COMPETITIVENESS OF KENYA'S MANUFACTURED EXPORTS TO THE EAST AFRICAN COMMUNITY

M.A RESEARCH PAPER

BY
AYIEKO O. BENARD
X50/75571/2009

A research paper submitted to the School of Economics, University of Nairobi, in partial fulfillment of the requirements for the award of the degree of Master's of Arts degree in Economics.

DECLARATION

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

Signed.....

Ayieko O. Benard

Date 10/11/2011

This research paper has been submitted for examination with our approval as University of Nairobi supervisors.

Supervisor

Signed.....

Mr. Jasper Okello

Date 10/11/2011

Supervisor

Signed.....

Dr. Kiriti Ng'ang'a

Date 10/11/2011

DEDICATION

To my parents for their steadfast support and efforts to bring up an informed child. My mum for her unrelenting soft voice of a mother to a child with a wakeup call all the time.

ACKNOWLEDGEMENTS

First and foremost, I am indebted to my supervisors, Mr. Jasper Okello and Dr. Kiriti Ng'ang'a for their valuable supervision without which I would have found it difficult to complete this research paper in time. More importantly, they sacrificed their time amid a tight working schedule to go through the drafts and assess the final paper.

My sincere appreciation goes to Mr. Peter Wamalwa, for his wise counsel on matters economics and assistance in the usage of the Eviews package. I express my gratitude to my mother for her soft advice that transformed me immensely. Thanks to my kith and kin who tolerated the other side of me. Irene, your unwavering support was priceless.

I am grateful to each and every one especially friends, relatives, colleagues and fellow students who I may not have mentioned here but in one way or another they contributed significantly towards the accomplishment of this research work.

It is worth noting that, whereas great care and due diligence has been taken in preparing this research work, as the author, I bear responsibility for this work, that is, its contents and any errors that will emerge.

God bless you.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

AERC.....African Economic Research Consortium

ADF..... Augmented Dickey- Fuller

AGOA..... African Growth and Opportunity Act

CBS..... Central Bureau of Statistics

COMESA....Common Market for East and Southern Africa

EAC.....East African Community

EACO.....East African Cooperation

EU.....European Union

EPPO.....Export Promotion Programmes Office

EPC..... Export Promotion Council

EPZ.....Export Promotion Zones

FEM.....Fixed Effects Methods

GNP.....Gross National Product

GNI.....Gross National Income

GOK.....Government of Kenya

GDP.....Gross Domestic product

H-O..... Heckscher-Ohlin model

IBRD.....International Bank for Reconstruction and Development

KNBS..... Kenya National Bureau of Statistics

MUB..... Manufacture under Bond

NESC..... National Economic and social council of Kenya

OECD..... Organization for Economic Co-operation and Development

OLS..... Ordinary Least Square

REM..... Random Effects Method

SADC..... Southern African Development Community

SSA..... Sub-Saharan Africa

UK..... United Kingdom

US.....United States of America

VAT..... Value Added Tax

DEFINITION OF TERMS

Asian tigers - is a term used in reference to the highly developed economies of Hong Kong, Singapore, South Korea and Taiwan. These nations were notable for maintaining exceptionally high growth rates (in excess of 7 percent a year) and rapid industrialization between the early 1960s and 1990s.

Autarky - is the quality of being self-sufficient. It is used to describe a closed economy. The idea behind the closed economy is to meet all consumer needs with the purchase and sale of goods and services that are produced internally. It excludes the possibility of exporting goods and services.

Competitiveness – is the ability of a firm or a nation to offer products and services that meet the quality standards of the local and world markets at prices that are competitive and provide adequate returns on the resources employed or consumed in producing them.

Complete Knockdown (CKD) – is the fully disassembled item (such as an automobile, bicycle, or a piece of furniture) that is required to be assembled by the end user or the reseller. Goods are shipped in CKD form to reduce freight charged on the basis of the space occupied by (volume of) the item.

Openness – It is the ratio of a country's exports to imports and it determines the level of trade flow between trading partners.

Panel data - refers to multi-dimensional data. Panel data contains observations on multiple phenomena observed over multiple time periods for the same firms or individuals. Time series and cross-sectional data are special cases of panel data that are in one-dimension only.

Shocks – refers to an internal and external unexpected event that impacts an economy. For example, a natural disaster such as an earthquake or drought can have a major impact on an economy.

Spill-over effects – refers to a secondary economic effect that follows from a primary economic effect, and may be far removed in time or place from the event that caused the primary economic effect.

Tax rebates – refers to money that is remitted by the government to a tax payer who has 'overpaid' tax. Tax rebates are calculated during the process of filling out and filing tax returns. They act as incentives to attract investments in specific sectors of the economy.

ABSTRACT

Despite policy efforts to diversify exports, Kenya's export base is still largely dominated by primary products from the agricultural sector. Trade and commodity concentration has led to export earnings fluctuations which eventually leads to the problem of balance of payments, budgets deficits and does not permit future systematic economic planning. With dwindling fortunes in the agricultural sector due to vagaries of weather among others, it is imperative for policy makers to deal with the issue of diversification of the country's exports. This will help cushion the country against shocks arising from the instability in the foreign exchange markets especially for the primary products. This strategy will contribute to the development of new export markets for manufactured goods destined for the EAC.

By using panel data this paper investigated factors influencing competitiveness of Kenya's manufactured exports to the EAC. The primary concern of policy makers and macroeconomic analysts is what factors promote or inhibit the flow of Kenya's manufactured exports to the EAC.

The findings indicate that trade policy, captured by openness and nominal exchange has a large effect on export competitiveness, their coefficients are large. However, fixed capital formation which is a proxy for trade facilitation has a small effect on export competitiveness. Infrastructural development is not playing the rightful role in releasing export potential of the trading bloc; hence is a bottle neck on the export supply side.

The national government should have a policy of infrastructural investment like construction of corridors and upgrading of railway system to increase accessibility and ease the movement of manufactured exports. Unit labour cost has a negative effect on export competiveness. EAC member countries are labour abundant and therefore productivity of labour is more important than numbers. The member countries should invest in research and development, health care, education and capital equipment to increase labour productivity that lower unit labour cost thereby increasing competitiveness of manufactured goods.

Therefore, manufactured exports are important for Kenya's export matrix. It is therefore critical for the GOK and policy makers to work towards accelerating policies that will improve the volume of exports of manufactured goods to the EAC while drawing lessons from Asian tigers.

CHAPTER ONE

INTRODUCTION

1.1 Background

Like most Sub-Saharan African countries, Kenya's export structure is predominantly composed of primary commodities mainly; tea, coffee and horticulture - besides tourism. This has made the export sector to be more vulnerable to fluctuations in world prices. While certain nontraditional exports such as horticultural products have experienced rapid growth in the last few decades, manufactured goods make only a small proportion of total exports. Besides horticultural products, coffee and tea still remain key export commodities. The share of manufactured exports has not only remained small but has also been declining despite Kenya's immense potential. Consequently, export growth has been highly erratic, based on fluctuations hi earnings from a few traditional primary exports and the tourism sector. The decline in Kenya's export performance is mainly attributed to muddled policies that produced an anti-export bias (Wagacha, 2000).

Kenya's exports profile reveals that there have been minimal attempts, or negligible success to diversity export markets and products. Fresh horticultural exports have been the only positive move towards diversification (Kimuyu and Moyi, 1999). Africa is currently the principal market for Kenya's total exports. In 1998, Kenya exported 45% of its total exports to Africa. Although Kenya's total share averaged 29% during the period 1987-1992, this rose to 34% in 1993 and has exceeded 43% since 1994. By 1995, the largest African importers of Kenyan goods were Uganda (32%), Tanzania (25%), Rwanda (7%), DR. Congo (3%) and Sudan (3%). Apparently, the East and Central African region where Kenya exploits economies of proximity has dominated Kenya's export trade within Africa. Exports to Uganda and Tanzania stood at 29.4% of total exports in 1998. Total exports to the African region marginally increased by 0.1% compared to a 31.1% growth in 2008 and accounted for 47.2% of total exports in 2009 (KNBS, 2010).

