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Assessing the Feasibility of Establishing Special Economic Zones: Geo-economic Mapping Method

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ABSTRACT

The purpose of the study is to systematize factors of successful and sustainable functioning of special economic zones, as well as to develop tools to map of zones on a map of a country with the competitive advantages of individual territories identified therein in order to make recommendations for improving the zonal policy. **The relevance of the study** is due to the fact that in the context of global shocks, a special preferential regime, flexible governance models of special economic zones are not determinants of their successful application in order to promote national investment strategies. The geo-economic advantages of the territories within which the special economic zones operate come to the fore. Such advantages are the basis for the formation of poles of economic, commercial, industrial and innovative growth. The use of methods of theoretical (analysis, synthesis, generalization) and empirical (comparison, measurement) research allowed the authors to reveal the content of effects associated with the functioning of special zones, to highlight the problems of their measurement; to generalize the features of preferential regimes of Russia; to systematize the geoeconomic factors of successful and sustainable operation of special zones. The method of geo-economic mapping was used to identify the correspondence between the competitive advantages of territories and special zones created within their borders. As a **result**, it is proposed to classify key geo-economic factors that determine the potential successful functioning of special zones into three groups: spatial, economic and organizational. These groups of factors, according to the authors, should be considered in terms of formation and retention of geo-economic advantages: general, caused by public management and specialized. The method of geo-economic mapping identifies regions whose special zones correspond to the level of development of the identified geo-economic advantages, as well as those whose conditions are most likely not to maximize the effect of the special zones localized in their territory. It is recommended to establish a system for monitoring the conformity of specialization of regions with the profile of special economic zones established within their borders.

Keywords: special economic zone; sustainable functioning; effects; geo-economic factors; geo-economic advantages; geo-economic mapping method; investment strategies; preferential regime

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INTRODUCTION

Special economic zones (further — SEZ) are specific instruments that contribute to: attracting domestic and foreign investors by compensating for the shortcomings of the investment climate; increasing the volume of industrial exports by providing trade preferences to residents; increasing employment by organizing new industries by investors[1]; integration into global supply chains by reducing transaction costs[2]; implementing structural reforms and improving environmental sustainability [1]. At the same time, the achievement of the aforementioned effects of SEZs at the planning stage of the zone cannot be guaranteed.

The monitoring of SEZs,[3] conducted by UNCTAD experts during 2007–2012 showed that the average SEZ value for the period increased by 15%, approximately 3% below the GDP growth of the SEZ-based countries. SEZs can support growth, but they are not a prerequisite for this process. In some cases, investment and trade flows did not increase, despite the presence of a "critical mass" of SEZs [2–4] in a certain territory. A large number of zones are not closely linked to the base territory and therefore do not contribute to its advanced development [5].

For many countries, assessing the effectiveness of the SEZ is not a priority. In some cases, there are no mechanisms for reorganizing or closing SEZs when the fact of their "financial insolvency" is confirmed, i.e. the amount of public investment in the development of the zones exceeds the value expression of the effects generated by them [6, 7].

[1] Special Economic Zones: An Operational Review of Their Impacts. World Bank; 2017. URL: https://openknowledge.worldbank.org/handle/10986/29054 (accessed on 12.03.2024).

[2] World Investment Report 2020: International Production Beyond the Pandemic. United Nations Conference on Trade and Development (UNCTAD); 2020. URL: https://unctad.org/system/files/official-document/wir2020_en.pdf (accessed on 12.03.2024).

[3] World Investment Report 2019: Special Economic Zones. United Nations Conference on Trade and Development (UNCTAD); 2019. URL: https://unctad.org/system/files/official-document/wir2019_en.pdf (accessed on 12.03.2024).

MODELS OF FINANCIAL SECURITY FOR EXPENSES IN THE FRAME OF SEZ

The decision to develop a potentially successful and sustainable zonal program always involves an assessment of the disadvantages arising from the functioning of the SEZs created. There are three types of such costs: investment, operational (including managerial) and costs associated with the special preferential regime of conducting business within the SEZ.

The investment costs, which can be very significant at the planning stage of the establishment of the SEZ, depend mainly on three elements: location (determines the need to build transport infrastructure facilities to serve the zone); quality and adequacy of the existing engineering and telecommunications infrastructure (in some cases the operation of the SEZ requires the creation of a separate infrastructure of greater capacity); type and functionality of SEZ (many modern SEZs offer potential investors to organize production on ready-made sites with the necessary utility infrastructure, which significantly increases the initial capital costs for the development of the zones). In the majority of cases, investment costs for the establishment of internal and external, supporting and associated infrastructure facilities of the SEZ are incurred from state and local budgets.

Operating costs relate, firstly, to the operation of the administration of the area (management costs), and secondly to the maintenance of SEZ infrastructure facilities in good condition. Most zones are created on the basis of a cost-reimbursement mechanism, so management and other operating costs are generally reimbursed by SEZ residents through the lease of premises, utility charges and investment project support fees. At the same time, in the public SEZs, management costs are further subsidized from the budget; in this case, the reimbursement of expenses is due to additional tax revenues associated with the implementation of investment projects by SEZ residents. In private areas, one of the sources of financing of operating costs is income from concession

fees for the establishment of SEZs in a specific territory, as well as fees for use of infrastructure facilities (e.g. port facilities, power plants, etc.).

