SPECIAL ECONOMIC ZONES: THE IMPACT AND IMPLICATIONS ON ECONOMIC GROWTH WITH REFERENCE TO THE CHINESE MODEL

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ABSTRACT

The subject of the research is related to the analysis of the impact of special economic zones on the economic growth of countries that have applied the aforementioned concept of economic development, with reference to the Chinese model. The research goals are to provide the scientific and expert public with an overview of the mechanism of special economic zones and the implications on targeted macroeconomic parameters. The research was conducted by analyzing the relevant literature, the method of deduction and quantification of the impact of special economic zones on economic growth. The research will provide an answer to the research problem that is sublimated in the question: Do special economic zones stimulate economic growth of the national economy and how? The results of the research will show that there is a strong relationship and a degree of determination between special economic zones and targeted macroeconomic parameters. This will confirm the basic hypothesis that special economic zones have a significant impact on sustainable and inclusive economic growth of the national economy ceteris paribus as well as the access to high technology, innovations and know-how.

1. INTRODUCTION

One of the basic elements of a country is the existence of political and economic sovereignty. Economic sovereignty implies, among other things, autonomy in determining the foreign trade and customs regime. In accordance with their economic interests, countries determine economic policies and activities in their implementation. An important aspect of economic policy, especially in developing countries, is the development of human capital and access to modern technologies. Knowledge, innovation and technological advancement are the essential components of economic growth and development. Because most countries have limited resources, both human and financial, they are therefore unable to develop the technology and innovation sector on their own to compete in the market. Therefore, the focus of the economic development strategy is how to attract foreign companies which provide access to innovation, technology and human capital development. One way to attract all forms of investment is to establish special economic zones.

At some point in time, a country may, in accordance with its economic policies, limit sovereignty in certain parts of its territory. The aforementioned parts of the territory where companies operate with various tax subsidies and where the country has limited sovereignty in terms of customs, business conditions and labor legislation, are called special economic zones.

Special economic zones can be a useful tool for comprehensive economic growth, in terms of achieving industrial competitiveness and attracting foreign direct investment. Special economic zones can also be effective instruments for promoting industrialization and structural transformation of the economy, provided that their functioning is well conceived, in accordance with economic policies. These formulations represent the basic scope of research into the functioning of special economic zones.

The research problem is sublimated into the question whether special economic zones stimulate economic growth of the national economy and how. Analytical procedures and a method of deduction will prove the basic hypothesis of the research:

Special economic zones have a significant impact on the sustainable and inclusive economic growth of the national economy ceteris paribus.

The first part of the research provides an overview of literature with relevant data and opinion of the authors from previous research regarding the subject of the research. The second part describes the development, structure, characteristics and mode of operation of Special Economic Zones globally, with a focus on dominant zone types. The third part of the paper is a research chapter where, based on the relevant data available at the time of the research, the basic hypothesis of the paper will be proven using regression model. The fourth part deals with the discussion and conclusion regarding the obtained research results and possible contradictions.

2. OVERVIEW OF PREVIOUS RESEARCH

Special Economic Zones (SEZs) are parts of territories where the country's sovereignty is partially or fully suspended in respect of tax policy, customs restrictions and labor legislation. The logical question is why countries should give up their economic sovereignty in order to establish zones with complete economic jurisdiction. Are the benefits of establishing a SEZ greater than the distributional effects and has the externalities factor been taken into account? Developing countries primarily need SEZs in order to be internationally competitive and provide access to modern technologies, innovations and knowledge.

Bjelić (2018) believes that it is the interest of countries to establish the SEZ as an instrument of export promotion and that is why the number of newly established zones increases significantly every year. However, according to the World Trade Organization, Torres (2007) argues, the effects of SEZ operations are similar to the effects of subsidies. Torres believes that the way the SEZ operates, WTO member countries are in breach of the Agreement on Subsidies and Countervailing Measures, because any form of state aid directed at companies or certain areas related to exports is considered a subsidy.

Zeng (2015) is of the opinion that SEZs can be very effective instruments in promoting the industrialization and structural transformation of the national economy only if their implementation and the mode of functioning are put in the

proper context. So far, the global results of the establishment of SEZs are different, with great success in Asian and Latin American countries and poorer results in sub-Saharan Africa.

