EXPORTS AND ECONOMIC GROWTH
THE CASE OF KENYA

BY

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DECLARATION

This research paper is my original work and has not been presented for examination in any other University.

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This research paper has been forwarded for examination with my approval as the University supervisor.

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DEDICATION

This study is dedicated to my wife Maureen Wanjiru for her love, support and encouragement during the entire duration of the course.

Further dedication is to my parents George Ngumi and Beatrice Njambi for their sacrifice in educating me and for teaching me the discipline and value of hard work.

I also dedicate this piece of work to my children; Sammy Njunji, Sylvia Njambi, Grace Wambura and George Ngumi. This piece of literature will be a source of motivation for hard work when they become of age.

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Thank you all and may God bless you.

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ABBREVIATIONS

ARDL	–	Autoregressive Distributed Lag
AGOA	–	African Growth Opportunity Act
COMESA	–	Common Market for Eastern and Southern Africa
DCs	–	Developed Countries
EG	–	Engle Granger
ERS	–	Economy Recovery Strategy
ELG	–	Export Led Growth
EAC	–	East African Community
EU	–	European Union
EPZs	–	Export Processing Zones
ECM	–	Error Correction Model
FDI	–	Foreign Direct Investment
GLE	–	Growth Led Exports
GDP	–	Gross Domestic Product
GOK	–	Government of Kenya
LDCs	–	Less Developed Countries
MENA	–	Middle East and North Africa
NICs	–	Newly Industrialised Countries
OLS	–	Ordinary Least Squares
VAR	–	Vector Autoregressive
VECM	–	Vector Error Correction Models

ABSTRACT

Economic growth is a phenomenon that has been subjected to many studies by economists. The overriding consideration of the many studies on economic growth has been to analyse how economic growth can be influenced positively for the improved welfare of society and the wealth of nations. Economic growth is a key variable for gauging the economic and social wellbeing of nations.

This research paper had an objective of assessing whether manufactured exports have been influencing economic growth overtime in Kenya. Other variables studied in relation to their influence on economic growth were; other exports other than manufactured exports, imports and terms of trade. The period of study was 1970 -2007.

Data on manufactured exports, non-manufactured exports, imports and terms of trade for the period 1970-2007 was used to test their causality on real GDP. Unit roots tests on the data were conducted using Augmented Dickey-Fuller method while the Engle-Granger method was used to test for cointegration. The causality test was conducted using the Granger causality method.

The findings revealed that manufactured exports have not had significant impact on economic growth and therefore Kenya's manufactured exports have not Granger-caused economic growth over the period of study. However there was found to be bi-directional causality between imports and manufactured exports.

These findings do not suggest that manufactured exports are less important in influencing and determining the direction of economic growth. Manufactured output and exports are important in the matrix of growth as has been demonstrated by many world economies. It is therefore critical for the government of Kenya and policy makers to work towards initiating and accelerating policies that will improve the quantity, quality and value of manufactured output and exports in the overall GDP contribution, while drawing lessons from the Asian Tigers.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This chapter provides an overview of Kenya's economic growth performance in the post independence period, the status of exports, a statement of the research problem, objectives, relevance of the study and organization of the research report.

1.1 Background

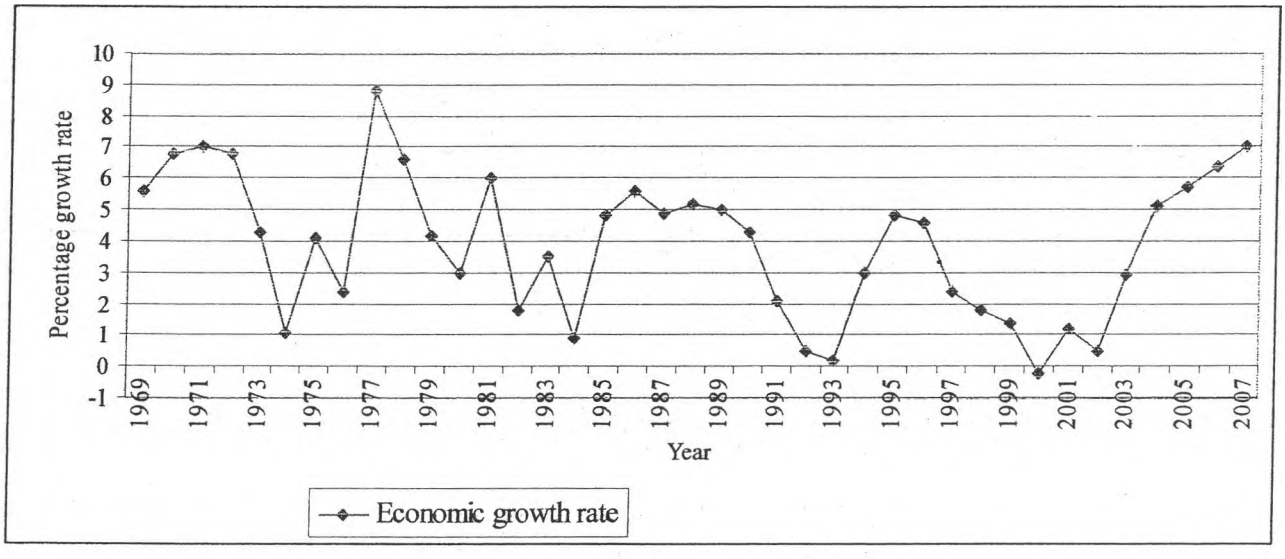
The Kenyan economy has had mixed experiences in terms of the growth rate in real Gross Domestic Product (GDP) since independence as is evidenced by the peaks and troughs depicted in figure 1. Growth in real GDP averaged 6.5 percent over the period 1964-67. This was considered an exceptional case among developing countries at that time. This growth momentum was dampened by the first oil crisis of 1972, and as a result, GDP growth rate decelerated to below 4 percent for much of the early 1970s until the 'unexpected coffee boom' of 1976 and 1977 when GDP growth rate averaged 8.2 percent. (GOK, 1994). However, this boom was short-lived because of the second oil crisis of 1979 that pushed up inflation rate.

During most of the early 1980s, GDP growth rate remained below 5 percent and fell to below 1 percent in 1984. This was largely attributed to severe drought of that year. Agriculture was the most affected; its contribution to GDP fell to -3.9 percent. However, there was a rebound of the economy in 1985-86; when growth rates of 4.8 percent and 5.5 percent respectively were realised. This was attributed to favourable weather conditions, government budgetary discipline and improved management principles (GOK, 1994).

GDP growth rate continued to slide in the 1990s falling to a mere 0.2 percent in 1993. Dismal performance of the economy during this period was attributed to decline in real output and value added in agriculture, due to below average amount of rainfall; sluggish growth in aggregate private domestic demand and foreign exchange shortages leading to reduced imports of intermediate goods as well as suspension of donor aid (GOK, 1994).

The economy registered its worst performance since independence in the year 2000 when the GDP growth rate was -0.2 percent. This dismal performance of the economy was largely attributed to the decline in agriculture and manufacturing which contributed to about a third of the GDP; both recorded growth rates of -2.4 per cent and 1.5 per cent respectively (GOK, 2001).

Figure 1: Economic growth rate for Kenya, 1969-2007



Source: Computed from economic survey data for Kenya (various)

After the economy registered a disappointing performance in the 1990's and early 2000, it resumed growth momentum as can be seen from figure 1. There was a consistent increase in GDP growth rate from year 2002. The economy grew at a rate of 7.0 percent in 2007 compared to -0.2 percent in the year 2000. This could probably indicate that the Economic Recovery Strategy (ERS) adopted by the government in 2003 to guide the economy

towards recovery was bearing fruits. However, this growth momentum was slowed by post election violence of 2008, and the economy grew at a rate of 1.7% percent in 2008 while 2009 is projected to grow at 2.5 percent.

Since independence in 1963, there has been considerable progress in the trade reform in Kenya, advancing from import substitution to export orientation (Ramesh and Boaz, 2007). Export led growth (ELG) policies of the successful East Asian economies are partly the motivation for Kenya to embark upon it[1]. Agriculture is the main engine of economic growth of Kenya, presently contributing directly 26 percent of the Gross Domestic Product (GDP) and indirectly a further 27 percent through linkages with other sectors. It accounts for 80 percent of rural employment, 60 percent of export earnings and 45 percent of annual government revenue[2]. Tea, horticulture, coffee, pyrethrum, sisal, fishery, and leather products are the main agricultural exports for Kenya (see appendix 1). The focus of Kenya's exports on unprocessed primary products is mainly due to low levels of education among population and availability of abundant natural resources (Ramesh and Boaz, 2007). Other major sectors of the Kenyan economy include manufacturing and tourism.