The costs associated with the maintenance of the special preferential regime of conducting business activities within the SEZ include tax costs (tax benefits, reduced tax rates, etc.) and non-tax costs (subsidies for the implementation of resident projects, preferential financing, lower rates of insurance premiums, tariff benefits, etc.). Compensation of such outstanding and missing revenues from the budget in connection with the acquisition of SEZ resident status by the investor is made at the expense of additional tax and non-tax revenues of residents of the SEZ in the framework of their projects. In order to the objective set both at the planning stage of the SEZ and at the stage of its operation it is necessary in the rules of selection of investment projects of potential residents of SEZ within the economic expertise of business plans of projects to provide a criterion of their budget effectiveness (excess of tax and non-tax revenues over similar expenses).

The financing of investment, operating costs and costs associated with the special regulatory regime of the SEZ is carried out through three main models: public, private financing and public-private partnership (*Table 1*).

The implementation of an integrated assessment of the financial implications of the establishment of a SEZ for the public sector is difficult for the following reasons. Firstly, a substantial proportion of the real cost of the zonal programs is attributable to income derived from the introduction of a reduced tax regime. Assessing such tax costs requires an assessment of the efficiency and effectiveness of the incentives provided, i.e. an understanding of the level of economic activity that would have been observed in the SEZ in the absence of incentive. Secondly, the end costs of operating the SEZ for the population increase as domestic enterprises relocate their activities to zones to benefit from tax concessions, thereby reducing the existing tax base. Also, negative financial consequences can arise as a result of undue use of zones for illegal financial transactions, which can be a serious problem in zones with insufficiently rigid government controls. The arrival of goods imported without customs duties from the territory of the SEZ to the rest of the country may cause additional damage, which will have not only negative financial consequences, but will also lead to unfair competition with domestic goods.

FUNCTION OF RUSSIAN SEZ

In Russia, at present, 180 SEZs of different types (special economic zones of basic and other types, areas of advanced development, Free Port of Vladivostok, Arctic zone, innovation centers, special administrative areas) are located on the territory of 77 regions of the Federation.

In 2022, the experts of the Accounts Chamber of Russia anticipated the results of a serious study concerning the functioning of the preferential regimes of Russia.[4] Federal investments in the development of the SEZ (excluding tax and non-tax expenses in the form of various benefits) for the period 2019–2021 amounted to almost 240 mln rubles. At the same time, the experts of the Accounts Chamber of Russia noted that the competition of the regions for attracting investors leads not to improving the efficiency of the operating SEZs, but to the "trading" of standard models without their adaptation to regional characteristics [8]. The diversity of SEZ types creates conditions for doubling financial flows: from federal and regional budgets under different programs to the same objectives. This eventually leads to system instability and loss of public funds, as well as ineffective planning of expenditure budgets in the Russian Federation's budgetary system. The main conclusions of the auditors were the inadequate planning of the impact of SEZ; the absence of a cost-benefit-based SEZ assessment system; and the inefficiency of the SEZ management system.

[4] Preferential regimes. Bulletin of the Chamber of Accounts of the Russian Federation; 2022. URL: https://ach.gov.ru/upload/iblock/7d8/hlzxwaeqw 81llk92aca5pqsg36es4cmu.pdf (accessed on 12.03.2024).

Table 1

Models of Financial Support for Expenses Within the SEZ

Type of Expenses	Funding Model (predominantly used)	Source of Recovering the Expenses	Foreign Experience	Russian Experience
Investment costs	Public funding; public-private partnership	Revenue from SEZ residents under concession agreements, lease agreements; tax and non-tax proceeds in SEZ resident projects	Funding by development banks, financial institutions, commercial banks; government subsidies; venture capital; establishment of joint project companies	Funding by VEB.RF, state corporations; government subsidies; infrastructure budget loans; infrastructural bonds; restructuring of budget loads; financing under investment protection and promotion agreements
Operating costs	Public and private funding	Revenue from SEZ residents under concession agreements, leases, integrated service and project support	Regular grants, private investment (possible cofinancing)	Public subsidies for the maintenance of SEZ management companies
Expenses relating to the special regulatory regime of the SEZ	Public funding	Tax and non-tax revenues from SEZ resident projects	Financial and non-financial incentives for SEZ residents (stabilization reservation, tax concessions, subsidization of credit rates, granting of land for lease on preferential conditions, etc.). In Russia, there is also a mechanism for assessing the effectiveness of tax expenditure by the Ministry of Finance of Russia, which allows to qualitatively and quantitatively adjust the set of benefits within the framework of SEZ.	

Source: Author's development.

Most of the significant disadvantages identified in the previous Accounts Chamber analysis of the functioning of preferential regimes could be addressed by developing tools to assess the feasibility of placing certain types of SEZs in the territory of a particular region, taking into account the socio-economic conditions established in that region.

GEO-ECONOMIC FACTORS AND BENEFITS OF FORMING SEZ

The methodology for accessing the effectiveness of the functioning of the SEZ requires the identification of key geo-economic factors for the success of SEZ. On the basis of a thorough analysis of a wide range of work by domestic and foreign professionals[5] [9–15] for the purposes of this study, it is proposed to classify the key factors that determine the success of SEZ, in three groups: spatial, economic and organizational (*Table 2*). Spatial factors are mainly related to the choice of the location of the SEZ, as well as to the infrastructure within and outside of SEZ. Economic are the factors that determine the functioning of the SEZ and its impact on the economy. The organizational factors relate to issues relating to the institutional structure of the SEZ.