Research of Popović, &Erić (2018) has shown that significant statistical relationship between FDI and BDP per capita in developing countries (Western Balkan countries) exists. Moreover, FDI favors countries with tax reliefs, subsidies and possibilities to generate high profit.

The World Bank's (2008) attitude is that, for developing countries, SEZs have double positive effects, both in terms of economic policies and in matters of infrastructure rationality. Through SEZ, developing country governments can develop and diversify the export sector, create more jobs, enhance policies and create a new approach to customs policy, legislation, labor legislation and public-private partnerships.

Vats, A. et al. (2018) agree with the stated claims regarding the usefulness of SEZ, but they believe that the success of SEZ depends on two critical issues. Are SEZs still relevant and effective development strategies in the present connected and globalized world and what is needed for the success of SEZs in changing national and global economic conditions?

Many empirical studies (Warr, 1989; Chen, 1993; Jayanthakumaran, 2003; Mongé-Gonzales, Rosales-Tijerino& Arce-Alpizar, 2005) have shown that many SEZs have been successful in generating exports and employment and marginally successful in assessing cost-utility ratios.

On the other hand, Farole&Akinci (2011) take the view that traditional SEZ programs have been successful in attracting investment and increasing employment in the short term but have failed to remain stable when labor costs have increased or preferential treatments have not offered a great advantage in production and/or export.

Also, studies by Hamada (1974), World Bank (1994) and Madani (1999) support the thesis that SEZs are the second or even third best solution for competitiveness and their effects are limited to specific conditions for a limited period of time. Kaplinsky (1993) also agrees with these views, arguing that companies that are

developed in SEZs have failed to extend benefits beyond SEZs or to participate in enhancing knowledge and the ability in manufacturing bases.

Regardless of different opinions and views, SEZs have played a significant role in economic growth and the process of adapting economies to contemporary trends in the global market. Willmore (1995) and Johansson & Nilsson (1997) are of the opinion that many SEZs, established in the 1970s and 1980s in Asian tiger economies, were the most significant factor in the industrial development and the process of improving production quality.

Chang (2007) also agrees with them, with the view that the main factor in the effective use of SEZs in economic development is the application of well-conceived economic policies. Specifically, Chang believes that many Asian countries, primarily China and Singapore, have provided significant subsidies to multinational companies in SEZ "in order to direct their activities to exactly those industries that they viewed as strategic" (Chang 2007, p. 54). The adoption of the SEZ model by China, under extremely specific criteria, provided a platform for attracting foreign direct investment, which was not only a factor in the development of China's export-oriented sector, but also an important factor in comprehensive economic reforms.

Researching Western Balkan countries, Popović, &Erić (2012) showed that long-term benefits of SEZ are results of well conceptualized measures and activities of economic policy and favorable political environment.

According to Farole&Akinci (2011) in Latin America, the role of SEZs in countries such as the Dominican Republic, El Salvador and Honduras was to use the advantages of preferential access to the US market and generate the development of wide-ranging product sector in economies previously based on the agricultural production. In the Middle East and North Africa, SEZs have played a significant role in enhancing the export-oriented sector, especially in Egypt, Morocco and the UAE. Sub-Saharan Africa and Mauritius are also examples of SEZ as a key aspect in supporting the process of economic diversification and industrialization.

Although nature, framework and the extent of success or limitation of the SEZ will continue to be a matter of debate and controversy in the future, it is clear

that the attractiveness of the SEZ to economic policy makers in countries, as an essential factor in trade, investment, industrialization, spatial policy, is beyond question.

3. GENESIS, STRUCTURE AND FUNCTIONING OF SPECIAL ECONOMIC ZONES

Special economic zones have existed for centuries. They were originally established as Free Trade Zones to encourage trade and predominantly took the form of cities located along international trade routes. Examples of Gibraltar (Free Economic Zone established in 1704), Singapore (1819), Hong Kong (1848), Hamburg (1888) and Copenhagen (1981) illustrate the long history of the existence of various forms of free trade zones whose primary goal was import and export of products.

The first modern SEZ was established in Ireland in 1959. The Shannon Free Zone is located near the international airport and it includes two zones, the west and the east zone. Production of electrical and information technology and aircraft maintenance are concentrated in the west zone. The east zone represents the modern services sector, above all IT, telecommunications and financial services.