The manufacturing sector was very vibrant in the 1980s. It grew rapidly to become the second largest employer after the civil service. The growth was driven by closed market policies, which led to protectionism (Ramesh and Boaz, 2007). However, with the liberalization of the market in early 1990s, there was an influx of cheap textile products and garments from other countries. This marked the beginning of a decline in the industry.

The manufacturing sector grew by 3.8% in 2008 compared to 6.5% in 2007. This growth was against a number of challenges; supply disruption and temporary closures during the 2008 post election skirmishes, stiff competition from cheap imports and counterfeits and subdued domestic and external demand. In 2007 and 2008 manufacturing sector contributed an average of 10% to the country's GDP. The good performance in 2007 was partly attributed to a stable macroeconomic environment that prevailed during the year, tax

[1] Export Promotion Council of Kenya http://www.epckenya.org
[2] Export Promotion Council of Kenya http://www.epckenya.org

exemption on some imports for intermediate use and enforcement of anti-dumping measures in the East African Community (EAC) and the Common Market for Eastern and Southern Africa (COMESA) region, improved access to credit and increase in export demand particularly within the EAC and COMESA (Export Promotion Council of Kenya, 2008).

The EAC and the COMESA are the main markets for Kenya's exports, highlighting the importance of regional economic trading blocs, followed by the European Union (EU). EAC and COMESA are the main markets for Kenyan goods owing to close proximity, preferential treatment, reconstruction activities and a relatively well developed manufacturing industry in Kenya compared to neighbouring countries. On the basis of individual countries, Uganda is the main market for Kenya's exports, followed by United Kingdom while Tanzania is third (Uganda and Tanzania are both members of the East African community). See appendix 2 for more details of major destination of Kenya's exports.

With a series of external shocks in the 1970s, the inefficiency and inadequacy of the import-substitution policy became evident. The first oil crisis of 1973 that led to severe problems in balance of payments (BOP), and the collapse of the EAC in 1977, adversely affected the performance of import-substitution enterprises. The latter removed the disguised competitiveness of Kenya's manufactured exports (Wagacha, 2000). The resultant high import costs and limited market led to excess capacity and inefficiencies (SIMASG, 1989). By the end of the 1970s, the government started recognizing the need for an export-oriented industrial strategy as indicated in National Development Plans of 1974-78 and 1979-83. Nonetheless, adherence to import-substitution still lingered. In the early 1980s, partly due to the increasing pressure for structural adjustment reforms, the government began to demonstrate commitment to a liberalization policy, a major component of which was a shift from import-substitution to export-promotion strategy.

The major turning point in policy was in the form of *Sessional Paper No.1 of 1986 on Economic Management for Renewed Growth* in which the government committed itself to

liberalize the economy and adopt an outward-looking development strategy. By this time, Kenyan exports had deteriorated tremendously. Merchandise export earnings as a percentage of GDP had for example declined from 19.6 percent in the 1970s to 16.97 percent over 1980-84 and to 13.6 percent over 1985-89 (Glenday and Ndii, 2000). (Appendix 3) Besides the export compensation scheme established in 1976, a number of export promotion programmes were initiated. These include Manufacturing under Bond (MUB) and Export Processing Zones (EPZs) established in 1988 and 1990, respectively. Other export incentive schemes were Green Channel, Export Guarantee and Credit Scheme, the revival of the Kenya Export Trade Authority (KETA), Export Promotion Council and the Export Promotion Programmes Office (EPPO) for tax rebates on imported inputs for exporters.

The export promotion programmes were mainly geared towards promoting manufactured exports—mainly labour-intensive manufactures. MUB and EPZs targeted new investments while others like duty and VAT exemption schemes targeted existing manufacturers (Glenday and Ndii, 2000). The MUB/EPZs were aimed at using the abundant semi-skilled labour to produce labour-intensive manufactures, notably garments and foot wear for overseas market—perhaps something similar to 'sweat shops' in Asia (Glenday and Ndii, 2000).That notwithstanding, export orientation in the 1980s remained weak largely due to very high effective rates of protection accorded to domestic industries, exchange rate bias against exports, high cost of imported inputs, foreign exchange controls and administrative delays, high transaction costs that militated against the profitability of exports, among others. In addition, the export incentive schemes remained unattractive and unsuccessful than expected due to weaknesses in implementation and poor coordination.

The government of Kenya through the ministry of trade and industry developed the national export strategy 2003-2007. The need to develop Kenya's National Export Strategy was triggered by realization that Kenya, like many other countries, both developing and developed, does not have an export strategy. In an environment of declining exports due to non-competitiveness of local products, limited negotiation capacity of public and private sectors, and falling terms of trade, it become urgent to develop an export strategy that

would focus on the measures required to ensure diversification of markets and reduce vulnerability of unilateral decisions over trade in export markets. The finance bill of 2003/2004 and the Economic Recovery Strategy for Wealth and Employment Creation, 2003-2007 recognised the urgency for a National Export Strategy and put in motion activities towards achieving this goal.

Kenya vision 2030 (2007) expects the manufacturing sector to play a critical role in propelling the economy to a 10 per cent growth rate. The growth in this sector is expected to be largely driven by local, regional and global markets. The manufacturing sector will play a vital role in boosting growth in the agricultural sector by stimulating agro-processing activities. Consequently these incremental economic activities will spur exports.

Kenya inaugurated the Export Processing Zones (EPZs) program in 1990 as part of export development program meant to transform the economy from import substitution to a path of export led growth. EPZs were designed to further integrate Kenya into the global supply chain and attract export-oriented investments in the zones in order to create employment, diversification and expansion of exports, increase in productive investments, technology transfers and creation of backward linkages between zones and the domestic economy[3]. The program has contributed significantly to achieving these objectives with over 40 zones in place, close to 40,000 workers employed and contribution of 10.7 percent of national exports[4]. Share of Kenyan exports to the United States of America (USA) has grown considerably in the recent past because of preferential treatment accorded to the Kenyan goods through the African Growth Opportunity Act 2000 (AGOA). Over 70 percent of EPZ output is exported to the USA under AGOA[5].

[3] Export Promotion Council of Kenya http://www.epckenya.org

[4] Export Processing Zones Authority http://www.epzakenya.com

[5] Export Processing Zones Authority http://www.epzakenya.com

1.2 The Research Problem

The 'Kenya Vision 2030' covering period 2008-2030, aims to transform Kenya into a newly industrialising, middle-income country providing a high quality life to all its citizens by the year 2030 (GOK, 2007). The vision is based on three pillars, economic, social and political. The economic pillar aims at achieving an average GDP growth rate of 10 percent per annum beginning 2012.

One way of stimulating economic growth rate is through growth of exports especially manufactured exports. Currently agricultural products are the main exports from Kenya while the share of manufactured exports is very small (Appendix 1). This compares poorly with the newly industrialising countries (NICs) which Kenya seeks to emulate. The NICs such as Malaysia, Hong Kong, Taiwan, Singapore and South Korea had over 80 percent of exports comprising of manufactured exports during their industrialising process.

The export-led growth hypothesis (ELGH) postulates that export expansion is one of the main determinants of growth. It holds that the overall growth of countries can be generated not only by increasing the amounts of labour and capital within the economy, but also by expanding exports. Exports can perform as an "engine of growth". The association between exports and growth is often attributed to the possible positive externalities for the domestic economy arising from participation in world markets, for instance from the reallocation of existing resources, economies of scale and various labour training effects. However, these mechanisms are frequently invoked without any theoretical support or any empirical proof.

A substantial amount of research concerning the ELGH in developing countries (DCs) has been carried out during the past couple of years. The theoretical benchmark can be considered in general weak and based on bivariate and *ad hoc* production functions, while the empirical results derived from traditional econometrics have been highly criticized for being spurious. Therefore, early studies could have been misleading in that they advocated

export expansion in an indiscriminate way. Evidence available is far from conclusive and this situation explains to some extent why this debate still exists in the economic literature.

Consequently, the purpose of this study was to examine and test the ELGH, using the case of Kenya. The study examined empirically the relationship between export expansion and economic growth.

In the literature on exports and growth there are three types of causations between exports and growth; namely export led growth, growth led exports and where there is no causation between exports and growth. All the three types of relationships have variants of policy recommendations and implications. Many studies done on this front have had generalised conclusions.

