IMPACT OF FOREIGN DIRECT INVESTMENT ON
ZAMBIA’S EXPORT PERFORMANCE
(1970 - 2012)

By
Jonathan Msoni
BA (The University of Zambia)

A Dissertation Submitted to the University Of Zambia in Partial Fulfilment Of The
Requirements of the Degree of Master of Arts in Economics

THE UNIVERSITY OF ZAMBIA
LUSAKA
2016
DECLARATION

I Jonathan Msoni declare that this dissertation

a) Represents my own work.

b) Has not been previously submitted for a degree at this or any other University and;

c) Does not incorporate any published work or material from another dissertation.

Signed: ______________________________

Date: ______________________________
APPROVAL

This dissertation of Jonathan Msoni has been approved as a partial fulfilment of the requirements for the award of the degree of Master of Arts in Economics by the University of Zambia.

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ABSTRACT
Zambia has sought to attract Foreign Direct Investment because of the many benefits that it brings to the economy. Foreign Direct Investment is considered beneficial not only because it brings in the much needed capital, but also generates employment and provides access to advanced technologies and other spill-overs. It has been argued that Foreign Direct Investment has a positive impact on the export performance of the host country because they exploit the host factor endowments there by lowering their production cost and increasing their export competitiveness.

The main purpose of this study was to ascertain the impact of Foreign Direct Investment on Zambia’s Export performance covering the period from 1970 to 2012. The study reviewed both theoretical and empirical work on the relationship between exports and Foreign Direct Investment. The study employed the Single Equation Error Correction Model. The results of the Augmented Dickey Fuller unit root test showed that the time-series data were non-stationary at levels, but become stationary in the first differences.

The study reviewed, that in the short run foreign direct investment were not contributing to the export performance, while in the long run, the coefficient of FDI variable was found to be negative, but there was no statistical evidence, at all conventional levels of significance, to claim that foreign investment did not improve export performance. This evidence could be attributed to the fact most FDI inflows are concentrated in the mining sector. FDI inflow in the mining sector has exploited Zambia’s rich resources, but there is an opportunity for Zambia to attract other export-oriented FDI in other sectors which are not yet fully explored, this is provided by Zambia’s abundant access to important markets under various preferential trade schemes. Export oriented FDI could also be indirectly targeted by means other than incentives, i.e. by providing specific services, infrastructure or human resources that are possibly required by the export oriented firms.
DEDICATION

This study is dedicated to my wife Lombe Mbuta Msoni and my son Jonathan Msoni
ACKNOWLEDGEMENTS

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<tr>
<td>ADF</td>
<td>Augmented Dickey Fuller</td>
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<tr>
<td>COMESA</td>
<td>Common Market for East and Southern Africa</td>
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<td>CSO</td>
<td>Central Statistical Office</td>
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<td>EPZ</td>
<td>Export Processing Zone</td>
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<td>FDI</td>
<td>Foreign direct investment</td>
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<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>INDECO</td>
<td>Industrial Development Corporation</td>
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<td>MFEZ</td>
<td>Multi Facility Economic Zone</td>
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<td>MNC</td>
<td>Multi-National Corporations</td>
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<td>REER</td>
<td>Real Effective Exchange Rate</td>
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<td>SADC</td>
<td>Southern Africa Development Community</td>
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<td>Single Equation Error Correction Model</td>
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<td>TO</td>
<td>Trade Openness</td>
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<td>UNCTAD</td>
<td>United Nation Conference on Trade and Development</td>
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<td>ZDA</td>
<td>Zambia Development Agency</td>
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CHAPTER ONE
INTRODUCTION

1.0 INTRODUCTION
In recent years, many countries have sought to attract foreign investment, especially Foreign Direct Investment (FDI) into their economies. The touted benefits of increased foreign participation in the economy include the capital brought in, employment opportunities and spill overs such as technological, which contribute to enhanced economic growth (Blomström & Sjöholm, 1999). For this reason, most governments encourage foreign direct investment into their economies.

It has long been argued that Foreign Direct Investment (FDI) plays an important role in promoting export and economic growth of an economy. It is argued that FDI promotes exports of the host countries by increasing the productivity and productive capacity of the host country by increasing capital stock, transfer of technology, managerial skills and upgrading the skills of the local workforce through training. Further, FDI also increases the opportunity for the host countries to export by facilitating access to the new and large foreign markets (Sultan Z. , 2013).

The role of FDI in a receiver country’s export performance is important, since exports have for a long time been viewed as an engine of economic growth. The growth of exports increases technological innovation covers the domestic and foreign demand and also increases the inflows of foreign exchange, which could lead to greater capacity utilization and economic growth (Shihab, Soufan, & Abdul-Khaliq, 2014).

The importance of increased exports is highlighted in decreasing a countries’ trade deficit. Draper, Freytag and Voll (2009) indicated that a trade deficit within the emerging and developing country context is dangerous, especially during times of crises, as was evident during the 2008 global financial crisis. If the current account deficit is off-set by capital-inflows, the balance of payments is at equilibrium and can function on a current account deficit for some time, however, in emerging and developing economies, most capital inflows are of a short term nature, and therefore the danger of retrieval can take place during times of crises, leaving the country with no funds to pay back its debt. This further highlights the
importance of FDI – should FDI (long-term investments) increase, this would alleviate the balance of payments constraints in an economy.

According to the Consumer Utility Trust Society (2003), a stable, efficient and professional environment that welcomes investors into most economic activities, without discrimination, is a necessary prerequisite for FDI inflows. Zambia appears to be an attractive FDI destination: the economic reforms, tax incentives and other regulations put in place to attract FDI has opened up the Zambian market and has made it a more attractive FDI destination. This is visible in the increase of FDI inflows: from 2000-2004 FDI inflows increased by 274 percent to USD 334 million (UNCTAD, 2010).

Foreign investment in Zambia has mainly been in mining, energy, manufacturing and agro-business companies. In addition, investments have been largely in copper and cobalt extraction and Greenfield investments in the agricultural sector (in particular horticulture and floriculture production) and in tourism (UNCTAD 2006). This can also be shown from the results of the foreign investment perception surveys in table 1 below. Unfortunately, data on the sectoral distribution of FDI over the last three decades does not exist.

| Table 1: Zambia's Foreign Direct Investment Inflows by Sector (In US $ million) |
|----------------------------------|--------|--------|--------|--------|
| Mining & Quarrying               | 367.2  | 1,141.3| 955.6  | 933.7  |
| Agriculture, Forestry & Fishing  | -14.1  | 13.2   | 31.7   | 28.3   |
| Manufacturing                    | 285.7  | 373.9  | -177.8 | 469.6  |
| Wholesale and Retail Trade       | 65.0   | -2.2   | 76.6   | 38.3   |
| Tourism                          | 40.9   | 4.3    | 13.6   | 0.0    |
| Transport & Communication        | -10.7  | 179.3  | 41.6   | 19.7   |
| Information and Communication    | 0.0    | 0.0    | 0.0    | -18.4  |
| Construction                     | 44.2   | 17.4   | 39.2   | 54.6   |
| Real Estate Activities           | -0.4   | -4.5   | 42.8   | 4.9    |
| Finance & Insurance              | -83.5  | -11.2  | -0.2   | 0.0    |
| Electricity, Gas and Steam       | 0.0    | 0.0    | 13.3   | 6.5    |
| Deposit Taking Corporations      | 0.0    | 0.0    | 71.1   | 184.4  |
| Other Financial Institutions     |        |        |        | 9.2    |
| Other                            | 0.6    | 17.8   | 1.0    | 0.8    |
| **Total**                        | **694.9** | **1,729.3** | **1,108.5** | **1,731.6** |

The FDI-exports nexus debate is whether FDI of Multinational Companies (MNCs) is export-oriented or market-oriented, intended just to capture the local or regional markets. Since the MNCs have superior export performance than local firms, in case of export-oriented FDI, this would lead local firms to imitate foreign firms in the same way (Shao-Wei, 2007). Through collaboration or even competition, or more likely imitation, foreign affiliates can stimulate local firms’ exports (Görg and Greenaway, 2003). On the other hand, the reverse causality running from exports to FDI can also exist. It is argued that FDI is attracted to countries with a higher trade potential both in terms of imports and exports (Ponce, 2006).

1.1 OVERVIEW OF EXPORTS IN ZAMBIA
Since independence, the Zambian economy has been dependent on copper exports as the main export product. Exports in copper have been the major contributor to Zambia’s income. In fact, from Independence, up to 1990, exports consisted almost entirely of copper, which accounted for more than 90 percent of total export earnings. In 1964, copper export earnings contributed about 91 percent to total export earnings, a figure that grew to a higher consistent level of 96 percent in 1970 and declined to a level of about 83 percent in 1986. By 1996, copper contribution to exports had declined to approximately 58 per cent (Balat, 2008).

With the global recession of the 1970s copper incomes fell dramatically. The government was initially not willing to adjust, but borrowed large amounts of money to maintain the copper mines and the public sector. After 1975 Zambia faced a collapsing copper price, conflict in neighbouring countries and the severe repercussions of the first oil shock.

The decline in metal exports led government to diversify sources of earning by encouraging non-traditional exports. Zambia’s non-traditional exports have included sugar, cotton lint, horticulture, soya beans and other primary agricultural produce with textile, engineering products, cement and handcrafts being the other products. Other significant export products are fertilizers, hydrated lime, coal, tea, maize, skin leather, asbestos pipes/sheets, groundnuts, mushrooms, fresh eggs and day old chicks, paper, aluminium wires and cables, sorghum, clothing and blankets.¹

The diversification strategy led to an increase in non-traditional exports in the period between 1990 and 1999. In this period, the performance of non-traditional exports was relatively favourable, mainly because of an increase in exports of floriculture and horticulture products, which grew by an average of 36.1%. The increase in the floriculture and horticultural

¹ Zambia development agency (ZDA): promoting economic growth and development, brochure
subsector was spurred by favourable investment flows into the sector. A sizable increase in sugar exports also contributed to the increased non-traditional exports during the same period (Musonda A., 2008).

According to UNCTAD (2004), FDI contributed to the growth of non-traditional export products (i.e. non-natural resources) and an overall diversification. Cotton and tobacco emerged as expanding export sectors accounting for about 17 percent of exports in 2004 compared to 8 percent in 2000, and metal manufactures (mainly base metals, including copper waste and scrap) saw an important increase, rising from 1 per cent in 1995 to 7 percent in 2000 and 4 percent in 2004.