Kenya's second most important market is the European Union (EU). Up to 1993, the EU dominated Kenya's export trade, its share varying between 40% and 50% of the total value. However, by 1994, this share had fallen to 34%. Between 1994 and 1998 the EU's share had averaged about 32.45% of the total exports. Since 1994, there has been a gradual shift from Western Europe as the principal destination for Kenya's exports to the African region. Mwega (2002) observes that the shift could have been due to the declining competiveness of

Kenya's exports. Kenya's share of the export market in Europe, North and South America and Middle East has been stagnant.

1.1.1 Export Competitiveness of a Nation

Classical economists perceived competitiveness of a nation in the context of international trade to be determined by cost of labour which was the only factor of production. Smith (1776) in contributing to a debate on defining competitiveness of an economy suggests that competitiveness is influenced by efficiency which is brought about by specializing in absolute advantage and pursuit of free trade. Ricardo (1817) associates competitiveness with efficiency but adds that an economy is competitive if it has lower cost of production relative to the other economy. However, Schumpeter (1942) emphasizes entrepreneurship and technical progress which influence cost of production. Contrary to Smith (1776) and Ricardo (1817), Krugman (1981) defines competitiveness of a country in terms of existence of imperfect market in the national economies that on aggregate confer relative competitiveness to that economy's exports especially in those industries where substantial economies of scale exist or have a firm that was the first to move into that industry.

Porter (1990) perceives competitiveness to be a fall in the cost of production and prices of goods and services due to increase in productivity of an economy relative to other economies. Increased productivity emanates from factor endowment, economies of scale, innovation and factor creating mechanisms that reduce cost of production, hence creating differences in costs across boundaries and over time. In line with Classical economists and Porter (1990) a nation's competitiveness refers to comparisons of prices and costs across countries which is determined by aggregate productivity that makes an economy to compete favorably in the international trade particularly in the export of industrial goods. Increase in productivity not only reduces prices of goods and services exported but also creates employment opportunities and income of a competitive economy.

1.1.2 Role of competitiveness in international trade

Herschede (1991) contends that causes of flow of goods and services across borders of nations are essential in explaining international trade and welfare differences among economies of the world. Competitiveness influences trade in commodities thereby determining welfare, hence making international trade to be a crucial factor in the overall development process of developing and developed nations. Due to the important role that exports play in the overall development process, economies have prioritized international competitiveness to foster growth and development. National policies and strategies in developing countries have consequently shifted from import substitution to export promotion in a bid to tilt competitiveness in favour of the economy (Donges and Riedel, 1977). Most economies have undertaken structural adjustment programmes and diversification of their export products to improve on price competitiveness as a long term strategy (Kotan and Sayan, 2002). In the short run Sub-Saharan countries have employed trade facilitation measures to increase export volumes through price reduction (Njinkeu, et al. 2007).

There are further attractions to an outward orientation stance. As the market grows, there are domestic spill-over effects particularly associated with exports of manufactures. Moreover, increased trade diversification emanating from manufacturing exports has a stabilizing effect on the economy since earnings from manufactured exports also offer better support for stable growth relative to primary exports (Helleiner, 1973).

Trade liberalization is a central plank of structural adjustment programmes implemented in developing countries to increase exports of manufactures. Exports hasten growth when increase in volume of exports facilitates investment in sectors in which the country enjoys greatest comparative advantage. Greater specialization in such sectors increases productivity. Access to foreign markets also allows countries to gain from economies of scale since domestic markets become larger through the inclusion of an international component. Furthermore, greater exposure to international competition increases the pressure on exporters to keep costs low and move towards points of best practice leading to significant gains in productivity. Exporters further increase technical efficiency through the learning-by-exporting effects. Spill-over effects can also result in economy-wide productivity increases stimulated by the export sector.

Export diversification in markets and products reduces vulnerability to external shocks. The demand for primary commodities is more cyclical and rises less steadily than for manufactured products, so that primary exporters are more subject to terms of trade losses than exporters of manufactures. These translate to lower investments and slower growth. Many initial manufacturing export activities, in the fast growing countries of East Asia and Latin America, have depended extensively on female labour, not only increasing employment but also creating additional opportunities for female workers. This has important distribution and welfare effects which are important for development (Kimuyu and Moyi 1999).

1.1.3 Overview of Kenya's export performance

Since Kenya's independence in 1963, there has been considerable progress in the trade reform in Kenya, advancing from import substitution strategy to export orientation (Ramesh and Boaz, 2007). Export led growth policies of the successful Asian tigers' economies are partly what motivated Kenya most. However, the manufacturing sector was very vibrant in the 1980s. It grew rapidly to become the second source of employment after the civil service. However, the sector grew by 3.8% in 2008 compared to 6.5% in 2007. This growth was against a number of challenges, namely; supply disruption, temporary closures during the 2008 post-election skirmishes, stiff competition from cheap imports and counterfeits, and subdued domestic and external demand. In 2007 and 2008, manufacturing sector contributed an average of 10% to the country's GDP (KNBS, 2009).

In 1976, the government set up export compensation schemes and export promotion programmes, namely: Manufacturing under Bond-MUB and export processing zones (EPZs) established in 1988 and 1980 respectively. Other export incentive schemes were: Green channel, export guarantee and credit scheme, the revival of Kenya export trade authority, export promotion council (EPC) and the export promotion programmes office (EPPO) for tax rebates on imported inputs for exporters.

The export programmes were mainly geared towards promoting manufactured exports mainly labour intensive manufactures. MUB and EPZs targeted new investments while others like duty and VAT exemption schemes targeted existing manufactures (Glenday and Ndii, 2000). The MUB and EPZs were aimed at using the abundant semi-skilled labour to produce labour intensive manufactures; garments and footwear for overseas market. Kenya still maintains an exporting advantage over the rest of the EAC member countries. Kenya claims

only 7% of the market share of the regional market for manufactures. However, the aim is to raise Kenya's market share to 15% by 2012 (National Economic and Social Council of Kenya (NESC), 2007). Kenya's trade with it is EAC has grown in leap and bounds. Africa continues to be Kenya's dominant export market accounting for 46.1% of the total exports in 2010, (KNBS, 2010). Exports to Africa rose by 16.1% from Ksh.162,732 million in 2009 to Ksh.188,975 million in 2010 as indicated in figure 1.