A number of studies find that manufactured exports than primary products exports, offer potential of stimulating economic growth, (Axfentiou and Serletis, 1991, Ahmed and Kwan, 1991, Dodaro, 1993, Ukpolo, 1994, Xu, 1996). However, despite the consequences of not accounting for composition of exports in the test of the ELG hypothesis, to my knowledge, there has been no study for Kenya that has decomposed aggregate exports into manufactured exports and non-manufactured exports to investigate the relationship between economic growth and exports growth. This study sort to fill this gap.

Specifically this study sort to address the following research questions

(i) Is there evidence of export led growth in Kenya?

(ii) Does any causality exist between manufactured exports and growth of output in Kenya?

(iii) Does the causal relationship differ by export category ?

1.3 Objectives of the Study

The main objective of the study was to test the export-led growth hypothesis for Kenya. The specific objectives were:

(i) To establish the direction of causality between manufactured exports and economic growth

(ii) To assess the impact of manufactured exports and non-manufactured exports on economic growth, while controlling for imports and terms of trade.

(iii) To make policy recommendations which might contribute to accelerated economic growth via exports.

1.4 Relevance of the Study

The results of the study are of relevance to policy makers seeking to promote manufactured exports because of many limitations that face primary products exports. This is in order to realise faster economic growth as envisioned in Kenya's Vision 2030. However, this is not possible if the exact causal link between economic growth and growth in exports is not established.

Previous tests of the ELG hypothesis for developing countries in which Kenya was included such as those by Jung and Marshall (1985), Upkolo (1994) and one specific to Kenya by Ramesh and Boaz (2007) did not disaggregate total exports into the different components , omitted terms of trade and therefore causal models in these studies could have been misspecified.

In the studies where Kenya was included in a cross-country panel analysis, it was assumed that countries grouped in the study had similar social economic settings and characteristics. Since countries have differing social economic and political set-ups the grouped study assumptions are not likely to hold and hence the need for a country specific study.

1.5 Organisation of the Study

The rest of the paper is organised as follows; chapter two is the literature review and provides theoretical basis of ELG hypothesis, previous empirical studies and an overview of the literature. Chapter three gives research methodology by providing details of how time series properties of the data were investigated and specification of the empirical model. This chapter also includes data sources and measurement of variables used in the study. Hypotheses that were tested are also part of this chapter. Chapter four captures the results of data analysis while chapter five summarises, concludes, and offers policy recommendations and suggestions for further research. It also highlights the limitations of the study.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter presents the theoretical basis of Export Led Growth (ELG) hypothesis, reviews empirical evidence regarding its application especially among the developing countries and an overview of the literature.

2.1 Theoretical Literature Review

The starting point for a discussion of international trade is the theory of Comparative Advantage. According to that theory, trade allows a more efficient use of the economy's resources by enabling import of goods and services that could otherwise only be produced at home at higher resource costs. For instance, trade enables developing countries to import capital and intermediate goods – critical to long-run economic growth – that would be quite expensive to produce locally. The traditional case for the gains of trade is based on comparative advantage, in which a country that opens up can be assured the benefits. The Ricardian model explains the welfare gains if any country specializes in producing goods in which it has a comparative advantage.

The Hecksher-Ohlin-Samuelson (H-O-S) model, on the other hand, shows the welfare gains in the two-country model that each country specializes based on their factor endowments. The keystone of these theories is that international trade is the way to achieve static productive efficiency and international competitiveness. However, it is not clear, under the Ricardian or the H-O-S model, whether and how international trade determines economic growth in the long run.

Theoretical consensus on export-led growth emerged among neoclassical economists after the successful story of newly industrialized countries. They argue that, for instance, Hong Kong (China), Taiwan, Singapore and the Republic of Korea, the so called Four Tigers, have been successful in achieving high and sustained rates of economic growth since early 1960s because of their free-market, outward-oriented economies (World Bank, 1993).

The production and composition of export was not left to the market but resulted as much from carefully planned intervention by the governments. As Amsden (1989) states, the approach behind the emergence of this new 'Asian Tiger' is a strong, interventionist state, which has wilfully and abundantly provided tariff protection and subsidies, change interest and exchange rates, managed investment, and controlled industry using both lucrative "carrots" and threatening "sticks".

Export-led growth (ELG) hypothesis was first suggested by Kindleberger (1962). ELG is considered one of the main pillars of the free trade school of thought that emerged in the 1980's. The other major school of thought is known as the protectionism school based on Prebisch (1950), which calls for the adoption of policies of import substitution rather than promoting exports to stimulate economic growth. Economists have had little consensus on the nature of the relationship between exports and economic growth. Debates have been on whether strong economic performance is export-led or growth-driven.

Traditionally, it has been assumed that exports are exogenous to domestic output. This could be an inappropriate assumption because output can also affect exports. A justification of causality from output to exports may be found in the contributions of Kaldor (1967) to the theory of growth. Kaldor shows that output growth has a positive impact on productivity growth, and improved productivity, or reduced unit costs, is expected to act as a stimulus to exports. Theoretically, the augmented production function has been used to show that export growth promotes economic growth (Krueger, 1978; Balassa, 1978; Greenaway and Sapsford, 1994). In the augmented production function, real output depends on capital, labor, and other macroeconomic variables such as exports and industrial production. A positive correlation between export growth and real output growth is termed

in literature as the export-led growth hypothesis, reflecting the view that export-oriented policies contribute to economic growth.

Theoretically, the ELG hypothesis postulates that exports lead to economic growth. This may hold because of several reasons. First, export growth may represent an increase in demand for the country's output and thus serve to increase real Gross National Product (GNP). Second, an increase in exports may loosen a binding foreign exchange constraint and allow increases in productive intermediate imports and hence result in the growth of output. Third, export growth may result in enhanced efficiency and thus lead to greater output. This is because; contacts with foreign competitors that arise from exporting may lead to more rapid technical change, the development of indigenous entrepreneurship, and the exploitation of scale economies. In addition, this competitive pressure may lead to X-efficiency and better product quality. Exchange control liberalization and the export growth it produces are likely to reduce the allocative inefficiencies prevalent under exchange controls (Jung and Peyton, 1985).

All these mechanisms through which export promotion contributes to growth share a common feature. They all argue that export growth leads to output growth. Thus the export –led growth hypothesis should be taken to be not only an assertion of correlation, but also an assertion of causation (Jung and Peyton, 1985).

Other theories argue that export expansion is not a necessary condition of economic growth; instead, it is the superior domestic production that paves the way for exports. This is the growth led export hypothesis (GLE).This growth-led exports argument tends to suggest protectionist policies, to allow local industries to establish themselves at a competitive scale. Superior economic development will inevitably lead to export expansion. The implied causation is then from domestic growth and accumulation to trade (Grossman and Helpman, 1990).

According to Stern (1991), the focus of endogenous growth is about the supply side by considering the medium or long-run accumulation of production factors. In short, supply

increases faster than domestic demand such that the excess supply is exported. In this view, then, export expansion is not a necessary condition of growth (Darrat, 1987; Dodaro, 1991). Instead, a country's ability to export goods depends on its ability to produce these goods more competitively. This suggests policies that have the potential for helping long-run domestic growth. Both exports-led growth and growth-led exports may coexist in a tight dynamic relationship.

Bhagwati (1978) points out that feedback could give rise to virtuous or vicious cumulative cycles. A virtuous cycle occurs when export expansion stimulates domestic production, and the increased production encourages more exports. A vicious circle would occur if domestic production and exports defeated each other. In summary, the existing theories suggest that three causal relations may be hypothesized: export-led- growth, growth-led exports, and feedback, that is reciprocal causation.

2.2 Empirical Literature Review

Controversy still rages over the links between trade and economic growth. Favourable arguments with respect to trade can be traced to the classical school of economic thought that started with Adam Smith and subsequently enriched by Ricardo, Torrens, James Mill and John Stuart Mill in the nineteenth century. Since then, the justification for free trade and various undisputed benefits that international specialisation brings to the productivity of nations have been widely discussed in economic literature for example by Bhagwati, (1978) and Krueger, (1978).

Empirical estimations have tended to focus attention on the direction of causality between exports and economic growth using Granger causality tests. Jung and Marshall (1985) used Granger causality tests and found support for export-led growth hypothesis only for four out of thirty seven developing countries considered. In the case of three countries, there was found a statistically significant relationship and causality running from output growth to export growth. Six countries exhibited evidence of export-reducing growth relationship, while another three countries supported a growth-reducing exports relationship. Chow

(1987), using a bivariate Sims test on annual data of real manufactured exports and Gross Domestic product (GDP), found evidence of bidirectional causality in the case of Israel.

