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***«Effect of SEZ on attracting FDI to Kazakhstan»***

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*Abstract «Effect of SEZ on attracting FDI to Kazakhstan», by Kengesbekova A.N., ISE KAZGUU University, May (2023).*

One of the place-oriented policies is the Special economic zone (SEZ) regime implementation policy, which has become widespread among the countries of the world by now. The main task of the SEZ approach is to create conditions for the development of the country's economy, which can subsequently improve the situation in the labor market, contribute to attracting domestic and foreign investments to the region, in particular foreign direct investment (FDI). On the territory of Kazakhstan, there are 13 SEZs in different regions of the country, each of which has its own focus on the development of certain industries by attracting investment in these areas. Consequently, there is a high research interest in studying the SEZ regime of Kazakhstan as a method of public policy to attract FDI.

The main purpose of this work is to determine the potential effectiveness of Kazakhstan SEZs in attracting FDI. The main method for achieving this goal is to construct a hypothesis about the positive impact of the implementation of the SEZ program in the region on the volume of FDI attracted, as well as to test the hypothesis using regression analysis of panel data for 14 regions of the country over a 9-year period. The results of this study revealed the inefficiency of SEZs in terms of the method of attracting FDI.

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## 1. Introduction

The study of the essence of FDI, the motives for their occurrence, as well as their role in the economy of the host country has remained one of the fundamental questions of researchers for many years. Typically, FDI is defined as an investment involving the transfer of a wide range of assets, such as capital, advanced technology and know-how, best management practices, and is carried out by a legal entity in foreign companies, while owning a significant share in the equity capital or exercising managerial control over the company assets [1]. There isn't a single superior theory that fully explains FDI from the perspective of its theoretical basis, according to an analysis of the major FDI theories that are now in use [2]. To date, there are several main theories of FDI, the purpose of which is to specify the motives of FDI, as well as the FDI model. These include Dunning's OLI Paradigm, Internalization Theory, Product Life Cycle Theory, Dynamic Capabilities Theory. These theories as a whole provide a useful framework for understanding the complexities of FDI and the factors that influence firms' decisions to invest in overseas markets. At the same time, all empirical results show that there is no single theoretical explanation for FDI, and at the moment it seems very unlikely that such a unified theory will appear [3].

International experience demonstrates that the inflow of foreign direct investment can positively affect the growth of the economic indicators of the host country through the transfer of a wide range of assets, including new technologies and efficient management methods, ultimately contributing to an increase in the country's GDP, an increase in jobs, and an improvement in the quality of technologies, especially in developing countries, which may lack the resources, technology, and skills needed [4]. Empirical studies of the impact of FDI on the host economy report that countries, especially developing countries, emerging market economies and countries in transition, consider FDI as a significant source of growth and economic modernization [5].

For example, a study of the impact of FDI on economic growth in Vietnam showed that in the period 2000-2018. FDI accounted for an average of 21.3% of total investment in the economy, creating more than 4 million jobs while providing workers with advanced foreign business knowledge and management skills. In addition, FDI enterprises have a large export turnover, which accounted for about 75% of the country's total export turnover. It is also worth noting the positive impact of FDI on gaining access to new technologies in the field of banking, communications and transport [6]. The results of a similar study of the impact of FDI inflows to a group of developing countries concluded that FDI growth and GDP growth have a positive and significant relationship [7].

Obtaining the status of an independent country forced the Kazakhstani government to create the necessary conditions for attracting foreign capital in the form of a competent economic policy aimed at increasing the investment attractiveness of our country. The main features of investment attractiveness include the stability of the economic and political situation of the country, the provision of tax and customs benefits, developed infrastructure, optimized business processes, as well as the availability of skilled labor and resources [8].

Based on the foregoing, there is high research interest in exploring a number of issues related to FDI inflows to emerging markets such as Kazakhstan. A number of studies have been devoted to studying the impact of FDI on the economic growth of host countries [9, 10], employment [11, 12], the spread of new technologies [13, 14], and the environment [15, 16]. At the same time, many research works are also devoted to determining the motives and causes of FDI inflows [17].

In particular, the literature suggests several motivations for firms to invest in foreign economies. Researchers have found that firms invest abroad in search of natural resources, labor or market resources in host countries [18, 19]. In addition to the search for resources, the literature mentions the role of state institutions in creating conditions

for stimulating FDI through the introduction of special regimes, such as subsidies and tax breaks, and the provision of resources, such as raw materials, land, and labor [20, 21]. Some works believe that for most firms, the use of FDI is motivated by the goal of overcoming government barriers in their countries and finding the best government institutions to conduct their business [22, 23].

One of the state policy tools that contribute to the creation of a favorable environment for attracting foreign investment is the creation of SEZ [24], which are one of the options for local policies, the essence of which is to create a more favorable environment for conducting hotel types of business in a limited territory.

A potential reason for their attractiveness to foreign investors in Kazakhstan may be the more liberal economic policy compared to other parts of the country. The main incentives for attracting FDI are considered to be tax and customs benefits, the provision of free land plots, as well as support for the one-stop shop principle [25].

One of the best examples of the implementation of the SEZ policy in the country's economy is China. Thus, researchers of the influence of the SEZ regime on the volume of attracted FDI found that SEZ mechanisms play an important role in increasing FDI, foreign exchange reserves and exports in the country [26, 27]. Another study found that the attraction of FDI to those cities that are located in the territory of the SEZ, in many respects exceeds the volume of FDI in cities located outside the territory of the SEZ [28]. At the same time, the actual issue today is the effectiveness of Kazakhstan's SEZs as a method of state policy to attract FDI.