Figure 1: Value of total exports by destination, 2006 – 2010 Ksh. Million

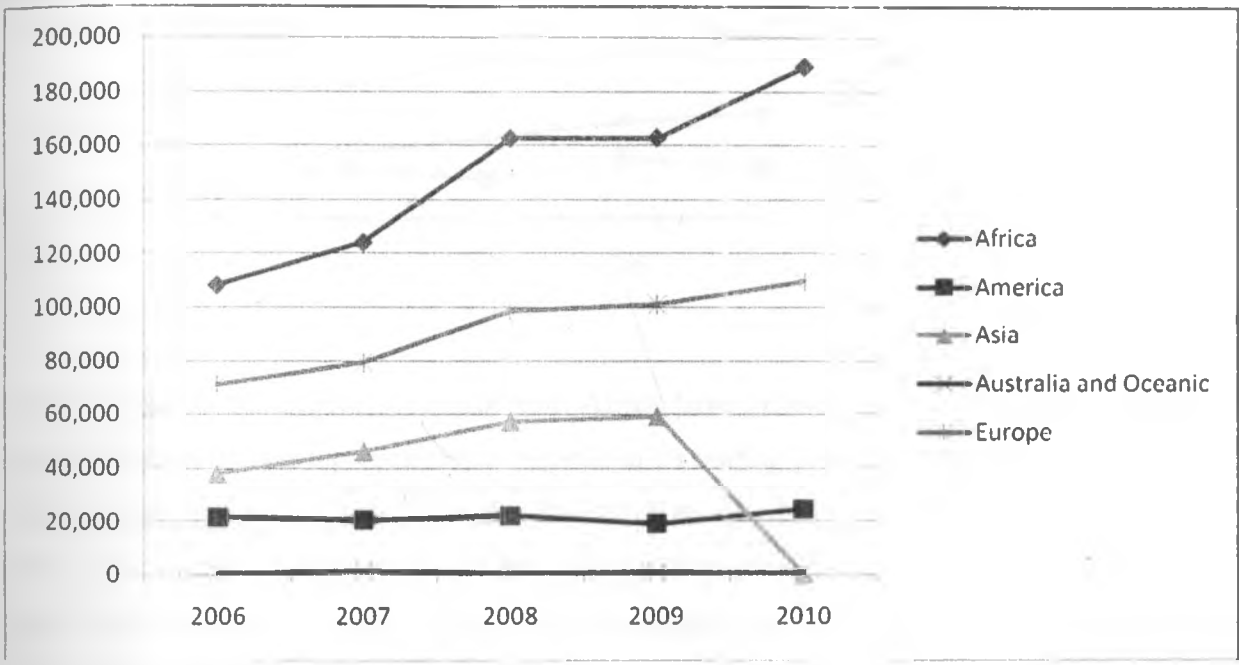


Figure 1 shows that trade between Kenya and Africa has been growing but it has not decomposed the export sector to clarify from which sector this exports have come from. Exports to Rwanda increased by 10.5% from Ksh.9,536 million to Ksh.10,535 million in 2010 while those to Uganda increased by 12.7%. The export earnings from South Africa however declined from Ksh.3,580 million to Ksh.2,444 million. EU which has been a traditional market for Kenya's exports rose by 7.3% and accounted for 24.1 % of the total exports. Kenya's exports to Spain, Italy, Belgium and United Kingdom increased by 34.9%, 34.6%, 22.7% and 4.5% respectively. The significant increase in the exports to EU region was partly due to increases in horticultural, and fish and fish preparation exports.

Figure 2: Value of total imports by destination, 2006 – 2010 Ksh. Million

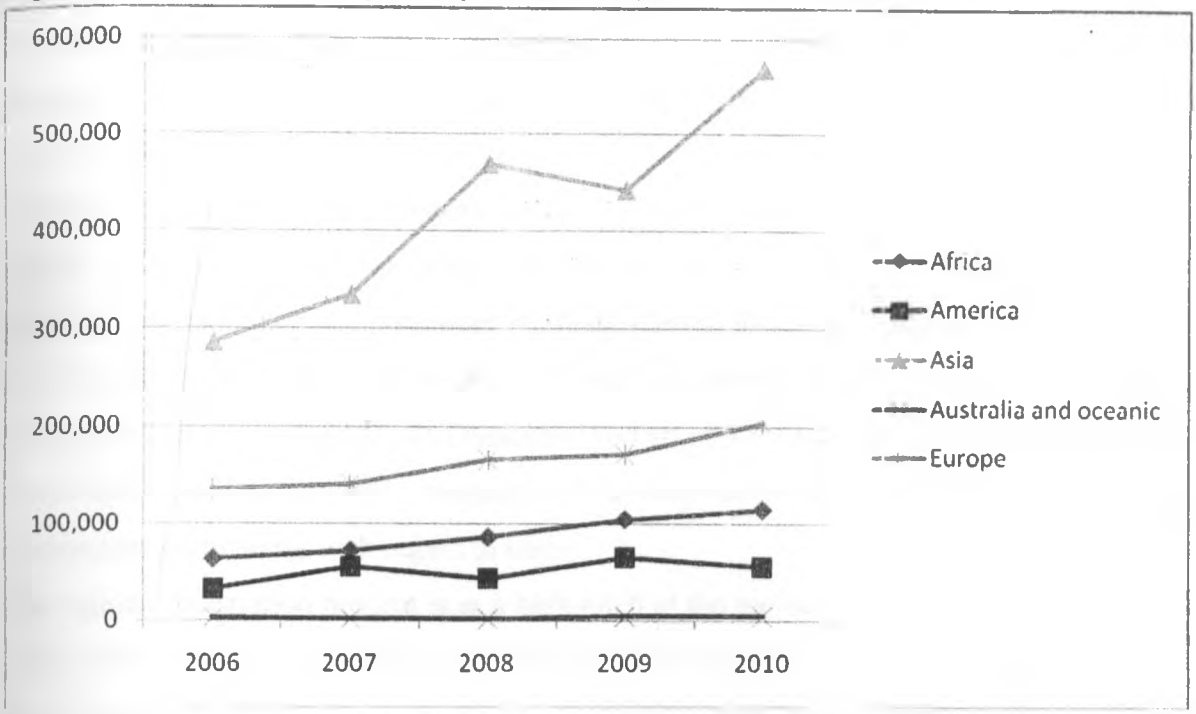


Figure 2 depicts that Kenya's imports from Africa have grown overtime showing increased trade with its neighbouring countries compared to its trading partners in the other continents. The major challenge though, is the poor infrastructure that has a negative cost effect on the final prices of these goods. This will raise the price of these goods leading to high market prices hence uncompetitiveness in the domestic market. The high prices therefore must be compensated by lower domestic costs of production to make the goods affordable. If prices are high then Kenyan importers will then source for these goods at competitive rates in foreign markets hence reducing the volume and degree of trade between Kenya and its African counterparts (Wangwe, 1995).

1.1.4 The East African Community

Kenya, Uganda and Tanzania have had a long history of economic cooperation going back to pre-independence period. A common market between the three territories came into being in stages over a number of decades. Kenya and Uganda established a customs union in 1917 making tariff administration relatively easy as goods could flow freely across borders. The Treaty for the Establishment of the East African Community was signed on 30 November, 1999, with the EAC officially inaugurated in January, 2001. The East African Community

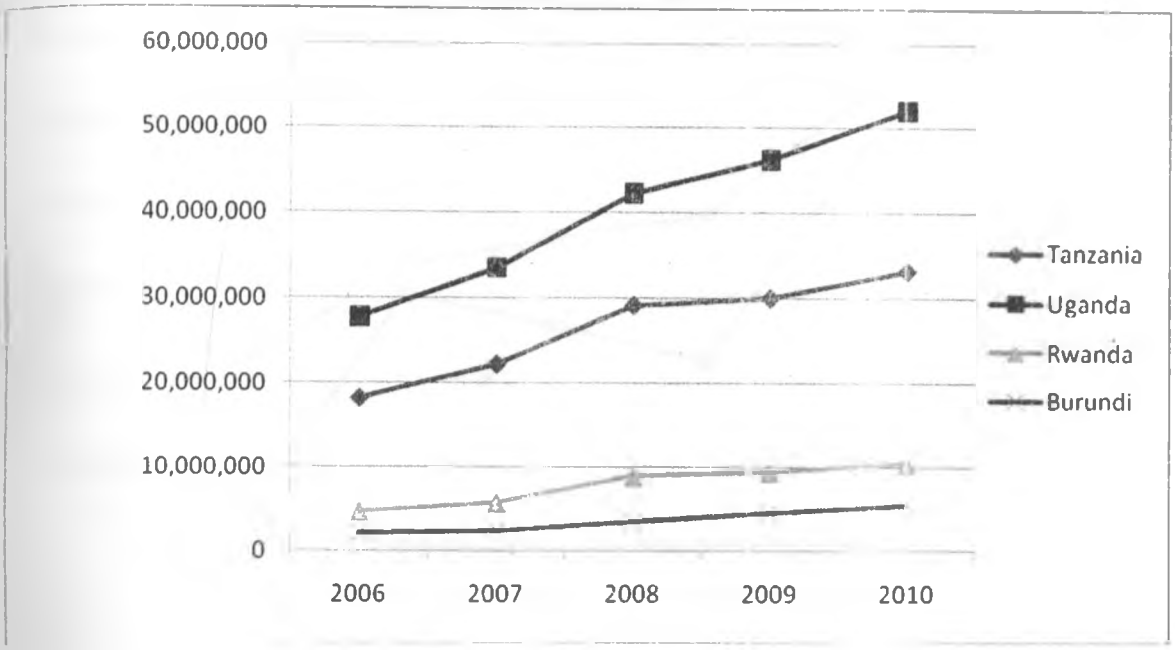
aims at widening and deepening cooperation among the members through policies and programs in political, economic, social and cultural fields for their mutual benefit. By forming a regional bloc, the expectation is that this will aid the acceleration of the socio-economic transformation of East Africa.