Axfentiou and Serletis (1991) found that ELG hypothesis was verified in the Asian tigers (South Korea, Singapore, Taiwan, and Malaysia) but also for less developed countries in Latin America and for some countries in Africa. But in countries such as Norway, Japan, and Canada in the period 1950-85, there was evidence of economic growth led export (GLE), which means that in these countries the economic growth determined exports, suggesting GLE.

Ahmad and Kwan (1991) investigated the causal link between exports and economic growth in 47 African countries. They made use of pooled time series and cross sectional data from 1981-1987 using Granger causality test and an error correction model. The results supported the notion that no causation existed between exports and economic growth or vice-versa in the African countries. However, the authors found that in some low-income African countries, weak causation runs from economic growth to exports.

Hutchinson and Singh (1992), using annual data in the natural logarithms of real non-export GDP and exports for the period 1950-1985 and applying bivariate Granger Causality test, failed to find any causality in the cases of Egypt, Morocco, and Tunisia. Kugler and Dridi (1993) used the Johansen's methodology to test for cointegration in order to test for causality between exports and growth for some Middle East and North African (MENA) countries. They found no cointegration among the variables in the case of Egypt, which provides no support to the ELG hypothesis.

Dodaro (1993) employed a bivariate Granger causality test on real GDP growth and growth of real exports of goods and non-factor services over 1967-87 for a sample of six countries. The results did not show evidence of causality between growth and exports in the cases of Algeria, Jordan, Morocco, Sudan or Tunisia. However, he found evidence of unidirectional causality in the case of Israel, running from exports to growth. No cointegration tests were performed in this study.

Sharma and Dhakal (1994) conducted Granger causality tests on natural logarithm of real GDP and exports, after testing for unit roots. The choice of lag lengths was based on Akaike's Final Prediction Error (FPE) criterion. They found support for the Growth Led Export (GLE) hypothesis in the cases of Tunisia, Egypt and Morocco, but no causality for Turkey. But Reizman et al. (1996) found support for ELG based on bivariate Granger causality test in the cases of Algeria, Egypt, and Tunisia but no evidence of causality in the cases of Israel, Jordan, Morocco, Sudan or Turkey. However, with the inclusion of imports as an additional variable resulting in a trivariate system, they obtained different results. ELG was supported only in the cases of Jordan and Sudan while no causality was detected for the rest of the MENA countries in the sample.

Ukpolo (1994) studied the linkage between export and economic growth using a sample of eight low income African countries including Kenya over the period 1969-1988. Based on the time-series regression results, the author concluded that there is a positive relationship between non-fuel primary exports and economic growth. However, the regression results presented some inconclusive outcome on the role of manufactured exports on economic growth.

Pomponio (1996) used cointegration and Error Correction Model (ECM) approach in a bivariate setting to test for ELG in five countries. The results offered support for the GLE in the cases of Algeria and Tunisia, but no causality was detected for Morocco, Sudan and Turkey. When he introduced investments as an additional variable resulting in a trivariate model, he found evidence for ELG in Turkey and Tunisia where bidirectional causality was detected. However, his findings with regards to Algeria, Morocco, and Sudan remained intact.

Xu (1996) used a cointegration and ECM approach but could not establish evidence for long-term relationship between exports and economic growth for Israel, Morocco, Tunisia and Turkey. However, he confirmed GLE in the cases of Israel and Tunisia, a feedback relation in the case of Turkey but no causality for Morocco. Dutt and Ghosh (1996) using

tests based on Engle and Granger (EG) cointegration and causality based on ECM for the period 1953-1991 point to the existence of cointegration and causality from exports to growth in the cases of Israel and Turkey, evidence that supports the ELG hypothesis. They found bidirectional causality between exports and growth in the case of Morocco.

Amoateng and Amaoko-Adu (1996) used the trivariate causality analysis by including the external debt into the export-economic growth Granger causality regression. Using data for low-income Africa, middle-income Africa, Africa-south of Sahara, and the entire sample, (for the period of 1970-1990, 1971-1982 and 1983-1990), the relationships among GDP growth, export revenue growth and foreign debt service was examined in this study. The authors found bidirectional causality between external debt servicing, economic growth and exports.

Emilio and Smith (2001) tested ELG for Costa Rica using an augmented Cobb-Douglas production function. They included exports as a third input to capture total factor productivity (TFP) growth. The study examined short-term as well as long-term relationship. The study found out that ELG hypothesis was valid, however, the empirical results showed that physical investment and population mainly drove Costa Rica's overall economic performance from 1950 onwards.

Awokuse (2003) examined ELG hypothesis for Canada by testing whether exports Granger Cause national output growth. The test was based on Vector Error Correction Models (VECM) and the Augmented Vector Autoregressive (VAR) methodology developed by Toda and Yamamoto (1995). The empirical results suggested that a long-run steady state existed among the model's six variables (GDP, labour, capital, foreign output shock, real exports and terms of trade) and that Granger causal flow was unidirectional from real exports to real GDP.

Keong, Yusop and Sen (2005) used bounds test approach to test the validity of export-led growth hypothesis in Malaysia. Both exports and labour force were found to have stimulated economic growth, whereas imports, exchange rate and the East Asian financial

crisis were found to influence growth negatively. Moreover, a cointegrated relationship between exports and economic growth was determined. Further, the analysis showed that exports Granger-caused economic growth in the period of study.

Silaghi and Loana (2006) investigated the relationship between trade and economic growth for the case of Romania, during 1998-2004. They used cointegration and Granger Causality tests on exports, imports and GDP. Exports were found not to Granger cause GDP, but the relationship was inverse where causality ran from growth to exports during the period under study. The presence of imports in the model did not have significant effects.

Ramesh and Boaz (2007) tested export led growth hypothesis for Kenya using autoregressive distributed lag (ARDL) bounds test approach. The results indicated that there existed a long-term relationship between GDP growth and exports, and the relationship was unidirectional, running from exports to GDP growth. However this study did not examine whether there was evidence of ELG relating to different export components. This study had five variables (GDP, exports, imports, exchange rate and labour) but did not include terms of trade.

2.3 Literature Review Overview

In the international trade and development literature, causality from exports to real output is denoted 'ELG hypothesis', while the reverse causal flow from real output to exports is termed 'GLE hypothesis'. ELG hypothesis reflects the view that export-oriented policies help to stimulate economic growth. Export expansion can be a catalyst for output growth both directly, as a component of aggregate output, as well as indirectly through efficient resource allocation, greater capacity utilisation, exploitation of economies of scale, and stimulation of technological improvement due to foreign market competition.

The review of empirical literature shows that there is no consensus regarding the relationship between exports and GDP growth. At the centre of this debate is the question of the causality direction between exports and growth (Awokuse, 2003). Previous

empirical studies have produced mixed and conflicting results on the nature and direction of the causal relationship between export growth and output growth. Most of the studies on the causal link between export growth and output growth have been carried among the developing countries than in developed countries.

Export led growth hypothesis has been tested for Kenya in cross-country studies such as Jung and Marshall (1985) and Upkolo (1994). One study specific to Kenya is Ramesh and Boaz (2007). In contrast to these studies our study contributes to the literature on the relationship between exports and growth in the following ways. First, it decomposed exports into manufactured and non-manufactured exports in order to examine their separate relationships to GDP. Second, by including terms of trade in the analysis, the study was able to capture possible linkages of the real exchange rates and real output and the possible effects of restrictive trade policy such as tariff and non-tariff barriers.

Many researchers have sought to test empirically the hypothesis that export promotion strategies accelerate economic growth, what has come to be known as export-led growth (ELG) hypothesis. Early work on the ELG hypothesis generally affirmed its validity because the export variable and the output variable are highly correlated. Recent empirical estimations have tended to focus attention on the direction of causality between exports and economic growth using Granger Causality tests. However, the empirical evidence on these tests is, at best, mixed and often contradictory.

Early studies on the relationship between exports and economic growth relied on rank correlation coefficients, simple Ordinary Least Squares (OLS) regressions, or informal growth regressions, along the lines of Barro (1991), utilising available cross-sectional data. A positive correlation between exports and growth or a significant positive coefficient of the exports variable in the growth equation, using a simple or a multiple OLS regression, have been considered as a confirmation of the ELG hypothesis. Examples of such studies include; Kravis, (1970), Balassa, (1978), Dollar, (1992). A shortcoming of these studies is that they do not provide an insight into the direction of causality, but merely examine the correlation between exports and economic growth. A positive correlation or coefficient of

exports in the equation of economic growth can be equally compatible with causality from exports to growth (ELG), from growth to exports (GLE) or a bi-directional causality between the two variables.