Thus, it can be concluded that the topic of FDI, their causes, and their impact on the host country is extremely popular, while many works emphasize their exceptional positive impact, especially in developing economies. One common method of attracting FDI is the introduction of a place-based policy, which is SEZs. It can be assumed that

SEZ preferences can create a more favorable environment for business development. World practice shows that SEZs are doing a good job of attracting FDI.

Based on the foregoing, the purpose of this study is to explore whether there is a positive impact of the SEZs operating on the territory of Kazakhstan on attracting FDI to the country's economy. The main hypothesis is that the presence of SEZs in the regions has a positive effect on the volume of FDI attracted. This study of the effectiveness of SEZs as a government tool for attracting FDI becomes important in the context of an analysis of the emerging market of Kazakhstan, where attracting foreign investment becomes a catalyst for business development, job creation and technological advancement. The main method of analysis and hypothesis testing is the construction of a regression model that will analyze panel data collected for 14 regions of the country for the period from 2014 to 2022. The results of the study revealed a weak influence of the SEZs available on the territory on the volume of attracted FDI.

## 2. Literature review

The main research questions of many FDI-related works, according to an analysis of the literature that is currently available, are, first, identifying the factors that influence investors to localize the amount of investments they make in a given nation, and, second, determining the impact that these investments will have on the host economy. The studies available to date have identified several factors influencing the choice of FDI location, which are the set of characteristics of the host country. According to traditional theories of economics, the main variables for understanding the activities of FDI are such characteristics of the host country as the size of the market, the openness of the economy, the level of inflation, the available infrastructure, natural resources, advanced technologies, the structure of the labor market, as well as government institutions for attracting FDI [29]. These factors, to one degree or another, are capable of inducing foreign entrepreneurs to invest in the economies of other countries. Thus, studies of the impact of the level of GDP have revealed their positive impact on FDI inflows, as well as statistical significance in this matter [30, 31]. Based on the results of empirical studies of the impact of selected variables on GDP, Aneta KOSZTOWNIAK concluded that among such variables as GFCF, employment, FDI, exports and R&D, FDI belongs to the group of factors of long-term positive impact and the effectiveness of FDI in terms of its impact on GDP has grown over time [32]. Khachoo, Ab Quayoom and Khan, Mohd Imran, after examining the potential determinants of FDI in developing countries, found strong empirical evidence for a positive relationship between FDI and GDP levels and concluded that countries with larger market sizes (i.e., larger high GDP) receive a large amount of foreign investment. The result is commensurate with Dunning's OLI paradigm, according to which a large number of market-oriented investments are directed to countries with a large market size [33].

One of the key factors affecting FDI, according to some, is the rate of inflation. A lower level of inflation will consequently draw in more FDI because an increased level of inflation has a negative impact on the influx of FDI [34]. This negative relationship between FDI and inflation is explained by the fact that one of the most frequent and constant signs of domestic economic instability and the inability of the host government to implement sound monetary policy is high inflation. From the point of view of FDI sources, high inflation creates uncertainty about the net present value of expensive long-term investments. For these reasons, companies may avoid investing in countries with high inflation [35]. Research by Saini & Singhania confirmed that companies invested less in developing countries with high inflation [36]. In addition, high inflation indicates the weakness of the state's monetary policy, which in the future may lead to currency devaluation. It follows that foreign investors will have to bear the costs to prevent transaction and remittance losses when the currencies of the host country depreciate. Thus, *ceteris paribus*, foreign investors prefer to reduce their forecasts regarding foreign exchange risk by investing in economies that are more stable in terms of inflationary shocks [37].

Of particular importance among the determinants of FDI is given to the human capital of the host country [38, 39]. In general, the host country's stock of human capital is often used to measure the absorptive capacity of the host country. On the one hand, the level of human capital affects the host nation's capacity to acquire, study, and implement new technology from abroad, and thus affects the efficacy of FDI infusion. The application of the technologies needed to make full use of FDI requires a sufficient level of human capital in the host country. Thus, the decision to invest in a host country is directly related to the existing skills (level of education) of the country's workforce, because if these skills are low, the host country cannot acquire and reproduce the knowledge that is necessary for FDI work. On the other hand, an essential indicator of

the state of the labor market is the indicator of wages of workers, which has a significant impact on FDI inflows. As noted in the work of Omar G. Aziz, higher labor costs hinder the inflow of FDI, which means that countries with affordable cheap labor are the preferred destinations for FDI [40]. Previous empirical studies have also found an inverse relationship between labor costs and FDI, especially for foreign investment in labour-intensive industries and for export-oriented subsidiaries [41].

In addition, the literature states that natural resource endowments contribute to FDI, but the degree of impact varies depending on different types of resources [42, 43]. As Sahar Hassan Khayat points out, different types of natural resources influence FDI differently in MENA countries. For example, fuel exports attract FDI, but natural resource indicators such as oil rent, oil production and oil reserves, and oil production relative to oil reserves discourage FDI. It has also been suggested that oil production depends on the institutional quality in the MENA countries [44].

It is worth noting that past research shows mixed results, as the same determinants can affect FDI differently in different countries. A study of the influence of various determinants on FDI inflows in the group of Next 11 countries, contrary to the well-established opinion that infrastructure is one of the most important factors in the distribution of FDI, revealed the low significance of this factor [45]. On the other hand, there are many other studies that confirm the positive impact of infrastructure on FDI [46].

Given the importance of macroeconomic factors in attracting FDI inflows, much of the literature is devoted to the role of institutional factors in creating a more attractive investment climate. The analysis of institutional factors covers such aspects of the state apparatus as methods of reducing barriers for foreign entrepreneurs, the absence of restrictive policies, the rule of law, the existence of specialized bodies to attract and protect the rights of foreign investors, as well as the issues of using and distributing the country's resources [47, 48]. Since state institutions control the political, economic, and

social climate of the nation, these variables are the most important ones to consider when making investment decisions.

