AN EXAMINATION OF THE CAUSAL RELATIONSHIP BETWEEN ECONOMIC GROWTH, FOREIGN DIRECT INVESTMENT AND EXPORTS, IN NAMIBIA

THESIS SUBMITTED IN PARTIAL FULFILLMENT

OF THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF SCIENCE IN ECONOMICS

OF

THE UNIVERSITY OF NAMIBIA

BY

SAARA INGO

STUDENT NUMBER 200134450

AUGUST 2015

MAIN SUPERVISOR: Dr. J. M. Nyambe

CO-SUPERVISOR: Prof. J. P. S. Sheefeni

ABSTRACT

The study investigated the relationship between economic growth, exports, and FDI in Namibia using quarterly data for the period of 1980:Q1 to 2013:Q4. The Autoregressive Distributed Lag approach to cointegration was used to carry out the study. The study used foreign direct investment (FDI) inflows as a proxy for FDI, export values as a ratio of GDP as a proxy for Exports, and Real Gross Domestic Product as a proxy for economic growth.

The results from the study found that economic growth is explained by itself and exports in the short run and that FDI does not have a role to play in explaining economic growth in the short run. The study also established that exports, FDI and GDP do not explain economic growth in the long run. In addition, Granger causality tests revealed bidirectional causality between economic growth, FDI and exports.

ACKNOWLEDGEMENTS

First, I would like to thank my God, who has been with me during the program until the end. I would like to also express my gratitude to my supervisors: Dr. J.M. Nyambe and Prof. J. P. S. Sheefeni, who sacrificed their precious time to guide me through this research and for their constructive comments and advice.

I would also like to thank all the people who made my study possible either financially or emotionally. I would be ungrateful if I forgot to thank my lecturers from the University of Namibia and JFE-2011 who contributed to my education, for their commitment and passion towards my education. I would also like to express my appreciation, to my classmates, colleagues, and friends for their wonderful inputs, and all the shared experiences we went through together. I owe this achievement to you all and God bless you.

DEDICATION

This work is dedicated to my God, my fortress, my deliverer, my shield, in whom I take refuge. It is also dedicated to my husband, Mr. Petrus Imbili, my daughter Sheni Imbili, my parents Mrs. Selma Eliaser and Mr. Petrus Ingo, my sisters, and my brother for their encouragement, and their helping hand. Without their help this study would not have been completed successfully. I will always be grateful to the almighty God for surrounding me with love and these wonderful people.

DECLARATION

I, Saara Ingo, hereby declare that this study is a true reflection of my own research, and that this work, or part of it has not been submitted for a degree in any other institution of higher education.

……..Date……..

Saara Ingo

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

CHAPTER ONE: INTRODUCTION

1.1 Orientation of the proposed study

The relationship between foreign direct investment (FDI), export, and economic growth in both developing and developed countries, continues to be of considerable interest among policy makers. Literature has highlighted the role of both exports and FDI on economic growth. While the export led growth (ELG) hypothesis states that exports are the main determinant of the overall growth, empirical evidence indicates that FDI flows have been growing at a pace far exceeding the volume of international trade. However, the ELG literature and the FDI growth literature present different results. If there is a complementary relationship between FDI and exports, then foreign investments may increase the volume of exports and international trade in general (Ekanayake, Veeramacheneni, and Mukherjee, 2003). Blomström, Kokko and Zejan (2000) argue that the beneficial impact of FDI is only enhanced in an environment characterized by open trade, investment and macroeconomic stability.

FDI was the main source of flows to developing countries in the 1990s including Namibia. Contrary to other capital flows, FDI is less volatile and does not show a pro-cyclical behaviour. Therefore, FDI has become the main source of capital inflows for developing countries. The FDI increased rapidly during the late 1980s and the 1990s in almost every region of the world, revitalizing the long and contentious debate about the cost and benefits of FDI inflows. On the one hand, it can be argued that, given appropriate policies and a basic level of development, FDI could play a key role in the process of creating a better economic environment. However, potential drawbacks do exist, including a deterioration of the balance of payments as profits are repatriated and the negative impacts of competition in the national markets (Hansen and Rand, 2004). However, the consensus academic view seems to be that

there is a positive association between FDI inflows and growth provided receiving countries have reached a minimum level of educational, technological and infrastructure development.

Most of the FDI-exports nexus debates are based on whether FDI is export-oriented or market-oriented, which is intended to capture the local and regional markets. Since the MNCs have superior export performance than local firms, the local firms usually attempt to imitate the way foreign firms do their business (Shao-Wei, 2007). Through collaboration, competition, and imitation, foreign affiliates can stimulate local firm's 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 in terms of both imports and exports (Fernando, 2006).

The relationship between exports and economic growth is also subject to debate. Should a country promote exports to speed up economic growth or should it primarily focus on economic growth, which in turn generates exports? Some researchers advocate that a country could accelerate economic growth by promoting exports, leading to the so-called export-led growth hypothesis (Krugman, 1998; Shan and Sun, 1998; Sharma and Panagiotidis, 2005; etc.). However, others argue that the causality may also run from economic growth to exports (Growth-driven exports hypothesis). In fact, it is advocated by the neo-classical trade theory that economic growth, through its effects on the supply side (factor endowments) creates the demand for exports, providing the country with a strong export production base that is internationally competitive (Baharumshah and Rashid, 1999; Mahadevan, 2007).

The debate surrounding the nexus between FDI and economic growth, the question of whether countries should promote FDI to obtain economic growth, known as "FDI-led

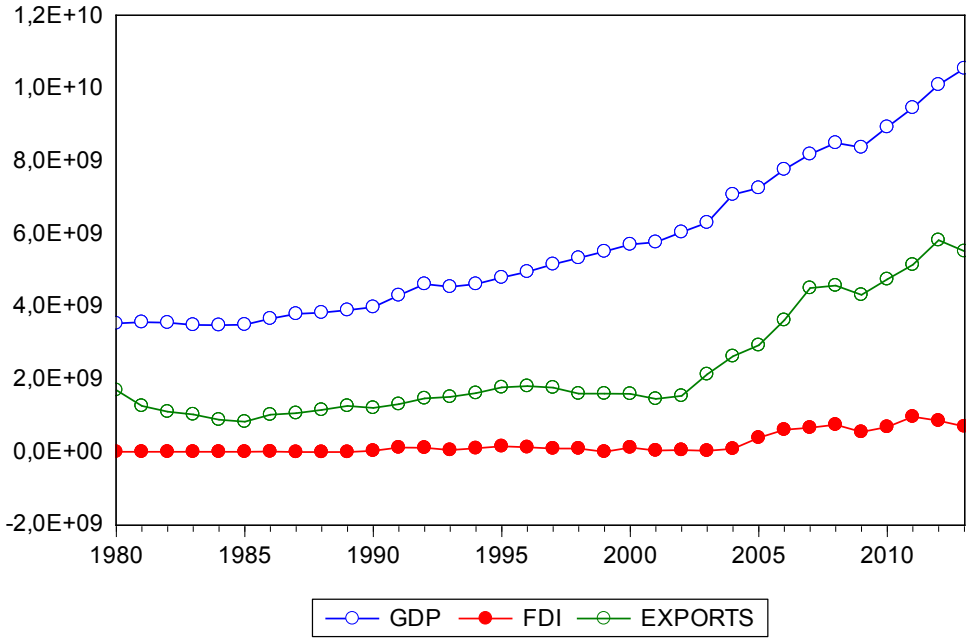
growth hypothesis" or whether they should promote economic growth to attract FDI, known as Growth-driven FDI hypothesis (FDI-led growth hypothesis) is well justified in the neo-classical growth and endogenous growth models. In the neoclassical models of growth, FDI increases the volume of investment or its efficiency, and leads to the increase in long-run growth. The new endogenous growth models, consider long-run growth as a function of technological progress, and provide a framework in which FDI can permanently increase the rate of growth in the host economy through technology transfer, diffusion, and spill over effects (Nair-Reichert and Weinhold, 2000). On the other hand, the advocates of "Growth-driven FDI hypothesis" argue that the level of economic growth is recognised as one of the determinants of FDI inflows in the host country as far as rapid economic growth may create large domestic markets and businesses, hence attracting market-seeking FDI (Christopher, 2012).

The Namibian economy is heavily dependent on the extraction and processing of minerals for export were mining accounts for 8% of GDP, but provides more than 50% of foreign exchange earnings, while rich alluvial diamond deposits make Namibia a primary source for gem-quality diamonds. Marine diamond mining is becoming increasingly important, as the terrestrial diamond supply has dwindled. Namibia is the world's fourth-largest producer of uranium. In addition, it also produces large quantities of zinc and small quantities of gold and other minerals. A high per capita GDP, relative to the region, hides one of the world's most unequal income distributions, as shown by Namibia's Gini coefficient of about 0.59. The Namibian economy is closely linked to South Africa with the Namibian dollar pegged on a one-to-one basis to the South African Rand. Namibia receives about 30% to 40% of its revenues from the Southern African Customs Union (SACU). Volatility in the size of Namibia's annual SACU allotment complicates the budget planning process. In addition, the

Namibian economy is also vulnerable to volatility in the price of uranium. Namibian authorities recognized these issues and emphasized the need to increase value addition to raw materials, manufacturing, and provision of services, especially, in the logistics and transportation sectors (NDP4, 2012). In 2012, exports accounted for $4.335 billion, whilst in 2011 they were at $4.639 billion. The major export commodities were diamonds, copper, gold, zinc, lead, uranium, cattle, processed fish, and karakul skins (IMF report, 2013).

Statistics have also indicated that in the early 1990s, shortly after independence, Namibia attracted large FDI flows, of approximately N$ 100 million, which went up to N$ 2 billion by 2002 (MTI, 2010). The total foreign direct investment in Namibia as a percentage of GDP increased from 17.8% in 1998 to over 25% in 2004, which was very high compared to neighbouring countries such as South Africa, Swaziland, Zimbabwe, and Zambia, but was below that of Botswana (MTI report, 2010). Therefore, FDI is considered a key variable in Namibia's economic development. Figure 1 shows the trend of the three variables and their relative association. All the three variables appear to be trending upwards, which shows that there is likely to be a positive relationship among them.

FIGURE 1.1: FDI, EXPORTS, AND ECONOMIC GROWTH (GDP) TRENDS (IN N$ MILLION)



SOURCE: Author's compilation

1.2 Statement of the problem

FDI and exports are anticipated to be positively related to GDP. The relationship between these variables is highly debated in economic literature. Acaravci and Ozturk (2012) examined the causal relationship between economic, exports and FDI for the ten transitioning European countries and the results show a causal relationship between FDI, exports and economic growth in four out of the ten countries considered. Other studies found no causal relationship between these variables. As stated in the Fourth National Development Plan Four (NDP4) and Vision 2030, FDI serves to transfer technology and technical expertise, which are often in limited supply in Namibia. FDI has been empirically shown to be responsible for higher levels of exports, access to international markets and inflows of international currencies. With the transfer of technology from Multinational Corporations (MNCs) to local firms, capacity of local firms to produce is increased and this leads to enhanced production of output which allows local firms to export to foreign markets as well. In addition, in 2001, the United Nation launched the New Partnership for Africa's Development (NEPAD), which saw

Namibia developing a vision and framework for achieving the MDGs by 2015. One of the strategies adopted is to promote FDI and trade.

A few related studies have been conducted on the relationship between these three variables in Namibia. These studies used either descriptive methods or econometric techniques such as of VECM, to analyse the relationship between FDI and economic growth. However, these studies did not incorporate exports as an important variable in their analysis. Therefore, without understanding the direction of the relationships between these variables, it is not possible to draw important lessons for policy making purposes in the bid to pursue more effective policies that promote economic growth in Namibia. Hence, there is a need for a study that incorporates all the three variables in the model to examine the relationship between the variables.

1.3 Research objectives

The major purpose of the study is to investigate the relationship between economic growth, exports, and FDI in Namibia. The specific objectives are:

- To determine the impact of FDI and exports on economic growth in Namibia,
- To examine the causal relationship between FDI, exports, and economic growth in Namibia, and
- To suggest possible policy recommendations based on the outcomes of the study.

1.4 Hypothesis of the study

H_0: There is no causal relationship between GDP, exports, and FDI.

H_1 : There is a relationship between GDP, exports, and FDI.

1.5 Significance of the study

There is a scarcity of empirical literature on the relationship between GDP, Exports and FDI in Namibia. Thus, the current study is very relevant in that it will provide the much-needed literature on the subject, which may be useful to the policy makers in their quest for developing the relevant policies that will eventually lead to economic growth and development in Namibia. The need for this research arises because exports and FDI promotion policies have been, and are still the policies encouraged for developing countries desiring to promote their economies. While the need for operating knowledge economies is on an increase, shortages of empirical studies remain a critical factor that continues to undermine this noble cause. The knowledge about the relationship between GDP, Exports, and FDI would have very crucial policy implications in Namibia. For instance, if the export-led growth and FDI-led growth hypotheses are valid for Namibia, this would mean that policies promoting exports and attracting FDI should be encouraged to promote and sustain economic growth in the country. Thus, the knowledge of the interaction between the three variables would provide helpful information to policymakers in Namibia. The conclusion and recommendations emanating from this study will assist policy makers in some ways in designing appropriate strategies to attract investors that are highly needed for the economy to grow and help realise the objectives of Vision 2030.

1.6 Limitations of the study

The data used in this study were sourced from the Namibia Statistic Agency (NSA), World Bank and the Bank of Namibia. This study is focusing on specific macroeconomic variables that affect economic growth. Other possible variables that may influence the economic growth are not included in the study. These variables are beyond the scope of this study.

1.7 Organization of study

This study is organized as follows: Chapter One presents orientation of the proposed study, a statement of the problem, the research objectives, research questions, significance of the study and limitations of the study. Chapter Two presents some salient features of Foreign Direct Investment, exports and economic growth in Namibia. Chapter Three reviews the theoretical and empirical literature, related to the relationship between economic growth, exports, and FDI. Chapter Four presents in detail the methodology used in this study. In Chapter Five, the results are presented, interpreted, and discussed. In the final Chapter a general conclusion of the study, policy implications, and recommendations as well as areas for further research are discussed.

CHAPTER 2: FOREIGN DIRECT INVESTMENT, EXPORTS AND ECONOMIC GROWTH IN NAMIBIA

2.1. Introduction

The previous chapter presents orientation of the proposed study, a statement of the problem, the research objectives, and research questions, significance of the study and limitations of the study. This chapter reviews Namibian trends for economic growth, FDI inflows and exports, for the period 1980Q1 -2013Q4. The chapter is divided into four sections. Section 2.2 gives an overview of economic growth; section 2.3 presents an overview of foreign direct investment, while the overview of exports is discussed in section 2.4. The chapter is then concluded in section 2.5.

