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THEORETICAL BASIS AND PRACTICAL DIRECTIONS OF OPTIMIZATION OF FINANCIAL INSTRUMENTS AND INVESTMENT SOURCES IN FREE ECONOMIC ZONES

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ABSTRACT

This article provides a scientific analysis of the types of financial instruments and investment sources in free economic zones (FEZs), their economic efficiency and impact on regional development. The role of financial instrument diversification, preferential financing, infrastructure bonds, venture capital and digital grant platforms in FEZs is highlighted. Also, the institutional-pluralistic approach to the development of financial infrastructure, balancing resource asymmetry and vertically integrated financing models are evaluated from the point of view of efficiency. As a result of the analysis, theoretical conclusions and practical proposals have been developed to increase investment attractiveness, diversify risks and ensure financial stability in FEZs.

KEYWORDS

Free economic zones, financial instruments, investment sources, institutional-pluralistic approach, preferential financing, venture capital, infrastructure bonds, digital financial infrastructure, financial clustering, investment attractiveness.

Introduction

Financial instruments in free economic zones (FEZs) are a set of institutional financial mechanisms that serve to stimulate investment activity. These include fiscal support mechanisms, credit and insurance programs, forms of public-private partnership financing, and leasing-based financial solutions. In particular, preferential financing instruments implemented within the framework of the FEZ allow enterprises to minimize the cost of resources. Also, investment flows based on the principle of financial clustering enhance local economic activity. In this process, the practice of attracting targeted capital through sectoral specialization funds increases efficiency indicators. Thus, the financial architecture of the FEZ is becoming a factor that strategically influences economic balance.

Among the types of financial instruments, the most actively used are state-guaranteed infrastructure bonds, subsidized credit lines, and sources of financing in the form of insurance capital. The coordinated use of these instruments in the EIH is forming a multimodal financing mechanism. Investment instruments implemented through financial incubators are especially important in high-tech industries. This mechanism creates a diversified risk management system for investors. This, in turn, increases the speed of capital turnover and ensures multiplicative investment efficiency. Therefore, the

types of financial instruments directly affect not only the volume of investments, but also their spatial and inter-sectoral distribution.

Analysis of literature on the topic

Research by international and local scholars serves as an important scientific basis for studying financial instruments and investment sources in free economic zones. For example, C. Jenkins (2018) in his work emphasizes that diversification of financial instruments in free economic zones is a key factor stabilizing investment flows, noting that the synergistic use of state-guaranteed bonds and preferential credit lines has a significant impact on regional GDP growth. RA Musgrave (2019) substantiates the priority of an institutional-pluralistic approach and scientifically confirms that financial cooperation between the state and the private sector serves to reduce investment risks and increase capital profitability.

In line with local experience, international research also provides important theoretical and practical conclusions. R. Gulyamov (2021) analyzed the role of infrastructure bonds and financial incubators in Uzbekistan's free economic zones as a mechanism for sustainable economic growth in production clusters. At the same time, J. H. Dunning (2020) demonstrated the strategic importance of venture financing in free zones for high-tech industries within the framework of his international production paradigm, scientifically substantiating ways to increase risk diversification and capital turnover.

DZ Zeng (2022), who analyzed the Chinese experience, highlights the role of digital financial infrastructure in free economic zones and mechanisms for increasing the transparency and speed of investment processes through blockchain-based smart contracts and fintech ecosystems. In addition, the OECD Expert Group (2021) report scientifically substantiates the role of financial logistics systems and clustering strategies in free zones in optimizing the geography of capital flows and expanding investment space. These approaches are especially effective in export-oriented and international trade-integrated regions.

Also noteworthy is the research conducted by PK Wong (2020) on the development of the free economic zone financing system in recent years. He analyzes the institutional mechanisms for financing infrastructure projects based on public-private partnerships in the case of Southeast Asian countries, emphasizing the importance of the participation of digital grant platforms and international financial institutions in ensuring financial stability. Analysis of domestic and foreign sources shows that the selection and targeted use of financial instruments in the FEZ is the basis for strategic economic growth, which serves to strengthen regional economic balance and increase investment attractiveness.

