Impact of Export Processing Zones Foreign Direct Investments on Economic Growth in Kenya

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Abstract

Background: Export Processing Zones (EPZs) have emerged to be a crucial policy tool among developing countries as a way of capitalizing on the advantages of globalization in the form of trade which follow the inadequacies in import-substitution program. The acceptance of EPZs as a policy tool has been on an enormous rise for a long time even though many EPZs have failed to meet their primary objectives. Nevertheless, numerous EPZs still contribute significantly to the economic growth through exports and foreign direct investment (FDI) as observed in East Asian countries. From literature, many EPZs activities have failed to impact significantly the economic growth despite high investment and tax foregone by governments. In Kenya, only one study on assessment of whether EPZs help promote economic growth has been undertaken. However, the study was based on limited scope and was carried out when the program was relatively new under implementation. Thus, the general objective of this research was to assess impacts of EPZs foreign direct investments on economic growth in Kenya.

Materials and Methods The study used quarterly secondary data spanning 1993 to 2019. The data was sourced from KEPZA, KNBS, CBK and UNCTAD websites. The autoregressive distributed lag (ARDL) model was employed to achieve the research objective and to determine the strength of the long run relationship among the variables of interests. The short run dynamics were analyzed using the error correction model (ECM) since the variables in the study were cointegrated.

Results: The results show that FDI within EPZs in Kenya have a significant negative association with economic growth. (p<0.05).

Conclusion: From results of data analysis, this study found that EPZs foreign direct investments have a significant negative impact on economic growth which is attributed to generous incentives and tax holiday accorded to the zones which in turn generally benefits the investors and not the host country.

Key Word: Economic Growth; Foreign Direct Investments; Export Processing Zones; Globalizations.

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I. Introduction

Export Processing Zones (EPZs) have emerged as a crucial policy tool in the developing nations as a way of capitalizing on the merits of globalization on international trade which follow the inadequacies not addressed by the policy of import-substitution. Import substitution strategy aimed at substituting imports with local production with the aim of promoting economic growth¹. Therefore, EPZs is recognized by the World Bank as an exodus from import substitution to the export-oriented economy as well as a way of managing the barriers in the economy to export trade. The main goals of EPZs include the provision of foreign exchange earnings, alleviation of unemployment and attracting FDI to the economy of the developing countries. The Export Processing Zone was first established in 1960 at Shannon Airport in Ireland. The Irish government decided to start a free trade zone in Shannon International Airport that would provide an opportunity for foreign investors and replace the jobs lost due to the business decline of the airport. Apart from Shannon Zone, there was a remarkable increase in EPZs in the developing countries after 1966. EPZs have since then emerged as a significant policy instrument adopted by most nations intending to entice foreign investors, promote export-oriented growth, as well as generation of employment

Like many states emerging from colonial regimes, Kenya adopted the Import Substitution Industrialization strategy at independence, a legacy that the colonial government had started². Kenya manufacturing sector, therefore, expanded rapidly, especially in production on a wide range of consumer and domestic markets. But by the 1980s, industrial production targeting the domestic market had reached its limits and there was a pressing need to break into export manufacturing³. Kenya therefore inaugurated her EPZs program in 1990 after the ratification of CAP 517 of Kenya, as part and parcel of the EDP to be conducted by

the state for the transformation of the economy to change from import substitution into a path of growth leading into exports⁴. Asian countries and Latin America apparently seem to be the only countries where EPZs have lived up to this objective. EPZs in most countries specifically those in Sub-Saharan Africa have had no or minimal impact on their economic growth despite generous incentives offered to the zones and huge tax foregone by many governments as a way of attracting investors⁵. Therefore, there was need to carry out a study to ascertain impacts of EPZs foreign direct investment on economic growth in Kenya.

II. Literature review

Theoretical Review.

2.1 Neoclassical theory of growth

The neoclassical growth theory was developed by Swan (1956) and Solow (1957). The theory decomposed the elements of economic growth using capital (K), Labor (L), skills or knowledge (A) together with output (Y). The Solow growth model stipulates that all the factors combine at any given time (t) yield output. Thus, the production function takes the form of the equation below:

$$Y_{t} = f(K_{t}, A_{t}L_{t}) \qquad (2.1)$$

Whereby t represents time.