2.2. An overview of economic growth in Namibia

Namibia became independent on March 21 1990, and inherited a functional physical infrastructure system. Namibia is endowed with rich natural resources, sound economic management and strong public administration. However, Namibia has also inherited some social and economic inequalities as indicated by a Gini coefficient of 0.6 in 2010 (National Planning Commission, 2010). This means that Namibia's income distribution is among the most unequal in the world. Namibia's per capita national income saw the country being rated as a high-middle income country in 2011 (World Bank, 2011). After independence, the country was faced with the need to increase social welfare and raise standards of living for the majority of the people especially people living in rural areas. With the millennium development goals framework in place, Namibia, like any other country, embarked on efforts to address social and economic challenges. Improvements in access to basic primary education, health care, and safe water and sanitation were realized. Namibia's population at

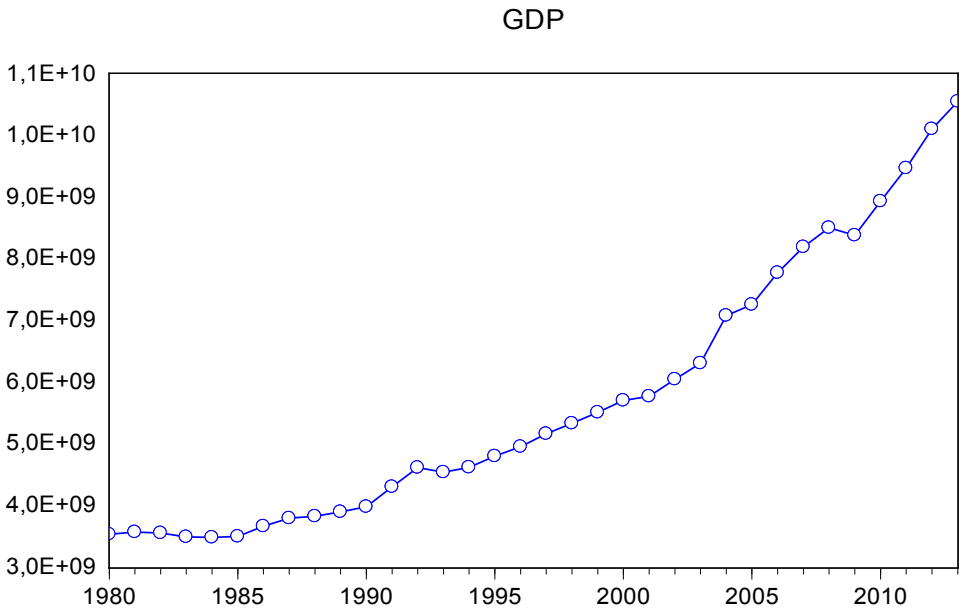
independence stood at 1.4 million people. The 2011 population and housing census results indicate that the total population is now 2.1 million people, which is slightly, below double of what it was at independence. The rate of economic growth for the 2011 fiscal year was 3.7 per cent (National Planning Commission, 2011).

During the period before independence (1980-1989), the economy recorded an average growth rate of 1.01 percent (National Planning Commission, 1991). The driving sector for this growth rate was the tertiary sector, consisting of trade, transport, finance and government services, which recorded an average growth of 3.7 per cent, while the secondary sector, which includes manufacturing, electricity and water, and construction, and the primary sector, which consists of agriculture, fishing and mining recorded average growth rates of 0.75 per cent and -1.4 per cent respectively. The primary sector recorded negative growth rates because of unfavourable performances in the mining industry. However, shortly after independence (1991 – 1998), the primary sector recorded better performance in the fishing industry, which transformed into 3.6 per cent contribution to the average growth rate of the economy. The tertiary and secondary sectors, both recorded improved growth rates of 3.5 per cent. The average growth rate for the economy improved to 3.5 percent (National Planning Commission, 2000).

The tertiary sector was the biggest contributor to GDP in 2010 (BoN, 2010). The 2007 global financial crisis saw the GDP growth rate decline to 1.1 per cent in 2009, primarily as a result of a decline in exports of diamonds and gold and other natural resources. However, the economy managed to pick up again in 2010, recording a growth rate of 6.6 per cent and an average growth of 4.9 per cent in 2011. This strong growth is credited to expansionary

measures by the government since 2009, as well as to high commodity prices as a result of increased global demand of natural resources.

FIGURE 2.1: ECONOMIC GROWTH FOR NAMIBIA FROM 1980 TO 2010 (MILLIONS)



SOURCE: Author's compilation

Namibia is a middle-income country with an estimated annual GDP per capita of US$ 5 828, which is regarded as relatively high among developing countries. In addition, Namibia is considered as having the most unequal income distribution and standards of living (UNCTAD, 2013). The country's sophisticated formal economy is based on capital-intensive industry and farming. Over the last ten years, Namibian economy grew by an average of 5 per cent with average annual inflation rate below 10 per cent (BoN, 2013). However, the economy is heavily dependent on earnings generated from primary commodities such as minerals, diamonds, livestock, and fish. In addition, the Namibian economy remains closely dependent on the South African economy, as the majority of the trade is with South Africa.

The Namibian economy recorded a growth rate of 4.4 per cent in 2013, which is 2.3 per cent lower than the 6.7 per cent recorded in 2012 (BON, 2013). The lower than expected growth is

attributed to slow growth in the primary industry, including agriculture and forestry, fisheries and on-board fish processing, mining and quarrying. These provide raw materials to secondary industries which contribute to export growth. Whereas, primary industries shrunk by 9.3 per cent due to the negative effects of the 2011/2012 drought. The secondary industry registered a growth of 8.7 per cent compared to tertiary industry 8.2 per cent growth in 2012 and 6.4 per cent in 2013 (NSA, 2013). However, the growth was attributed to an exceptional growth from the hotels and restaurants that grew by more than 10 per cent in 2013.

2.2.1 Global development

The world's output growth remained low during 2013 as the world economy grew by 3.0 per cent only, representing a 0.1 per cent lower than the 3.1 per cent growth of 2012 (IMF, 2013). This was due to lower real GDP growth of the Euro area and emerging markets such as Russia and Mexico. The slow world growth is mainly caused by a fall in commodity prices. China's economy on the other hand, remains strong recording a growth rate of 7.7 per cent in 2013 compared to others. Despite a slow growth in the global economy, real GDP growth in the Sub-Saharan region increased by 5.1 per cent in 2013 compared to 4.8 per cent in 2012. This growth was a result of private investment in infrastructure, strong domestic demand, as well as productive capacity and increased exports, especially in the oil producing countries. Table 1 shows the Global growth figures.

TABLE 2.1: ACTUAL GROWTH FOR 2012 AND 2013 FOR SELECTED COUNTRIES

Markets	2012	2013
World output	3.1	3.0
Euro Area	-0.7	-0.4
United states	2.8	1.9
Emerging markets & Developing	4.9	4.7
China	7.7	7.7
Brazil	1.3	2.3
Sub-Saharan Economies	4.8	5.1

Source: International Monetary Fund, World economic Outlook 2013

2.2.2 Regional development

The African region total output growth slowed down to 4% in 2013 from the 5.7 per cent in 2012 (Economic report for Africa, 2013). The low growth was caused by poor global demand because of the debt crisis affecting the Euro area and the poor output growth in the US. Growth in the East and West Africa regions grew by the almost same rate from 2012 to 2013 at 6 per cent and 6.7 per cent, and it was driven by high investment from countries such as Ghana, Nigeria and Liberia, specifically by oil and other related minerals (Economic report for Africa, 2013). Strong growth in Kenya has also contributed positively to regional growth, whereas the Southern African region recorded a growth of 3.6 per cent during 2013. Growth in this region is attributed to growth in investment in the mining sectors, mainly for Diamond and Uranium as well as recovery in Zambia (7.7%), Angola (6.8%), and Mozambique (7.2%). South Africa, the biggest economy in the region recorded a growth of 2.7 per cent in 2013. Table 2 below gives a summary of the regional growth rates for the African continent.

TABLE 2.2: SUMMARY OF THE REGIONAL ECONOMIC GROWTH STANDINGS

Regions	2012	2013
North Africa	7.2	2.3
Southern Africa	3.9	3.5
Central Africa	5.8	4.2
Eastern Africa	6.0	6.0
Western Africa	6.7	6.7

Source: Economic report for Africa 2013

Although Namibia is a small open economy, it could still benefit from these sustained global or regional high economic growths, which indirectly indicate increases in income levels. The growth recorded in the Southern Africa region augurs well for Namibia's vision of being a regional logistical hub. Thus, there is the need to maintain and improve the standard of the

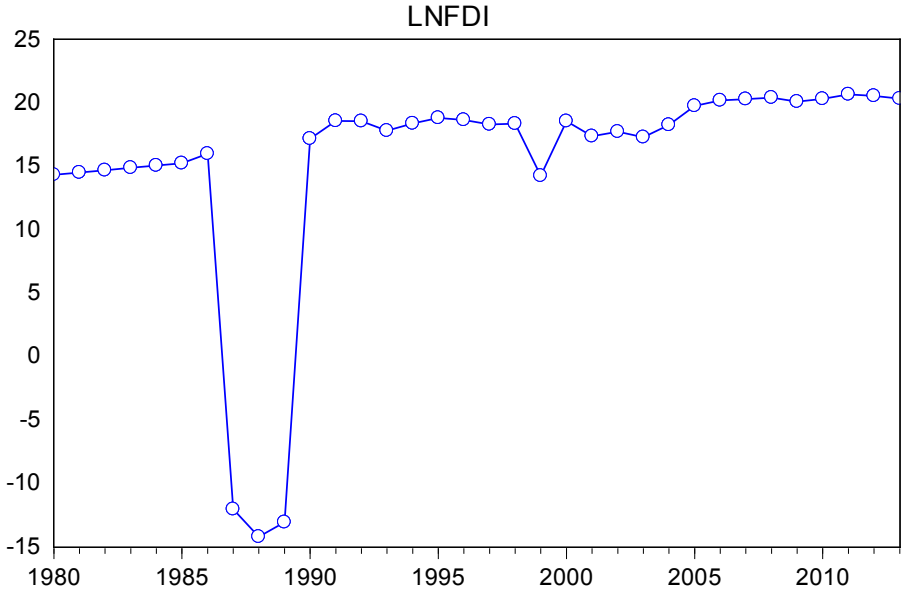
current infrastructure, while at the same time, accelerating the expansion drive in order to achieve the target of being a logistic hub of choice in the region and beyond. Lower commodity prices will have dampening effects on the Namibian economy and threatens efforts for employment creation.

2.3 An overview of Foreign Direct Investment in Namibia

Namibia is a developing country that depends heavily on investment for its continued growth. The injection of investment funds from abroad is essential to ensure the proper, efficient and effective utilization of the country's vast natural resources, which in turn enhance the continued growth of the economy.

According to UNTCD (2013), 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 investment or parent enterprise) in an enterprise resident entity in one economy other than that of the foreign direct investor (FDI enterprise or affiliate enterprise or foreign affiliate). There are several types of investments that enter host countries through Multinational Companies (MNCs). In principle, four main motives influence investment decisions by Transnational Companies (TNCs), that is, assert exploiting strategies, efficiency seeking, resource seeking, and assert augmenting strategies. FDI in Namibia is defined as any proposed investment by a foreign national with not less than 10 per cent of the total share capital of the venture or that the foreign national holds a management interest in the day-to-day running of the business concerned (Foreign Investment Act, 1990). Figure 2 shows the FDI inflows attracted by Namibia between 1980 and 2010.

FIGURE 2.2: FDI INFLOWS ATTRACTED BY NAMIBIA FROM 1980 TO 2010



SOURCE: Author's compilation

The Namibian Foreign Investment Act of 1990 outlines the legal framework on how investors can operate and provides the basic guarantees for an enabling environment conducive to private investors across all sectors of the economy. Namibia continues to be an attractive destination for private investments, including foreign direct investments due to the country's liberal economic policy regime, business friendly environment, legal and regulatory framework (Bank of Namibia, 2012). The country continues to attract FDIs though the value is dwindling due to the adverse financial and economic conditions prevailing in the global economy, especially, in the developed world.

According to the Bank of Namibia (2012), FDI inflows rose substantially to N$6. 5 billion during 2011 from N$5. 2 billion in 2010, representing a 25.3 per cent increase. Most of the FDI was in the resource sector, particularly the mining and energy sectors. In addition to that, the Ministry of Trade attracted and facilitated FDI and continues to facilitate linkages and partnerships between Namibian businesses and their counterparts in other countries to establish mutually beneficial business partnerships as joint ventures or other business

relations. In this regard, the Ministry of Trade also organised and hosted outward business missions in 17 countries where local business people from different regions took part (MTI, 2012). In addition, the Ministry of Trade hosted inward trade and investment exploratory missions for various delegations from different countries. These missions are platforms to market investment opportunities in Namibia and to promote mutually beneficial business linkages.

In order to ensure a conducive legal and regulatory environment, the investment centre has commissioned a review of the existing Foreign Investment Act, of 1990. The drafting of a new foreign investment Act has already been completed and is undergoing refinement (BoN, 2012). However, investment policy is expected to provide a better framework for attracting, facilitating, retaining, and regulating investments (domestic and foreign direct) and will clarify investment procedures and the rights and obligations of both the host country and investors (BoN, 2012).

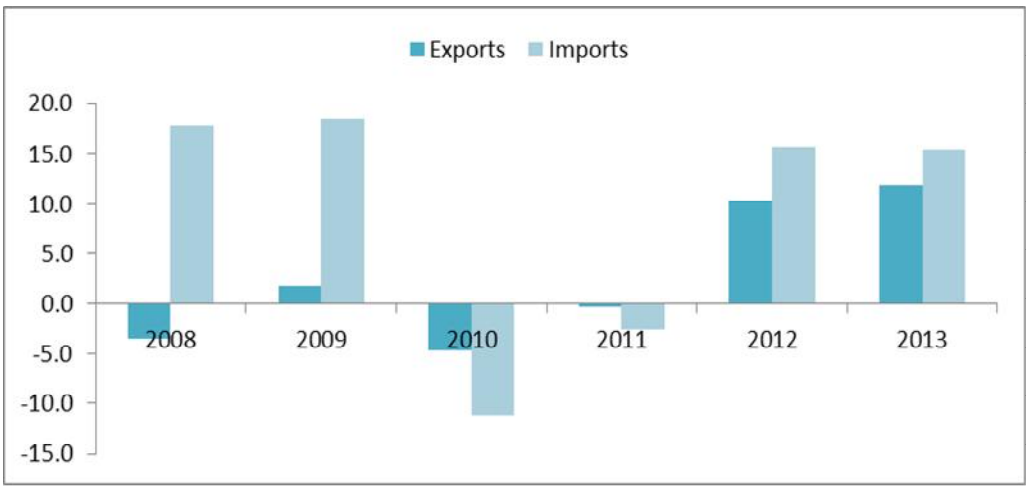
2.4. An overview of export in Namibia

In several studies, researchers argued that exports are the main channel through which trade liberalization can affect economic growth (Balassubramanyam et al., 1996). It was observed that the effect of export oriented policies on economic growth had less impact than import substitution policies. After independence in 1993, the average growth rate of exports was 27.4 per cent, while imports from South Africa increased to 87 per cent in the same year. This is because Namibia's economy is closely linked to the South African economy.

Namibia continues to experience trade deficits, which can be beneficial if they are being caused by imports of capital goods invested in the expansion of the productive capacity. However, trade deficits can also hurt long-term growth, if imports are mainly associated with consumption goods (BoN, 2012). Namibia imports mainly vehicles, nuclear reactors, machinery and mechanical appliances, mineral fuels, electrical machinery, natural or cultured pearls among others. The country's exports are mainly made up of natural or cultured pearls, fish, crustaceans, copper, ores, zinc, beverages among other products (BoN, 2012). This means that Namibia imports, processes and then re-exports, natural or cultured pearls indicating excess capacity in processing of precious stones.

Following a deceleration in export in the period 2010 to 2011, export of goods and services increased in 2012 and 2013 by 10.4 per cent and 12 per cent, respectively, while imports registered a growth of above 15 per cent in the period 2012 to 2013 (NSA, 2013) [see Figure 3]. As expected in economics, if the growth in imports is greater than that of exports, trade deficits results, which in the long run is unsustainable as they represent continued leakages out of the economy.