The groups of geo-economic factors discussed above do not, in our view, automatically determine the success of a specific zone program. We consider factors in terms of the formation and retention of geo-economic advantages [16, 17]: general; determined by public administration; specialized.

"General" geo-economic advantages. Such advantages are easily replicable, including basic infrastructure, greenfield land and low-skilled workforce. General geo-economic advantages are focused on the activities of low-value transnational corporations (further — TNCs) with mainly low capital costs for production capacities and equipment (excluding mining industries). SEZs, which take into account only general geo-economic advantages, are in most cases unsuccessful, as their proposed simplified regulatory and institutional regimes for SEZ residents are also "general", similar to SEZ regimes in other countries. For example, SEZs in almost all countries have "accelerated" approval procedures for investment transactions, as well as institutions such as an effective regulatory framework, common infrastructure (water, electricity, roads); so, they can no longer be described as "advantages".

Advantages of public administration. These advantages are conditional on the actions of the Government and relate to the provision of tax and non-tax benefits, available loans to SEZ residents. The aforementioned advantages are no longer unique and are to some extent covered by the special regime of most SEZs. The favorable conditions for the State are associated with falling incomes and can therefore be justified only if they do not exceed the social and budgetary effects generated by investment projects [18]. The country in the quest to outperform competitors offer so many such incentives that SEZ comes to a net negative result.

Specialized geo-economic advantages. The more unique the specialized advantages are, the more likely the SEZ will be to succeed. Only in those sectors where there are "specialized" geo-economic advantages associated with providing conditions for the localization of high value-added activities, the receiving countries can advantage significantly from the functioning of TNC in the long-term. This, in turn, requires substantial investment in knowledge infrastructure related to higher education, research institutes and other key scientific

[5] Leveraging a New Generation of Industrial Parks and Zones for Inclusive and Sustainable Development: Strategic Framework. United Nations Industrial Development Organization (UNIDO); 2018. URL: https://www.unido.org/sites/ default/files/files/2019–12/UNIDO_Strategic%20Framework_WEB.pdf (accessed on 12.03.2024). Re-birth of Special Economic Zones in the GCC: Capturing the Full Potential of Special Economic Zones. PwC; 2020. URL: https://www.pwc.com /m1/en/publications/documents/re-birth-of-special-economic-zones-gcc.pdf (accessed on 12.03.2024). Tracking Special Economic Zones in the Western Balkans: Objectives, Features and Key Challenges. Organization for Economic Co-operation and Development (OECD); 2017. URL: https://www.oecd.org/south-east-europe /SEZ_WB_2017.pdf (accessed on 12.03.2024).

Table 2

Geo-economic Factors of SEZ Success

Factor	Content
Spatial factors	
Factor of availability of developed infrastructure and transport hubs	SEZs should be located in the immediate vicinity of transport, industrial, innovative and other infrastructure facilities
Fact of the existence of sustained cooperative links of firms	The location of related/technologically related industries within the SEZ is a prerequisite for the development of production cooperation and value chains
Factor of high competitiveness of firms located in a compact dense zone	SEZs attract new enterprises to compete with existing residents by encouraging low-performing enterprise to leave the market or move beyond the zone, which facilitates the transfer of resources such as land from low efficient enterprises into high-performance enterprises in the zone
Economic factors	
Factor of availability of a single strategic objective of establishing a SEZ	Lack of clarity about the objectives often leads to SEZs not achieving them and consequently failing to success
Factor of balance of economic interests of business agents and authorities	SEZs should be used primarily for the implementation of national and regional development strategies and policies, pilot reforms, and development of economic growth poles
Opening factor of the SEZ to the international economic area	The most successful areas adapt their policies and strategic orientation to both local and international economic trends
Incentive factor for economic experimentation	SEZs should be used to test reforms and new development models
Factor of "unity of place and time" of the SEZ	The success of the SEZ is largely determined not only by the approved location, but also by the time chosen to begin its operation, both in the light of national developments and the state of global economic growth and trade
Organizational factors	
Factor of graduality of SEZ development processes in the national economy	It is advisable to start with the creation of processing SEZs that involve controlled risks, and then gradually adjust the SEZ policy by creating trade, service and high-tech zones
Factor of continuous monitoring and feedback in the gradually expanding SEZ area	Given the budgetary costs associated with the SEZ, as well as the potential risks, the program should be fully tested at one or two locations before it is deployed on a wider scale
Factor of flexibility and adaptability of management mechanisms of SEZ	The management and development model of SEZs should ensure their efficiency and profitability

Source: Compiled from data: [9–15].

resources. In addition to the scientific direction, the specialized advantages may include the development of the agglomeration and cluster capacity of SEZs in order to integrate local companies into the global supply chains of TNCs [19, 20].

There are four possible combinations of the "Successful — Sustainable / Not Successful — not Sustainable" pair of indicators in the evaluation of the functioning of the SEZ (*Fig. 1–4*).

For the model of not successful and not sustainable SEZs the following features.

Firstly, the strategic planning process of such SEZs is missed or improperly undertaken when they are devised. Zonal programs are not integrated into existing national and regional strategic planning documents. Decisions on the placement and type of SEZs are taken centrally, without taking into account the real needs of the private sector.

