

**THE EFFECT OF EXPORTS AND IMPORTS ON ECONOMIC
GROWTH: EMPIRICAL EVIDENCE FROM KENYA**

RUFUS MARUNDU MAINA

D61/71539/2008

**A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT FOR
THE REQUIREMENTS OF THE AWARD OF THE DEGREE OF MASTER
OF BUSINESS ADMINISTRATION (MBA) OF THE UNIVERSITY OF
NAIROBI (UoN)**

OCT 2015

DECLARATION

I, the undersigned, declare that this is my original work and has not been submitted to any other college, institution or university other than University of Nairobi for academic purpose.

Signed _____

Date: _____

Rufus Marundu Maina (D61/71539/2008)

This project report has been presented for examination with my approval as the appointed supervisor.

Signed _____

Date: _____

Prof. Aduda Josiah O

Dean, School of Business, Department of Finance and Accounting.

ACKNOWLEDGEMENT

The path to this accomplishment has been very long and full of detours. I would like to thank my supervisor Professor Aduda Josiah for piquing my interests in completing this project. He spared no efforts in supporting me through the program and I wish to thank him deeply for his understanding.

I would also like to thank the staff at the University of Nairobi Library, for their efforts in enabling me access the necessary written and online publications which greatly enhanced my final output in this project. And in addition, the Lecturers who dedicated their time in the course work for their guidance and ultimate sacrifice of time.

My appreciation also goes out to my employers who afforded me time in spite of the very demanding nature of my job. It would have been even more difficult to complete the Programme without their support and encouragement.

I would like to acknowledge the various authors and academicians for their scholarly work, and which I have used in reaching conclusions and submissions. I would not have been able to access the requisite foundation on which this project has been based. They shared their thoughts and ideas on the subject matter, and I have used the information to conduct my research.

Last but not least, I acknowledge the emotional support my family accorded me, especially during the intense exertions of my job, and the competing interest of successfully completing this Programme. Your continuous encouragement has been of immense help.

DEDICATION

This work is dedicated to our two dear children, Robin and Emma, and my wife Tabitha Njeri whose presence in my life constantly reminded me of the need to carry on and complete my studies. It is also a dedication to my dear parents who taught me what resilience and a hope for tomorrow is all about.

ABSTRACT

The main objective of the study was to investigate the relationship between exports, imports and economic growth in Kenya. The study was guided by the following specific objectives: To examine the relationship between exports, imports and economic growth: This will be determined by establishing whether a correlation of any nature exists and to examine the strength of the relationship, if any, between exports, imports and economic growth. The type of research design that employed in this study is co-relational research design. The target population relevant to the study was GDP, imports and exports as measured in terms of dollars for the period 1960 to 2010. The study employed secondary data collection. Correlation analysis was employed.

The findings revealed that exports led to economic growth. There was a strong positive or direct relationship between the exports and the economic growth. However, the correlation coefficient exports and economic growth compared to the correlation between the imports and economic growth was slightly small. For this case, it would mean that imports had a greater impact than exports on economic development in Kenya. Also, the findings indicated that there was a strong positive or direct relationship between the imports and the economic growth in the country. It was easy to conclude that that the association is very strong as compared to exports. This may be attributed by the imports of capital goods main in the agriculture, industry and transport sector.

The study recommends that the country should apply both the Export Led Growth hypothesis, and the Import Led Growth hypothesis, although the latter has greater impact in Economic growth. The study recommends that the country should continually import capital goods to increase the growth of the economy in the country thereby raising domestic output in key areas of the economy such as agriculture, industry, and transport and Infrastructure to lead to economic growth. Capital goods also increases the efficiency of labor by reducing time spent on production and hence raises production, in turn leading to growth of the economy .On the same breadth, investment in export sectors such as Tourism, Horticulture and Minerals is also important and must be continually encouraged.

TABLE OF CONTENTS

DECLARATION	i
ACKNOWLEDGEMENT	ii
DEDICATION	iii
ABSTRACT	iv
LIST OF TABLES	vi
LIST OF FIGURES	vii
ABBREVIATIONS	viii
CHAPTER ONE: INTRODUCTION	1
1.1 Background of the Study	1
1.2 Statement of the Problem.....	4
1.3 Objectives of the Study.....	6
1.4 Significance of the Study	6
CHAPTER TWO: LITERATURE REVIEW	8
2.1 Introduction.....	8
2.2 Review of Theories	8
2.3 Review of Empirical Studies	11
2.4 Summary of Literature Review.....	21
CHAPTER THREE: RESEARCH METHODOLOGY	22
3.1 Introduction.....	22
3.2 Research Design.....	22
3.3 Population and Sample	22
3.4 Data Collection Method.....	22
3.5 Data Analysis	23
CHAPTER FOUR: RESULTS AND FINDINGS	24
4.1 Introduction.....	24
4.2 General Information.....	24
4.3 Correlation Coefficient of Exports on Economic Growth	24
4.4 Correlation Coefficient of Imports on Economic Growth.....	24
4.5 Summary and Interpretation of Findings	31
CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS .Error! Bookmark not de	
5.2 Conclusion	35
5.3 Recommendation to Policy and Practise.....	35
5.4 Limitations of the Study.....	36
5.5 Recommendation for Further Studies	37
5.1 Summary	Error! Bookmark not defined.
REFERENCES	39
APPENDICES	43
APPENDIX A: INTRODUCTORY LETTER	43
APPENDIX B: RESEARCH DATA	44

LIST OF TABLES

Table 4.1: Correlation Coefficient Exports and Economic Growth	26
Table 4.2: Regression of Exports and Economic Growth.....	28
Table 4.3: Correlation Coefficient of Imports on Economic Growth.....	30
Table 4.4: Regression of Imports and Economic Growth.....	31

LIST OF FIGURES

Figure 4.1: Linear Graph for the GDP	24
Figure 4.2: Linear Graph for the Exports.....	25
Figure 4.3: Linear Graph for the Imports.....	26
Figure 4.4: Scatter Diagram of Exports and Economic Growth.....	29
Figure 4.2: Scatter Diagram of Imports and Economic Growth.....	31

ABBREVIATIONS

ADF.....	Augmented Dickey-fuller test
AEO	African Economic Outlook
DRC.....	Democratic Republic of Congo
ECM.....	Error correction method
ELG.....	Export Led growth
G-7.....	”Group of seven” industrially advanced nations
GDP.....	Gross Domestic Product
H-O.....	Eli Heckscher and Bertil Ohlin Theory
KES.....	Kenya Shillings
OECD.....	Organization for Economic Co-operation and Development
PP.....	Phillip-Peron test
R&D.....	Research and Development
SPSS.....	Statistical package for Social sciences
TOT.....	Terms of Trade
TV.....	Television set
UAE.....	United Arab Emirates
UK.....	United Kingdom
US.....	United states
USA.....	United states of America
USD.....	United States Dollar

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Gross Domestic product (GDP) is largely used as a barometer to measure a country's economic progress. Economic policies leading to economic growth and development have been studied by many economists such as the Mercantilists, Adam Smith, and David Ricardo for a long time. Some of these variables are investment, savings, inflation, inflation variability, governmental expenditures as a percentage of GDP, government deficit, and other mainly macroeconomic variables.

GDP is defined as the market value of all officially recognized final goods and services produced within a country in a given period. Imports refer to goods and services produced by the foreign sector and purchased by the domestic economy. Essentially, they are goods and services purchased from other countries. Exports refer to goods and services produced domestically and purchased by a foreign sector. They are goods and services purchased by other countries.

Carbaugh (2000) identified that imports and economic growth are positively correlated, with causality running in both directions. Faster economic growth does indeed lead to higher imports, but countries that are open to trade, imports and exports, tend to grow faster than countries that are closed or less accessible. Similarly, Humpage (2000) noted that between 1998 and 1999, the United States total GDP advanced by 5.6 percent while imports advanced by 12.3 percent. It is not the case; however as is frequently claimed, that GDP would have grown faster had people spent their incomes on domestically produced goods instead of imports. Imports do not, in fact, depress the GDP total because of the way they are financed.

Subasat (2002) investigated the empirical linkages between exports and economic growth. The analysis suggested the more export oriented countries like middle income countries grow faster than the relatively less export oriented countries. The study also showed that export promotion does not have any significant impact on economic growth for low and high income countries. Jordan (2007) analyzed the causality between exports and GDP of Namibia for the period 1970 to 2005. The hypothesis of growth led by export is tested through Granger

causality and co-integration. The results revealed that exports Granger cause GDP and GDP per capita and suggested that the export-led growth strategy through various incentives has a positive influence on growth.

It is not surprising to note that imports have been expanding in Kenya, particularly in the past decade, given the country's move towards trade liberalization. Trade liberalization has continued in line with agreements Kenya has entered into with organizations such as the World Trade Organization and has resulted in tariff rates being progressively reduced. Kenya source most of its imports from Far East Asia, whose share of imports accounted for 42% of the total import bill as well as from the European Union and Middle East Asia, whose shares of imports respectively amounted to 20.4% and 14.7% of the import bill (African Economic Outlook, 2011).

Over the years, the increased value of imported oil and manufactured goods raised the value of imports by 10.1% during the first half of 2010 compared to the first half of 2009. Oil imports increased by 23.6%; manufactured goods imports increased by 20% and imports of machinery and transport equipment increased by 10.8%. During the third quarter of 2010, Kenya sourced most of its imports from Far East Asia, whose share of imports accounted for 42% of the total import bill as well as from the European Union and Middle East Asia, whose shares of imports respectively amounted to 20.4% and 14.7% of the import bill (African Economic Outlook, 2011). This may show that income increases are likely to be reflected in higher consumption and given the limited range of consumption and investment goods produced domestically, the stronger demand is likely to translate into higher imports.

Kenya also imported crude oil and refines it for domestic use and for export. In the last five years, the quantity of imported petroleum products has grown from 3.5 million tonnes in 2004 to 4.7 million tonnes in 2009. On the other hand, the export of petroleum products increased from 37 400 tonnes in 2004 to 216 100 tonnes in 2007, fell again to 88 700 tonnes in 2008, but increased to 112 500 tonnes in 2009 (AEO, 2011). On the other side, the services current account deficit improved to USD 1 787 million in the year to August 2010 from USD 1 966 million in the year to August 2009. Earnings from tourism and transportation services are the main sources of this improvement. Increased value of Kenya's imports contributed to worsening its merchandise account deficit from a deficit of USD 5 842 million in the year to

August 2009 to a deficit of USD 6 509 million in the year to August 2010. As a result, the current account deficit increased from 5.3% of GDP in 2009 to 7.8% of GDP in 2010 (AEO, 2011). These suggest that increased current account deficit will likely result in a substantial increase in imports in the long run.