FIGURE 2.3: ANNUAL GROWTH RATE OF EXPORTS AND IMPORTS GOODS AND SERVICES



Source: Namibia Statistics Agency: National Account 2013

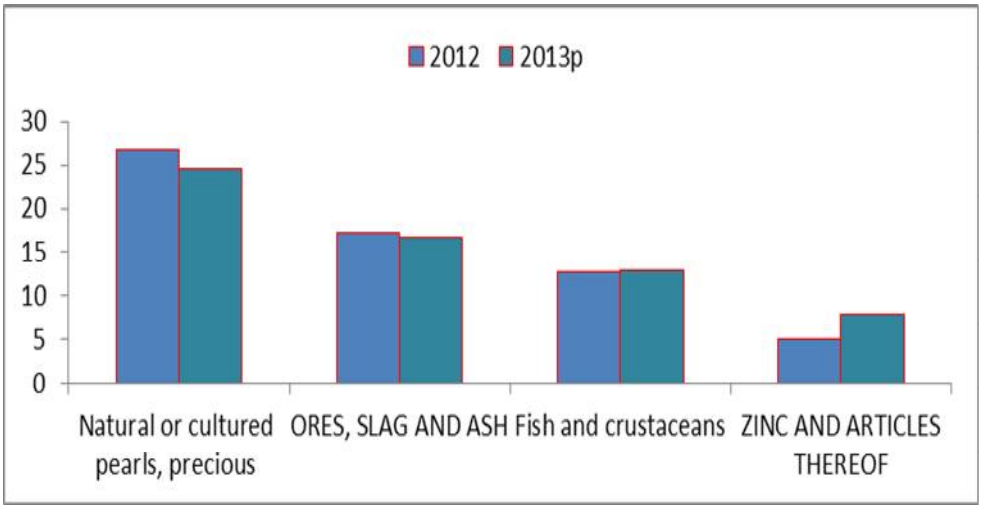
Trade is generally essential to satisfy human needs and wants, and more importantly to enhance society's standards of living. When the domestic demand for a certain product is higher than the supply, there is a shortage, which could be met through imports. When there is a surplus of goods, a country exports excess supply and receive foreign earnings. A country can have more imports than exports or fewer imports than exports and the difference between the two is known as trade balance which can be positive (surplus) or negative (deficit). In smaller developing economies, that have low manufacturing bases like Namibia, the trade balance is usually negative.

Figure 4 above, shows that in Namibia witnessed a negative trade balance during 2009 and 2010. In 2012, the export bill amounted to N$44 billion, compared to N$54 billion in 2013 representing a growth of 21 per cent (NSA, 2013). The figure also shows the growth of the trade deficit from 2009 to 2013. In 2008, the trade balance was positive and it stood at N$13 million. However, after 2008 the trade balance became negative until 2013. This is not good for the economy as it indicates a manufacturing opportunity lost as well as manufacturing jobs lost. On the other hand, imports can be beneficial to the economy and could signal strong demand and a growing economy, especially if they are composed of productive assets that are necessary to improve production (NSA, 2013).

The major exported products for 2012 were similar to those exported in 2013. The commonly exported product was natural or cultured pearls, accounting for 27 per cent and 25 per cent of total exports respectively, followed by ores, slag and ash (NSA, 2013) [see Figure 5]. Exports of fish and crustaceans remained constant at 13 per cent in both 2012 and 2013 of total exports. In addition, zinc products exports increased from 5 per cent in 2012 to 8 per cent in 2013 and remain one of the top exported goods in Namibia. Namibia's exports continue to

depend on the primary industry, mainly fishery and mining and as such are prone to external influences such as commodity prices and weather conditions, and this should trigger the need to diversify the economy in order to cushion it from externalities.

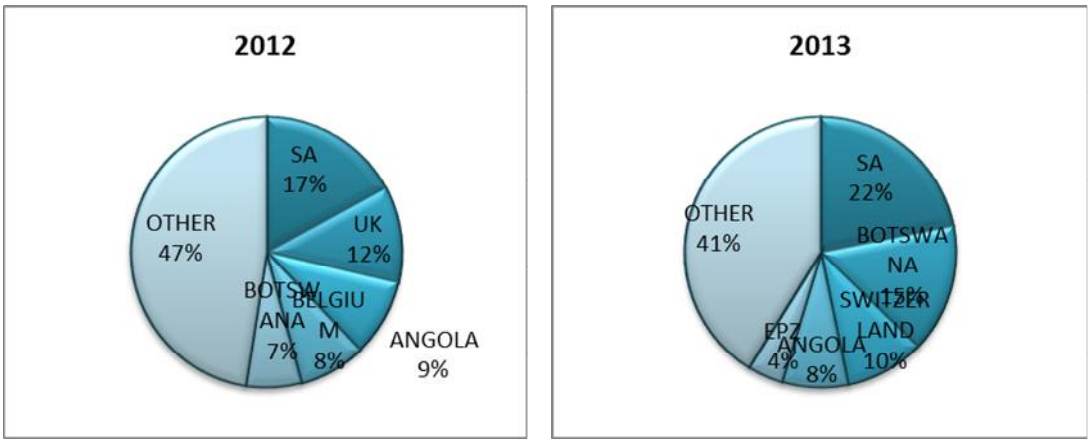
FIGURE 2.4: TOP FOUR EXPORTED GOODS IN COMPOSITION OF TOTAL EXPORTS (2012-2013)



Source: Namibia Statistics Agency, 2013

South Africa remained the key trading partner for Namibia for both exports and imports. In 2012, South Africa accounted for 17 per cent of total exports, followed by the United Kingdom (12%), Angola (9%), Belgium (8%), and Botswana (6.7%). Exports to Botswana were mainly Diamonds and other precious metals. The statistics also show that exports to South Africa increased from 17 per cent in 2012 to 22 per cent in 2013 (NSA, 2013). In 2013, Botswana became the second major trading partner of Namibia at 15 per cent, followed by Switzerland (10%), and Angola (8%). The importance of regional trade seems to be taking the centre stage, as Namibia intensifies trade within SADC and SACU countries, which is good for Namibia's efforts to be the regional logistic hub. Figure 6, summarises all the major trading partners for Namibia.

FIGURE 2.5 : NAMIBIA'S MAJOR EXPORT PARTNERS, 2012, AND 2013



Source: Namibia Satistic Agency, 2013

2.5 Summary

The foregoing chapter looked at an overview of FDI, exports and economic growth in Namibia. An in-depth analysis of sources and sectors of FDI in Namibia, as well as the magnitude and sources of exports were discussed. Economic growth as well as the drivers of the growth was also explored in this chapter. Furthermore, global and regional economies and their growth rates for 2012 to 2013 were also discussed in detail, including some of the economic challenges being faced by the Euro area and US economies that have a bearing on the economy of Namibia through international trade and capital flows. Namibian trading partners, as well as, the volumes of trade for the year 2012 and 2013 were also reviewed. In order to get a good grasp of the link between FDI, exports and economic growth the following chapter reviews theoretical and empirical literature review.

CHAPTER 3: LITERATURE REVIEW

3.1 Introduction

The foregoing chapter looked at an overview of FDI, exports and economic growth in Namibia. An in-depth analysis of sources and sectors of FDI in Namibia, as well as the magnitude and sources of exports were discussed. Therefore, this chapter presents the literature review related to economic growth, foreign direct investment, and exports. The chapter analyses theoretical and empirical literature related to FDI led exports, FDI led economic growth, and exports led economic growth. The chapter is divided into two sections. The first section presents the theoretical literature review and the second section presents the empirical literature review.

3.2. Theoretical review

3.2.1 Theoretical relationship between FDI inflow and exports

The relationships between FDI, exports, and economic growth have been explored quite extensively in economic literature. Most of the research undertaken used bivariate Granger causality framework. Studies that used bivariate framework include Baliamoune-Lutz (2004), Sharma and Panagiotidis (2005) and Xu (1996). Meanwhile, other researchers such as Balassa (1978), Balasubramanyam, Salisu, and Sapsford (1996), Feder (1983), Fosu (1990), and Tsai, (1994) used the multivariate framework derived from the production function, in which the growth variable is regressed against exports or FDI along with other endogenous variables such as labour and capital. Most of the theories on growth hypothesis are supported if the coefficient of exports and /or FDI is significantly positive.

Export theories attempt to explain why countries trade with one another, whereas FDI theories try to explain why firms produce abroad and invest in other countries (Favara, 2007). However, there are mainly two aspects of possible linkages between FDI and exports. These are: (a) whether FDI inflows and exports are regarded as complements or substitutes, and (b) whether FDI causes exports or vice versa. Theoretical arguments that emanated from literature are those by Ricardo and the Hecksher-Ohlin-Samuelson classical theories which argued that labour abundant countries need to specialise in production of labour intensive goods and those countries that are capital abundant should specialise in capital intensive goods. To this effect Dunning (1998) believes that, the relationship between FDI and exports depends on the motives of MNCs when undertaking investments in foreign countries. These motives may have positive or negative influences on imports and exports.

Other theories capture the relationship between FDI and exports by defining them as horizontal or vertical FDI. Traditional models of horizontal FDI are based on the assumption that a parent company creates an affiliate to replicate its activities and sells to the host country and nearby developing countries. In contrast, models of vertical FDI assume that a parent creates an affiliate in order to carry out some stages of the production process. Production involves intra-firm flows of goods between the parent and the affiliate, or among foreign affiliates that specialize in different stages of production. Markusen (2002) argued that incorporating the concept of the multinational enterprise into the standard theory of international trade indicates a relationship between capital movements and trade depend on whether multinational firms are horizontally or vertically integrated and the types of integration are determined by factors such as transport costs or firm and plan level economies of scales.

3.2.2 Theoretical relationship between exports and economic growth

The relationship between exports and economic growth has been a research interest in both theoretical and empirical literature for some time now. Export led growth theories advocate that trade is the engine for growth. The following are therefore the advantages associated with trade: (a) enables the adoption of foreign technologies; (b) results in greater capital utilization and utilization of economies of scale and comparative advantage, and (c) helps create a conducive and stable macroeconomic environment through creating employment, improving labour productivity and enhancement of foreign currency earnings by the economy (Edward, 1998; Shan and Sun, 1998). In addition, Krugman (1998) believes that the economic growth leads to the enhancement of skills and technology in the various sectors of an economy.

In the Keynesian national accounts framework, net exports represent external demand for the country's output and comparing that relationship between exports and economic growth is just an accounting identity and does not imply causal relations. Various theories concerned with the role of export in economic growth, which go back to the classical economic theories, argue that international trade plays an important role in economic growth and that there are economic gains from the specialization (Aktar, Ozturk & Demirci, 2008). These theories further emphasize that exports provide the economy with foreign exchange needed for import exchange.

3.2.3 Theoretical relationship between FDI inflow and economic growth

In developing countries, foreign direct investment (FDI) is the main channel through which capital, knowledge, and technology transfer between countries. The benefits of FDI on

economic growth depend on the ability of the host countries to access, learn, and implement new technologies (Waldkirch, 2010; Xu, 2000). According to Bhagwati (1978), the benefits of FDI are likely to be less if FDI is a substitute for imports in comparison to countries with export promotion policies. Thus, the growth enhancing effect of FDI and trade interaction depends upon the specific policies and factor endowments of various countries. Most cross-country studies assume a positive relationship between FDI and economic growth (Borensztein et al., 1998). According to Balasubramanyam et al. (1996), there is a strong role of FDI on economic growth in export promoting countries in comparison to the countries with import-substitution policies. Similarly, most of the research shows a positive relationship between economic growth and exports in cross-country studies (Feder 1983; Fosu 1996). However, the major problem or limitation of the cross-country data analysis is the assumption of common production technologies across countries, which is not always true. The host countries' domestic policy such as monetary, fiscal, production technology, financial structures, and external shocks may differ across countries. Therefore, the effect of FDI and exports on growth varies across countries. Further, provision for the case of reverse causality was not allowed in the past as it led to inconsistent conclusions (Feder 1983, and Fosu 1996).

In the neoclassical growth model, technological progress and labour are exogenous factors of foreign direct investments that simply increase the rate of investments and afterwards lead to an increase to per capita income, without having any effect on long-term growth (Dritsaki, Dristaki, & Adamopoulos, 2004). Long run growth can only be increased through technology and population growth. If FDI positively influences technology, then FDI is growth advancing (Solow, 1995). This means that FDI has a permanent effect on economic growth

through technology transfer and this may be through new production processes and techniques, managerial skills, ideas and new varieties of capital goods (UNTCD, 2013).

(2004)

The most critical and debatable part is the tripartite nexus of export, FDI and economic growth, is the correlation among these variables might be bidirectional which means that causality may run from exports to FDI or FDI to export. Christopher (2012) believes that countries that are growing at a rapid rate produce more goods and services and thus export more, which lead to increased GDP as more FDI is attracted due to high returns and increased productivity.

3.2 Empirical literature review

The relationship between FDI, Exports and economic growth has interested a number of scholars whose debates gave birth to an abundant economic literature which is also full of controversies. The economic literature argues that FDI inflows can promote exports in the host countries and that FDI is attracted to countries with a higher trade potential. It also says that export promotion can enhance economic growth and that economic growth can, in turn, promote exports. It further says that FDI inflows can promote economic growth in the host countries and that economic growth can be a determinant of FDI inflows. This section reviews what the proponents advance to support those possible relationships among FDI, exports, and economic growth.

The preceding empirical results have tried to explain the relationship between FDI and economic growth and exports led growth. Most studies found a positive relationship between FDI and growth as well as positive relationship between exports and economic growth and

others did not find any link between these variables. Empirical literature shows that the relationships vary depending on the period of study, countries studied, variables included in the model as well as the econometric methods used in the study (Hsiao and Hsiao, 2006). However, there are not many studies that looked at the tripartite relationship of these three variables simultaneously, and their results are mixed and inconclusive. The results found are either bidirectional, unidirectional or no causality relationships between FDI, exports, and economic growth. The empirical literature review below presents the results of studies that explored these variables.

3.2.2. The empirical literature on FDI-led exports hypothesis

From a theoretical perspective, one may understand that it is difficult to predict whether FDI and exports are substitutes or complements. Existing empirical studies in the literature have used diverse data and methodologies that have given mixed results. Blomstron, Lipsey and Kulchycky, (1988) examined the relationship between FDI and exports using the United State (US) and Swedish firm level data. The results found a complementary relationship between FDI and exports.

Goldberg and Klein (1999) do not find evidence to support a significant link between FDI and aggregate exports in Latin America. According to them, the trade-promoting effects of FDI appear to be weak or insignificant with regards to Latin American trade with the United States and Japan. Their results also failed to find a systematic linkage between sectoral trade and FDI in Latin America.

Soliman (2003) examined the role of FDI in export promotion of four MENA countries (Egypt, Tunisia, Morocco, and Turkey) for the period of 1970-1995. Applying a gravity model he found a positive relationship between FDI inflow and exports. In addition, they found an insignificant relationship between FDI and the share of manufacturing exports in total merchandise exports.

Pacheco and Lopez (2005) demonstrated the casual relationship between inward FDI and export performance in Mexico by using the Granger Causality test. The results indicate that there is a bi-directional causal relationship between inward FDI and export performance.

Ahmedi, Cheng and Missinis (2007) investigated the short and long run causality relationship between exports and FDI, FDI and growth and exports and growth in Sub-Saharan African countries (Namely, Ghana, Kenya, Nigeria, South Africa and Zambia), for the period 1990-2003. A new Autoregressive Distributed Lag approach was employed in the examination of Granger type test for causality with an error correction. Estimation results showed that there is a bi-directional Granger causality between FDI and exports in Ghana, Kenya, and Nigeria, while the Granger causality runs from FDI to export in South Africa and from exports to FDI in Zambia. Moreover, causal linkages were observed from FDI to growth (income), a positive relationship was also observed from exports and FDI to income in all five African countries studied. Overall, the results provided evidence of positive existence and long run impact of exports and FDI on income.

Kutan and Vuksic (2007) employed a generalized least square (GLS) estimation method to estimate the potential effects of FDI inflows on exports in 12 Central and Eastern European (CEE) economies for the period 1996 and 2004. The study separated FDI into supply-

capacity increasing effects and FDI-specific effects and found that for all the countries that were contained in the sample, FDI contributed to higher exports through increased supply capacity. This implied that for these countries, positive impact of FDI went beyond increasing supply capacity because there were additional indirect, positive effects of inward FDI.

Njong (2008) examined the association between FDI and export in the case of Cameroon. Data for the period 1980-2003 was used and the results indicate that there is positive relationship between FDI and exports through the increase in supply capacity and spill over effects.

Sharma and Kaur (2013) examined the causal links between FDI and trade in India and China, using data over the period 1976-2011. The Granger causality test results for China showed unidirectional causality running from FDI to imports and also from FDI to exports. However, the results show bidirectional causality between imports and exports. On the contrary, the results on the Indian economy found bidirectional causality between FDI and imports, FDI and exports and exports and imports.