The EAC aims at widening and deepening co-operation among the Partner States in, among others, political, economic and social fields for their mutual benefit. The realization of a large regional economic bloc encompassing Burundi, Kenya, Rwanda, Tanzania and Uganda with a combined population of more than 125 million people, land area of 1.82 million sq kilometres and a combined Gross Domestic Product of $73 Billion, bears great strategic and geopolitical significance and prospects of a renewed and reinvigorated East African Community particularly with regard to trade.

The regional integration process is at a high pitch at the moment as reflected by the progress of the East African Customs Union, the signing in November 2009 and ratification in 2010 of the Common Market Protocol by partner states. The consultations on the Monetary Union, which commenced in 2009, and fast tracking the process towards East African Federation all underscore the serious determination of the East African leadership and citizens to construct a powerful and sustainable East African economic bloc.

Though the trade pattern for Kenya with its EAC partners shows some steady rise (see figure 3) over the last half a decade, the exact potential is still unexploited and so this calls for a closer look at export diversification policies to expand the exports basket for Kenya's products.

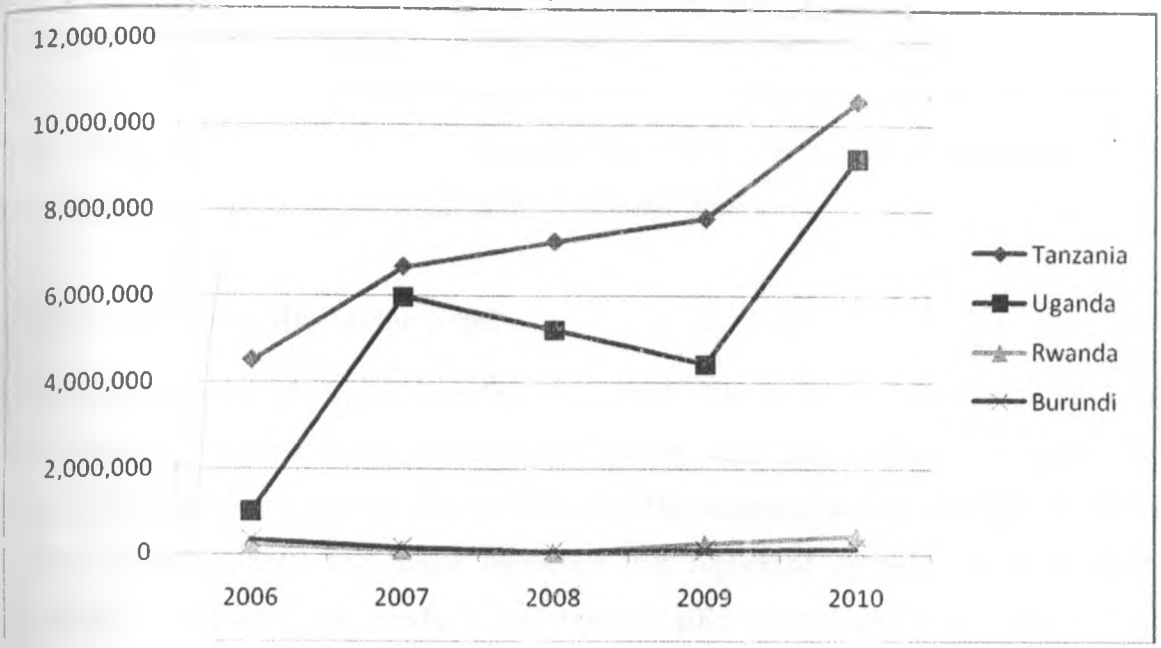
Figure 3: Value of exports to EAC, 2006 – 2010 Ksh. '000'



In Africa, EAC and COMESA remain the largest market for Kenya's exports. Kenya's value for exports to COMESA increased from Ksh.112,971 million in 2009 to Ksh.135,962 million in 2010. The total value of exports to EAC increased by 12% accounting for 53.6 % of the total exports to Africa (KNBS, 2010). The increase is attributed to the exports of petroleum products, medicaments, sugar confectionery, packing containers, and animal/vegetable fats and oils.

Wagacha (2000) indicates that failure by Kenya to diversify her exports and markets has been the main cause of her uncompetitiveness in the exports market. The loss due to lack of commodity diversification and failure in market diversification was about US$1 billion and US$191 million respectively for the two periods, 1980 and 1997. In these exports, the intra trade is almost homogeneous with agricultural products dominating the goods being traded. This homogeneity has exacerbated the problems associated with trading in both agricultural and homogenous products. Trade (see figure 4) in similar goods affects competitiveness of the trading countries and it is this veiled negligence on the important role that the manufacturing sector plays in the economy, perceived to be bigger than its EAC partners that has prompted this study to examine the competitiveness of Kenya's manufactured exports to the EAC.

Figure 4: Value of imports from EAC, 2006 – 2010 Ksh. '000'



The value of imports has been rising steadily in Tanzania and Uganda (though there was a decline from 2007 to 2009) indicating that trading activities have intensified. But the question of trade in similar goods then arises. Primary products being the traded commodities may indicate that countries of origin for Kenya's imports may have gained a comparative advantage in the production of these products. The value of imports underscores Tanzania and Uganda's resolve to work on their comparative advantage in the production of agricultural products. Tanzania and Uganda have then made their primary goods competitive and that is why Kenya's imports have increased significantly.

1.1.5 The Exports trend

Kenya's export can be distinctively divided into two categories namely; the agricultural, and manufacture components although generally, the structure is predominantly composed of primary agricultural commodities mainly tea, coffee and horticultural products. These three commodities together with articles of apparel and clothing accessories continue to be the leading export earners, accounting for over 49.7% of the domestic export earnings in 2007 (KNBS, 2008). Through Kenya's steadfast implementation of EAC integration programs, EAC has since become Kenya's leading export destination, that is, accounting for 36.6% of the total exports. Kenya's exports are expanding beyond the traditional markets, particularly

with advance in economic integration such as EAC. With liberalization, regional trade integration measures under EAC and COMESA have accounted for the dominant share of the increase in Kenya's exports, particularly in manufactured exports, with COMESA being the leading destination of Kenya's exports within the African region accounting for 69.5% share of the total exports to Africa in 2007 (KNBS, 2008).

1.1.6 Manufacturing sector trend

Kenya has a relatively larger manufacturing sector than its trading partners in the EAC and consequently exports more manufactured goods than her EAC counterparts. Kenya's manufacturing sector growth rose by 3.8% in 2008 compared to a revised growth of 6.5% in 2007 (KNBS, 2009). The major industries that registered growths included; beverages, clothing, wood and cork products and non metallic mineral products. Some of the key challenges facing the sector included low levels of productivity and the high cost of production. These challenges were aggravated by the post election crisis, high inflationary pressures, the depreciation of the Kenya shillings, counterfeits and stiff competition from cheap imports (KNBS, 2009).

Although Kenya is the most industrially developed country in East Africa, manufacturing still accounts for only 14% of gross domestic product (GDP). This level of manufacturing contribution to GDP represents only a slight increase since independence. Expansion of the sector after independence, initially rapid, has stagnated since the 1980s, hampered by shortages in hydroelectric power, high energy costs, dilapidated transport infrastructure, and the dumping of cheap imports. Industrial activity, concentrated around the four largest urban centers namely; Nairobi, Mombasa, Kisumu and Thika. Kisumu and Thika industrial zones are dominated by food processing industries such as grain milling, beer production, and sugarcane crushing, and the fabrication of consumer goods, e.g., vehicles from complete knockdown. Kenya also has an oil refinery that processes imported crude petroleum into petroleum products, mainly for the domestic market. In addition, a substantial and expanding informal sector engages in small-scale manufacturing of household goods, motor-vehicle parts, and farm implements (Were et al, 2002).