The improper assessment of the causal relationship in a static-section setting paved the way for the adoption of a more dynamic time series analysis of the experiences of individual countries aimed at determining whether exports promote economic growth or vice-versa. Granger causality has been used as the principal tool of investigation.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter describes how time series properties of the data used in the study were analysed, specification of the empirical model, data sources and measurement of variables.

3.1 Econometric Methodology

Toda and Phillips (1993) provide some guidelines for testing for causality. The first step would be to test for unit roots in all the variables involved. In the case of stationary variables, the model would be estimated in levels and a standard Granger causality can be applied. If all the variables are non-stationary, $I(1)$, in levels and are stationary in first differences, $I(0)$, then a cointegration test is carried out to determine if a long-term relationship exists. Once cointegration is detected, causality tests have to be performed using an error correction model. If no cointegration is detected, then the model has to be estimated in first differences and the Granger causality is applied.

3.2 Testing for Unit Roots

The first step is to test the variables for unit roots to establish their order of integration. To test the level of integration of the variables that were employed in this study, Augmented Dickey-Fuller test (ADF) was applied. The aim is to determine whether the variables follow a non-stationary trend and are of the order 1 denoted as $I(1)$ or whether the series are stationary, that is, of the order of 0 denoted as $I(0)$. ADF test is based on the estimate of the following regression.

$$\Delta x_t = a_0 + a_1 t + \beta x_{t-1} + \sum_{j=1}^{p} \delta_j \Delta x_{t-j} + \varepsilon_t \quad (1)$$

Where a_0 is a drift term; t represents a time trend; and p is a large enough lag length to ensure that ε_t is a white noise process. The null hypothesis that the variable x is non-stationary ($H_0 : \beta = 0$) is rejected if β is significantly negative, when compared with the Augmented Dickey-Fuller (1979), critical values.

If the series are non-stationary, the use of classical methods of estimation such as OLS could lead to a spurious relationship thus rendering the results meaningless. The traditional suggestion to deal with series that are non-stationary around their means was to difference the series. However, first differencing is not an appropriate solution to the above problem and has a major disadvantage: it prevents detection of the long-run relationship that may be present in the data, that is, the long-run information is lost (Emilio and Smith, 2001).

Because the ADF test is sensitive to lag lengths, Akaike Information Criterion (AIC) and Bayesian Schwartz Criterion (BSC) are used to determine the optimal lag length.

3.3 Cointegration and Vector Error Correction Model

Most economic variables are non-stationary in their levels (integrated of order 1, $I(1)$ but stationary, $I(0)$, in their first difference. If all variables are I(1) the second step is to test for cointegration. Engle and Granger (1987) introduced the concept of cointegration in which economic variables may reach a long-run equilibrium that depicts a stable relationship.

Two variables, x and y are said to be cointegrated of order one ($CI(1,1)$ if both are integrated of order 1 and there exists a linear combination of the two variables that is stationary, $I(0)$. The linear combination is given by either equation (2) or (3):

$$y_t = \alpha_0 + \beta_0 x_t + \mu_{0t} \quad (2)$$

$$x_t = \alpha_1 + \beta_1 y_t + \mu_{1t} \quad (3)$$

For cointegration testing the study used the Engle and Granger (1987) two step method abbreviated as EG. Engle and Granger (1987) established a number of new results concerning cointegration and the ECM. This two-step procedure is quite straightforward. First, a simple static OLS regression is run on the levels of each variable, and the null hypothesis of non-cointegration is tested. If rejected, the parameter estimates of the variables provide an estimate of the long-run relationship. In the second step, the dynamic specification is considered, with lagged value of the residuals from the cointegrating regression appearing among the regressors.

The use of error-correction modelling provides an additional channel through which causality in the Granger sense can be assessed. The standard Granger test may provide invalid causal information due to the omission of error-correction terms from the tests. If the error-correction term is excluded from causality tests when the series are cointegrated, no causation may be detected when it exists, that is, when the coefficient of the error-correction term is statistically significant. Once cointegration is detected, it must follow that x causes y, y causes x or that there exists a feedback between the variables (Granger, 1986; 1988).

3.4 Testing for Granger Causality (GC)

According to the Granger (1969) causality approach, a variable y, in this case, economic growth is caused by x, exports in this case, if y can be predicted better from the past values of y and x than from the past values of y alone. By considering a simple bivariate model, we can test if x is Granger-causing y by estimating equation (4) and then testing the hypothesis in (5), using the standard F test.

$$y_t = \mu_1 + \sum_{j=1}^{p} \gamma_{11j} y_{t-j} + \sum_{j=1}^{p} \gamma_{12j} x_{t-j} + u_{1t} \qquad (4)$$

$$H_0 : \gamma_{12j} = 0 \quad for\ j=1,\ldots,p$$

$$H_1 : \gamma_{12j} \neq 0\ for\ at\ least\ one\ j. \qquad (5)$$

Where u_{it} is a white noise process. Variable x is said to Granger-cause variable y if we reject the null hypothesis (5), where γ_{12} is the vector of the coefficients of the lagged values of the variable x. Similarly, we can test if y causes x by estimating equation (6) and testing the null hypothesis (7) using an F test.

$$x_t = \mu_2 + \sum_{j=1}^{p} \gamma_{21j} y_{t-j} + \sum_{j=1}^{p} \gamma_{22j} y_{t-j} + u_{2t} \quad (6)$$

$$H_0 : \gamma_{22j} = 0 \quad for\ j=1,...,p$$

$$H_0 : \gamma_{22j} \neq 0\ for\ at\ least\ one\ j. \quad (7)$$

Rejecting the null hypothesis (5) but not (7) establishes the evidence that supports the ELG hypothesis. However, this study adopts a broader definition of ELG, where ELG is supported if hypothesis (5) but not (7) is rejected (unidirectional causality from export to output growth) or if both hypotheses are rejected (bidirectional causality between output and export growth). Alternatively, if hypothesis (7) but not (5) is rejected, we conclude that causality is running from economic growth to exports growth and thus provide evidence for the validity of the GLE hypothesis. In the case that neither hypothesis is rejected, exports and output are said to be causally independent and have to be determined by other set of variables.

Prior to testing for a causal relationship between the time series, we have to ensure that the variables series used as regressors are either stationary individually or non-stationary individually. The aim is to verify whether the series had a stationary trend, and, if non-stationary, to establish the order of integration.

The export-output growth causal link is a long-run behavioural relationship whose analysis requires estimation techniques appropriate for long-run equilibria. Therefore, the variables in the system must be tested for cointegration prior to testing for Granger causality (Awokuse, 2003).

3.5 Hypotheses of the Study

This study tested the following hypotheses;

(i) There is bidirectional causality between economic growth and growth of manufactured exports.

(ii) Manufactured exports, other exports, imports and terms of trade are not important in explaining variations in real GDP.

3.6 Data and Variable Definitions

3.6.1 Empirical Model Specification

The empirical model that was estimated in this study is specified as follows:

$$LN\Delta GDP_t = \beta_0 + \beta_1 LNMNF_t + \beta_2 LNOX_t + \beta_3 LNM_t + \beta_4 LNTOT_t + \xi_{1t} \quad (8)$$

$$LNMNF_t = \alpha_0 + \alpha_1 LN\Delta GDP_t + \alpha_2 LNOX_t + \alpha_3 LNM_t + \alpha_4 LNTOT_t + \xi_{2t} \quad (9)$$

Where

β_0 and α_0 = constant

β_i and α_i where i = 1,2,34 are the estimated coefficients

ξ_t = random variable or uncorrelated disturbances

t = time period

Variable Name	Definition	Measurement
LNΔGDP	Natural logarithm of change in GDP	Change in value of GDP as a percentage of GDP of previous year
LNMNF	Natural logarithm of manufactured exports	Value of manufactured exports
LNOX	Natural logarithm of non-manufactured exports	Value of non-manufactured exports
LNM	Natural logarithm of imports	Value of imported goods and services
LNTOT	Natural logarithm of terms of trade	Unit value of exports as a percentage of unit value of imports

3.6.2 Data Sources

All the data used in this study is secondary and was extracted from the Government of Kenya Economic Surveys, Statistical Abstracts, World Development Indicators (WDI) of the World Bank and data from the Export Promotion Council of Kenya.

This study was extended beyond the traditional bivariate approach by including imports as an additional variable in the system following Glasure and Lee, (1999). Studies such as those by Serletis (1992) and Riezman et al (1996) suggest that imports may contribute to the establishment of cointegration and thus have to be accounted for when testing for long-term equilibrium between economic growth and exports. The inclusion of imports in the system allows us to capture the role of promoting exports in the accumulation of foreign exchange which makes it easier for the economy to finance the importation of capital goods which in turn boost economic growth. Thus, by incorporating imports as an explanatory variable in the model, we allow not only for a direct effect of exports on economic growth but also for an indirect effect that involves imports. Riezman et al (1996) suggest that omitting imports from the system may 'either mask or overstate the effects of exports on income'.