3.2.3. Empirical literature on FDI and Economic Growth

Erricsson and Iraandoust (2001) examined the causal effects between FDI growth and output growth in the four OECD countries (Denmark, Finland, Norway and Sweden). The study fails to detect the causal relationship between FDI and output growth for Denmark and Finland.

Nair-Reichert and Weinhold (2001) used a panel of 24 developing countries over the period 1971-1995 to analyse the relationship between FDI economic growths. They had used a

mixed form and random form panel data estimation method to allow for cross-country heterogeneity in the casual relationship between FDI and growth. The results show that there is some evidence that the efficacy of FDI in raising future growth rates is higher in economies that are more open. However, the relationship between the two seems to be highly heterogeneous across countries.

Chakraborty and Basu (2002) investigated the relationship between economic growth and foreign direct investment (FDI) in India for the period 1970 to 2005. Cointegration and error correction models were employed to identify the links between these variables. The study found that there is a unidirectional relationship running from GDP to FDI.

Duasa (2007) examined the causality between FDI and economic growth in Malaysia, using quarterly data from 1990 to 2002. He used the Toda-Yamamoto's (1995) methodology to establish the direction of causality between the two variables. The study found no strong evidence of a causal relationship between the two variables. This indicates that in the case of Malaysia FDI does not cause economic growth and vice versa, but FDI does contribute to stability of growth as growth contributes to the stability of FDI.

Christopher (2012) investigated the impact of foreign direct investment on economic growth and other variables in Nigeria, using time series data for the period of 1986-2007. The paper employed multiple regression models to determine the impact of some external macro variables on the GDP proxy for economic growth in Nigeria. The study found that FDI has the potential to positively impact upon the economy through its contribution to GDP was very low within the reviewed period. The multiple regression results also revealed that FDI, Government Tax Revenue (GTR) and savings exerted positive, but not significant impact,

except saving, on GDP. However, foreign exchange and Public Expenditure on Education (PEE) had an inverse relationship with GDP. The study concluded that FDI induces the inflow of capital, technical expertise, and managerial capacity, which can stimulate domestic investment and accelerate the pace of economic growth.

3.2.4. Empirical literature on Exports and Economic Growth

There are several studies that investigated the causal relation between exports and economic growth, called the export-led Growth Hypothesis, using the cases of individual countries and groups of countries. However, conflicting results due to the variations in the periods studied, countries or groups of countries focused on or the methodologies used are still giving mixed results.

Ogbokor (2005) analysed the export led growth relationship in Zimbabwe, using time series data for the period 1991-2003. The results obtained show that there is a relationship between the exports and growth. Moreover, the study suggested fundamental economic and political changes in order to address the various challenges that face the economy.

Jordaan and Eita (2007) investigated the export led growth hypothesis for Botswana covering the period 1995Q-2005Q. They used a modified Granger causality test in which GDP minus exports was used as a proxy for economic growth. The results indicate that Botswana can promote higher export growth by encouraging higher economic growth because there is a positive relationship between these two variables.

Taban and Aktar (2008) examined the relationship between economic growth and export growth in Turkey using quarterly data for the period 1980Q1 -2007Q2. The Granger causality

test was used. The results indicate a bi-directional causal relationship between exports and real GDP. Furthermore, export-led growth policies in Turkey may contribute to economic growth and economic growth may also contribute to growth in exports.

Ziramba (2011) analysed the relationship between exports and economic growth in South Africa, using quarterly data from 1960Q-2008Q. The result shows evidence of both the export-led growth hypothesis and growth-led export hypothesis. His results show a relationship between economic growth and merchandise export to support the export-led growth hypothesis. The results also show evidence in support of the growth-led export.

3.2.5. Empirical literature on FDI, Export, and Economic Growth

Liu et al (2002) investigated the casual relationship between inward FDI, trade, and economic growth in China using quarterly data at the aggregate level for the period 1981-1995. The result indicates two-way causal relationships between inward FDI and export. In addition, Baliamoune-Lutz (2004) found similar results for Morocco for the period 1973 -1999.

Dritsaki, and Adamopoulos (2004) examined the relationship between FDI, exports, and economic growth in Greece over the period of 1960-2002. The Co-integration test shows that there is a long run equilibrium relationship. The Granger causality results showed that a positive causal relationship existed between the variables. Hence, economic growth, FDI, and exports appear to be mutually reinforcing In Greece.

Hsiao and Hsiao (2006) investigated causality between FDI, exports, and GDP in East and Southern East Asia Their study covered China, Korea, Taiwan, Hong Kong, Singapore,

Malaysia, Philippine, and Thailand. Time series and panel data from 1986 to 2004 was employed. VAR and VECM were used for each of eight economies as a group and the fixed effects and random effects approaches were used to estimate the panel data VAR equation for Granger causality. The study found that FDI has unidirectional effects on GDP. Furthermore, there also exists bidirectional causality between exports and GDP for all the countries.

Aktar, Ozturk, and Demirci (2008) examined the impact of Foreign Direct Investment, exports, economic growth and total fixed investment on unemployment in Turkey for the period of 1987-2007. The Johansen co-integration technique was applied to determine the long run relationship between the variables. The results indicated that there are two co-integrating vectors during the period under study in Turkey, which indicates that there is a long run relationship. In addition, all the variables were found to affect the unemployment rate significantly.

Carbajal, Canfield, and De la Cruz (2008) examined the existence of causality between Gross Domestic Product (GDP), exports, imports, and FDI in Mexico. GDP and FDI were broken down into industrial and services sectors. Cointegration test showed a stable causal relationship between FDI and variables such as the industrial GDP, exports, and imports. The study used methodologies used by Liu, Burridge, and Sinclair (2002) and Quintos and Phillips (1993) (to test for structural changes). The estimation showed a stable causal relationship between of FDI and industrial GDP, exports, and imports. However, the services sector tends not to have a direct effect on investments. Notwithstanding that, Mexico greatly benefits from FDI, but such benefits are generated by exports and the industrial GDP. The strong trade relationship between the Mexican economy and the USA economy appear to be benefiting Mexico to a greater extent.

Miankhel, Thangavelu and Kalirajan (2009) investigated the casual relationship between trade, foreign direct investment, and economic growth for India, Pakistan, Malaysia, Thailand, Chile, and Mexico for the period 1970-2007. The cointegration analysis found a long-run relationship, while the Granger causality test found that there is a casual relationship between economic growth, trade, and FDI and appear to be mutually reinforcing under the open economy policies.

Shaikh (2010) investigated the causality relationship between FDI, trade and economic growth, using quarterly time series data for Pakistan from 1998-2009. The co-integration method employed found that there is a long run relationship among the variables. The VECM causality test found bidirectional causality between FDI, export, and economic growth. Their results showed that FDI has a positive impact on trade growth in Pakistan, hence the government needed to play a positive role in providing security to the investors around the globe by urging them to invest in various parts of Baluchistan as well as the rural areas of Sindh province.

Gallová (2011) investigated a causal relationship between FDI, economic growth, and exports for Central and Eastern Europe, for the period 1993-2010. The study used the vector error correction model. The results confirm the existence of long-term casual links between the variables studied in five of the eight countries in the region. The impact of FDI within the region of Central and Eastern Europe, however, was not clear, as the results indicate that there were both positive and negative effects on exports.

Ahmadi and Ghanbarzadeh (2011) examined the causal relationship between FDI, exports, and economic growth in the Middle East and North African countries (MENA), for the period 1970-2008. Using a Hausman test, he estimated the fixed effects panel data model to estimate the mutual relation between GDP, exports, and FDI. The study found bidirectional causal relations among all the three variables in the group.

Meerza (2012) investigated the causal links between trade, FDI and economic growth in Bangladesh for the period 1973 to 2008. He found that there was a long run relationship among the variables analysed. He found out that economic growth influences both FDI and export. The study found a causal relationship between FDI and export which runs from export to FDI.

Babalola, Dogon-Daji and Saka (2012) examined the relationship between exports, FDI, and economic growth in Nigeria, over the period of 1960-2009. The Johansen cointegration test indicated the existence of at least six cointegrating vectors. The error correction coefficient results showed a deviation from the long run RGDP path corrected by about 48% for the following year. It indicated that removing the degree of openness variable may be detrimental because even the percentage deviation from equilibrium does not change. The study, therefore, concluded that the relevance of the degree of openness might facilitate more FDI inflows that are capable of accelerating the growth process.

Shawa and Shen (2013) examined the causal relationship between FDI, GDP growth, and exports in Tanzania using time series data from 1980 to 2012 within the VAR co-integration. The co-integration test found the existence of a long run relationship among the variables in question. The Granger causality showed that there is a unidirectional relationship running

from FDI to exports and no causality was discovered between FDI and GDP growth. The findings of the study suggested that FDI is a good predictor of exports, resulting in FDI led export growth in Tanzania.

3.3 Empirical literature on Namibia

Akinkugbe (2006) used a disruptive statistic to analyse the net present value of benefits and cost of companies operating under the Export Processing Zone (EPZ) incentive scheme. The paper found that Namibia has derived net benefits from companies operating under the EPZ regime in terms of attracting companies to Namibia, and has indeed assisted companies to raise substantial resources that enabled them to increase exports.

Ikhide (2006) investigated the relationship between foreign direct investment and domestic investment in developing countries, including Namibia, for the period 1985-2004. The author used an OLS and dynamic estimation model, including a lagged dependent variable in the specification to avoid biased results. A bivariate VAR framework was used to test the causation between FDI and economic growth. The paper found a unidirectional causality from FDI to domestic investment. Furthermore, it suggested that FDI crowded out domestic investment in Namibia.

Jordaan and Heita (2007) examined the casual relationship between exports and economic growth for the period 1970-2005. The Granger causality and cointegration techniques were applied to test the hypothesis of a growth strategy led by exports. The results showed that export Granger causes GDP and GDP per capita. The study concluded that export-led growth strategy had a positive impact on economic growth in Namibia.

Kaulihowa and Yinusa (2007) examined the relationship between FDI and economic growth in Namibia, using time series quarterly data for the period 1993-2007. The Vector Error Correction Model (VECM) technique was employed to determine the relationship between the variables. The results showed a positive relationship between FDI, economic growth as well as domestic investment. Similarly, forecast error variance decomposing found that variations in economic growth were mainly due to innovations in domestic investment, FDI, and human capital.

Niishinda and Ogbokor (2013) investigated the export-economic growth relationship for Namibia, using annual time-series for the period 1972-2010. The Johansen cointegration test vector-error correction model (VECM) and Granger causality tests were employed to test for the nature of the relationship. The Granger causality test indicated a unidirectional causation from export to economic growth. However, the results confirm the validity of the export-led growth hypothesis in the case of Namibia. The study further suggests that Namibian economic growth depends on export performance; therefore, Namibia needs to enhance economic growth by improving the competitiveness of its exported items.

3.3 Summary

Most studies related to this study on Namibia used either descriptive methods or econometric techniques such as VAR/VECM, to analyse the relationship between FDI, economic growth and exports. The results that the study summarised are conflicting as already alluded to. The fact that there are still inclusive results means that there is need to carry out further research using superior techniques that have proven to give more robust results. Without

understanding the direction of the relationships between these variables, it is not possible to draw important lessons and guidelines for policy makers in their pursuit to find more effective policies that promote economic growth in Namibia. Hence, this study incorporated all three variables in the model using newly developed technique called the ARDL model which is deemed more superior than the cointegration and error correction methodology.

CHAPTER 4: METHODOLOGY

4.1. Introduction

In the previous chapter, a literature review was done to explore the relationships between economic growth, FDI and exports. The review demonstrates that the relationship of these variables can run either way. Therefore, this chapter presents the methodology followed and the techniques applied to investigate the relationship between economic growth, FDI and exports in Namibia. The techniques applied in this chapter are informed by empirical literature. In this regard, an overview of ARDL model is discussed in order to understand how the model works. This chapter is divided into three sections. Section 4.2 discusses the theoretical framework of this study. Section 4.3 discusses the analytical framework, that is, the ARDL model in greater detail. The issues pertaining to data sources and measurements are presented in section 4.4. The last section of the chapter gives the conclusion of the chapter.

4.2 Theoretical framework

The empirical study is based on the new theory of endogenous growth model to investigate interrelationships among FDI, exports and economic growth, developed by Arrow (1962) and Shell (1966) which was later modified by Romer (1990), Lucas (1988) and Grossman and Helpman (1991). The starting point is to explain the standard model of growth where real GDP is explained by total factor productivity (TFP), Labour force, and the stock of capital (Solow, 1994). In the neoclassical growth model, technology and labour are exogenous. FDI inflows increase the investment rate and lead to an increase in per capita GDP in the short run, but have no growth effect in the long-run. According to the new theory of endogenous growth, TFP is determined in an endogenous way by economic factors. Technological

progress and FDI have been considered to have a permanent growth effect in the host country through technology transfer and spill over effects. Literature on FDI and economic growth stipulates that FDI does encourage knowledge transfer in labour training and skill acquisition. Exports are regarded to increase productivity and alleviate the country's foreign exchange constraints. In addition, economic growth has positive effects on exports and FDI. The aggregate production of the endogenous growth equation is shown below:

$$Y_t = A_t \; K_t^{\alpha} \; L_t^{\beta} \qquad [1]$$

4.3 Econometric Framework

The Bounds Test for Cointegration Analysis is used to investigate the existence of a long run and short run relationships. The Bounds test was developed by Pesaran, Shin, and Smith (2001). Transforming variables into natural logarithms gives the empirical formulation in equation 2 as follows:

$$lnRGDP_t = \beta_0 + \beta_1 \, lnFDI_t + \beta_2 lnEXP_t + \varepsilon_t \qquad [2]$$

Where *ln* is the natural logarithm operator. All the three variables are changed to logarithms for the purposes of the current study. This is to removes any uncertainty of non-linear relationship between variable and allow coefficient interpretations. The variables on the right hand side of the equation (2) are independent variables.

In order to establish the long run and short run relationships between economic growth, exports, and FDI, the Autoregressive Distributed Lag (ARDL) Model was employed. To analyse the time series properties of the dataset, the Augmented Dickey-Fuller (ADF) and

Phillips-Perron (PP) test statistics were employed in carrying out the unit roots tests to determine whether the variables are stationary or not. Lastly, the study performed causality tests by employing the Wald tests and the pairwise Granger causality tests.

4.3.1 Unit Root Tests

Most macroeconomic variables often exhibit certain statistical properties, which have to be examined, especially, when they are in time series. This is because most time series data are usually non-stationary in levels. These non-stationary time series may result in spurious regressions if used without being transformed. Thus, it is important to test the series for stationarity in order to avert the problem of spurious regression and derive meaningful relationships among the variables. The standard method for testing the stationarity of a time series is to account for a deterministic trend as well as the stochastic trend represented by a unit root. Thus, the study determines the order of integration of the series in levels and in first differences with the intercept, trend and intercept.

A number of tests are employed to test for unit roots in time series data and this study employs the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests for unit roots, as they are considered reliable in literature. The ADF and PP are used to determine the order of integration. The null hypothesis that the series contain unit roots is tested against the alternative that they do not. The Akaike Information Criterion (AIC) and Schwartz Information Criterion (SIC) are used in the selection of the lag length. The ADF test for the presence of unit roots is specified as follows:

$$\Delta Y_1 = \alpha_1 + \phi_1 Y_{t-1} + \sum_{i=1}^{n} w_1 \Delta Y_{t-1} + \varepsilon_{1t} \quad [3]$$

In order to check for unit roots of the selected variables, the Dickey-Fuller test (ADF) and the Phillips Perron tests were employed. In this case Y_t represents the series at time *t*, Δ reflects the first difference operator, α, ϕ, and *w* represent the parameters to be estimated and ε is stochastic term which is assumed to be homoscedastic.