There are different interpretations of defining SEZs, but they all include the general criteria that zones must meet in order to obtain the required status. Two generally accepted definitions have been defined, one by the United Nations and the other by the Kyoto Convention on the World Customs Organization. According to the UN definition, i.e. the Conference on Trade and Development (UNCTAD) of 1984, SEZs are zones in which production, trade, and storage, which are not time-limited and which are exempt from customs and taxes, are carried out.

The Kyoto Convention defined standards and procedures regarding SEZ, in particular Annex D of the Convention, which laid down the necessary standards and recommendations for the treatment of products intended for import and export, territorial restrictions, minimum required documentation for establishment and issues of national legislation. From these definitions, a common framework for all SEZs emerges, referring to a limited geographical area, unique administra-

tion/management, location, customs and tax breaks, and simplification of procedures. According to Akinci, &Crittle (2008), four main objectives achieved by establishing SEZ are:

- Attracting foreign direct investment,
- Reducing the high unemployment rate (especially in developing countries),
- Support for broad economic reforms,
- Experimental "laboratories" for the implementation of new policies and development.

The key aspects of the success of the implementation of these goals is determining the zone configuration, that is, determining which zone type is most appropriate for a particular country. Global experience suggests that in order to determine the most appropriate type of SEZ for a particular country, it is necessary to incorporate certain principles. This primarily refers to the correlation and integration of SEZs with the local area, the provision of a flexible regime for the functioning of SEZs, the supremacy of private versus state/public SEZs, and the development of the appropriate legal, regulatory and institutional framework that will provide adequate regulation and breaks.

The development of SEZs began at the beginning of the previous century and, after the Second World War, by intensified integration of the global trade and financial flows, SEZs evolved into different forms depending on the country or geographical area of activity.

The American model, in accordance with the economic status and power of the state, is a model of supremacy of free entrepreneurship, trade and protection of individual and corporate rights. Bell (2016) defined the above-mentioned model as the model with four basic pillars, namely respect for presence in zone jurisdictions, protection of individual rights, settlement of disputes at completely independent bodies and freedom of exit for entrepreneurs from zones, depending on business success. The four pillars listed are in line with the basic principles of protecting private rights and stimulating entrepreneurship as the basis of US economic development.

Federal Free Zone Programs in the United States began in 1934 with the formation of zones that were exempt from tax and customs jurisdiction. SEZs existed, first and foremost, on the East and West coasts, and were based on trade and imports of scarce technologies and manufacturing innovations from all parts of the world. Flexible tax and customs breaks, simple administrative procedures, efficient dispute resolution procedures, protection of individual rights, and the central authority of The Foreign-Trade Zone Board and the federal body responsible for the functioning of the SEZ, are the characteristics of the SEZ in the USA. Two of the most important characteristics of the American model, by which it is specific in the world, are:

- SEZs located in the USA, but also in Mexico border regions, are focused on manufacturing and marketing products for the US market.
- Products of SEZ, regardless of origin and purpose, are free to sell and distribute to the third world countries, without any burden or restriction.

The USA, in terms of simplicity of business operations, is also characterized by an interesting state system. Even today, there are areas that, although nominally under the jurisdiction of federal government, create SEZs that are beyond the full capacity of federal regulations. Thus, residents and companies in the American Samoa, Guam, Northern Mariana Islands, Puerto Rico and the U.S. Virgin Islands have no obligation to pay federal taxes and other financial obligations (Bell 2016, p. 974). The US model of SEZ is characteristic primarily of Latin and South American countries. Countries in the above regions are establishing SEZs primarily because of preferential access to the US market and the opportunity to attract US investment in manufacturing, but also in the services sector.

Unlike the American model, the East Asian SEZ model was developed on other motives and grounds. First and foremost, it was based on attracting foreign direct investment and access to high technology, innovation in the manufacturing and services sectors and reducing unemployment. The development of SEZ in countries such as Pakistan, India, Indonesia and Vietnam has been accompanied by insufficient development of state capacities in terms of legislation, administrative barriers, flexibility of tax and customs policy and protection of labor rights. Therefore, SEZs have produced variable results in the mentioned countries. It is an indisputable fact that their establishment resulted in stronger economic

growth, lower unemployment and higher living standards, but the results could have been better, above all in the distribution of income from progressive economic growth and better protection of labor rights.