Among other things, the leading factor is the quality of the institutions of the host country, since better institutional quality of the host country stimulates more new foreign participants, while the deterioration of institutional quality tends to reduce foreign inputs [49]. Despite the fact that developing economies are characterized by a lower quality of institutions, the introduction of policies such as SEZs can improve the quality of local institutions in certain regions where SEZ policies are in place [50].

The literature on the effect of SEZs on local markets received particular attention in light of the theme of this paper. The majority of studies on SEZ can be categorized into different groups. The examination of the effects of the SEZ policy's implementation on the performance of the local economy is the focus of the first group of works.

The introduction of the SEZ policy contributes to an increase in the number of companies and firms in the local market due to the set of preferences and benefits provided to them. Those, in turn, contribute to the creation of new jobs, thereby reducing unemployment, increasing production volumes, as well as providing more goods for export [50, 51]. In addition, the creation of SEZs has a positive effect on industrial development [52]. Thus, studies have revealed the indisputable effect of the SEZ policy on GDP growth, the structure of the labor market, the introduction of new technologies, and the level of agglomeration [53, 54].

Another group of studies on the topic of SEZs focuses on studying the effectiveness of SEZs as a public instrument, in particular, researchers pay special attention to the analysis of the effectiveness of tax incentives in terms of associated government spending. Similar studies of SEZs in Russia conclude that despite the higher productivity of enterprises in SEZs, the payback of SEZs in terms of tax benefits provided is quite low [55]. The experience of African SEZs is also characterized by relatively low

efficiency in terms of public investment to maintain the SEZ regime, but at the same time, researchers consider the main reasons for this problem to be an imperfect legal and institutional framework, a lack of effective strategic planning, a weak level of management and policy implementation, as well as a lack of necessary infrastructure [56]. At the moment, the results of the analysis of the effectiveness of SEZs on a global scale are rather mixed: there are successes, for example, in Asia and Latin America, and unsuccessful examples, especially in African countries. Thus, the mixed results across economies, countries and regions show that the introduction of SEZ policies is not a panacea for development. Key aspects of the effectiveness of SEZs are the creation of the necessary regulatory framework, the implementation of the necessary strategic planning, the search for ways to provide adequate infrastructure and the establishment of responsible social and environmental standards [57, 58].

Of particular importance for this work are studies devoted, in particular, to the impact of SEZs as a local policy on the volume of FDI attracted. Thus, the results of similar studies in China do indicate a positive and significant relationship between FDI inflows and SEZ policy formulation, thus explaining why emerging market economies can attract large amounts of FDI in the face of relatively unfavorable institutions [59]. Similar findings were obtained from an analysis of the SEZ in India: FDI inflow is large in the states where the SEZ regime is in place, but increased per capita income, urbanization, and infrastructure development have grown to be major drivers of FDI [60].

Available studies on the activities of SEZs in Kazakhstan mainly cover the topics of legislation, history of development, state regulation, as well as the impact of SEZs on certain sectors of the economy [61, 62, 63]. The papers note that the most successfully functioning SEZs include SEZ "Astana-New City", SEZ "Seaport Aktau", SEZ IIT "Alatau". At the same time, the authors note a small impact of the activities of the SEZ on the investment attractiveness of the country due to the short period of operation of the SEZ

and the lack of an effective mechanism for regulating the activities of the SEZ in Kazakhstan. At the same time, there was no literature base regarding the impact of SEZs on the volume of FDI attracted to the country.

Based on the above review of the literature, it can be concluded that to date there are many studies in which the authors have attempted to determine the factors that attract FDI, as well as the role of FDI in the economy of the host country. However, the number of studies on the role of SEZs in attracting FDI within the framework is rather limited. In addition, most of these studies consider the impact of SEZ policies in other countries, leaving this phenomenon unexplored in Kazakhstan. This conclusion is decisive in supplying the relevance of this paper, as the present study fills this important gap in the literature by examining the role of SEZs in attracting FDI in Kazakhstan.

### 3. Review of SEZ policy and experience of SEZ operation in Kazakhstan

#### 3.1 Theoretical background and evolution of SEZ

The application of place-based policies has become widespread among the economies of the world. These policies cover various areas of the economy, including the introduction of simplified business rules, tax incentives, the provision of resources and business support programs, public-private partnerships in well-defined areas. States frequently implement such initiatives in economically underdeveloped or underserved regions of the nation to boost the region's economic performance and enhance the climate for doing business. Typically, the introduction of place-based policies in the above territories takes the form of increased employment opportunities and higher wages. At the same time, the decision to apply a location-based policy can also apply to the most prosperous areas in order to further improve economic performance in such areas [64].

One of the most common forms of place based policy today is the SEZ policy. The history of SEZ development dates back to the 16th century, when this policy was implemented in the form of free ports, which gradually transformed into free trade zones [65].

zone type	period of establishment	distinctive characteristics
free trade zones	16th century	These zones, which were established on the foundation of formerly operational free ports, are distinct areas where duty-free policies may be used. Additionally, spaces were made available for trading, transshipment, and re-export operations to make the process of conducting transit trade more convenient. Currently, these zones are quite modernized and are used as offshore storage and logistics centers with world-class trade infrastructure, multi-module vehicles, barrier-free customs procedures and attractive incentives. These zones had a peculiarity in terms of the geographical location of the zones near the ports.
industrial zones	mid 20th century	A variety of similar zones with an emphasis on production