Kenya's inclusion among the beneficiaries of the United States Government's African Growth and Opportunity Act (AGOA) has given a boost to manufacturing in recent years. Since AGOA took effect in 2000, Kenya's clothing sales to the United States increased from

US$44 million to US$270 million in 2006. Other initiatives to strengthen manufacturing have been the new government's favorable tax measures, including the removal of duty on capital equipment and other raw materials (KNBS, 2007).

In the 1980s the share of the total exports had not only remained minimal but had also been declining. The contribution to the country's total exports has improved with its value standing at 37% of the total Kenyan exports and locally manufactured goods comprising 25% of Kenya's export. Agriculture has always been described as the backbone of Kenya's economy accounting for 22% of the GDP. A major impediment to the exports of manufactured items is poor product quality, and which makes most items internationally uncompetitive, except in the regional markets (World Bank, 1993). Over the years, Kenya has relied heavily on exports of commodities especially the agricultural products mainly coffee, tea and cotton, a situation which exposed the economy to higher volatility of commodity prices and persistent decline in commodity prices.

Today, Kenya has gained reasonable success in penetrating regional markets. The manufactured exports in this market are in conformity with Kenya's industrial aspirations and overall development agenda. The manufacturing sector registered a growth of 0.5% from 261.1 thousand persons in 2008 to 265.3 thousand persons in 2009. Direct formal employment to Kenyans in the Export Processing Zones (EPZ) however contracted marginally from 30.2 thousand persons in 2008 to 30.1 thousand persons in 2009. The sector further employs about 254,000 people, representing 13% of the economy's total employment (NESC, 2007).

The issue of international competition is compounded further by the increasing cross border trade in the Eastern African made possible by the elimination of trade barriers such as tariffs and quotas. The introduction of the Common Market for Eastern and Southern Africa (COMESA) Treaty and the East African Cooperation (EAC) has enabled trade liberalization between member countries. The regional trade blocs like COMESA strive to reduce tariffs on intra COMESA trade, liberalize and simplify rules of origin, ratify free movements of persons, adopt a single goods custom declaration and integration of the private sectors. Introduction of free trade between these countries, despite substantially improving flow of goods and factor of production, countries have not exploited comparative advantage in the production of certain commodities (Ng'ang'a, 2006). It is indeed the comparative advantage

that stimulates trade between countries. Exploitation of comparative advantage among member countries in the region would increase employment, raise incomes and welfare of its people (Hoekmann et al. 2001). However, the pattern of competitiveness may not be very clear. The need for this continuous integration therefore requires an assessment of manufacturing competitiveness in these countries (Ramesh and Boaz, 2007).

It is against this backdrop that the importance of improved performance in promoting economic growth cannot be gainsaid. Goods and services sold outside the country bring in dollars that can be used to purchase other goods and services. Hoekmann et al. (2001) observed that no country has managed to raise the standards of living of its population without significantly increasing its exports. Sub Saharan Africa has recorded the highest proportion of people living in poverty with 46% of the population living under one dollar a day compared with 15.3% in the successful exports oriented economies of the Asian tigers. Sub Saharan Africa has also recorded the greatest erosion of its world exports share from a low of 3.3% in 1950 to 0.85% in 1999 which according to Amjabi and Yeats (1995), amounts to an annual loss of Ksh.65 billion dollars in exports earnings. This loss appears to be increasing over time and was estimated at Ksh.92 billion dollars in 2000, which amount to immense loss in welfare.

1.2 Statement of the Problem

In the wake of EAC common market protocol operationalisation, countries are opening up their borders for trade and member states have been eager to exploit opportunities created by the common market. Member countries have adopted policies to increase exports to EAC. Member countries including Kenya have promoted exports generally not considering their comparative advantage relative to other EA countries. This has led to exports of similar commodities which on aggregate are dominated by imports from outside member states notably from Asia. Consequently, full potential of exports market has not been realized. By investigating the factors that will influence Kenya's manufactured exports competitiveness in the EAC, this study will enable refocusing of efforts towards export promotion in goods that Kenya has comparative advantage and this will not only increase trade but also enhance economic growth.

What appears to be gaining momentum in the recent years in most countries is that they are pursuing growth successfully and have taken the advantage of international trade to open

foreign markets for their exports (Martin, 2001). However, it is vital to note that international trade is not without policies, for example the recent international policy for open trade, the Uruguay Round Agreement of 1994, even at the national level, the choice of policies to manage interactions with the world economy is complex and therefore, in order to formulate trade and industrial policies aimed at stimulating manufactured exports, it is vital to understand which factors stimulate or deter the competitiveness of Kenya's manufactured exports into the international market. Primary products dominate Kenya's export matrix and this can partly explain the heavy focus of empirical work on the agricultural sector vis-a-vis to the manufacturing sector.

This will therefore reduce Kenya's predominant reliance on primary products for foreign exchange. This study therefore will reduce heavy focus of empirical work on the agricultural sector vis-a-vis the manufacturing sector. Given the fact that the export competitiveness for a country requires a multifaceted approach, this study takes the gravity model approach with an aim to identify factors that explain the export behavior of Kenya's manufactured goods to the EAC within the context of economic integration.

1.3 Objective of the Study

The overall objective of this study is to investigate factors influencing competitiveness of Kenya's manufactured exports to the EAC. The following are specific objectives for the study:

a) To determine the factors that influence Kenya's manufactured exports competitiveness to the EAC.
b) To determine the relative competitiveness of Kenya's manufactured exports among EAC countries.
c) To offer feasible policy recommendations based on the research findings.

1.4 Research questions

a) What factors determine competitiveness of Kenya's manufactured exports to the EAC?
b) To what extent do these factors influence the competitiveness of Kenya's manufactured exports to the EAC?

1.5 Justification of the Study

The primary concern of policy makers and macroeconomic analysts is what factors promote or inhibit the flow of Kenya's manufactured exports to the EAC. The use of gravity model in this study attempts to identify these factors, improving on the earlier work by Were, et al. (2002) by incorporating the geographical and policy factors (the cross border effects). The significance of this study rests on the model's outstanding empirical performance in analyzing export flows between countries thus attempts to estimate Kenya's manufactured exports function.

Based on the methodology and data used, the regressions results can be used as policy guidelines in the formulation of Kenya's export trade policy frameworks since they give direct measures of the responsiveness of manufactured exports flow to the trade potential variables of the estimated equation. The policy variables help to understand the impact of the represented policies on manufactured exports flows. In this context, an estimation of Kenya's manufactured exports potential with the EAC partners is not only appropriate but also important.

CHAPTER TWO
LITERATURE REVIEW

2.1. Introduction

This chapter presents the theoretical and empirical evidence so as to get insightful examination of the determinants of competitiveness of Kenya's manufactured exports to the EAC. The empirical literature essentially focuses on the literature related to this study from Kenya, Africa and the world. The subsequent section of this chapter will also review the relevant empirical studies on the gravity model which the study has adopted. Finally, the chapter will also look at the overview of literature review.

2.2. Theoretical literature

International trade theory provides a useful framework through which to analyze competitiveness. Within the traditional trade theory espoused by Hecksher-Ohlin, the potential to trade occurs when relative prices differ between countries. Thus, in the standard 2 country 2 product model, home country (*H*) is competitive in producing product *A* compared to country *F* in producing B, if relative prices in country F are less than relative prices in country H. Country *F* in this case is competitive in producing product *B*. If permitted, trade will occur so long as these relative price differences are large enough to overcome the costs associated with natural and policy barriers between these countries.

Where trade theories differ is in their explanation of the sources of competitiveness; why relative prices diverge. The notion of competitiveness in classical and neo-classical trade theory is synonymous with comparative advantage. Within the Ricardo framework of comparative advantage, technological differences ensure that labour requirements per unit of real output differ between countries. Because of the assumptions of the model (perfect competition, constant returns to scale production technology and labour as the single mobile factor of production) prices in this model equal unit labour costs. Hence competitiveness is determined by differences in the unit labour costs.