An exception is the development of SEZ in Singapore whose One-Stop Shop system is the most functional of its kind. Singapore's economic development and the functioning of the SEZ in it are an excellent example of implementing effective and well-conceived economic policies. This primarily refers to a well-defined strategy for priority export-oriented sectors, a strategy for developing business, innovation and talent as domestic products. In addition, it simplifies access to all the necessary data to start a business and diversifies the Board of Directors' activities at the Economic Development Board (EDB), as the supreme authority in defining economic policies and strategies.

The Chinese SEZ development model is a specific model based on the country's economic development and transformation policy, known as Opening-up. In the 1970s, China was a poorly developed country that needed comprehensive reforms in order to catch up with global economic flows and address the technological backwardness, low standard of living, high unemployment and uneducated population. The main pillars of the reforms concerned industrialization, globalization, urbanization, informationization and market economy principles. The Chinese economy model is a hybrid of a market economy with the elements of strong role of the state in the planning and implementation of economic policies.

One of the biggest problems that China faced was the high level of technological backwardness, unemployment and uneducated population. In order to provide access to high technologies and acquire knowledge to use them in work, a model that would attract foreign direct investment in the manufacturing and service sectors was required. The development of SEZs has proven to be a good and effective model for achieving these goals.

The first SEZs were created in Shenzhen, Zhuhai, Shantou and Xiamen in 1980. Originally conceived as a pilot project, they have shown enviable results in the industrialization and urbanization of China. The SEZ model in China is quite simple. SEZs are built near airports and port cities to provide access to transport

infrastructure. The construction of the zones is financed from domestic and foreign loans and financial resources provided by the World Bank.

Simplified administrative procedures, business start-up rate (up to 8 days from application), tax and customs breaks (income tax is payable at a fixed rate of 15% in comparison to the rest of China where it is up to 33%), large labor supply (including also highly educated employees), built road and rail infrastructure and quick access to airports and ports are comparative advantages that China has successfully used. According to the Ministry of Economic Relations and Regional Cooperation (2018), the basic principles of doing business in the SEZ, defined by China, are:

- Establishment and functioning of SEZs primarily focuses on attracting and using foreign capital,
- Business forms in SEZ are joint ventures of Chinese and foreign companies and exclusively foreign investments,
- Manufacturing in zones is primarily export oriented,
- Economic activities and prices are market determined.

Today, SEZs in China are a city in a city, a state in a state with all aspects of life fully developed. The residential area, hospitals, schools, universities, cinemas, sports fields and recreation grounds are a complete unit where employees in addition to working in manufacturing and service companies live with their families. There is no longer need for ad hoc workforce engagement, but there are major migrations from rural areas to cities/SEZs, which have a higher level of economic development and prosperity than mainland China.

4. IMACT OF SPECIAL ECONOMIC ZONES ON ECONOMIC GROWTH

The main motive for establishing the SEZ is to attract foreign direct investment and gain access to high technology, as well as to increase trade. The original free trade zones were primarily used to increase trade and import of scarce products. With the evolution of trading cities in the SEZ, the range of their activities has expanded rapidly. Today, the goal of establishing SEZs, that is, their success, is

to attract as many multinational companies, both foreign and domestic, as possible, in order to maximize economic growth.

The successful implementation of the SEZ project brings direct and indirect benefits for each country. The direct ones refer to employment growth, industrial production and foreign direct investment growth and exports. The indirect benefits include improving knowledge and skills, technology transfer and adaptation to modern management practices, export diversification, enhancing the efficiency of domestic companies, creating clusters, urban and regional development and environmental protection.

The success of the SEZ depends primarily on the economic policies of countries. Well-defined and effectively implemented economic policy measures have a significant impact on the success of the SEZ, first of all, a good legal framework and administrative capacity as well as synergy of economic decision makers and local level. Countries must determine which sectors of the economy they wish to develop and, accordingly, seek to attract investment. The administrative capacity and legal framework must be designed to facilitate access to investment. All examples of good practice, above all the US, Singapore and Chinese SEZs, have the same success matrix.

On the other hand, SEZs in African countries have yielded limiting results. Farole (2011) conducted a comparative study of six African countries (Ghana, Nigeria, Kenya, Lesotho, Tanzania and Senegal) and four non-African countries (Dominican Republic, Honduras, Vietnam and Bangladesh). The study found that in terms of investment, employment and exports, African countries achieved much more modest results than non-African countries, primarily due to the poor business environment, high levels of corruption and illiteracy of the population, which could not quickly get involved in the production process.