According to the Central Statistical Office (2012), the average contribution of non-traditional exports to total exports from 2005 to 2012 was about 22.7 percent while metal exports were 77.3 percent. During global financial crisis of 2008, non-traditional exports recorded a sharp negative growth of -10.9 percent. However, in 2009 as the world started recovering from the effects of the recession, NTEs equally recovered to 41.6 percent from the previous year. In the same vein, the global financial crisis affected metal exports because of poor commodity prices on the international markets and shrinking demand for metals. These dynamics on the international market resulted in Zambia experiencing massive closures of mines, consequently leading to a reduction in domestic metal production.

**Figure 1: Exports as a percentage of GDP**

Source: own calculation from World Development Indicators
The figure above shows that Zambia’s exports have been fluctuating from low and high performances. The low performance may be explained in part by an unfavourable macroeconomic environment, international markets and other structural factors. The movement in total exports as a percentage to GDP is highly detected by the movement in metal exports. According to the CSO (2012), the main export destination of Zambian exports was Switzerland followed by China, with the rest of the exports been in Africa (SADC, COMESA) and other parts of the world.

1.2 OVERVIEW OF FDI IN ZAMBIA

Foreign direct investment in Zambia has been present since independence in 1964. Zambia’s foreign direct inflow was relatively low in the early 1970s. That is, from 1970 to 1971, the average inflow was about $8.9 million. This could have been attributed to the economic reforms implemented by the government such as the Mulungushi and Matero reforms of 1968 and 1969 respectively. The Mulungushi reforms were targeted at the non-mining sector in an attempt to manage its economic sector affairs following the colonial rule, while the Matero reforms were targeted at the mining sector, stipulating that mining and non-mining sectors were to surrender 51 percent of their controlling shares to the state (Osei-Hwedie, 2003). This hampered investor confidence.

The government in an attempt to better the investment prospects implemented the industrial act in 1977 which had “good” prospects for investors. As a result, FDI inflows improved, graduating from the negatives and averaging around US$37 million in the late 1970s and early 1980s (ibid). By 1980, FDI inflow had increased to $61.6 million before drastically flowing to -$38.4million in 1981. This was caused by the oil and debt crises of the 1980s. This showed that inflows of FDI into Zambia were sensitive to external shocks.

The new policies adopted by the new government in the early 1990s saw FDI inflow decline drastically to $34.3million by 1991 from $202.8million the previous year. This was because of uncertainties in the economy perceived by investors. Despite this, between the period of 1995 and 2000 the average FDI inflows increased to US$161 million (UNCTAD, 2006).

The global financial crisis of 2007/2008 had a negative impact on the FDI inflow in Zambia. Although it did not affect its financial sector, the crisis hit various parts of its real sector, the
tourism sector was adversely affected and Zambia experienced a decline in terms of investment and trade. The mining sector remained the highest recipient of FDI inflows.

Figure 2: Trend in FDI inflows (millions of dollars) in Zambia from 1970 to 2012

![Trend in FDI inflows](image)

Source: Authors own calculations based on UNCTAD online data

The second largest sector for FDI is the services sector, more specifically banking, communications and tourism. There are thirteen international banks operating in Zambia, including Barclays, Standard Chartered, Stanbic and Citibank. FDI in telecommunications services, hospitality and insurance Industries are also present. The tourism industry has also attracted more foreign investors in recent years, especially in the development of game parks and in sites around the Victoria Falls area. In recent years, agriculture has been attracting FDI directed mainly at the production of fruit, flowers, horticultural products, cotton, maize, tobacco and sugar (UNCTAD 2006).

Chinese investors are playing a prominent role, primarily in the manufacturing and construction sectors. Zimbabwe was also a source of investment, in agriculture and tourism in recent years. Outside mining, British investment is present in tourism, services, and manufacturing. South African investors have displayed most interest in recent years in services, particularly in tourism, retail trade and banking (ibid).
1.2.1 PLEDGED INWARD FDI VS ACTUAL FDI
The combination of records of foreign direct investment pledges from the Zambia investment centre\(^2\) report surveys and Zambia development agency show that Zambia is a potential FDI destination. The discrepancy between the pledged FDI and the actual FDI inflow is significantly high. According to the Zambia Investment Centre, the pledged inward FDI in 1993 was US $389 million compared to the actual foreign investment inflow of US$40 million. The peak in the pledged inward FDI inflows in the 1990s was reached in 1999 when US$ 1,043 million was pledged and only US$ 121.7 million was the actual investment inflow.

**Figure 3 : Pledged FDI and actual FDI inflows**

![Graph showing pledged FDI and actual FDI inflows from 1993 to 2012.](source)

Source: Authors own based on the ZIC and ZDA data

There has been instance were the actual investment inflows surpassed the pledged inflows. In 2006 the pledged inflow amounted to US$ 757 million while the actual investment inflows were US$ 1,323 million. In like manner the same trend occurred in 2009 were actual investment was more than pledged investment, though the trend was not the same from 2010 to 2012.

There are many incentives offered for investors, for example in the Zambia investment Act, investors who invest any amount in a sector or product not provided for as a priority sector or product are entitled to general incentives provided under the various pieces of legislation. These incentives are provided for under the pieces of legislation falling under the Zambia Revenue Authority, namely: the Customs and Excise Act, Income Tax Act and Value Added Tax Act.

\(^2\) Unpublished reports
1.3 STATEMENT OF THE PROBLEM

The role of FDI in promoting export is a controversial topic and basically depends upon the motive for such investment. Despite Zambia been one of the attractive destinations for FDI and experiencing an increased inflow, the annual growth rate of exports has relatively been low. The average annual growth rate of exports from 1970 to 1979 was about -0.5 percent and between 1980 to 1989 it was about -2.9 percent. While the average annual growth of exports from 1990 to 1999, and 2000 to 2010 was about 5.5 percent and 10 percent respectively. This implies that the country’s average growth rate of exports has been growing at a small rate.

In addition, in the past decades Zambia had been experiencing a current account deficit. A current account deficit implies that the country is importing more goods and services than it is exporting. A current account deficit is when a country's government, businesses, and individuals import more goods, services and capital than it exports.

Figure 4: Current Account balance as a percentage of GDP

Source: Own compilation from World Economic Outlook database

The current account had been in deficit for quite some time with the record deficit reaching 19 percent of GDP in 1981. From the mid-eighties, the performance of the economy improved, the current account deficit being turned to a small surplus in 1991 to 1.29 percent

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3 calculation of percentages based on the world development indicators
of GDP before going back into a deficit from the period 1992 to 2005. From 2009 the current account balance has been a positive.

Moreover the government has set out policies and strategies such as setting up of Multi Facility Economic Zones to encourage export oriented FDIs. It is not clear if those policies are a panacea to export growth. The problem is that there is no evidence that suggest that the FDI inflow has improved the exports performance. This provides a gap in knowing what kind of Investments we are attracting. According to Sultan (2013) if the motive for FDI is to reap the benefits of host country’s comparative advantage so as to produce at relatively low cost, such investments are likely to promote trade and hence complement trade. Such FDI is export oriented. We have little understanding on how FDI impacts on exports, identifying its impact will provide useful information to policy makers.

1.4 GENERAL OBJECTIVES

The general objective of this study was to investigate the impact of FDI inflows on Zambia’s export performance from 1970 to 2012.

1.5 SPECIFIC OBJECTIVES

The specific objectives of the study were to

I. Determine if FDI inflow had increased Exports
II. Identify policy implication on the findings.

1.6 HYPOTHESIS

The main hypothesis tested was that

- Increased FDI inflow does not increase Exports from Zambia

1.7 RESEARCH QUESTION

What is the impact of Foreign of Direct Investment on Zambia’s Export performance?
1.8 SIGNIFICANCE OF THE STUDY

This study was motivated by the paucity of literature on the impact of FDI on the export performance in Zambia. There are a lot of empirical investigations in this area by other countries but in Zambia such investigation remains few. Ndoricimpa (2009) provided a publication on the interrelationship between Foreign Direct Investment, exports and economic growth in COMESA Countries from 1983 to 2007. Dogan (2013) examined the causality relationship between foreign direct investment inflow (FDI) and economic growth (GDPGR) in Zambia using the time-series analyses. The analysis was conducted with the annual data of foreign direct investment and real gross domestic product of Zambia over the years of 1970 and 2011. On the other hand, Bwalya (2005) published on FDI and technology spill overs in the manufacturing firms in Zambia while Musonda (2008) published on Exchange Rate Volatility and Non-Traditional Exports Performance from 1965 to 1999.

The study done by Dogan (2014) focused only on the relationship of foreign direct investment and economic growth and it did not take in to account how FDI affected the export performance. The study by Ndoricimpa (2009) applied the test for Granger causality in heterogeneous panels by testing first for Homogeneous Non-Causality and Homogeneous Causality hypotheses which only found the short run causality between FDI and exports in the case of Zambia. The study also did not consider other variables such as inflation, and trade openness which could have influences on the direction of FDI and exports.

In our study we hoped to contribute to literature by analysing the short and long run effects of foreign direct investment on the export performance by using a single equation error correction model which was suitable for many variables. The study also extends the time frame by analysing from 1970 to 2012. The study was also motivated by finding out whether the government policy of encouraging foreign investment inflows had impact on the export performance. This was because from 2001, the government embarked on a path of export-led industrialisation through the introduction of the Export Processing Zones (EPZs) and the Multi-Facility Economic Zones (MFEZs) policies. These policies were aimed at increasing exports through value addition to raw materials that hitherto were exported in their raw form. To operationalize these policies, the government enacted the Export Processing Zones Act and the Zambia Development Agency Act in 2001 and 2006 respectively.

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4 Burundi, Comoros Islands, DRC, Djibouti, Egypt, Eritrea, Ethiopia, Kenya, Libya, Madagascar, Malawi, Mauritius, Rwanda, Seychelles, Sudan, Swaziland, Uganda, Zambia, Zimbabwe.
In this study we built on the existing literature which focused on exports and FDI to analyse the impact of FDI on exports. The study was hoped would add to Zambia’s literature on the impact of FDI on exports and be a source of future reference. It was also hoped that it would also provide a basis for further research using other methodologies that could not be exploited in this study.