		<p>activities first began to appear in Europe and the United States. On the territory of these zones began to provide incentives for the development of industry and funny activities with it. Unlike free trade zones, the location of these zones was no longer dependent on ports. Later, similar zones were introduced in Asia (India, Taiwan), Latin America and Africa.</p> <p>If at the beginning such zones were aimed at the development of labor-intensive industries, subsequently the range of their activities also extended to more high-tech industries of mechanical engineering. Finally, they move to high-tech industries.</p>
Integrated SEZ	late 1970s	<p>The main feature of this type of SEZ is, firstly, the provision of incentives and preferences for a wider range of activities, and secondly, the territory of the new generation SEZ was no longer limited to a separate industrial zone. Thus, the SEZ policy stimulates the development of not only industry, but also the service sector, retail trade, IT, and their territory can be located within the boundaries of an entire city or region.</p>

Table 1: Evolution of SEZs

The modern concept of SEZ is more extensive and is defined as a part of the territory of states where entrepreneurs are granted access to preferential economic treatment, which varies depending on the specific country. But one way or another, the common features of many SEZs are the provision of certain preferences and benefits for enterprises participating in the SEZ, which creates the most favorable environment for entrepreneurs in certain sectors of the economy. The essence of such a preferential regime is the application by the state of a number of hard and soft policies. Among the strict policies of the SEZ are the provision, first of all, of tax and customs benefits, that is, entrepreneurs are exempted from paying part of the taxes, as well as customs duties. Also, in many free economic zones, enterprises get access to ready-made infrastructure. A common practice is the application of a separate method of regulation, the promotion

of the one-stop shop principle, government subsidies, credit lines and various land tenure systems. The list of soft policies includes the promotion of certain sectors of the economy, staff training and advanced training [66]. At the same time, the main conditions for obtaining such benefits are doing business in specific sectors of the economy.

The goal of establishing a special economic zone depends on a variety of political and economic factors, but in general, it can be said that the main objective is to meet the region's needs by developing the economic sectors that are pertinent to the region, enhancing the region's overall investment climate, and generating jobs. In addition, the introduction of SEZ policies can be considered as a testing ground for improving institutional quality [67].

The effectiveness of SEZ policy implementation depends on many factors and requires the fulfillment of a wide range of conditions covering geography, politics and the business ecosystem. First of all, the effectiveness of SEZs depends on the geographical location, the places of their operation must comply with the goals of creating SEZs and meet the specific needs of the region. But in addition to the right choice of location, the success of the SEZ will also be determined by its comparative advantage, therefore, the choice of the sectoral focus of the SEZ is essential [68]. The development of secondary effects of SEZs, such as the formation of production clusters that result in the formation of dense labor markets, the fostering of connections between producers using SEZs and local resource suppliers, and the adoption of new production technologies, are also essential to the success of SEZs. The active use of soft policy by the government helps to attract multinational companies, which, in turn, begin to launch the above process.

### 3.2 SEZ in Kazakhstan: history and current situation

The history of the development of the SEZ on the territory of Kazakhstan dates back to the 90s of the last century. The legal basis for their functioning was fixed by the

Law “On the Creation of Free Economic Zones in the Kazakh SSR” adopted in 1990. As a result, by the end of the 20th century, the SEZ regime became widespread on the territory of Kazakhstan, where the Zhairm-Atasu SEZ, Alakol and Zharkent SEZ, Lisakovskaya and Kyzylorda SEZs functioned. However, a significant drawback of these SEZs is the fact that in most cases the zones were created without a proper analysis of the economic situation of the regions, and therefore subsequently the SEZs undermined the well-established work of the economic relations of the regions, created risks of unfair competition, and therefore became economically inefficient [69]. In addition, the lack of properly developed mechanisms for the organization and management of SEZs contributed to the deterioration of the situation of the zones. Thus, the unresolved fundamental issues with the SEZ's operation caused the early termination of the SEZ's first wave [70].

To date, 13 SEZs operate in Kazakhstan, the activities of which are regulated in accordance with the Law on Special Economic and Industrial Zones dated April 3, 2019.

№	SEZ	Period of existence	Area	Purpose of creation	Direction
1	Astana - new city	2001-2027	15421.72 hectares, including the territory of the Industrial Park, as well as the administrative and business center of the city of Astana	attraction of investments, introduction of technologies and creation of modern infrastructure in order to accelerate the development of the capital; creating an environment for the development of highly efficient competitive industries, industrial development.	Mixed, including many industries, as well as the construction of residential and non-residential buildings
2	Seaport Aktau	2003-2028	2130 hectares, including the territory of the commercial seaport, parts of the territory of the city of Aktau and the Munailinsky district of the Mangistau region.	expedited regional growth to stimulate the republic's economy's integration into the system of international economic ties; attraction of investments in the spheres of industry in order to create highly efficient industries;	Logistic, oil equipment
3	Innovation Technology Park	2003-2028	163.02 hectares, located within the boundaries of the city of Almaty and	accelerated development of information and communication technologies, electronics and renewable energy sources;	ICT, R&D