Zeng (2015) has identified key factors that limit the effective implementation of SEZ projects. Those are:

1. Problematic legal, regulatory and institutional frameworks,
2. Poor business environment,
3. Lack of strategic planning,
4. Inadequate infrastructure,

5. Lack of knowledge and skills at management level,
6. Inconsistency of policies and failure to fulfill the obligations of local governments to investors,
7. Inconsistency in acquiring land ownership/disposal rights.

We would add another significant limiting factor, which hinders the development of SEZs and thus economic development as well. This refers to the existence of systemic corruption, which significantly reduces the capacity to attract investment and use it effectively.

In addition to the aforementioned failures in the effective implementation of SEZ establishment programs globally, SEZs have become a very significant factor in economic development, especially in developing countries. Today, there are over 3.500 SEZs, of which over 2.300 are in 119 developing countries, mostly in Asia, the Pacific and on both American continents. Data from the study by Boyenge (2007) and the International Labor Organization (2015) show that SEZs generated about 68 million direct jobs in the world (compared with 800.000 direct jobs in 79 SEZs in 1979), with exports of 851 billion USD, accounting for 41% of the world value export.

According to Zeng (2010), SEZs created over 40 million direct jobs in China and generated 22% of national GDP, 46% of foreign direct investment, and 60% of export value. Adler, Shao, &Zilibotti (2013) analyzed data from 276 cities in China for over 23 years since the creation of the SEZ and found that the average GDP growth in these cities was 12%, depending on the type of zone, and that long-term projections of the cumulative effect of the SEZ on GDP increase were about 20%. Another analysis by Wang (2013) found that, in the period between 1978 and 2008 in 321 cities, the SEZ program increased the level of foreign direct investment per capita by 21.7% and the growth rate of investments by 6.9%.

Records from many other countries around the world suggest that the potential of SEZs to boost employment and economic growth is large and significant. According to Zeng (2016), more than 7.000 companies in Jebel Ali Free Zone in Dubai employ 170.000 people, accounting for 13% of the total workforce. By 2012, the Aqaba Special Economic Zone in Jordan had attracted 18 billion USD in investment and created 10.000 jobs. Eight SEZs in Bangladesh, according to

Zeng (2016)have attracted 412 companies with investments worth 2.6 billion USD, resulting in the creation of 350.000 jobs.

The Akinci, &Crittlestudy (2008) concluded that the development of SEZ in the Dominican Republic in the period between 1970 and 2003 increased the number of employees from 500 to 200.000 and the share of SEZs in exports increase in Costa Rica between 1990 and 2007 increased from 10% to 55%.

The above global examples confirm the thesis that SEZs are one of the major generators of economic growth in the countries as well as globally. The failures of realizing the SEZ project are not the result of economic forces but of poor economic policies in countries, exceptions that have nothing to do with the impact of SEZ on cumulative economic growth.

5. RESEARCH RESULTS

The example of the Chinese City of Shenzhen best exemplifies effectively managed economic policies that have resulted in strong economic growth and an increase in the standard of living of the population. At the beginning of comprehensive Deng reforms in the late 1970s, Shenzhen was just a village of about 30,000 inhabitants and developed into a super modern luxurious city of 15 million in 2016. The impressive economic growth of one of China's first SEZ pilot projects shows their importance in overall economic growth of the country.

The SEZ Shenzhen model focused on simplified administrative procedures, efficient administration, speed of infrastructure development and zero tolerance for corruption. This simple development formula has resulted in rapid and strong economic growth. Economic growth has been accompanied by great progress in all other areas. All aspects of transport infrastructure, high degree of urbanization, construction of hospitals, schools, investments in labor force in accordance with the requirements of modern markets, are just some of the important aspects as prerequisites for successful implementation of the SEZ program.

The city has evolved and transitioned from a commodity production phase to a service and software industry. Today, Shenzhen is home to major multinational companies such as BGI, BYD, ZTE and Huawei, and Apple has moved almost all stages of the manufacturing process to Shenzhen Technology/Science Park.