In 2010, Kenya also benefited from the global economic recovery as well as higher prices for its exports. The agriculture and manufacturing sectors became Kenya's new growth drivers after two years of weak performances. The economy grew by 5.0%, compared with 2.6% in 2009, and 1.7% in 2008. 2010. High growth can also be attributed to increased public investment under the economic stimulus program implemented by the government at the end of 2009. Large investments were undertaken in key sectors of the economy, namely agriculture, infrastructure, services, and health and education. Improved and well-distributed rains starting in November 2009 and continuing into 2010 contributed to the recovery of the agricultural sector. The sector had started to recover in 2009 with the margin of decline improving from -4.1% in 2008 to -2.6%. In the third quarter of 2010, the sector continued its recovery, expanding by 6.8% compared to a contraction of 3.4% in the corresponding quarter of 2009. Despite the increase in the first three quarters of 2010, agricultural output still has not reached the pre-crisis growth levels recorded in 2007.

Kenya's main crops, namely maize, beans, potatoes and tea, recorded significant increases in production in 2010. However, horticultural products, coffee and sugarcane recorded lower levels of output and export in 2010 compared with 2009. Flight cancellations due to the volcanic eruption in Iceland, insufficient rainfall and depressed demand from Kenya's traditional flower markets aggravated by the global economic recession are among the main challenges faced by Kenya's horticulture exports in 2010. As a result, horticultural exports grew only marginally, by 3.7%, while horticultural production increased by 5.7%. Coffee, sugarcane and milk recorded negative growth performances. Excessive drought in 2009 and unpredictable rainfall patterns in the coffee-growing area in 2010 contributed to the reduction of coffee sales from 49 498 metric tonnes in 2009 to 38 938 metric tonnes in 2010, representing a 21.3% decrease. Rising coffee prices helped to absorb the impact of lower outputs. Average annual prices for coffee sales more than doubled, from KES 195.75 (Kenyan shilling) per kilogram in 2009 to KES 396.78 per kilogram in 2010.

The main exports in the first half of 2010 were tea (23.6%), horticulture (14.5%), manufactured goods (12%), raw materials (4.4%), coffee (3.9%) and oil products (2.2%). Improved commodity prices in the international markets and growing domestic production led to an increase in the value of merchandise exports of 8.4% between August 2009 and August 2010. This increase was mainly attributed to tea exports whose value increased by 37.5%. Over the same period, receipts from other exports also increased. Horticultural exports increased from USD 673 million to USD 709 million. Oil products exports increased by 21.7% from USD 91 million in August 2009 to USD 110 million in August 2010. Almost half (46%) of Kenya's exports for the year up to August 2010 went to African countries. The main destinations for exports were Uganda (12.4%), Tanzania (8.4%), Egypt (4.5%) and Sudan (4.3%). Outside Africa, Kenya mainly exported to the United Kingdom (UK) (10.7%), the Netherlands (6.9%), the United States (US) (4.5%), Pakistan (4.5%), and United Arab Emirates (UAE) (4.4%).

1.2 Statement of the Problem

Several studies have been carried out in determining the growth of Gross Domestic Product. Intermediate goods such as machinery and transport equipment are an important input for the production of other commodities. Imports of these goods from developed countries bring new technology to developing countries, which in turn enhance the productivity of factors and leads to the growth of output (Coe, *et al*, 1997).

In this regard, high technology goods are required by the industrialization process and economic growth. In this way, imports of such goods play a similar role to that of R&D activities in developed countries, that is, they help developing economies to be able to acquire foreign technology from R&D intensive countries (Busse and Groizard, 2008; Caselli and Wilson, 2004).

Furthermore, the contribution of imports to industrialization and growth in less developed countries requires a reallocation of resources and an increase in investment. In this effort, imports play an additional role, namely, that of improving the efficiency of capital accumulation by importing relatively cheaper capital goods from high income countries that

are intensive in R&D (Lee, 2005). The same occurs when they have access to an increasing variety of higher quality intermediate inputs in foreign markets (Amiti and Konings, 2007).

Maingi (1999) did a study on the determinants of the real Gross Domestic Product growth rate in Kenya, 1973-97. The objectives of the study were to identify the factors that determine fluctuations in real Gross Domestic Product (GDP) growth rate in Kenya, measure the relative effect of the factors, and to give policy recommendations. The study established that the growth of capital stock, export growth, financial development, external debt, exchange rate, and real interest rate were significant determinants of real gross domestic product.

Otinga (2009) examined the role of exports on Kenya's economic growth vis- a-vis other components of the GDP for the years 1975-2007. He concluded that exports have a greater positive impact to the GDP than other components. He found imports, private and public investments to be negatively correlated with GDP, while exports, foreign aid and government expenditure were positively correlated with GDP, exports having a greater impact. His study chiefly centered on the prominent role of exports, largely ignoring to place the same emphasis on other components, notably imports. The chief argument was despite export led growth, economic growth has not grown at a rate consistent with the rate of growth in exports.

Kipkosgei (2011), in a study aimed at providing an analysis of the empirical linkage between trade balance and a set of key macro-economic variables concluded that real exchange rate, government consumption expenditure, domestic income and money supply are significant determinants of Kenya's trade balance for the period 1970-2010 as opposed to foreign income which was statistically insignificant.

Sentsho (2002) tested the causal relationship between exports and economic growth in the mining sector in Botswana for the period 1976-1997. The objective of the study was to see whether revenues derived from the primary exports sector (such as mining) could lead to positive and significant economic growth in Botswana. Sentsho investigated the contribution of exports to Botswana's economic growth. The author found evidence supporting the statistical analysis, suggesting that capital, labor force, primary exports, manufactured (nontraditional) exports, imports, government sector, previous period growth in real GDP, and world GDP are important factors affecting Botswana's economic growth.

Because of the critical roles of exports and imports have towards economic growth, it is important to establish the nature of the relationship, and related strength. The study provides an analysis of the empirical relational linkage between imports and exports, and economic growth.

1.3 Objectives of the Study

1.3.1 Main Objectives of the Study

The main objective of the study was to investigate the relationship between exports, imports and economic growth in Kenya.

1.4 Significance of the Study

It is agreed that investment is important for economic growth. The recommendations from the study will provide important contributions to the Ministry of Trade in coming up with appropriate policies to assist the government in pursuing policies that restore and sustain high growth rates in the Kenyan economy. For long, the major business partners have tended to veer towards Western countries (Read Europe and the USA).Of late though, there has been a deliberate government policy to increase trade with the Asian countries and especially the People's Republic of China as evidenced by the sheer number of projects being implemented by the latter. Importation of security apparatus and police vehicles from Japan and China which was for long, the preserve of Britain and USA can also be viewed along the same lenses.

The study will also aid the East African Secretariat responsible for harmonizing trade practices in the region, in coming up with policies that will improve instead of hindering trade amongst member countries .One has in mind the recent spat between Kenya and Tanzania on payment of border fees where Tanzania unilaterally imposed a fee of USD 200 on every truck. This led to a protracted and an unnecessary quagmire between the two countries. It was a standoff that would probably have been avoided if the decision makers were better informed on likely repercussions of their actions, diplomatic-wise and economic wise.

The study will also definitely contribute to the existing empirical literature on the effects of imports and exports in GDP growth using the Kenyan scenario. In this context, it also helps us to draw an important policy lesson. The contrasting views on the subject are numerous and a comprehensive study using the Kenyan Scenario is bound to enrich the available literature on the subject.

It is a study that will also be of benefit to the importers and exporters (whether corporate or individuals) by letting them understand how their activities contribute to the growth of GDP. In a way, it may enhance levels of patriotism amongst members of the business community, much as the profit motive may be of greater importance to them.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The aim of this study was to investigate causal relationship between imports, exports and economic growth in Kenya. The study will be guided by the following specific objectives: to examine the effect of imports on economic growth and to investigate the effect of exports on economic growth.

2.2 Review of Theories

2.2.1 The Eli Heckscher and Bertil Ohlin Theory (The H-O Theory)

The Heckscher-Ohlin theory explains why countries trade goods and services with each other, the emphasis being on the difference of resources between two countries. This model shows that the comparative advantage is actually influenced by the interaction between the resources countries have (relative abundance of production factors) and production technology (which influences the relative intensity by which the different production factors are being utilized during the production cycle. A country having a bigger offer in a resource than in another is relative abundant in that resource and tends to produce more products that use that resource. Countries are more efficient in producing goods for which they have a relative abundant resource.

According to the Heckscher-Ohlin theory, trade makes it possible for each country to specialize. Each country exports the product the country is most suited to produce in exchange for products it is less suited to produce. The changes in relative prices of goods have a powerful effect on the relative income obtained from the different resources. International trade also has an important effect on the distribution of incomes.

The core assumptions of this model include Labour and Capital flows freely between sectors, the amount of labour and capital in two countries differ, free trade, technology is the same between countries and tastes are the same.

One of the draw backs of this theory is that it does not include the trade of capital goods. However, modern trade includes capital goods. Empirical problems with the H-O model, such as the Leontief paradox were further exposed in empirical tests by Wassily Leontief who

found that the United States tended to export labor-intensive goods despite having an abundance of capital.

2.2.2 Paul Samuelson – Ronald Jones Theory (Specific Factors and Income Distribution Model)

Paul Samuelson and Ronald Jones elaborated a trade model based on specific factors. This is a tri-factorial model because it is based on three factors: labour, capital and territory. Products like food are made by using territory and labour while manufactured products use capital and labour. From this simple example it is easy to observe that labour is a mobile factor and it can be used in both sectors of activity, while territory and capital are specific factors.

A country having capital abundance and less land tends to produce more manufactured products than food products, whatever the price, while a country with a territory abundance tends to produce more food. If the other elements are constant, an increase in capital will mean an increase in marginal productivity from the manufactured sector, while a rise in the offer of territory will increase the production of food in the detriment of manufacturers. When the two countries decide to trade, they create an integrated global economy whose manufacture and food production is equal with the sum of the two countries' productions. If a country doesn't trade, the production for a good equals the consumption.

The gains from trade are bigger in the export sector of every country and smaller in the sector competed by imports. This model provides insights into the meaning of economic efficiency, how complex economies simultaneously determine prices and quantities (and that it is relative prices that matter) and how changes in demand conditions or technology can affect income distributions among owners of factors of production (Soumaya and Wilson, 2003).

The theory is premised on the assumptions that the effects of trade on income distribution are due to the facts that: Moving resources from one sector to another takes time and is costly, and industries differ in the factors of production they demand.

2.2.3 Paul Krugman – Maurice Obsfeld Theory (The Standard Model of Trade)

Previous trade theories have emphasized specific sources of comparative advantage which give rise to international trade:

- Differences in labor productivity (Ricardian model)
- Differences in resources (Specific factors and Income Distribution model, and Heckscher-Ohlin model)

The standard trade model is a general model of trade that admits these models as special cases. It is built on four key relationships: Production possibility frontier and the relative supply curve, relative prices and relative demand, World relative supply and world relative demand, and Terms of trade and national welfare.

The standard trade model provides a framework that can be used to address a wide range of international issues. A country's terms of trade are determined by the intersection of the world relative supply and demand curves. Economic growth is usually biased. Growth that is export-biased (import-biased) worsens (improves) the terms of trade. International transfers of income may affect a country's terms of trade, depending if they shift the world relative demand curve. Import tariffs and export subsidies affect both relative supply and demand. The terms of trade effects of an export subsidy hurt the exporting country and benefit the rest of the world, while those of a tariff do the reverse.