Secondly, such SEZs are created in the absence of the necessary grounds. From an economic point of view, the SEZ tool is justified by the fact that it can complement market mechanisms and help in overcoming the caused "failures" of the market and government management barriers. Potential barriers include: inefficient functioning of the market for the sale of land; inadequate industrial infrastructure (e.g. energy, water, gas, telecommunications, etc.) needed for industrial agglomeration; and poor quality of the investment climate caused by lack of coordination within governments or between the government and the private sector. The application of the SEZ instrument in this case is justified if all these barriers occur simultaneously.

Some governments adhere to the socioeconomic development of the country's various regions over the financial viability of SEZs, deciding to host at least one SEZ in each "retarded" or remote region, but only a few governments are doing enough to address infrastructure, employee skills, and access to supply channels.

For the model of successful but not sustainable SEZs the following features are.

Firstly, the regulatory framework associated with the SEZ does not contain a uniform approach to the establishment and functioning of different types of zones, is uncertain and contradictory; many provisions of the normative acts are duplicated. The establishment of SEZs under such circumstances does not guarantee the attraction of the necessary investment and development of the activities targeted by the zonal program. As a rule, such SEZs are created in the absence of methodologies for assessing their effectiveness, which prevents public authorities from properly monitoring the achievement of the SEZ program targets.

Secondly, the sustainability of SEZs is often undermined by the lack of attention by zonal program developers to the social and environmental risks that need to be identified and evaluated during the technical and economic justification of the establishment of the SEZ. As a result of the character of SEZ projects, they typically involve the acquisition and development of new land or a change in its category and permitted use, as well as the resettlement of persons residing in the land.

In addition, some areas may contain non-environmental sectors such as textile, leather and petrochemical, which can cause serious environmental damage. The absence of a system for regular monitoring and assessment of the pollution impact of such industries in the SEZ could lead to a discrepancy between the actual and initial SEZ objectives and the "failure" of the zonal program.

For the model of not successful, but stable SEZ has the following features.

Firstly, such zones rely on the basic infrastructure already available within the boundaries of the zone. Construction of new facilities, including communications, usually takes place without the mediation of the State and is carried out at the expense of the investor.

Secondly, the areas do not have a clear specialization, business plan and tend to focus on low value-added activities. There is no mechanism in the zones to determine whether the investment projects of potential residents

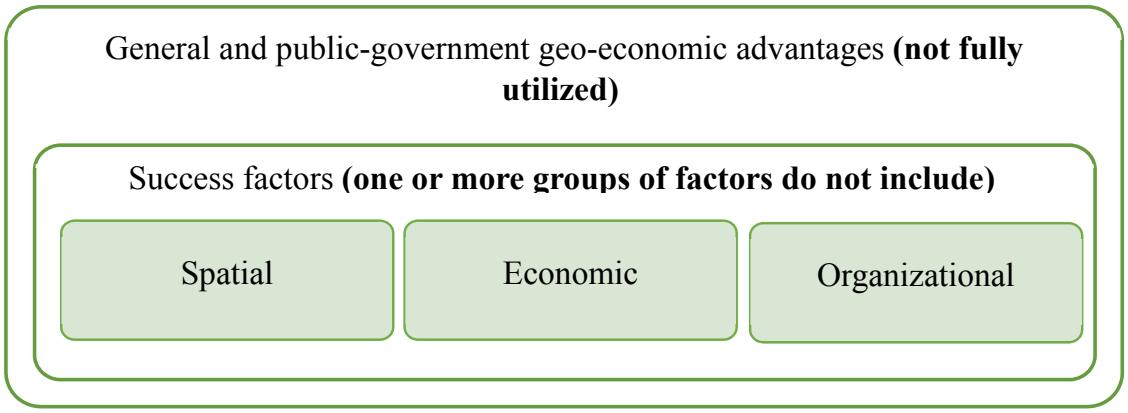

Fig. 1. **Option 1 – "Not Successful and not Sustainable" SEZ**

Source: Author's development.

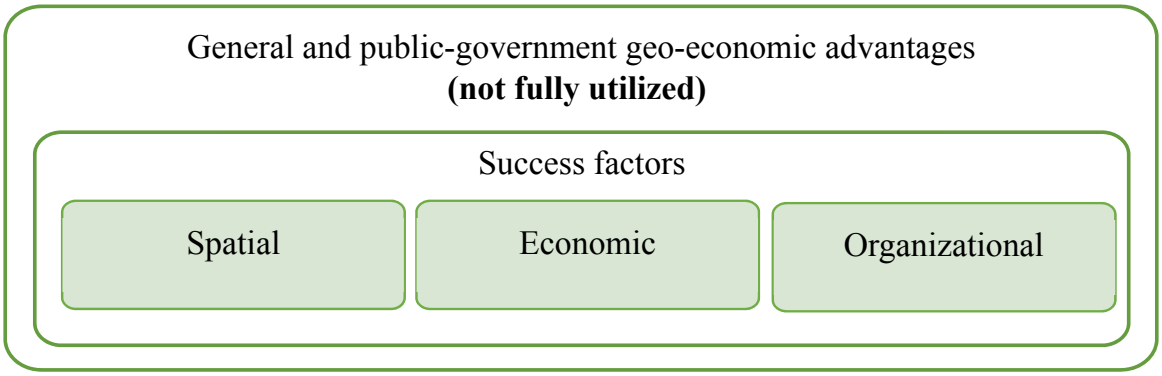

Fig. 2. **Option 2 – "Successful but not Sustainable" SEZ**

Source: Author's development.

are in line with the socio-economic development strategies of the territories of base.