The data in Table 1 quantitatively indicate the degree of economic development that is a direct consequence of the opening of the SEZ. Since China was a technologically backward country with unskilled labor at the beginning of reforms, it needed foreign direct investment to grow economically. In order to attract the necessary investments, the SEZ in Shenzhen had to adjust the conditions to investors as much as possible, primarily, by building modern infrastructures (highways, railways and airports), as well as access to electrical installations, sewage networks and other municipal infrastructure, investment in education and rapid urbanization. With the implementation of the aforementioned economic policy measures, the number of foreign companies in SEZs has progressively increased, and thus their investments. In line with macroeconomic models, this has led to an increase in employment, industrial production, exports and GDP per capita.

The calculation of the impact of the independent variable (FDI, Employment and Gross Output Value of Industry) on the dependent variables (GDP per capita) is based on a multiple regression model.

Table 1: Main macroeconomic indicators of Shenzhen in the period 1980-2015

	FDI (.000.000 USD at constant prices)	Employment (.000)	Export (.000.000$ at constant prices)	GOV of Industry (.000.000 USD at constant prices)	GDP per capita (.000)
1980	239,660,000	148,900	11,240,000	68,150,000	122,43
1981	863,600,000	153,600	17,450,000	152,520,000	840,00
1982	175,460,000	184,900	15,970,000	200,170,000	1,048,00
1983	293,550,000	223,700	62,300,000	381,870,000	1,260,00
1984	533,420,000	272,600	265,390,000	614,750,000	1,242,00
1985	793,230,000	326,100	563,400,000	768,410,000	1,498,00
1986	243,960,000	360,400	725,520,000	912,130,000	1,228,00
1987	566,750,000	443,000	1,413,540,000	1,496,810,000	1,434,00
1988	430,210,000	545,300	1,849,490,000	2,715,110,000	1,736,00
1989	469,450,000	936,500	2,174,280,000	3,123,610,000	1,418,00
1990	678,990,000	1,092,200	8,151,650,000	4,202,630,000	1,664,00
1991	1,086,110,000	1,493,200	9,862,400,000	5,808,400,000	2,209,00
1992	2,494,960,000	1,759,700	12,000,190,000	7,418,100,000	2,188,00
1993	4,969,370,000	2,208,100	14,217,760,000	11,870,850,000	2,582,00
1994	2,831,280,000	2,730,000	18,309,210,000	12,988,280,000	1,999,00
1995	3,463,070,000	2,985,100	20,527,360,000	15,494,090,000	2,344,00

	FDI (.000.000 USD at constant prices)	Employment (.000)	Export (.000.000$ at constant prices)	GOV of Industry (.000.000 USD at constant prices)	GDP per capita (.000)
1996	1,680,000,000	3,221,200	21,207,810,000	18,374,500,000	2,699,00
1997	1,353,870,000	3,535,300	25,618,440,000	21,872,080,000	3,089,00
1998	2,034,750,000	3,903,300	26,396,110,000	26,055,330,000	3,345,00
1999	1,210,170,000	4,268,900	28,208,110,000	29,511,890,000	3,592,00
2000	1,738,130,000	4,749,700	34,563,330,000	37,095,680,000	3,961,00
2001	2,723,180,000	4,913,000	37,479,550,000	45,261,730,000	4,205,00
2002	3,544,000,000	5,097,400	46,557,040,000	56,550,220,000	4,875,00
2003	4,846,870,000	5,358,900	62,982,080,000	82,097,180,000	5,679,00
2004	4,121,310,000	5,621,700	77,846,320,000	103,729,850,000	6,550,00
2005	5,250,970,000	5,762,600	101,518,290,000	126,078,500,000	7,534,00
2006	5,264,100,000	6,097,600	136,095,560,000	157,614,410,000	8,774,00
2007	8,571,550,000	6,471,100	168,492,990,000	194,908,770,000	10,349,00
2008	7,282,830,000	6,823,500	179,719,950,000	238,764,770,000	12,233,00
2009	3,558,050,000	7,236,100	161,978,250,000	231,751,580,000	12,453,00
2010	5,651,970,000	7,581,400	204,183,550,000	283,904,660,000	14,463,00
2011	7,633,070,000	7,645,400	245,517,600,000	338,204,950,000	17,404,00
2012	6,261,840,000	7,712,000	271,361,630,000	358,089,640,000	19,815,00
2013	6,700,003,000	8,992,400	305,701,910,000	397,421,950,000	22,674,00
2014	10,895,370,000	8,996,600	284,361,570,000	415,619,010,000	24,073,00
2015	25,595,310,000	9,061,400	264,038,950,000	410,618,580,000	24,380,00