The standard model of trade implies the existence of the relative global supply curve resulting from the production possibilities and the relative global demand curve resulting from the different preferences for a certain good. The exchange rate (the rapport between the export prices and the import prices) is determined by the crossing/intersection between the two curves, the relative global supply curve and the relative global demand curve. If the other elements remain constant, the exchange rate improvement for a country implies a substantial rise in the welfare of that country.

2.3 Review of Empirical Studies

Industrial goods are also known as capital goods which are helpful for high production and industrial development. The role of capital goods in the manufacturing sector can be seen from two perspectives. These are growth oriented and innovation-oriented approach (Baark, 1988). The first approach focuses on the role of capital goods in economic growth. Here, it is said that capital goods help to achieve new manufactured goods and affect the three main sectors of the economy, namely, agriculture, industry and transport. Import of machines that are related to agricultural and industry increases a country's output as inputs into production. Similarly, efficient transport system is essential to facilitate the movement of goods at low cost. Thus, the development of these three factors leads to the growth of GDP. Imports of capital goods are also influenced by the investment policy of the government. An increase in industrial growth in turn requires substantial additional imports of capital goods.

According to Baark (1988), the second approach is an innovation-oriented approach, which considers the importance of capital goods as supply of new technology to the manufacturing sector. The import of capital goods supplies efficient machines that occupy new technology, which is obtained from the research and development in developed countries. Thus, diffusion of embodied technology to domestic industry from developed country is important to increase productivity growth throughout the economy and this raises domestic output, in turn, leading to growth of GDP. A good example of embodied technology in this category of imports is import of computer hardware and software. This increases the efficiency of labor by reducing time spent on production and hence raises production, in turn leading to growth of GDP.

Also, the increased value of manufactured goods raised the value of imports by 10.1% during the first half of 2010 compared to the first half of 2009. In Kenya, imports of machinery and transport equipment increased by 10.8% (African Economic Outlook, 2011). This may show that income increases are likely to be reflected in higher consumption and given the limited range of consumption and investment goods produced domestically, the stronger demand is likely to translate into higher imports (Rogers, 2000).

Friesen (1973) tested various theories of import demand and tariffs and to help clarify their operation in Kenya and East Africa through a series of empirical tests and studies. Non-agricultural, compared with agricultural, income appeared to have a consistently, but not

significantly, greater effect on imports. Income had both a significant and elastic effect on imports, but import price, while elastic, was not quite significant. Tariffs had a significant effect on most imports, with elasticity slightly below unity for aggregate imports. The implication is that an increase in tariff rates would increase government revenue, but not greatly since the upper range of the tariff elasticity is nearly unitary.

Humpage (2000) argues that a nation pays for its imports either with exports of the current output or with financial claims against the future output. When exports rise (or fall) in line with imports, GDP remains unaffected. Exports add to the output tally exactly what imports subtract and net exports (the trade balance) do not change. The need to finance imports with exports that add directly to output or with capital inflows that sustain other types of expenditures ensures that imports do not lower GDP or its growth rate. Instead, a positive relationship exists between imports and economic growth.

Levine and Renelt (1992) also provided that international trade has only a robustly positive relationship with economic growth. The result of trade can be reduced costs of production (because imports used in production are cheaper) and reduced prices of finished goods and services, and ultimately a lower cost of living.

Keller (2000) argued that developing country stands to gain more in terms of both the product that it can import and the direct knowledge it can acquire from a developed country than it would import from another developing country. This implies that importing a new (or better) type of intermediate goods will increase the degree of specialization in the production of other products. One example, which is sighted in this respect, is import of crude fertilizer, which constitutes high-technology imports from developed countries to developing countries. This is a transfer of foreign technology that helps to increase productivity in the agricultural sector.

Additionally, there is empirical evidence that suggests that those who participate in international transactions are more likely to survive than those not involved in international trade, given that it forces domestic firms to improve their efficiency (Lopez, 2006). The strong competitiveness and the spillovers generated by technological progress embodied in imports may favor the innovation of new products and processes in the domestic economy.

These technological spillovers improve efficiency and consequently enhance growth (Amiti and Konings, 2007).

It is argued that new technologies are usually embodied in intermediate and capital goods; it is through capital accumulation that these new technologies are incorporated into the production processes and become an engine of growth for the economy. Therefore, for developing countries, the imports of these intermediate and capital goods from technologically more advanced countries are a way to directly improve both the efficiency of domestic production processes and their own processes of innovation and growth (Aghion and Howitt, 2005; Grossman and Helpman, 1991).

Coe *et al* (1997) studied the effect of foreign research and development on productivity based on data for 77 developing countries over the period 1971-90. The result showed that imports of machinery and equipment from industrial countries positively and significantly affect total factor productivity in developing countries and a one percent increase in the research and development embodied in capital stock in the industrial countries leads to an average of 0.1 percent increase in output in the developing countries. In his view, United States is the most important industrial country trade partner for many developing countries and therefore the spillovers is the largest from this country. On the other hand, if there is a recession in the United States, it can be accompanied by a fall in imports in a country like Kenya just like the way economic growth in the U.S may be accompanied by higher imports in Kenya.

Keller (2000) found results similar to the above studies. He conducted a study on productivity of imports of intermediate goods that embody new technology using industry level data for eight OECD countries (Sweden and G-7 countries) during the period 1970-1991. The result showed that productivity of foreign research and development (measured by import of intermediate goods) is less for developed countries. Connolly (1998) showed that high technology imports from developed country have a positive influential effect on real per capita growth than domestic technology. His study was based on forty countries during the period 1970 - 1985.

The effect of imports of consumer goods on economic growth (measured by GDP growth) may be ambiguous. Imports of consumer goods like medical and pharmaceutical goods are

important to make workers healthy and healthy workers are more productive than unhealthy workers, in turn leading to growth of GDP. Imports of non-durable consumer goods like food have adverse effect on real GDP growth if there is sufficient amount of domestic production since the shift of demand toward imports would reduce the demand for domestic goods; hence production of domestic goods, in turn leading to slower growth in food production (Jaeger, 1992). On the other hand, if there is not enough domestic production, import of these goods is important for economic development since workers need food to be strong and productive. Consumer goods like radio, TV contribute information for society.

Most durable goods are luxury items that are required to keep the welfare of society. Food imports are one of the main non-durable consumer goods in Sub-Saharan Africa. According to Jaeger (1992), the causal direction between imports of food and domestic production is ambiguous. If domestic foods are not perfect substitute for imported foods, then rising demand for imported food could be the result of higher income. The reduction in domestic production can be the result of policies, which have constrained productivity growth (Jaeger, 1992).

Ghartey (1993) examined any causal relation between exports and economic growth for Taiwan, Japan, and the United States. Ghartey utilized Hsiao's version of Granger causality (Hsiao 1979). The three endogenous U.S. variables were GDP growth, export growth, and capital stock or the terms of trade as the third variable. For the United States, it was found that economic growth causes export growth, while the opposite is true for Taiwan. A feedback causal relationship or bidirectional causality between exports and economic growth was found for Japan. Similar results present in a study conducted in Canada and United States were found in another study by Tao and Zestos (1999) for Japan and Korea. For Korea, a country that has a more trade-dependent economy than Japan in which there was a stronger causal relationship.

According to mercantilists, the most important way in which a nation could grow rich was by exporting more than it imported. Exports were viewed as favorable because they help to obtain precious metals, which are indicators of richness and powerfulness of the country, while imports were considered as unfavorable in view that they reduce the country's true source of richness, namely precious metals, and thereby hinder growth of output. On the basis

of this, they argued that the governments should discourage imports and encourage exports (Sodersten and Reed, 1994). This view is not relevant for Kenya because its industry depends on imports of intermediate and capital goods. In addition, its agricultural sector depends on imports of fertilizer and agricultural machines. Even the transport sector depends on the imports of spare parts, vehicles and machineries. Thus, all these sectors will be affected if restrictions are imposed on imports, leading to lower income.

Since it is argued that the importation of technology (machinery and equipment) and access to intermediate goods enhances economic growth, Rodrik (1995) argues that trade is more a consequence of the process of growth than a cause. In particular, Rodrik has doubts about the effectiveness of trade promotion policies as the main determinant of long-run growth and he argues that economic growth among developing countries like Kenya is caused fundamentally by increases in investment that in turn stimulates imports.

The earliest empirical work on the relationship between import and GDP growth was that of Khan (1974). He tried to analyze the determinants of imports in fifteen developing countries using a two-stage estimation procedure for the period 1951-69. The model he used was based on traditional import demand function that relates a country's import demand to real GDP and relative prices (the ratio of unit value of imports of the country to domestic price levels). In his result, all except for six countries, income elasticity of import is significantly different from zero and has positive sign at the five per cent level of significance in the long run. However, in the short run, income elasticity of import is significant and positive for four countries, but not for the other countries.

In another study, Krugman et al. (1997) looked at the incidence of causation and reverse causation (from a short-run perspective) between income, export, import and investment growth in 39 developing countries for the period 1951–1998. The findings of this research yielded mixed results, both as regards the variables that best explain GDP growth (trade variables or investment and with respect to reverse causation). They conclude that the direction of causality largely depends on country-specific characteristics. The evidence is not very clear with the direction of the causality in the long run.

A growing body of trade and development literature has emphasized exports as a vehicle to accelerate economic growth. It is argued that exports can help the process of economic growth through a variety of channels including, for example, efficient allocation of resources, economies of scale, enhanced capacity utilization, improved productivity, and diffusion of technological knowledge and innovation. It is mainly in view of these considerations that many countries around the world have embraced export oriented policies as part of their growth strategies.

Butcher (1983) study examined the industrial export based in the Kenyan economy between 1954-1980 and the incentives for the producers. An analysis is presented on the impact of import substitution and export promotion policies on the relative profitability of industrial production for domestic and for foreign markets. Estimation of effective rates of protection for Kenyan industries indicates that export production realized negative effective rates of protection while production destined for the domestic market realized very high effective rates of protection. The study found out that while export promotion policies encouraged production of industrial exports, the pursuit of import substitution had a negative impact on such production. Taking this study into consideration, it did not mention the effect of components of imports on GDP growth.

Castro-Zuniga (2004) has investigated on the issue of Export Led Growth in both developed and least developing countries using either cross-sectional or time series approaches.

With rank correlation, the Export Led Growth hypothesis is supported when the correlation coefficient between exports and output is positive and statistically significant. Limitations associated with this procedure include the presence of spurious correlation resulting in a need for minimum development before any association exists; meanwhile, any observed correlation can reflect an underlying relationship through other economic variables (GDP to exports) (Castro-Zuniga, 2004).

In another study conducted by Findlay (1984), the export led growth hypothesis was tested for four Asian countries (Hong Kong, Korea, Singapore, and Taiwan) using annual data for the period 1960-1982 (Darrat, 1986). The authors concluded that economic growth in all four countries was driven by the countries' export promotion. It was also concluded that higher

exports caused economic growth in all countries. Some limitations of this study included failure to base conclusions on econometric testing and failure to consider the possibility that simple correlations may not be appropriate to test for causality since high correlation between the variables can also be the result of GDP growth resulting in exports.

