IMPACT OF EXPORT PROCESSING ZONES FOREIGN DIRECT INVESTMENTS ON ECONOMIC GROWTH IN KENYA

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DECLARATION

This research project is my original work and has not been presented for a degree in any other University or any other award.

Signature…… Date…11.11.2022……

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I confirm that the work reported in this research project was carried out by the candidate under my supervision.

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To Evans Kipchumba.

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ABBREVIATIONS AND ACRONYMS

ADF	Augmented Dickey-Fuller
AGOA	African Growth and Opportunity Act
ARDL	Autoregressive Distributed Lag
ECM	Error Correction Model
EDP	Export Development Program
EPZs	Export Processing Zones
EPZA	Export Processing Zones Authority
FDI	Foreign Direct Investment
ILO	International Labour Organization
IMF	International Monetary Fund
ISAPs	Industrial Structural Adjustment Program
KEPZA	Kenya Exports Processing Zones Authority
MFA	Multi-Fibre Arrangement
MUB	Manufacturing Under Bond
NICs	Newly Industrialized Countries
OLS	Ordinary Least Squares
SAPs	Structural Adjustment Programs
SDGs	Social Development Goals
SEZs	Special Economic Zones
SSA	Sub-Sahara Africa
UNCTAD	United Nations Conference on Trade and Development
UNIDO	United Nations and Industrial Development Organization

OPERATIONAL DEFINITION OF TERMS

Economic Growth: Annual rate in a country's production of economic goods and services over a time period.

Export Processing Zones: Industrial establishments within third world countries that provide incentive schemes and a barrier-free conditions to spur economic growth by attracting foreign direct investment, promoting export, and generating revenue and employment creation.

Globalization: It is a method of contact and incorporation among individuals, corporations, and governments from other nations through the movement of capital, products, and services worldwide.

Foreign Direct Investment: Investments made by a firm or individual in a country other than home country enterprise.

Import Substitution Strategy: Trade and economic policy that advocates for local production of goods that could have otherwise been imported so as to reduce foreign dependency.

ABSTRACT

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 known 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. The specific objectives were to measure effects of EPZs foreign direct investments (FDI) on economic growth in Kenya and determine the factors that attracts EPZs foreign direct investment. 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 first 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. The results show that FDI within EPZs in Kenya have a significant negative association with economic growth. This is because of high turnover of investor within the zones after expiry of tax holidays and incentives accorded to them. Thus, depriving government its resources that could have otherwise been invested in other productive sectors. On the other hand, the second objective of the study was achieved using the ordinary least squares (OLS) estimation. The OLS results found that inflation coefficient has a negative statistically significant relationship with EPZs foreign direct investment. Gross Domestic Product and real exchange rate coefficients had a positive association with EPZs foreign direct investment. External debt was found to be insignificant in determining the FDI within EPZs in Kenya. 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. EPZs output have a significant positive impact on economic growth in the long run in Kenya. While low inflation, depreciation in exchange rate, low economic growth and high GDP significantly play a positive role in attracting FDI within EPZs. Thus, it can be concluded that despite generous incentives accorded to EPZs in Kenya, FDI within the zones do not translate to economic growth in the long run. This can be attribute to high turnover of investors within the zones after expiry of tax holidays and incentives accorded to them, high rate of inflation, appreciation of exchange rate, low production capacity as well as growth in GDP in Kenya. From the findings, the study recommends that the Kenya 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 and retain revenue forgone within the economy. Efforts should also be made to allow local firms into the zones since they invariably retain all their profits in the Kenya economy rather than just benefitting foreign investors. This is because over-reliance on foreign investors will not maximize the full benefits from the operation of EPZs.

CHAPTER ONE

INTRODUCTION

1.1Background of the Study.

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 growth as noted by Elbeydi, Hamuda, and Gazda (2010).

The import substitution approach had been effective in enhancing production of goods for import substitution more lucrative than production of goods for export based on inflated exchange rates, high tariffs, and quantitative limitations (Odhiambo, 1991). According to Aggarwal (2005), the import-substitution method was widely preferred by the top leadership of developing nations following their independence because it promoted industrialization which offered the possibility of increasing the income per head (per capita income) and enhance economic growth, as noted by Baldwin (2004). However, the restrictions on import substitution did not have much influence to help these countries in overcoming the variation in the economic challenges they faced. Therefore, the restrictions on import substitution were successful in compounding the economic challenges as well as distorting macroeconomic statistics in those nations.

For example, a report by the United Nations Conference on Trade and Development (UNCTAD, 2015 indicated that import substitution strategies were adopted by countries characterized by over borrowing and global financial downturn in the 1980s, resulting in a scenario where the

ratio of debt-to-GDP increased to over 70 percent while per capita income fell by over 14 percent with very hyperinflation across the region. Thus, import substitution can be seen as a scheme that appeared as partial against the export sector as recorded by Aggarwal (2005).

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 as noted by Cook (2000). 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 (World Bank, 2011). A popular characteristic of the Export Processing Zones is the fact that they provide special incentives that attract foreign investors and production for export. The incentives include duty-free import and export, tax holidays, repatriation of profits at a free cost, infrastructural development together with labour laws exemptions.

The Export Processing Zone was first established in 1960 at Shannon Airport in Ireland (ILO, 1988). 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 as noted by Farole (2011). The enormous growth of the EPZs has been experienced regardless of most zones failing to achieve their set goals i.e., other developing countries like Nigeria, Senegal, Namibia and Togo the EPZ program has failed to an extent that some zones are unable to meet their initial set-up costs which were very expensive as noted by Page and Velde (2004).

Nevertheless, some zones contribute significantly to the economic growth of their respective countries through FDI and increasing total exports and employment, catalyzing the integration with other global trading partners and transformation of structures, which include upgrading and industrialization. These zones are primarily in East Asian countries such as South Korea, Japan, China, India, South Korea together with some selected countries from Latin American such as Brazil, Argentina, Puerto Rico, Mexico and the Dominican Republic (Vasveit, 2013).

The success of these EPZs is attributed to various factors. For example, East Asian countries EPZs have performed well because of the socialist economy background traits as well as the vast size of spread over land together with enormous regional diversity as recorded by Farole (2011). The success of Asian EPZs is also a result of the fact that all Asian EPZs are public. Public management seems to have worked well in Asia because the EPZs have been managed flexibly, akin to private businesses with profit-making as an objective, and because most of the zone administrators have learned from each other from the experience of the well managed successful zone in Taiwan (Aggarwal, 2005).The success of EPZs in Latin America and East Asia have also been accredited to the correlation with stable macroeconomic policies and realistic exchange rates in these countries (World Bank, 2002).

Many Third World countries have borrowed a leaf from the Newly Industrialized Countries (NICs) and have put in place programs similar to EPZs with the hope of realizing similar results (Vasveit, 2013). According to Taylor and Smith (2007), the liberal approach which Sub Sahara Africa (SSA) adopted concerning EPZ was to recognize the failures of their manufacturing sector to help in the economic development. There has been a general underperformance among the African zones except for Mauritius and a partial exception of Kenya, as well as Lesotho and Madagascar (Farole,2011). Watson (2013) discovered that most zones in Africa have faced

challenges including inadequate attention to issues of displacement and labor, high turnover of investors, poor infrastructure, weak macroeconomic policies and weak skills of economic management making it difficult for governments to handle the multiple challenges in delivering government services, provision of high-quality infrastructure together with human capital.

1.1.1 Export Processing Zones in Kenya

Like many states emerging from colonial regimes, Kenya adopted the Import Substitution Industrialization strategy at independence, a legacy that the colonial government had started (Chabari, 2000). 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 manufacturing (Vastveit, 2013)

The World Bank and other multilateral development agencies were pressing for the implementation of Structural Adjustment Programs (SAPs) in developing countries. Industrial Structural Adjustment Program (ISAP) was put in place with its objective of realigning the industrial manufacturing sector in Kenya to encourage and attract investment and a more export-friendly environment.

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 exports (McCormick, 1995.) Therefore, in an attempt to inculcate confidence among the potential investors alongside signaling commitments to stable and predictable EPZ policy regimes, the

government enacted an Export Processing Zone Act in November 1990 whereby a regulatory authority known as Export Processing Zones Authority (EPZA) was established.

EPZ act conferred several incentives, such as exemptions from (VAT) on inputs, custom duty on imported inputs, payments of withholding taxes on dividend together with other payments made to a non-resident for ten years, stamp duty on all legal instruments relating to the EPZ activities, rent and tenancy controls, and exchange controls on payments relating to raw materials and related expenses as well as receipts of EPZ exports (Chabari, 2000). The incentives are given to the firms in free zones to reduce the expenses of conducting business as well as motivating the investors to consider increasing their production levels as well as quality improvement of their products so that they can meet the international standards as recorded by Angko (2014).

The program focuses mainly on attraction of investments that are export-oriented thereby creating more job opportunities, diversifying and expanding exports and increasing economic value additive investments (KEPZA 2013). The EPZs program has a central role in the development plan for the nation, commonly known as the Kenya Vision 2030 under the Economic pillar, aiming to achieve a rate of economic growth of 10 percent p.a. and ensuring its sustainability. Thus, the government's plan on EPZs captured in the economic pillar aims to establish a diversified, competitive and vigorous manufacturing sector.

Despite the inauguration of the EPZ program in 1990, the commencement of production was not until 1993 when the government commenced numerous key reforms like eliminating exchange rate controls and allowing rates to be determined by the markets, eliminating import controls and implementation of tax reforms (Vastveit, 2013). Table 1.1 below highlights key performance indicators of the EPZs in Kenya as well as their contribution to GDP since its inception.

Table 1. 1 Key Performance Indicators of the EPZs in Kenya

PERIOD	EPZ EXPORTS (Ksh million)	EPZ FDI (Ksh million)	EPZ EMPLOYMENT (no of workers)	EPZ IMPORTS (Ksh million)	EPZ CONTRIBUTION TO GDP (per cent)
1999	3,020	5,160	7,077	2,126	0.96
2000	3,635	6,107	6,487	2,349	0.97
2001	5,962	8,950	13,444	399	1.02
2002	9,741	12,728	26,447	7,043	1.08
2003	13,818	16,716	38,199	9,920	1.4
2004	23,047	17,012	37,723	13,029	2.18
2005	20,036	18,862	38,051	12,497	2.03
2006	22,893	20,320	36,757	12,674	2
2007	27,408	19,027	34,446	17,363	2.2
2008	28,094	21,701	30,187	16,348	2.29
2009	23,948	21,507	30,115	12,672	1.92
2010	28,998	23,563	31,026	16,518	2.2
2011	39,067	26,468	32,043	21,443	2.76
2012	39,962	38,535	35,501	24,973	2.75
201	44,427	48,004	39,961	27,413	1.06

3					
2014	51,377	44,218	46,221	29,461	1.06
2015	60,879	48,128	50,302	31,370	1.04
2016	64,151	88,977	52,947	30,160	0.96
2017	60,729	95,258	54,764	30,305	0.87
2018	72,390	105,066	57,099	34,229	0.84
2019	68,502	106,433	60,383	39,638	0.77

Source: Kenya Export Processing Zones Authority KEPZA (2002-2020); Economic Surveys (2002-2020).