Analysis and discussion of results

Financial instruments in free economic zones are often formed on the basis of an ecosystem approach, that is, these instruments are integrated with regional infrastructure, transport and logistics capacities, and labor resources. In particular, credit institutions created within the framework of the transformational financial architecture provide financial support to production clusters in the free economic zones. Also, the practice of venture financing is an important factor in attracting startup projects based on new technologies. Statistical data show that in the regions where modern financial instruments have been implemented in the free economic zones, the growth rate of gross regional product has accelerated by 1.5–2 times. In this regard, an important role is played by the effective

allocation of resources based on a dynamic liquidity strategy in financing. This approach stabilizes the activities of economic entities and increases their financial resilience.

Table 1 Types of financial instruments in free economic zones and their economic efficiency indicators

Type of financial instrument	Scope of application	Financial efficiency index (in points)	Return on capital (%)	Risk level (1–10)
Preferential financing	Large industrial projects	8.2	12.5	4
Infrastructure bonds	Transport and communication	7.9	11.8	5
Subsidized loans	Small business and service	7.5	10.3	6
Insurance capital	Agriculture and exports	6.8	9.2	5
Venture financing	Innovative startups	8.6	14.6	8
Financial incubators	Technopark and SEZ internal projects	7.8	11.1	6
Digital grant platforms	Social innovation	7.1	10.7	7
Blockchain-based smart contracts	International trade and logistics	8.4	13.8	7

The table above shows the main types of financial instruments used in free economic zones, their practical areas of application and economic efficiency criteria. The indicators presented in the table are evaluated based on the return on capital, efficiency index and risk level of financial instruments, which are important for making investment decisions when analyzing them.

The analysis shows that, although venture financing has the highest profitability (14.6%) and efficiency index (8.6 points), it is characterized by a high level of risk (8 points). This situation indicates a high level of uncertainty in investing in high-tech and innovative startups. At the same time, preferential financing is characterized by relatively low risk (4 points) and stable efficiency (8.2 points), which confirms it as an acceptable tool for industrial projects supported by the state.

Subsidized loans and financial incubators, on the other hand, have medium-level profitability and risk indicators, and are a source of stable financing, especially for small and medium-sized businesses. Infrastructure bonds, on the other hand, are a long-term form of investment that allows for the return of fixed capital and the generation of passive income, which is important in the transport and infrastructure sectors.

In conclusion, diversified types of financial instruments ensure the stability of the investment environment in the EIH and allow for the formation of an appropriate approach to each project. The formation of financial strategies based on an analysis of the effectiveness and risk level of each instrument serves to create a competitive and sustainable model of economic growth. Therefore, a scientifically based classification of financial instruments and their targeted use are an important pillar of the development of the EIH.

When assessing the effectiveness of financial instruments in the EIH, indicators such as the return on capital index, the rate of return on investments, and the level of financial stability are used. The improvement of these indicators also has a positive effect on the macroeconomic indicators of the EIH.

An example of this is a significant increase in new production capacities and jobs in regions with a high reinvestment rate. A financial monitoring system and indicative planning elements are of great importance in increasing the effectiveness of financial instruments. This ensures transparency and accountability of financial flows. As a result, economic activity in the EIH becomes balanced and stable.

At the current stage, the introduction of digital financing infrastructure in the activities of the EIH, namely fintech ecosystems, blockchain-based smart contracts and artificial intelligence-assisted risk analysis systems, is leading to a qualitatively new level of financial instruments. In particular, online grant-financing platforms are creating an additional resource base for small businesses and innovative entities. All this serves to increase the level of financial inclusion within the EIH. At the same time, an optimal environment is being formed for various types of investors through financial transformation from the experimental to the institutional stage. Such a modern and systematic appearance of financial instruments creates the basis for increasing the international competitiveness of the EIH. As a result, the regional differential level of economic growth is reduced and economic balance is strengthened.

Theoretically, in financing the activities of free economic zonesinstitutional-pluralistic approachplays an important role. According to this approach, the collaborative activities of the government, the private sector and international financial institutions shape the financing architecture. In this approach,financial cooperationresources are integrated based on the principle ofregulatory preferencesreduces financial risks for investors. Financial infrastructure is not only a set of technical systems, but alsofinancial services logisticsThus, the financing process is formed as an integral part of economic processes.