Based on a cross-section data of 41 less developed countries, Michaely (1977) uses the Spearman's rank correlation to detect the association between export growth and economic growth. The study finds evidence of a positive relationship between export growth and economic growth while emphasizing the fact that export expansion contributes to economic growth only when countries achieve some minimum level of development.

Balassa (1978) argues that, in an inter-country context, the correlation between export growth and economic growth may also capture the indirect effects of exports emanating from changes in incomes and costs. To disentangle the direct and indirect effects of exports on economic growth, the study develops several measures of exports and income to explore the relationship between export expansion and economic growth in a sample of 11 developing countries having a substantial industrial base. The overall results suggest that export growth favourably affects the rate of economic growth.

Tyler (1981) analyses the empirical relationship between economic growth and export expansion in a sample of 55 middle income developing countries using inter-country cross section analysis. The results reveal a strong positive association between export growth and economic growth. Reliance on correlation analysis has been criticized in the literature on the ground that contemporaneous relationship between exports and output cannot be taken as an indication of causality between export growth and economic growth. It is argued that the question of causality is essentially a dynamic one and thus can be meaningfully studied only in a dynamic framework based on time series data. Consequently, a number of studies have examined the export-led growth hypothesis by employing Granger (1969) and Sims (1972) causality tests. Jung and Marshall (1985) and Chow (1987) are among the earlier studies along this line.

Time series approaches solve for some of the limitations presented in cross sectional studies. In most time series studies, three steps are commonly followed: (1) test for unit roots in the

series (stationary or non-stationary series) using the Augmented Dickey-Fuller (ADF), and Phillip-Perron (PP) tests, (2) test for co-integration, using Johansen (1988), Johansen and Juselius's (1990) procedures, and/or Engle-Granger co-integration approach, and (3) test for causality using the widely applied causality approach developed by Granger (1969). In Granger's causality procedure, there is no attempt to incorporate economic theory in order to impose any restriction on the relationship between the variables of interest. Since the 1980s, two of the procedures commonly used in empirical studies have also been applied to most export led growth studies in a dynamic time series setting.

Although time series approaches test for causality between exports and economic growth using econometric techniques, they still present some problems such as (1) definition of the information, which sometimes leads to problems in an export led growth study using Granger-causality tests, (2) aggregation of data, a limitation realized in different findings for specific countries where researchers have reached mixed conclusions when using different data sets, and (3) lag-length selection, stationary, and the presence of deterministic terms. It is suggested that a researcher selects the appropriate lag-length to avoid the erroneous conclusions of the Granger-causality test (Castro-Zuniga, 2004).

Jin (1995) examined the validity of the export led growth hypothesis in four Asian countries (the four little dragons: Hong Kong, Singapore, South Korea, and Taiwan) using quarterly data for the period 1973:1-1976. Co-integration test was also used. Stationary tests on the series were conducted. Jin found that exports have significant effect on economic growth in all four countries.

Anwer and Sampath (1997) tested the validity of the export led growth hypothesis in 97 countries using annual data for the period 1960-1992. Anwer and Sampath found that 29 countries reported positive effects from exports to economic growth. In 12 countries (out of 30 and out of 29), the positive sign of exports in the GDP equation and the positive sign of GDP in the exports equation were statistically insignificant. Al-Yousif (1997) examined the export led growth hypothesis in four Arab Gulf oil producing countries (Saudi Arabia, Kuwait, and United Arab Emirates, and Oman) using annual data for the period 1973-1993. Exports were found to be positive and significant in the economic growth equations in all countries.

Abdulai and Jaquet (2002) tested the ELG hypothesis for Côte- D'Ivoire. For the period 1961-1997, the authors examined the short-run and long-run relationship between economic growth, exports, real investments, and labor force. Time series techniques used were co-integration and ECM. The authors found evidence of one long-run equilibrium relationship among all variables. They also found causality, both in the short-run and in the long-run, flowing from exports to economic growth. Bidirectional causation between the variables was also found. It was concluded that Cote D'Ivoire's recent trade reforms (such as promoting domestic investment and recovering international competitiveness) contribute to export expansion, diversification, and, potentially, future economic growth in the nation.

Over the past years, many empirical studies have investigated the validity of the export led growth hypothesis. Most of these studies used annual, quarterly or monthly data to test for the properties of a time series. The most recent studies have been reported in Castro-Zuniga's thesis (2004). Jung and Marshall (1985) examined the export led growth hypothesis testing for causality and auto-correlation (Box-Pierce statistics to test for general auto-regression on the residuals) on a bi-variate autoregressive process for the period 1950-1981 for 37 countries. The author found that the export led growth hypothesis was not supported in most of the countries except for Indonesia, Egypt, Ecuador, and Costa Rica. The export reduction hypothesis was supported in South Africa, Korea, Pakistan, Israel, Bolivia, and Peru. Unidirectional causation from growth to exports was found in three countries in Kenya, Iran and Thailand, supporting the growth-led export hypothesis. Evidence of growth reducing export was found in Greece and Israel.

Darrat (1986) re-estimated the export led growth hypothesis in four Asian countries (Hong Kong, Korea, Singapore, and Taiwan) using the same time period employed by Findlay (1984) analysis between 1960 to 1982. The equations were estimated using the Beach-Mackinnon maximum-likelihood method correcting for serial correlation. To investigate the directional causation between exports and economic growth in each country, Granger causality tests were used. It was found that exports did not cause economic growth and economic growth did not generate export in Hong Kong, Korea, and Singapore, implying that both variables were causally independent. In Taiwan, evidence of unidirectional causation was found from economic growth to exports. Overall, the author's empirical results failed to support the export led growth hypothesis in all four countries.

Afxentiou and Serletis (1991) tested the validity of export led growth in 16 industrialized countries using annual data for the period 1950-1985. The countries included in the analysis were Austria, Belgium, Canada, Denmark, Finland, Germany, Iceland, Ireland, Japan, Netherlands, Norway, Spain, Sweden, Switzerland, the UK, and the US. Time series properties were tested and used to test for causality. In the entire sample, the authors found no evidence of co-integration between GDP and exports. They found that, in general, only two countries supported either the export led growth hypothesis or the growth-led export hypothesis. The export led growth hypothesis was only supported in the US and economic growth-led export was supported in the US and in Norway.

Enriques and Sadorsky (1996) tested the validity of export led growth hypothesis for Canada using annual data for the period 1870-1991. The following variables were included in the analysis: exports, terms of trade (TOT) and GDP. However, no evidence supporting the export led growth hypothesis was found.

Unidirectional causation was found from agricultural exports to economic growth in nine countries (Cameroon, Côte-d'Ivoire, Ghana, Burkina-Faso, DRC, Madagascar, Malawi, Zambia, and Gabon). Unidirectional causation was found from manufactured exports to real GDP growth in three countries (Cameroon, Mali, and Malawi). Unidirectional causation from real GDP to agricultural exports was found in Kenya, Mali, Senegal, Nigeria and Tanzania. The author found unidirectional causation from real GDP to manufactured exports in six countries (Côte-D'Ivoire, Ghana, Madagascar, Gabon, Benin, and Togo), implying that total export growth depends on the economic growth in these countries. Bidirectional causation between economic growth and agricultural exports was found in three countries (Burkina-Faso, DRC, and Madagascar), leading to an acceptance of the economic-led export and the ELG hypotheses in these countries (Njikam, 2003).

2.4 Summary of Literature Review

International trade expands markets and global competition, and firms achieving substantial economies of scale may be best poised to adapt to new technologies. Importation, particularly of capital goods, facilitates the transfer of technology and encourages the development of new products and production processes. Exports can similarly promote technological transfer through the exposure to foreign markets.

While other factors such as competence of human capital, level of infrastructural development, political stability amongst others are critical in determining GDP growth, a country's policies on imports and exports do play a very significant role as well.

Responsible bodies must therefore critically assess needs and priorities of a country and seek to seamlessly exploit opportunities available for both imports and exports in order to enhance GDP growth.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter highlights the various methods and procedures the researcher adopted in conducting the study in order to answer the research objectives raised in the first chapter. The chapter was organized in the following structure: the research design, population and sample, data collection methods, sampling design and sample size, research procedures, data analysis methods and lastly the chapter summary.

3.2 Research Design

The type of research design that employed in this study is co-relational research design. In general, correlation research examines co-variation between two or more variables. It can be accomplished by a variety of data which include the collection of empirical data. Often times, co- relational research is considered type of observational research as nothing is manipulated by the experimenter or the individual conducting research. (Gay, L.R, 1987) Co-relational explanations argue that phenomenon Y (such as GDP) is related with factor X (such as imports or exports). In this study, the dependent variable were GDP while imports and exports were the independent variables

3.3 Population and Sample

Cooper and Schindler (2003) describe a population as the total collection of elements whereby references have to be made. The target population relevant to the study was GDP, imports and exports as measured in terms of dollars for the period 1960 to 2010.

3.4 Data Collection Method

The study employed secondary data collection. Secondary data can be defined as information collected by someone else than the researcher for some other purpose than the research project at hand (Ligthelm and Van Wyk, 2005). The secondary data included information on the imports of goods, exports and GDP data.

3.5 Data Analysis

The collected data was analyzed using quantitative techniques notably Statistical Package for the Social Sciences (SPSS) software to enable the carrying out of the analysis. Because we have more than one independent variable, multiple regression analysis was the best statistical tool to use.

For the purpose of this study, independent variables consisted of import and export values while the dependent variable was the GDP .The linear equation was determined thus:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2$$

Where Y = Defines the dependent variable (GDP)

α = Constant or the intercept

β_1 = Independent contribution of the import variable to the prediction of the GDP

X1 = Represents Import value

B2 = Independent contribution of the export variable to the prediction of the GDP

X2 = Represents Export value

Diagnostic tests include:

- a) **Coefficient of determination** defined as Sum of squares explained by the model (that is, Regression sum of Squares) divided by the Total Sum of Squares will tell us the strength of relationship between the response variable(GDP) and the explanatory variables (import and export values)
- b) The **F ratio** will tell us whether there is a linear relationship between the response and explanatory variables taken together ,and
- c) The **t-ratio** will tell us whether any given explanatory variable has an influence on the response variable over and above that of other explanatory variable.

CHAPTER FOUR: RESULTS AND FINDINGS

4.1 Introduction

This chapter presents the findings of the secondary data collected from the field. The main objective of this study was to investigate the relationship between exports, imports and economic growth in Kenya. The study was guided by the following research objectives: To examine whether there is a relationship between exports and economic growth, between imports and economic growth as well as the strength of the relationship, if it exists.

4.2 General Information

4.2.1 Gross Domestic Product GDP

The data on the Gross Domestic Product was obtained from the Central Bank of Kenya. The average level of the GDP throughout the years between 1960 to 2010 was US\$ 8,738,589,027.84. The range of the GDP for a period of 51 years was a low of US\$ 791,265,462.13 in 1960 and a high of US\$ 32,198,151,217.22 in 2010. Figure 4.1 shows the movement of the GDP.