Table 1.1 indicates that all key indicators of EPZs have been increasing since 1993 up to 2019. However, their contributions to GDP have been experiencing decline. Its contribution to GDP increased between the year 1999 up to 2008. In 2009 it experienced a decline which can be associated with post-election which perhaps might have scared away the FDI investors within the zones. However, there was an increase in EPZs contribution to GDP thereafter. This increase is seen between the 2010 and the year 2012 as depicted by table 1.1. From 2013 to 2019, EPZs contribution to GDP have been declining. This means that other sectors in the economy are doing much better than the program.

According to Kenya Institute for Public Policy Research and Analysis (KIPPRA)(2013), the GDP from the manufacturing sector has stagnated around 10 per cent despite the government's effort in the mid-1980s to focus on export strategy rather than the import strategy. Export processing zones under the manufacturing sector is faced with various challenges that limiting their objectives (Chemengich, 2010). Restricted diversification, low-value addition, high costs of

energy, poor infrastructures, the flooding of counterfeit goods, high turnover of investors after-tax holidays and inadequately skilled labor are major key barriers which the sector face. Overreliance on the manufacture of foods, usually impacted by unfavorable weather conditions, additionally obliges the performance of the sector (KNBS, 2013). The exports from the zones are of low-value addition with limited or no diversification and thus faces high competition in the world market forcing companies to contend with the available market (EPZA, 2012).

Although there has been an increase in the total exports, the balance of trade in Kenya has remained negative (KNBS, 2005, 2008, 2012; World Bank, 2013a). This is attributed to a high number of inputs sourced from abroad used in the industries. The percentage of textile and apparel inputs sourced from abroad is approximately 83 per cent, the service sector is 59 per cent, food and agricultural is 16 per cent and other manufacturing inputs is 66 per cent (Vastveit, 2013). Most EPZ firms opt to import their intermediate goods owing to the unreliability and low quality of inputs available in the Kenyan market, and the domestic labour force within EPZ firms which for the most part was the only local input relied on, and is characterized by high turnover (World Bank, 2016). Though the EPZ Act provided for several benefits to facilitate the production of goods by EPZ companies, the government has done little to improve the poor state of communication and transportation networks that affected the transfer of goods from the zones to their endpoint. These inefficiencies further increased costs for EPZ firms, which has reduced the competitiveness of their exports and also reduced FDI (Mulama, 2007).

Investments within the Kenya EPZs also remained low and stagnating in the years before the enactment of the African Growth and Opportunity Act (AGOA) by the US government in May 2000 (Vastveit, 2013). In 1995, the investments within these zones were only valued at KSh 3.9 million, whereas the output of the zones was small based on the GDP as noted by Mwenga and

Ndung'u (2001) and Omolu (2006). AGOA allowed access to markets that are duty-free to the United States for eligible apparel articles which came from the sub-Saharan African countries that qualified, thereby briefly triggering a resurgence of the EPZ scheme mainly within the sector of apparel and textile (Were & Mugerwa, 2009). The number of zones that were gazetted rose from 19 in 2000 to 37 in 2004, with the number of textile industries operational in the various zones rising from 10 to 40 during the same period. Kenya's garment and apparels exports also thrustfrom US$30 million in 2000 to US$249 million at the startof 2005 (Chege, Ngui & Kimuyu, 2014).

However, the increased investments experienced after the enactment of AGOA started declining in 2005 following the termination of Multi-Fibre Arrangement (MFA) which had taken effect in 1974. MFA had provided an outline through which the developed countries including the U.S., Canada and EU member countries removed forced quotas on the exportation of apparel and textiles originating from countries that are developing. These restrictions negatively impacted several large-scale textile exporters, including China and several Asian countries that could produce huge volumes with low prices to the benefit of Kenya and a few other developing countries that were granted special market access by the AGOA (McCormick, Kamau & Ligulu, 2006).

After the termination of the MFA in early 2005, the investment levels within the apparel and textile industry reduced by 11.5 per cent from KSh8.6 billion in 2004 to KSh7.6 billion in 2008 (Chemengich, 2010). It also reignited competition in the global textile industry, which marked an end to the growth fortune that had been experienced by Kenya's textile industry.

There has also been a high turnover of firms in Kenya's EPZs especially after the expiry of the tax holidays and incentives, although the number of firms investing under the program has

grown over the years, the rate of divesture is also very high accompanied by the high mobility of capital invested in the EPZs (Kuria, 2016).

Generally, the direct costs for the establishments of the infrastructure of EPZ, foregone revenues for the government, subsidized services and income at the national level, due to tax exemptions and import-export duties exemptions are expected to translate to long term benefits (Kuria, 2016). This therefore means, the zones are anticipated to support the national economic growth by creating employment opportunities, generation of foreign exchange, diversifying exportation, attracting FDI as well as stimulating the transfer of the necessary technology to improve the production levels.

Despite the government's efforts to promote economic growth through EPZs as part of manufacturing, there have been inconsistent trends in Kenyan economic growth in the past few years as detailed in Figure 1.1.

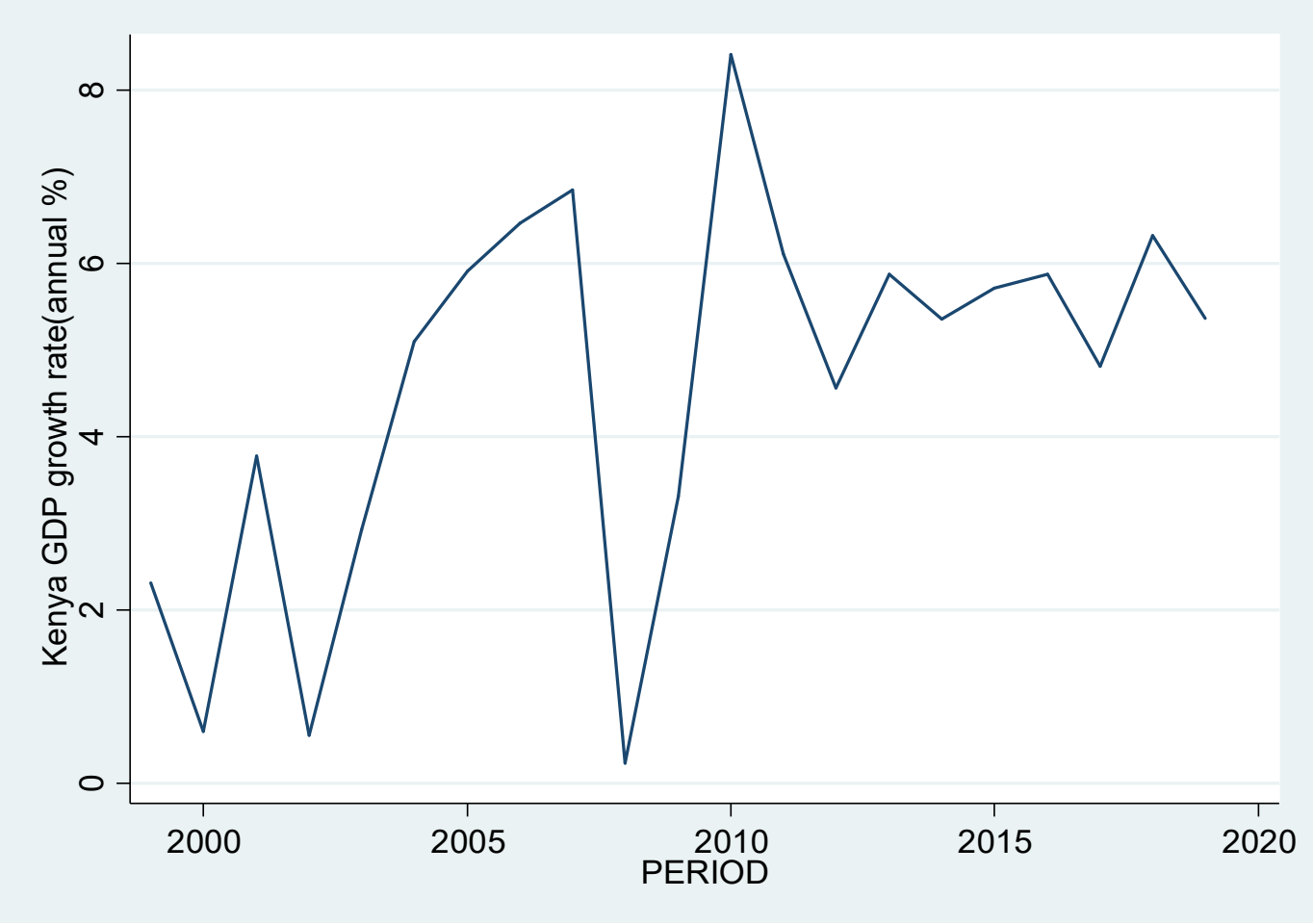

Figure 1. 1 GDP growth rates in Kenya 1999 – 2019

From the above illustration, the real GDP growth rate of the country portrayed low rates at the beginning of the year 2000s which can be associated with low contribution EPZs to GDP. However, there was an increase in GDP growth rate between 2003 and 2007 which is also consistent with EPZs support to the GDP as seen in table 1.1. Thereafter the economy registered a sharp drop in 2008 which can be linked to the post-election violence. Nevertheless, there was an improvement in the economic performance throughout 2009-2011 which is linked to improved political stability in the country that encouraged foreign direct investments as well as promoted exports. Thereafter, the GDP growth rate has been inconsistent over the observed

period with a lower GDP growth rate in 2012 of 4.56 per cent, with an increase between the period 2013-2016 followed by a decline in 2017 and thereafter an increase in 2018 with another decline in 2019.

The EPZ regimes that have succeeded in maintaining their economic growth rate are found in Asia and parts of Latin America. Mauritius stands out as the only successful EPZ case in Africa (Vasveit, 2013). Thus, there is a need to assess the impacts of EPZs foreign direct investments to ascertain their significance on the economic growth in Kenya.

1.2 Statement of the Problem

EPZs are believed to have a high likelihood of spurring any nation in its quest for economic growth and development. 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 investors (Angok, 2014). In countries like Togo, Nigeria, Senegal, and Namibia, the Export Processing Zones policy program has completely failed in with some zones unable to repay the expenses incurred for their initial set up as recorded by Jauch (2002) and Stein (2012).

Therefore, there was need to carry out a study to ascertain impacts of EPZs foreign direct investment on economic growth in Kenya. This is because FDI as a major component of EPZs and growth experience high turnover of investors especially at the end of tax holidays and incentives accorded to them. Furthermore, EPZs contribution to GDP has been experiencing decline from 2013(KEPZA,2019). Most empirical studies done in Kenya have focused on a qualitative approach as opposed to a quantitative approach in assessing the impacts of EPZs in Kenya. These studies include; Chabari (2000), Farole (2011), Vasveit (2013), Kuria (2016) and

Laryea, Nyamori and Ndonga (2020). studies such as Farole (2011) and Vasveit (2013) have primarily focused on the performance of EPZs exports, employment and FDI using a qualitative approach. These studies found out that exports from EPZs in Kenya have been increasing but have failed to take off, while employment within the zones have been low. The two papers also concluded that there is increasing trend of FDI within EPZs. However, it is not clear whether these increases contribute significantly to economic growth.

Chabari (2000) assessed the role of EPZ in economic growth in Kenya using both quantitative and qualitative approaches. The paper used two case studies of EPZs and found that EPZs have not had any impact on economic growth. The study however lacked enough data for analysis on employment, FDI, exports and spillovers as major components of the EPZs. As it stands, despite the EPZ scheme remaining active, it is not certain whether the impacts of EPZs foreign direct investments in Kenya is significantly contributing to economic growth or not.

