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Comparative Analysis of the Effectiveness of Special Economic Zones and Their Influence on the Development of Territories

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ABSTRACT

One of the key issues of the functioning of special economic zones (hereinafter SEZ) is the effect that the tax incentives they offer has on the state and their home areas. The purpose of this article is to perform a comparative analysis of SEZ of industrial type that won the global free zones of the Year 2015 awards. By summarizing China's experience of conducting a comprehensive evaluation of SEZs' effectiveness we were able to identify the main methods that are used for evaluating the effectiveness of SEZs. To perform the analysis, we use financial indicators such as direct investment, revenue shortfalls because of tax incentives, direct financial subsidies as well as indicators that reflect the impact of SEZs on the development of their home territories: People's income, employment, gross domestic product. The article presents a comparative analysis of the impact of SEZs on the development of their home territories using the case of the leader zones in the following regions: Europe - Alabuga SEZ, Republic of Tatarstan (Russia); Central and Eastern Europe - Katowice SEZ, Poland, Latin America and Caribbean - Zona Franca Santiago, Dominican Republic. The results of the analysis prove that the SEZs have a positive effect on the development of their home territories, for example, by driving up direct foreign investment and GPD per capita. At the same time, SEZs have no influence on the size of the population and the unemployment rate there.

Keywords: Special Economic Zones, Tax Incentives, The Effectiveness of Tax Incentives
JEL Classifications: O01, H21, H23

1. INTRODUCTION

Special economic zones (SEZ) are commonly used globally as a tax instrument for furthering development and attracting foreign investment. Tax incentives offered in SEZs have a far greater impact today on investment decisions than they used to in previous years. First, they now offer bigger tax cuts and longer tax holidays for investment projects. Second, during the past few decades non-tariff barriers have been reduced, with measures being taken to liberalize trade and increase capital mobility. Third, business as such is changing: Its organizational structure, production principles and the types of products are undergoing transformation; the volume of cross border transactions is growing. Thanks to improvements in logistics and communication fewer companies today manufacture their products strictly within one country. According to the International Labour Organization, the number of SEZ grew from 176 in 46 countries in 1997 to 3.500 in 130 countries in 2007. The success of economic transformations in Singapore, Korea and Hong Kong are often attributed to SEZs. In China, industrial zones were created as testing grounds for gradual liberalization of the economy and export-led industrialization (Wang, 2013). Chinese SEZs brought about a 7-percent growth in foreign investment a year and boosted regional economic growth by 12% a year (Simon et al., 2013). The success of the East Asian countries inspired many developing countries, including the countries of Africa, to establish various types of free zones. However, some zones have yielded mixed results, raising the need for assessing their influence on the development of territories.

2. METHODS AND RESULTS

The effect of tax incentives in SEZs is assessed in relation to associated costs and the goals it was designed to accomplish.

One of the common ways of assessing the effectiveness of SEZs is by performing a comprehensive evaluation of the impact of individual projects implemented in the zone on the development of the municipality or the region of residence. Examples of comprehensive studies of the effect of successful SEZs in China are outlined in Table 1.

Studies that employ this method show the actual effectiveness because they measure not only financial indicators, the amount of investments received, lost revenue resulting from tax incentives, and direct financial subsidies, but also per capita income, employment rates, GRP and other indicators.

SEZ, including industrial ones are established and operated in order to further the social and economic development of regions. This paper presents a comparative analysis of industrial zones that won the "Global Free Zones of the Year 2015 awards" (FDI "Global Free Zones of the Year, 2015") that are given out by British FDI Magazine of the Financial Times. Considering the previously done effectiveness assessments of China's SEZ, the comparative analysis of the impact of SEZs on the development of territories (countries) is performed for leading zones in the following regions:

- Europe: Alabuga SEZ, Russia (Alabuga, 2016)
- Central and Eastern Europe: Katowice SEZ, Poland (KSEZ Co., 2016)
- Latin America and Caribbean: Zona Franca Santiago, Dominican Republic (CZFS, 2016).