			adjacent lands of the Almaty region	attraction of investments in developments in the areas of resource conservation and efficient nature management; intensifying the entry of the economy into the system of world economic relations	
4	Ontustik	2005-2030	200 hectares, located within the territory of Shymkent	development of the textile and clothing industry; expedited regional growth to stimulate the republic's economy's integration into the system of international economic ties; development of industry by attracting investments in the creation of competitive industries.	Textile, chemical, petrochemical industries
5	Pavlodar	2011-2036	3300 hectares	attraction of investments industries involving chemicals, petrochemicals, and metalworking; production of export-oriented products; putting into practice the integration of Kazakhstani products into the world's production and marketing systems; expedited regional growth to stimulate the republic's economy's integration into the system of international economic ties; solving employment problems.	industries involving chemicals, petrochemicals, and metalworking
6	Khorgos - East Gate	2011-2035	608.56 hectares	Development of export-oriented businesses; the activation of the business and investment climate, the growth of international tourism, and cross-national economic and cultural cooperation.	Mixed, including trade, warehousing, tourism
7	Saryarka	2011-2036	595.01 hectares, located on the territory of the city of Karaganda and adjacent lands of the Bukhar-Zhyrau district of the Karaganda region	development of the metallurgical industry; putting into practice the integration of Kazakhstani products into the world's production and marketing systems; expedited regional growth to stimulate the republic's economy's integration into the system of international economic ties; solution of employment problems	Metallurgy, heavy engineering
8	Chemical Park Taraz	2012-2037	505 hectares	development of the chemical industry	production of chemical products and mechanical engineering
9	National Industrial Petrochemical Technopark	2017-2032	3475.9 hectares, within the boundaries of the territory of Atyrau region.	attraction of investments in the construction and integrated development of petrochemical industries; putting into practice the integration of Kazakhstani products into the world's production and marketing systems; work in the field of research and scientific and technical innovation projects for the purification, deep processing of hydrocarbon raw materials;	Chemistry, petrochemistry

				advanced training of petrochemical workers.	
10	Astana - Technopolis	2017-2042	631.92 hectares, includes the territories of industrial park No. 2, Nazarbayev University, as well as separate subzones	attraction of investments in the areas of innovative development, IT, as well as the development of the creation of advanced technologies and know-how; development of the manufacturing industry by attracting investments in the creation of new highly efficient and competitive industries; development of the sphere of development of new technologies, assistance in their commercialization.	Mixed
11	International Center for Border Cooperation "Khorgos"	2017-2041	608.56 hectares, located on the Kazakh-Chinese border, on the territory of the Panfilov district of the Almaty region	development of border trade and the solution of related problems	Mixed, including trade
12	TURKISTAN	2018-243	1350.0 hectares, located within the territorial border of the city of Turkestan, includes the territory of the airport, the administrative and business center, as well as the industrial zone, as well as the historical center	accelerated development of the city of Turkestan by attracting investments in tourism, industry, social and housing construction; increasing the tourist attractiveness of the city	Mixed, including tourism, construction
13	Qyzyljar	2019-2044	197.3 hectares, within the boundaries of the city of Petropavlovsk	attracting investments in order to accelerate the development of the city of Petropavlovsk; mastering the production of new types of products; solving social problems; expedited regional growth to stimulate the republic's economy's integration into the system of international economic ties.	mixed

Table 2: operating SEZs in Kazakhstan [71]

The law defines a special economic zone as a region of the Republic of Kazakhstan's territory with clearly delineated borders where a particular legal framework for special economic zones governs the implementation of priority activities [72]. The essence of the special legal regime lies in the totality of the conditions for the functioning of the SEZ for its participants in accordance with this Law, the tax, customs, land

legislation of the Republic of Kazakhstan, as well as the legislation of the Republic of Kazakhstan on employment. Thus, within the framework of the special legal regime of SEZ, SEZ participants receive benefits and preferences in three main areas.

Firstly, the participants of the SEZ of Kazakhstan have the right to use the preferential regime in respect of taxes. Participants in SEZs are excluded from paying corporate income tax, property tax, land tax, and VAT on products that are fully consumed in carrying out activities that meet the goals of creating such a SEZ (as per the list of goods) within the framework of tax incentives. Secondly, a SEZ participant is provided with customs benefits: exemption from customs duties when importing goods into the SEZ territory. Thirdly, SEZ participants enjoy a preferential treatment in relation to the price of land, which implies exemption from payment for the right to use land plots received for the purpose of implementing SEZ projects. In addition, on the territory of the SEZ, the attraction of foreign labor is carried out outside the quotas and without the permission of the employer to attract foreign labor, thereby simplifying the procedure for hiring foreign labor [73].

The introduction of such benefits and preferences should enhance the economic effect of the SEZ in terms of economic growth, the creation of highly efficient industries, as well as attracting FDI. In addition, the development of the SEZ contributes to the improvement of the institutional quality of the state due to the presence of a hotel administrative management.

№	1	2	3	4	5	6	7
SEZ	Astana - new city	Innovation Technology Park	TURKISTAN	Seaport Aktau	Ontustik	Khorgos - East Gate	Pavlodar
number of participants	313	145	78	52	46	46	41

№	8	9	10	11	12	13
SEZ	International Center for Border Cooperation "Khorgos"	Saryarka	National Industrial Petrochemical Technopark	Astana - Technopolis	Qyzyljar	Chemical Park Taraz

number of participants	39	22	17	14	11	8
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Table 3: register of SEZ participants

Thus, today the total number of SEZ participants is 832 companies that contributed to the creation of more than 22 thousand jobs [73]. The largest SEZs in terms of participants were Kazakhstan's Innovation Technology Park, Astana's New City, and TURKISTAN. The list of priority activities for these SEZs is rather long and includes industries as well as the construction of social infrastructure including schools, hospitals, and sports facilities. This phenomena is specific to SEZ Astana-New City and TURKISTAN. Additionally, these SEZs are unique in that they allow for the construction of multi-apartment residential complexes, which, given the rapid urbanization and growing real estate values, is a very appealing construction market for investors. One of the oldest SEZs is SEZ Innovation Technology Park, which has been operating for 20 years. In addition, this zone ranks first in terms of the degree of infrastructure completeness.