Based on this theory, changes in output are necessitated by the factor input change over a given time whereas technological change happens with changes in skills. As illustrated in the model, A and L are used multiplicatively, whereby AL represent effective labour. The original endowment of capital, skills and labour at time (0) is assumed to be strictly positive. There is a constant growth of labour and skills at a constant rate of n and g respectively given as;

$$L(t) = nL(t)...(2.2)$$

$$A'(t) = gA(t)$$
....(2.3)

The output is hereby divided between investment and consumption. The output fraction which is dedicated to investments s (saving rate) is constant and exogenous. In this case, a unit of invested output produces one unit of new capital whereas the depreciation of capital at time (t) is at a rate of δ . Therefore, the growth of capital can be described by equation 2.4 as:

$$K'(t) = sY(t) - \delta K(t)$$
....(2.4)

It is assumed in the model that the economic growth may take place over some time, and it can be easy to focus on the capital stock per unit of effective labour, k, compared to the unadjusted capital stock, K. Since k = K/AL, in which the chain rule can be used to find

$$k'(t) = \frac{K'(t)}{A(t)L(t)} - \frac{K(t)}{[A(t)L(t)]^2} [A(t)'L(t) + L(t)A'(t)] \dots (2.5)$$

Replacing K (t) in equation (2.5) with equation (2.4) and taking into account the growth rate of labour and knowledge respectively, equation 2.5 can be written as given by equation 2.6 to describe the evolution of capital per effective labour;

$$k^* = sf(k^*) - (\delta + n + g)k^*$$
 (2.6)

s is marginal propensity to save, n and g are the growth rate of labour and knowledge while δ is the depreciation rate

The equation implies that for output to grow:

$$(k^*)>(\delta+n+g)k^*$$
 (2.7)

Whereby, the invested output proportion must be higher than break-even investments all the time. The focus of this study is growth defined in the neo-classical theory in form of output. The study aims to give a conjecture with which EPZs positively contributes to Kenya's economic growth through the attraction of Foreign Direct Investments (evolution of capital). Therefore, Foreign Direct Investment meant that capital be imported into the Export Processing Zones leading to production of the capital-intensive good thus augmenting the rise in the rate of export for high-valued goods.

2.2 Eclectic theory

Eclectic theory also known as the ownership, location and internalization (OLI) paradigm was pioneered by Dunning (1973, 1980, 1988). The abbreviations OLI refer to three types of variables that determine factors that attract FDI. These are the advantages of ownership, the advantages of location, and the advantages of internalization. The benefits of ownership are those that are specific to the firm which include potential benefits in new tech and management, teamwork size and diversity, the ability to accept political support from their government, capital requirements on reasonable terms, possibly in both domestic and international industry sectors, and the simplicity with which the business can speed adjustment between two countries are also examples of such advantages. While advantages of location include shipping costs of inputs, tax laws in both supplier and destination countries, and political stability in the host country are all factors to consider. Internalization benefits are features that make it more viable to conduct transactions within the

organization rather than rely on external markets. The fundamental assumption of the eclectic theory of FDI is that all three categories of variables must be met before FDI can occur.

The basic concept of the eclectic paradigm is that in order to invest internationally, a business must have considerable advantages in terms of ownership, location, and internalization. According to the theory, the positive indirect effects of FDI to host countries and their economic systems can assume the shape of increased national income, savings, financial resources, higher employment levels, technological advances and expertise and know, improvements in human resources, intense competition, and sustainable growth (Chowdhury and Mavrotas, 2006; Moghaddam and Redzuan, 2012). This theory illustrates the assertion that foreign investors are willing to boost FDI if the basic requirements of any developing country are satisfied.

Empirical review

Leong (2012) investigated the role of EPZs in liberalizing the Indian and Chinese economies and their respective impacts on the growth of the economy based on data ranging from 1990 to 2011. The paper used the ARDL model where it was established that the growth of FDI and export have both statistically significant and positive impacts on the development of economies in these countries. An increase in regional growth with an increasing number of EPZs was found to have a negligible effect on growth.