The analysis took into account the following parameters:

- Tax revenue lost to tax breaks;
- Gross regional product per capita;
- Foreign direct investments;
- Indicators of the social development of the region and the country.

Tatarstan has two SEZ: Alabuga SEZ and the Innopolis science and technology park. Alabuga, that has been operating in Tatarstan since 21 December 2005, was the winner of the Global Free Zones of the Year 2015 award in Europe. The SEZ of technology type Innopolis was inaugurated on 1 November 2012. Alabuga SEZ accounts for 42% of tax payments excluding VAT (8.7 billion roubles) and for 54% of investments made by the residents of all SEZ in Russia. Alabuga SEZ residents are exempt for 10 years from land, property and vehicle taxes. During the first 5 years of residency they pay corporate tax at the rate of 2%; during the second period of 5 years the tax rate is 7%, and up until 2055 it is 15.5%. The tax holidays start once there is a tax base. Insurance contributions are paid at the rate of 14% until 2017; 21% in 2018 and 28% after 2019. Alabuga SEZ is a free customs zone.

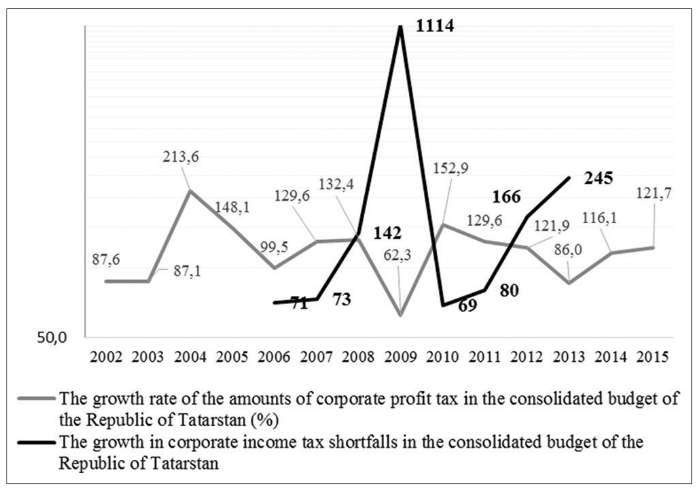
Figure 1 depicts a comparative analysis of the pace of growth in revenue shortfalls due to lower rates of the corporate income tax that SEZ residents are eligible for, and the actual revenue from the corporate income tax received by the Republic of Tatarstan. Between 2006 and 2014, the missed tax revenue stemming from lower rates of the corporate tax amounted to 739.2 m rubles, which is 0.21% of the total corporate tax collections in the Republic of Tatarstan. The drop in tax collections in 2009 was due to a crisis that hit the Russian economy in 2008.

Figures 2 and 3 show an analysis of the property and land taxes in the Republic of Tatarstan.

It might be problematic to measure tax revenue shortfalls stemming from tax concessions offered by the SEZ because the Federal Tax Service of Russia did not report the revenue forgone on account of property tax exemptions until 2011.

Over the period of study, property tax revenue shortfalls amounted to 1.76 billion rubles, and 8.63 billion rubles in the case of land tax exemptions. Lost tax revenue and insurance contributions totalled 3.9 billion rubles over the entire period of the SEZ operation in Tatarstan. An analysis of the pace of growth in GRP per capita in Tatarstan and foreign direct investment is shown in Figure 4.

Figure 1: Analysis of the shortfalls tax profits for the Special economic zone residents in the budget of the Republic of Tatarstan