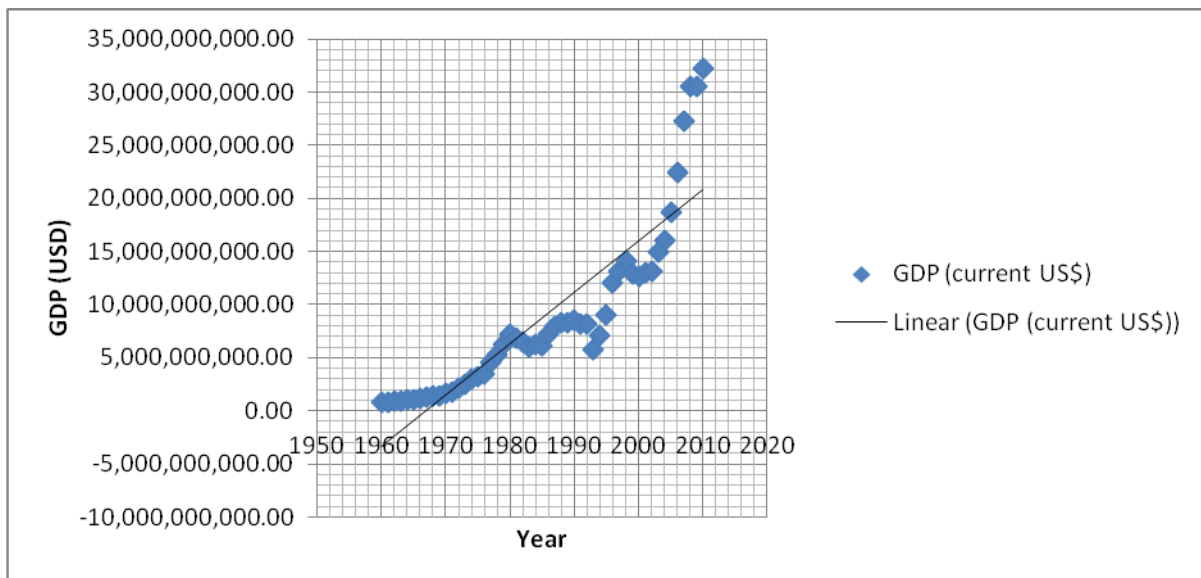


Figure 4.1: Linear Graph for the GDP

4.2.2 Exports

The data on the exports was obtained from the Central Bank of Kenya. The average level of the exports throughout the years between 1960 to 2010 was US\$ 2,302,474,740.00. The range of the exports for a period of 51 years was a low of US\$ 246,049,908.27 in 1960 and a high of US\$ 8,861,227,717.13 in 2010. Figure 4.2 shows the movement of the exports.

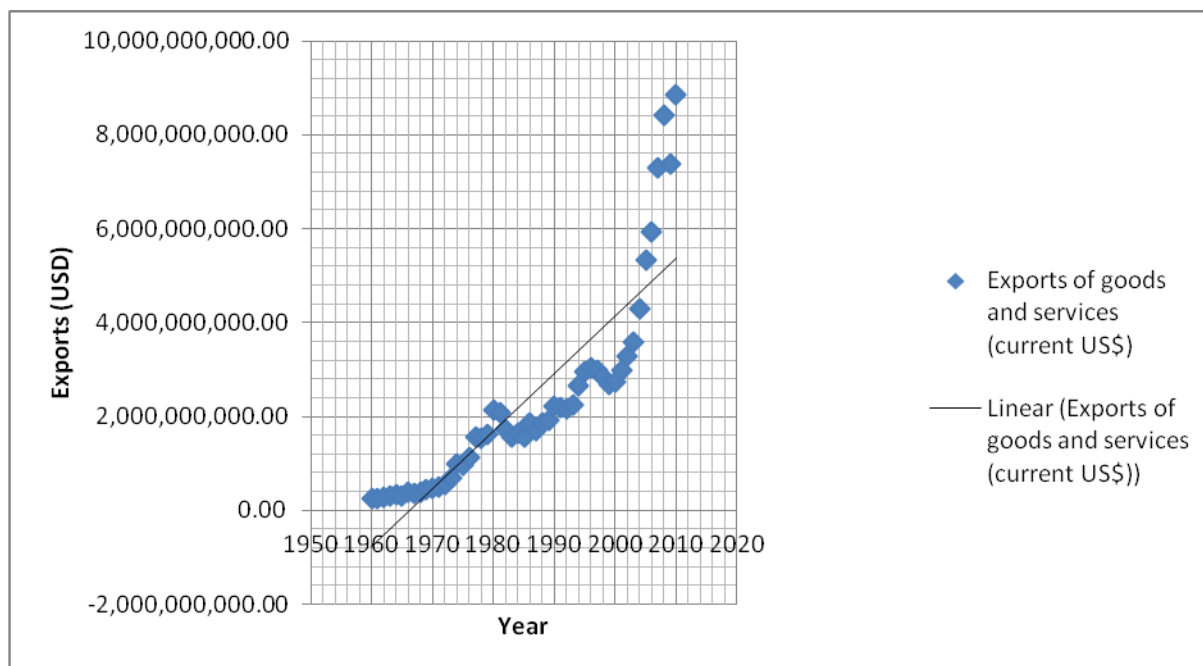


Figure 4.2: Linear Graph for the Exports

4.2.3 Imports

The data on the imports was obtained from the Central Bank of Kenya. The average level of the imports throughout the years between 1960 to 2010 was US\$ 2,943,104,645.34. The range of the GDP for a period of 51 years was a low of US\$ 246,847,903.48 in 1961 and a high of US\$ 12,718,712,430.06 in 2008. Figure 4.3 shows the movement of the imports.

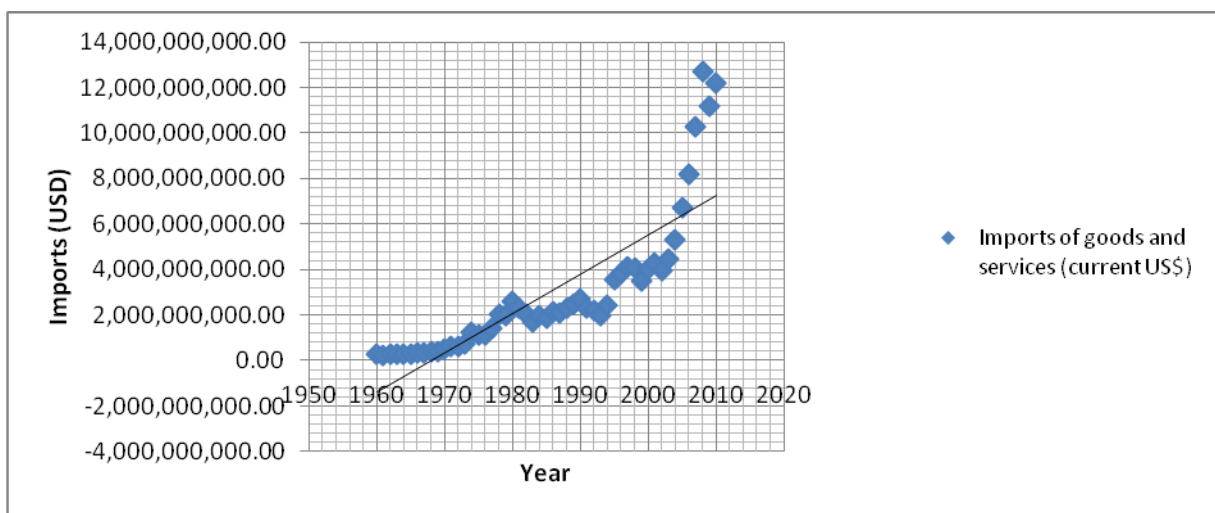


Figure 4.3: Linear Graph for the Imports

4.3 Correlation Coefficient of Exports on Economic Growth

A correlation of 0.988 indicates that there is a strong positive or direct relationship between the exports and the economic growth. The scatter diagram also confirms the reasoning. The value of 0.988 is very close to 1.00; therefore it is easy to conclude that that the association is very strong. In other words, 1.12 percent increase in exports will likely lead to an increase of economic growth by 1.12 percent.

Table 4.1: Correlation Coefficient Exports and Economic Growth

		GDP (current US\$)	Exports of goods and services (current US\$)
GDP (current US\$)	Pearson Correlation	1	.988**
	Sig. (2-tailed)		.000
	N	51	51
Exports of goods and services (current US\$)	Pearson Correlation	.988**	1
	Sig. (2-tailed)	.000	
	N	51	51

** . Correlation is significant at the 0.01 level (2-tailed).

4.3.1 Coefficient of Determination

$$r^2 = 0.988 \times 0.988 = \mathbf{0.976144}$$

Since the terms of strong, weak or moderate used in coefficient of correlation do not have precise meaning, a measure that has a more easily interpreted meaning is the coefficient of determination. It is computed by squaring the coefficient of correlation. In this case the coefficient of determination, r^2 , is 0.976144, found by $(0.988)^2$. This is a proportion or a percent (99%) of the variation exports accounted for, by the variations in the economic growth.

4.3.2 Testing the Hypothesis

From the 0.000 level of significance as indicated in Table 4.1, the decision rule states that that there is a significant relationship between the exports and economic growth.

4.3.3 Regression Analysis

This is an equation that defines the relationship between two variables. The equation for the line used to estimate Y based on X is referred to as the regression equation. Judgment is eliminated by determining the regression line using a mathematical method known as the least squares principle. This method gives the “best fitting” line.

The general form of the regression equation is:

$$Y' = a + bX$$

Where:

Y' is the predicted value of the Y variable for a selected X value.

a is the Y-intercept. It is the estimated value of Y when $X = 0$. In other words it is the estimated value of Y where the regression line crosses the Y-axis when X is zero.

b is the slope of the line, or the average change in Y' for each change of one unit (either increase or decrease) in the independent variable X.

X is any value of the independent variable that is selected.

Slope of the regression line $b = \frac{n(\sum XY) - (\sum X)(\sum Y)}{n(\sum X^2) - (\sum X)^2}$

Y – axis intercept $a = \frac{\sum Y}{n} - b \frac{\sum X}{n}$

Where

X is a value of the independent variable.

Y is a value of the dependent variable.

n is the number of terms in the sample.

$$Y' = a + bX$$

Thus the regression equation is $Y' = -11,315,453.26 + 3.800X$. The b value means that for each increase in export, the economic growth is expected to increase by about 3.8 times.

The value of -11,315,453.26 is the point where the equation crosses the Y-axis. It is easy to state that when the exports rate is at zero, $x = 0$, the average economic growth would be at US (\$) -11,315,453.26 this is the predicted value of Y.

Table 4.2: Regression of Exports and Economic Growth

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-11,315,453.26	261,351,865.49		-.043	.966
	Exports of goods and services (current US\$)	3.800	.084	.988	45.238	.000

The regression in this case slopes upward from left to right as indicated on Figure 4.4.