1.9 SCOPE OF THE STUDY

This study utilised time series data for the period 1970 to 2012, the variables used included Exports, Foreign Direct Investment, Real Effective Exchange Rate, Gross Domestic Product, Inflation and Trade Openness. The focus was placed on the relationship between FDI and Export performance mainly because of the deliberate government policy direction in attracting FDI with several investment incentives and campaigns.

1.9.1 ORGANISATION OF THE STUDY

The study was divided into seven chapters. Chapter one introduced the study. Chapter two gave an overview of economic performance and trade policy, while chapter three reviewed the relevant theoretical and empirical literature, chapter four outlined the methodology and estimation techniques. Chapter five showed the results of the empirical analysis and chapter six gave the discussion and limitation of the study. Finally, chapter gave the conclusion and suggestions.
CHAPTER TWO
OVERVIEW OF ECONOMIC PERFORMANCE AND TRADE POLICY

2.1 ECONOMIC PERFORMANCE AND TRADE POLICY

At the time of independence, Zambia inherited an archetypical dual economy. Its small export enclave was devoted almost entirely to crude copper, which constituted 90-95 per cent of its exports. It imported almost all the manufactured goods consumed. Outside the limited enclave built around the Copper Belt and about 1,000 lines of settler estates, the rural areas stagnated (Seidman, 1974). The mining industry and the associated rail and power infrastructure belonged to expatriate interests. Manufacturing was still on a small scale, with most manufactured products being imported. Agriculture was divided between African farmers, many of whom supplemented their subsistence incomes with off-farm wages, while some produced food surpluses for sale to urban areas, and some 1200 European-owned farms, mainly located along the line of rail, which supplied maize to the local market and produced Virginia tobacco for export (Wood et al., 1990).

Zambia's manufacturing sector at independence contributed less than 7 per cent of the total Gross Domestic Product, about half as much as was typical of other countries with the same income per capita. It was dominated by the beverages and tobacco industries, which produced almost a third of total manufacturing value-added. The high copper price of the 1960s expanded government revenues, permitting expenditures to double from 1965 to 1970. They consumed a third of the G.D.P. in the latter year. This contributed to expanded purchases of materials and supplies for infrastructural development and, indirectly, to increased demand for consumer goods for growing numbers of government employees. Most of this growing demand was satisfied through imports, which roughly doubled from K156 million to K340 million in 1970. The manufacturing sector also expanded: its estimated contribution to G.D.P. in money terms had almost quadrupled by 1972. Despite this rapid growth, closer examination reveals several disturbing features of the manufacturing sector (Seidman, 1974).

First, it became increasingly dependent on certain imported parts and materials. Local value-added actually declined from half to about a third of the gross output of manufacturing industry. Intermediate parts and materials for manufacturing constituted about 16 per cent of all manufactured imports in 1970. Secondly, the composition of manufacturing remained
much as it had been before independence, except that beverages and tobacco became increasingly predominant. Thirdly, the number of establishments reported by the census of industrial production dropped by a third from 1966 to 1969 (ibid).

Like many African countries during the 1960s and 1970s, Zambia pursued a development strategy driven by large-scale urban-based industrialization and a vast degree of state intervention in the economy. For Africa as a whole, the impetus for this strategy, termed “urban bias,” was threefold. First, there was a genuine belief among African governments that state-directed industrialization was the most effective means of achieving modernization. Indeed, this was the prevailing development paradigm of that period, widely espoused by both development economists and international institutions (Helleiner 1986; Lofchie 1997).

Second, in the quintessential political economy work on the subject, Bates (1981) observed that well-organized consumers and trade unions located in African cities posed greater threats to African leaders and the prevailing one-party political systems, than more dispersed and remote smallholder agricultural producers. As such, African governments invested more heavily in urban areas, often leading to the decline and neglect of the agricultural sector. Thirdly, many African countries were endowed with considerable mining resources that provided the revenues for financing investments in state industries at the expense of agriculture. For instance, copper revenues constituted 53 percent of Zambia’s government budget in the decade after the country achieved independence in 1964 (Bratton, 1994).

A major prong of this strategy was Import-Substitution Industrialization (ISI), which sheltered state-owned industries from international competition through protectionist trade policies. By limiting competition from foreign imports, Import Substitution Industrialization was expected to provide Zambia’s “infant” industries with an opportunity to achieve global competitiveness. High tariff barriers were erected against foreign imports, and Zambian industries relied on cheap raw materials to produce manufactured goods intended for export. Anticipated advantages of this approach included improved manufacturing capacity and increased employment opportunities in urban areas. Indeed, ISI contributed to the tremendous growth of state owned industries, which accounted for three quarters of the Zambian economy by 1990 (McCulloch et al., 2000).
A holding company, Industrial Development Corporation (INDECO), was set up to orchestrate state takeovers and to control the government’s parastatal portfolio. The number of parastatal enterprises rose from 17 to 147 in the course of the 1970s. In 1970, banks and insurance companies were nationalised and new parastatal banks like the Zambia National Commercial Bank were established. New manufacturing enterprises were opened, built and equipped with extensive recourse to foreign suppliers’ credits. Companies remaining in the private sector were subject to onerous regulation. By the end of the 1970s INDECO’s portfolio was incurring sizeable financial losses (Gulhati, 1989).

The Industrial Development Corporation, by 1979 provided jobs for 25,000 people more than 55 per cent of all those employed in manufacturing. The attitude of the state towards foreign private investment was less favourable than towards its own industries. While statements are frequently made welcoming overseas investors, they were viewed with deep mistrust. At the same time, Zambia was regarded by multi-national companies as a relatively unattractive country in which to invest, with a small market, poor supply routes, and an unpredictable government. These attitudes were reflected in the low level of new foreign investment (Fincham, 1980).

According to Musonda and Adams (1999), the introduction of the foreign exchange auction system in 1985, producers of non-traditional exports were allowed to retain 50% of their export proceeds for their own current account use. Despite providing these incentives, the manufacturing sector failed to expand export sales. By 1990, industrial exports accounted for less than two percent of total exports. The overall incentive system did not promote the production and export of manufactured goods. It promoted the production of final consumer goods for the domestic market rather than that of intermediate goods or exports. Moreover, it was biased towards industrial production rather than agriculture and mining which carried negative effective protection.

Huge import dependence associated with the Zambian Import Substitution Industrialization strategy amid foreign exchange shortages resulted in companies operating below their capacity. With foreign exchange shortages, government adopted exchange allocations strategy. The allocations followed Government prioritisation of the industries based on necessity and luxury classifications. As a result of the difficulty in accessing foreign exchange, most industries had to cut production, increasing unutilised capacity and thereby pushing overheads up (Seshamani, 1994).
Exporters had to be licensed from the Export Licensing Unit of the Ministry of Commerce and Industry using cumbersome procedures. They lacked access to export credit insurance and the focus on ISI forced firms to focus on the satisfaction of the domestic market before exporting (Mudenda, 2009).

Overall, the trade policies adopted by government were fraught with various difficulties. The tariff schedules were inconsistently punitive towards the agriculture sector and domestic manufacturers. The dependence on imported inputs limited the linkage effects of the ISI strategy. Agriculture was ignored. The anti-export biased nature of the policies inhibited private investment initiatives. While the ISI strategy was meant to encourage domestic production and save foreign exchange, it ignored export sales and suffered the predicament of a huge import bill for inputs and a limited national market for manufactured goods. Thus, the current account deficit increased as foreign exchange problems escalated, creating the same problems it was meant to solve (ibid).

Zambia’s political turnaround from one-party socialist to a multiparty democracy in 1991 was accompanied by fundamental change in economic re-orientation. The Zambian Government embarked on drastic economic reforms whose immediate priority was stabilization of major macroeconomic indicators, encouraging the private sector and the State withdrawing from running enterprises. The elements of economic reforms that were implemented included: Abolition of price controls, Removal of exchange rate and bank interest rate controls, Abolition of foreign currency controls, 100% repatriation of net profits, Privatisation of state-owned enterprises, Promotion and facilitation of both local and foreign direct investment, Promotion of exports, Development of the capital market through the Lusaka Stock Exchange (Saasa, 1996).

At the start of the privatization programme, over 80 percent of companies in Zambia were state owned, ranging from mines, utilities and financial services to hotels and supermarkets. Privatization began with the divestment of smaller companies, often to local investors, and its impact was minimal until larger firms started to be sold off in 1995. Between 1995 and 2000, average FDI inflows increased to $161 million, peaking at $207 million in 1997 (UNCTAD, 2012).
2.2 SELECTED MACROECONOMIC INDICATORS

Zambia was re-classified as a lower middle-income country (LMIC), an improvement from its previous status of belonging to the group of less developed countries. The table below shows the selected macroeconomic indicators from 1970 to 2012. The GDP growth rate from 1970 to 1979 averaged about 1.6 percent, while from 1980 to 1989 the growth rate fell to 1.4% representing a 20% drop. As a result, real GDP per capita collapsed from an average of US$416.8 to US$328.9 in the period under review. The GDP growth rate continued to fall as represented in the period between 1990 and 1999 to 0.4% before rising to 5.2 percent and 7.2 percent for the periods of 2000-2009 and 2010-2012 respectively.

Table 2: Selected Macroeconomic indicators

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<tbody>
<tr>
<td>GDP growth (annual %)</td>
<td>1.6</td>
<td>1.4</td>
<td>0.4</td>
<td>5.2</td>
<td>7.2</td>
</tr>
<tr>
<td>GDP per capita</td>
<td>416.8</td>
<td>328.9</td>
<td>267.1</td>
<td>275.5</td>
<td>338.5</td>
</tr>
<tr>
<td>Inflation, (annual %)</td>
<td>5.9</td>
<td>36.3</td>
<td>70.1</td>
<td>18.1</td>
<td>10.0</td>
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Share of GDP (%)

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<tbody>
<tr>
<td>Manufacturing, value added</td>
<td>16.1</td>
<td>25.1</td>
<td>21.2</td>
<td>11.0</td>
<td>8.6</td>
</tr>
<tr>
<td>Agriculture, value added</td>
<td>14.6</td>
<td>15.9</td>
<td>21.1</td>
<td>22.0</td>
<td>19.9</td>
</tr>
<tr>
<td>Exports of goods and services</td>
<td>43.8</td>
<td>34.4</td>
<td>32.8</td>
<td>33.4</td>
<td>46.4</td>
</tr>
<tr>
<td>Services, value added</td>
<td>35.1</td>
<td>38.6</td>
<td>39.7</td>
<td>48.6</td>
<td>43.0</td>
</tr>
</tbody>
</table>

Source: own calculation from World Development Indicators

The economic growth reflected improved economic performance due to policy reform and improved economic management. The positive economic performance had, also been boosted by substantial debt relief under the Highly Indebted Poor Countries Initiative and the Multilateral Debt Relief Initiative and record high prices for metals, including copper, the mainstay of the Zambian economy. GDP per capita also followed the same trend.