The terms of trade variable reflects the possible linkages of the real exchange rates and the possible effects of restrictive trade policy such as tariff and non-tariff barriers and real output, Awokuse (2003).

CHAPTER FOUR

EMPIRICAL RESULTS

4.0 Introduction

This section presents two sets of results: The first subsection gives descriptive statistics and the findings on non-stationarity and cointegration. The second subsection presents the estimated Granger causality test results.

4.1 Descriptive Statistics

Before embarking on the details of empirical analysis, it is important to establish whether the data exhibits normality, as most economic data is skewed (non-normal).The Jarque – Bera test is used to test normality of the series. It utilizes the mean based coefficient of skewness and Kurtosis to check normality of variable used. Skewness is the tilt in the distribution and should be within the -2 and +2 range for normally distributed series; Kurtosis is the peakedness of a distribution and should be within -3 and +3 range when data is normally distributed. Normality test uses the null hypothesis of non-normality. If the probability value is less than Jarque-Bera chi-square at the 5% level of significance the null hypothesis is not rejected (Hildebrand, 1986). Table 1 gives the summary of the descriptive statistics of the data used in the study.

Table 1: Descriptive Statistics

Description	LNGDP	LNOX	LNMX	LNM	LNTOT
Mean	1.080986	16.85964	15.46367	17.64090	4.469831
Median	1.434801	16.63342	14.92568	17.49829	4.465842
Maximum	2.174752	18.93971	18.35439	20.22093	4.875197
Minimum	-1.609438	14.25570	13.13847	14.96616	4.248495
Std. Dev.	0.931534	1.406615	1.684913	1.559298	0.140916
Skewness	-1.485642	-0.162269	0.194675	0.000693	0.505819
Kurtosis	4.678971	1.870515	1.483354	1.776810	3.074631
Jarque-Bera	18.44183	2.186680	3.882032	2.368977	1.629224
Probability	0.000099	0.335095	0.143558	0.305903	0.442811
Observations	38	38	38	38	38

Source: Own Calculations

All the variables included in the study, that is; gross domestic product (LNGDP), manufactured exports (LNMX), other exports (LNOX), imports (LNM) and terms of trade (LNTOT) were observed for a period of 38 years.

The normality test shows that most of the variables are not normally distributed because the probability values are less that the Jarque-Bera values at 5 percent level of significance. This can impair the normality of the residuals forming the long-run relationship. By examining kurtosis, manufactured exports, non-manufactured exports and imports are normally distributed.

4.2 Unit Roots Tests

Prior to the testing for a causal relationship between the time series, the first step is to check the stationarity of the variables used in the model to be estimated. The aim is to verify whether the series had a stationary trend, and, if non-stationary, to establish orders of integration. This is meant to eliminate the possibility of spurious regressions and erroneous inferences. The most widely acceptable and reliable methods of determining the order of integration are the Augmented Dickey-Fuller (ADF) and the Phillips-Perron (PP) tests. However, for the purposes of this study, ADF test was selected. The ADF test which parametrically models the autocorrelation of the residuals has the advantage that can test whether the residuals of the estimated test equation are still auto-correlated. This is not possible with Phillips-Perron test. The results of the ADF test are presented in Table 2 below.

Table 2: Unit roots test at level

Variable	ADF Statistics	1% critical value	5% critical value	Comments
LNGDP	-3.236483	-3.6228	-2.9446	Stationary
LNOX	-1.554344	-3.6228	-2.9446	Non stationary
LNMX	0.320011	-3.6228	-2.9446	Non stationary
LNM	-0.283230	-3.6228	-2.9446	Non stationary
LNTOT	-2.738351	-3.6228	-2.9446	Non stationary

Source: Own Calculation

The results indicate that variable LNGDP is stationary at level at 5 percent levels, but not stationary at 1 percent level. This means that LNGDP is integrated of order 0, that is, I(0). Variable LNOX is not stationary at 1 percent and 5 percent levels. This means that there exists at least one unit root and it requires to be differenced to become stationary. Variables LNMX, LNM and LNTOT are also non-stationary at both 1 percent and 5 percent levels and thus they require differencing to become stationary; this is in order to eliminate the possibility of spurious regression results and erroneous inferences. First differencing results are presented in table 3.

Table 3: Unit roots at first differencing

Variable	ADF Statistics	1% critical value	5% critical value	Comments
LNOX	-4.673674	-3.6289	-2.9472	Stationary
LNMX	-3.110987	-3.6289	-2.9472	Non stationary
LNM	-5.480848	-3.6289	-2.9472	Stationary
LNTOT	-4.283183	-3.6228	-2.9472	Stationary

Source: Own calculation

The results in table 3 indicate that after first differencing, LNOX, LNM and LNTOT have become stationary and therefore are integrated of order 1, that is, I(1). However, LNMX is still non stationary at first differencing indicating that it has at least another one unit root and therefore further differencing is required to attain stationarity. Results of differencing twice variable LNMX are given in table 4.

Table 4: Variable MX after second differencing

Variable	ADF Statistics	1% critical value	5% critical value	Comments
LNMX	-6.751068	-3.6353	-2.9499	Stationary

Source: Own calculation

The results indicate that the variable has become stationary after second differencing meaning that it is integrated of order 2, that is, I (2).

4.3 Test for Cointegration: The Engle-Granger Method

Cointegration is a method used to establish whether there exists a linear long-run economic relationship among the variables (Johansen, 1991). Cointegration also helps in pointing out whether there exists disequilibrium in various variables (Pesaran and Shin, 2001). Further, cointegration allows us to specify a process of dynamic adjustment among the co-integrated variables (Johansen, 1991).

The next step after finding out the order of integration is to establish whether the non-stationary variables at levels are co-integrated. Differencing of the variables to achieve stationarity leads to loss of long-run information. The concept of cointegration implies that if there is a long-run relationship between two or more non stationary variables, deviations from this long-run path is stationary. The Engle-Granger two step procedure was used. The first step was to generate residuals from the long-run equation of the non-stationary variables, which were then tested for stationarity using ADF test in the second step of the procedure. The null hypothesis was that the residuals are non-stationary (have unit roots) against the alternative of stationary residuals. The main weakness of the Enger-Granger method is that we may have problems when dealing with small samples. If there is a bias in the first step it can spill over to the second step.

The least squares estimation result of co-integrating regression (CR) is given in table 5 below.

Table 5: The long-run model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.025523	7.600255	-0.266507	0.7915
LNOX	-1.761378	1.098627	-1.603254	0.1184
LNMX	-0.344376	0.499557	-0.689363	0.4954
LNM	1.831160	1.216390	1.905405	0.0417
LNTOT	1.303114	1.495379	1.871427	0.0898

R-squared	0.142251	Mean dependent var	1.080986
Adjusted R-squared	0.038281	S.D. dependent var	0.931534
S.E. of regression	0.913530	Akaike info criterion	2.779079
Sum squared resid	27.53974	Schwarz criterion	2.994551
Log likelihood	-47.80250	F-statistic	1.368197
Durbin-Watson stat	1.287416	Prob(F-statistic)	0.266145

Dependent Variable: LNGDP
Sample: 1970 2007
Included observations: 38

The data analysis results in table 5 above indicate that LNM and LNTOT are significant in explaining change in real GDP. LNOX and LNMX were found to be insignificant in explaining changes in real GDP.

Table 6 below reports the stationarity test for the residual of the Co-integrating regression.

Table 6: Stationarity Test Results of the Co-integration Regression Residuals

ADF Test Statistic	-3.606849	1% Critical Value*	-3.6289
		5% Critical Value	-2.9472
		10% Critical Value	-2.6118

The residuals were found to be stationary at 5% and 10% levels of significance using ADF test. This cointegration test has provided evidence of the existence of long-run relationships among the variables and the possibility of disequilibrium. The residuals become the error correction term and consequently, an error correction formulation is adopted.

The error term is the ECT (error correction term) and it is derived from the above cointegrating regression and is expressed as:

ECT=LNGDP-2.025523*-1.761378LNOX-
0.344376*LNMX+1.831160LNM+1.303114LNTOT (10)

From table 5, the long-run relationship among the variables can be expresses as follows:
LNGDP= -2.025523*-1.761378*LNOX-
0.344376*LNMX+1.831160*LNM+1.303114*LNTOT (11)

Having found that the variables are cointegrated, the next step is to re-specify the equation (8) to include the error correction term (ECM). This term captures the long run relationship. It reflects attempts to correct deviations from the long-run equilibrium and its coefficient can be interpreted as the speed of adjustment or the amount of disequilibrium transmitted each period to changes in GDP growth rate. The result of the error correction model is represented in the table 7 below.