Dornbusch et al (1977) extends this model to multiproduct. Home country will have a comparative advantage in the production of a good and therefore will export goods for which relative labour productivity exceeds its relative wage and will import those for which relative labour productivity is less than relative wage. Competitiveness is thus dependent on the

interaction between relative wages and relative productivity. Productivity growth combined with wage moderation enhances a country's competitiveness. However, difficulties arise when we extend the production function to include several factors. The model espoused by Ricardo and extended by Dornbusch et al (1977) fails to predict factors of competitiveness and hence direction of trade.

Within the Heckscher-Ohlin model differences in relative factor endowments give rise to relative price differences under autarky. In autarky countries that are abundant in capital relative to labour will produce capital intensive products (machinery) relatively cheaper compared to economies where capital is scarce. Similarly, the relatively labour abundant economies will produce labour intensive products (agriculture) relatively cheaper. Under perfect competition these relative cost differences give rise to relative price differences and an incentive to trade. Thus according to the Heckscher-Ohlin theorem a country will export the commodity which uses its abundant factor intensively. Because technology is common across countries, trade causes product prices to converge which results in factor price equalization. Competitiveness in this model is thus closely linked to a country's natural resource endowment.

These traditional trade models fail to explain the existence of trade in similar products (intra-industry trade) which accounts for the dominant share of total world trade, particularly between developed economies as well as in East Africa Community. Krugman (1981) model incorporates internal economies of scale and product differentiation in a market characterized by monopolistic competition. Under autarky, a combination of competitive market forces and economies of scale determine the price and number of product varieties traded. Furthermore, the larger market due to international trade increases the profitability of existing firms which encourages the entrance of new firms producing slightly differentiated products.

Therefore, preceding theories suggest that similarity in factor endowments, economies of scale, product differentiation and geographical proximity influence competitiveness of an economy thereby increasing the potential for intra-industry trade to occur as well as regional location of firms. A major weakness of these models is their failure to explain dynamic comparative advantage as in the geographical relocation of the consumer electronics and hard disk drive industries from the US to the South East Asian region and from Kenya to East African community countries (Lowe and Kenney, 1999; Gourevitch et al 2000) and relocation of industries among East Africa community countries.

Vernon's (1966) product life cycle hypothesis suggests that the geographical relocation of production reflects stages in the life cycle of a 'new product'. New products catering for high income consumers and using labour saving production techniques are developed in high-income economies. These economies then export the product to the rest of the world. As production techniques and product characteristics become standardized, labour costs rather than the product or process innovation become an important determinant of cost competitiveness. As a result the production process is relocated to low wage economies who then become the dominant exporters of the product.

Krugman (1981) and Krugman and Venables (1995) models of economic geography provide insight into the changing geographical location of production in East Africa community. Backward and forward linkages between firms (Krugman and Venables, 1995) or between firms, workers and consumers (Krugman, 1991) generate externalities that for various levels of transport costs may lead to the agglomeration of industrial activity in a particular region. In this case transport costs and proximity to the market are important determinant of competitiveness. However, as transport costs diminish, access to a wide range of cheap intermediates become more important; firms may relocate to larger markets where intermediates are readily available. This in turn gives rise to a circular process that leads to regional differentiation with the world economy or regional economies organized in an industrial core and a deindustrialised periphery.

Central to dynamic comparative advantage is the technical progress that is essential in reducing production costs and determining an economy's competitiveness. Distribution of technological progress is considered decisive in determining the pattern of international trade (Olofin, 1977; Fisch and Speyer, 1997).

In this new approach based on Schumpeter's (1942) dynamic theory of growth, foreign trade is explained not by static comparative cost advantage, but by the existence of dynamic competition. By this argument, a country's production and trade is not limited by its endowment of a given resource only, but also by a process of searching and learning, which itself is determined by competition incentives in an appropriate institutional setting. Comparative advantage is therefore partly endogenous, and hence foreign trade is determined by technical progress.

Porter (1990) assumes that it is in a particular industry, such as passenger cars, facsimile machines etc., where competitive advantage is won or lost. According to Porter in order to

understand national competitiveness, it is essential to know why specific industries or even segments of industries, which are highly successful at international level, are often located in the same country or even the same region. Porter sees high and rising living standards as the principal economic goal of a nation. In order to achieve this objective, he argues that a nation needs to productively employ its resources (labour and capital). Porter's analysis of competitiveness focuses therefore on productivity and aims at understanding why in one country firms were able to build up the capacity to achieve high levels of productivity and to increase them over time and in another country not. When Porter examines national competitiveness he is concerned with the international level. Porter looks at how countries compete with each other through their exports and the location of company activities abroad, and pays less attention to the analysis of the evolution, national history and aspirations regarding competitiveness.

Competitiveness in all these models in general is determined by particular features of the domestic economy. Therefore, resource endowment, labour cost, organization of production, the adoption of technology, institutional structures and the efficiency of agents and the linkages between them within the value addition chain are important determinants of competitiveness.

2.3. Empirical literature

Empirical studies reveal that factors inhibiting exports growth and diversification of exports are similar to those explaining Africa's low growth and uncompetitiveness in international trade. Indeed, the important variables that explain the movements in the level of exports are policy related variables. The main instruments of trade policy are trade taxes, import and export taxes and a variety of quantitative restrictions on trade. This varies from country to country and from one trading bloc to the other.

Morrison (1976) investigated the effects of protectionism on manufactured exports of developing countries. The regression model had a dependent variable being manufactured exports of the year 1968-70 and explanatory variables are population, GDP tariff and literacy levels. OLS results indicate that protectionism reduce manufactured exports.

Helleiner (1986b) did a study on industry characteristics and export manufactures competitiveness from less developed countries to developed countries -USA Canada and other OECD member countries. Dependent variable was the value of imports while

explanatory variables were tariffs and variables measuring factor intensities. Empirical evidence suggests that labour cost, factor intensities and technical progress and product differentiation influence competitiveness. These results support static and dynamic comparative advantage theories.

Lundberg (1988) attempt to explain changes in the industrial pattern of relative international competitiveness and specialization in the Swedish manufacturing industry during the period 1969-1984, with special focus on the role of research and development. The dependent variable used to measure competitiveness is the net export ratio. The explanatory variables in the OLS model are human and physical capital intensity and research and development variables. Results suggest that factor intensities and research and development influence competitiveness, thus evidence in support of Hecksher-Ohlin and technology gap models is obtained.

Roberts and Tybout (1997) studied export booms among many firms in developing countries. Their study revealed that firms, which are sources of manufactures, were already exporting before the export booms did not dramatically adjust export volumes in response to evaluation. The explanations given for the response include demand elasticities that are not large, risk averse behavior and near full capacity utilization. These explanations varied from one country to another in importance.

Mody and Yilmaz (2002) analyze the relationship between export competitiveness and investment in machinery. They estimate a translog export price function for developed countries; export oriented developing countries and import-substituting developing economies in panel data frame work using data on 14 developed countries and 25 developing countries for 1967-1990 period. The explanatory variables in the model are world income, capital stock, wage rate and exchange rate. Results show that capital stock influences export competitiveness.

Countries are made up of export enterprises and since an enterprise does not produce in a vacuum, its competitiveness can only be measured within various types of market territories at the sub-national, national and supra-national levels. The optimization of its capital resources (finance, technology, labour) commands its ability to penetrate each of these three market territories. Metcalf, Ramlogan and Uyarra (2003) maintain that a country's competitiveness is embodied in the characteristics of the firm, namely through: the current efficiency and effectiveness in the use of resources; willingness and the ability to relate

profitability to growth of capacity through continued investment; and ability to innovate in technology and organization and thus improve efficiency and effectiveness of production.

Trade facilitation acts as an export subsidy that reduces cost of commodities across national trading patterns and influences competitiveness of commodities of an economy. Njinkeu, et al (2007) investigated trade facilitation strategies and their effect on trade and GDP in Southern African Development Community (SADC) using data from Global Competitiveness Report of 2006. The dependent variable in their Tobit model is the volume of exports. Independent variables include facilitation variables, tariff, GNI and dummy variables to capture the effect of preferential trade agreements, language similarity and adjacency. The major findings indicate that the infrastructure both fiscal and service of exporting and importing country port efficiency have a positive impact on trade. Institutional and regulatory framework influence trade both in the importing and exporting country negatively and positively respectively.