This research project is therefore designed to measure effect of EPZs foreign direct investments on Kenya`s economic growth using both qualitative and quantitative approach. Since Chabari (2000) study was based on limited scope and was carried out when the program was relatively new under implementation. Thus, the study will use secondary data from 1993 to 2020. This will provide a recent insight into whether incentives offered to the scheme deprive the government of valuable revenue that could have otherwise been invested in other productive sectors or not as well as determine the best macroeconomic policies that can be accorded to the EPZs.

1.3 Research Questions

The study was design to answer the following questions;

i. What are the effects of EPZs foreign direct investments (FDI) on economic growth in Kenya?
ii. What are the factors that attract EPZs foreign direct investment in Export Processing Zones in Kenya?

1.4 Research Objectives

The main objective was to assess the impacts of Export processing Zones foreign direct investments on economic growth in Kenya. The specific objectives were to:

i. Measure effects of EPZs foreign direct investments (FDI) on economic growth in Kenya.
ii. Determine the factors that attract EPZs foreign direct investment on Export Processing Zones in Kenya.

1.5 Significance of the Study

This study comes in handy as a source of complementing a few existing pieces of literature on EPZs. This study offers policymakers a chance to tell how much attention and treatment they should give the zones, considering their objectives to the general economic development in Kenya. This is due to the fact that EPZs require both financial and non-financial incentives, such as infrastructural facilities and a stable macroeconomic environment, to enable effective functioning.

The study also helps the state to evaluate the performance of the zones and establish whether they are achieving the objectives of their establishment after investing in them and giving the zones generous incentives and tax holidays. The study also provides relevant suggestions on the

right macroeconomic policies for EPZs. For academia, this study provides an extension to the existing knowledge on the impacts of EPZs on economic expansion in Kenya.

1.6 Scope of the Study

The research complements existing literature by assessing the performance of Kenya EPZs. It used a quantitative approach using quarterly data covering the period from 1993 to 2020. The aforementioned period associates with the life existence of EPZs in Kenya.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The section provides an overview of the theoretical framework and empirical literature review by previous scholars on the subject matter of the research. Additionally, the section provides research gaps that need to be filled.

2.2 Theoretical Literature

Various theories and approaches have been advanced to fit the explanation of EPZs. These theories include the neo-classical theory, endogenous growth theory, export-led growth hypothesis theory, eclectic and flexible accelerator theory. The theories are discussed below.

2.2.1 The Neo-classical 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:

$Y_t = f\ (K_t, A_tL_t)$ …….....……. (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;

$\dot{L}(t) = nL(t)$.....(2.2)

$\dot{A}(t) = gA(t)$.....(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:

$\dot{K}(t) = sY(t) - \delta K(t)$. .....(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

$\dot{k}(t) = \frac{\dot{K}(t)}{A(t)L(t)} - \frac{K(t)}{[A(t)L(t)]2}[A(t)\dot{L}(t) + L(t)\dot{A}(t)]$ .....(2.5)

Replacing $\dot{K}(t)$ 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.

2.2.2 Endogenous growth theory

The proponents of the endogenous theory are Romer (1989), Lucas (1990) and Barro (1991). Contrary to the Solow model whereby the assumption of steady-state growth can be exogenously determined, the endogenous growth model presumes that the assumption can be determined within this model. The explanation given by the endogenous growth models illustrates how growth determinants can be assumed to automatically grow in various proportions to the capital changes. The development of these models occurs just like the production function in the form of Y =AK, commonly known as AK models.

It is assumed in the AK Models that the aggregate level of output production has a collinear association with aggregate capital stock. The model argues that the perpetual growth rate is influenced by internal processes which include human capital, investment together with innovation. Furthermore, the assumption of the model states that in a competitive economy, organizations face a technology that has constant returns. Nonetheless, the production is increasing as cumulative capital increases. Therefore, the model summarizes that provided constant returns assumption of capital holds, the motivation for investments never declines.

Furthermore, the pioneers of the AK models understand the existence of positive externalities which include skills, knowledge transmission and technology that can be exploited as a result of

globalization. Moreover, the proponents of the AK models such as Barro (1990, 1991) among others established and employed a simple model of endogenous growth known as the Barro Model which appear in the form:

$Y = f(Ki)$

Whereby Y denotes an output while Ki represents a component of capital. Barro model aimed at explaining the growth of the economy across the various country by emphasizing the connection that existed between investment and innovation being on one side while growth being on the other. Through the assumptions advanced by the AK model, the model was established by the proponents.

This research was based on the idea brought about by the Barro model to establish the impacts of FDI on the Kenyan economic growth through the effect they have on the accumulation of capital as well as spillovers which include skills, innovation and technology among others.

2.2.3 Export-Led Growth Theory

The Export-Led Growth (ELG) Model proponents are Kaldor (1964), Lancaster (1980), Krugman (1984), and Stavrinos (1987). The export-led growth hypothesis (ELGH) assumes that the expansion of export is considered a major determinant of economic growth. The model maintains that the general growth of nations can be produced not only through the increase of amounts of capital and labour in that economy but also through export expansion.

Kaldor emphasizes that the rate and levels of output growth rely mostly on the rates and levels of growth in exports. The theory designates the level of dependency of output on the country's exports through the multiplier of foreign trade in the form of $Y=mX$ whereby (Y) denotes the output level, while (X) denotes the multiple of exogenous levels of export and (m) representing

the propensity of a country to export as explained by Antonella Palumbo (2003). In the event of balanced trade, an increase in the levels of export raises the levels of output through the Keynesian multiplier which creates a surplus of trade that induce growth.

According to Watson (2001), African countries have substantial potential to derive some benefits from the policy of export-oriented growth through the establishment of Export Processing Zones. Every nation trying to establish any program for the EPZ has to enlist the coordinated and concerted support of all the potential development partners in the process of implementation of the program. Ramachandran and Cletus (1999) illustrated that perhaps the crucial lesson that can be drawn from the experience of the Chinese is the fact that exports are crucial for higher rates of GDP growth.

2.2.4 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.

2.2.5 The Flexible Accelerator Theory

The Flexible Accelerator theory was developed by Chenery and Koyck (1952). The theory principle is based on the relationship between changes in output and investments with time lags in process of adjustments due to uncertainty about future demand and payments cost. The flexible accelerator theory demonstrates that the connection involving investment and production level does not have to be constant and may be influenced by other factors such as interest rates. It also depicts the changing connection between the percentage of expansion and the quantity of net investment. Therefore, FDI firms will consider its past output in capital investments. Since a firm has an expectation of its future output based on its previous output, the model employs delays in the process of adjustment between output level and capital stock. The model is given by equation (2.8)

$$K^* = K^*(Y, UC, PO) \quad \text{.....(2.8)}$$

Where;

K^* - Capital stock at Equilibrium

$Y -$ Total Output

UC- User Cost

PO – Output price

The framework suggests that capital stock is determined by all previous production levels, with proportions decreasing geometrically, a concept known as lag investment. This is described by equation 2.9

$K_t = g(Y_t, Y_{t-1}, , Y_{t-2}, Y_{t-3, \ldots, Y_{t-n}})$.....(2.9)

K_t is capital stock equilibrium and Y_{t-n} is previous output level. While t= 1, 2, 3, ..., T and n= 1,2, 3..., N.

The model assumes that capital invested is expanded until real user cost in equation 2.8 equals marginal profit. Thus, firms carrying out FDI keep on increasing capital until the cost equals benefits. In addition, the model is useful since it admits that there are other factors other than output that influence investments.

2.3 Empirical Literature

Chabari (2000) researched the role of EPZs in Kenya using primary data from four zones. The research findings were presented through descriptive statistics illustrated through percentages and frequencies. The research found that the program has not lived up to the expectations of many. The generation of employment and FDI was low as well as exports from the zones. The paper concludes that EPZs operations failed to significantly impact the economic growth and life standard of Kenyans apart from largely benefiting investors. The study was however based on

the limited scope and was carried out when the program was relatively new under implementation.

De Armas and Jallab (2002) focused on the roles and impact of EPZs on economic growth and development of the host. Their main focus of the study was on the Mexican EPZs due to the quality and abundance of the available data as well as its closeness to the markets in the US making it the best exemplar of an international division of labor. The study used OLS for analysis of available data covering from 1988 to 2000. It was established in the study that the Mexican maquiladoras had succeeded in the creation of employment for the individuals with the appropriate skills as well as wealth redistribution in the Mexican community. Based on this study, however, the industry of maquila had not succeeded in the generation of earnings from foreign exchange to the economy because of the high importation composition, since it brought about disappointments in the roles it played as the driver for the modernization and the industrial growth in the Mexican economy. The paper however ignored the contribution of zones output to total exports.

Muthoga (2003) did a study to find determinants of FDI in Kenya for the period 1970-1999. The concept of FDI was estimated using Generalized Least Squares (GLS). The findings revealed that economic openness was significant factor in determining FDI. Growth rate of GDP, domestic investment, exchange rate and internal rate of return.

Janicki (2004) studied the determinants of FDI in nine EU countries, specifically Bulgaria, Czech Republic, Estonia, Hungary, Poland, Slovakia, Slovenia, Romania and Ukraine. The study found that, Journal of most important determinant of FDI was the trade openness, what was explained by the fact that trade and investments complemented one another. Moreover, market

size was set to be a statistically significant positive FDI determinant, and it was expected that FDIs were greater in larger economies with well-built markets.

Mukhtar and Islam (2011) used a regression analysis to examine the influence of EPZs on socioeconomic development in Bangladesh, focusing on job creation, export volume, and investment scale. The article used time-series data from 1983 to 2008 to show that EPZs contributed considerably to Bangladesh's socioeconomic development over that time frame. For instance, the EPZ program contributed over 17 per cent of total exports and over 22 per cent of working population, with women representing for more over 64 per cent of the working population.

Farole (2011) explored African Special Economic Zones through a comparison of the performance of some Africa Zones and lessons from a global perspective. The paper used qualitative data analysis and found out that African zones show a relatively high contribution to national FDI inflows from EPZs. Farole (2011) also found that Kenya's EPZs provides close to 3.5 times extra job opportunities per US dollar of exports compared to Lesotho. The study also concludes that exports in Lesotho and Kenya grow although have failed to take off due to their inability to compete well in the global market because of low value-added exports.

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. The paper however does not explain the significance of employment in the two countries.

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 GLS, 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.

Chanegriha (2017) studied determinants of DDI in 168 countries and considered 58 potential economic, geographic and political determinants. The general results, without specific emphasis on the particular group of countries showed that trade openness, outgoing FDI, government spending, corporate tax rate, tertiary and secondary school enrolment. On the other hand, this study provided strong evidence against inflation being robust determinant of FDI.

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.

Begum, H., Aktar, M., & Sultana, A. (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.

2.4 Overview of the Literature

Neoclassical and endogenous have been used widely as the main theories of economic growth. Studies such as Edward (1998), Obadan (2008), and Obadan and Elizabeth (2010) used endogenous theory to determine economic growth. While flexible accelerator theory and eclectic theory have been used as the main theory theories of investments. Flexible accelerator theory is based on assumption that investments is affected by other variables and not output only. On the other hand, eclectic theory is based on assumptions that there are conditions such stable

macroeconomic conditions that must be met for FDI to flow into any economy. This study adopted Barro model under endogenous growth theory to determine effects of EPZs foreign direct investments on economic growth and flexible accelerator theory to determine factors that attract FDI within EPZs in Kenya.