The inflation rate rose on average from 5.9 percent in the period of 1970-1979 to 36.3 percent on average in 1980-1989 periods. This is attributed to both local and external shocks to the economy. The period of 1990-1999 is when inflation reached its peak to 70.1 percent on average. Thereafter the period of 2000-2009 and 2010-2012 saw inflation dropping to 18.1 percent and 10.1 percent on average respectively.
CHAPTER THREE
LITERATURE REVIEW

3.1 THE CONCEPTUAL FRAMEWORK OF FOREIGN DIRECT INVESTMENT

According to UNCTAD (2006), Foreign direct investment (FDI) is defined as an investment involving a long-term relationship and reflecting a lasting interest and control by a resident entity in one economy (foreign direct investor or parent enterprise) in an enterprise resident in an economy other than that of the foreign direct investor (FDI enterprise or affiliate enterprise or foreign affiliate). Investments of MNCs can be of several types depending on the motives of investment or the modes of entry in the host country. In principle, four main motives influence investment decisions by Transnational Companies: market-seeking, efficiency-seeking, resource-seeking and created-asset seeking.

According to traditional theoretical literature on multinationals and FDI, a distinction can be made between three main types of investments, namely horizontal, vertical FDI and export-platform FDI. Conventionally, horizontal FDI occurs when MNCs roughly have the same production process in the home and host country, with the headquarters in the home country and where each plant provides products for its local market (Markusen, 1992)\(^5\). So, horizontal FDI may act as a substitute for exporting and a desire to be close to the foreign markets and thereby avoiding transportation cost and other trade barriers. Horizontal FDI is also often referred as market-seeking FDI.

Vertical FDI arises when MNCs divide the production process into more than two parts, with a plant in the host- and home country and maintaining its headquarter in the home country (Helpman and Krugman, 1985). The basic idea behind vertical FDI is that each production process has different input requirements. For example, processes like assembling need cheap labour and headquarter activities needs technology and skilled labor. Through the differences in prices of these different kinds of input between countries, it generally becomes cost effective to separate the production. Thus, the main motivation for vertical FDI is to lower the costs of the production. Furthermore, vertical FDI can be distinguished into backward and forward vertical FDI, based on where all the various kinds of input are coming from. In case of backward vertical FDI, foreign affiliates act as suppliers of input for the parent firm. This type of investments can typically be seen in primary sectors like mining, oil and agriculture.

\(^5\) The headquarters provides both home and host country plants with services (Markusen, 1992).
Consequently, backward vertical FDI is also referred to as resource seeking FDI. In case of forward vertical FDI, the parent companies export their products to foreign affiliates for further production, where intermediate or final products are send back to the home country or even exported to a third country. The latter case is known as export-platform FDI (efficiency seeking FDI).

**Figure 5: Conceptual framework of three types of FDI**

**Situation 1**

![Diagram for Situation 1]

**Situation 2**

![Diagram for Situation 2]

**Situation 3**

![Diagram for Situation 3]
3.2 THEORETICAL LITERATURE REVIEW

This part of the section reveals two theories that help to explain the relationship between FDI and exports. These are the Flying Geese Model and the Heckscher Ohlin Samuelson model.

Flying Geese model

According to Sutlan (2013), the theory that establishes a complementary relationship between FDI and trade is the Flying Geese model, a term, which was for the first time coined by Akamatsu in the 1930s and introduced into academia in the early 1960s. The model is developed based on observation of Asian economies, and the model provides a migratory image where Japan is the leading country in industrialization in Asia while other countries fly back behind emulate the Japanese model.

According to the Asian Development Bank (ADB, 2005) labour costs and openness are the essential factors in the flying geese model. ADB (1999) pointed out that FDI shifted from high labour cost home country to the lower labour cost host country. As the lower labour cost host countries developed they became high labour cost nations for a new set of low labour cost host countries (Lee, 2007).

However, according to Awokuse et al. (2008), the direct effects of FDI on host country’s exports will depend on whether the multinational firms are vertically or horizontally integrated. Vertical FDI is based on relative endowments, hence it is attracted by factor cost differentials, that is, and it is driven by trade costs. Here, the investors come to a host country for the resources where the country’s comparative advantage lies. In this case, the MNCs affiliates target at lowering their costs of production and they are willing to export their products abroad from the host country. On the contrary, for horizontal FDI, the MNCs affiliates aim at penetrating the domestic market, they come to a host country for its huge potential market, therefore it is more likely that they will sell their products in the promising market of the host country and will have little direct effect on the host country’s exports.

Productivity spill overs can also be channelled into industries different from the one in which foreign investor operates through backward and forward linkages. Backward linkages occur when MNCs foreign affiliates, source inputs from local firms, and forward linkages occur when foreign affiliates sell goods or services to domestic firms (Vukšić, 2007). On the other hand, according to Shao-Wei (2007), MNCs affiliates create opportunity for local firm’s exports potential with inside or outside MNCs networks when MNCs take integration
strategies between parent and its affiliates; in the meantime, local firms obtain access to the international markets by linking themselves to MNCs affiliates through sub-contracting and other arrangement. In addition, competition between MNCs and local firms provokes local firms” ambition to increase their exports. Competition effect involves the local firms” behaviour of “learning by watching” to protect the market share.

Using the host country’s abundant factor, the MNEs increase the export supply capacity of the host country. Furthermore, the transfer of FDI also brings with them new technology, capital equipment, and managerial expertise into the host countries and improve the productivity and competitiveness of the indigenous firms thereby increase in competitiveness and exports of the host countries.

**Heckscher Ohlin Samuelson model**

Mundell (1957) on the base of H-O-S (Heckscher-Ohlin-Samuelson) model (two countries, two products, and two factors) model demonstrated that the difference in comparative advantage is the basis of trade. In the absence of factor mobility, trade between two countries takes place to a level at which factor price tends to equalize in both countries, in absolute as well as in relative terms. However, once capital is allowed to move freely across the countries, i.e., from the abundant to a country where it is scarce, the difference in factor prices are reduced, the difference in comparative cost will diminish and eventually will vanish. Hence trade will decline and will be substituted completely by FDI. This view assumes that FDI comes only in those sectors in which the host country has comparative disadvantage. Such FDIs come only to supply domestic market of host countries and hence plays no role in increasing exports. Hence FDI replace imports with domestic production.

The conclusion that both trade in goods and factors work as substitutes is derived from the H-O factor endowment theory based on allocative efficiency in a static framework characterized with perfectly competitive markets, identical constant returns to scale production function and in the absence of transportation cost. However, the generality of this proposition has been questioned in an imperfectly competitive international market, based on economies of scale, imperfect competition, and differences in technological changes that explains the possibility of intra-industry trade (Grossman and Helpman, 1993; Krugman, 1979) and is compatible to explain vertical FDI (intra-firm transfers).
3.3 EMPIRICAL LITERATURE REVIEW

A number of empirical studies on the relationship between exports and FDI have been done with different results coming out, each adopting different methodologies, sample size and variables used. The approach was first to consider global studies and then studies in Africa and finally studies done in Zambia.

A number of studies have been done in developed countries. Sultan (2013) examined the nature of relationship between export and FDI in India over the period 1980-2010. Using Johansen co-integration method, he found a stable long run equilibrium relationship between FDI and export growth. The result of Granger causality based on vector error correction model (VECM) showed that causality runs from export to FDI inflow direction and not from FDI inflow to export direction. In the short run, however, neither export Granger cause FDI inflow nor FDI inflow Granger caused export from India. This implied that inflow of FDI in India was mostly not for efficiency seeking (vertical FDI). FDI inflow was taking advantage of the growing market size determined by large population with high population and economic growth (horizontal FDI).

In another study done in India by Sharma (2000), he investigated the determinants of export performance using annual data for the period 1970-1998. He used a simultaneous equation model to explain India's export performance and applied the Hausman's specification test. Since Hausman's specification test indicated simultaneity bias the two-stage least squares (2SLS) procedure was applied. His empirical findings showed that though the coefficient of FDI had a positive sign; it wasn’t statistically significant, thus rejecting the FDI-led exports hypothesis in India. The findings therefore suggested that FDI in that country was not export-oriented. This could have had been due to an inward-oriented policy that India pursued for a long time which could have discouraged export-oriented foreign investment.

Using panel data including fourteen main FDI receiving and exporting manufacturing sectors in China, Awokuse et al. (2008) examined whether FDI stimulated export performance for the period 1995 to 2005. The empirical results suggested that FDI had a statistically significant and positive impact on China’s exports, which showed that FDI received by China was mainly export-oriented. It was indicated that foreign investments produced their products using China’s relatively rich resources and low wage rates and exported them abroad. These findings by Awokuse et al (2008) were similar to those of Liu et al (2002) who investigated the causal relationship between inward FDI, trade and economic growth in China using
quarterly data at aggregate level for the period 1981 to 1997. A two–way causal relationship between inward FDI and exports was found.

In a study done by Bhatt (2011) on a causal relationship between exports, FDI and income in Vietnam, using Vector Auto regression (VAR) model, the cointegration test result showed that there existed a long-run equilibrium relationship among exports, FDI and GDP. It was found from the estimated error correction model that FDI was a significant variable and the result indicated that 1 unit increase in FDI in Vietnam led to 0.23 units increase in exports. The Granger causality test indicated that there was a unilateral relationship between exports and FDI and the direction was from FDI to exports which meant that FDI caused exports. The results suggested that the structural reforms ‘Doi Moi’ in 1986 which transformed the economy from a closed and centrally planned economy to an open and market oriented one contributed to export performance of FDIs.

Similarly results were found by Pham (2008) who investigated the relationship between FDI and trade (exports and imports) in Vietnam for the period 1990-2007 using a bivariate and multivariate VAR, he found the existence of cointegration between FDI, exports and imports, and the results of Granger causality tests based on a VECM showed that there was a feedback causality between FDI and exports and between FDI and imports, suggesting that FDI in Vietnam was export-oriented. These findings were also confirmed by Xuan and Xing (2008) who analysed the impact of FDI on the exports of Vietnam using gravity model. They estimated the model with both the pooled regression and random effects methods. The coefficient of FDI was found to be positive and significant in both methods, suggesting that FDI in Vietnam contributed significantly to the increase of the country’s exports.