Table 7: Short-run relationship results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-10.74291	7.399313	-1.451880	0.1569
DLNOX	-1.640101	1.088299	-1.507032	0.1423
DDLNMX	-0.664158	0.511912	-1.297406	0.2044
DLNM	2.150010	1.171636	1.835049	0.0764
DLNTOT	2.615846	1.456754	1.795668	0.0826
ECT	-0.420283	0.169097	2.485448	0.0187
R-squared	0.272251	Mean dependent var		1.033740
Adjusted R-squared	0.150960	S.D. dependent var		0.934723
S.E. of regression	0.861285	Akaike info criterion		2.690230
Sum squared resid	22.25437	Schwarz criterion		2.954149
Log likelihood	-42.42413	F-statistic		2.244605
Durbin-Watson stat	1.825939	Prob(F-statistic)		0.075540

Dependent Variable: LNGDP
Sample(adjusted): 1972 2007
Included observations: 36 after adjusting endpoints

The R-squared of 0.272251 indicates that the model explains 27 percent of the GDP variation meaning that there are other significant variables that explain changes in GDP. Manufactured exports and other exports are not statistically significant at 5 percent level in explaining GDP growth. From the above results imports are statistically significant at 5 percent level in explaining GDP growth. A 1 per cent increase in imports will lead to a 2.2 percent positive change in GDP. Conversely terms of trade is statistically significant at 5

percent level and a 1 per cent change in terms of trade will lead to a 2.6 per cent positive change in GDP. The ECT is negative and significant. This term captures the long-run relationship. It reflects attempts to correct deviations from the long-rum equilibrium path. Its coefficient is interpreted as the speed of adjustment or the amount of disequilibrium transmitted each period to economic growth. Its magnitude is -0.42083 implying that about 42 percent of disequilibrium is corrected in the subsequent period.

4.4 Granger Causality Test Results

After testing for stationarity, establishing the order of integration and establishing that the variables are co-integrated, it is now possible to determine whether there is Granger causality between variables used in the model to determine whether the ELG hypothesis holds for Kenya. Granger causality test results are presented in table 8 below.

Table 8: Granger causality test results

Null Hypothesis:	Obs	F-Statistic	Probability
DLNOX does not Granger Cause LNGDP	35	0.11636	0.89055
LNGDP does not Granger Cause DLNOX		1.38481	0.26592
DDLNMX does not Granger Cause LNGDP	34	0.62600	0.54179
LNGDP does not Granger Cause DDLNMX		1.76956	0.18832
DLNM does not Granger Cause LNGDP	35	0.13723	0.87231
LNGDP does not Granger Cause DLNM		0.81291	0.45310
DLNTOT does not Granger Cause LNGDP	35	0.08243	0.92108
LNGDP does not Granger Cause DLNTOT		0.08079	0.92259
DDLNMX does not Granger Cause DLNOX	34	3.84700	0.03297
DLNOX does not Granger Cause DDLNMX		3.56202	0.04137
DLNM does not Granger Cause DLNOX	35	2.68994	0.08423
DLNOX does not Granger Cause DLNM		1.36715	0.27025
DLNTOT does not Granger Cause DLNOX	35	2.55174	0.09475
DLNOX does not Granger Cause DLNTOT		0.66475	0.52181
DLNM does not Granger Cause DDLNMX	34	3.07185	0.06166
DDLNMX does not Granger Cause DLNM		1.32323	0.28188
DLNTOT does not Granger Cause DDLNMX	34	0.86059	0.43343
DDLNMX does not Granger Cause DLNTOT		0.40613	0.66995
DLNTOT does not Granger Cause DLNM	35	0.85599	0.43498
DLNM does not Granger Cause DLNTOT		0.98161	0.38642

Pairwise Granger Causality Tests
Sample: 1970 2007
Lags: 2

From table 8, the null hypothesis that non-manufactured exports do not Granger cause GDP will be accepted while GDP granger causes non-manufactured exports. The causality is unidirectional running from non-manufactured exports to GDP. Manufactured exports does not granger caused GDP, while GDP granger causes manufactured exports. In this case there is unidirectional causality running from GDP to exports. From the results imports granger cause GDP but GDP does not granger cause imports. Terms of trade does not granger cause GDP and the converse is the same for GDP on terms of trade. This therefore means that there is no causality between terms of trade and GDP.

However, there is bi-directional causality between manufactured exports and non-manufactured exports. There is unidirectional causality between imports and non-manufactured exports running from imports to non-manufactured exports; terms of trade and non-manufactured exports running from terms of trade to non-manufactured exports; and imports and manufactured exports running from imports to manufactured exports.

CHAPTER FIVE

CONCLUSIONS AND POLICY RECOMMENDATIONS

5.0 Introduction

This chapter provides a summary of the study, conclusions, policy recommendations, limitations of the study and areas for further study.

5.1 Summary

The main objective of this study was to test export-led growth hypothesis for Kenya while controlling for other potentially relevant variables, such as terms of trade and imports omitted in previous studies. In addition, it focused on manufactured and non-manufactured exports. Specifically, the study assessed whether promoting exports; in particular manufactured exports, enhances economic growth. Promoting exports has been suggested by prominent economists and by international institutions as a key strategy of fostering economic growth. To realise the above goals, the analysis in this study utilised time series econometric techniques and data for 1970-2007.

From the results of the analysis, manufactured exports and other exports do not Granger cause change in GDP indicating that they do not have a significant positive effect on GDP in Kenya for the period studied. There is unidirectional causality between imports and other exports running from imports to exports; terms of trade and other exports running from terms of trade to exports and imports and manufactured exports running from imports to manufactured exports.

5.2 Conclusions

Cointegration test demonstrates that there is a long-run relationship between change in GDP, manufactured exports, other exports, imports and terms of trade. The results suggest that the variables under consideration are co-integrated and therefore share a common linear common trend, that is, they move together in the long run.

Promotion of exports especially those that are manufactured has a great potential of accelerating economic growth. However, results from the study indicate that manufactured exports and other exports do not Granger cause economic growth. The probable reason why manufactured exports have no positive impact on economic growth could be because they constitute only an average of 27 percent (calculated from the data used in the study) of the total exports. On the other hand, other exports have no positive impact on change in GDP probably because primary products form the largest share of the other exports. These primary products (raw materials) exports are prone to long economic slowdown as is the case in Kenya and the rest of the world due to fluctuations in the prices of such products.

The analysis of the data revealed some important points. When considering manufactured exports and other exports, causality tests did not uncover support for the ELG hypothesis where growth in exports causes growth in GDP and this contradicts what is widely accepted. This finding does not suggest that manufactured exports are less important in influencing and determining the direction of economic growth. Manufactured output and exports are important in the matrix of growth as has been demonstrated by many Asian economies. It is therefore critical for the government of Kenya and policy makers to work towards initiating and accelerating policies that will improve the quantity, quality and value of manufactured output and exports in the overall GDP contribution.

5.3 Policy Recommendations

Since the study has been unable to establish that growth in manufactured exports promotes economic growth, it is important that those sectors that are likely to foster growth in manufactured exports be chosen based on the expected gains to the whole economy. A more detailed analysis at the sectoral level is necessary to further assess these aspects. Equally important is seeking ways of increasing manufactured exports' share of the overall exports from the current 27 percent.

Kenya should design policies aimed at diversifying production for export and focus on the manufacturing sectors in which the economy possesses comparative advantage. This will cushion the economy against adverse effects associated with fluctuations of primary products prices which form the largest share of the total exports merchandise. Primary products have both low income and price elasticities of demand.

Given that the largest share of other exports is composed of raw materials and semi-processed agricultural output; it is important to add value to these products. However, this is bound to elicit resistance especially from developed countries which are likely to impose both tariff and non-tariff barriers to imports. Thus, there is need for Kenya to seek to deepen its integration with regional economic blocs to both increase its bargaining power and broaden its market.

Exchange rate stability is an important economic policy, as it does not only affect imports and exports but also FDI, and the stock market. It also needs to be stressed that the provision of an adequate infrastructure is another important concern for the business communities. Given that the Government has been giving more attention in establishing an adequate infrastructure, it is anticipated that this will have positive impacts on exporters and FDI, and thus finally also on growth.