The majority of empirical studies done on impacts of EPZs on economic growth have focused more on countries outside Kenya. Such studies include Milberg (2007), Mukhtar and Islam (2011), Leong (2012), Wang (2013), Angko (2014) and Soderbery (2014). Results from these studies done in different countries in the world may not clearly explain the impacts of EPZs in the context of the Kenyan economy. Thus, this study aims to fill this gap.

The empirical researches done in Kenya have concentrated more on qualitative descriptive impacts of EPZs. These studies include Chabari (2000), Farole (2011) and Vasveit (2013). According to Vasveit (2013), the effects of EPZs on economic growth in Kenya have been quite effective in terms of creating jobs and producing foreign money, mostly through textile and garment sector exports. However, the paper does not explain how much of EPZs FDI is attributed to economic growth.

While Chabari (2000) assessed the impact of EPZs on economic growth using a quantitative approach using primary data from four zones, the study was however based on the limited scope and was carried out when the program was relatively new under implementation. With these gaps, there was a need for a study on impacts of EPZs Foreign direct investments on economic expansion in Kenya using statistical analysis to measure the effects of EPZs FDI on economic progress and to determine the factors that attract EPZs FDI on Export Processing Zones in Kenya using data from the inception of EPZs to the present. This study therefore provides the most recent insights on the performance of EPZs in Kenya in promoting economic growth and exports.

From literature, there is no study that has attempted to determine factors that attract FDI within EPZs, thus, this study aimed to fill this gap.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The section presents the research methodology the study adopted to achieve its objectives. Research design, the theoretical framework, empirical model, data analysis, definition of variables and their measurement as well as the diagnostic tests follow chronologically.

3.2 Research Design

The research study adopted a non-experimental design on the variables for the time between 1993 and 2019 to study the effect of Export Processing Zones FDI on economic growth in Kenya and to determine factors that attract FDI within EPZs in Kenya.

3.3 Theoretical Framework

3.3.1 Effects of EPZs Foreign Direct Investments on Economic Growth

This study used endogenous growth theory by Barro (1990, 1995) 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 study therefore adopted the Barro model with assumption that output is given as;

$Y_i(t) = F(K_i(t),\ A(t)L_i(t))$……...….... (3.1)

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 (3.1) can be written in intensive form by dividing the equation by $1/_{AL}$ to yield;

$\frac{Y(t)}{AL} = F(\frac{K_i(t)}{AL}, 1)$…… (3.2)

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. Let k = K/AL and y = Y/AL. Therefore, (3.2)is rewritten as,

$y_t = f(k_i)$.....(3.3)

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, ...,

This study extended the assumption of this model by examining the impact of EPZFDI accumulation in form of capital incorporated with the government of Kenya strategies used to attract FDI in the EPZs to promote economic growth. The study assumes that any increase in FDI results in to increase in capital stock in the country which is believed to increase the economic growth of the country. Furthermore, any increase in FDI is expected to gear up competition which stimulates economic growth.

3.3.2 Factors that Attract EPZs Foreign Direct Investments

The flexible accelerator theory was used in the study to identify variables that attract foreign direct investments into EPZs. It was postulated by Chenery and Koyck (1952). This is because

the model demonstrates that the connection between output and investment does not have to be constant and may be influenced by a variety of variables. The capital stock at equilibrium K* is expressed as a subset of price of output, user cost level and volume output.

$K^* = K^*(Y, UC, PO)$ .....(3.4)

Where;

K^* - Capital stock at Equilibrium

Y Output level

UC- User Cost

PO–Output price

Since investments are a result of changes in capital stock, the investment function is therefore given as;

$i_t^* = K_{t+1} - K_t + \delta K_t$ .....(3.5)

Where: i_t^* - Gross Investment

$K_{t+1} - K_t$ – Net Investment (i^n)

δK_t – Replacement investment denoted as (i^r)

Therefore, Gross investment can be given as the summation of replacement investment and net investment in equation 3.6;

$i^* = i^n + i^r$ .....(3.6)

The replacement investment is the provision for the depreciation of capital(δK) while the net investment is an investment over time. Since net investments are a component of total

investments that raise the volume of capital stock, in the absence of delays in the process of adjusting actual capital stock to intended level of capital stock, the net investment was presented as;

$i_n = \Delta K^E$ .....(3.8)

Thus, the gross investment given by equation 3.5 can further be written as;

$i^* = i^n + i^r = \Delta K^E + \delta K$ .....(3.9)

As a result, net investment is impacted by variations in the capital stock level at equilibrium, whereas replacement investment is affected by the volume of capital stock.

This provides the accelerator principle framework that provides the correlation between production variations and level net investment. Because the main premise of this theory is that investment is connected to output, investment in period t may be represented as follows:

$I_t = K_t - K_{t-1} = \Delta K = \alpha (Y_t - Y_{t-1})$ .....(3.10)

Where;

I_t - Net investment at time t

K_t – Desired capital stock level

K_{t-1} – Actual level capital stock for the previous time

Y_t– Current output

Y_{t-1}- Previous output

α - Marginal productivity of capital

Net investment (i^n) is related to ΔY, thus, changes in output can be given as;

$\Delta Y = \alpha(I^n)$ .....(3.11)

And from the accelerator principal model, net investment level is an expression output.

$I^n = f(Y)$ .....(3.12)

This study used the above model with accelerator model principle that demonstrates that the connection between output and investment does not have to be constant and may be influenced by a variety of variables. Thus, equation 3.12 was modified to include other variables other than output to determine the factors that attract Export Processing Zones FDI in Kenya by adopting a log linear version of the model.

3.4 Empirical Model

3.4.1 Effects of EPZs Foreign Direct Investments on Economic Growth

This study investigated the effects of EPZs foreign direct investments on economic growth using the Barro model (1990, 1995). The model is given in the form Y = f(Ki), Where *Y* represent Economic growth and *Ki* are components of variables that influence growth. Edward (1998), Obadan (2008), and Obadan and Elizabeth (2010) employed this Barro growth model in their studies and modified as expressed in equation (3.13) to fit variables of the study.

$$GDPGR_t = \beta_0 + \beta_1 EPZFDI_t + \beta_2 INF_t + \beta_3 FDI_t + \beta_4 RER_t + \varepsilon_t \quad \text{.....(3.13)}$$

Where:

GDPGR= Economic growth

INF = Inflation rate

$EPZFDI$= Foreign direct investment within EPZs

FDI= Total Foreign direct investment in the economy excluding EPZFDI

RER=Real Exchange rate

ε = unobservable error term

t is time period; t = 1, 2, …, T

β_0 is intercept term while the β_i are the coefficients of the regressors

From endogenous growth theory, $\beta_1 and\ \beta_3$ is expected to be positive since capital accumulation induces growth. While $\beta_2 and\ \beta_4$ are expected to take negative values since high real exchange rate(devaluations) and high rate of inflations means unfavorable macroeconomic conditions for economic growth to take place.

3.4.2 Factors that Attract EPZs Foreign Direct Investments

The study determined factors that attract EPZs foreign direct investments in Kenya using Chenery and Koyck (1952) in flexible accelerator framework adopted earlier by Dunning (1993, 2000), Vernon (1996), Voorpijl (2011), and Asiedu (2006). This study used accelerator model principle that demonstrates connection between output and investment does not have to be constant and may be influenced by a variety of variables. This study, therefore, modified equation 3.12 to fit the variables of the study as follows;

$$EPZFDI_t = f(\ GDP_t, RER_t, EPD_t, INF_t, U_t) \quad \text{.....(3.14)}$$

Where;

EPZFDI= FDI within EPZs

GDP= Total production capacity of the economy

RER= Real exchange rate

INF= Inflation rate

EPD= External Public debt

ε =Error term
t is time period; t = 1, 2, …, T

α_0 is the intercept term and α_i are the coefficients of the regressors.

The explanatory variables included in our empirical model fall into broad categories of OLI of Eclectic theory that provides a holistic framework to identify and evaluate factors that may significantly influence foreign production by enterprises (Njuguna, A. E., & Nnadozie, E, 2022).

Therefore, the empirical model in log linear is written as:

$$\boldsymbol{lnEPZFDI_t = \alpha_0 + \alpha_1 lnGDP_t + \alpha_2 lnRER_t + \alpha_3 lnEPD_t + \alpha_4 lnINF_t + \varepsilon_t} \quad \text{..... (3.15)}$$

From eclectic theory, α_1 is expected to be positive since high production capacity attract FDI. While $\alpha_2$and α_4 are expected to take negative values since high real exchange rate(devaluations) and high rate of inflations means unfavorable macroeconomic conditions for investors. External public debt can either affect FDI positively or negatively, thus, its uncertain. Therefore, α_3 is expected to be positive or negative.

3.5 Description and Measurement of Variables

The variables used in the study and their descriptions are presented in Table 3.1 below.

Table 3. 1 Description and Measurement of variable

Variable Used	Description and Measurement of variable
EPZ Foreign Direct Investment (EPZFDI_t)	The measure of foreign net inflows in USD (Million) within EPZs in a given year t.
EPZ Output (EPZY_t)	Amount of goods and services produced within Kenya EPZs to be sold abroad in USD (Million) in a given year t.
Economic growth GDPGR_t	The yearly rate of increase in Kenyan goods and services output in a given year t, expressed in percentage points.

Gross Domestic Product (GDP_t)	Kenyan Gross Domestic Product used to capture the domestic production capacity of the country in a given year t, including that not related to the EPZ measured in USD (Million).
Foreign Direct Investment (FDI_t)	This is the measure of foreign direct net inflows outside EPZs in USD (Million) in a given year t.
Real Exchange Rate (RER_t)	The value of one currency is expressed in terms of another. In the case of Kenya, this is the price of one Ksh in US dollars in a particular year.
Inflation(INF_t)	The measure of the rate of the rising price of goods and services in Kenya in a given year t.
External Public Debt (EPD_t)	Amount borrowed from foreign nations by the government. The total value of short-term and long-term foreign debts in Kenya was used to calculate EPD in USD (Million).

3.6 Data Type and Source

Quarterly secondary data spanning 1993 to 2019 was used. EPZs output and EPZs foreign direct investments quarterly data was not available. Thus, available annual data was converted to quarterly using E-views quadratic formular. The data was sourced from KEPZA, KNBS, CBK, KIPPRA, World Bank and UNCTAD websites. Other sources included government statistical abstracts and economic surveys.

3.7 Model Estimation

The study adopted the Autoregressive Distributed Lag (ARDL) developed by Shin and Pesaran (1999) and Pesaran, Smith, and Shin (2001) 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 first objective. The model is described in equation (3.16).

$$\Delta GDPGR_t = \beta_0 + \beta_1 GDPGR_{t-1} + \beta_2 EPZFDI_{t-1} + \beta_3 INF_{t-1} + \beta_4 FDI_{t-1} + \beta_5 RER_{t-1} + \beta_6 EPZY_{t-1} + \sum_{i=1}^{P} \omega i \, \Delta GDPGR_{t-i} + \sum_{i=0}^{P} \varphi i \, \Delta EPZY_{t-i} + \sum_{i=0}^{P} \gamma i \, \Delta EPZFDI_{t-i} + \sum_{i=0}^{P} \alpha i \, \Delta INF_{t-i} + \sum_{i=0}^{P} \delta i \, \Delta FDI_{t-i} + \sum_{i=0}^{P} \delta i \, \Delta RER_{t-i} + \varepsilon_t \text{.....(3.16)}$$

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. Additionally, the model can be applied regardless of whether variables are I(0), 1(1) or a combination of both. Finally, it takes into consideration the error correction model(ECM) to establish the rate of adjustment in cases where the variables are cointegrated (Nkoro & Uko, 2016).