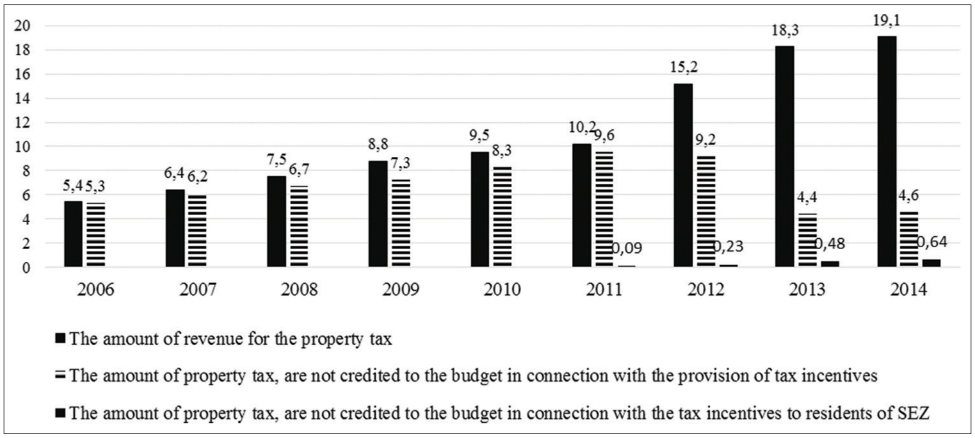
Source: Federal tax service of Russia (2016)

Table 1: Comprehensive study of the effectiveness of special economic zones

Study	Subject	Findings
Wang (2009) 326 China's municipalities between 1978 and 2007	GDP, investment, employment, FDI, exports, labor productivity	SEZs not only drives capital flows, but also spurs innovation The share of FDI and export- driven businesses increased by 58% per capita
Simon et al. (2015) 276 Chinese cities between 1988-2010	The effect on SEZs on economic development of municipalities	During the first ten years of the operation of the SEZ the GRP of the city per capita grew by 13% and by 18% in subsequent years. There was a positive effect on productivity, investment, and human capital. The impact on neighboring municipalities tends to intensify in the course of time

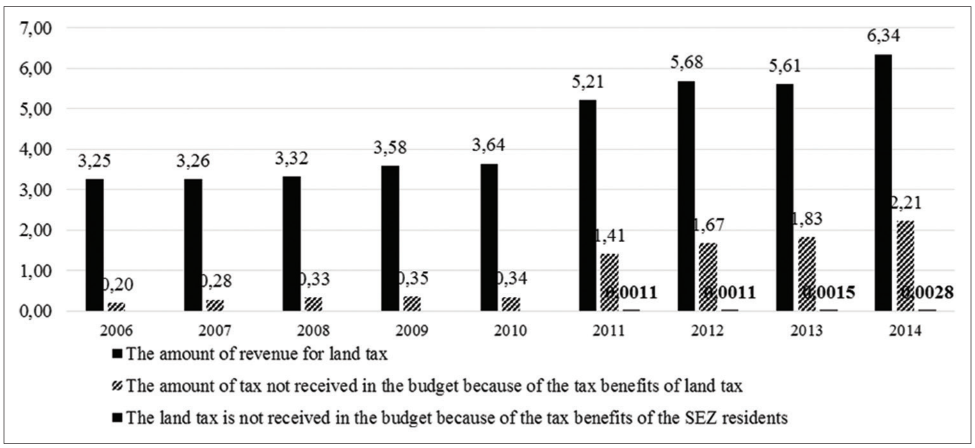
Source: Compiled by the authors, SEZs: Special economic zones, GDP: Gross domestic product

Figure 2: An analysis of property tax in the Republic of Tatarstan organizations (billion rubles)



Source: Federal tax service of Russia (2016)

Figure 3: An analysis of land tax in the Republic of Tatarstan organizations (billion rubles)



Source: Federal tax service of Russia (2016)

Over the period of the SEZ operation, Tatarstan has remained one of the least risk-prone regions of Russia from the point of view of foreign investors and one of the most investment friendly regions of the country. Between 2005 and 2014, foreign direct investments in the region amounted to 3,110.02 billion dollars, which is more than 2,000 times higher than the government's spending on the SEZ. The Netherlands and Turkey are the biggest investors in Tatarstan.

Between 2006 and 2014, GRP per capita grew by an average of 15.63%, which is an indicator of economic effectiveness. An analysis of the growth in GRP per capita and the annual population growth in Tatarstan is depicted in Figure 5.

Over the period of study, personal incomes per capita grew steadily by an average of 19% per year and the unemployment rate went down to 0.74% in 2014. The drop in unemployment was due not only to the creation of new jobs, but also to a decline in the population of able-bodied adult workers. During the operation of Alabuga SEZ its residents created 5.504 new jobs.