The export booms underlying the Asian success stories did not generally occur spontaneously, as an inevitable result of the interaction between supply and demand in free markets. Instead, governments played a central role in the development process. Most significantly, periods of successful growth and export expansion were characterized by public policies providing a stable economic environment with various incentives for private business, and promoting the accumulation of human and physical capital. It is no coincidence that several of the Asian economies exhibit remarkably high rates of savings, investment and human capital accumulation. The policies implemented to achieve this growth oriented macroeconomic environment were quite orthodox. The GDP share of government spending and the level of taxation should be relatively low. This is the same success story that is recommended to the Kenyan Government for the very intent of promoting exports growth and economic growth. The government should have purposeful macro-economic policies directed towards the export sector.

Exchange rates should be managed to avoid overvaluation of the domestic currency. The stability will make it possible to avoid imposing general import restrictions to correct balance of payments deficits, and facilitate a gradual reduction of trade restrictions. In fact, trade liberalization should often integrate with macroeconomic management, so that major phases of liberalization coincide with devaluation, exchange rate unification, fiscal reform, and inflows of foreign aid or concessional loans to offset the temporary weakening of the current account. Both trade liberalization and realistic exchange rates are necessary requirements for export success, given that most exporting firms are dependent on access to imported intermediary and capital goods, and rely on low prices as a major competitive asset.

Concurrently, land reforms are important in Kenya to create a more equal distribution of income and wealth and to allow a larger part of the population to benefit from new export and growth opportunities. Looking more specifically at the policies and institutional framework in the export sector, it should be noted that most successful episodes of export promotion share some common features. First, the allocation of various preferences and export incentives will largely be based on markets and competition, to qualify for continued

support, firms will have to show good export performance. Second, it is the private sector rather than state-owned firms that should be targeted. In most countries, foreign investors have also played an important role for export success. It is therefore necessary for the government to strengthen the role of export processing zones in the enhancement of manufactured exports.

5.4 Limitation of the Study

This study did not take into account private investment in the model mainly because of lack of data. It is private investment that drives export growth and hence the need to include it in the model in a further study. Further, lack of data, made it impossible to disaggregate imports and use imports of capital goods in the estimation process.

5.5 Areas for Further Study

Future study can include private investment in the model to be able to examine to what extent private investment drive economic growth in Kenya. Imported capital goods other than aggregate imports can be used in another empirical work since imported capital goods are likely to lead to increased exports. It is therefore important for a further study to split imports into that of capital goods and other imports in the estimation model. This will establish which import component has a causal relation with exports and economic growth.

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Appendix 1: Percentage Value of Exports, 1997-2003

Item	1997	1998	1999	2000	2001	2002	2003
Horticulture	10.5%	11.7%	12.9%	15.0%	13.6%	18.5%	22.5%
Tourism	12.8%	10.1%	15.6%	15.2%	16.6%	14.2%	15.9%
Tea	17.4%	25.9%	24.2%	24.9%	23.7%	22.5%	20.3%
Iron and steel	4.0%	3.0%	2.0%	1.8%	2.5%	2.7%	2.5%
Coffee	12.8%	10.1%	8.8%	8.3%	5.1%	4.3%	3.9%
Soda ash	1.7%	1.0%	1.0%	1.0%	1.4%	1.4%	1.5%
Fish and fish preparations	2.3%	2.2%	1.7%	2.1%	2.6%	2.7%	2.5%
Articles and plastics	1.3%	1.6%	1.1%	1.5%	1.8%	2.0%	1.6%
Essential oils	2.5%	2.6%	2.5%	1.5%	1.7%	1.6%	1.7%
Tobacco and tobacco manufactures	1.3%	1.3%	1.1%	1.5%	2.0%	2.3%	1.8%
Animal and vegetable oils	1.7%	1.9%	1.6%	0.8%	0.9%	1.5%	1.5%
Medicinal and pharmaceutical products	1.4%	1.3%	1.2%	1.7%	1.1%	1.1%	1.3%
Sugar confectionery	0.6%	0.7%	0.6%	0.9%	1.1%	1.2%	1.1%
Cement	1.0%	1.1%	0.9%	1.0%	0.7%	1.0%	1.2%
Footwear	0.9%	0.7%	0.8%	0.8%	0.8%	1.0%	0.9%
Petroleum products	5.5%	7.2%	7.0%	6.7%	8.5%	2.5%	0.0%
Maize	0.0%	0.1%	0.4%	0.0%	0.0%	1.1%	0.1%
All other	22.3%	17.6%	16.6%	15.2%	15.9%	18.5%	19.7%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Own Calculations

Appendix 2: Major Destinations of Kenya's Exports by Country, 1997-2007

Destination	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Uganda	15.0%	16.1%	17.3%	18.0%	20.4%	18.5%	16.7%	17.3%	17.4%	11.8%	13.2%
United Kingdom	11.4%	13.4%	13.9%	13.9%	11.1%	11.6%	11.8%	10.4%	9.5%	11.6%	11.3%
Tanzania	13.5%	13.3%	11.2%	8.2%	9.2%	8.4%	8.0%	8.4%	8.2%	7.8%	8.8%
Netherlands	4.7%	4.4%	5.0%	5.4%	6.7%	6.5%	7.7%	8.0%	5.5%	8.4%	8.6%
Pakistan	4.3%	6.8%	7.4%	7.4%	6.0%	4.9%	5.0%	5.3%	5.9%	5.8%	5.3%
Democratic Republic of Congo	2.0%	1.7%	1.7%	2.3%	2.9%	2.9%	2.9%	3.7%	4.2%	3.2%	3.3%
Egypt	2.5%	4.7%	5.5%	5.3%	4.8%	4.0%	3.0%	3.2%	3.6%	4.2%	3.6%
Rwanda	3.1%	2.5%	2.5%	2.6%	2.4%	2.5%	3.3%	3.2%	3.0%	2.0%	2.3%
Germany	6.3%	4.6%	4.7%	4.1%	3.5%	2.6%	2.9%	2.1%	2.1%	2.0%	2.3%
U.S.A.	2.8%	2.5%	2.2%	2.1%	2.3%	2.0%	1.5%	2.1%	4.9%	8.6%	7.6%
India	1.0%	1.5%	1.4%	1.0%	1.6%	1.5%	1.4%	1.9%	1.6%	1.6%	2.3%
France	2.1%	1.6%	1.9%	1.6%	1.6%	1.4%	1.7%	1.7%	2.1%	1.6%	1.6%
Somalia	1.6%	1.5%	1.7%	2.2%	1.1%	2.7%	2.0%	1.5%	2.0%	3.2%	3.3%
Belgium	1.5%	1.4%	1.3%	1.4%	1.4%	1.4%	1.3%	1.2%	1.2%	0.9%	1.0%
Ethiopia	1.8%	1.3%	1.2%	1.5%	1.5%	1.2%	0.9%	1.0%	1.0%	1.6%	1.3%
Italy	1.9%	1.4%	1.3%	1.1%	0.8%	1.0%	0.9%	0.8%	0.9%	0.8%	1.0%
All other	24.5%	24.3%	21.2%	22.9%	22.9%	28.4%	30.4%	28.5%	26.8%	24.9%	23.3%
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Own Calculations

Appendix 3: Kenya Export Data Analysis, 1970-2007

Year	X/Y	MX/X	OX/X
1970	18%	25%	75%
1971	17%	26%	74%
1972	17%	20%	80%
1973	20%	22%	78%
1974	22%	19%	81%
1975	19%	17%	83%
1976	23%	15%	85%
1977	26%	10%	90%
1978	18%	13%	87%
1979	17%	14%	86%
1980	18%	14%	86%
1981	17%	14%	86%
1982	16%	12%	88%
1983	16%	12%	88%
1984	17%	11%	89%
1985	16%	13%	87%
1986	16%	12%	88%
1987	11%	14%	86%
1988	12%	15%	85%
1989	12%	17%	83%
1990	13%	17%	83%

Year	X/Y	MX/X	OX/X
1991	14%	23%	77%
1992	13%	25%	75%
1993	22%	25%	75%
1994	21%	32%	68%
1995	20%	30%	70%
1996	17%	28%	72%
1997	15%	19%	81%
1998	13%	23%	77%
1999	13%	24%	76%
2000	12%	22%	78%
2001	12%	24%	76%
2002	13%	27%	73%
2003	12%	28%	72%
2004	12%	31%	69%
2005	15%	22%	78%
2006	14%	36%	64%
2007	13%	36%	64%

Source: Own Calculations

Key

X/Y - % Total Exports to GDP

MX/X - % Manufactured Exports to Total Exports

OX/X - % Non-Manufactured Exports to Total Exports