Vukšić (2007) investigated whether the inward foreign direct investment (FDI) in 14 transition economies of Central and Eastern Europe, over the period between 1993 and 2001, had improved the export performance of the host countries The results suggested that, along with real effective exchange rates and development on export markets, foreign direct investment had been a significant determinant of export performance for the whole sample as well as for the two subsamples, in various model specifications. The FDI-specific effects arose because the multinational company may have had superior knowledge and technology, better information about export markets, or better contact to the supply chain of the parent firm than did local firms.
In addition Johnson (2006) examined the relationship between FDI and exports in the East Asian economies, China, Hong Kong, Indonesia, Korea, Malaysia, Singapore, Taiwan and Thailand for the period 1980 to 2003. The results using Time series regressions for individual economies as well as panel data estimation indicated that FDI inflows had a significant and positive effect on host country exports. Moreover, Granger causality tests indicated that FDI inflows caused export flows. His findings suggested that Liberalised FDI regulations could have resulted in an increase in inflows, possibly stimulating exports and eventually increasing the standard of living in these countries.

Other researches done in other places tend to give mixed results. Khan and Leng (1997) examined the interactions among inward – FDI, exports and economic growth for Singapore, Taiwan and South Korea. They did not find any evidence of causal relation between FDI and export in the case of Taiwan and South Korea. In the case of Singapore, a one – way causal relationship from exports to inward FDI was found.

Gallová (2010) analysed the relationship between foreign direct investment, economic growth and export in eight countries of Central and Eastern Europe. The cointegration method and vector error correction model were applied on quarterly data. Estimation of effects on economic growth and export was performed for each country of the region individually in the period from 1993 to 2010. The results confirm the existence of long-term causal links between variables studied in five of the eight countries of the region. The impact of foreign direct investment within the region of Central and Eastern Europe, however, was not clear, since there were positive as well as negative effects proven on export.

Abdel-Rahman (2002) using causality test found that FDI did not Granger cause export growth in the Kingdom of Saudi Arabia but export growth Granger caused FDI growth. This was because exports were mainly from Oil and anecdotal evidence showed that when oil revenues were high in the Kingdom, there was generally less urge to attract FDI and vice versa. In addition, Alici and Ucal (2003) also investigated the causal links among inward FDI, exports and economic growth in Turkish economy during the period of 1987 to 2002 on a quarter bases. The linkage of FDI – led export growth was not found in Turkey.

A study done for Middle East and North African countries which included Egypt, Tunisia, Morocco and Turkey by Soliman (2003) examining the role of FDI in export promotion in these countries for the period of 1970-1995, applying gravity model, he found a positive relationship between FDI inflow and export; however, an insignificant relationship was found
in the case FDI and share of manufacturing export in total merchandise exports. It was suggested that many countries in the region had supported their competition for FDI by major revisions of FDI laws and regulation and incentives along with broader economy wide reform packages. In addition, Metwally (2004) tested the relationship between FDI, exports and economic growth in three countries, viz., Egypt, Jordan and Oman, during the period from 1981 to 2000 by using a simultaneous equation model. The result suggested that the export of goods and services were strongly influenced by the inward FDI in these three countries.

Some studies have been done in Africa. Njong and Raymond (2008) examined the association between FDI and export in the case of Cameroon. Using the data for the period 1980-2003, they found a positive impact of FDI on export through increase in supply capacity and spill over effects. The results were attributed to the generous incentives offered by the regulatory and institutional framework especially from the 1984 Investment Code and the Free Trade Zone regime created during the period reviewed in Cameroon.

In a study done in Uganda, Achandi (2011) determined whether the increase in FDI inflow had an impact on the country’s export performance using data from 1981-2006. The results found out that FDI coefficient was positive and statistically significant in light of other determinants of export, implying that an increase in FDI inflows increases exports in Uganda. The results were attributed several incentives and investment protection measures for investors by the regulatory authority to making the country a preferred investment destination.

Reviews of literature suggest that a study was conducted to validity FDI-led exports hypothesis in Zambia using COMESA countries. Ndoricimpa (2009) examined the interrelationship between Foreign Direct Investment, exports and economic growth in COMESA Countries so as to assess the validity of “FDI-led exports”, “Export-led growth” and “FDI-led growth” hypotheses in that region. The study used annual data for a panel of 16 COMESA Countries: Burundi, Comoros, DRC, Egypt, Ethiopia, Kenya, Libya, Madagascar, Malawi, Mauritius, Seychelles, Sudan, Swaziland, Uganda, Zambia and Zimbabwe for the period 1983-2007. Without taking into account the kind of causality, the results showed globally that FDI was causing exports in 11 countries of the panel: Burundi, DRC, Egypt, Kenya, Mauritius, Madagascar, Seychelles, Sudan, Swaziland, Uganda, Zambia and Zimbabwe, supporting hence the FDI-led exports hypothesis in those countries. However, no causality running from FDI to exports was found in Comoros, Ethiopia, Libya, Malawi and Zambia.
In addition, Ahmed et al (2008) analysed the role of Exports, FDI and Imports in Development in Sub-Saharan African (SSA) Countries using the autoregressive distributed lag (ARDL) model for the time period 1990 to 2000. They found that FDI inflow was not causing exports in Zambia but the causality was running from exports to FDI. The paper called for more market-oriented policy changes in SSA countries to create a liberal environment for foreign trade and FDI.

The study done by Musonda (2008) estimated an error correction model of the impact of real effective exchange rate volatility on the performance of non-traditional exports for Zambia between 1965 and 1999. The findings showed that exchange rate volatility depressed exports in both the short run and the long run. The results also suggest that supportive macroeconomic factors were important in enhancing non-traditional exports in the country. This requires packaging a set of incentives aimed at removing anti-export bias policies so as to promote exports, particularly of non-traditional products, given their standing in the economic growth agenda for the country.

The review of the above studies, whether country specific or cross country analysis reveals that the impact of FDI on exports cannot be generalized based on a specific study. The results vary based on methodologies, approaches and proxies used in the study. Furthermore, the review has shown that the impact of FDI and on exports postulated in literature have varied for different studies, whether in different locations or the same. It is therefore imperative to carry out several studies using various methods to understand the country specific impact of FDI on exports.
CHAPTER FIVE
METHODOLOGY

4.0 STUDY DATA
The study used Time series data of Zambia covering the period 1970-2012. The data for foreign direct investment, exports and gross domestic product was collected from the World Development Indicators and while the data for real effective exchange rate was collected from Brugel\(^6\) because the data in the world development indicators was reaching up to 1980. Data was analysed using the STATA 13 software package.

4.1 STUDY VARIABLES
4.1.1 DEPENDENT VARIABLE
Exports
Exports was used as the dependent variable because of the researchers interest in finding out how it is affected by the independent variable of interest which was foreign direct investment. Exports contribute to a country’s economic growth. It was measured as a percentage of GDP.

4.1.2 INDEPENDENT VARIABLE
Foreign direct investment
Foreign direct investment was also measured as a percentage of GDP and adopted because of the deliberate government policy in attracting inflows with a view of improving economic growth in general. The interest was to find out whether it had a positive or negative effect on export performance.

Real effective exchange rate
From the macroeconomic environment, the real effective exchange rate was adopted because it reflected the relative movement of prices at home and abroad. According to Lim (2001), depreciation of a currency could imply that foreign firms would be able to purchase assets and technology in the host country cheaply thus increasing FDI. The depreciation of the currency makes exports cheaper hence leads to an increase in the exports.

\(^6\) Can be found at: http://www.bruegel.org/datasets/. The annual REER data for Zambia is only available from 1980. However, the REER data from Bruegel runs back to 1970.
**GDP growth rate**

The economic growth rate provides insight into the general direction and magnitude of growth for the overall economy. The GDP growth rate influences positively the business climate for FDI as it reflects an improvement in economic performance. The market size of the economy is reflected through the GDP growth rate. This variable was expected to capture the effects of increased supply capacity due to FDI inflows. We expect the coefficient to be positive.

**Inflation**

Inflation is defined as the general price level in an economy. It measures the macroeconomic stability of the economy. A stable economic environment provides a good platform for doing business and investments. We expect the coefficient to be positive. This is because a currency with a higher inflation rate will depreciate against a currency with lower inflation making its exports relatively cheaper.

**Trade Openness**

Openness of the economy to trade was measured by the ratio of exports and imports to gross domestic product. The degree of openness should influence positively foreign investors through trade liberalization and higher competitiveness. The expected sign of the coefficient is positive.

4.2 **EMPIRICAL MODEL SPECIFICATION**

This study employed the imperfect substitutes export supply equation model developed by Goldstein and Khan (1985). The fundamental assumption underlying on the imperfect substitutes model is that neither imports, nor exports can be considered perfect substitutes for the domestic products. Perfect substitutes model, on the other side, assumes perfect substitutability between domestic and foreign goods and is typically used in the case of highly disaggregate data set. And according to imperfect substitutes model export supply traditionally depends on the real export prices, Real exchange rate, and productive capacity. Consequently, the general form of the export supply function is expressed as:

\[ \text{EXs} = f(\text{REP}, \text{RER}, \text{PC}) \]  

\[ \text{(1)} \]
Where EXs represents the volume of exports, REP is real export price, RER is real exchange rate, and PC is the capacity of production. The model outlined in equation (1) is a standard export supply function that is used in many empirical works.

But in this study the researcher modified the model by including other variables.

\[ \text{LEX}_s = \alpha_0 + \alpha_1 \text{LFDI} + \alpha_2 \text{LGDP} + \alpha_3 \text{LREER} + \alpha_4 \text{LTO} + \alpha_5 \text{LINF} + \epsilon_t \ldots \ldots \text{(2)} \]

Where: \( \alpha_0 \) is the intercept of the model and \( \alpha_1, \alpha_2, \alpha_2 \) and \( \alpha_4 \) are elasticity coefficients of the variables. \( \epsilon_t \) is the disturbance term. The \( L \) in front of the variables represents the natural logarithm of variables.