According to the results of the audit of the effectiveness of the activities of special economic zones, the total volume of actually attracted investments in the SEZ by 2021 amounted to more than 4.3 trillion tenge, 29% of which falls on the development of the industrial sector. The leaders among SEZs in terms of attracted investments are “Astana – a new city” (2.9 trillion tenge), National Industrial Petrochemical Technopark (758 billion tenge) and Seaport Aktau (193 billion tenge). A 3.9 tenge private investment was attracted for every tenge of budgetary spending. While foreign investment in the SEZ totaled only 391.3 billion tenge, or 8.9% of the total investment, subjects of the quasi-public sector invested 807.2 billion tenge in the SEZ's industry (65.2% of the total investment in industrial projects of the SEZ). Thus, there is a predominance of public investment compared to private [74].

Despite the annually increasing performance of SEZs, there are many systemic problems that hinder the attraction of investments in SEZs. The most important of them is the lack of necessary infrastructure in the SEZ. The average infrastructure completion

rate is 70%, of which the SEZ "Ontustik", "Park of Innovative Technologies" and "Khorgos - Eastern Gate" are fully completed [75]. But on the other hand, the rest of the SEZs feel the low provision of infrastructure and are still in the process of building infrastructure. Secondly, the lack of clear specialization in most SEZs hinders the creation of production chains. Thirdly, the problem with land plots is currently intensifying. The lack of advertised rules for the distribution of land plots in the conditions of their limited number, problems with obtaining documentation for the plot, the difficulty of buying plots after the commissioning of buildings - all this creates investor uncertainty about policy, as well as increases the risk of corruption, which creates barriers to attracting FDI.

Thus, we can conclude that the SEZ in Kazakhstan is characterized as certain clearly defined territories of the state, where a special legal regime is applied, which implies the provision of various kinds of preferences and benefits to SEZ participants, which in turn creates conditions for its economic growth, the creation of highly efficient industries and attracting domestic and foreign investments. The history of Kazakhstan SEZ dates back to the 90s of the last century, but today there are 13 SEZs. All of them differ in their entrepreneurial orientation, goals, as well as the terms of operation. In addition, the condition of the infrastructure of the zones is of great importance in terms of their effectiveness. At the end of 2021, it was determined that the volume of FDI in the total volume of investments attracted in the SEZ is only 8.9%, on the basis of which we can make an assumption about the low efficiency of the SEZ as a method of attracting FDI. In addition, in such zones there is a predominance of public investment over private investment. The main problems of the SEZ of Kazakhstan include the weak state of infrastructure, the lack of a clear specialization that impedes the creation of a production chain, as well as legislative problems in relation to land.

## 4. Methodology and Data

### 4.1 Data and Sample

This section of this study describes the methodology used to analyze the role of the Kazakhstan SEZs on FDI inflows, taking into account other factors that are assumed to have statistical significance in terms of attracting FDI.

Based on the data obtained as a result of the analysis of the existing literature, it can be assumed that several groups of factors influence the choice of a place for investment. The first group includes those factors that are able to describe the state of the market of the host country.

This group of factors includes information on the host country's GDP, inflation rate, and labor market conditions. These variables can provide important information about the state of the country's economy and its market. At the same time, GDP is considered to be the most representative factor, since it reflects the general condition and size of the economy, its growth rates and general economic stability. Higher GDP indicates a larger economy with more production and consumption, which in turn indicates a growing consumer market with higher purchasing power, which can lead to increased demand for goods and services. A high level of GDP indicates market stability and reduces risk exposure for foreign investors, indicating a more favorable business environment, making the country an attractive FDI destination with high return on investment opportunities. On the other hand, a low level of GDP indicates a weak state of the economy, thereby creating the risk of losses for a potential investor.

The next group of factors that affect FDI inflows in a particular country characterize the state of the labor market in the host country. The analysis of the state of the labor market provides information regarding the unemployment rate, the availability of skilled labor, average wages, as well as the general demographic situation of the country. A low unemployment rate signals the overall good health of the host economy. Having a skilled

workforce can help companies maintain production quality, reduce training costs and increase their competitiveness, so countries with large pools of skilled labor are often more attractive to foreign investors. Wage levels are also an important factor in FDI decisions, as countries with lower labor costs are often more attractive to investors as they can lower production costs and increase profitability. Demographic trends such as population growth, age structure and labor force participation rates can also influence FDI decisions. For example, countries with young and growing populations can have a large workforce, which can be attractive to foreign investors. Conversely, countries with aging populations and a shrinking workforce may find it difficult to attract foreign investment due to labor shortages. In this study, as a factor describing the state of the labor market, the indicator of the labor force in the population, which is the ratio of the size of the labor force in relation to the total population of the country, was used. This indicator was chosen as a factor describing the state of the labor market, because it gives an idea of the level of economic activity in the country. A higher share of the labor force in the population indicates a greater number of workers, which can potentially lead to an increase in output and economic growth, and therefore attract FDI. On the other hand, a lower share of the labor force in the population implies a smaller labor force, which can limit economic growth, as well as worsen the investment attractiveness of the host country.

An important factor in attracting FDI is the availability of infrastructure, which includes information on the state of transport routes (roads, airports, seaports and railways), heat and water transmission networks, and telecommunications. These indicators directly affect the state of communication costs, the stability of the production process, as well as the level of productivity. Within the framework of this study, indicators of the length of public roads were used as an infrastructure factor.

Finally, the implementation of government policies that favorably influence the volume of attracting FDI constitute the fourth group of factors. Public policy refers to

programs and laws implemented by the government that stimulate the inflow of FDI through various discounts, benefits and preferences that directly affect the cost of doing business and improve the business environment. One of the well-known such policies is the creation of SEZs, which is the main institutional factor in this paper.