Edwards and Alves (2006) conducted a comparative analysis of South Africa's export supply determinants using 28 manufacturing sectors over the period 1970-2002. In their pooled estimation model the dependent variable was the export volume and explanatory variables were exchange rate, infrastructure costs, tariff rates and variable cost. The generalized method of moment results indicate that exchange rate, infrastructure costs, tariff rates and labour costs, are also shown to be important determinants of export performance.

2.4. Overview of Literature review

Theoretical literature suggests that competitiveness of an economy's exports is influenced by cost of production especially variable costs depicted by labour cost and resource endowments (Dornbusch et al, 1977). On the other hand dynamic comparative advantage theorem and new trade model depict competiveness to be determined by geographical distance and innovation (Krugman,1981 and Krugman and Venables,1995). There is no consensus in the theoretical literature regarding drivers of competiveness of an economy in the international trade.

Empirical evidence exhibit varying formulations of competitiveness model, that leads to conflicting findings. For instance Njinkeu, et al (2007); Edwards and Alves (2006) and Morrison (1976) include policy and resource endowment variables. Findings support static comparative advantage model. But, Lundberg (1988) includes variables for static and

dynamic comparative advantage. Evidence from Lundberg (1988) supports product cycle model.

There is no single study that includes resource endowment, policy and technological progress in the analysis of determinants of competitiveness of exports. This study fills this gap by investigating policy, technological and resource factors that influence competitiveness. In particular, this study employs a variant of a gravity model in the context of static panel data to investigate competitiveness of manufacturing exports in EAC. In doing so, this study will add to literature especially with respect to competitiveness of Kenya's manufactured exports to the EAC.

CHAPTER THREE
METHODOLOGY

3.1. Introduction

This chapter outlines the methodological approach that will be used in analyzing the determinants of competitiveness of Kenya's manufactured exports to the EAC. This chapter will also describe the empirical model, data sources, gravity model and other statistical tests required.

3.2. Theoretical framework

This section is primarily concerned with the theoretical presentation of a model, which can then be used as a framework to test the important determinants of competitiveness of Kenya's manufactured exports to the EAC. The gravity model is a macro model by nature since it is designed to capture volume, rather than composition of bilateral trade (Appleyard and Field, 2001). The model is used to explain the driving forces of exports such as what leads one country to export to another. With increased popularity in the 1990's, the gravity model has been found to work best for similar countries that have considerable intra-industry trade with each other (Helpman, 1999).

The properties of the gravity model are particularly suitable in the case of the EAC since the model captures the effects of distance on trade volume as well as the market size and income of each country. This paper provides a quantitative study of the factors that determine the competitiveness of Kenya's manufactured exports to the EAC using a gravity model. Gravity model estimation provides a useful multivariate framework for assessing the impact of these factors on the level and direction of trade for Kenya's manufactures.

The model is based on the idea that trade between two countries, like the gravitational force between two objects, is a function of the countries' "mass" (in this case population size and GDP) as well as the distance between them. The gravity model states that the volume of trade can be estimated as an increasing function of the national incomes of trading partners, and a decreasing function of the distance between them. Gravity models assume that, in the absence of a regional trade agreement, members' trade will be proportional to the gross domestic product (GDP). Bilateral trade is also influenced by cultural similarities, historical ties and political factors that reduce the effect of distance of the trading partners.

3.2.1. Gravity Model

Gravity model is a method of predicting the amount of interaction between two places. It asserts that interaction is directly related to the product of the two populations and inversely to the distance between the places concerned. The study will analyze the competitiveness of Kenya's manufactures to the EAC using a gravity model. The question here is what factors determine competitiveness of Kenya's manufactured exports to the EAC and to what extent do these factors influence the competitiveness of Kenya's manufactured exports to the EAC. My objective is to provide answers to these questions by exploring the factors that have hindered Kenya's capability to widen the regional market share for its manufactures within the context of the EAC. The estimation will be done using secondary bilateral trade panel data for 20 years.

Gravity model predicts bilateral trade flows based on the economic size of (often using GDP measurements) and distance between two units. The gravity model equation is attributed to Tinbergen (1962) and Poyhonen (1963). Basic gravity model predicts bilateral trade flows based on the economic sizes of (often using GDP measurements) and distance between two units.

$$\text{Log (export ij)} = \alpha + \beta_1 [\log (\text{GNP}i \times GNP_j) - \beta_2 (\text{Log Dist.ij})] + \text{Uij} \quad \ldots\ldots (1)$$

Where: Exports ij = is the value of the bilateral exports between country i and j, GNP i and GNP j are country i and j's respective national income.

Dist. ij is a measure of the bilateral distance between the two trading partners.

α and β are parameters and a priori β_1 is positive and β_2 is negative. The linear form of the gravity model equation is specified in equation (1).

Equation (1) is the core gravity model equation where bilateral exports are forecasted to be a positive function of income and negative function of distance. Distance does not only relate to the geographical distance, the transport costs, but also to other factors affecting transaction costs. The gravity model is a macro model by nature since it is designed to capture volume, rather than composition of bilateral trade (Appleyard and Field, 2001). The model is used to explain the driving forces of exports such as what leads one country to export to another. Basic gravity model does not include firm level characteristics embedded in the production function that influence competitiveness of a country's product. In addition, this paper investigates determinants of Kenya's manufactured exports in EAC.

Therefore we utilize a variant of gravity model in which the dependent variable is the indicator of manufactured exports competitiveness.

3.3. Empirical model

This paper investigates the determinants of export competitiveness of Kenya in the context of East Africa community. To investigate these factors we augment equation 1 with cost factors in the manufacturing sector among the EAC member countries. Borrowing from Mody and Yilmaz (2002) and Lundberg (1988), we augment the basic gravity model (specified below) by including nominal exchange rate *e*, unit cost of labour *w*, openness *opp*, and infrastructure *z* in the model.

$$Exports\,ij = \alpha + \beta_1 GNP + \beta_2 e + \beta_3 w + \beta_4 opp - \beta_5 z + U \quad (3)$$

Edwards and Alves (2006) include infrastructure and tariff in their model to capture export supply determinants. In our model instead of tariff we use the ratio of exports to imports (openness, *opp*).

In the augmented gravity model, export is the quantity of exports from country i to j. In our case i is the exporting country in EAC and j is the importing country among the trading partners. The size of the economy can be measured by the two variables of population and national income. Frankel (1997) explains that countries with large populations tend to be more inwardly oriented than smaller countries because they are able to exploit economies of scale in their large domestic population size. A large economy as measured by large GNI has economies of scale in production that makes exports cheaper hence gross national income depicts an economy's competitiveness of exports (Edwards and Alves, 2006). *GNP* is the Gross national income of the exporting country. Infrastructure *z*, is the aggregate expenditure on economic infrastructure such as transport, communication, power, water and sanitation.

Competitiveness of exports in EAC countries can be explained by factors inherent in the individual economy that are either time invariant or vary over time. Time invariant factors of export competitiveness are unique to the economy and they represent residual comparative advantage of the economy. Dynamic comparative model suggests that comparative advantage can shift from one economy to another over time (Fisch and Speyer, 1997). To take into account individual and time variations in competitiveness of an economy, we specify a generalized two-way error component model as:

$$y_{it} = \alpha + \beta x_{it} + \mu_i + \lambda_t + \varepsilon_{it} \qquad (4)$$

Where y_{it} is competitiveness of economy i at time t, α is the intercept β is the coefficient, x_{it} is a vector of explanatory variables, μ_i is the unobserved time invariant economy specific factors while λ_t unobserved competitiveness that varies over time, ε_{it} is stochastic disturbances. This panel data specification allows analysis of relative competitiveness of EAC member country competitiveness. Panel data type is preferred because it adds a unique dimension to empirical analyses unlike cross section or time series data. Panel data models are able to capture both the cross section and time series variation of the dependent variable thereby reducing the margin of error in data analysis. Panel data will therefore give a more informative data, more variability, less collinearity among variables, more degrees of freedom and more efficiency. Its main drawback is that it suffers from heterogeneity and biasedness. Sometimes they also exhibit design and data collection problems and distortions of measurement errors (Gujarati, 2007).