Thirdly, there are various tax and non-tax incentives, broad-based support programs that do not always correlate with the needs of residents. Investor support institutions have duplicate functionality.

The resilience of such zones is generally determined by political rather than economic factors. In some cases, legislation may not have an instrument to declare an ineffective zone with its subsequent closure.

For the model of successful and sustainable SEZs have the following features.

Firstly, such SEZs tend to be located in central areas of the country or around major transport hubs (sea ports and airports). Localization in such areas gives SEZ access to top-qualified staff, high-performance workforce, specialized suppliers and business services, social infrastructure, and domestic, regional and global markets.

Secondly, the regulatory regime of successful and sustainable SEZs is embedded in the broader context of government investment, trade, industrial and tax policies, and the SEZ administration has some autonomy in conducting experimental economic reforms that can subsequently be replicated throughout the economy.

Thirdly, such areas have high-quality basic infrastructure as well as effective mechanisms for the provision of public services. One of the important additional features of SEZ is the "one window" system. Since the zonal program involves various government agencies responsible for the regulation of land, property, transport, infrastructure, customs, financial,

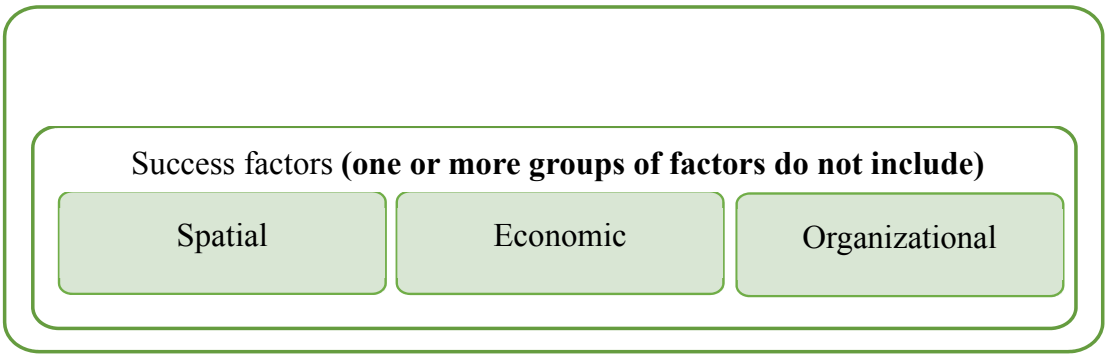

Fig. 3. **Option 3 – "Not Successful but Sustainable" SEZ**
Source: Author's development.

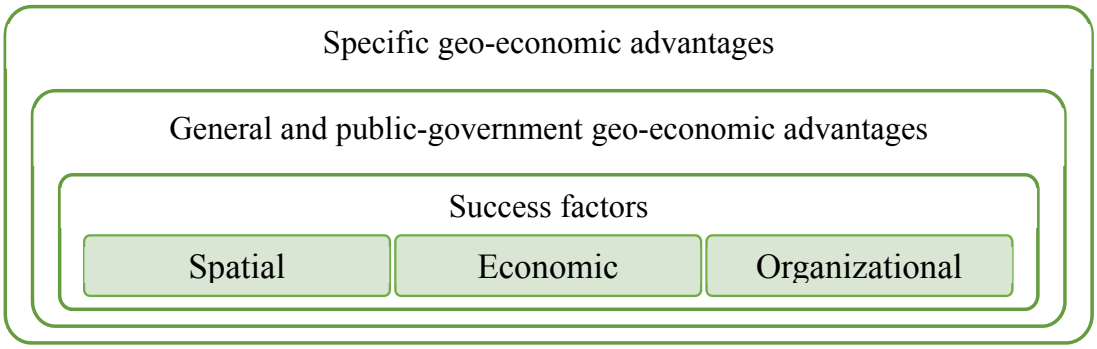

Fig. 4. **Option 4 – "Successful and Sustainable" SEZ**
Source: Author's development.

labor and other relationships, the "one window" mechanism could make public services in these areas much easier and more efficient.

Fourthly, successful and sustainable SEZs tend to be based on public-private partnerships. The participation of the private sector can be organized at various stages of the zone project, from planning and development to the management of the SEZ. This not only reduces the financial burden on the government, but also reduces risks associated with the development of zones, by leveraging the professional expertise of private investors.

Fifthly, SEZs in the framework of this model are based on local comparative advantages. The proactive identification of opportunities, coordination of efforts and training programs between firms within and outside the zones significantly improve the efficiency of the zones. In order to leverage the benefits of zonal programs, governments and SEZ administrations take into account local comparative advantages by adapting the specialization of SEZs and assisting local firms to connect with zonal investors through supply chains or subcontracts.

Moreover, the competitiveness of SEZs in the global market is increasingly determined by the compliance of zonal programs with strict international environmental and social standards of investors. In this connection, successful and sustainable SEZs adopt the principles of eco-industrial development, implementing resource-saving technologies, establishing control of pollutant emissions.