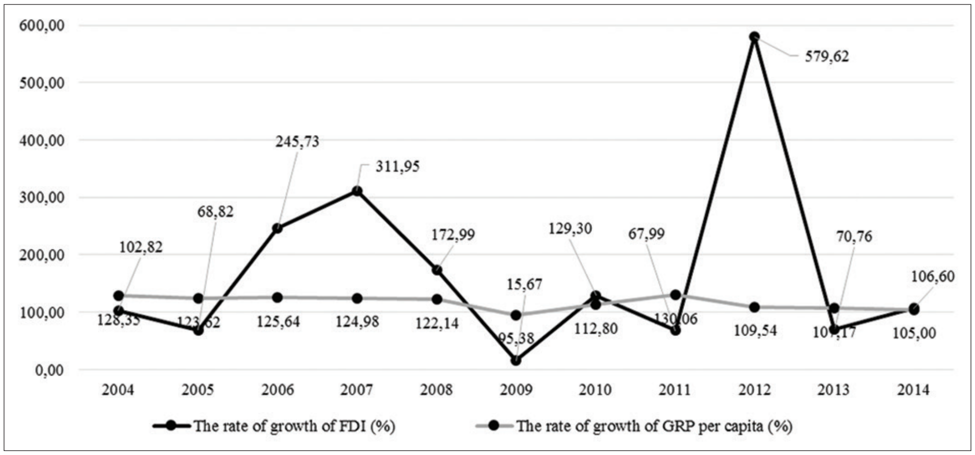
Government investment in the SEZ of Tatarstan totalled 47.4 billion rubles, including 24.7 billion rubles in Alabuga and 22.7 billion in Innopolis. The direct costs incurred by the state in the form of forgone tax revenue and public funds invested in the establishment and running of the SEZs amounted to 51.39 billion rubles. Since the launch of Alabuga SEZ its residents have paid 9.7 billion rubles in various taxes (2.6 billion rubles in 2015). The fiscal impact stands at 5.71 billion rubles. The increase in tax receipts exceeds tax expenditures for the SEZ.

The free zone and the industrial park Zona Franca Santiago in the Dominican Republic was inaugurated over 40 years ago (21 April 1974.) (CZFS, 2016). The system of tax breaks offered by the zone provides for almost complete exemption from national taxes. Domestic and foreign investors enjoy reliefs from customs duties, including VAT on imports, for 20 years. They do not pay any local taxes, state duties, fees for patents, property transfer and construction permits. Resident companies are exempt from corporate tax for 20 years (since 2011 they pay a 3.5% tax from sales in the local market). Staff of the resident companies are exempt from the income tax.

The SEZ of the Dominican Republic accommodates around 500 companies. There is a significant difference in the distribution of economic sectors: 70% of companies in the SEZ are engaged in manufacturing, meanwhile, outside the free zone, the services sector gathers almost 80% of the firms (Table 2). The level of real sales in the free zone is, on average, between 8 and 10 times higher to firms without incentives. Labor costs are also higher in the free zone for all the sectors, which are between 5 and 6 times higher than those of the firms outside the special tax regime (Artana, 2015).