Wang (2013) conducted a study on the roles played by EPZs in the strategies of national economy of China. The dissertation employed data from over 50 Export Processing Zones (EPZs) and used the difference-indifferences (DID) model in the analysis of the impacts on FDI in the Chinese zones. Based on the findings, the research study established that EPZs enhanced economic outputs, promote export as well as inviting huge foreign direct investment. The paper however could not offer any significance of FDI within the zones.

Vastveit (2013) examined the performance of (EPZ) programs in sub-Saharan Africa (SSA) using Lesotho and Kenya as case studies. The paper used Qualitative data analysis in the two countries' EPZ program authorities from 1993 to 2011. The study reveals that the economic zones in the two SSA nations had been rather effective in terms of employment creation and earning foreign exchange income, mostly through textile and garment sector exports. These were made possible by (AGOA). According to the findings of the research, the two nations' zones attracted a comparatively high level of FDI.

Angko (2014) examined the effects of EPZs on the Ghanaian economy based on export growth from 2003 to 2008. The paper used a sample of 100 free zone companies from a total of 176 zones. Using inferential statistics, it was established that free zone exports have been inconsistent over time. However, the research recognizes that it lacks high-quality data and suggests a more in-depth analysis of the phenomenon.

Islam (2018) investigated the influence of EPZs on the Bangladeshi economy. Data on exports, FDI and employment were utilized for nine years, from 2009 to 2017. The analysis of the article was based on graphical presentations. According to the report, EPZs help to relieve unemployment and underemployment while also assisting in income creation, with employment opportunities growing year after year. EPZs encourage foreign direct investment and facilitate technological and knowledge transfer. According to the research, total investment and exports from EPZs are growing year after year.

Hasan and Ali (2019) studied the role of EPZs on the national economy of Bangladesh. The Study adopted data from 2005 to 2018. The ARDL model results confirmed that EPZs contribute to significantly to FDI, export and investment levels.

Humaira, Mahbuba and Ayrin (2020) researched the impact of Export Processing Zones on the Economic Development of Bangladesh. The research considered the performance of the EPZs during the period from 2011 to 2019 using secondary sources of data. The paper used graphical presentation for analysis and found that the contribution of BEPZAs to national export is appreciable. In regards to FDI total inflows, EPZs FDI inflows were not significant. However, employment levels within the zones have been increasing over time.

III. Methodology

The research study adopted a non-experimental design. Quarterly secondary data spanning 1993 to 2019 was used. The data was sourced from KEPZA, KNBS, CBK, KIPPRA, World Bank and UNCTAD websites. Other sources included government statistical abstracts and economic surveys.

Theoretical Framework: The study used endogenous growth theory⁶ which was advanced to explain the possible impact of capital accumulation on growth. The model assumes that productivity increases as capital increases, and each firm faces constant returns to scale for a given technology in any competitive economy. The model is given as;

$$Y_i(t) = F(K_i(t), A(t)L_i(t))$$
....(1)
Where;

Y is the output, K is the capital, L is the labour and while A is knowledge and t represent the period. The model is centered on the presumption of constant returns, equation (1) can be written in intensive form by dividing the equation by $\frac{1}{A_L}$ to yield;

$$\frac{Y(t)}{AL} = F(\frac{R_i(t)}{AL}, 1). \tag{2}$$

Here; K/AL is the volume of capital per unit of effective labour, and Y/AL is the volume of output per unit of effective labour. If we define k = K/AL and y = Y/AL. Therefore, we can rewrite (2) as,

$$y_t = f(k_i)...(3)$$

Where.

y is the amount of output and k_i denotes components of capital.

The time is given by subscript t where t=1, 2, ..., T and subscript i represent the number of capital components, where i=1, 2, ..., T

Empirical Model: This study investigated the effects of EPZs foreign direct investments on economic growth using the Barro model. ^{7,8,9} employed the Barro growth model in their studies and modified as;

$$GDPGR_t = \beta_0 + \beta_1 EPZFDI_t + \beta_2 INF_t + \beta_3 FDI_t + \beta_4 RER_t + \varepsilon_t$$

Where:

GDPGR= Economic growth

INF = Inflation rate

EPZFDI= Foreign direct investment within EPZs

FDI= Total Foreign direct investment in the economy excluding EPZFDI

Model Estimation: The study adopted the Autoregressive Distributed Lag (ARDL) developed by ¹⁰ and ¹¹ approach to analyze the effects of EPZs foreign direct investments on economic growth in Kenya. The ARDL model in the form of error correction model was used to achieve the, objective. The model is described below.

$$\Delta GDPGR_t = \beta_0 + \beta_1 GDPGR_{t-1} + \beta_2 EPZFDI_{t-1} + \beta_3 INF_{t-1} + \beta_4 FDI_{t-1} + \beta_5 RER_{t-1} + \beta_6 X_{t-1} + \sum_{i=1}^P \varphi i \, \Delta X_{t-i} + \sum_{i=0}^P \gamma i \, \Delta EPZFDI_{t-i} + \sum_{i=0}^P \alpha i \, \Delta INF_{t-i} + \sum_{i=0}^P \delta i \, \Delta FDI_{t-i} + \sum_{i=0}^P \delta i \, \Delta RER_{t-i} + \varepsilon_t.$$
 The choice of the ARDL is based on the fact that the ARDL technique provides a unified framework for testing for co-integration relationships using a single equation.

Statistical analysis

Data was analyzed using E-views 11 student version. All the variables were tested for stationarity before model estimation. Non-stationary variables were differenced to make them stationary and to avoid spurious results. The Auto Regressive Distributed Lag model (ARDL) was estimated and p-values was used to ascertain the significance of the variables. Thereafter, the Error Correction Model (ECM) was estimated to determine the speed of adjustment since the variables of the study were cointegrated. P < 0.05 was considered as the level of significance.

IV. Result

The study applied the Bounds Test to determine existence of long run relationship between the dependent variable and the explanatory variables with the null hypothesis of no co-integration¹. The results were tabulated in table 1 ARDL Bounds Test.

Table 1 ARDL Bounds Test

 Test Statistic	Value		
F Statistic	4.537383		
Significance Level	Lower Bound Value	Upper Bound Value	
1%	3.06	4.15	
5%	2.39	3.38	
1.00/	2.00	2.12	

From the results, the null hypothesis of no co-integration was rejected since the computed F-Statistic of 4.537 was greater than the upper bound critical value of 3.38 at 5 percent level of significance at unrestricted intercept and no trend obtained from Table CI (iii) of ¹¹. The null hypothesis of no co-integration was therefore rejected hence confirming existence of long run relationship.

Cointegration and Long run form: Since the Bounds test results in Table 4.5 indicated presence of long run relationship among the variables of the study, there was need to carry out ECM to determine speed of adjustment to equilibrium, short run and long run effects of EPZs foreign direct investments on economic growth. The results are as shown in Table 2.

Table 2:ARDL Model Results

Original dep. variable: GDPGR

Cointegrating Form							
Variable	Coefficient	Std. Error	t-Statistic	Prob.			
D (GDPGR (-1))	0.556526	0.087731	6.343539	0.0000****			
D (GDPGR (-2))	0.217594	0.088464	2.459699	0.0158***			
D(GDPGR (-3))	0.198139	0.088352	2.242607	0.0274***			
D(RER)	-0.161568	0.051214	-3.154780	0.0022***			
D(FDI)	0.001619	0.000597	2.710999	0.0080***			
D(EPZOUTPUT)	0.007083	0.004408	1.606711	0.1116			
D(EPZFDI)	-0.000279	0.001077	-0.259402	0.7959			
D(INFLATION)	-0.105332	0.028309	-3.720842	0.0003***			
D(INFLATION (-1))	0.091197	0.027442	3.323307	0.0013***			
CointEq (-1)	-0.372603	0.068213	-5.462325	0.0000^{***}			

Long Run Coefficients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Real exchange rate FDI EPZs OUTPUT EPZFDI INFLATION C	-0.066904	0.027033	-2.474910	0.0152***
	-0.000404	0.000556	-0.725997	0.4697
	0.012221	0.001958	6.240017	0.000***
	-0.003330	0.001076	-3.094484	0.002***
	-0.066675	0.029828	-2.235350	0.027***
	7.810541	1.837279	4.251145	0.000***

Source: Author's Computation, 2021

Note: '***', '**' represent statistical significance at 1 percent, 5 percent and 10 percent, respectively.