Source: Authors' calculation based on Shenzhen Statistical Yearbook 2016

Applying correlation analysis we omitted variable Export from regression model because that variable was weakly intercorrelated with other independent variables and also with dependent variable (0.54 for Export-FDI ratio, 0.54 for Export-Employment ratio, 0.53 for Export-Gross Output Value of Industry and 0.54 for Export-GDP per capita ratio). Moreover p value of variable Export is higher than 0.05 (0.369) which means that targeted variable is not significant for research. The regression equation for calculating the influence of the independent on the dependent variable is presented in the following way:

$$Y = ß_0 + ß_1X_1 + ß_2X_2 + ß_3X_3 + Ɛ$$

Where Y is dependent variable (GDP per capita), X_j is independent variable (FDI, Gross Output Value of Industry and Employment), β_0 is Constant, β_1 is unknown

parameter along with the independent variable and $\mathcal{E}$ is an error that reflects all influences on the dependent variable that does not originate from the dependent variable.

Application of the multiple regression and calculation of the correlation coefficient and determination, prove the research hypothesis that special economic zones significantly influence the economic growth ceteris paribus. The explanatory variable in the model are FDI, Employment and Gross Output Value of Industry by which we tested the hypothesis that the development of SEZs (with the arrival of more companies) directly affects the dependent variables, i.e. GDP per capita, as significant macroeconomic indicator of economic growth.

Time period for observation was 34 years, since first FDI inflow in Shenzhen, in 1980. We calculated influence of independent variable on dependent variable with 2 year time lag because it is approximate time for targeted macroeconomic indicators occurrence of influence on GDP per capita, as an indicator of economic growth.

The values of correlation coefficients are 0.82 for the FDI- GDP per capita ratio, 0.99 for the Gross Output Value of Industry-GDP per capita ratio and 0.90 for the Employment- GDP per capita ratio. High values of the correlation coefficient prove a high degree of correlation between the independent and dependent variables.

Table 2: Regression Analysis Summary

Variable	B	95% Confidence for Interval B	ß	t	p
(Constant)	14119432.17	[10305705.86 17933158.485]		7,561	0,000
FDI	-0.002	[-0..04 -0.001]	-0.084	-2.899	0,007
Employment	0.048	[0.030 0.065]	0.184	5.563	0,000
Gross Output Value of Industry	0.001	[0.001 0.001]	0.903	30.273	0,000

Source: Authors' calculations

Also, the high value of the Pearson coefficient between independent variables shows the interdependence of the macroeconomic indicators. The coefficient value of 0.82 for the FDI- Gross Output Value of Industry ratio, 0.86 for the FDI-

Employment- ratio and0.87 for the Gross Output Value of Industry- Employment ratio quantitatively prove the above statement. Based on the foregoing, it is concluded that FDI, Gross Output Value of Industry and Employment as prerequisites for the success of the SEZs, directly affect the GDP per capita.

Squaring the correlation coefficient gives a more reliable relation between the independent and dependent variables.

The value of the coefficient of determination for the research model is 0.994. High values of the coefficient of determination show a high degree of determination of dependent variables based on the variations of independent variable. Thus, 99.4% of GDP per capita variability is determined by the impact of FDI, Gross Output Value of Industry and Employment. Values illustrated in Table 2 confirmed that independent variables well statistically predicted dependent variables. Moreover p value showed that each independent variable is significant and necessary for analysis.

The tested hypothesis has been proven, that is, a strong relationship of independent and dependent variables was found, as well as a high degree of determination of dependent variables by variations of independent variable.

6. DISCUSSION

Since the original forms of preferential free trade zones in maritime cities, special economic zones have been significant catalysts for the economic integration of countries with the rest of the world and economic development. The modification of the SEZs, in line with the global economic trends, forced the implementation of different policies and strategies, primarily those which are involved in attracting domestic and foreign multinational companies and investments, access to modern technologies, innovations and know-how regarding the manufacturing process.