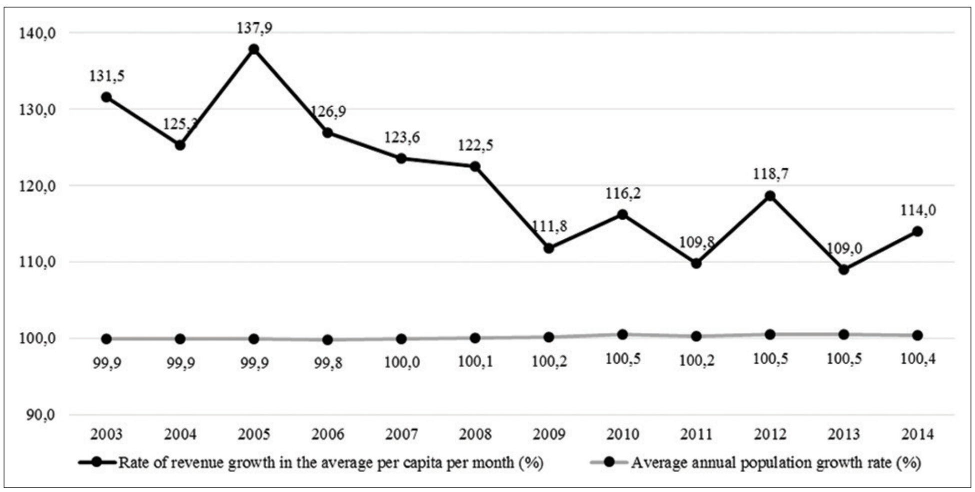
Figure 6 shows the dynamics of gross regional product per capita (%) and foreign direct investment (percentage of Gross domestic product [GDP]). Globalization trends in the 1990s and the first decade of the 2000s spurred FDI flows all over

Figure 4: Gross regional product per capita and direct foreign investments in the Republic of Tatarstan



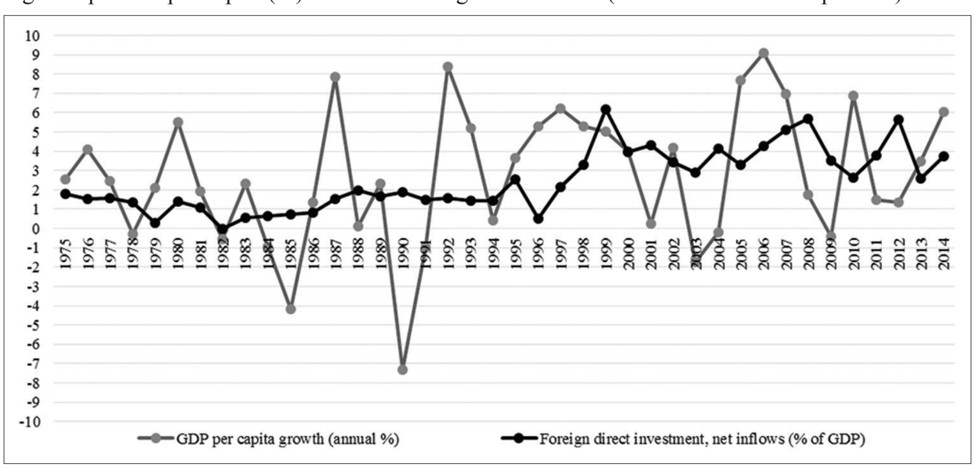
Source: Federal State Statistics Service (Republic of Tatarstan) (2016)

Figure 5: Average income growth per capita (per month) and the average annual number of population of the Republic of Tatarstan



Source: Federal State Statistics Service (Republic of Tatarstan) (2016)

Figure 6: Gross regional product per capita (%) and direct foreign investments (% of Gross domestic product) in Dominican Republic



Source: World Bank (2016) http://data.worldbank.org/country/dominican-republic the world, especially in developing countries, the Dominican Republic being no exception. FDI prevail in export-oriented countries that are based in the free zone. The inflow of FDI in the republic is largely connected with the proximity of the USA, although over the past few years investors focus on selling their products in the domestic market. Over the past 10 years FDI have varied between 4% and 6% of GDP. Between 1975 and 2014 FDI net inflows amounted to 25.59 billion dollars (World Bank, 2016).

Figure 7 shows the dynamics of tax revenue in the Dominican Republic. A drop in tax revenue in 2009 was due the 2008 economic crisis, just as in the case of Alabuga SEZ.

Table 3 presents an analysis of tax expenditures in the Dominican Republic in 2012. Tax expenditures account for 5% of GDP, 0.5% of GDP associated with corporate income tax and 0.3% of GDP being corporate tax shortfalls in the free zone (Report to the G-20, 2015).

Despite a steady population decline in the Dominican Republic, the average population growth is higher than in Tatarstan, while the average wage is 150 dollars lower and stands at 306.5 dollars. As many as 41% of people in the Dominican Republic live below the poverty line (World Bank, 2016).