EXs = Exports
FDI = Foreign Direct Investment
REER = Real Effective Exchange rate
GDP = Gross Domestic Product
INF = Inflation
TO = Trade Openness

4.3 STATIONARITY TEST
The Augmented Dickey Fuller (ADF) tests (Dickey and Fuller, 1979) were used to check whether each data series had a unit root. The importance of the stationarity of variables in a model cannot be overemphasized. Running a regression that contains some non-stationary variables may yield spurious results because the t and F distributions no longer approximate the standard distributions. A series is said to be stationary if its mean and variance are constant over time.

There are about three common approaches used in testing for unit roots in macroeconomic time series data. These are the Dickey-Fuller (DF), Phillips-Perron (PP) and the Augmented Dickey-Fuller (ADF) tests. The Dickey-Fuller test is valid only if the series is an AR (1) process. If the series is correlated at higher order lags, the assumption of white noise disturbance is violated. On the other hand, the ADF and PP tests control for higher-order serial correlation in the series, but use different approaches.
For purposes of this study, the ADF test is employed in examining the time series properties of the data. The ADF tests help to ascertain the order of integration and the degree of differencing needed to make each time series stationary. The test was performed on each of the time series in logarithmic levels.

The ADF employed was,

$$\Delta y_t = \beta_1 + \beta_2 t + \delta y_{t-1} + \sum_{i=1}^{m} a_i y_{t-i} + e_t \ldots \ldots \ldots \ldots \ldots (3)$$

Where, $y_t$ is the variable in question, $t$ is the time trend, $m$ is the lag length, and $e_t$ is the error term assumed to be white noise. If the time series were stationary without differencing then it was integrated of order 0 or designated as I (0). While on the other hand if it was stationary after first difference then it was integrated of order 1 or designated as I (0). The hypothesis for the ADF test was specified as follows;

H0: $\delta = 1$ is the Null Hypothesis implying unit root, and
H1: $\delta < 1$ is the Alternative Hypothesis implying stationary

To determine the lag order $p$, the optimal lag length, we employed the final prediction error (FPE), Akaike information criterion (AIC), Hanna and Quinn information criteria (HQIC) and Schwartz-Bayesian information criterion (SBC) to ensure that the errors were white noise.

### 4.5 COINTEGRATION TEST

Once the order of integration was established there was need to test for cointegration. Cointegration means that despite being individually non-stationary, a linear combination of two or more time series can be stationary. Cointegration of two (or more) time series suggests that there is a long-run, or equilibrium, relationship between them. If there is at least one cointegration relationship among the variables of interest, there must be some causal relationship among the variables (Maddala and Kim, 1998).

In our study, the Single Equation Error Correction Model (SEECM) was employed to test for cointegration as opposed to two-stage Engle-Granger or Johansen cointegration test. This was because the Engle-Granger two stages do not clearly distinguish dependent variables from independent variables and it was preferred only for two variables.
4.5.1 SINGLE EQUATION ERROR CORRECTION MODEL (SEECM)

The SEECM clearly distinguish between dependent and independent variables. Single Equation ECMs estimate a long term effect for each independent variable, allowing us to judge the contribution of each. According to Sjo (2008), a pragmatic approach to studying dynamic models was to use a priori information to estimate an Error Correction Mechanism (ECM) first, and then include it in an equation of variables which were in the first difference form. The error term $V_{t-1}$, calculated from a static OLS model, should be used as an error correction mechanism in the SEECM.

The ECM procedure allows the distinction between short-run and long-run relationships, and is therefore, more relevant from the policy perspective. The separation between short-run dynamics and long-run relationships is particularly important in the context of the present study because this helps determine how exports has been influenced by FDI both in the short and long term.

Further, Sjo (2008) advised that this realistic approach should be motivated by a priori information about the long-run relationship of variables, and that it was better to have some representation of the long-run adjustment in the model than not have, since it did not cause any spuriousness.

In this regard, under the SEECM, compared to other models, the test for cointegration was merely for clarification of a priori information purposes but not that it was necessary for modelling. Since in our model the dependent variable is exports, the SEECM is specified as below:

$$\Delta \text{LEXs} = \gamma_0 + \gamma_1[\text{LEXs} + \text{LFDI} + \gamma_2 \text{LREER} + \gamma_3 \text{LINF} + \gamma_4 \text{LTO} + \gamma_5 \text{LGDP}]$$

$$+ \sum_{i=1}^{p} \gamma_6 \Delta \text{LEXP}_{t-1} + \sum_{i=1}^{q} \gamma_7 \Delta \text{LFDI}_{1t-1} + \sum_{i=1}^{r} \gamma_8 \Delta \text{LREER}_{2t-1}$$

$$+ \sum_{i=1}^{s} \gamma_9 \Delta \text{LINF}_{3t-1} + \sum_{i=1}^{t} \gamma_{10} \Delta \text{LTO}_{4t-1} + \sum_{i=1}^{u} \gamma_{11} \Delta \text{LGDP}_{5t-1} + W_t$$

$$........................................ (4)$$

Where all variables are defined as in 5.2 above and $\Delta$ are the first difference notation.
Let

\[ \text{LEX}_s + \text{LFDI} + \gamma_2 \text{LREER} + \gamma_3 \text{LINF} + \gamma_4 \text{LTO} + \gamma_5 \text{LGDP} = V_{t-1} \] 

\[ \text{................. (5)} \]

Therefore we can rewrite the SEECM as follows

\[ \Delta \text{LEX}_s = \gamma_1 [V_{t-1}] + \sum_{i=1}^{p} \gamma_6 \Delta \text{EXP}_{t-1} + \sum_{i=1}^{q} \gamma_7 \Delta \text{LFDI}_{1t-1} + \sum_{i=1}^{r} \gamma_8 \Delta \text{LREER}_{2t-1} \]

\[ + \sum_{i=1}^{s} \gamma_9 \Delta \text{LINF}_{3t-1} + \sum_{i=1}^{t} \gamma_{10} \Delta \text{LTO}_{4t-1} + \sum_{i=1}^{u} \gamma_{11} \Delta \text{LGDP}_{5t-1} + W_t \]

\[ \text{......................... (6)} \]

Where the part of the equation in parentheses \( V_{t-1} \) is the error correction mechanism.

According to best (2008), if the error correction approach is correct, then \( \gamma_1 \) should be \(-1 < \gamma_1 < 0\) and significant. If this part equals zero, then the model is in equilibrium.

The coefficients on the lagged explanatory variables estimated the long term effect (correction) that a 1 percent increase in the independent variable has on the dependent variable. This long term effect (correction) will be distributed over future time periods according to the rate of error correction term.

The diagnostic test included: testing for normality using the Shapiro-Wilk test, multicollinearity using the variance inflation factor (VIF) test, serial correlation using the Durbin’s alternative test and model specification using the Link test and Ramsey reset test for omitted variables.
CHAPTER FIVE
PRESENTATION OF THE RESULTS

5.0 INTRODUCTION
This chapter presents the results of the empirical analysis. The chapter also includes the interpretation of the findings.

5.1 DESCRIPTIVE STATISTICS
The table below shows the descriptive statistics of the data. The table reports the mean, standard deviation, minimum and maximum values of the data included in the study.

Table 3: Descriptive Statistics

<table>
<thead>
<tr>
<th>Variables</th>
<th>Obs</th>
<th>Mean</th>
<th>standard deviation</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEXP</td>
<td>43</td>
<td>3.587747</td>
<td>0.19009</td>
<td>3.276238</td>
<td>3.98236</td>
</tr>
<tr>
<td>LFDI</td>
<td>43</td>
<td>0.973272</td>
<td>0.876328</td>
<td>-0.674724</td>
<td>2.43981</td>
</tr>
<tr>
<td>LREER</td>
<td>43</td>
<td>4.187519</td>
<td>0.297164</td>
<td>3.349904</td>
<td>4.76814</td>
</tr>
<tr>
<td>LGDP</td>
<td>43</td>
<td>4.187519</td>
<td>0.297164</td>
<td>3.349904</td>
<td>4.76814</td>
</tr>
<tr>
<td>LINF</td>
<td>43</td>
<td>2.893325</td>
<td>0.851039</td>
<td>-0.591017</td>
<td>2.22017</td>
</tr>
<tr>
<td>LTO</td>
<td>43</td>
<td>4.314072</td>
<td>0.119961</td>
<td>4.085546</td>
<td>4.53095</td>
</tr>
</tbody>
</table>

The variables were expressed in their logarithmic form. This was done to get a clear picture of the elasticity of exports with respect to each of the explanatory variables. Therefore, the statistics above represent that of the variables in their growth rate forms.

The table 4 below shows the correlation matrix among the variables. Correlation is a statistical technique which shows us if two variables are related. The correlation technique measures the strength and direction of a linear relationship between two variables. The value of the correlation coefficient is such that $-1 \leq r \leq +1$. The + and – signs are used for positive linear correlations and negative linear correlation respectively. If two variables have a have a strong positive linear correlation, $r$ is close to $+1$, while if the two variables have a
strong negative linear correlation, $r$ is close to -1. Two variables will be said to have a weak positive linear correlation and a weak negative linear correlation if $r$ is close to 0 respectively. A correlation greater than 0.8 is generally described as strong whereas a correlation less than 0.5 are generally described as weak.

Table 4: Correlation matrix of the variables

<table>
<thead>
<tr>
<th></th>
<th>LEXP</th>
<th>LFDI</th>
<th>LREER</th>
<th>LGDP</th>
<th>LINF</th>
<th>LTO</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEXP</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LFDI</td>
<td>-0.2752</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LREER</td>
<td>0.1375</td>
<td>0.2837</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LGDP</td>
<td>0.1493</td>
<td>0.4803</td>
<td>0.444</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LINF</td>
<td>-0.3199</td>
<td>0.2945</td>
<td>-0.5119</td>
<td>-0.2107</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>LTO</td>
<td>0.8227</td>
<td>-0.2665</td>
<td>0.0421</td>
<td>0.0887</td>
<td>-0.395</td>
<td>1</td>
</tr>
</tbody>
</table>

The result of the table above shows that there is a weak negative linear correlation between exports and FDI, and between exports and inflation respectively. There correlation coefficients are less than 0.5 and therefore they are generally described to be weak. In addition the correlation coefficient between export with real effective exchange rate and gross domestic product respectively is described to have a weak positive linear correlation since also the coefficients are less than 0.5, whereas the correlation coefficient between exports and trade openness is greater than 0.8 implying a strong positive linear correlation.