The ADF test does not take into consideration heteroscedasticity and non-normality and it is also unable to discriminate between stationary and non-stationary series with a high degree of autocorrelation. As such, the PP test is employed to resolve this problem. The PP unit root tests differ from the ADF tests mainly in how they deal with serial correlation and heteroscedasticity in the errors. In particular, where the ADF tests use a parametric autoregression to approximate the ARMA structure of the errors in the test regression, the PP tests ignore any serial correlation in the test regression. Thus, the PP test can be considered as nonparametric. Whereas, the ADF assumes the error terms are independent with a constant variance, the PP test assumes the error terms are weakly dependent and distributed heterogeneously providing robust estimates over the ADF.

4.3.2 Autoregressive Distributed Lag Bounds approach to Cointegration

The Autoregressive Distributed Lag (ARDL) approach also referred to as the bounds test to cointegration advanced by Pesaran and Pesaran (1997), Pesaran and Shin (1999) and Pesaran et al. (2001) is employed in this study. The study formed the Autoregressive Distributed lagged model of equation (1). The ARDL approach to cointegration has some significant econometric advantages over the fully modified ordinary least squares (FMOLS) procedures used by Phillips and Hansen (1990), Engle and Granger (1987) and Johansen and Juselius (1990) (in their maximum likelihood-based approach).

The bounds test, firstly, does not require prior testing of the series to determine the order of integration because the test can be performed irrespective of whether the series are I [0] or I [1] and this averts the a priori problem associated with standard cointegration analysis, which requires classification of variables into I [1] and I [0] that are mutually integrated (Pesaran et al. 2001). Also, Laurenceson and Chai (as cited in Shrestha and Chowdhury, 2005) observed that the ARDL modelling takes into account a sufficient number of lags to capture the data generating process (DGP) general to specific modelling framework. However, for variables, whose order of integration is more than I [1] then ARDL model approach cannot be used.

The ARDL approach also solves the endogeneity problem found among many macroeconomic variables. Pesaran and Shin (1999) argued that modelling the ARDL with the appropriate lags corrects the problems of endogeneity and serial correlation. A significant feature of this approach is the fact that all the variables are assumed to be endogenous. This implies both the long-run and short-run parameters of the model that are estimated jointly. Thus, the issue of endogeneity is crucial since the causal relationship between Economic growth, exports and FDI cannot be established in advance.

The ARDL approach unlike the Johansen and Juselius (1990) cointegration test has superior small sample properties. Invariably, it is more robust and performs better for small sample sizes than other co-integration techniques (Pesaran and Shin, 1999). The error correction model (ECM) can also be derived from the ARDL via a simple linear transformation. OLS can then be used for estimation and identification once the order of the ARDL has been determined (Pesaran et al., 2001). The long run relationship can be found using the selected ARDL model through AIC or SBC. This study will employ procedures by Pesaran et al.

(2001) to investigate the long run relationship in the form of unrestricted error correction model as follows:

$$\Delta InRGDP_t = \propto_0 + \sum_{i=1}^{n} \propto_{1i} \Delta InRGDP_{t-1} + \sum_{i=0}^{n} \propto_{2i} \Delta InFDI_{t-1} + \sum_{i=0}^{n} \propto_{3i} \Delta InEXP_{t-1} +$$

$$\beta_1 InGDP_{t-1} + \beta_2 InFDI_{t-1} + \beta_3 InEXP_{t-1} + e_t \quad [4]$$

Where Δ denotes the first difference operator, $\propto_0$ is the drift component, e_t are white noise residuals, the parameter, $\propto_{ij}$ and β_{ij} are the short –run and long-run parameters respectively. The F-test or Wald test is used to test for the presence of long run cointegration among variables in equation 4 and the following are the hypothesis used:

$H_0 : \beta_1 = \beta_2 = \beta_3 = 0$ (there is no long run relationship among the variables)

$H_1 : \beta_1 \neq \beta_2 \neq \beta_3 \neq 0$ (there is a long run relationship among the variables)

The ARDL approach is in two stages. In the first stage, the existence of the long-run relationship between the variables under consideration is tested by computing the F-statistic which is then compared with the lower and upper bounds F-Bound statistics. The distribution of this F-statistic, however, is non-standard regardless of whether the regressors are I [0] or I [1]. Pesaran and Pesaran (1997) provided two sets of critical values for the test of cointegration. The lower critical bound assumes all the variables to be I [0], implying there is no co-integration among the variables. The upper bound, on the other hand, assumes all variables to be I [1]. If the computed F-statistic is greater than the upper critical bound, then the null hypothesis will be rejected implying the existence of a co-integrating relationship

among the variables. If the F-statistic falls below the lower critical bounds value, then it implies that there is no co-integration relationship.

In order to obtain the optimal lags for each variable the ARDL approach estimates $(p + 1)^k$ number of regressions, where p represents the maximum number of lags to be used and k is the number of variables in the equation (Shrestha & Chowdhury, 2005). The model is selected based on the Schwarz-Bayesian Criterion (SBC) or the Akaike Information Criterion (AIC). The SBC uses the smallest possible lag length and it is considered as the most parsimonious model, whereas the AIC chooses the maximum necessary lag length (Shrestha & Chowdhury, 2005).

After establishing cointegration from the ARDL model above, the long-run and error correction estimates of the ARDL are then obtained. The diagnostic test statistics of the selected ARDL model can then be examined from the short-run estimates at this stage of the estimation procedure. The stability of the parameters of the model is tested by using the CUSUM test. The Schwartz-Bayesian Criteria (SBC), the Akaike Information Criteria (AIC), or the Hannan and Quinn (HQ) criterion are then used to select the orders of the lags of the ARDL models.

Once cointegration relationship is established, the selected long-run ARDL model can be estimated in order to obtain long run coefficients and their asymptotic standard errors. The long run estimation investigates the impact of each variable with the dependent variable, which in this case is FDI, and it will follow Equation 5 ARDL model:

$$InGDP_t = \alpha_0 + \sum_{i=1}^{n} \alpha_{1i}\ InRGDP_{t-1} + \sum_{i=0}^{n} \alpha_{2i}\ InFDI_{t-1} + \sum_{i=0}^{n} \alpha_{3i}\ InEXP_{t-1} + \epsilon_t \qquad [5]$$

After estimating the selected long-run ARDL model, the next step is to then estimate the short-run elasticities of the variables within the framework of the error correction model (ECM) representation of the ARDL model. The speed of adjustment to equilibrium is determined by the coefficient of the ARDL model which is supposed to be negative and significant for it to be interpreted. The existence of the long - run relationship among the variables necessitates the estimation of the unrestricted ARDL error correction representation as shown below.

$$\Delta InRGDP_t = \propto_0 + \sum_{i=1}^{n} \propto_{1i} \Delta InRGDP_{t-1} + \sum_{i=0}^{n} \propto_{2i} \Delta InFDI_{t-1} + \sum_{i=0}^{n} \propto_{3i} \Delta InEXP_{t-1} \Delta \phi ECM_{t-1} + e_t \quad [6]$$

Where ϕ is the speed of adjustment parameter and ECM_{t-1} represents the residual obtained from the long run OLS equation of the three variables which are used in the study. . The α coefficients represent the short run dynamics while ϕ represents the speed of adjustment towards the long run as a result of a shock to the system. In order to further confirm the presence of a cointegrating relationship among the variables in the model, it is expected that the coefficient of the lagged error correction term should be negative and significant.

The reliability of the goodness of fit of the model is determined by conducting the stability tests using the CUSUM test. The diagnostic tests take account of heteroscedasticity, autocorrelation, normality and the functional form linked with the selected model. The CUSUM and CUSUMSQ are used to perform parameter stability tests (Pesaran & Pesaran, 1997).

4.3.3 Granger Causality Tests

It is important to establish causality between economic variables as unidirectional or bidirectional so that the actual way the variables relate is established. To examine the question of whether an economic variable causes each other, the Granger causality approach is usually employed.

Granger (1969) definition states that $X_t$causes Y_t if the history of X_t can be used in predicting Y_t more accurately than simply using the history of Y_t only. Thus, Y_t is said to be Granger-caused by X_t if X_t helps in the prediction of Y_t, or equivalently if the coefficients of the lagged X_t are statistically significant. This type of causality is useful principally for two purposes. First, it is equivalent to the econometric exogeneity such that unidirectional causality that runs from the explanatory variables to the dependent variables is necessary for the consistent estimation of distributed lag models that do not involve lagged dependent variables. Finally, it is related to leading indicators and rational expectations. Granger (1969) argued that testing for Granger causality provides a useful way of evaluating the information useful in forming economically rational expectations. Granger's definition of causality amounts to estimating;

$$X_t = \sum_{i=1}^{\infty} \alpha_i Y_{t-1} + \sum_{i=1}^{\infty} \alpha_i Y_{t-1} + e_t \quad [7]$$

$$Y_t = \sum_{i=1}^{\infty} \phi_i X_{t-1} + \sum_{i=1}^{\infty} \phi_i X_{t-1} + \upsilon_t \quad [8]$$

where δ_i = (I 1, 2… ∞) so that Y_t fails to causeX_t.

Causality in equation (7) is from Y_t to X_t if and only if the coefficients on the lagged variable Y_t are statistically different from zero. Conversely, causality in equation (8) is from X_t to Y_t if and only if the coefficients on the lagged are X_t is statistically different from zero.

4.4.1 Data, data sources and data measurements

The study was conducted on a macro level and as such, quarterly data covering the period 1980 to 2013 was employed. GDP and exports data was collected from the Bank of Namibia and the FDI figures were collected from the World Bank Statistics. In the current study, Real Gross Domestic Product (GDP) is measured in constant 2004 millions of dollars. Exports (EXP) are measured in constant 2004 millions of Namibian dollars. In the same vein, Foreign Direct Investment inflows (FDI) are also measured in constant 2004 millions of dollars.

4.4.2 Foreign Direct Investment (FDI) inflows

Foreign direct investment is the net inflows of investment to acquire a lasting management interest in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital in the balance of payments. FDI is a powerful tool of export promotion because multinational companies (MNCs) through which most FDI is undertaken have well-established contacts and up-to date information about foreign markets. Therefore, FDI affects trade indirectly through technology spill overs, which improve the international competitiveness of the host country's industry and result in dynamic changes in comparative advantage and industrial structures. If the motive behind FDI is to capture the domestic market with tariff-jumping type investment, it may not contribute to export growth. However, if the motive is to tap export markets by taking advantage of the country's comparative advantage, then FDI may contribute to export growth to the extent permissible under the prevailing policy regime. It is

well known that an outward oriented regime encourages export-oriented FDI while an inward-oriented policy regime attracts FDI mainly to capture domestic rather than export markets. This study expects a positive relationship between FDI and exports.

4.4.3 Exports (EXP)

Exports of goods are valued FOB (free on board), which means they include the value in the market at the frontier of the country such as costs of transport and export duties. Exports are measured in terms of export values in million Namibian Dollars. The study employs the ratio of export to GDP as a measure of exports and expects to have a positive relationship with FDI.

4.4.4 Real Gross Domestic Product (RGDP)

The measure of the total value added (total value of the goods and services produced within the country less raw materials, and other goods and services consumed during the production process) in all resident producing units (NSA report, 2013). The gross domestic product (GDP) is equal to the total expenditures of all final goods and services produced within the country in a given period. Thus, the study expects GDP and exports to have a positive relationship. In other words, if GDP increases, it is expected that exports increase and vice versa.

4.5. Summary

The purpose of this chapter was to discuss in detail the research methodology of this study, explain the sample time frame, describe the units of measurements, and describes the procedures of the model involved as well as the equation to be estimated to analyse the data.

The ARDL model was explained in detail including how the ARDL error correction model is derived. All the necessary tests that was conducted in the study were explained, including the Granger causality tests the Wald test, autocorrelation and stability tests.

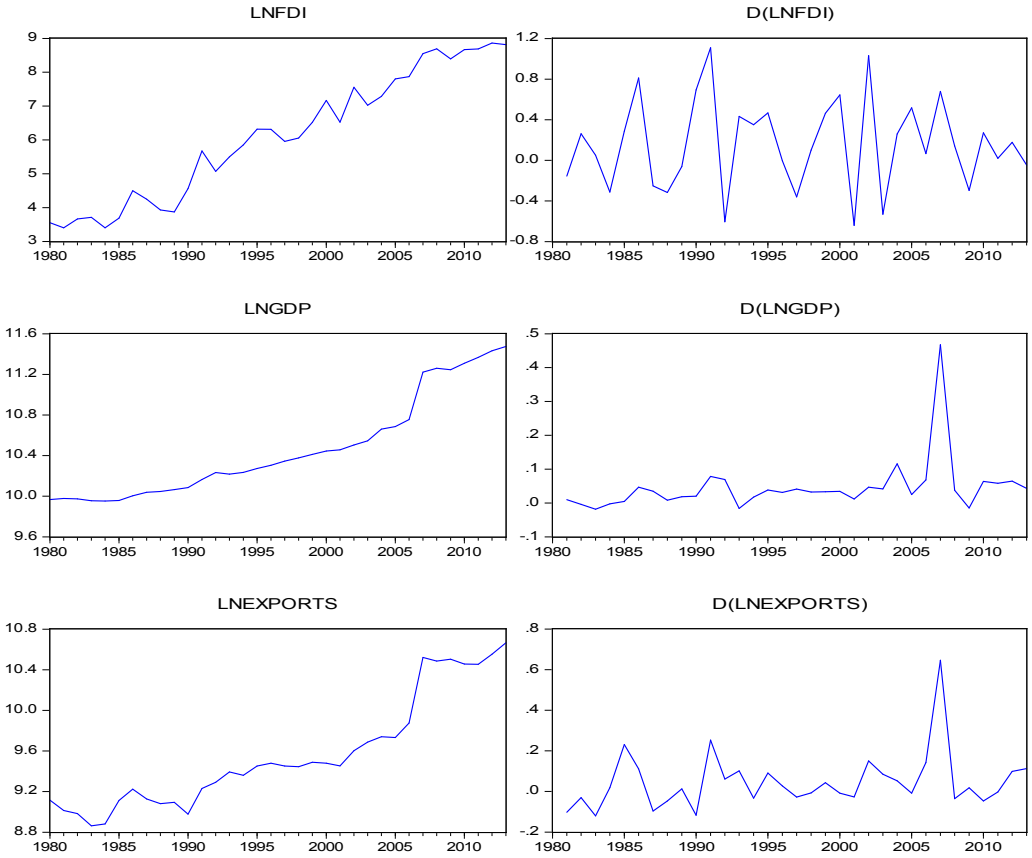
CHAPTER 5: MODEL ESTIMATION AND INTERPRETATION OF RESULTS

5.1. Introduction

In the previous chapter, all the necessary tests that need to be conducted in the study were explained in-depth. Therefore, this chapter presents the results of the study. The results provide an insight to understand the relationship between economic growth, exports and FDI in Namibia based methodology used. This chapter is divided into four sections. Section 5.2 presents the graphical analysis of the variables that are shown to be non-stationary in levels. Section 5.3 discusses the unit root results of variables, while section 5.4 discusses the ARDL bounds test. The results relating to Granger causality are presented.

5.2. Graphical Analysis

FIGURE 5.1: UNIT ROOT TEST USING THE DIAGRAMMATIC APPROACH



SOURCE: Author's compilation

Figure 7 above clearly shows that all the variables are non-stationary in levels, but they become stationary after first differencing. These results are bolstered by the ADF and PP unit root tests that are explained below.

5.3 Unit root test

The unit root tests of the variables included in the model were conducted, even though the bounds approach does not necessarily require the pre-testing of variables for the presence of unit roots. The Bounds test requires that none of the series be integrated of an order higher than one. This is to avert the problem of spurious regression. The Augmented Dickey-Fuller (ADF) and the Phillips-Perron (PP) tests for unit root were employed and the results are shown in Table 3 below.