Katowice SEZ (KSEZ Co., 2016) was inaugurated on 18 June 1996. In 2015 it was the winner of the global free zones of the Year 2015 award in Europe and finished the runner-up of all global zones. KSEZ boasts over 250 tenants, it has created 55,000 new jobs and attracted 5.2 billion dollars in investment, with 63% of it going into its automotive cluster.

Table 2: Enterprises by economic sector with and without benefits in Dominican Republic (2013)

Sector	Free zone		Zone without benefits	
	Firms	%	Firms	%
Industry	146	30	1065	15
Textile industry	181	37	314	4
Agro-industry	39	8	308	4
Services and others	125	25	5613	77
Total	491	100	7300	100

Source: Artana Daniel (2015)

Tax breaks in 14 Polish SEZs are available until 2026. Tax relief includes the exemption in corporate income tax for legal entities and personal income tax for non-legal entities. Tax exemption in corporate income tax might range between 25% and 55%, depending on the amount of investment, the number of new jobs, the size of the company, the location of the new investment project. Income from the business activity that is not listed on the SEZ permit is taxed at the standard rate of 19%.

Figure 8 shows the growth in GDP per capita (percentage) and the growth in foreign direct investment (percentage of GDP) in Poland. The rapid development of the automotive cluster and the presenter of the auto giants General Motors, Fiat and Toyota were among the reasons boosting the inflow of foreign direct investment (PAIiIZ, 2016).

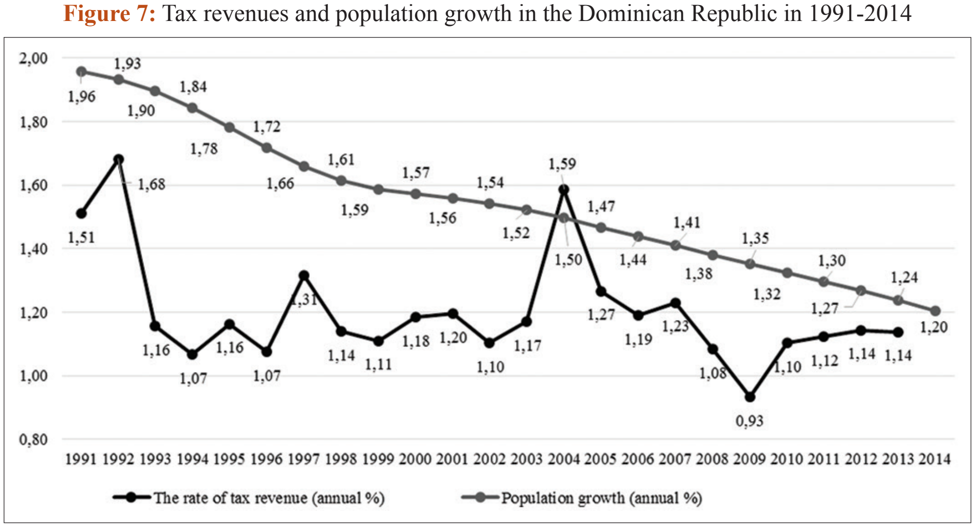
The GDP per capita data confirms conclusions made by Klemm and Van Parys after a study of 80 countries between 2005 and 2008. Lower CIT rates are effective in attracting FDI, especially if the business climate improves (Klemm and Van Parys, 2010).

The dynamics of tax revenue in Poland as depicted in Figure 9, including the effect of the 2008 economic crisis, is similar to other territories under consideration.

Tax expenditures make up an average of 4.5% of Poland's GDP. Over the period of 2009-2013, an average share of tax expenditures in the sum total of personal income tax receipts was 50% and from CIT 40%. For comparison, the share of excise tax expenditures is 3%. (Dziemianowicz et al., 2014) CIT contributes 6% to Poland's tax revenues, which is 3% lower than the OECD average (Revenue Statistics Poland, 2015).