To answer the second objective, the study used the ordinary least square estimation (OLS) technique represented by equation (3.15). The choice of OLS estimation techniques is based on the fact that OLS gives the best linear unbiased estimates and have the least variance among the class of all linear unbiased estimators if all the assumptions of OLS hold. The variables were transformed to their natural logarithm to estimate and interpret coefficients in terms of elasticities.

3.8 Diagnostic Tests.

3.8.1 Unit Root Test

To minimize admission of spurious output, the data was tested for stationarity. The commonly used tests for unit root tests are the Phillips- Perron (PP) test of 1988 and the Augmented Dickey-Fuller (ADF) test of 1979. This study used the ADF procedure because the ADF test assumes that there is no autocorrelation among the error terms (Gujarati, 2005). The tests were done at levels and differences to determine the order of integration.

3.8.2 Normality Test

Normality test is a crucial test of linear regression model to enhance the robustness of the residuals and error terms (Ogun, 2012). Jarque Bera normality test of residuals was used because other tests like the Shapiro-Wilk test are not reliable for large data sets.

3.8.3 Serial Correlation Test

The error terms are not allowed to be correlated with the values from previous periods, otherwise, the resultant coefficients could not have been efficient. In this study, the LM test was used because it is a suitable test for large samples.

3.8.4 Multicollinearity Test

Multicollinearity occurs when the explanatory variables are correlated among themselves. When this occurs, the variance of the coefficients is large and so are the standard errors, thus, it is possible that t-statistic will be small which can lead to the conclusion of insignificant coefficients. A Variance Inflation Factor (VIF) test of correlation between any two explanatory variables in the model was used to detect any presence of Multicollinearity.

3.8.5 Stability Test

It is important to test for the stability of parameters to avoid model misspecification (Narayan & Smith, 2004). The cumulative sum of squares of recursive residuals (CUSUMQ) and cumulative sum of recursive residuals (CUSUM) tests for the dynamic and structural stability of the model was used.

CHAPTER FOUR

EMPIRICAL FINDINGS

4.1 Introduction

This chapter presents descriptive statistics, properties of time series, regression analysis and diagnostic tests. It further presents results of the study as well as discussion of the findings.

4.2 Descriptive Statistics

Descriptive statistics provides summary of variables used in the study. Table 4.1 presents these summary statistics.

Table 4. 1 Descriptive Statistics

	Mean	Median	Max	Min	Standard deviation	skewness	kurtosis
EPZFDI (USD Million)	320.5	207.8	1072.4	15.9	326.1	1.2	3.1
GDP (USD Million)	34684.8	25860.0	97189.1	5334.4	26320.6	0.8	2.5
INF (%)	10.7	8.0	50.1	0.77	9.4	2.4	9.3
RER (%)	77.6	77.5	103.5	51.0	15.1	0.1	2.1
EPD (USD Million)	29749.8	7307.0	537245.7	5495.3	80102.1	4.4	23.3
GDPGR (%)	4.1	4.6	8.8	0.6	2.3	0.4	0.5
EPZY (USD Million)	292.7	256.1	788.0	9.2	256.6	0.5	2.0

Source: Author`s computations ,2021

From the descriptive statistics on Table 4.1, GDP averaged approximately USD 34. 684 billion for the period between 1993 and 2019 with deviation from the mean of 26.3206. GDP also had a positive skewedness with the highest value of USD 97.189 billion recorded in 2019 and a minimum of approximately USD 5.334 billion in 1993. Thus, it is evident that economic performance in Kenya has improved significantly between the period of 1993 and 2019 following implementation of economic reforms as well as government investing heavily in

productive sectors for economic recovery. EPZs Output averaged approximately USD 0.29207 billion with deviation from the mean of 0.2566 and a maximum of about USD 0.788 billion in 2018 and a minimum of USD 0.0092 billion in 1993. The increase of EPZs Output is attributed to increased FDI within the zones enjoying generous incentives (KEPZA,2018). Inflation recorded a standard deviation of 9.4 from the mean of 10.7 and highest rate of 10.7 recorded in 1993 attributed to devaluation of Ksh and excessive money supply caused by inflationary pressures. EPZs Foreign direct investments averaged approximately USD 0.320 billion with standard deviation of 0.3261 and a maximum of USD 1.0724 billion and minimum of USD 0.0159 billion in the year 2019 and 1993 respectively. It can be noted that the FDI within the zones have been increasing over the years due to tax holidays and other incentives enjoyed by the investors. Economic growth averaged 4.1 percent with deviation of 2.3 highest economic growth of 8.8 per cent with a minimum of 0.6 per cent.

4.3 Time Series Properties

4.3.1 Unit Root Test

To avoid spurious results, stationarity was checked before estimating the relationship between the explanatory variables and dependent variable. This is necessary since economic time series data is known to be non-stationary (Engle & Granger, 1987). This study used Augmented Dickey Fuller (ADF) tests to enhance and corroborate the robustness of the test results. According to Gujarati (2005), the ADF test is appropriate for uncorrelated and homoscedastic errors.

The null hypothesis was that time series data under study had a unit root with the alternative hypothesis of time series were stationary (Green, 2004). Thus, null hypothesis was not rejected if the computed p-values were greater than 0.05 significance level. The test results are presented in Table 4.2 results of ADF unit root test at Level.

Table 4. 2 Results of ADF unit root test At Level

Variables	At Level Intercept ADF	P-Values	Status	With Trend and Intercept ADF	P-Values	Status
EPZY	-1.689	0.433	Non-Stationary	-2.1282	0.5071	Non-Stationary
EXPORTS	-0.655	0.8522	Non-Stationary	-2.2520	0.4521	Non-Stationary
EPZFDI	1.6372	0.987	Non-Stationary	-0.0829	0.9550	Non-Stationary
FDI	-0.2749	0.5359	Non-Stationary	-2.0661	0.1247	Non-Stationary
GDP	1.6991	0.982	Non-Stationary	0.196	0.9910	Non-Stationary
GDPGR	-4.532	0.0032	Stationary	-4.5941	0.0096	Stationary
RER	-0.976	0.7530	Non-Stationary	-2.6049	0.2816	Non-Stationary
INF	-5.880	0.001	Stationary	-5.5036	0.0007	Stationary

Source: Author`s computations ,2021

The study used 108 observations with -2.981038 and -3.595026 as asymptotic critical values for intercept only and trend with intercept respectively. The results of the ADF test at level as depicted in Table 4.2 shows that all variables except INF and GDPGR are non-stationary at level. INF and GDPGR are stationary at level with trend and intercept. It was therefore necessary to carry the stationarity test for the first difference of the variables that were non stationary. The unit root test results of the series at first differences are presented in Table 4.3 results of ADF unit root test at first difference.

Table 4. 3 Results of ADF unit root test At First difference

Variables	At Level Intercept ADF	P Values	Status	With Trend and Intercept ADF	P Values	Status
EPZY	-4.796	0.0008	Stationary	-4.381	0.0132	Stationary
EXPORTS	-4.181	0.0034	Stationary	-4.114	0.0175	Stationary
EPZFDI	-6.839	0.0000	Stationary	-7.072	0.0000	Stationary
FDI	-3.692	0.0072	Stationary	-5.317	0.0015	Stationary
GDP	-2.986	0.008	Stationary	-3.446	0.0024	Stationary
RER	-4.091	0.0016	Stationary	-4.022	0.0113	Stationary

Source: Author`s computations ,2021

Table 4.3 shows that all variables that were nonstationary at levels are stationary at first difference both at level and with trend and intercept. This therefore supports the use of ARDL approach to co-integration since the variables under study are integrated of order I (0) or I (1) (Enders, 2010).

4.4 ARDL Model Diagnostic Tests

4.4.1 Normality Test

The study carried out normality test to enhance the robustness of the residuals and error terms (Ogun, 2012). The null hypothesis that residuals were normally distributed was tested and the results are presented in figure A1.1. The Jarque Bera statistic of 111.0987 with p-value (0.000) confirmed that the residuals did not follow a normal distribution. This is because the p-value reported was more than 5 per cent significance level. The violation of normality assumption in the estimation however do not cause major problem since parametric procedures can be used even when the data are not normally distributed since the sample size of the study was large.

4.4.2 Serial Correlation Test

The study applied the Breusch-Godfrey LM test to test for serial correlation of the residuals

using an optimal lag length of 2. The null hypothesis of no serial correlation against the alternative of serial correlation was used. The results are shown in Table A1.1 The null hypothesis was not rejected since the resulting F-statistic of 0.355875 with p-value (0.7016) more than 5 per cent significance level confirmed that the residuals were not serially correlated.

4.4.3 Multicollinearity Test

The study used Variance Inflation Factor (VIF) test of correlation between any two explanatory variables in the model to detect any presence of Multicollinearity. The correlation relationship between all the explanatory variables results is presented on Table A1.2. The results show that all explanatory variables had VIF coefficient less than 5 with an average of approximately 3 hence confirming that there was no multicollinearity problem.

4.4.4 Stability Test

The stability of the parameters was examined using the Brown, James and James (1975) cumulative sum (CUSUM) test. From the results shown in Figure A1.2, the ARDL model was structurally and dynamically stable since the statistic stayed within the 5 per cent critical bounds.

4.5 Model Estimation: Economic Growth Regression

4.5.1 Optimal Lag length selection

Having ascertained the stationarity status of each variable of the time series, Hannan-Quinn Information Criterion (HQ), Schwarz Information Criterion (SC), Final Prediction Error (FPE), Sequential Modified LR Statistic (LR) and Akaike Information Criterion (AIC) were used to determine the optimal lag length, The results are shown in Table 4.4 Long Run Bounds Test Results.

Table 4. 4 Long Run Bounds Test Results

Lag	LogL	LR	FPE	AIC	SC	HQ
1	-2349	NA	2.89E+14	47.48568	48.13697	47.74926
2	-2255	169.3703	7.27E+13	46.10378	47.40637	46.63096
3	-2245	17.4898	9.84E+13	46.39802	48.3519	47.18879
4	-2239	10.01101	1.45E+14	46.77288	49.37805	47.82724
5	-2105	200.2165	1.71E+13	44.60333	47.85979	45.92128
6	-1992	158.7223*	3.04e+12*	42.83587*	46.74362*	44.41741*
7	-1982	12.60179	4.38E+12	43.14199	47.70104	44.98712
8	-1975	8.912817	6.75E+12	43.49345	48.70379	45.60217

Source: Author's Computation,2021

The VAR model was used and optimal lag length of 6 was recommended because it gave the lowest values and was selected by all the criteria (AIC, FPE, LR, SC and HQ) as depicted in Table 4.4 ARDL Bounds Test for Effects of EPZs Foreign Direct Investments on Economic Growth.

4.5.2 ARDL Bounds Test

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-integration (Nkoro & Uko, 2016).The results were tabulated in table 4.5 ARDL Bounds Test.

Table 4. 5 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
10%	2.08	3.12

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 Pesaran et al. (2001). The null hypothesis of no co-integration was therefore rejected hence confirming existence of long run relationship.