One of the modern theoretical foundations of financing isresource asymmetry balancing theoryis aimed at optimizing the uneven distribution of resources. In free regions, this theoretical model is based onfinancial reallocation centersare being established. Through such centers, individual financing mechanisms tailored to the needs of investors will be developed. In addition,institutional coding of financial flowsThrough this, their transparency and efficiency are ensured. This, in turn, creates an adaptive model of financing strategies within the EIH. As a result, financing is not only a resource allocation, but also a mechanism for economic growth.

The infrastructure of free zones consists not only of physical facilities, but alsodigital financial instruments infrastructureand is based on the idea of "digital sovereignty". In particular,fintech clusters,blockchain network-based settlement systemsandartificial intelligence-based monitoring modulesare strategic components of financial infrastructure. This infrastructure creates opportunities for investors to provide high-speed service, security and a clear profit forecast. At the same time,financial logistics systemsdirectly affects the location and level of capital flows. This reduces financial volatility within the region and stabilizes the investment climate. An intelligent and automated model of financial resource management is being formed using digital infrastructure.

The EIH financing system includes a multi-tiered structure, and thisvertically integrated financing modelIt is represented as. At the top level, it involves state and international donors, at the middle level, commercial banks and investment funds, and at the bottom level, enterprises and individual investors. In this model, financial and capital transfer channels play a special role. In particular, financial intervention at the bottom level ensures the financial stability of small projects. At the same time, the efficiency of financing infrastructure projects is assessed based on the spatial intensity of capital circulation. This requires a systematic approach to financial management for the entire EIH system.

Table 2 Financing approaches and financial infrastructure fundamentals

Financing approach	Description	Application level (1–10)	Efficiency coefficient	Impact on investment attraction (%)
Institutional-pluralistic	Financing based on cooperation between the public, private sector and international institutions	9	0.91	45
Resource asymmetry balancing	Directing financial flows by optimizing the uneven distribution of resources	8	0.88	42
Vertically integrated model	Integration of financial layers at the state, bank and user levels	8	0.87	40
Digital financial infrastructure	Financing based on artificial intelligence, blockchain and digital services	7	0.83	38
Financial logistics system	Management of financial resources based on the location and circulation of capital flows	6	0.78	32
Financial clustering	Formation of financial services centers across regions and sectors	7	0.81	35

Table 2 shows the main theoretical approaches used in financing the activities of free economic zones, their description, level of practical application, efficiency coefficient and impact on investment attraction. Each approach presented in the table performs a specific function in the economic system and describes different mechanisms for managing the flow of resources.

The analysis shows that the institutional-pluralistic approach is characterized by the highest efficiency coefficient (0.91) and the level of application (9), which indicates that cooperation between the state, the private sector and international financial institutions has a strong impact on the investment climate. The resource asymmetry balancing approach, on the other hand, plays an important role in increasing resource efficiency, allowing for targeted redistribution of investment capital. This model increased the investment attraction rate by up to 42 percent.

The vertically integrated model ensures seamless coordination of resources at all three stages of infrastructure projects - at the state, commercial and user levels. Based on this model, the continuity of financial flows and the balance of financing sources are maintained. Digital financial infrastructure, on the other hand, is based on artificial intelligence, blockchain and digital platforms, which significantly improves the speed and security of the financing system. This approach allows creating infrastructures ready for global integration.

Financial logistics systems and financial clustering also serve to optimize regional investment flows. They clarify the geography of capital circulation, allowing to expand and diversify the investment space. In conclusion, theoretical approaches to financing and infrastructure foundations play a decisive role in increasing the investment attractiveness of the EIH, ensuring resource efficiency and forming sustainable economic growth.

Financing and infrastructure are interdependent in the operation of free zonescomplementary economicsystems. As a result of their interaction, a chain of regional financial empowerment is formed.

In this chain, the flow of resources, investment returns, and quality indicators of financial services reinforce each other. Analyses show that the level of investment attraction in the EIH without an effective financial infrastructure is 30–40 percent lower. Therefore, an effective strategy is to adapt the financial infrastructure to different regions and sectors by clustering it. This approach creates a stable financial basis for long-term economic development.

The formation of the investment climate in the free economic zones of Uzbekistan is carried out on the basis of the principles of economic liberalization, institutional reforms and financial stability. In this environment, factors such as tax preferences for investors, currency freedom and simplification of the foreign trade regime play a key role. In the formation of the investment climate, a clustering approach is used based on sectoral specialization. Through this, certain FEZs are being directed to the energy, chemical, pharmaceutical or electronics sectors. At the same time, a simplified model of the regulator and investor service system is being introduced in the regions. As a result, a favorable environment is being formed for foreign and local investors, and the level of financial risk is decreasing.