TABLE 5.1 : AUGMENTED DICKEY-FULLER (ADF) AND THE PHILLIPS-PERRON (PP) UNIT ROOTS

Variables	**ADF**		**PP**		**Order of Integration**
	Level	**1st difference**	**Level**	**1st difference**	
InEXPO	0.326632	-5.24788***	1.367040	-5.49819***	I(1)
InFDI	-0.523784**	-7.50249***	-0.488139**	-13.2532***	I(1)
InGDP	1.252105	-5.03718***	1.477434	-5.03591***	I(1)

Note: ***, **and * indicate the rejection of the null hypothesis of non-stationary at 1%, 5% and 10% significance level. Δ denotes first difference and *I [0]* am the order of integration. The values in parenthesis are the P-values.
SOURCE: Author's compilation

The unit root tests were done in levels and first difference for all the variables, using the intercepts only and intercept and trend. The results show that all variables became stationary after first differencing and this means that the variables are integrated of one order I(1). This means that *lnGDP*, *lnFDI,* and *lnEXPORT* become stationary and do not contain unit root after first differencing at the 1 per cent level of significance. According to Engle and Granger

(1987), variables with the same order of integration can be tested for cointegration. In view of this, the results from the unit root tests gave the green light for one to proceed with the cointegration test. Therefore, the study used the autoregressive distributed lag (ARDL) bounds model to test for both the short and the long run relationships.

5.4 ARDL Bounds Tests for Cointegration

In order to empirically analyse the long run relationships and short run dynamic interactions among FDI, exports and GDP, the study employed the Autoregressive distributed lag (ARDL) cointegration technique. Pesaran and Shin (1999) and Pesaran et al. (2001) developed this approach.

This analysis makes use of unrestricted error correction model in equation 4 to establish whether there is a long run relationship between the variables. The first step is to estimate a VAR in which GDP is the endogenous variable and exports and FDI are treated as exogenous variables and the results from this estimation is used to determine the lag order. Hence, Akaike Information Criteria (AIC) and Schwarz information Criteria (SC) are used to determine the optimal lag length in the equation. The maximum lag length was found to be 6. To test for cointegration the study uses the results in Table 4 below.

TABLE 5.2: VAR LAG ORDER SELECTION

Lag	LogL	LR	FPE	AIC	SC	HQ
0	133.8656	NA	0.007577	-2.044775	-1.977930	-2.017615
1	421.0982	556.5132	8.65e-05	-6.517159	-6.428033	-6.480947
2	445.1074	46.14268	6.04e-05	-6.876678	-6.765270	-6.831412
3	445.5505	0.844730	6.09e-05	-6.867977	-6.734288	-6.813658
4	446.3102	1.436316	6.12e-05	-6.864222	-6.708252	-6.800850
5	461.3270	28.15654	4.91e-05	-7.083235	-6.904983	-7.010810
6	473.1159	21.91986*	4.15e-05*	-7.251810*	-7.051277*	-7.170333*
7	473.1842	0.125911	4.21e-05	-7.237252	-7.014438	-7.146722
8	473.8855	1.282244	4.23e-05	-7.232587	-6.987490	-7.133003

* indicates lag order selected by the criterion LR: sequential modified LR test statistic (each test at 5% level) FPE: Final prediction error AIC: Akaike information criterion SC: Schwarz information criterion HQ: Hannan-Quinn information criterion

SOURCE: Author's compilation

After establishing the appropriate lag length the next step is to estimate the ARDL model where GDP is explained by six lags of D(GDP), D(exports) and D(FDI) and GDP(-1), Exports(-1) and FDI(-1). The variables that are lagged once in levels are the ones that are used to test for cointegration using the Wald test and the Bounds critical values. The general equation that is estimated to give the results in table 4 is given below as Equation 9:

$$D(GDP) = C(1) + C(2) * D(GDP(-1)) + C(3) * D(GDP(-2)) + C(4) * D(GDP(-3)) + C(5) * D(GDP(-4)) + C(6) * D(GDP(-5)) + C(7) * D(GDP(\ 6)) \mid C(8) * D(FDI(\ 1)) \mid C(9) * D(FDI(\ 2)) \mid C(10) * D(FDI(-3)) + C(11) * D(FDI(-4)) + C(12) * D(FDI(-5)) + C(13) * D(FDI(-6)) + C(14) * D(EXPORTS(-1)) + C(15) * D(EXPORTS(-2)) + C(16) * D(EXPORTS(-3)) + C(17) * D(EXPORTS(-4)) + C(18) * D(EXPORTS(-5)) + C(19) * D(EXPORTS(-6)) + C(20) * GDP(-1) + C(21) * FDI(-1) + C(22) * EXPORTS(-1)$$

[9]

Equation 9 is estimated to give the results in Table 5. These are the results that the study uses to determine if the variables used in the study are cointegrated or not. In order to do the cointegration test study uses the coefficients C (20), C (21) and C (22).

TABLE 3.3: ARDL MODEL: DEPENDENT VARIABLE: D (GDP)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-11493512	4787143.	-2.400913	0.0181
D(GDP(-1))	0.668011	0.118222	5.650482	0.0000
D(GDP(-2))	0.124523	0.127992	0.972900	0.3328
D(GDP(-3))	0.009477	0.080825	0.117248	0.9069
D(GDP(-4))	-0.937566	0.080853	-11.59600	0.0000

D(GDP(-5))	0.596460	0.128714	4.633984	0.0000
D(GDP(-6))	0.064822	0.121115	0.535211	0.5936
D(FDI(-1))	0.012379	0.133552	0.092693	0.9263
D(FDI(-2))	0.106958	0.164250	0.651191	0.5163
D(FDI(-3))	0.049668	0.137413	0.361447	0.7185
D(FDI(-4))	0.047405	0.138800	0.341532	0.7334
D(FDI(-5))	0.013316	0.151334	0.087991	0.9300
D(FDI(-6))	0.054825	0.148617	0.368902	0.7129
D(EXPORTS(-1))	-0.032665	0.068875	-0.474263	0.6363
D(EXPORTS(-2))	-0.001282	0.079797	-0.016067	0.9872
D(EXPORTS(-3))	0.010013	0.074142	0.135051	0.8928
D(EXPORTS(-4))	0.444129	0.074206	5.985105	0.0000
D(EXPORTS(-5))	-0.320171	0.090726	-3.529004	0.0006
D(EXPORTS(-6))	-0.099099	0.081089	-1.222106	0.2244
GDP(-1)	0.012855	0.007132	1.802283	0.0743
FDI(-1)	-0.064398	0.072621	-0.886762	0.3772
EXPORTS(-1)	0.004536	0.020357	0.222813	0.8241
R-squared	0.802836	Mean dependent var		13763735
Adjusted R-squared	0.764141	S.D. dependent var		16700277
S.E. of regression	8110550.	Akaike info criterion		34.80933
Sum squared resid	7.04E+15	Schwarz criterion		35.29705
Log likelihood	-2223.202	Hannan-Quinn criter.		35.00750
F-statistic	20.74744	Durbin-Watson stat		2.011484
Prob(F-statistic)	0.000000			

SOURCE: Author's compilation

5.5 Testing for Cointegration

C(2) to C(19) are the short run coefficients and C(20) to C(22) are the long run coefficients in the results shown in Table 5. The study test if these three variables have a long run association (cointegrated). Hence, the study uses the Wald test to test cointegration. The hypothesis used are summarised below:

H_0 : C(20)=C(21)=C(22)=0 (the coefficients are jointly equal to zero)

H_1 : C(20)≠C(21)≠C(22)≠0 (the coefficients are jointly not equal to zero)

The results of the Wald test are summarised in Table 6. In this analysis, the study does not use the probability values of the F or Chi-Square statistic but it uses the calculated F-statisitc and compares it with the Pesaran Bounds critical values.

TABLE 5.4 : WALD TEST FOR COINTEGRATION

Test Statistic	Value	df	Probability
F-statistic	**3.757769**	(3, 107)	0.0131
Chi-square	11.27331	3	0.0103

SOURCE: Author's compilation

To do this the study compares the calculated F-statistic with the Bounds critical values at the 5% level of significance. The calculated F-statistic is 3.757769. This figure is compared with the lower and the upper bounds of the Pesaran bounds test critical values. According to the Pesaran critical tables the Lower bound is 2.41 and the Upper bound is 3.55. If the calculated F-value is greater than the Upper bound of the critical values the study rejects the null hypothesis. This means that there is cointegration among the three variables. In other words, these three variables move together in the long run. This implies that the study can develop the ARDL error correction model.

5.5.1 Validity of the ARDL results

The next step in the use of the ARDL model to test if the model results can be trusted. To do this it uses the autocorrelation and the CUSUM test. If these two tests give good results, then the study can conclude that the results it came up can be considered as valid and authentic.

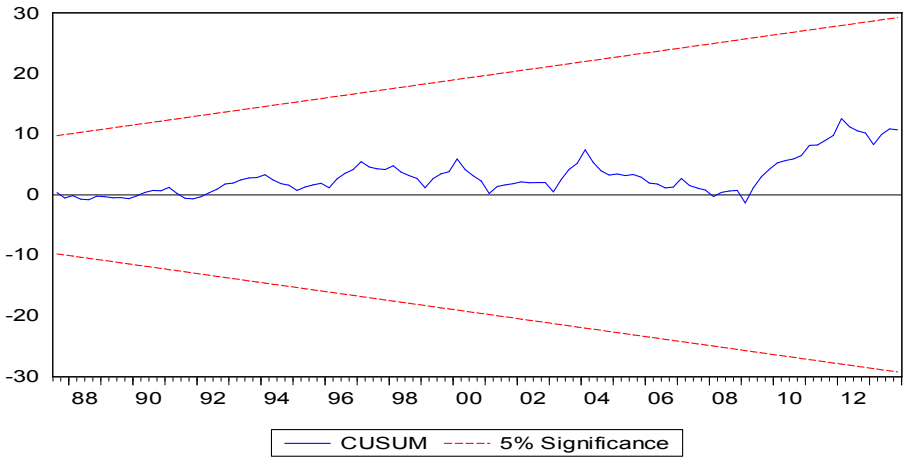
TABLE 5.5 : BREUSCH-GODFREY SERIAL CORRELATION LM TEST

F-statistic	0.874573	Prob. F(2,105)	0.4201
Obs*R-squared	2.113740	Prob. Chi-Square(2)	0.3475

SOURCE: Author's compilation

The results in Table 7 show that the ARDL model estimated in Table 5 are free from autocorrelation since the probability values for both the F-statistic and the Obs*R-Squared are greater than 0.05. In addition, the results of the CUSUM test show that the parameters of the variables used in the ARDL model are stable at the 5 percent level of significance. Since both the autocorrelation and the CUSUM test are giving good results the study can conclude that the ARDL model results are valid and can be relied upon. This means that the study can go ahead to specify and estimate the ARDL Error Correction Model. However, before the ARDL Error Correction Model is estimated the study has to run the long run model for the three variables so that the error terms that are used in the ARDL Error Correction Model can be generated. The next section shows the long run results that are used to generate the error terms which are used as the ECT variable in the ARDL Error Correction Model.

FIGURE 5.2: THE CUSUM TEST



SOURCE: Author's compilation

5.5.2 Long Run Model Estimation

Get the errors from long run model in Table 7 so that they can be used in the Error Correction Model. The errors that are generated are called ECT for the purposes of the ARDL ECM model that is estimated in the next section.

TABLE 5.6: DEPENDENT VARIABLE: LNGDP

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	9.521646	0.350681	27.15185	0.0000
LNFDI	0.001315	0.001274	1.032453	0.3037
LNEXPORTS	0.574258	0.017896	32.08882	0.0000
R-squared	0.905371	Mean dependent var		21.01690
Adjusted R-squared	0.903948	S.D. dependent var		0.351039
S.E. of regression	0.108795	Akaike info criterion		-1.576886
Sum squared resid	1.574243	Schwarz criterion		-1.512636
Log likelihood	110.2282	Hannan-Quinn criter.		-1.550776
F-statistic	636.2409	Durbin-Watson stat		0.032602
Prob(F-statistic)	0.000000			

SOURCE: Author's compilation

5.5.3 The ARDL Error Correction Model

The general model that is estimated to give the results that are represented in Table 9 is Equation 10. According to equation 10 C(2) to C(19) are the short run coefficients and C(20) is the coefficient of the Error Correction Term (ECT). C(20) is the one that gives information about the speed of adjustment of GDP towards its long run equilibrium. C(1) represents the constant in this equation.

D(GDP) = C(1) + C(2)*D(GDP(-1)) + C(3)*D(GDP(-2)) + C(4)*D(GDP(-3)) + C(5)*D(GDP(-4)) + C(6)*D(GDP(-5)) + C(7)*D(GDP(-6)) + C(8)*D(FDI(-1)) + C(9)*D(FDI(-2)) + C(10)*D(FDI(-3)) + C(11)*D(FDI(-4)) + C(12)*D(FDI(-5)) + C(13)*D(FDI(-6)) + C(14)*D(EXPORTS(-1)) + C(15)*D(EXPORTS(-2)) + C(16)*D(EXPORTS(-3)) + C(17)*D(EXPORTS(-4)) + C(18)*D(EXPORTS(-5)) + C(19)*D(EXPORTS(-6)) + C(20)*ECT(-1) [10]

TABLE 5.7: THE ARDL ERROR CORRECTION MODEL

Dependent Variable: D(GDP)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2198780.	1295649.	1.697049	0.0925
D(GDP(-1))	0.762132	0.118097	6.453463	0.0000
D(GDP(-2))	0.173398	0.131721	1.316399	0.1908
D(GDP(-3))	0.014165	0.083750	0.169139	0.8660
D(GDP(-4))	-0.932459	0.083751	-11.13373	0.0000
D(GDP(-5))	0.683377	0.130114	5.252139	0.0000
D(GDP(-6))	0.129713	0.123548	1.049903	0.2961
D(FDI(-1))	-0.022676	0.136449	-0.166185	0.8683
D(FDI(-2))	0.021384	0.157965	0.135372	0.8926
D(FDI(-3))	0.017279	0.136848	0.126266	0.8998
D(FDI(-4))	0.007780	0.136812	0.056870	0.9548
D(FDI(-5))	-0.014920	0.155813	-0.095758	0.9239
D(FDI(-6))	-0.012737	0.142360	-0.089471	0.9289
D(EXPORTS(-1))	-0.029478	0.070797	-0.416378	0.6780
D(EXPORTS(-2))	0.012679	0.081999	0.154621	0.8774
D(EXPORTS(-3))	0.012956	0.076473	0.169418	0.8658
D(EXPORTS(-4))	0.449004	0.076502	5.869176	0.0000
D(EXPORTS(-5))	-0.348278	0.093553	-3.722779	0.0003
D(EXPORTS(-6))	-0.077299	0.083745	-0.923030	0.3580
ECT(-1)	**-0.51217.**	9342300**.**	**-5.043829**	**0.2989**
R-squared	**0.784220**	Mean dependent var		13763735
Adjusted R-squared	**0.746607**	S.D. dependent var		16700277
S.E. of regression	8406603.	Akaike info criterion		34.86855
Sum squared resid	7.70E+15	Schwarz criterion		35.31193
Log likelihood	-2229.021	Hannan-Quinn criter.		35.04870
F-statistic	**20.84975**	Durbin-Watson stat		**1.987357**
Prob(F-statistic)	**0.000000**			

SOURCE: Author's compilation

5.6 The Wald Tests for the Lags of the Independent Variables

5.6.1 The Wald Test for the influence of GDP on GDP

The results in Table 10 show that the lags of GDP are significant in explaining changes in the dependent variable GDP in the short run since the probability values are less than five percent. In this case the study rejects the null hypothesis that C(2) to C(7) are jointly equal to zero.

TABLE 5.8: GDP WALD TEST

Test Statistic	Value	df	Probability
F-statistic	35.28664	(6, 109)	0.0000
Chi-square	211.7199	6	0.0000

Null Hypothesis: C(2)=C(3)=C(4)=C(5)=C(6)=C(7)=0

SOURCE: Author's compilation

5.6.2 The Wald Test for influence of FDI on GDP

Since the probability value of the Chi-Square test is greater than 5%, this means that FDI coefficients jointly do not affect GDP in the short run. This means that FDI is not important in explaining GDP in the short run in Namibia.