The results in table 4.6 shows that the Error Correction Term (ECT) is -0.3726 with p-value (0.000). This further supports the existence of cointegration relationship among variables in the model because the coefficient is statistically significant and has correct (negative) sign at 5 per cent level of significance. Thus, the adjustment towards equilibrium following a shock adjust at a rate of approximately 37.26 per cent quarterly. The cointegrating equation was given as follows.

ECM = GDPGR - (-0.0669*RER -0.0004*FDI + 0.0122*EPZOUTPUT -0.0033*EPZFDI - 0.0667*INFLATION + 7.8105)

V. Discussion

The model error term was normally distributed with no serial correlation. The parameters were stable under 5 percent level of significance and the variables are had no multicollinearity. The cointegrating form (ECM) results in Table 2 show that in the short-run, all the variables in the model were statistically significant at 5 per cent level of significance except EPZs output and EPZs foreign direct investments. In the long run, real exchange rate, EPZs foreign direct investments and inflation coefficients were found to have significant negative association with economic growth. EPZs output was found to have a positive statistically significant association with economic growth in the long run. FDI outside EPZ was not statistically significant in the long run.

The long run results in Table 2 indicate that real exchange rate coefficient is negative and statistically significant. This means that an increase in real exchange rate by one unit leads to a decline in economic growth by 0.0669 units holding all other variables constant in the long run. This implies that an appreciation of Kenya shilling against the Dollar discourages the investors from investing in EPZs in Kenya hence reducing capital inflows and economic growth within the zones. EPZs output coefficient was positive and statistically significant. Therefore, holding all other variables constant, an increase in EPZs output by one million USD will lead to 0.01221 increase in economic growth in the long run. This implies that EPZs output increases the national manufacturing exports which are major components of growth. The results are consistent with the findings of Wang¹³ who found that EPZs output and export contributes significantly to economic growth. The findings are also consistent with the popular export-led growth hypothesis¹⁴ which advocates for export as a major determinant of economic growth.

EPZs foreign direct investments coefficient was negative and statistically significant. The results imply that increase in EPZs foreign direct investments by one million USD will result to decline in economic growth by 0.00330 units cateris paribus in the long run. Thus, increase in EPZs foreign direct investments induces a decline in economic growth due to huge revenue loss in terms of generous incentives accorded to the zones which do not translate to long term growth which can be attributed to withdrawal of the firms from the zones after expiry of the tax holidays and other incentives. This negative relationship between EPZs foreign direct investments and GDP is in line with similar findings by¹⁵. The study found that free zones investments in Ghana have significant negative relationship with economic growth.

Inflation coefficient was negative and statistically significant. From the results, an increase in inflation by one unit will lead to 0.06668 units decline in economic growth holding all other factors constant in the long run. The rate of inflation is a proxy for the level of economic stability in an economy therefore investors prefer to invest in more stable economies with a lesser degree of uncertainty¹⁶. This is consistent with theoretical expectation of the classical views on the role of exchange rate volatility in the macro economy. It is also consistent with other empirical studies such as ¹⁷. Thus, it is reasonable to expect that increase inflation would have a negative impact on economic growth. The coefficient of FDI outside EPZs was statistically insignificant in determining economic growth in the long run.

VI. Conclusion and Policy Recommendation

The literature on Export Processing Zones is characterized by arguments both for and against the use of EPZs trade tool as a means of promoting economic growth especially in the developing world. Most governments in poor countries see it as a viable means to promote the growth of their economies by offering generous trade incentives to these firms to attract investors. From the results, it can be concluded that Kenya EPZs foreign direct investments do not translate to growth in the long run despite the generous tax holidays and incentives accorded to the zones.

Policy makers should formulate and implement sound fiscal and monetary policies to create the enabling environment to attract more investors. On the other hand, the government should regulate the incentives and tax holidays given to EPZs such that no investor should withdraw at the expiry of tax holidays. This will reduce high turnover of investors at expiry of tax holidays. Efforts should be made to attract especially more local firms into the zones since they invariably retain all their profits in the Kenya economy rather than just benefitting investors only who are foreigners. This is because over-reliance on foreign investors will not maximize the full benefits from the operation of EPZs.

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