The correlation coefficient of FDI in respect to real effective exchange rate, gross domestic product and inflation shows that there is a weak positive linear correlation in the coefficients since they are less than 0.5, while the correlation coefficient with trade openness is described to be a weak negative linear correlation. In addition the tables shows a weak positive linear correlation between real effective exchange rate and gross domestic product, and also between real effective exchange rate and trade openness, whereas the correlation coefficient between real effective exchange rate and inflation is described to a moderate negative linear correlation. The correlation coefficients between gross domestic product and inflation and between gross domestic product and trade openness are described to be weak negative and weak positive linear correlation respectively.
5.2 UNIT ROOT TESTS
It was necessary to verify the stationarity properties of variables included prior to regressing them. The null hypothesis underlying unit root testing was that the variables under investigation had unit roots and the alternative was that they did not have (Dick and Fuller, 1979). The study utilised the Augmented Dickey Fuller test, to test for non stationarity in the variables. This was because Non Stationarity of the variables could lead to spurious regression results based on the Ordinary Least Squares estimation.

Table 5: ADF test results

<table>
<thead>
<tr>
<th>Variable</th>
<th>LL</th>
<th>Level form</th>
<th>1st difference form</th>
<th>Order of integration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>t-statistic</td>
<td>p-value</td>
<td>t-statistic</td>
<td>p-value</td>
</tr>
<tr>
<td>LEXP</td>
<td>1</td>
<td>-2.146</td>
<td>0.52</td>
<td>-7.035***</td>
</tr>
<tr>
<td>LFDI</td>
<td>3</td>
<td>-2.917</td>
<td>0.1569</td>
<td>-4.720***</td>
</tr>
<tr>
<td>LREER</td>
<td>2</td>
<td>-2.547</td>
<td>0.3049</td>
<td>-6.136***</td>
</tr>
<tr>
<td>LGDP</td>
<td>4</td>
<td>-2.636</td>
<td>0.2635</td>
<td>-4.915***</td>
</tr>
<tr>
<td>LINF</td>
<td>3</td>
<td>-0.977</td>
<td>0.9471</td>
<td>-4.529***</td>
</tr>
<tr>
<td>LTO</td>
<td>1</td>
<td>-3.046</td>
<td>0.1196</td>
<td>-6.442***</td>
</tr>
</tbody>
</table>

(***)) indicates significance at all conventional levels of significance, 1%, 5% and 10%. LL denotes the lag length.

The results from table show that the variables were non-stationary in there level form hence we failed to reject the hypothesis of existence of a unit root, at one percent, five percent and ten percent. This also was shown from their corresponding p values which were greater than the conventional level of significance. When the variables were differenced, they became stationary hence rejecting the hypothesis of a unit root. Thus, the variables were stationary and integrated of the same order, i.e., I (1). In this accord, the results therefore implied that the Single Equation Error Correction Modelling approach could be applied in this study since none of the variables were integrated of order higher than 1.
5.3 COINTEGRATION TEST
The Single equation error correction model was used to test for cointegration in the model to establish the existence of long run relationship. After estimating the model, diagnostic tests were conducted to make sure that the model fitted well and preserved the validity of the estimated parameters (Diagnostic test results are shown in the appendix).

a) Short-Run Results based on the SEECM
Table 6: Export supply model short run regression results

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient value</th>
<th>Robust Standard Error</th>
<th>t- Statistic</th>
<th>p- value</th>
</tr>
</thead>
<tbody>
<tr>
<td>$V_{t-1}$</td>
<td>-0.434242</td>
<td>0.192491</td>
<td>-2.26</td>
<td>0.031***</td>
</tr>
<tr>
<td>LDLEXs</td>
<td>-0.029778</td>
<td>0.086217</td>
<td>-0.35</td>
<td>0.732</td>
</tr>
<tr>
<td>DLFDI</td>
<td>-0.042386</td>
<td>0.0182604</td>
<td>-2.32</td>
<td>0.027***</td>
</tr>
<tr>
<td>DLRREER</td>
<td>0.093857</td>
<td>0.1146627</td>
<td>0.82</td>
<td>0.419</td>
</tr>
<tr>
<td>DLGDP</td>
<td>0.022939</td>
<td>0.0155636</td>
<td>1.47</td>
<td>0.150</td>
</tr>
<tr>
<td>DLINF</td>
<td>0.074246</td>
<td>0.0224832</td>
<td>3.30</td>
<td>0.002***</td>
</tr>
<tr>
<td>DLTO</td>
<td>1.095241</td>
<td>0.2227372</td>
<td>4.92</td>
<td>0.000***</td>
</tr>
<tr>
<td>CONSTANT</td>
<td>-0.002778</td>
<td>0.0137012</td>
<td>-0.20</td>
<td>0.841</td>
</tr>
</tbody>
</table>

$R^2=0.7025$  $F=0.000$

(*** indicates significance at all conventional levels of significance, 1%, 5% and 10%.

The results showed that the error correction term $V_{t-1}$ was significant which validated the assumption of cointegration in the variables under consideration. Further, the results showed that the sign for the error correction term was negative and that the term was between 0 and -1. The error correction term of -0.4342417 implied that, according to this model, whenever there was any deviation from the static equilibrium, the deviation had to be corrected at a rate of about 43 percent. (Notice that, the larger the magnitude of the error correction term coefficient is, the faster the speed of adjustment towards the equilibrium).
Coming to the FDI, which was the variable of interest, as far as the study was concerned, the results showed that the coefficient for FDI was negative and significant at all conventional levels of significance. The coefficient of approximately -0.042 implied that for a 1 percent increase in FDI inflow reduced exports by 0.042 percent. To this end, this meant that in the short run we failed to reject our research hypothesis that FDI inflow did not increase export performance in Zambia hence not been export oriented.

The other variable considered was REER. The results showed that the coefficient for the REER was not significant based on the p value. The REER coefficient of approximately 0.09 implied that for a 1 percentage increase (depreciation) in the Real Effective Exchange Rate of the Kwacha, in a particular year (in the short-run), exports would increase by 0.09 percentage. This meant that in the short-run, the depreciation in the Real Effective Exchange Rate increased exports but was insignificant.

Gross Domestic product was found to be insignificant at all conventional levels. The coefficient was approximately 0.02 which implied that for a 1 percentage increase in the GDP growth rate in a particular year (in the short run), exports increased by 0.02 percentage. This implies that there was a positive relationship between exports and GDP growth rate but not significant.

The other variables included in the model were inflation and trade openness. The coefficient of inflation was found to be approximately 0.07 while that of trade openness was approximately 1.1 percent. This meant that in the short run, a 1 percentage increase in inflation increased exports by 0.07 percent, this result was found to be significant based on the convention levels of significance. While for trade openness, a 1 percentage increase in trade openness increased exports by 1.1 percent, and this was also found to be significant. Hence trade openness had a positive contribution to the export performance in the short run.

Finally, the adjusted R-squared of about 70 percent, implied that in the short run, the explanatory variables that were considered in the model accounted for about 70 percent of the changes that take place in exports.
### b) Long-Run Results

Table 7: Export supply model Long run regression results

<table>
<thead>
<tr>
<th>Variable</th>
<th>coefficient value</th>
<th>Robust Standard Error</th>
<th>t- Statistic</th>
<th>p- value</th>
</tr>
</thead>
<tbody>
<tr>
<td>DLFDI</td>
<td>-0.0348</td>
<td>0.02373</td>
<td>-1.47</td>
<td>0.151</td>
</tr>
<tr>
<td>DLREER</td>
<td>0.05181</td>
<td>0.14044</td>
<td>0.37</td>
<td>0.714</td>
</tr>
<tr>
<td>DLGDP</td>
<td>0.02482</td>
<td>0.01882</td>
<td>1.32</td>
<td>0.195</td>
</tr>
<tr>
<td>DLINF</td>
<td>0.08382</td>
<td>0.02158</td>
<td>3.88</td>
<td>0.00</td>
</tr>
<tr>
<td>DLTO</td>
<td>0.97901</td>
<td>0.21017</td>
<td>4.66</td>
<td>0.00</td>
</tr>
<tr>
<td>CONSTANT</td>
<td>-0.0055</td>
<td>0.01484</td>
<td>-0.37</td>
<td>0.713</td>
</tr>
</tbody>
</table>

R²=0.6182  F=0.000

The table above show the long-run results of the export supply model. For the results of FDI, the coefficient was found to be negative but insignificant unlike in the short run meaning that in the long-run the research hypothesis of FDI not increasing to the export performance is rejected implying that in the long run FDI would contribute to the increase in the export performance.

Furthermore the results for REER and GDP were found to be positive but insignificant in the long run with the coefficients been 0.05181 and 0.02482 respectively. This results was the same as found in the short run, while the results of inflation and trade openness were found to be significant as the same as in the short run.

In the long-run model, the Adjusted R-Squared was approximately 0.62 implying that the explanatory variables under consideration accounted for about 62 percent of changes in the exports.
CHAPTER SIX
DISCUSSION AND LIMITATIONS OF THE STUDY

6.0 DISCUSSION

This chapter discusses the results of the study. These results, however, must be interpreted with caution. Our dependent variable (total exports as a percentage of GDP) grouped together total exports from all sectors. In doing so we assumed that the export supply function was the same in all sectors which would not be the case.

The results indicated that in the short run foreign direct investment did not contribute to the export performance. This result was in line to the findings of Ndoricimpa (2009) who investigated the relationship of Foreign Direct Investment, Exports and Economic growth in COMESA countries. His findings were that foreign direct investment was not causing exports in Zambia in the short run. Similarly Ahmed et al (2008) found that in the short run FDI were not causing exports in Zambia. The study suggested for more market-oriented policy changes in Sub Saharan countries in order to create a liberal environment for foreign trade and FDI. The results also corroborated with the findings Khan and Leng (1997). They did not find any evidence of causal relation between FDI and export in the case of Taiwan and South Korea.

