use of the Public Sector Comparator (PSC) method. This method compares the cost of implementing a project by the government in a traditional way with the cost of implementing it through a PPP (taking into account risks). If it is cheaper for the government to transfer the risks to the private sector, the project is implemented on a PPP basis. In Australia, in social projects, the "demand risk" (for example, the number of patients in a hospital) is usually left with the government, since the private investor cannot control the population size or the level of morbidity [14].
3. Canadian Model – Healthcare : Canada is known for its PPP projects in healthcare. Here, the risk management is completely transferred to the private sector, with the "construction risk" being transferred. If the building is not completed on time, the government does not start paying. This creates a strong incentive to complete projects on time and within budget. Canada makes extensive use of the bond market to manage financial risks, which allows for the attraction of long-term, low-cost resources.

Specific mechanisms for risk management in social projects

Since the source of income in social investment projects is not directly from users (the population), but from the state budget, the following risk management mechanisms are used :

- a. Availability Payments : Once a private partner has built and operated a facility, the government makes regular payments to the private partner to ensure that the facility is operational. If a school's heating system fails or a hospital's elevator breaks down, the payments are reduced as a penalty. This mechanism is considered the most effective way to manage operational risk [15].
- b. Step-in rights: Financing banks have the right to replace the private partner if the project fails. This reduces credit risk and ensures the continuity of the project.
- c. Currency risk hedging: In developing countries (e.g. Indonesia, India), governments have set up exchange rate guarantee funds for infrastructure projects. If the national currency depreciates sharply, the difference is covered by this fund. This is the most important guarantee for foreign investors.

Discussion and critical analysis

Although foreign experience is rich, it is not advisable to blindly transfer it to Uzbekistan. For example, criticism of PFI projects in the UK is that long-term contracts (25-30 years) "freeze" the state budget and impose a hidden debt on future generations. Given the high inflation and exchange rate volatility in Uzbekistan, full private financing can be very expensive.

Therefore, it is advisable to use a financing mechanism called "Viability Gap Funding" (VGF). In this case, part of the project costs (for example, 20-30%) is covered by the state in the form of a grant during the construction phase, and the rest is contributed by a private investor. This increases the financial attractiveness of the project and reduces tariffs (or government fees). The Indian experience has shown that the VGF mechanism is very effective in social projects [16].

The conducted analyses and theoretical approaches, the following results and classifications were formulated regarding risk management in financing social investment projects. These results represent a hypothetical model adapted to the conditions of Uzbekistan.

1. Financial modeling results: Analysis shows that the use of the "Availability Payment" by the state in social projects, compared to direct financing from the budget, allows saving costs during the project life cycle by 10-15%. These savings are achieved due to innovative solutions and construction quality control by the private sector. However, to achieve this result, transaction costs should not exceed 3-5% of the project cost [17].

2. Proposal for an institutional mechanism: The need to establish an "Infrastructure Guarantee Fund" for social PPP projects in Uzbekistan has been identified. This fund will provide partial guarantees for private investors' credit obligations and provide liquidity in cases of force majeure. According to calculations [18], such a fund can reduce the cost of financing projects (interest rate) by 2-3 percentage points.
3. Quantitative risk assessment: A hypothetical analysis based on Monte Carlo simulations showed that the greatest financial losses in social projects are associated with construction delays (25% probability) and inflation exceeding forecasts (40% probability). Therefore, the introduction of an inflation-linked indexation mechanism in contracts increases investor confidence by 60% [19], [20].

4. Conclusion

This study analyzed foreign experience in risk management in financing social investment projects based on public-private partnerships. The study concluded the following main conclusions:

First, social infrastructure projects (schools, hospitals), unlike economic projects, do not allow the commercial risk (demand risk) to be fully transferred to the private sector. The most effective model is for the private sector to bear the construction and operational risks, while the state makes "availability payments" for the quality of service.

Second, the experience of the UK, Canada and Australia shows that transparency and Value for Money analysis should be central to risk management. A project should only be implemented as a PPP if it is more efficient than traditional public procurement.

Third, in emerging markets like Uzbekistan, currency and political risks are a major barrier for investors. Therefore, it is recommended that the government introduce mechanisms for partial coverage of currency risks (hedging) and a Viability Gap Funding (VGF) system.

Fourth, it is advisable to strengthen the institutional framework for risk management, in particular, to increase the capacity of the PPP Development Agency under the Ministry of Finance and create a single electronic database for monitoring fiscal risks.

In conclusion, the application of risk management tools tested in foreign experience, adapted to the legislation and economic environment of Uzbekistan, will serve to attract large-scale private investments in the modernization of social infrastructure in the country and increase the efficiency of budget funds.

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