Unfortunately, the available information does allow for precise calculations of the fiscal effect because the data on government

Figure 7: Tax revenues and population growth in the Dominican Republic in 1991-2014



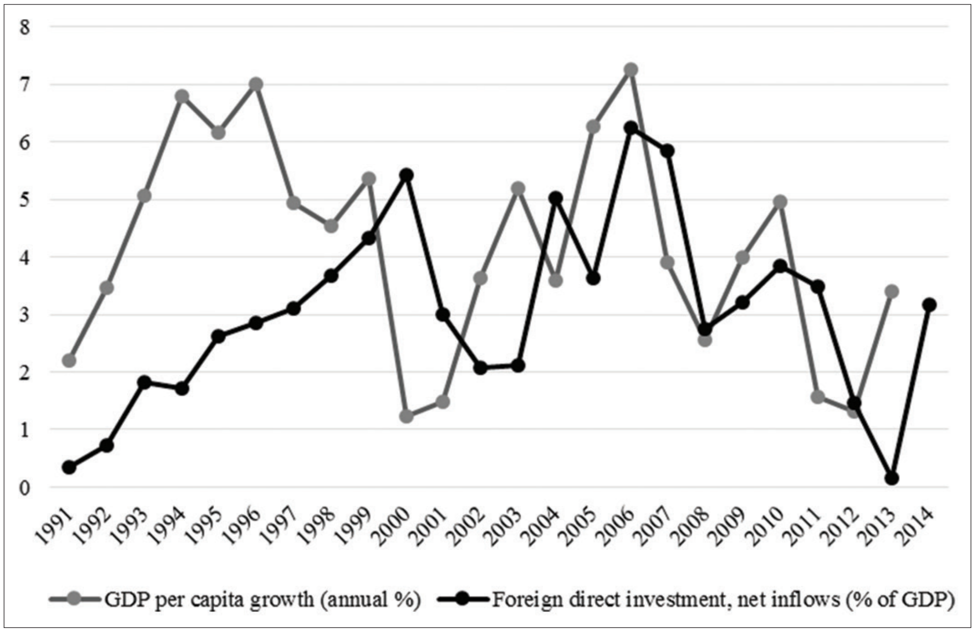
Source: http://data.worldbank.org/country/dominican-republic

Table 3: Tax expenditures in Dominican Republic, 2012

Tax expenditure, by tax (percentage of GDP)				Tax expenditure, by type (persantage of total revenue foregone)		
VAT	CIT	PIT	Others	Exemptions, reduced rates, regimes	Deductions and credits	Deferrals, reimbursements, others
3.23	0.42	0.1	1.37	70.9	2.3	26.8

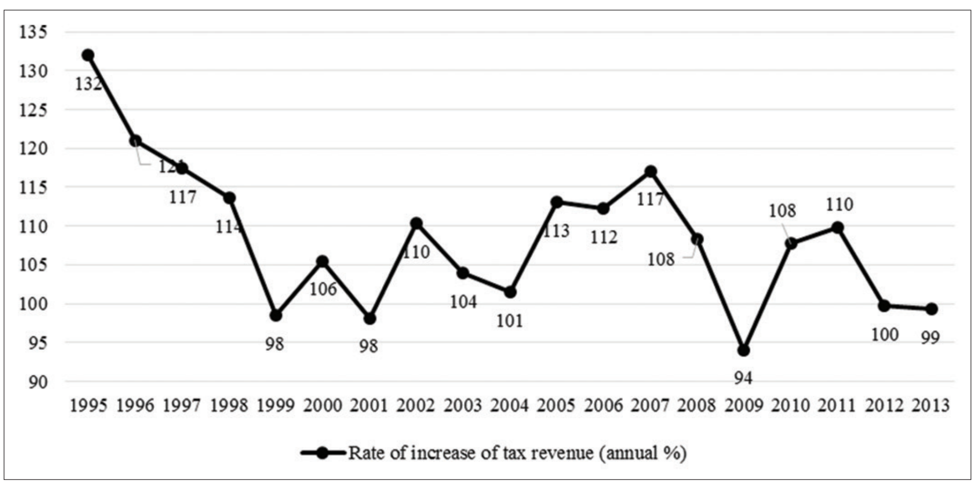
Source: Report to the G-20 (2015), GDP: Gross domestic product