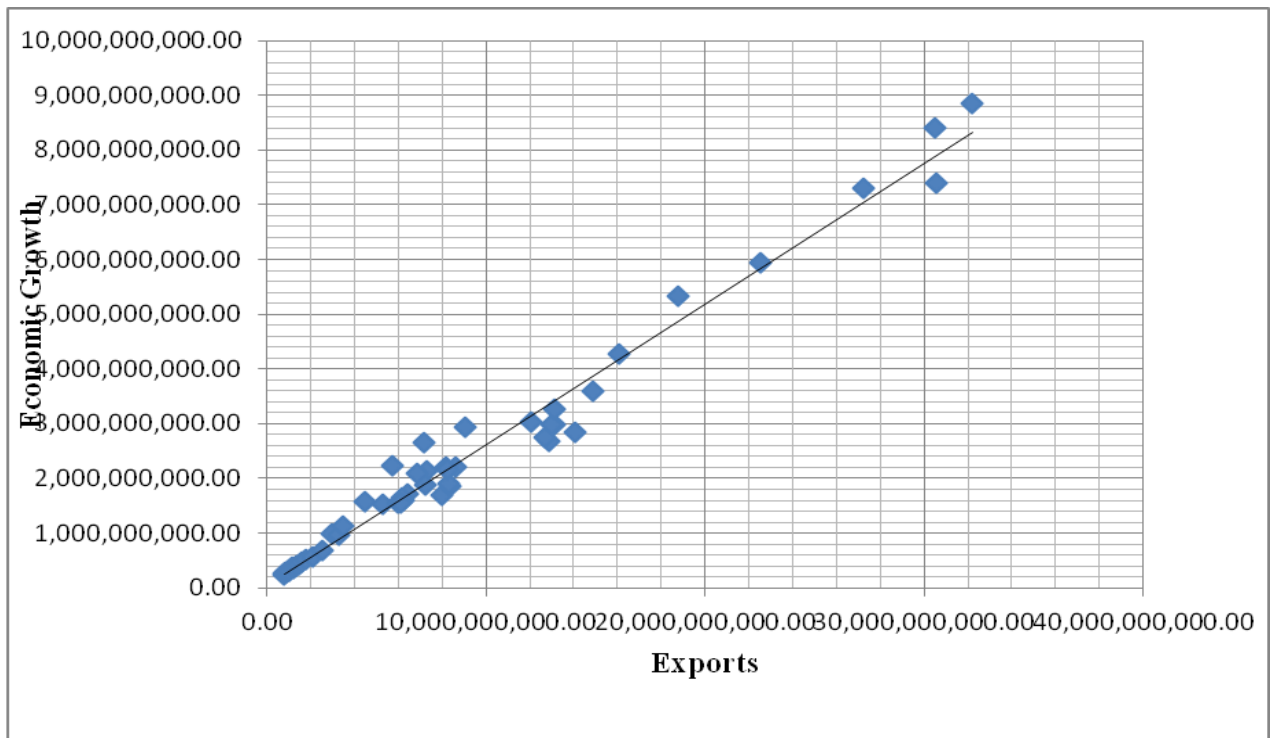


Figure 4.4: Scatter Diagram of Exports and Economic Growth

4.4 Correlation Coefficient of Imports on Economic Growth

A correlation of 0.990 indicates that there is a strong positive or direct relationship between the imports and the economic growth in the country. The scatter diagram also confirms the reasoning. The value of 0.990 is very close to 1.00; therefore it is easy to conclude that that the association is very strong. In other words, 0.1 percent increases in imports will likely lead to an increase of economic growth by 0.1 percent.

Table 4.3: Correlation Coefficient of Imports on Economic Growth

		GDP (current US\$)	Imports of goods and services (current US\$)
GDP (current US\$)	Pearson Correlation	1	.990**
	Sig. (2-tailed)		.000
	N	51	51
Imports of goods and services (current US\$)	Pearson Correlation	.990**	1
	Sig. (2-tailed)	.000	
	N	51	51
**. Correlation is significant at the 0.01 level (2-tailed).			

4.4.1 Coefficient of Determination

$$r^2 = -0.990 \times -0.990 = 0.98$$

Since the terms of strong, weak or moderate used in coefficient of correlation do not have precise meaning. A measure that has a more easily interpreted meaning is the coefficient of determination. It is computed by squaring the coefficient of correlation. In this case the coefficient of determination, r^2 is 0.98, found by $(0.99)^2$. This is a proportion or a percent (99%) of the variation in imports is accounted for, by the variations in the country's economic growth.

4.4.2 Testing the Hypothesis

From the 0.000 level of significance as indicated in Table 4.3, the decision rule states that that there is a significant relationship between the imports and economic growth.

4.4.3 Regression Analysis

The regression equation is $Y' = 1,050,060,679.57 + 2.612 X$. The b value means that for each increase in imports the country's economic growth is expected to increase by about 2.612 times.

The value of 1,050,060,679.57 is the point where the equation crosses the Y-axis. It is easy to state that when the import rate is at zero, $x = 0$, the average economic growth would be at US (\$) 1,050,060,679.57 this is the predicted value of Y.

Table 4.4: Regression of Imports and Economic Growth

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1,050,060,679.57	222,584,165.18		4.718	.000
	Imports of goods and services (current US\$)	2.612	.053	.990	49.744	.000

The regression in this case slopes downward from left to right as indicated on Figure 4.5.

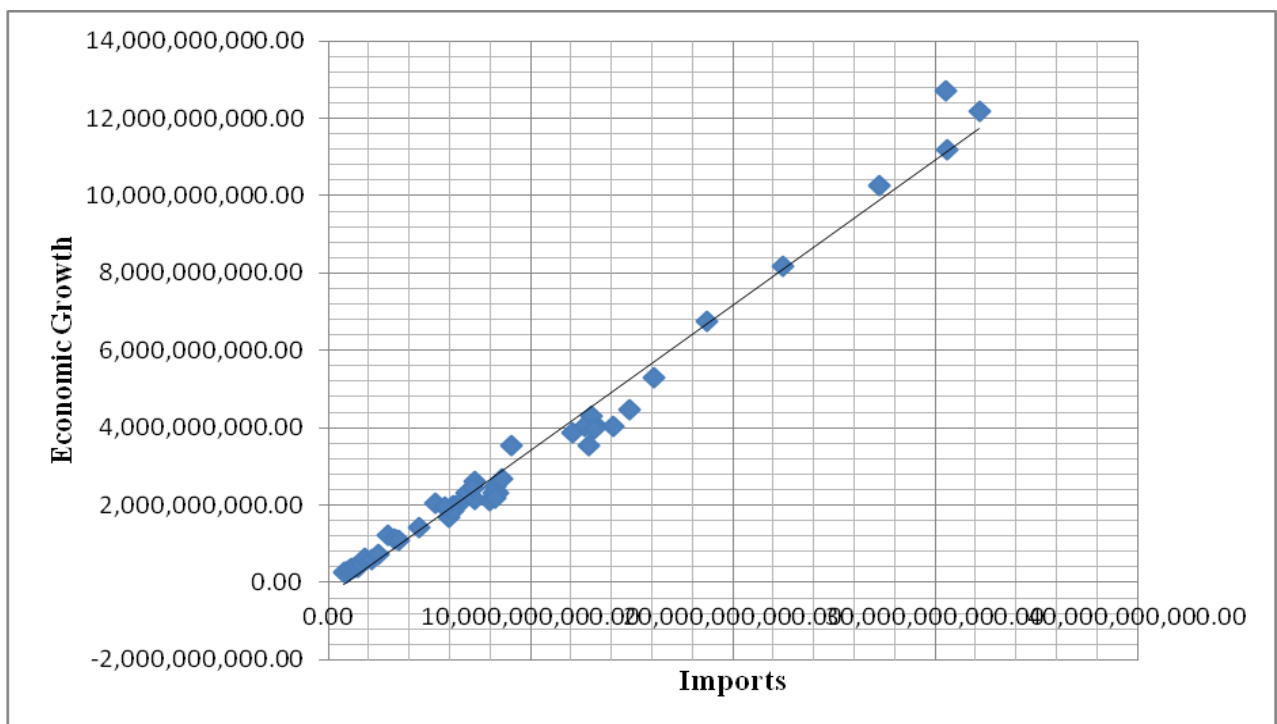


Figure 4.5: Scatter Diagram of Imports and Economic Growth

4.5 Summary and Interpretation of Findings

4.5.1 Effects of Exports on Economic Growth

The findings in this study revealed a correlation of 0.988 which indicated that there was a very strong positive or direct relationship between the exports and the economic growth. The scatter diagram also confirmed the reasoning. The value of 0.988 is very close to 1.00; therefore it was easy to conclude that that the association is very strong. Michael (1997)

contends that a positive relationship between the export growth and economic growth, but also recognizes the fact that export expansion contributes to economic growth when countries achieve some minimum level of Economic Development

The coefficient of determination, r^2 , was 0.976144 meaning that 98% of the variation exports was accounted for, by the variations in the economic growth. Krugman *et al* (1997) contends that exports can help the process of economic growth.

The Export Led Growth hypothesis is supported when the correlation coefficient between exports and economic growth was positive and statistically significant at 0.000 level. The findings are similar to Findlay (1984) causality results which indicate high correlation between the exports and GDP growth.

The regression equation was $Y' = -11,315,453.26 + 3.800X$. The b value means that for each increase in export, the economic growth is expected to increase by about 3.8 times. The value of -11,315,453.26 is the point where the equation crosses the Y-axis. It is easy to state that when the exports rate is at zero, $x = 0$, the average economic growth would be at US (\$) - 11,315,453.26 this is the predicted value of Y. Balassa (1978) argues that the correlation between export growth and economic growth may also capture the indirect effects of exports emanating from changes in incomes and costs.

This outcome supports the Mercantilists who argued that the most important way in which a nation could grow rich was by exporting than Importing. However, it is important to note the Mercantilists views were based on exports of precious metals and may not be relevant in economies which largely depend on intermediate and capital goods. The findings are also in congruence with Sodersten and Reed (1994) views who argued that Governments should discourage imports and encourage exports. On the basis of this, they argued that governments should discourage imports and encourage exports. The results also compare favorably with the findings of Castro-Zuniga (2004) who concluded that an Export Led Growth hypothesis is supported when the correlation co-efficient between exports and output is positive and statistically significant.

4.5.2 Effects of Imports on Economic Growth

There was an extremely strong positive or direct relationship between the imports and the economic growth in the country as indicated by a correlation of 0.990. This may be attributed by the imports of capital goods mainly in the agriculture, industry and transport/Infrastructure sector. The role of capital goods in the manufacturing sector can be seen from growth oriented and innovation-oriented approach. Baark (1988) agrees that import of machines that are related to agricultural and industry increases a country's output as inputs into production. The import of capital goods supplies increased the growth of the economy in the country thereby raising domestic output, in turn, leading to growth of GDP.