COMPREHENSIVE METHODOLOGY OF GEO-ECONOMIC MAPPING AND ASSESSMENT OF THE EFFECTIVENESS OF THE CREATION OF SEZ IN THE ECONOMY OF RUSSIA

In the circumstances of the shortage of statistical information on the activities of the SEZ, as well as in the absence at the national level of

comprehensive methods of assessment of the different types of SEZs, it is proposed to use the geo-economic method of analysis, imposing a map of the operating in Russia SEZ on the map of a country with indicated on its geo-economic advantages of its regions. The author's methodology of geo-economic mapping includes the following stages.

First stage — determination of the object of application and analysis in mapping.

Objects of imposition during mapping will be the SEZs operating in Russia.

Based on the typology of special economic zones depending on their specialization, domestic SEZ can be grouped as follows:

- *commercial SEZ:* port special economic zone (further — SEZ), free port "Vladivostok";
- *industrial SEZ*: industrial-production-type SEZ;
- *service SEZ:* tourist-recreational SEZ, special administrative district;
- *innovative SEZ:* SEZ of technical type, Skolkovo Innovation Centre, Innovation Scientific and Technological Centre;
- *complex SEZ (combining features of several types of SEZ):* territory of advanced development, SEZ in the Kaliningrad region, SEZ in the Magadan region, Free Economic Zone in the territory of the Republic of Crimea and the Federal City of Sevastopol, Arctic zone.

Regions of the Russian Federation are the *object of analysis* when mapping. Calculation by 85 regions.

The second stage is the determination of the subject and period of analysis, as well as the selection of indicators.

The subject of analysis are the geo-economic advantages of the regions of Russia, which are necessary for the successful and sustainable functioning on their territory SEZ of a particular type.

The analysis period covers the 2010–2020 period. This is due, firstly, to the availability of statistical information, secondly, the formation in this period of most active in Russia SEZs. The shorter period will be taken into account for individual indicators.

The selection of *indicators for analysis* is proposed to be based on the following principles: firstly, only relative indicators are included in the calculation; secondly, the classified sequence of quantitative analysis is based on indicators of level or intensity, structure and dynamics. At the same time, dynamics is understood as "impulse-indicators", "accelerators". All indicators are grouped by blocks determined by the target SEZ of a particular type (*Table 3*).

Third stage — is calculation. At this stage, the base of values of indicators in the range of pages and regions is formalized; values for each indicator are standardized from 0 to 1. To determine the geoeconomic advantage of the region, the geometric average of the three values of the indicators for each year is taken per page.

Fourth stage — is rankings of regions. At this stage, the rankings of the regions will be made according to the level of development of the geo-economic benefit (further — GB) on a particular page. The overall level of development of geo-economic advantage is determined on the basis of the geometric average of the average values of indicators for the period per page. The regions are grouped into several groups: "low level of development of the GB", "sufficiently low level of GB development", "average level of GP development," "sufficiently high level of GB development," and "high level of GB development". Also, on each page for each region defined the trend of development of GB: "upward" or "downward".

Fifth stage— reconciliation of the analysis object (regions) with the imposition object (SEZ) and interpretation of results. At this stage, the regions with marked geo-economic advantages (in their level and dynamics) are combined with the SEZs created within their borders.

The conclusion on the feasibility of establishing a specific type of SEZ in a particular region is based on a quantitative assessment of the geo-economic advantages of a specific region and its assignment to one of the range values of the GB development level indicator. The interpretation of analysis results should be based on the gradients presented in *Table 4*.

RESULTS AND DISCUSSION

Assessment of the geo-economic advantages of the regions of Russia for the creation of trade and industrial SEZs in harmony with the actual number of special zones operating in these regions is presented in *Table 5 (columns 2 and 3)*. The table shows that SEZs are created not only in "green" (favorable) and "yellow" (conditionally favorable), but also in "red" (potentially disadvantaged) for their creation regions.

The analysis showed that the established *commercial and industrial* SEZs in 8 regions correspond to the level of development of the identified geo-economic advantages, therefore, this is most likely to ensure SEZ data successful and sustainable functioning. In 16 regions, the level of development of the export and production component of the economy is unlikely to maximize the effect of SEZs localized in their territory. The conditions in the six regions are unfavorable in terms of the placement of industrial and commercial types of SEZs within their borders.

Innovative SEZs created in seven regions correspond to the level of development of identified geoeconomic advantages, therefore, this is most likely to ensure SEZ data successful and sustainable functioning. In the four regions, the level of development of the innovative component of the economy is unlikely to maximize the effect of localized in their territory SEZs. The conditions in the three regions are unfavorable in terms of the placement of innovative SEZs within their borders.

The *service and complex* SEZs established in the four regions correspond to the level of development of the identified geo-economic advantages, therefore, this is most likely to ensure the successful and sustainable functioning of the SEZ data. In 12 regions, the level of socio-economic and investment development is unlikely to maximize the effects of SEZs localized in their territory. The conditions in 53 regions are unfavorable in terms of the placement of service and integrated types of SEZs within their borders.

CONCLUSION

The high uncertainty of modern economic development and the initial impossibility at the stage of establishment of the SEZ to predict precisely in advance its successful and sustainable functioning, in our opinion, require the observance of the principle of not exceeding in the territory of the country at a particular moment of time the optimal number ("critical mass") of SEZs. Achieving the effect of scale, external effects from the generation of intra-sectoral knowledge, agglomeration effects and clustering effects within a limited number of highly efficient SEZs would contribute not only to the emergence of new and development of existing growth poles in the country, but also to the rational development of the national economic complex as a whole and the efficient expenditure of limited financial resources of both the federal center and regions of the Federation.