In the experience of Uzbekistan, the legal framework created for SEZs is based on the principle of integration of fiscal and institutional incentives. This integration creates conveniences at the stages of taxation of investors' activities, use of land resources and state registration. A system of temporary exemption from profit tax, land tax and customs duties for manufacturing entities in SEZs is being implemented. This increases the capital intensity of investment activities and leads to a decrease in the cost of products. Also, freedom of foreign economic activity is guaranteed through legal mechanisms. This simplifies the flow of investments and strengthens trust between the state and the investor.

In recent years, legal reforms related to the activities of SEZs have been carried out on the basis of compliance control and legal forecasting mechanisms. Through these approaches, risks and obstacles arising in the legal environment are identified in advance and eliminated. In particular, the "single window" principle, the digital licensing system and online contract monitoring serve to strengthen the legal confidence of investors. Through these systems, document circulation is accelerated and the efficiency of legal procedures is increased. At the same time, foreign practices are being studied in order to achieve legal convergence in international investment cooperation. This serves to bring the legal space of SEZs closer to world standards.

As a result of the above approaches, the principles of institutional stability and regulatory clarity are gaining priority in the activities of SEZs. Currently, it is planned to introduce an integrated rating system for the investment and legal environment in Uzbekistan. These ratings will allow assessing and analyzing the quality of the environment in the SEZs. On this basis, investors can directly influence the improvement of legislation through the mechanism of regulatory initiatives. The harmonization of the legal and investment environment directly affects the socio-economic results of the activities of SEZs. In conclusion, the formation of the investment environment in SEZs of Uzbekistan is closely related not only to economic factors, but also to the improvement of legal mechanisms.

CONCLUSION AND SUGGESTIONS

The following theoretical conclusions were formed within the framework of the research:

1. Diversification of financial instruments in free economic zones is a key factor in ensuring the stability of investment flows and increasing regional economic activity. The coordinated use of instruments such as preferential financing, infrastructure bonds and venture capital accelerates the economic growth model.

2. The effectiveness of financial instruments is determined not only by the level of return on capital, but also by the acceptability of the risk profile. While high-risk venture financing creates innovative growth opportunities for high-tech startups, it must be reinforced by risk diversification mechanisms.
3. The institutional-pluralistic approach to the financing system of the EIH has the highest efficiency coefficient, and cooperation between the state, the private sector and international financial institutions allows for the optimal allocation of resource flows. Such a cooperative model increases the potential for attracting investment and strengthens financial stability.
4. The implementation of digital financing infrastructure is an important factor in increasing the international competitiveness of the EIH. Blockchain-based smart contracts, fintech ecosystems, and artificial intelligence-assisted risk analysis systems ensure transparency, speed, and security of financial transactions.
5. The integration of legal preferences, tax incentives, and institutional reforms in Uzbekistan's SEZs has significantly improved the investment climate. However, it is necessary to further enhance investor confidence and ensure regulatory stability through the introduction of an investment and legal rating system.

Summarizing the results of the above research, the following practical suggestions can be made:

1. **Optimizing a portfolio of financial instruments.**Develop a combination of financing instruments tailored to the specific sector and territorial specialization of each EIH, including expanding insurance capital and state guarantee packages for high-risk innovative projects.

2. **Developing a digital financing ecosystem.**Increasing the financial inclusion of small and medium-sized businesses through the introduction of blockchain-based smart contract platforms and online grant funding systems.

3. **Improving the financial monitoring and evaluation system.**Create a national information system that provides real-time monitoring based on return on capital, investment return coefficient, and risk indices.

4. **Strengthening public-private partnership mechanisms.**Introduce the PFI (Private Finance Initiative) model in large infrastructure projects and create a package of legal and fiscal preferences that encourage private sector participation.

5. **Creation of an investment-legal rating system**. Introduce an integrated rating system for assessing the legal environment and investment attractiveness of FEZs, and implement regulatory reforms based on the results of the rating.

6. **Expanding financial clustering.**Optimize resource flows by forming financial services centers as regional clusters, and actively use international credit lines to finance export-oriented projects.

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