The coefficient of determination, r^2 is 0.98, found by $(0.99)^2$ means that 99% of the variation in imports is accounted for, by the variations in the country's economic growth. According to Baark (1988), capital goods increases the efficiency of labor by reducing time spent on production and hence raises production, in turn leading to growth of GDP.

The statistical significance level of 0.000 indicated that the decision rule state was a significant relationship between the imports and economic growth. For a developing country like Kenya, Keller (2000) argues that it stands to gain more in terms of both the product that it can import and the direct knowledge it can acquire from a developed country than it would import from another developing country.

In addition, the regression equation is $Y' = 1,050,060,679.57 + 2.612 X$. The b value means that for each increase in imports the country's economic growth is expected to increase by about 2.612 times. The value of 1,050,060,679.57 is the point where the equation crosses the Y-axis. It is easy to state that when the import rate is at zero, $x = 0$, the average economic growth would be at US (\$) 1,050,060,679.57 and this is the predicted value of GDP. Rogers (2000) shows that income increases are likely to be reflected in higher consumption and given the limited range of consumption and investment goods produced domestically, the stronger demand is likely to translate into higher imports.

Coe *et al* (1997) concluded that imports of machinery and equipment from Industrial countries positively and significantly affect total factor productivity in developing countries and a one percent increase in the research and development embodied in capital stock in the industrial countries leads to an average of 0.1 per cent increase in output in the developing countries.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

The fundamental objective of the study was to establish the effect of exports and imports on economic growth based on verifiable information and data (empirical evidence) from Kenya. The results from the study can then be used to come up with new policies and practises which can lead to further economic growth of Kenya. Additionally, the results of the study can be used to interrogate existing policies and practises to enhance their applicability. They can also be used as a blue print by other countries around which their economic policies can be modelled.

The study is grounded on exploring existing theories. These theories advance an Export led growth model, an import led growth model or a mix of Export led and Import led growth models. To test the validity of these theories, secondary data comprising the GDP, Export values and Import values was collected and collated from the Central Bank of Kenya. The data range is for a period of 51 years, between 1960 to 2010. Co-relational research design which examines co-variation between two or more variables, has been used to establish whether any relationship exists between GDP , Export values and Import values, and the strength of this relationship. It is from this relationship, and the strength from which conclusions have been drawn.

The conclusions of the findings indicate that although a strong relationship exists between the GDP, Export Values and Import values, it is more pronounced in the relationship between GDP and Imports. While it is imperative to encourage exports, Imports do have a stronger impact on the GDP. Exports play a significant role in a country's economy. The current depreciation of the Kenyan currency against the US Dollar can be seen against the background of reduced inflows of dollars largely influenced by exports. Imports have thus become more expensive as a result. The role of Exports can thus not be ignored even as imports play a larger role in overall economic growth.

5.2 Conclusion

5.2.1 Effects of Exports on Economic Growth

It can be concluded that exports lead to economic growth. There was a strong positive or direct relationship between the exports and the economic growth. The scatter diagram also confirmed the reasoning. However, the correlation coefficient between exports and economic growth compared to the correlation between the imports and economic growth was slightly low. For this case, it would mean that imports had a greater impact than exports on economic development in Kenya. For this case, the imports were viewed as favorable because they led to economic growth. The Export Led Growth hypothesis is supported when the correlation coefficient between exports and economic growth was positive and statistically significant. The correlation between export growth and economic growth may also capture the indirect effects of exports emanating from changes in incomes and costs. Exports can therefore not be ignored as their impact on Economic growth is still quite significant. The flow of foreign currency into the economy significantly affects the strength of the local currency. Reduced flows lead to a weak currency which makes imports expensive. Increased flows lead to a strong currency which makes imports cheaper.

5.2.2 Effects of Imports on Economic Growth

There was a strong positive or direct relationship between the imports and the economic growth in the country. It was easy to conclude that the association is very strong as compared to exports. The scatter diagram also confirmed the reasoning. This may be attributed by the imports of capital goods mainly in the agriculture, industry/Manufacturing and transport/Infrastructure sector. The import of machines that are related to agricultural and industry/Manufacturing increases a country's output as inputs into production. The import of capital goods supplies increased the growth of the economy in the country thereby raising domestic output, in turn, leading to growth of the economy as measured by GDP. Capital goods also increased the efficiency of labor by reducing time spent on production and hence raising production, in turn leading to growth of the economy as measured by GDP. Income increases are likely to be reflected in higher consumption and given the limited range of consumption and investment goods produced domestically, the stronger demand is likely to translate into higher imports.

5.3 Recommendations to Policy and Practice.

The study makes the following recommendations based on the findings and conclusions:

5.3.1 Effects of Exports on Economic Growth

The study recommends that the country should apply the export led Export Led Growth hypothesis sparingly. While the imports had a greater impact than exports on economic development in Kenya, the fact that a strong relationship exists between the level of exports and Economic Growth underlines the need for exports. In absolute terms, the country should specialize in exports in which it has comparative advantage rather than on a large scale. Also, the Governments should move towards value addition, as opposed to exporting raw products or Services and importing the finished product. With this in mind, it should be hoped that the Oil discovery in the Country should lead to construction of more oil refineries, rather than contemplating exporting the crude oil and importing the finished oil products as currently happening in Nigeria.

5.3.2 Effects of Imports on Economic Growth

The study recommends that the country should continually import capital goods to increase the growth of the economy in the country thereby raising domestic output in key areas of the economy such as agriculture, industry and infrastructure to lead to economic growth.

The findings of the study are also in congruence with the fact that the stage of the economic growth of the country requires heavy investments in imports as opposed to exports. The fact is that Kenya may not be in a position to produce the key ingredients required as inputs in the key sectors of the economy hence heavy investment required in imports more than exports. For example, Kenya does not manufacture the tea-picking machines required to improve efficiency in the tea sector, and importation is inevitable. In addition, Kenya does not manufacture Oil drilling machines currently required in the oil exploration going on currently and all these machines have to be imported.

A growing economy requires a healthy population. The Government is currently investing massively in the Health Sector, and the state of the art Equipment being installed in the Hospitals is all imported from the original equipment manufacturers based in the United States, Holland, Italy, and China.

5.4 Limitations of the study

The data was exclusively obtained from one source only, which is the Central Bank of Kenya. It is possible that another source may have availed different data though not materially different from what the Central Bank has. This would have enriched the data output and further authenticated the findings.

The data obtained assumes that only the Export and Import values significantly affected the GDP. Other factors like the political environment may have influenced the GDP figure. For example, immediately after Independence, there was a lot of feel good factor in the populace, a fact which may have led to more productivity. This may have been reduced in the latter years of the period of the study, but the data in question is only limited to exports and Imports and not productivity from the population. Other Factors include the influence of the economies of the rest world on the Kenyan Economy which drive the demand of goods and services produced in Kenya.

The research design employed, which is co-relational assumes a mutual relationship between or among variables. For Example, that when exports go up, the GDP increases. However, while correlation is explicit, it does not tell how the independent variables interact and how that affects the dependent variable. For instance, it is not clear how the increase in imports affect exports, or how the decrease in exports affect imports. This interaction may affect the dependent variable.

It is possible that there may have been existence of outliers in data collated for Export and Imports. For example, a particular product or service with a very significant value may have been exported or imported only once in the period. This rarity may have significantly influenced the independent variable (GDP), and yet it is not a repetitive occurrence.

5.5 Recommendations for Further Studies

The study focused on the relationship between exports, imports and economic growth in Kenya. It is therefore recommended that a similar study is conducted in another country such as Tanzania, Uganda or Sudan to confirm the similarities or compare the differences with the findings of this study.

It will also be important to conduct studies aimed at determining the relationship between exports, imports and the level of a country's income status. In all probability, it is possible that a country requires more in exports if it is in the top-tier income bracket than if it is the mid-tier or low-tier income bracket. For example, a fully industrialized nation like Germany may derive little comfort by importing more than it exports since the need for imports is clearly subdued by the fact that the country no longer needs to import in order to industrialize (it is already there). Its economic growth is therefore likely to be influenced by how much it exports rather than how much it imports. A study is however important in order to make a sound judgement.

Another recommended study is determining how fast exports and imports affect the rate of economic growth. Could there be other significant factors at play other than exports and Imports, and how do those factors, if they exist, interact with exports and imports in determining the level of economic growth? For instance, how significant is the political situation of a country in determining economic growth? Further Studies would be required to clearly establish this significance.

Additionally, the study restricts itself to the period between 1960 to 2010. How the GDP is affected by exports and imports may have changed after 2010. It is therefore important to carry out a study for the period to date and establish whether the patterns are the same or may have changed. This may inform a change in strategy to influence the rate of economic growth.

REFERENCES

- Abdulai, A., & Jaquet, P. (2002). Exports and Economic Growth: Co-integration and Causality Evidence for Cote d'Ivoire. *African Development Review*, 14 (1): 1-17.
- African Economic Outlook (AEO) (2011). *Kenya 2011*. Accessed on December 2, 2011 from: www.africaneconomicoutlook.org.
- Afxentiou, P.C., & Serletis, A. (1991). Exports and GNP Causality in the Industrial Countries: 1950-1985. *Kyklos*, 44(2), pp.167-79.
- Aghion, P., & Howitt, P. (2005). Growth with quality-improving innovations: an integrated framework. *Handbook of Economic Growth*, vol. 1A, pp. 67–110.
- Al-Yousif, Y.K. (1997). Exports and Economic Growth; Some Empirical Evidence from the Arab Gulf countries. *Applied Economics*, 29(6), pp. 693-697.
- Anwer, M.S., & Sampath. R.K. (1997). *Exports and Economic Growth*. Western Agricultural Economics Association, Selected Papers of the 1997 Annual Meeting, July 13-16, 1997, Reno/Sparks, Nevada, <http://agecon.lib.umn.edu/cgi-bin/view.pl>.
- Amiti, M., & Konings, J. (2007). Trade liberalization, intermediate inputs and productivity: evidence from Indonesia. *The American Economic Review* 97 (5), 1611–1638.
- Baark, E. (1988). *Strategic Issues and Technology Policies for Developing Countries: Capital Goods*. Paper No 184.
- Balassa, B. (1978). Exports and Economic Growth: Further Evidence. *Journal of Development Economics* 5, 181–189.
- Busse, M., & Groizard, J.L. (2008). Technology trade in economic development. *World Economy* 31 (4), 569–592.
- Butcher, A. M. (1983). *The bias against industrial exports in the Kenyan economy 1954-1980*. University of Virginia, USA.
- Carbaugh, R. J. (2000). *International Economics* (7th ed.). Cincinnati, Ohio: South-Western College Publishing.
- Caselli, F., & Wilson, D. (2004). Importing Technology. *Journal of Monetary Economics* 51 (1), 1–32.
- Coe, D. T., & Helpman, E. (1993). *International R and D spillovers*. IMF Working Papers, No.84.