There is no unified approach to the successful implementation of the SEZ concept in a particular territory. However, general principles can be identified which are most likely to contribute to the successful operation and sustainable development of the SEZ.

Firstly, the development and implementation of the SEZ concept should take into account the interests of the public and the business community concentrated in the territory. Planning requires an assessment of the availability of land resources, identification of infrastructure needs and investment needs, as well as environmental and social problems.

Secondly, the process of establishing SEZs must be carefully planned and integrated into national and regional development strategies. The SEZ strategy should identify directions and set targets that are realistic and achievable by maximizing available resources and skills to attract investments and firms in specific sectors, based on the identified comparative advantages of the country and the location. At the same time, these strategies should have an element of adaptability and flexibility, respond to rapid technological changes and use the possibilities of geographical and functional fragmentation

Table 3

Geo-economic Benefits (GB) Indicators for Different Functional Types of SEZ

Type	Purpose	Indicators for Assessing Geo-economic Benefits
Commercial SEZ	Acceleration and simplification of international trade	Export and production page: total exports per capita; percentage of non-material non-energy exports in total exports; share of high-tech and science-intensive industries in gross regional product
Industrial SEZ	Promotion of general industrial development and diversification	Export and production page: total exports per capita; percentage of non-material non-energy exports in total exports; share of high-tech and science-intensive industries in gross regional product
Service SEZ	Promotion of the transition to the services economy	Social and Economic page: gross regional product per capita; turnover of small enterprises to aggregate turnover for organizations; number of high-productivity jobs per capita
		Investment page: capital investment per capita; share of reconstruction and modernization investments in total equity investments; percentage of equity capital investments made by own funds in overall equity investment
Innovative SEZ	Stimulation the modernization of the economy	Innovation page: level of innovative activity of organizations; percentage of the cost of innovation activities in the total volume of goods shipped, works carried out, services; used advanced production technologies per 100 peoples
Comprehensive SEZ	Promotion of social and economic development in general, improvement of the quality of the investment climate	Social and Economic page: gross regional product per capita; turnover of small enterprises to aggregate turnover for organizations; number of high-productivity jobs per capita
		Investment page: capital investment per capita; share of reconstruction and modernization investments in total equity investments; percentage of equity capital investments made by own funds in overall equity investment

Source: Author's development.

Table 4

Result Interpretation Algorithm

Range of Values of the Region's GB Development Level Indicator During the Assessment Period	Characteristics of the Region's GB Development Level	Trend	Conclusion on the Expediency of Establishing SEZ in the Region at a Given Region's GB Development Level*
0.00–1/5 reference value **	low level of development	downward	The creation of a SEZ is likely to be pointless, as there are no preconditions for its successful functioning. In this situation, direct public-private-sector support instruments are generally used
		upward	
1/5 reference value — 2/5 reference value	sufficiently low level of development	downward	
		upward	A SEZ may be created, but in the absence of sufficient preconditions, its operation is unlikely to be successful and its development sustainable without additional effort
2/5 reference value — 3/5 reference value	average level of development	downward	
		upward	The creation of a SEZ is justified. It is most likely that such a SEZ will function successfully and that development will be sustainable.
3/5 reference value — 4/5 reference value	sufficiently high level of development	downward	
		upward	A SEZ may be established, but its operation would not have significant additional positive effects
4/5 reference value — reference value	high level of development	downward	
		upward	The creation of a SEZ is likely to be pointless, as market and government mechanisms work effectively. In this situation, the establishment of a SEZ would distort competition without sufficient justification

Source: Author's development.

Note: * If the region's GB development level is in the range from "sufficiently low — upward trend" to "medium — downward trend" or in the range of "sufficiently high — upward trend" to "high — downward trend", the color is yellow, if in the range from "medium — upward trend" to "sufficiently high — downward trend", then the color is green, otherwise the color is red. ** The value of the region's GB development level indicator, the maximum achieved by all regions during the assessment period, is taken as a reference value.

of production chains and their real-time integration.

Thirdly, the establishment of the SEZ must be correlated with the political and legal regime of the country. Countries seeking growth poles and corridors must have specific laws and regulations to facilitate the creation of SEZs and attract investment. Rules should be developed within the broader framework of the domestic legal system of the country to hedge the risk of enclaves when investors working within growth poles are exempted from domestic laws of the host country or when SEZ laws are contrary to domestic law.

Fourthly, SEZs should promote socially, economically and environmentally sustainable growth.