4.5.3 Cointegration Analysis: Short- run and Long-run coefficients

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 study applied the Akaike Information Criteria to conduct a broader lag length selection for the ARDL model. Using the model lag selection criteria graph with the initial of lag length 6, ARDL model (4, 1, 1, 0, 0, 2) was the most parsimonious model. ARDL model (4, 1, 1, 0, 0, 2) provides significant lags of respective variables included in the estimation. The results are as shown in Table 4.6.

Table 4. 6 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	-0.066904	0.027033	-2.474910	0.0152***
FDI	-0.000404	0.000556	-0.725997	0.4697
EPZs OUTPUT	0.012221	0.001958	6.240017	0.000***
EPZFDI	-0.003330	0.001076	-3.094484	0.002***
INFLATION	-0.066675	0.029828	-2.235350	0.027***
C	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. This indicates that the speed of adjustment to long run equilibrium as a result of shock of previous period was found to be 37.26 per cent. 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)

4.6 Analysis of Empirical Findings

The cointegrating form (ECM) results in Table 4.6 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. FDI outside EPZs, inflation at lag 1 and economic growth at lag 1 to lag 3 were found to have significant positive association with economic growth implying that they positively impact economic growth in short run. Current inflation and real exchange

rate were found to have significant negative association with economic growth. Thus, they negatively impact economic growth in the short run. EPZs Output had positive association while EPZs foreign direct investments had negative association, however both were not statistically significant in determining economic growth in short run.

In the long run, real exchange rate, EPZs foreign direct investments and inflation 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 4.6 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 Wang (2013) who found that EPZs output and export contributes significantly to economic growth. The finding is also in line with empirical researches by Javid (2009), Afzal and Hussain (2010), Furuoka and Munir (2010) as well as Dreger and Herzer (2013). The findings are also consistent with the popular export-led growth hypothesis (Balassa, 1978; Kavoussi, 1984; Krueger, 1978; Ram, 1987) 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 (Kuria, 2016). This negative relationship between EPZs foreign direct investments and GDP is in line with similar findings of Quaicoe Aboagye and Bokpin (2017) that free zones investments in Ghana have significant negative relationship with economic growth. The results are also consistent with the findings of Begum et al (2020) on impacts of EPZs FDI in Bangladesh economy.

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 uncertainty (Ndolo, 2015). 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 Vijayakumar, N., Sridharan, P. and Roa, K.C. (2010). 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.

In conclusion, all the variables included the long run estimation were found to be statistically significant at 5 per cent level of significance with exceptions of FDI outside EPZs. These results

were found to be consistent with both endogenous growth theory of capital accumulation and Export Led growth hypothesis theory that advocates for exports as a major component of economic growth. 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. However, the output from the zones contributes significantly to the economic growth in Kenya in the long run.

4.7 Model Estimation: EPZs Foreign Direct Investments Regression

This section presents OLS estimation results of the second objective regression model specified in equation 3.16. Time series data was used for the entire period specified in the study to determine factors that attract EPZs foreign direct investments. OLS diagnostic tests were carried out and are discussed below.

4.8 OLS Diagnostic Tests

4.8.1 Normality Test

The study carried out normality test using Jarque Bera normality test of residuals to enhance the robustness of the residuals and error terms (Ogun, 2012). The results are presented in figure A2.1Jarque Bera statistic of 1.1022 with p-value (0.5763) confirmed that the residual followed a normal distribution. This is because the p-value reported was more than 5 per cent significance level.

4.8.2 Serial Correlation Test

The study applied the Breusch-Godfrey LM test to test for serial correlation of the residuals using an optimal lag length of 2. The null hypothesis was that there was no serial correlation against the alternative of existence of serial correlation. The results are shown in Table A2.1. The null hypothesis was not rejected since the resulting F-statistic of 1.799280 with p-value (0.1708)

more than 5 per cent significance level confirmed that the residuals were not serially correlated.

4.8.3 Multicollinearity Test

The study used Variance Inflation Factor (VIF) test of correlation between any two explanatory variables in the model to detect any presence of Multicollinearity. The VIF results are shown in Table A2.2. The results show that all explanatory variables had VIF coefficient less than 4 with an average of 1.12 hence confirming that there was no multicollinearity problem.

4.8.4 Stability Test

The stability of the parameters was examined using the Brown, James and James (1975) cumulative sum (CUSUM) test. From the results shown in Figure A2.2, the ARDL model was structurally and dynamically stable since the statistic stayed within the 5 per cent critical bounds.

4.9 Analysis of Empirical Findings

The results of the estimated model are reported in Table 4.7

Table 4. 7 OLS estimation Results

Dependent variable: Δ log EPZs foreign direct investments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
Δ log External public debt	0.016737	0.095237	0.176930	0.8599
Δ log Real exchange rate	0.137619	0.061551	2.053272	0.0426**
Log Inflation	-0.061937	0.032076	-2.461180	0.0155***
Δ Log Gross Domestic product	0.034216	0.015803	2.165153	0.0327***
C	0.208229	0.079071	2.633452	0.0098***
R-squared	0.472612			
Adjusted R-squared	0.459177			
F-statistic	2.822870			
Prob(F-statistic)	0.019871			

Source: Author`s computations

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

Results on Table 4.10 shows that all the variables included in the estimation were statistically significant at 5 percent level of significance with exceptions of external public debt. These findings are consistent with eclectic theory of investments on macroeconomic conditions that must be met for inflow of FDI to take place. The regression results had adjusted coefficient of determination (R^2) of 0.459177. This means that approximately 47 per cent variations in EPZs foreign direct investments is jointly explained by inflation, exchange rate, external debt and gross domestic product in Kenya. The F-value of 2.822870 with a probability of 0.0198 at 5 percent significance level indicates that all the independent variables were jointly significant in predicting EPZs foreign direct investment in Kenya.

From the results, Real exchange rate coefficient was positive and statistically significant. This means that one percent increase in real exchange rate would attracts 0.137619 per cent increase in EPZs foreign direct investments holding all other variables constant. Therefore, real exchange rate plays an important role in attracting the flow of FDI within EPZs in Kenya. Thus, the positive and significant effect of exchange rate on FDI is an indication that exchange rate is a key channel through which the economy can attract investors within its EPZs. This, can be attributed to a floating exchange rate regime which was established in 1993 and exchange rate control removed in 1995 as one of the reforms to attract EPZs investors. The study finding is in line with Manyanza R. (2009), Froot and Stein (1991), and Muthoga (2003). However, the study contradicts the findings of Batana (2011), Abala (2014) and Ndolo (2015) who found negative relationship between real exchange rate and FDI.

Inflation coefficient was negative and statistically significant. This implies that one percent increase in inflation would lead to 0.061937 per cent decrease in EPZs foreign direct investments holding all other factors constant. Therefore, the rate of inflation negatively affects the flow of

FDI within the Kenya EPZs. This therefore means that high rate of inflation erodes the purchasing power of Ksh value as well as increasing cost of production hence discouraging investors from investing in Kenya EPZs but rather invest in other countries with relatively low rate of inflation. This is because investors prefer more stable economies that reflect a lesser degree of uncertainty so as to enjoy profit margin. This is consistent with the studies by Onyeiwu and Shrestha (2004), Praque (2008) and Ndolo (2015), who found that instability in macroeconomic variables as evidenced by high inflation, and excessive budget deficits, limits region's ability to attract foreign investment.

GDP had a positive and significant coefficient. The results indicates that a one per cent increase in GDP increases EPZs foreign direct investments in Kenya by 0.034216 per cent cateris paribus. The results are consistent with the studies of Abala (2014), Kwoba and Kibat (2016), findings on GDP as significant determinant of level of FDI. Coefficient of external public debt was found to have insignificant negative association with EPZs foreign direct investments holding all other factors constant at 5 per cent level of significance.

The findings of this study are consistent with Eclectic theory on ownership, location and internalization (OLI) paradigm types of variables that determine factors that attract FDI. That is, sound macroeconomic policies are precursor for attraction of FDI.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter provide the summary of study findings, conclusions and policy recommendations of the study. It further highlights the areas for further research.

5.2 Summary

Many international institutions with the aim of developing poor regions across the world have concealed EPZs trade policy tool as a panacea to economic development. This is because the EPZs program which is mainly associated with poor countries is believed to be a precursor of economic growth. EPZs is generally expected to increase exports, increase investments particularly Foreign Direct Investments, employment generation, transfer of technology as well as structural transformation of the economy. However, empirical studies have so far only concluded that the program has generally been successful in Asian countries and Latin America with only Mauritius EPZs boasting as the most successful in SSA. Empirical papers such as De Armas and Jallab (2002); Graham (2004); Kinunda-Rutashobya (2003) and Cling et al. (2005) have found out that EPZs have positive impact on their host countries. However, papers especially on SSA by Engman et al. (2007); Farole (2011); Jenkins (2005). Stein (2012) and Quaicoe et al. (2017) have all concluded that EPZs do not actually play any significant role in the economic development of poor countries but instead benefit investors.

This study therefore sought to measure effects of EPZs foreign direct investments (FDI) on economic growth in Kenya and determine the factors that attract EPZs foreign direct investments in Kenya. To achieve these objectives, quarterly time series data from 1993 to 2019 was used. All the variables of the study were tested for stationarity and transformed accordingly to avoid

spurious results. The first objective was achieved using ARDL analysis since the variables were mixture of both order I(0) and I(1).The study found out that the variables were cointegrated in the long run with statistically significant speed of adjustment to equilibrium of 37.16 per cent. Real exchange rate, EPZs FDI and inflation were found to have a significant negative impact on economic growth in the long run at 5 per cent level of significance cateris paribus. While, EPZ output was found to have a significant positive association with economic growth in the long run. FDI outside EPZs was found to be insignificant in determining economic growth in Kenya in the long run. From the findings, it can be concluded that EPZs foreign direct investments have significant negative effect on economic growth in the long run despite generous incentives and tax holidays accorded to the zones by the government of Kenya.

The second objective was achieved through OLS analysis after checking for stationarity. The OLS regression results showed that all the variables included in regression jointly determine EPZs foreign direct investments. The study found that Inflation coefficient had statistically significant negative association with EPZs foreign direct investments. This imply that a rise in inflation leads to decline in FDI within EPZs in Kenya since investors prefer economies with more stable macroeconomic policies. Real exchange rate and gross domestic product coefficients had significant positive association with EPZs foreign direct investments, thus, depreciation in exchange rate and increase in production capacity tends to attract FDI within EPZs in Kenya. External public debt coefficient was statistically insignificant meaning that external debt does not play any role in attracting FDI in EPZs. Inflation, real exchange rate, external public debt and GDP jointly explains 47.26 percent variations in EPZs foreign direct investments. This means there are other hidden factors that determine FDI within EPZs.

5.3 Conclusions

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 results of data analysis, this study found that EPZs foreign direct investment have a significant negative impact on economic growth in Kenya in the long run. However, the EPZs output have a significant positive impact on economic growth in the long run. While low inflation, depreciation in exchange rate and high GDP significantly play a positive role in attracting FDI within EPZs. Thus, it can be concluded that despite generous incentives accorded to EPZs in Kenya, FDI within the zones do not translate to economic growth in the long run but generally benefit investors. This can be attribute to high turnover of investors within the zones after expiry of tax holidays and incentives accorded to them, high rate of inflation, appreciation of exchange rate and low production capacity.