- Castro–Zuniga, H. (2004). *Export-led Growth in Honduras and the Central American Region*. Thesis, Louisiana State University. <http://etd.lsu.edu/docs/available/etd-12032004-070104>.
- Chow, P. (1987). Causality between Export Growth and Industrial Development: Empirical Evidence from the NICs. *Journal of Development Economics* 26, 55-63.
- Cooper, D & Schindler, P. (2003). *Business Research Method* (7th ed.). New York: McGraw-Hill.
- Darrat, A.F. (1986). Trade and Development: The Asian Experience. *The Cato Journal*, 6 (2), pp. 695-699.
- Enriques, I., & Sadorsky, P. (1996). Export-led Growth or Growth-Driven Exports? The Canadian Case. *Canadian Journal of Economics*, 29(3): 540-555.
- Findlay, R. (1984). *Growth and Development in Trade Models in Handbook of International Economics*. Amsterdam: North-Holland.
- Friesen, R. L. (1973). *Empirical studies in import demand and tariffs: a case study of Kenya and East Africa*. Columbia University, USA.
- Gay, L. R. (1987). *Educational research: Competencies for analysis and application* (3rd ed.). New York: Merrill.
- Ghartey, E. E. (1993) Causal Relationship between Exports and Economic Growth: Some Empirical Evidence in Taiwan, Japan and the U.S. *Applied Economics* 25, 1145–1152.
- Granger, C. (1969). Investigating Causal Relationships by Economic Models and Cross Spectral Models. *Econometrica* 37, pp.424-438.
- Grossman, G.M., & Helpman, E. (1991). *Innovation and Growth in the Global Economy*. The MIT Press, Cambridge, MA..
- Humpage, O. F. (2000). *Do Import Hinder or Help Economic Growth*. <http://www.clev.frb.org/research/com2000/0315.ntm>
- Hsiao, H. (1979). Imports Protection and Export Performance: Their Impact on Economic Growth. *Weltwirtschaftliches Archive* 123 (2), 249–61.
- Jaeger, W. K. (1992). *The Effects of Economic Policies on Africa Agriculture*. World Bank, Paper No 147.
- Jordaan, A. C. and J. H. Eita, 2007. “Export and Economic Growth in Namibia: A Granger Causality Analysis”, *South African Journal of Economics*, Vol 75:3
- Jin, J.C. (1995). Export-led Growth and the Four Little Dragons. *Journal of International Trade & Economic Development*, 4(2): 203-215.

- Jung, W.S., & Marshall, P.J. (1985). Exports, growth and causality in developing countries. *Journal of Development Economy*, 18, pp. 10-12.
- Keller, W. (2000). Do trade Patterns and Technology flows Affect productivity Growth? *The World Bank Economic Review*, vol. 14 No. 1.
- Keller, W. (2004). International technology diffusion. *Journal of Economic Literature* XLII, 752–782.
- Khan, M. S. (1974). Import and Export Demand in Developing Countries. *IMF Staff Papers*, vol. 21, pp. 678-693.
- Krugman, P. R., & Obstfeld, M. (1997). *International Economics, Theory and Policy* (4th ed.). Reading, Mass.: Addison-Wesley.
- Lee, J. W. (2005). Capital goods imports and long-run growth. *Journal of Development Economics* 48 (1), 91–110.
- Levine R., & Renelt, D. (1992). A sensitivity analysis of cross-country growth. *American Economic Review* 82(4), 942-6.
- Ligthelm, T., & Van Wyk, M. (2005). *Marketing Research in Practice*. Pretoria: Unisia Publishers.
- Lopez, R.A. (2006). Imports of intermediate inputs and plant survival. *Economics Letters* 92 (1), 58–62.
- Lopez, R. E., & Thomas, V. (1990). Import Dependency and Structural Adjustment in Sub-Saharan Africa. *The World Bank Economic Review*, vol.4, No.2, PP. 195-207.
- Maingi, J. N. (1999). *Determinants of the real Gross Domestic Product growth rate in Kenya, 1973-97*. Kenyatta University, Kenya.
- Michaely, M. (1977). Exports and growth: an empirical investigation. *Journal of Development and Economics*, 40, pp. 49-53.
- Mugenda, O.M., & Mugenda, A. G. (1999). *Research Methods: Quantitative and Qualitative Approaches*. Nairobi: African Centre for Technology Studies.
- Njikam, O. (2003). Exports and economic growth in Sub-Saharan Africa: is there a connection? Thesis Submitted to the University of Yaoundé, Cameroon. Available online: <http://www.csae.ox.ac.uk/conferences/2004-GPRaHDiA/papers/3f-ousmanou>
- Otinga N. Hesbon. (2009). The impact of International Trade on economic growth in developing countries (Exports for rapid economic growth): A Case study of Kenya. Thesis submitted to the University of Nairobi, Kenya.
- Ricardo, D. (1817). *The Principles of Political Economy and Taxation*. London, UK.

Rodrik, D. (1995). Getting interventions right: how South Korea and Taiwan grew rich. *Economic Policy* 10 (20), 53–107.

Sentsho, J. (2002). Export Revenues as Determinants of Economic Growth: Evidence from Botswana. Thesis Submitted to the University of Botswana: Available online: http://www.essa.org.za/download/2003Conference/SentshoJ_Exports%20Revenue%20&%20Economic%20GrowthF.pdf#search='Export%20Revenues%20as%20Determinants%20of%20Economic%20Growth%3A%20Evidence%20from%20Botswana'.

Smith, A. (1776). *An Inquiry into the Nature and Causes of the Wealth of Nations*. University Of Chicago Press

Sodersten, M., & Reed, H. (1994). Import and Export Demand in Developing Countries. *IMF Staff Papers*, vol.21, pp.678-693.

Soumaya M. Tohamy & J. Wilson Mixon Jr., 2003. Lessons from the Specific Factors Model of International Trade. *Journal of Economic Education*, Helen Dwight Reid Foundation, vol. 34(2), pages 139-150.

Subasat, T., 2002. “Does Export Promotion Increase Economic Growth? Some Cross-Section Evidence”, *Development Policy Review*, Vol. 20

Tao, F., & Zestos, G. (1999). Exports and Economic Growth in Developing Countries: Evidence from Time-series and Cross-section Data. *Economic Development and Cultural Change* 36 (1), 51–63.

Toroitich S. Kipkosgei. (2011). The determinants of the trade balance in Kenya: An empirical analysis (1970-2010). Thesis submitted to the University of Nairobi, Kenya.

Tyler, W. (1981) Growth and Export Expansion in Developing Countries: Some Empirical Evidence. *Journal of Development Economics* 9, 121–130.

APPENDICES

APPENDIX A: INTRODUCTORY LETTER

To Whom It May Concern

Dear Sir/Madam,

We are pleased to inform you that the bearer of this letter is a graduate student at University of Nairobi pursuing a Masters degree in Business Administration. As partial fulfillment of his degree, Rufus M. Maina is conducting a research on the relationship between imports, exports and GDP.

Please note that any information you give will be treated with confidentiality and at no instance will it be used for any other purpose other than for this project. Your assistance will be highly appreciated. I look forward to your prompt response.

Yours Faithfully,

Rufus Marundu Maina

APPENDIX B: RESEARCH DATA

Year	GDP (current US\$)	Imports of goods and services (current US\$)	Exports of goods and services (current US\$)
1960	791,265,462.13	266,419,904.79	246,049,908.27
1961	792,959,474.91	246,847,903.48	259,433,903.04
1962	868,111,409.68	261,519,897.74	278,123,882.29
1963	926,589,364.42	268,365,890.59	296,813,879.46
1964	998,759,340.68	291,759,885.92	333,479,887.53
1965	997,919,320.83	306,319,877.47	313,319,874.67
1966	1,164,519,674.19	359,519,856.19	377,439,849.02
1967	1,232,559,506.98	362,039,855.18	350,839,859.66
1968	1,353,295,458.68	396,479,841.41	397,879,840.85
1969	1,458,379,416.65	409,639,836.14	430,639,827.74
1970	1,603,447,358.62	491,679,803.33	478,239,808.70
1971	1,778,391,288.64	625,800,029.68	509,319,796.27
1972	2,107,279,157.09	605,359,757.86	560,279,775.89
1973	2,502,143,758.60	717,339,944.56	685,433,124.70
1974	2,969,958,812.02	1,214,639,514.14	1,000,159,879.94
1975	3,259,346,414.84	1,124,852,005.74	972,057,239.43
1976	3,474,544,468.00	1,103,363,753.92	1,127,506,053.44
1977	4,494,379,307.35	1,419,913,587.29	1,571,184,163.47
1978	5,303,737,169.09	2,051,911,020.03	1,534,663,841.08
1979	6,234,390,279.47	1,970,754,390.12	1,605,552,144.33
1980	7,265,312,882.82	2,608,235,099.10	2,144,499,800.00
1981	6,854,490,190.66	2,318,209,450.12	2,087,869,577.23
1982	6,431,594,078.17	2,029,699,900.00	1,714,500,000.00
1983	5,979,205,949.74	1,686,899,800.00	1,551,599,900.00
1984	6,191,426,331.53	1,984,600,100.00	1,656,199,900.00
1985	6,135,040,560.85	1,849,500,100.00	1,552,099,800.00
1986	7,239,145,306.52	2,163,999,900.00	1,871,200,000.00
1987	7,970,816,493.97	2,104,100,000.00	1,698,200,100.00
1988	8,355,380,879.13	2,306,400,000.00	1,869,200,100.00
1989	8,271,729,985.97	2,491,721,994.48	1,905,230,000.00
1990	8,590,574,252.40	2,691,281,534.73	2,207,142,394.42
1991	8,152,105,054.25	2,327,920,573.88	2,204,462,273.97
1992	8,220,718,082.65	2,192,506,280.30	2,158,791,329.54
1993	5,751,786,609.50	1,953,010,583.67	2,237,653,790.08
1994	7,148,143,144.01	2,446,512,350.07	2,647,692,294.95
1995	9,046,331,923.21	3,542,004,457.92	2,948,353,472.09
1996	12,045,836,991.71	3,868,100,000.00	3,035,623,432.14
1997	13,115,729,422.01	4,114,500,000.00	2,975,485,180.91
1998	14,093,228,424.71	4,048,700,000.00	2,842,500,000.00
1999	12,896,050,251.69	3,528,300,000.00	2,686,600,000.00
2000	12,691,278,914.24	4,025,860,645.16	2,739,738,863.89
2001	12,986,519,857.43	4,287,533,252.11	2,978,013,718.18

2002	13,149,263,398.53	3,980,900,000.00	3,273,900,000.00
2003	14,903,634,448.25	4,477,864,124.31	3,589,810,903.34
2004	16,096,109,637.49	5,290,267,272.96	4,283,216,395.10
2005	18,737,895,400.78	6,739,990,236.10	5,341,992,261.31
2006	22,502,291,403.39	8,171,018,697.00	5,945,013,603.43
2007	27,236,739,895.94	10,268,037,014.67	7,293,596,889.03
2008	30,519,165,008.69	12,718,712,430.06	8,410,600,797.30
2009	30,580,367,979.31	11,195,532,918.63	7,385,780,706.03
2010	32,198,151,217.22	12,191,891,641.55	8,861,227,717.13