This study combines the geo-economic concept of volume-spatial development of the economy with the theory of special

Table 5

Combining the Localization of Existing SEZ with the Level of Development of GB Required for Successful and Sustainable Operation in the Regions

Region	Number of SEZs	Indicator of the GB Development Level	Region	Number of SEZs	Indicator of the GB Development Level	Region	Number of SEZs	Indicator of the GB Development Level
1	2	3	1	2	3	1	2	3
Commercial and industrial SEZ								
Primorsky district	1	y	Nizhny Novgorod region	1	g	Vladimir region	1	y
Sakhalin region	1	r	Sverdlovsk region	1	g	Voronezh region	1	y
Khabarovsk district	1	y	Kaluga region	1	g	Leningrad region	1	y
Ulyanovsk region	1	g	Novgorod region	1	y	Orel region	1	r
Chukotka	1	r	Tula region	1	g	Smolensk region	1	g
Astrakhan region	2	r	Ivanovo region	1	y	Chechen Republic	1	r
Kamchatka	1	y	Krasnoyarsk region	1	y	Kursk region	1	y
Republic of Tatarstan	1	y	Orenburg region	1	r	Lipetsk region	1	g
Republic of Bashkortostan	1	y	Perm region	1	g	Omsk region	1	y
Moscow region	3	y	Samara region	1	y	Pskov region	1	y
Innovative SEZ								
Primorsky district	1	y	Kaluga region	1	y	Ryazan region	1	g
Republic of Tatarstan	1	y	Novgorod region	1	g	Saratov region	1	r
Moscow region	2	g	Tula region	1	g	Tomsk region	1	g
Nizhny Novgorod region	1	r	Kaliningrad region	1	r	St. Petersburg	1	g
Moscow	4	g	Krasnodar	1	y			
Service and complex SEZ								
Primorsky district	5	r	Novosibirsk region	2	r	Samara region	2	r
Irkutsk region	5	g	Orel region	1	r	Ulyanovsk region	2	r
Altai district	3	r	Penza region	2	r	Chukotka	2	r
Kaliningrad region	2	r	Republic of Komi	2	r	Yaroslavl region	3	r
Republic of Buryatia	3	y	Ryazan region	1	r	Arkhangelsk region	2	r
Republic of Dagestan	3	r	Saratov region	1	y	Vladimir region	1	y
Republic of Tatarstan	5	r	Smolensk region	1	r	Voronezh region	1	r

Table 5 (continued)

Region	Number of SEZs	Indicator of the GB Development Level	Region	Number of SEZs	Indicator of the GB Development Level	Region	Number of SEZs	Indicator of the GB Development Level
1	2	3	1	2	3	1	2	3
Republic of Bashkortostan	5	y	Tomsk region	1	r	Trans-Baikal district	2	g
Nizhny Novgorod region	3	r	Udmurt Republic	2	r	Kamchatka	1	r
Sverdlovsk region	4	r	Belgorod region	1	r	Kirov region	2	r
Chelyabinsk region	5	r	Volgograd region	1	y	Krasnodar	1	r
Kaluga region	2	y	Vologda region	1	r	Sevastopol	1	r
Kemerovo region	4	r	Republic of Ingushetia	2	r	Jewish district	1	r
Novgorod region	2	r	Tver region	2	y	Kostroma region	1	r
Republic of Karelia	4	r	Chechen Republic	1	r	Magadan region	1	r
Sakhalin region	3	g	Kabardino-Balkar Republic	1	r	Nenets district	1	y
Tula region	2	r	Karachay-Cherkess Republic	1	r	Republic of Crimea	1	r
Khabarovsk district	3	r	Republic of Ossetia — Alanya	1	r	Republic of Mordovia	1	r
Amur region	3	r	Murmansk region	3	r	Republic of Khakassia	1	y
Ivanovo region	2	r	Orenburg region	2	r	Stavropol	1	y
Krasnoyarsk district	2	g	Perm district	2	r	Tambov region	1	y
Kurgan region	3	y	Republic of Sakha (Yakutia)	3	r	Chuvash Republic	1	r
Leningrad region	1	r	Rostov region	3	r	Yamal-Nenets district	1	r

Source: Author's calculations.

economic zones. This methodological synthesis allows:

to identify key geo-economic factors of the spatial, economic and organizational character that determine the successful functioning of special economic zones in the regions;

to develop a complex methodology for geo-economic mapping and assessment of the advantages of regions, taking into account the potential opportunities for the placement and long-term support of successful and sustainable SEZs. The methodology consists of 4 consecutive steps of action: implementation of the SEZ typology; selection of indicators relevant to each type of zone to assess the key advantages that are desirable for the regions of future accommodation; spatial and economic ranking of the regions; identification of a correlation between the level of development of the geo-economic advantages of the region

and the feasibility of establishing special economic zones in it;

to form on objective criteria groups of readiness of regions for the acceptance and successful development of special economic zones, depending on the level of development of relevant SEZ geo-economic advantages.

In practical terms, the value of the study is that it demonstrates the need for a scientific, objective approach to the creation of SEZs in Russian regions, based not only on political will, short-term priorities or "local" interests of the executive authorities in the field, but, above all, on an unbiased comprehensive analysis of the geo-economic state of the region (at the level of indicators of geo-economic advantage over other regions), which may demand or not demand at the moment of the establishment on its territory of an economic structure with special legal and economic regime.

* * *

Thus, the evaluation of the feasibility of establishing a SEZ in a given territory should be based on an assessment of the existing geo-economic conditions and advantages of a particular territory. Furthermore, financial coverage mechanisms that may arise at different stages of the operation of the SEZ should be compulsorily taken into account. The implementation of this approach, based on the methodology of geo-economic mapping, at the launch stage of the zone program will, in our opinion, contribute both to the more efficient and rational use of investment incentive instruments and to the improvement of the effectiveness of program-target budgeting in general. This approach will identify the areas of the country where the creation of SEZs is most likely to transform these areas into poles of geo-economic growth.

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