5.4 Policy Recommendations

FDI inflows plays a crucial role in the growth and development of developing countries. Therefore, the following policy recommendations arose from the findings of the study so as to attract and maintain FDI within EPZs in quest for economic growth.

Kenya government should also 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 and retain revenue forgone within the economy. Efforts should be made to allow 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.

5.5 Areas for Further Research

Effects of EPZs foreign direct investments on the economic growth in Kenya have been revealed in this study. However, other variables of the EPZ program such as employment generation, technology transfer and structural transformation should be carried out to ascertain their impacts on economic growth in Kenya. Since approximately 46 per cent variations of FDI within EPZs is jointly explained by variables used in the study, there is need to carry out further research on other hidden factors that attract EPZs. Further research is also required to carry out a cross-country study to investigate whether the same factors influencing FDI within EPZs in Kenya, affect EPZs foreign direct investments in other countries.

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APPENDIX 1
ARDL Diagnostic Tests Results

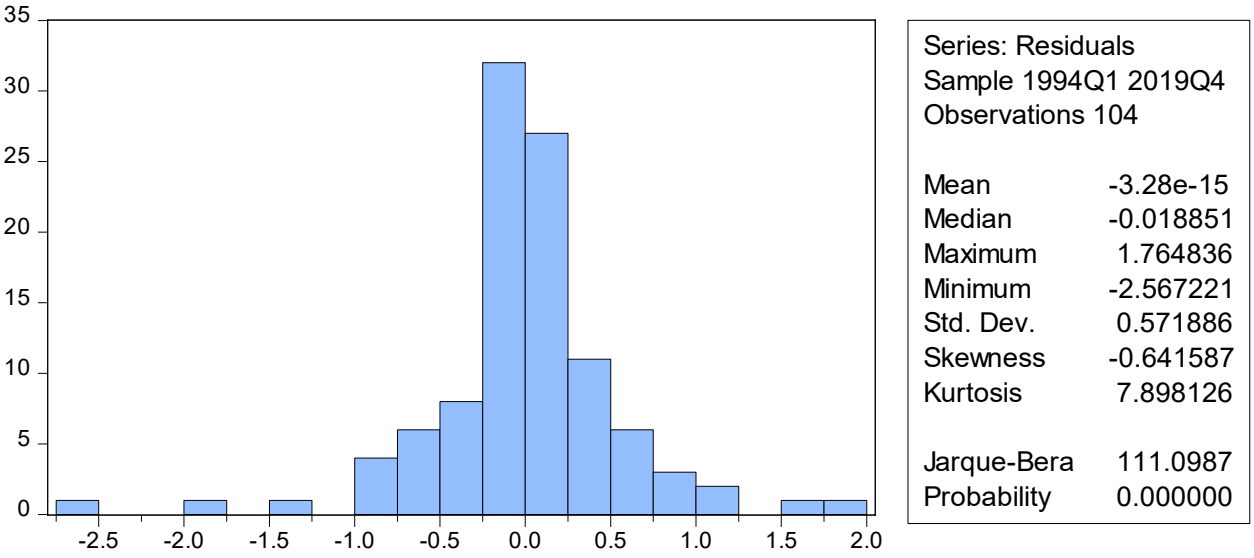

Figure A1. 1 ARDL Normality Test Results

Table A1. 1 ARDL LM Serial Correlation Test Results

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.355875	Prob. F(2,88)	0.7016
Obs*R-squared	0.834410	Prob. Chi-Square(2)	0.6589

Table A1. 2 ARDL VIF Results

Variable	VIF	1/VIF
EPZOUTPUT	2.84	0.352112
RER	3.42	0.292397
EPZFDI	4.61	0.217006
FDI	2.80	0.357730
INFL	1.22	0.818288
Mean VIF	2.978	

Source: Author`s computations

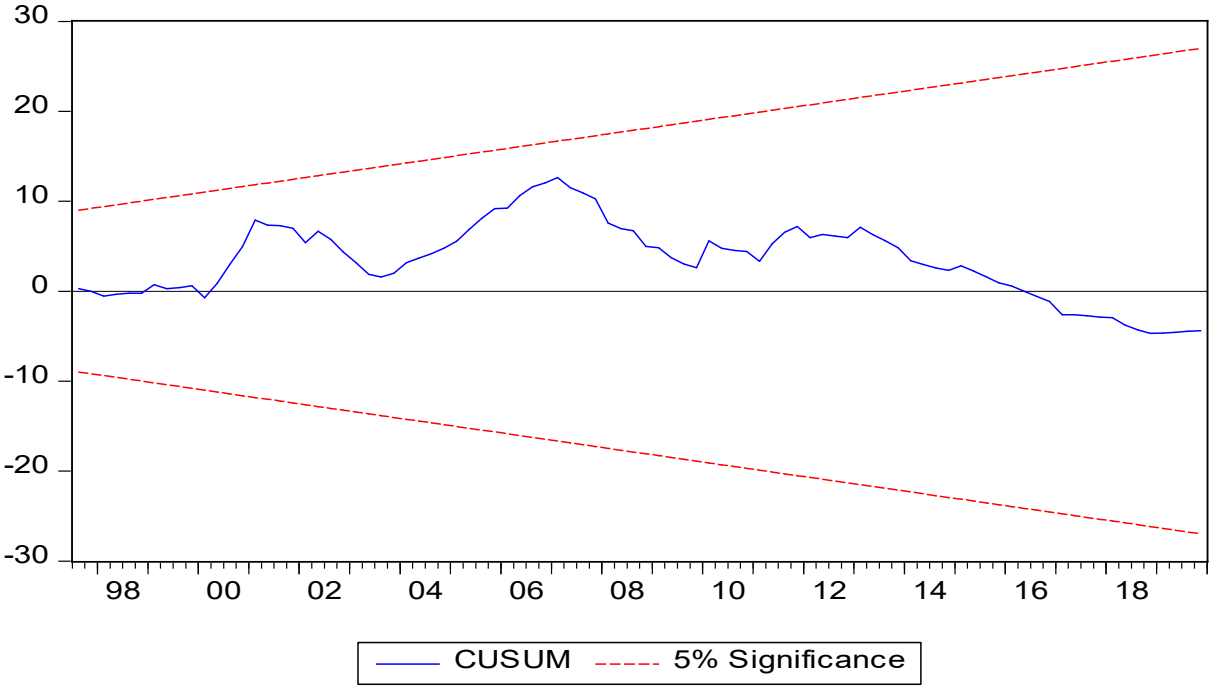

Figure A1. 2 ARDL CUSUM Test Results

APPENDIX 2
OLS Diagnostic Test Results

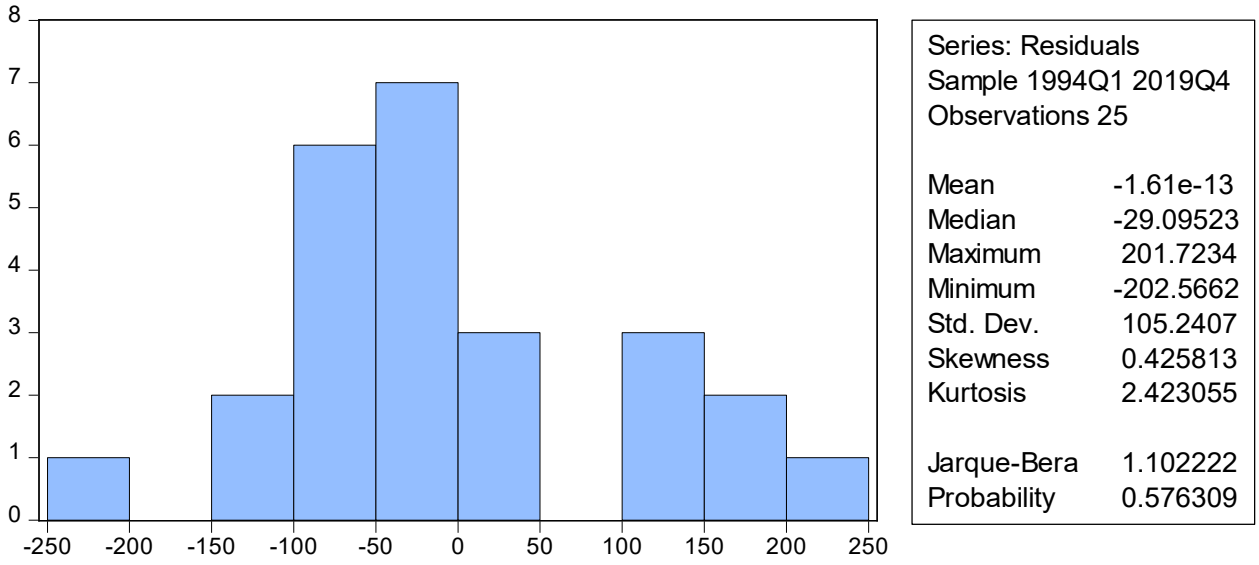

Figure A2. 1 OLS Normality Test Results

Table A2. 1 OLS Breusch-Godfrey Serial Correlation LM Test Results

F-statistic	1.799280	Prob. F(2,99)	0.1708
Obs*R-squared	3.752937	Prob. Chi-Square(2)	0.1531

Table A2. 2 OLS VIF Results

Variable	VIF	1/VIF
INFLATION	1.21	0.825072
Gross Domestic Product	1.13	0.885477
Real exchange rate	1.05	0.952519
External public debt	1.02	0.978805
Mean VIF	1.12	