TABLE 5.9: WALD TEST FOR LAGS OF FDI

Equation: Untitled			
Test Statistic	Value	df	Probability
F-statistic	0.204925	(7, 109)	0.9837
Chi-square	1.434478	7	0.9845
Null Hypothesis: C(8)=C(9)=C(10)=C(11)=C(12)=C(13)=0			

5.6.3 The Wald Test for the influence of Exports on GDP

The coefficients of the lags of exports are not jointly zero since probabilities of the F and Chi-Square statistics are less than five percent. This means that exports are important in explaining GDP in Namibia in the short run.

TABLE 5.10: WALD TEST FOR LAGS OF EXPORTS

Test Statistic	Value	df	Probability
F-statistic	8.664696	(6, 109)	0.0000
Chi-square	51.98818	6	0.0000
Null Hypothesis: C(14)=C(15)=C(16)=C(17)=C(18)=C(19)=0			

SOURCE: Author's compilation

5.6.4 The Bounds Test for Long Run Significance

In this case, the Bounds Test is used to check if the t-statistic of the error correction term is significant or not. In this case, the study compares the calculated t-statistic with the upper and lower bounds of the Pesaran Bounds test. From Table 9 the calculated t-statistic is -5.043829 and the Lower Bound is -3.41and the Upper Bound is -5.29. Since the calculated t-statistic lies between the LB and the UB this means that ECT is insignificant. This means that GDP, FDI and Exports do not cause GDP in the long run.

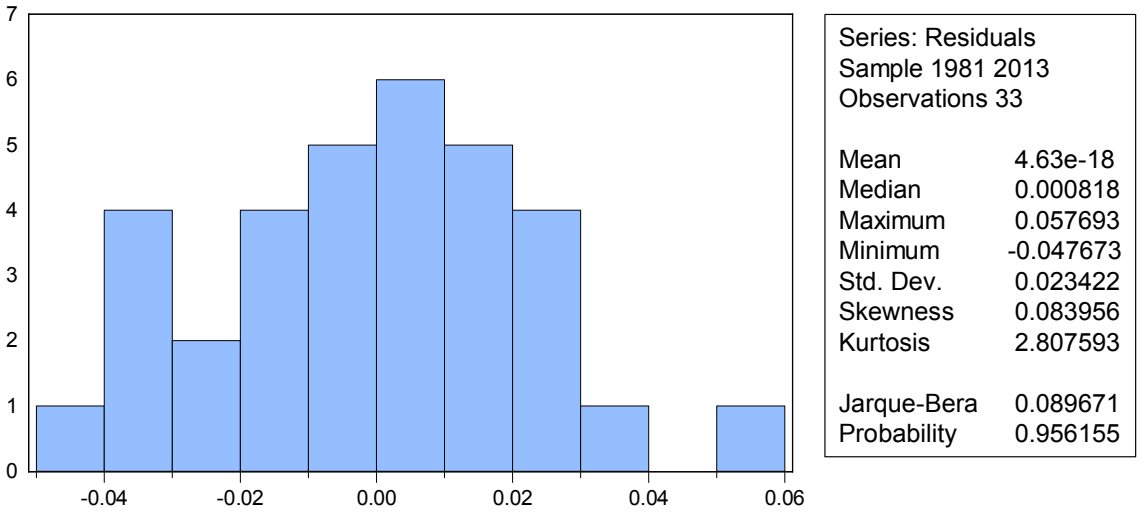
5.7 Statistical Validity of the Model

To test for the validity of the model the study used the normality, autocorrelation, heteroscedasticity, stability tests. The results of these tests are explained in the next sections.

5.7.1 Normality Test

The Jarque Bera normality test shows that the residuals in the ARDL ECM are normally distributed. This is what is considered good for the model.

FIGURE 5.3: THE JARQUE BERA NORMALITY TEST



SOURCE: Author's compilation

5.7.2 Autocorrelation Test

Since the probability values of both the F and the Obs*R-Squared are greater than five percent the null hypothesis is accepted that ARDL ECM in Table 6 is free from autocorrelation.

TABLE 5.11: BREUSCH-GODFREY SERIAL CORRELATION LM TEST

F-statistic	0.054966	Prob. F(2,28)	0.9466
Obs*R-squared	0.129056	Prob. Chi-Square(2)	0.9375

SOURCE: Author's compilation

5.7.3 Heteroscedasticity Test

The test for heteroscedasticity also shows that there is no heteroscedasticity in the results in Table 6.

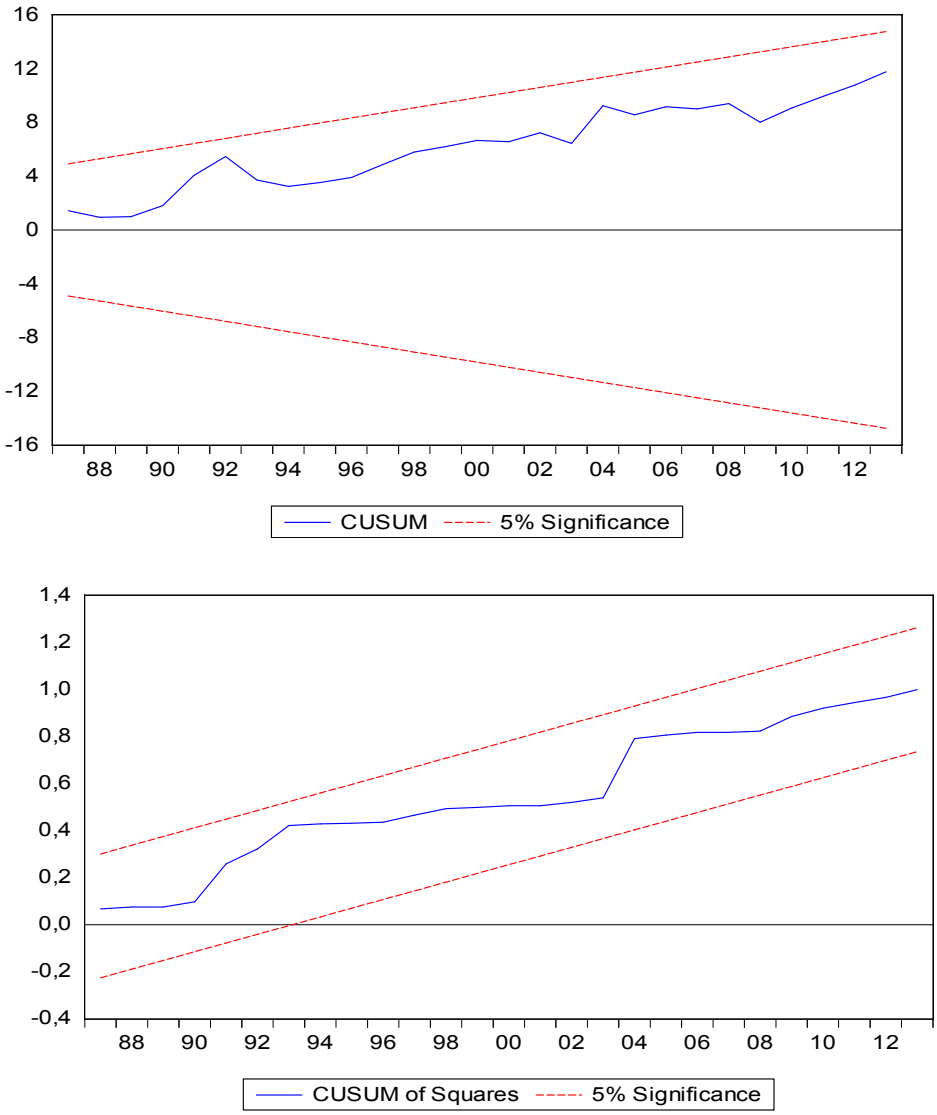
TABLE 5.12: HETEROSKEDASTICITY TEST: ARCH

F-statistic	0.289007	Prob. F(1,30)	0.5948
Obs*R-squared	0.305332	Prob. Chi-Square(1)	0.5806

SOURCE: Author's compilation

5.7.4 The Cusum Stability tests.

FIGURE 5.4: THE CUSUM OF SQUARES TEST



SOURCE: Author's compilation

The CUSUM and CUSUM of Squares Test show that the parameters in Equation 10 are stable. All the tests conducted above indicate that the results in the ARDL ECM are valid. This proves the fact that there is no problem with the results obtained.

5.8 Granger causality

The last part of the study used the Granger causality to test for causality among the variables. Employing the pairwise Granger causality test attributed to Granger (1969), the following results were obtained as depicted in Table 9. When testing for Granger causality between variables, the following possible outcomes can be expected. One variable may Granger cause the other (univariate causality) and in other cases, both variables Granger cause each other, in which case, there is bivariate causality. Table 9 below, shows the pairwise Granger causality tests for the three variables used in the study.

TABLE 5.13: PAIRWISE GRANGER CAUSALITY TESTS

Null Hypothesis:	F-Statistic	Prob.	Remarks
D(LNFDI) does not Granger Cause D(LNGDP)	2.15267	0.1364	Do not reject the null hypothesis
D(LNGDP) does not Granger Cause D(LNFDI)	0.17181	0.8431	Do not reject the null hypothesis
D(LNEXPORTS) does not Granger Cause D(LNGDP)	2.12748	0.1394	Do not reject the null hypothesis
D(LNGDP) does not Granger Cause D(LNEXPORTS)	0.06505	0.9372	Do not reject the null hypothesis
D(LNEXPORTS) does not Granger Cause D(LNFDI)	0.71597	0.4981	Do not reject the null hypothesis
D(LNFDI) does not Granger Cause D(LNEXPORTS)	0.05984	0.9420	Do not reject the null hypothesis

Source: Computed by Author using Eviews 7.0 Note: *, **, and ***, indicates a rejection of the null at 1, 5, &10 percent significance level

SOURCE: Author's compilation

Causality can be assumed to move from one variable to the other. On the other hand, a test concludes that a variable does not Granger cause the other, when the set of coefficients on the

variables are not statistically significant. As a result, the Granger causality tests between two variables X and Y conclude that there is unidirectional causality from X to Y if X Granger causes Y but Y does not Granger cause X. In addition, Granger causality tests conclude that there is bidirectional causality between X and Y if X Granger causes Y and Y Granger causes X. The null hypothesis of X does not Granger cause Y is tested against the alternative that X Granger causes Y.

The results in the Table 9 indicate that FDI does Granger causes GDP and GDP Granger causes do Granger cause FDI. This means that there is bidirectional causality between FDI and GDP. However, Exports do Granger cause FDI and FDI also Granger causes Exports. This means that there is bidirectional causality between FDI and Exports. Lastly, Exports also do Granger cause GDP and GDP Granger causes Exports. This implies that there is also bidirectional causality between Exports and GDP. The Granger causality results appear to be giving results that are different from what was obtained using the ARDL ECM, especially when it comes to the relationship between GDP and FDI. As far as the relationship between exports and GDP is concerned the Granger causality and the ARDL ECM results concur.

5.9 Conclusion

The current chapter discussed the results related to the study. Unit root tests and cointegration test results are the ones that were discussed in the first parts of the chapter. The other results that were discussed are related to the ARDL model and the ARDL ECM. The study found that economic growth is explained by itself and exports in the short run and that FDI does not have a role to play in explaining economic growth in the short run. The study also established that exports, FDI and GDP do not explain economic growth in the long run. The study also

established that the models estimated were valid and this was tested by using the autocorrelation, heteroscedasticity, normality and the CUSUM tests.

CHAPTER 6: CONCLUSIONS AND POLICY RECOMMENDATIONS

6.1. Introduction

In the previous chapter, the results of the model estimation were obtained and analysed accordingly. Therefore, this chapter presents the summary of the study results and the conclusion. This chapter is divided into three sections. Section 5.2 presents the conclusions of the study, while section 5.3 presents the recommendations of the study and section 5.4 discusses the areas of further research.

6.2. Conclusion

The three variables used in the study were found to be non-stationary in levels, but they became stationary after first differencing. The cointegration results showed that the three variables are cointegrated using the ARDL model. The results from the Error correction model show that there is no long run relationship between GDP (dependant variable) and Exports and FDI (independent variables). However, in the short run joint coefficients of FDI do not affect GDP. In addition, lagged exports and lagged GDP affect GDP.

The approach used for cointegration analysis was the Autoregressive Distributed Lagged Model (ARDL). The bounds test for cointegration was used to test whether there are long run relationships between FDI, exports, and GDP, and the results show that there a long run relationship among these variables and this is what allowed us to specify an ARDL Error Correction Model.

From the ARDL ECM the study found that the lags of GDP are significant in explaining changes in the dependent variable GDP in the short run. The study also found that FDI coefficients jointly do not affect GDP in the short run. This means that FDI is not important in explaining GDP in the short run in Namibia. However, the major problem or limitation of FDI with no effect on economic growth can be the domestic policies such as monetary, fiscal, production technology, financial structures and external shocks. Although, many believe that FDI boosts the productivity of host countries sustained economic growth, this is not true for Namibia since benefits from FDI do not contribute to economic growth. The technological gap between foreign firms and domestic firms is an important factor in determining whether domestic firms can benefit from interaction with foreign firms. This may be the cause foe the finding of insignificant impact of FDI on economic growth. In addition, the study also found that the coefficients of the lags of exports are not jointly zero. This means that exports are considered as of the main determinants of economic growth in Namibia. The results are consistent with growth theories which states that exports promotion can generate permanent effects on the level of GDP. Therefore, Namibia need to provide a wide range of incentives that encourages partners to exports more goods and services.

The study also found that GDP, FDI and Exports do not cause GDP in the long run using the Bounds test t-statistic. Thus, GDP is only explained by itself and exports in the short run and FDI does not explain GDP in both the short run and long run.

The Jarque Bera normality, the autocorrelation, the heteroscedasticity and the CUSUM tests were used to test the validity of the results of the study and all these tests gave results that point to the fact that the ARDL ECM results are valid and therefore can be relied upon.

The Granger causality test results indicate that FDI does Granger causes GDP and GDP Granger causes do Granger cause FDI. This means that there is bidirectional causality between FDI and GDP. However, Exports do Granger cause FDI and FDI also Granger causes Exports. This means that there is bidirectional causality between FDI and Exports. Lastly, Exports also do Granger cause GDP and GDP Granger causes Exports. This implies that there is also bidirectional causality between Exports and GDP. The Granger causality results appear to be giving results that are different from what the study got using the ARDL ECM, especially when it comes to the relationship between GDP and FDI. As far as the relationship between exports and GDP is concerned the Granger causality and the ARDL ECM results concur. The finding of causal relationship between exports and GDP is in line with Kaulihowa and Yinusa (2007), Jordaan and Heita (2007) and Niishinda and Ogbokor (2013).

6.3. Recommendations

Trade openness is important as a vehicle from technological spillovers. In order to benefit from trade openness, a country needs to have trade partners that are capable to provide the country with technology embodied in products, machines and equipment in which the country is in short supply. Exports need to be promoted for the economy to grow and this is in line with what was found in this study. Thus, Namibia can further strengthen its export oriented growth strategy if it wants to grow the economy further. Although FDI has been found insignificant in determining economic growth in Namibia it can still be attracted further, if it is attracted in large enough quantities it may eventually have an impact on the growth of the economy. This means that even if FDI is currently insignificant in influencing growth, there is great potential for it become an important factor explaining growth in Namibia in the future. Thus, Namibia need to review the tariff system and any other barriers

that may act to inhabit a smooth FDI flows in the country, because with liberalization and openness the country has to move to higher value added, skill intensive and high wages industries. Therefore, the country should focus on improving on infrastructures, training productive workers, provide adequate water, sufficient power supply and encourage domestic firms to invest in technology to attract more FDI. Finally, the effect of FDI on economic growth will be stronger when Namibia encourages export oriented FDI, improve human capital conditions, liberalise trade regime, maintain political and economic stability and increasing R&D investments.