Therefore, in the short run we failed to reject our research hypothesis that FDI inflow did not increase export performance. It must be suggested that in the short run (in a year), multinational enterprises may be setting up there operation hence not leading to exports. This may be the lag of time required to start operation. It must also be suggested that in the short run Zambia, mainly attracts efficiency and market seeking FDIs which take advantage of lower cost structures which would want to take advantage of the local demand hence not contributing to the export performance. This result on FDI’s may also be due to the fact that most of our FDI inflows in Zambia have been concentrated in our resource base, as evidenced by our sectoral distribution over the years, suggesting that for the most part, our FDI is more inclined on the non-market seeking FDI, rather than the market seeking FDI driven by domestic demand.
Although the coefficient of FDI variable was negative in the long run, there was no statistical evidence, at all conventional levels of significance, to claim that foreign investment did not improve export performance. Many studies done by many authors like Sultan (2013), Metwally (2004), Johnson (2006), Awokuse et al. (2008) and Njong (2008) found that FDI contributed to the export performance in the host countries. These studies suggested that multinational companies may have had superior knowledge and technology, better information about export markets, or better contact to the supply chain of the parent firm than did local firms.

In addition, more Liberalised FDI regulations could have resulted in increased inflows, possibly stimulating exports and eventually increasing the standard of living in the host countries. It was also suggested that outward looking development strategies included FDI as an essential part in addition to export-promotion strategies. Specifically, Njong (2008), suggested that the generous incentives offered by the regulatory and institutional framework especially from the Investment Code and the Free Trade Zone regime in the case of Cameroon, led to FDI contributing positively to the export performance.

In our finding, this could be due to the country’s heavy dependence on the mining sector which for years has dominated exports compared to non-traditional exports. The export supply function was assumed to be the same in all sectors which would not be the case. FDI inflow in the mining sector has exploited Zambia’s rich resources, with the mining sector contributing to about 80 percent of total exports. The concentration of FDI in the mining sector has implications for the economy. One of which is having a robust natural resource sector at the detriment of other sectors that may have the potential to grow the economy dynamically. The FDI flows channelled to the sector have increased productivity and exports but have also exacerbated the country’s dependence on it. This dependence on mines has left the potential of other sectors underexploited.

It must be also suggested that the country has had made strands in attracting investment by providing different incentives such as certain tariff exemptions and by creating multi facility economic zones (MFEZ) which have attracted different manufacturing firms and investments in other sectors which could have had contributed to the export performance. Zambia is also a signatory to the Multi-lateral Investment Guarantee Agency (MIGA) and other international agreements which guarantees foreign investment protection in case of civil strife, disasters, as well as other disturbances.
There is an opportunity for Zambia to attract other export-oriented FDI in other sectors which are not yet fully explored; this is provided by Zambia’s abundant access to important markets under various preferential trade schemes.

The significance of the positive relationship between trade openness and export performance both in the short run and long run, entail that trade liberalisation in Zambia has exposed the economy to foreign competition forces which has brought about more efficiency and competitiveness. The economy has undergone major changes, shifting from heavy government intervention to a liberalised system aimed at bolstering private sector participation both in the manufacturing and agricultural sectors, as well as other sectors. These results were similar to those of Vukšić (2007). It was suggested that transitional countries in Central and Eastern Europe took advantage of regional trade agreements especially with the European Union hence they had been able to attract more FDI that contributed to their export performance.

The full benefits of trade liberalization could be realized if investors perceived reforms as credible and not subject to reversal. Despite this, in COMESA, it was observed that the countries were exploiting less than a maximum of 22 percent of their inward FDI potential (COMESA Investment Report, 2012). Export oriented FDI could also be indirectly targeted by means other than incentives, i.e. by providing specific services, infrastructure or human resources that are possibly required by the export oriented firms. Macroeconomic stability remains to play an important role in the export performance of the economy.

6.1 LIMITATION OF THE STUDY
The study like any other had limitations. The lack of sectoral data restricted the researcher to examining the impact of FDI on export performance in Zambia by depending on aggregated data. The use of aggregated data unnecessarily assumed that the effects of FDI were equal across sectors. Where disaggregated data are available, we suggest a sectoral analysis of the linkage between FDI and the export performance of the economy. Such an approach would allow for capturing possible variations in the effects of FDI on export performance between different sectors, which may not be detected at the aggregated level. Furthermore, such a disaggregated analysis may have more important policy implications for designing development strategies and guiding FDI inflow to specific sectors. Also the data used is sensitive to different modelling as one can get different results.
CHAPTER SEVEN
CONCLUSION AND SUGGESTIONS

7.1 CONCLUSION
The main objective of the study was to investigate the impact of Foreign Direct Investment in Zambia. The methodology employed in this study was the Single Equation Error Correction Model using time series data. The variable included exports as the dependent variable while the independent variables were foreign direct investment, real effective exchange rate, inflation and trade openness. Stationarity tests were carried out by the Augmented Dickey Fuller test in order to ascertain the order of integration of the variables. The variables were found to be Stationary after the first difference. This meant that the variables used in this study were integrated of order one.

The cointegration test was done using the single equation error correction methodology to ascertain the existence of the long run equilibrium relationship. The results showed that there was long run equilibrium among the variables. The short run SEECM results found that there was a negative relationship between exports and foreign direct investments, implying that foreign direct investment was not contributing to the export performance. Therefore, in the short-run, we failed to reject our research hypothesis. The other results showed that exports had positive relationships with REER and GDP though not significant while with inflation and trade openness it was significant.

Further, in the long-run, we found that there was a negative relationship between exports and foreign direct investments; though there was no statistical evidence based on the p value at all conventional level of significance to claim that foreign investment did not improve export performance. On this basis it was concluded that foreign investment contributed to the export performance. The other long run results reviewed that exports had positive relationships with REER and GDP though not significant while with inflation and trade openness it was significant same as in the short run.

The lack of sectoral data restricted the researcher to examining the impact of FDI on export performance in Zambia by depending on aggregated data. The use of aggregated data unnecessarily assumed that the effects of FDI were equal across sectors. Zambia’s export sector is heavy dependent on its traditional export.
The agriculture sector remains to be the biggest employer accounting to about 70 percent the population, yet the sectors potential to contribute to the country export performance remains largely underexploited. The country has main priority crops for investment such as wheat, tobacco, maize, sugar, sunflower and dry bean offering enormous investment opportunities. Other sectors that need to be fully exploited are the energy and manufacturing sectors. The world’s economies have been growing over the years and the demand for energy has been raising this creates opportunities for investment that could contribute to the country’s export performance. Therefore, there is need for the country to attract more investments in underexploited sectors that have the potential to contribute to the export performance. Since Zambia has been pursuing a policy direction of attracting FDI, there is need to continue on this path in order to realize an even greater improvement in export performance.

The government can target better FDI (from which more spill over effects are expected in terms of new technologies or skills) and/or promoting linkages between foreign and domestic firms. It is also possible to target export oriented FDI indirectly by means other than incentives, i.e. by providing specific services, infrastructure or human resources that are possibly required by the export oriented firms (Vuksic 2007). Zambia is a host of location-specific factors such as low labour cost, skill, infrastructure, natural resources, openness and bilateral investment treaties.
BIBLIOGRAPHY


APPENDIX 1

DIAGNOSTIC TEST RESULTS

1.0 Normality

a) Short run model

Figure 6: Kernal density graph for the residuals

b) Long run model

Figure 7: Kernal density graph for the residuals
2.0 Multicollinearity

The researcher tested for multicollinearity. The primary concern was that as the degree of multicollinearity increased, the regression model estimates of the coefficients would become unstable and the standard errors for the coefficients could get wildly inflated.

**Table 8: Multicollinearity test Results**

<table>
<thead>
<tr>
<th>Test</th>
<th>Test statistic for the equation</th>
<th>Ho: There is</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>VIF</td>
<td>Short run: 1.35, Long run: 1.23</td>
<td>Normality</td>
<td>Residuals from all the models are normally distributed</td>
</tr>
</tbody>
</table>

Where VIF is the variance inflation factor

3.0 Model Specification

The null hypothesis for the link test was that the model was correctly specified. For the model to be correctly specified, _HAT should be significant since it was the predicted value. On the other hand, _HATSQ should not, because if our model was specified correctly, the squared predictions should not have much explanatory power. It was concluded that our models were correctly specified since all the _HAT in our model were significant at all conventional levels; _HATSQ on the other hand were insignificant.

**Table 9: Model Specification results for short run model**

<table>
<thead>
<tr>
<th>Variable</th>
<th>coefficient value</th>
<th>Robust Standard Error</th>
<th>t- Statistic</th>
<th>p- value</th>
</tr>
</thead>
<tbody>
<tr>
<td>_HAT</td>
<td>1.005164</td>
<td>0.10522</td>
<td>9.55</td>
<td>0</td>
</tr>
<tr>
<td>_HATSQ</td>
<td>0.4698559</td>
<td>0.69977</td>
<td>0.67</td>
<td>0.506</td>
</tr>
<tr>
<td>_CONS</td>
<td>-0.007291</td>
<td>0.01699</td>
<td>-0.43</td>
<td>0.67</td>
</tr>
</tbody>
</table>
### Table 10: Model Specification results for Long run model

<table>
<thead>
<tr>
<th>Variable</th>
<th>coefficient value</th>
<th>Robust Standard Error</th>
<th>t- Statistic</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAT</td>
<td>1.00751</td>
<td>0.127376</td>
<td>7.91</td>
<td>0.000</td>
</tr>
<tr>
<td>HATSQ</td>
<td>0.372879</td>
<td>1.041633</td>
<td>0.36</td>
<td>0.722</td>
</tr>
<tr>
<td>CONS</td>
<td>-0.00524</td>
<td>0.020916</td>
<td>-0.25</td>
<td>0.803</td>
</tr>
</tbody>
</table>

### 4.0 Heteroscedasticity

One of the main assumptions for the ordinary least squares regression is the homogeneity of variance of the residuals. Presence of heteroscedasticity implies estimates are still unbiased but not efficient. Since heteroscedasticity does not bias the estimates, the study used robust standard errors to correct for heteroscedasticity. Robust standard errors yield consistent estimates of the true standard error no matter what the form of the heteroscedasticity.

### 5.0 Serial Correlation

The study employed the Durbin's alternative test for autocorrelation with the null hypothesis stating that there was no autocorrelation. The results show that both in the long and short run models there was no autocorrelation.

### Table 11: Serial correlation results for short run model

<table>
<thead>
<tr>
<th>lags(p)</th>
<th>chi2</th>
<th>df</th>
<th>prob&gt;chi2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0.9907</td>
</tr>
</tbody>
</table>

### Table 12: Serial correlation results for long run model

<table>
<thead>
<tr>
<th>lags(p)</th>
<th>chi2</th>
<th>df</th>
<th>prob&gt;chi2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.572</td>
<td>1</td>
<td>0.4495</td>
</tr>
</tbody>
</table>