Source: Author`s computations

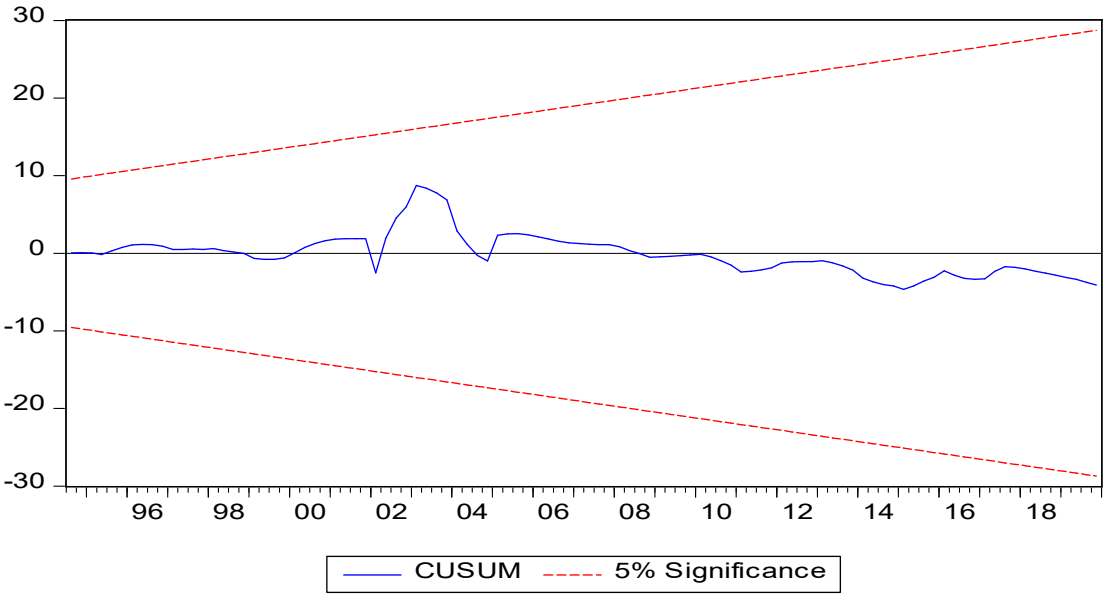

Figure A2. 2 OLS CUSUM Test Results

APPENDIX 3

YEAR	INFLATION (%)	EXTERNAL PUBLIC DEBT USD (billion).	EPZ_OUTPUT USD (billion).	EPZ-FDI (USD (billion).	FDI (USD (billion).	GDP USD (billion).	GDPGR (%)	RER (%)
1993Q1	45.93	0.711152	0.001147	0.001667	0.15	5.75	0.35	58.00
1993Q2	41.65	0.711474	0.001097	0.001775	0.11	6.10	0.92	57.51
1993Q3	37.37	0.711797	0.001047	0.001882	0.08	6.45	1.49	57.03
1993Q4	33.09	0.712119	0.000996	0.001990	0.05	6.80	2.06	56.54
1994Q1	28.81	0.712442	0.000946	0.002097	0.01	7.15	2.63	56.05
1994Q2	21.99	0.717061	0.001044	0.002548	0.02	7.63	3.08	54.89
1994Q3	15.18	0.721681	0.001142	0.002998	0.03	8.10	3.52	53.74
1994Q4	8.37	0.726300	0.001239	0.003449	0.03	8.58	3.97	52.58
1995Q1	1.55	0.730920	0.001337	0.003899	0.04	9.05	4.41	51.43
1995Q2	3.38	0.718533	0.001402	0.004017	0.06	9.80	4.35	52.85
1995Q3	5.21	0.706146	0.001467	0.004135	0.08	10.55	4.28	54.27
1995Q4	7.03	0.693759	0.001531	0.004252	0.09	11.30	4.22	55.69
1996Q1	8.86	0.681372	0.001596	0.004370	0.11	12.05	4.15	57.11
1996Q2	9.49	0.672655	0.001596	0.004370	0.10	12.32	3.23	57.51
1996Q3	10.11	0.663937	0.001596	0.004370	0.08	12.59	2.31	57.92
1996Q4	10.74	0.655220	0.001596	0.004370	0.07	12.85	1.39	58.33
1997Q1	11.36	0.646502	0.001596	0.004370	0.06	13.12	0.47	58.73
1997Q2	10.2	0.646968	0.001822	0.004714	0.05	13.36	1.18	59.14
1997Q3	9.04	0.647434	0.002047	0.005059	0.05	13.61	1.88	59.55
1997Q4	7.88	0.647901	0.002273	0.005403	0.04	13.85	2.59	59.96
1998Q1	6.72	0.648367	0.002499	0.005747	0.03	14.09	3.29	60.37

1998Q2	6.48	0.644358	0.002484	0.005600	0.04	13.79	3.05	62.86
1998Q3	6.23	0.640348	0.002469	0.005454	0.04	13.50	2.80	65.35
1998Q4	5.99	0.636339	0.002454	0.005307	0.05	13.20	2.55	67.84
1999Q1	5.74	0.632330	0.002439	0.005160	0.05	12.90	2.31	70.33
1999Q2	6.8	0.628321	0.002927	0.005397	0.07	12.85	1.88	71.79
1999Q3	7.86	0.624311	0.003416	0.005634	0.08	12.81	1.46	73.26
1999Q4	8.92	0.620302	0.003904	0.005870	0.10	12.76	1.03	74.72
2000Q1	9.98	0.616293	0.004392	0.006107	0.11	12.71	0.60	76.18
2000Q2	8.92	0.612284	0.004919	0.006818	0.09	12.78	1.40	76.78
2000Q3	7.86	0.608274	0.005446	0.007529	0.06	12.85	2.19	77.37
2000Q4	6.80	0.604265	0.005972	0.008239	0.04	12.92	2.99	77.97
2001Q1	5.74	0.600256	0.006499	0.008950	0.01	12.99	3.78	78.56
2001Q2	4.80	0.602589	0.007634	0.009895	0.02	13.03	2.97	78.61
2001Q3	3.85	0.604921	0.008770	0.010839	0.02	13.07	2.17	78.66
2001Q4	2.91	0.607254	0.009905	0.011783	0.02	13.11	1.36	78.70
2002Q1	1.96	0.609587	0.011040	0.012728	0.03	13.15	0.55	78.75
2002Q2	3.93	0.625067	0.011984	0.026336	0.04	13.59	1.15	78.05
2002Q3	5.89	0.640548	0.012928	0.039944	0.06	14.03	1.74	77.35
2002Q4	7.86	0.656028	0.013873	0.053552	0.07	14.46	2.34	76.64
2003Q1	9.82	0.671508	0.014817	0.067160	0.08	14.90	2.93	75.94
2003Q2	10.27	0.676546	0.017167	0.054623	0.07	15.20	3.47	76.75
2003Q3	10.72	0.681584	0.019517	0.042086	0.07	15.50	4.01	77.56
2003Q4	11.17	0.686622	0.021867	0.029549	0.06	15.80	4.56	78.36
2004Q1	11.62	0.691659	0.024217	0.017012	0.05	16.10	5.10	79.17
2004Q2	11.29	0.680988	0.024106	0.017475	0.04	16.76	5.30	78.27

2004Q3	10.97	0.670316	0.023996	0.017937	0.04	17.42	5.51	77.36
2004Q4	10.64	0.659645	0.023885	0.018400	0.03	18.08	5.71	76.46
2005Q1	10.31	0.648973	0.023774	0.018862	0.02	18.74	5.91	75.55
2005Q2	11.34	0.654022	0.024169	0.019227	0.03	20.51	6.05	74.69
2005Q3	12.38	0.659070	0.024564	0.019591	0.04	22.28	6.19	73.82
2005Q4	13.41	0.664119	0.024958	0.019956	0.04	24.06	6.33	72.96
2006Q1	14.45	0.669167	0.025353	0.020320	0.05	25.83	6.47	72.10
2006Q2	13.28	0.690601	0.026365	0.019997	0.22	27.36	6.57	70.91
2006Q3	12.11	0.712035	0.027376	0.019674	0.39	28.90	6.66	69.71
2006Q4	10.93	0.733470	0.028388	0.019350	0.56	30.43	6.75	68.51
2007Q1	9.76	0.754904	0.029400	0.019027	0.73	31.96	6.85	67.32
2007Q2	13.88	0.757904	0.029866	0.019695	0.57	32.95	5.19	67.79
2007Q3	18.00	0.760904	0.030331	0.020364	0.42	33.93	3.54	68.25
2007Q4	22.12	0.763904	0.030797	0.021033	0.26	34.92	1.89	68.72
2008Q1	26.24	0.766904	0.031262	0.021701	0.10	35.90	0.23	69.18
2008Q2	21.99	0.789152	0.030146	0.021653	0.11	36.18	1.00	71.22
2008Q3	17.74	0.811399	0.029030	0.021604	0.11	36.46	1.77	73.27
2008Q4	13.48	0.833646	0.027914	0.021555	0.11	36.74	2.54	75.31
2009Q1	9.23	0.855893	0.026798	0.021507	0.12	37.02	3.31	77.35
2009Q2	7.91	0.863326	0.028029	0.022021	0.14	37.77	4.59	77.82
2009Q3	6.60	0.870759	0.029261	0.022535	0.15	38.51	5.86	78.29
2009Q4	5.28	0.878191	0.030492	0.023049	0.17	39.26	7.14	78.76
2010Q1	3.96	0.885624	0.031723	0.023563	0.18	40.00	8.41	79.23
2010Q2	6.48	0.918108	0.034403	0.024289	0.50	40.49	7.84	81.63
2010Q3	8.99	0.950592	0.037083	0.025016	0.82	40.98	7.26	84.02

2010Q4	11.51	0.983076	0.039762	0.025742	1.13	41.46	6.69	86.42
2011Q1	14.02	1.015560	0.042442	0.026468	1.45	41.95	6.11	88.81
2011Q2	12.86	1.058441	0.042900	0.029485	1.43	44.07	5.72	87.74
2011Q3	11.70	1.101322	0.043358	0.032502	1.42	46.18	5.34	86.67
2011Q4	10.54	1.144202	0.043815	0.035518	1.40	48.30	4.95	85.60
2012Q1	9.38	1.187083	0.044273	0.038535	1.38	50.41	4.56	84.53
2012Q2	8.47	1.235222	0.045778	0.040902	1.32	51.58	4.89	84.93
2012Q3	7.55	1.283362	0.047284	0.043270	1.25	52.75	5.22	85.33
2012Q4	6.64	1.331501	0.048789	0.045637	1.19	53.93	5.55	85.72
2013Q1	5.72	1.379640	0.050294	0.048004	1.12	55.10	5.88	86.12
2013Q2	6.01	1.457233	0.052018	0.047058	1.05	56.69	5.75	86.57
2013Q3	6.30	1.534827	0.053743	0.046111	0.97	58.28	5.62	87.02
2013Q4	6.59	1.612420	0.055468	0.045164	0.90	59.86	5.49	87.47
2014Q1	6.88	1.690014	0.057192	0.044218	0.82	61.45	5.36	87.92
2014Q2	6.81	1.761688	0.059118	0.045196	0.77	62.09	5.45	90.49
2014Q3	6.73	1.833361	0.061045	0.046173	0.72	62.73	5.54	93.05
2014Q4	6.66	1.905035	0.062971	0.047151	0.67	63.37	5.63	95.62
2015Q1	6.58	1.976709	0.064897	0.048128	0.62	64.01	5.72	98.18
2015Q2	6.51	2.049878	0.065815	0.058340	0.64	65.31	5.76	99.01
2015Q3	6.44	2.123047	0.066733	0.068553	0.65	66.60	5.80	99.84
2015Q4	6.37	2.196216	0.067651	0.078765	0.67	67.90	5.84	100.67
2016Q1	6.30	2.269386	0.068569	0.088977	0.68	69.19	5.88	101.50
2016Q2	6.73	2.372784	0.068244	0.090547	0.83	71.44	5.61	101.98
2016Q3	7.15	2.476182	0.067920	0.092117	0.98	73.69	5.35	102.46
2016Q4	7.58	2.579580	0.067595	0.093688	1.12	75.94	5.08	102.93

2017Q1	8.01	2.682978	0.067270	0.095258	1.27	78.19	4.81	103.41
2017Q2	7.18	2.800012	0.069770	0.097710	1.36	80.59	5.19	102.88
2017Q3	6.35	2.917046	0.072270	0.100162	1.45	82.99	5.56	102.35
2017Q4	5.52	3.034079	0.074770	0.102614	1.54	85.38	5.94	101.83
2018Q1	4.69	3.151113	0.077270	0.105066	1.63	87.78	6.32	101.30
2018Q2	4.82	3.256281	0.077233	0.105408	1.56	89.59	6.08	101.52
2018Q3	4.95	3.361449	0.077195	0.105750	1.48	91.39	5.85	101.75
2018Q4	5.07	3.466617	0.077157	0.106091	1.41	93.19	5.61	101.98
2019Q1	5.20	3.571785	0.077120	0.106433	1.33	95.00	5.37	102.20
2019Q2	NA	NA	NA	NA	NA	NA	NA	NA
2019Q3	NA	NA	NA	NA	NA	NA	NA	NA
2019Q4	NA	NA	NA	NA	NA	NA	NA	NA