6.4. Area of further study

Future investigation towards the relationship between economic growth, FDI and exports is strongly recommended. Future researchers can include more variables such as labour, capital and imports because literature argued that labour abundant countries need to specialise in production of labour intensive goods and those countries that are capital abundant should specialise in capital intensive goods. Therefore, Dunning (1998) believes that, the relationship between FDI and exports depends on the motives of MNCs when undertaking investments in foreign countries. These motives may have positive or negative impact on imports and exports. Furthermore, they may use different methodologies such as structural vector auto regression, which uses more sophisticated analysis such as impulse response and variance decomposition functions. Finally, there is also a need for future research to look specifically on the sectoral and regional distribution of FDI to export sector as well as FDI specific effect to the export sector.

REFERENCES

Acaravci, A. & Ozturk, I. (2012). Foreign Direct Investments, exports and economic growth: Empirical evidence from new EU countries', *Journal for Economic Forecasting*, 2, 52-67.

Ahmadi, R. and Ghanbarzadeh, M. (2011). FDI, exports and economic growth: Evidence from MENA Region. Middle-East Journal of Scientific Research, 10: 174-182.

Ahmed, A., Cheng, E., and Messinis, G. (2007). "Causal links between exports, FDI and output: Evidence from Sub-Saharan African Countries". *Working Paper*, No. 35, centre of strategic economics, University of Australia.

Akinkugbe, O. (2006). Measuring the Benefits and Costs of Foreign Direct Investment in Namibia. *Bank of Namibian Annual Symposium*, Windhoek.

Aktar, I., Ozturk, L., & Demirci, N. (2008). *The Impact of FDI, Export, Economic Growth, Total Fixed Investment on Unemployment in Turkey*. Kirikkale University, Turkey

Arrow, K.J. (1962) `Economic Welfare and the Allocation of Resources for Invention. 'The Rate and Direction of Inventive Activity (Princeton, N.J.: Princeton University Press).

Bank of Namibia, (1993-2013*). Bank of Namibia*, *Quarterly Report*, Windhoek.

Babalola, S. J., Dogon-Daji, S.D., and Saka, J. O. (2012). Exports, foreign direct investment and economic growth: "An empirical Application for Nigeria". *Canadian Center of Science and Education*.

Baharumshah, A. Z., and Rashid, S. (1999). "Exports, Imports and Economic Growth in Malaysia". *Asian Economic Journal*, 13(4): pp. 389-406.

Balassa, B. (1978). Exports and economic growth: Further evidence. *Journal of Development Economics* 5 (2): 181-189.

Balassa, B. (1985). Exports, policy choices, and economic growth in developing countries after the 1973 oil shock. *Journal of Development Economics,* 18 (1): 23-35.

Balassubramanyam, V. N., Salisu, M., and Sapsford, D. (1996). Foreign direct investment And Growth in EP and IS countries. *The Economic Journal* 106 (434): 92-105.

Balianmoune-Lutz, M. N. (2004). Does FDI contribute to economic growth? Knowledge about the effects of FDI improves negotiating positions and reduces risk for firms investing in developing countries. *Business Economics* 39 (2): 49-56.

Belloumi, M. (2013). The relationship between trade, FDI, and economic growth in Tunisia: An application of the autoregressive distributed lag model. *Econometrica, 59 (6),* 1551.

Bhagwati, J.N. (1978). "Anatomy and Consequences of Exchange Rate Regimes", *Studies in International Economic Relations*, 10, New York: NBER.

Blomstron, M., Lipsey, R.E. and Kulchucky, K. (1988). "US and Swedish Direct Investment and Exports" in R. Baldwin, ed., *Trade Policy Issues and Empirical Analysis*, University of Chicago Press, Chicago.

Blomström, M., A. Kokko and M. Zejan (2000), *Foreign Direct Investment. Firm and Host Country Strategies*, London: Macmillan.

Borensztein, E., Gregorio, J. D., and Lee, J. -W. (1998). How does foreign direct investment affect economic growth? *Journal of International Economics* 45: 115- 135.

Carbajal, E., Canfield, C., & De la Cruz, J. L. (2008). "Economic Growth, Foreign Direct Investment and International Trade: Evidence on Causality in the Mexican Economy". *Working Paper*, University de los Andes School of Management, Colombia, 5-23.

Carkovic, M. and Levine R., (2003). *Does Foreign Direct Investment Accelerate Economic Growth: Working Paper*. Minneapolis: University of Minnesota.

Chakraborty, C., and Basu, P. (2002). Foreign Direct Investment and growth in India: a cointegration approach. *Applied Economics*, 34: 1061-1073.

Christopher, H. (2012). "Expropriation of foreign direct investment: sectoral patterns from 1993 to 2006". *Review of World Economics*, Springer, Vol. 148(1): 119-149.

Duasa, J. (2007). Malaysian Foreign Direct Investment and Growth: does stability matter? *The Journal of economic Cooperation*, 28 two (2007): 83-98.

Dunning, J. H. (1998). Location and the multinational enterprise: a neglected factor. *Journal of International Business Studies*, *29* (1), 45–66.

Dritsaki, M., Dristaki, C., & Adamopoulos, A. (2004). A causal relationship between trades, Foreign Direct Investment and economic growth in Greece. *American Journal of Applied Sciences,* 1 (3), 230-235.

Edwards, S. (1998). Openness, Productivity and Growth: What Do We Really Know, *Economic Journal,* Vol. 108(447): 383-398.

Ekanayake, E. M., Vogel, R., and Veeramacheneni, B. 2003, 'Openness and economic growth: Empirical evidence on the relationship between output, inward FDI, and trade', *Journal of Business Strategies*, 20 (1), pp. 59-72.

Ericsson, J., and Irandoust, M. (2001). On the causality between foreign direct investment and output: A comparative study. *The International Trade Journal*, 15(1): 122-132.

Favara, M. (2007). FDI and Trade in Eight MENA Countries: Complements or Subtitutes? A Gravity Model Analysis. *Working Paper*, 3, Department of Economic and Financial

Sciences, University of Genoa.

Feder, G. (1983). On exports and economic growth. *Journal of Development Economics* 12: 59-73.

Fosu, A. K. (1990). Export composition and the impact of exports on economic growth developing economies. *Economics Letters* 34: 67-71.

Hansen, H., and Rand, J., (2004). "*On the Causal Links between FDI and Growth in Developing Countries"*. Development Economics Research Group (DERG), University of Copenhagen.

Hsiao, F. S. T. and Hsiao, M. W. (2006). FDI, exports and economic growth in East and Southern Asia – Evidence from time series and panel data causality analyses. *International Conference on Korea and World Economy (July 7-8*). Korea University, Seoul Korea.

Gallova, Z. (2011). A causal relationship between foreign direct investment, economic growth and exports for Central and Eastern Europe. *Working Paper*, University Nam, Karvina, Czech Republic.

Goldberg, L. and Klein, M. (1999). International trade and factor mobility: *An empirical Investigation*. Staff Report 81, Federal Reserve Bank, New York, 22.

Gorg, H., and Greenaway, D. (2004). 'Much Ado about Nothing? Do Domestic Firms Really Benefit from Foreign Direct Investment?'. *World Bank Research Observer*, 19: 171-97.

Granger, C. W. J., (1969). Investigating Causal Relations by Econometric and Cros-Spectral Method. *Econometrica,* 37 (3), 424-438.

Greene, W. H. (2003). Econometric Analysis, 5th ed. Prentice-Hall. *The Journal of economic Cooperation*, 28 2 (2007): 83-98.

Grossman, G.M., and Helpman, E. (1991). Innovation and Growth in the Global Economy (Cambridge, MA: MIT Press).

Gujarati, D. N., (2003). *Basic Econometrics*. New York: McGraw-Hill.

Fernando, A. (2006). "*Regulation and FDI*: Sri Lankan Telecommunications Industry." Monash University, Sri Lanka.

Ikhide, S. (2006). Review of FDI and Domestic Investment: The experience of Developing Countries. *Bank of Namibian Annual Symposium*, Windhoek.

Jordaan, A., and Eita, J. H. (2007). Exports and Economic growth in Namibia: A Granger Causality Analysis. *South African Journal of Economics*, 75 (3), 540-547.

Johansen, S. (1991). Estimation and hypothesis testing of cointegration vectors in gaussian vector autoregressive models*, Econometrica*, 59(6):1551-1580.

Kaulihowa, T., and Yinusa, O. D. (2007). *FDI-Growth Nexus in Namibia: A Vector Error Correction Model.* University of Botswana, Gaborone, Botswana.

Khawar, M. (2005). Foreign Direct Investment and Economic Growth: a Cross Country Analysis. *Global Economy Journal*, 5 (1), 1-11.

Kutan, M.A., Vuksic, G. (2007). Foreign Direct Investment and Export Performance: Empirical Evidence. *Comparative Economic Studies,* September, 2007.

Krugman, P. R. (1998). What is new about the new economic geography? *Oxford Review of Economic Policy*, *14* (2), 7–17.

Liu, X., Burridge, P., and Sinclair P. J. (2002). *Relationships between Economic Growth, Foreign Direct Investment and Trade : Evidence from China.* Applied Economics, 34, 1433-1440.

Lucas, R. E. (1988). On the Mechanics of the Economic Development. *Journal of Monetary Economics*. 22, 3 – 42.

Maddala, G., (1992.) *Introduction to Econometrics*. (3rd ed). Prentice Hall, New Jersey.

Mahadevan, R. (2007). "New evidence on the export-ledg rowth nexus: A case study of Malaysia". *World Economy Journal,* 30, 1069-1083.

Miankhel, A., K., Thangavelu, S., M., & Kalirajan, K. (2009). Foreign Direct Investment, Exports, and Economic Growth in South Asia and Selected Emerging Countries: A Multivariate VAR Analysis. *CCAS Working paper No.23, Doshisha University.*

Nair-Reichert, U., & Weinhold, D. (2001). *Causality Tests for Cross-Country Panels: a New Look at FDI and Economic Growth in Developing Countries*,'' Oxford Bulletin of Economics and Statistics, 63 (2), 153-171.

Namibia Investment Centre (NIC). (2010). *Namibia Investment Centre: Annual Report*. Ministry of Trade and Industry, Windhoek, Namibia.

Niishinda, E. and Ogbokor, C. A. (2013). Testing the long-run relationship between export and Economic Growth: Evidence from Namibia. *Journal of Emerging Issues in Economics, Finance and Banking (JEIEFB)*, 1 (5): 248-259.

Markusen, J. R. (2002). *Multinational firms and trade theory of international trade.*

Meerza, S. I. A. (2012). *The causal links between trade, foreign direct investment and economic growth for Bangladesh*. Working paper.

Miankhel, A.K., S.M., Thangavelu, and K. Kalirajan. (2009). *Foreign direct investment, export and economic growth in South Asia and selected emerging countries*: *A multivariate VAR analysis,* working paper 23, Centre for Contemporary Asian, Studies Doshisha University.

Nair-Reichert, U., and Weinhold, D. (2001). Causality Tests for Cross-Country Panels: A New Look at FDI and Economic Growth in Developing Countries. *Oxford Bulletin of Economics and Statistics,* 63 (2): 153.71.

Njong, A. M. (2008). Investigating the effect of Foreign Direct Investment on export Growth in Cameroon. *International Journal of Economics and Finance*, 2(20), 201-239.

Pacheco-Lopez, P. (2005), "Foreign Direct Investment, Exports and Imports in Mexico". *The World Economy*, 28(8): 1157-1172.

Pesaran, M. H., & Pesaran, B. (1997). Working with Microfit 4.0: Interactive Econometric Analysis. Oxford: Oxford University Press.

Pesaran, M. H., & Shin, Y. (1999). An autoregressive distributed lag modelling approach to cointegration analysis. In S. Strom (ed.), Econometrics and Economic Theory in the 20th Century (Chapter 11). The Ragnar Frisch centennial symposium, Cambridge: Cambridge University Press.

Pesaran, M., Shin, Y., and Smith, R. J. (2001). Bounding Testing Approaches to the analysis Of level relationship. *Journal of Applied Economics*, 16, 289-326.

Phillips, P. C. B., & Hansen, B. E. (1990). Statistical inference in instrumental variable regression with I (1) processes. Revision Economics Studies, 57(1), 99-125.

National Planning Commission. (2010). *Impact of the Global Financial and Economic Crisis on the Namibia Economy*. NPC report, Government of Namibia.

Ogbokor, C.A. (2005). "Time Series Evidence for Export-Led Growth Paradigm: A Case Study of Zimbabwe." *Journal of Social Sciences* 1(2): 77-80.

United Nations Conference on Trade and Development (2013). World Investment Report: UNCTAD, Retrieved on http://unctadstat.unctad.org

Shell, K. (1966). "Toward a Theory of Inventive Activity and Capital Accumulation". *American Economic Association Papers and Proceedings,* 56: 62-68.

Shaikh, F.M. (2010). Causality Relationship between Foreign Direct Investment, Trade And Economic Growth In Pakistan. *In International Business Research*, 1: 11-18). Harvard Business School.

Shan, J., and F. Sun. (1998). On the Export-led Growth Hypothesis: The Econometric Evidence from China. *Applied Economics* 30 (8): 1,055–65.

Shao-Wei, L. (2007). ''*Foreign Direct Investment and export performance: The case of Taiwan*". School of Economics, Research paper 2007/14. University of Wollongong, Australia.

Shawa, M. J., and Shen, Y. (2013). Causal relationship between FDI, GDP growth, and exports in Tanzania. *International Journal of Economics and Finance*, 5(9), 13-19.

Sharma, R. and Kaur, M. (2013). Causal links between foreign direct investments and Trade: A Comparative study of India and China. *Eurasian Journal of Business and economics*, 6 (11): 75-91.

Sharma, K. (2003). 'Factors determining India's export performance', *Journal of Asian*

Economics, 14 (3), pp. 435-446.

Sharma, A., and Panagiotidis, T. (2005). An analysis of exports and growth in India: cointegration and causality evidence (1971-2001). *Review of Development Economics* 9(2): 232-248.

Soliman, M. (2003). "Foreign Direct Investment in LDCs Export: Evidence from MENA Region". Available: http://www.mafhoum.com/press6/173E14.pdf.

Solow, R. (1994). Perspectives on Growth Theory. Journal of Economic Perspectives. *Journal of Economic Perspective*, American association, vol. 8(1): 45-54.

Shrestha, M. B., & Chowdhury, K. (2005). Autoregressive distributed lag modelling approach to testing the financial liberalisation hypothesis. University of Wollongong.

Republic of Namibia. (2004). *Namibia's Vision 2030 - Policy Framework for Long Term Development Document*. Office of the President, Windhoek.

Republic of Namibia. (2012). *Namibia's Fourth National Development Plan- 2012/2013 to 2016/2017*. Office of the President, Windhoek.

Romer, P.M. (1990). "Endogenous Technological Change". *Journal of Political Economy,* 98: 71-102.

Taban, S. and Aktar, I. (2008). "An Empirical Examination of the Export-Led Growth Hypothesis in Turkey." *Journal of Yasa University*, 3(11): 1535-1551.

Tsai, P. -L. (1994). Determinants of foreign direct investment and its impact on economic growth. *Journal of Economic Development* 19(1): 138-163.

Toda, H. Y., and Yamamoto, T. (1995a). Statistical inference in vector autoregressions with possibly integrated processes. *Journal of Econometrics* 66(1-2): 225-250.

Waldkirch, A. (2010). The effects of foreign direct investment in Mexico since NAFTA. *The World Economy* 33(710-745).

Xu, B. (2000). Multinational enterprises, technology diffusion, and host country productivity growth. *Journal of Development Economics* 62(2): 477-493.

Xu, Z. (1996). On the causality between export growth and GDP growth: an empirical reinvestigation. *Review of International Economics* 4(2): 172-184.

Ziramba, E. (2011). "Export-Led Growth in South Africa: Evidence from Composition of Exports. Department of Economics, Unisa.