The data on the dynamics of FDI volume was taken from the report on the gross inflow of direct investments into Kazakhstan from foreign direct investors by regions of Kazakhstan. Direct investment in Kazakhstan includes net liabilities of a direct investment enterprise that is a resident of the Republic of Kazakhstan to a non-resident direct investor (liabilities of a direct investment enterprise less assets of a direct investment enterprise to a direct investor), as well as net liabilities of resident enterprises of the Republic of Kazakhstan, in relation to sister enterprises - to a non-resident, if the primary controlling investor is not a resident of the Republic of Kazakhstan. The gross inflow of direct investment into the Republic of Kazakhstan from foreign direct investors includes an increase in equity instruments, reinvested income and an increase in debt instruments [76]. Data on the gross inflow of direct investments into Kazakhstan from foreign direct investors by 14 regions of Kazakhstan are provided for the period from 2014 to 2022 from available publications of the National Bank of the Republic of Kazakhstan. As we can see from Table 3, the main centers of attraction for FDI over the chosen period are Atyrau (the first three years of the period under review without SEZ), Almaty (with SEZ) and East Kazakhstan (without SEZ) regions.

<b>region</b>	<b>Total FDI Inflow (USD million)</b>	<b>Average FDI Inflow (USD million)</b>
Atyrau region	72 379,08	8 042,12
Almaty region	49 118,24	5457,58
East Kazakhstan region	21 500,50	2388,94
West-Kazakhstan region	11 940,39	1326,7
Aktobe region	8 998,76	999,86
Akmola region	8 864,43	984,93
Mangistau region	6 973,23	774,8
Pavlodar region	6 660,62	740,06

Turkestan region	4 014,60	446,06
Kostanay region	3 333,72	370,41
Karaganda region	3 065,00	340,55
Kyzylorda Region	1 697,57	188,61
Jambyl Region	472,07	52,45
North-Kazakhstan region	173,31	19,25

Table 4: distribution of FDI by regions of Kazakhstan for 2014-2022

In order to achieve regional consistency with other variables, the regions of the country were considered without taking into account the creation of 3 new areas, i.e. the available information regarding the Abay region was included in the statistics for the East Kazakhstan region, Zhetysu region - Almaty region, Ulytau region - Karaganda region. In addition, in order to consider the data at the regional level, the data for individual cities such as Astana, Almaty and Shymket were appropriately disaggregated by region.

The existing SEZs were considered as a dummy value, which takes a value equal to 1 if there is at least 1 SEZ on the territory of the analyzed region, and 0 if the SEZ regime was not introduced in the region, taking into account the year of creation. Thus, information on the presence of 13 SEZs in Kazakhstan was distributed over 14 regions, resulting in 9 regions (Almaty region, Atyrau region, Jambyl Region, Karaganda region, Mangistau region, Pavlodar region, North-Kazakhstan region, Turkestan region, Akmola region), on the territory of which the SEZ operates. At the same time, 5 regions (Aktobe region, East Kazakhstan region, West-Kazakhstan region, Kostanay region, Kyzylorda Region) are considered regions that are not affected by the SEZ.

№	1	2	3	4
Region/city	Akmola region	Turkestan region	Mangistau region	Almaty region
SEZ	Astana - new city, Astana - Technopolis	TURKISTAN, Ontustik	Seaport Aktau	Khorgos - East Gate, International Center for Border Cooperation "Khorgos", Innovation Technology Park

№	5	6	7	8	9
Region/city	Pavlodar region	Karaganda region	Atyrau region	North-Kazakhstan region	Jambyl Region
SEZ	Pavlodar	Saryarka	National Industrial Petrochemical Technopark	Qyzyljar	Chemical Park Taraz

Table 5: regions of Kazakhstan with SEZ

As a GDP variable, statistics were used regarding the Gross Regional Product of the Republic, which is the indicator that measures the gross value added of a region, i.e. the value of all goods and services produced in a particular region. This indicator measures the level of economic activity and the quality of life of the population in certain regions of the country. Statistics for this indicator was obtained based on the publications of the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan for 14 regions for the period from 2014 to 2022.

<b>region</b>	<b>Total GRP</b>	<b>Average GRP</b>
Almaty region	82800469,1	9200052,122
Akmola region	44730858,8	4970095,422
Atyrau region	41822898,9	4646988,767
Karaganda region	28415678,4	3157297,6
Turkestan region	21533585,7	2392620,633
East Kazakhstan region	20652652,5	2294739,167
Mangistau region	19575229	2175025,444
West-Kazakhstan region	16443688,4	1827076,489
Aktobe region	16216768,1	1801863,122
Pavlodar region	14836013,4	1648445,933
Kostanay region	12305180	1367242,222
Kyzylorda Region	10470834	1163426
Jambyl Region	8541871,2	949096,8
North-Kazakhstan region	7185208,5	798356,5

Table 6: distribution of GRP by regions of Kazakhstan for 2014-2022

The analysis also used the parameter of population size as well as the average income by regions of the country. This indicators are able to provide information regarding the general condition and size of the region's economy, as well as the position of the labor market. In addition, the size of the population is often a benchmark for the formulation

and evaluation of government policy, as well as the allocation of resources. As a parameter for determining the state of the infrastructure of the regions, the indicator of the length of roads in the regions was used. These statistics have been sourced from the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan.

#### 4.2 Model and empirical results

Thus, in this study, the above variables are used as potential factors for attracting FDI. The model used to analyze the drivers of FDI inflows in Kazakhstan is as follows:

$$FDI=f(\text{availability of SEZ, GRP, population size, average income, length of roads}).$$

In this work, in order to study the effect of SEZs on FDI inflows, the following equation was used:

$$Y_{it} = \alpha_i + \beta \times X_{it} + \varepsilon_{it}$$

where *i* represents a single territorial unit (region) and *t* represents the time for the dependent variable *y* (FDI) and the independent variables.