Special economic zones today represent an important factor in economic growth and integration of national economies into global economic flows, which is shown in case of Chinese model of SEZs. Chinese SEZs model provided the best results by reason of spillover effect, apropos high percent of domestic economy inclusion. SEZs are powerful tool for economic growth in developing countries

which enable FDI attraction and positive link between the growth of industrial production, employment and GDP per capita. Research results are linked and confirmed research and attitudes of Zeng (2015), Chang (2007), Farole, &Akinci (2011), Popović, &Erić (2012). On the other hand, calculations of influence of the SEZ on economic growth in developing countries confirmed previous research of Zeng (2010), Akinci, &Crittle(2008) and Boyenge (2007),but with the analysis of real economic impact of SEZs on economic growth in developing countries. Macroeconomic growth models typical for the functioning of SEZs are confirmed to be correct. The hypothesis has been proved in the research that SEZs have a significant impact on the economic growth of the national economy ceteris paribus. This "fence" is the difference between the implications of economic laws and economic policy measures on the economic growth. The results of multiple regression analysis confirmed the hypothesis. The value of the B coefficients were positive except variable FDI, which implied weaker effect and influence to the dependent variable over the years. The value of statistics and adequate p value showed that all variables were important for research. The p value of variables, except Export variable, showed that all variables were significant for research. The value of the correlation coefficients showed the presence of strong linkage between the research variables. Moreover, the high value of coefficient of determination confirmed that high degree determination of dependent variables is based on the variations of independent variable.

7. CONCLUSION

Economic principles, incorporated into the hypothesis and quantitatively expressed, confirmed that SEZs, when well-conceived and implemented, significantly influenced the expansion of the national economy and economic growth. Increase in the number of companies within the zone leads to more investment. Higher investments in capital and labor have the effect of increasing the productivity of both factors of manufacturing. This has a direct impact on increasing production, employment, labor income and living standards. At the macro level, GDP per capita and trade volume increase, with a positive trade balance. In addition to direct benefits, the state has many indirect benefits, such as access to modern technology, new managerial knowledge and skills and training for workers, in line with technological advances and market demands.

On the other hand, economic policy measures and activities are a limitation of the macroeconomic model. Economic policies, with regard to the uneven redistribution of GDP growth and the protection of workers' rights, significantly influence the assessment of the overall success of the SEZs.

Standard models prove that SEZs multiply investment and thus GDP, but in addition to increasing national wealth, its redistribution is also important. Also, significant restrictions on labor legislation substantially reduce workers' rights with regard to job security and wage flexibility, which can be significant in terms of possible abuses. Apart from the two limitations mentioned, the importance of corruption as a devastating side effect in non-democratic countries whose economy is not based on market postulates, the legal state and the rule of law must be emphasized. Therefore, the failures of SEZs in certain countries are a direct consequence of these factors.

All three factors are not due to economic laws but to human factors and have not been taken into account in the research. Macroeconomic growth models based on the role of the SEZ have been quantified and proven. SEZs are significant for accessing cutting-edge technologies and innovations, increasing the productivity of production factors, and thus for GDP per capita. As such, they are extremely attractive to policy makers, especially in developing countries, as evidenced by the continued increase in zones around the world.

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ПОСЕБНЕ ЕКОНОМСКЕ ЗОНЕ: УТИЦАЈ И ИМПЛИКАЦИЈЕ НА ЕКОНОМСКИ РАСТ СА ОСВРТОМ НА КИНЕСКИ МОДЕЛ

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САЖЕТАК

Предмет истраживања односи се на анализу утицаја специјалних економских зона на економски раст земаља које су примијениле наведени концепт економског развоја, са освртом на кинески модел. Циљеви истраживања су да се научној и стручној јавности обезбиједи преглед механизма функционисања специјалних економских зона и импликација на циљане макроекономске параметре. Истраживање је спроведено анализом релевантне литературе, методом дедукције и квантификације утицаја специјалних економских зона на економски раст. Истраживање ће дати одговор на проблем истраживања који је сублимиран у питању: Да ли и на који начин специјалне економске зоне стимулишу економским раст? Резултати истраживања показаће постојање јаке везе и степена детерминисаности између специјалних економских зона и таргетираних макроекономских параметара. На тај начин потврдиће се основна хипотеза да специјалне економске зоне имају значајан утицај на инклузиван и одржив економски раст националне економије, као и приступ високим технологијама, иновацијама и *know-how*.

Кључне ријечи: специјалне економске зоне, макроекономски параметри, одржив економски раст, национална економија.