Figure 8: Gross regional product per capita (%) and direct foreign investments (% of Gross domestic product) in Poland 1991-2014



Source: http://data.worldbank.org/country/poland

Figure 9: Growth in tax revenue in Poland in 1995-2014



Source: http://data.worldbank.org/country/poland

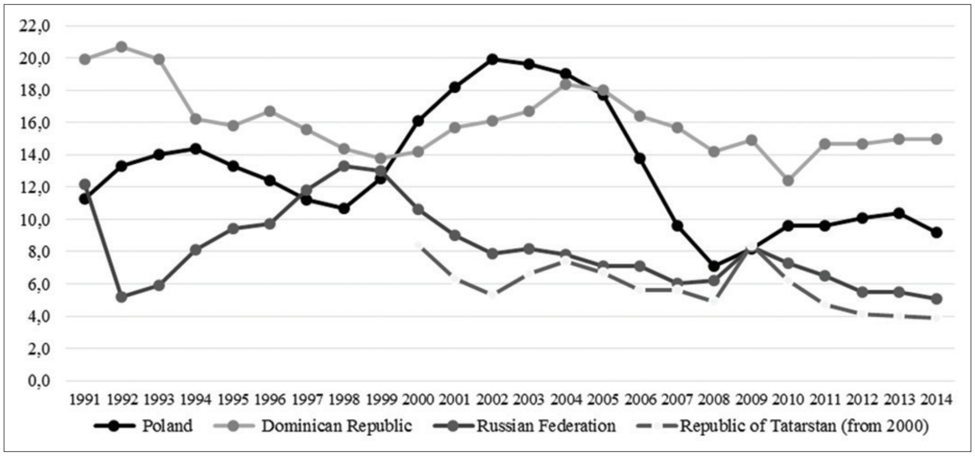
investments in the SEZs in the Dominical Republic and Poland are unavailable.

Despite a significant difference in the mean annual population figures for the countries and areas being studied - 143 m people in Russia, 38 m people in Poland, 9.5 m people in the Dominican Republic, 3.85 m people in the Republic of Tatarstan - Figure 10 outlines an analysis of the unemployment rates in percentage of total workforce.

3. DISCUSSION

The obtained data confirm the results of research by Givord et al. and Kolko and Neumark. Givord et al., who analyzed the impact on employment rates of tax incentives offered to companies that operate in stagnating regions of France (Givord et al., 2011), pointed to a weak effect of the tax incentives and concluded that their introduction encouraged companies to relocate from other regions of France The analysis by Kolko and Neumark of

Figure 10: Unemployment, total (% of total labor force) 1991-2014



Source: http://data.worldbank.org/country

the impact of tax incentives offered to new companies operating in and outside of enterprise zones in the USA revealed that the positive effect of new enterprises on employment is offset by the relocation of businesses from the neighboring states to the zone. Generally speaking, fiscal measures do not drive up employment (Kolko and Neumark, 2009).

4. CONCLUSION

By summarizing the experience of conducting a comprehensive assessment of the effect that SEZs have on their home territories, we were able to single out the key components of the analysis: Fiscal, social and economic indicators of regional development. The study comprises the analysis of the areas that are home to industrial zones topping the British FDI Magazine of the Financial Times - Global Free Zones of the Year 2015 awards ranking. These are the Republic of Tatarstan, the Dominican Republic, and Poland. Tax incentives provided by SEZs are often criticized on the grounds that they destroy the tax base and cut budget revenues without any significant payoff on the regional level. The obtained results indicate that the creation of the SEZs yielded substantial positive results for the development of the regions. Since the creation of Alabuga SEZ in Tatarstan, GRP has been growing by an average of 15.63% (as opposed to 3.7% nationally); the Dominican Republic boasted a GRP growth of 2.7; and 4.12% in Poland. There is a positive trend in the growth of tax receipts and foreign direct investment in the areas. At the same time, SEZs have no effect on population growth and the unemployment rate in the areas under study.

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