<i>parameter</i>	<i>FDI</i>	<i>roads</i>	<i>population</i>	<i>GRPtotal</i>	<i>AvIncome</i>
<b>mean</b>	1580,88493	7134,28103	1294950,071	2742309,016	654844,3398
<b>Standard Error</b>	209,662333	268,068891	83447,81413	212068,9649	17597,27461
<b>Median</b>	681,2	6820,95	871216	1935314,5	624116,5
<b>Standard Deviation</b>	2353,45385	3009,06584	936699,3904	2380468,227	197528,9176
<b>sample variance</b>	5538745,05	9054477,25	8,77406E+11	5,66663E+12	39017673270
<b>Kurtosis</b>	4,13562719	0,90737504	1,911024699	6,085482145	0,160730955
<b>skewness</b>	2,138768	0,1893295	1,698661	2,242958	0,621479815
<b>Range</b>	10709,7917	10142,3	3583272	14244643,3	969903,96
<b>Minimum</b>	-175,19178	2586	548755	549071,3	314087
<b>Maximum</b>	10534,6	12728,3	4132027	14793714,6	1283990,96
<b>Sum</b>	199191,502	898919,41	163163709	345530936	82510386,82

<b>Count</b>	126	126	126	126	126
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Table 7: descriptive statistics

First of all, in order to determine the need for the transformation of variables, the skewness of each of the variables was analyzed. Based on the results of this work, it was decided to perform a log transformation for the variables FDI, population, GRP and average income due to high and moderate skewness in order to achieve moderately approximately symmetric distributions.

Due to the analysis of panel data, I was faced with the task of determining the appropriate model for analysis: Pooled Model, Random Model or Fixed effects Model. Several tests have been carried out to achieve this goal, such as the breusch pagan lagrange multiplier test, a test of the Hausmann specification. Based on the results of the checks, the random effects model was chosen.

The regression is set up as follows:

$$\log FDI_{it} = \alpha_i + \beta_1 \times SEZ_{it} + \beta_2 \times roads_{it} + \beta_3 \times \log Population_{it} + \beta_4 \times \log GRP_{it} + \beta_5 \times \log AvIncome_{it} + \varepsilon_{it}$$

where  $\log FDI_{it}$  is the logarithm of inflow of direct investments into Kazakhstan from foreign direct investors by regions  $i$  in year  $t$ ;

$SEZ_{it}$  - dummy variable with one if there is an SEZ in region  $i$  and zero otherwise;

$road_{it}$  - length of public roads by region  $i$  in year  $t$ ;

$\log Population$  - logarithm of population of region  $i$  in year  $t$ ;

$\log GRP_{it}$  is the logarithm of the Gross Regional Product of region  $i$  in year  $t$ ;

$\log AvIncome$  is the logarithm of the average income of region  $i$  in year  $t$ .

Additionally, a multicollinearity test was performed. The indicators showed that the variables are moderately correlated. Testing for heteroscedasticity using The Breusch-Pagan test revealed its presence, and therefore it was decided to use a reliable covariance matrix to account for it.

	Estimate	Std. Error	t value	Pr(> t )	
(Intercept)	0.846217103	6.043633320	0.1400	0.88888	
SEZ	-0.360856887	0.146506993	-2.4631	0.01519 *	
roads	0.000017070	0.000061485	0.2776	0.78178	
logPopulation	-0.517033333	0.306700824	-1.6858	0.09443 .	
logGRP	1.501677379	0.263272289	5.7039	0.0000000858 ***	
logAvIncome	-0.648462502	0.392232410	-1.6533	0.10089	
---					
Signif. codes:	0 '***'	0.001 '**'	0.01 '*'	0.05 '.'	0.1 ' ' 1

Table 8: analysis results

Based on the results of the analysis, we found that the statistically significant variables for FDI inflows are the Gross Regional Product, Less significant was the indicator of the population. An increase in the Gross Regional Product of the region by 1% leads to an increase in FDI by 1.5%. At the same time, according to the results of the regression analysis, the presence of SEZs has a negative effect on the volume of attracted investments.

## 5. Results and conclusion

This study was carried out in order to study the degree of influence of the introduction of local SEZ policies on FDI inflows to Kazakhstan. To achieve this goal, data were analyzed for 14 regions of the country for the period from 2014 to 2022 to establish the relationship between FDI inflows and SEZ policies, taking into account other factors that can affect FDI stocks. These variables represent information about the state of the regional market (Gross Regional Product), the labor market, and infrastructure (length of roads).

As a result of the analysis, it was revealed that the indicators of the gross regional product have the greatest influence on the inflow of FDI. According to these results, the volume of FDI attracted increases in regions with a high rate of gross regional product. The results are consistent with the literature and show that FDI inflows are significant in regions with higher per capita income.

The main result of the work was the conclusion that the presence of SEZs is not a statistically significant factor influencing FDI inflows. Moreover, the results of the work point to the negative impact of the presence of SEZs in the regions on the volume of FDI. Thus, despite the presence of many incentives and benefits provided by the SEZ regime, this study pointed to the negative impact of SEZs on the volume of FDI attracted to the regions, which may be due to several reasons. Ideally, SEZs should help ease the bureaucratic burden for entrepreneurs, but often the presence of SEZs creates additional barriers to doing business. In addition, given the resource orientation of the economy of Kazakhstan, most FDI inflows are in regions that have minerals, and SEZ privileges remain irrelevant.

At the same time, it is worth considering the current state of the world economy, as well as the CIS economy in particular. At present, the likelihood of many companies relocating to a neighboring state is increasing, potentially leading to an increase in FDI.

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