3.4. Statistical properties

3.4.1. Unit root

When a time-series equation contains nonstationary variables, the results based on this estimation will be spurious. Im, Pesaran, and Shin (1996) recently extended stationarity tests to cross-section, time-series models. The test procedure extends the widely used augmented Dickey- Fuller (ADF) test to a panel data framework and allows for heterogeneity across groups in the panel. First, the average ADF unit root test statistic for the panel is obtained as the mean of individual ADF unit root statistics.

Next, the expected value and the standard error of the average ADF test statistic under the null hypothesis of a unit root are obtained through Monte Carlo simulation. The t statistic is calculated as the average ADF test statistic minus its expected value divided by its standard error. Im, Pesaran, and Shin (1996) show that under the null hypothesis of a unit root, the t-statistic has a standard normal distribution for a sufficiently large number of countries, N, and number of periods, T. If the null hypothesis of a unit root for all variables of the export competitiveness variable for all country groups is accepted, estimating the export function in levels using ordinary least square method would generate spurious results.

If the series has a unit root, equation 4 can be tested for cointegration. However, if N is less that T; we have unbalanced panel and dynamic panel data analysis will yield biased and inconsistent estimate (Baltagi, 2008). One possible solution to non stationary variables is to difference the non stationary variables (Gujarati, 2007). Variables that are not integrated of order zero will be difference to obtain a stationary series. Next, we test for unit roots in the first-differenced variables is to ensure that they are stationary. This allows us to estimate the equation in first differences.

In panel data models, OLS application to data (Least square dummy variable method) over parameterizes the estimates. Hence equation (4) can either be estimated using fixed effects or random effects. A random effects model (REM) is appropriate when estimating the export flow of manufactures from a randomly drawn sample from a large population while fixed effects model (FEM) are good for estimating the flows of manufactured exports from an ex-ante predetermined selected countries (Eita and Jordan, 2007). To select an appropriate model we conduct a Lagrange multiplier specification test to test an appropriate panel data model that fits the data generating process.

3.4.2. Expected signs

Openness *opp,* measures level of liberalization. Openness reduces the anti-export bias of production and thus positively affects export production. Gross National Income is included as a proxy for non-price improvements in competitiveness (total factor productivity, export supply networks, learning by doing) arising from increased economic activity. Finally, infrastructure constraints are expected to negatively affect export supply. Distance from the trading partners' capital impacts negatively on exports because of high transportation costs. This means that as the distance between Nairobi and the other capitals namely; Kampala (Uganda), Kigali (Rwanda), Dar es Salaam(Tanzania) and Bujumbura (Burundi) gets large so does the transport costs of manufactured exports.

3.5. Data Sources

The study estimates a panel model where exports are dependent variables explained by factors such as income, distance from the epicenter, means of transport, cost of production, among others. The purpose is to examine the role that fixed capital formation plays to reduce distance hence reduction of the transport costs between the capitals of the trading partners. This is an empirical study of the factors that determines the competitiveness of Kenyan manufactured goods within EAC in trade terms especially with the operationalisation of the Common market protocol which allows for free trade among member states. Secondary data from different actors e.g. Kenya National Bureau of Statistics for the period 1980-2010 (where available) was analyzed. The study was quantitative in nature. The data set of the study is based on unique series collected from Africa Development Indicators and KNBS (various issues) for manufactured exports flow from Kenya to its EAC trading partners.

CHAPTER FOUR
DATA ANALYSIS AND RESULTS

4.1. Introduction

This chapter presents the results of the empirical estimation and gives an economic interpretation of the results. We begin with descriptive statistics to have an overview of the data, then testing for stationarity before proceeding to present regression results and its interpretation.

4.2. Descriptive statistics

Graphical data presentation is important as it provides important characteristics of the variables by visual inspection. Time series graph shows general trend of the variable under the period of investigation as well as enabling the right specification of the unit root regression function. Since inception of EAC community, exports of member countries have increased steadily because trade exports to developed countries have generally been falling. Figure 5 shows exports trend of the EAC countries.

Figure 5: Export value per country

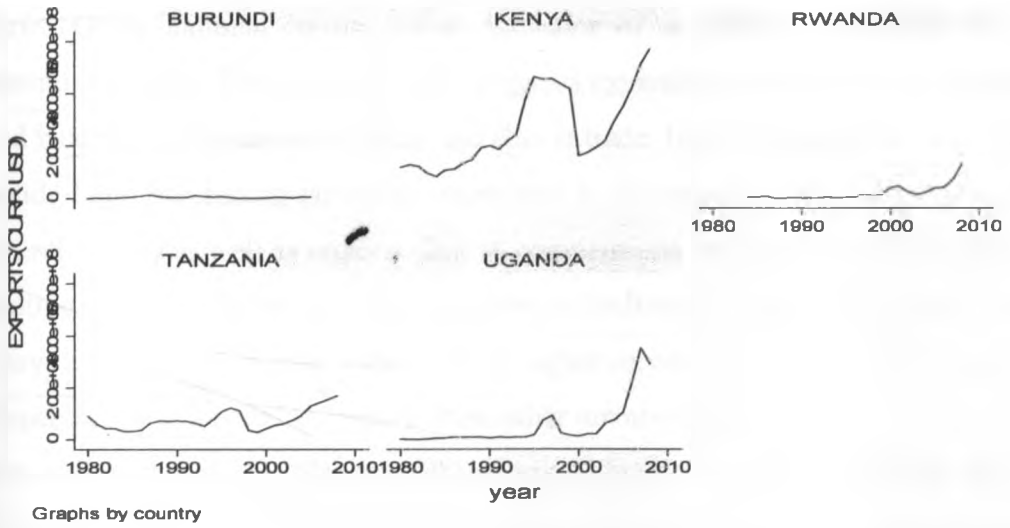
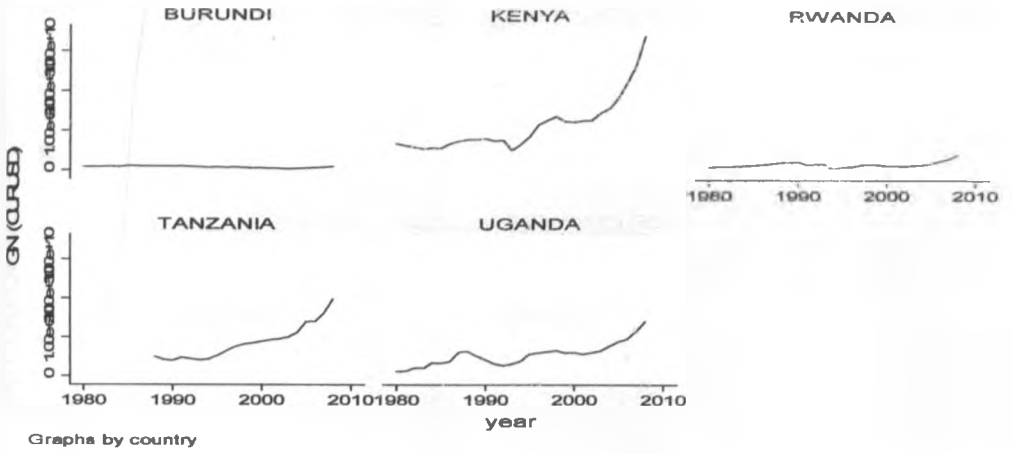


Figure 5 indicate that exports of all the countries have been increasing through time except for Burundi which have remained constant. Kenya has experienced a significant increase in manufactured exports compared to Uganda and Tanzania; Uganda has had significant growth in manufactured exports than Tanzania. Kenya has had the largest export volume compared to other member countries.

This is because, Kenya has pursued a more open trade policy and has a high income and investment infrastructure which have facilitated exports as compared to Burundi which has not only been more inward oriented but also low infrastructural investment in addition to political instability which are a major impediment to production and trade.

Figure 6: Time series Graph of GNI

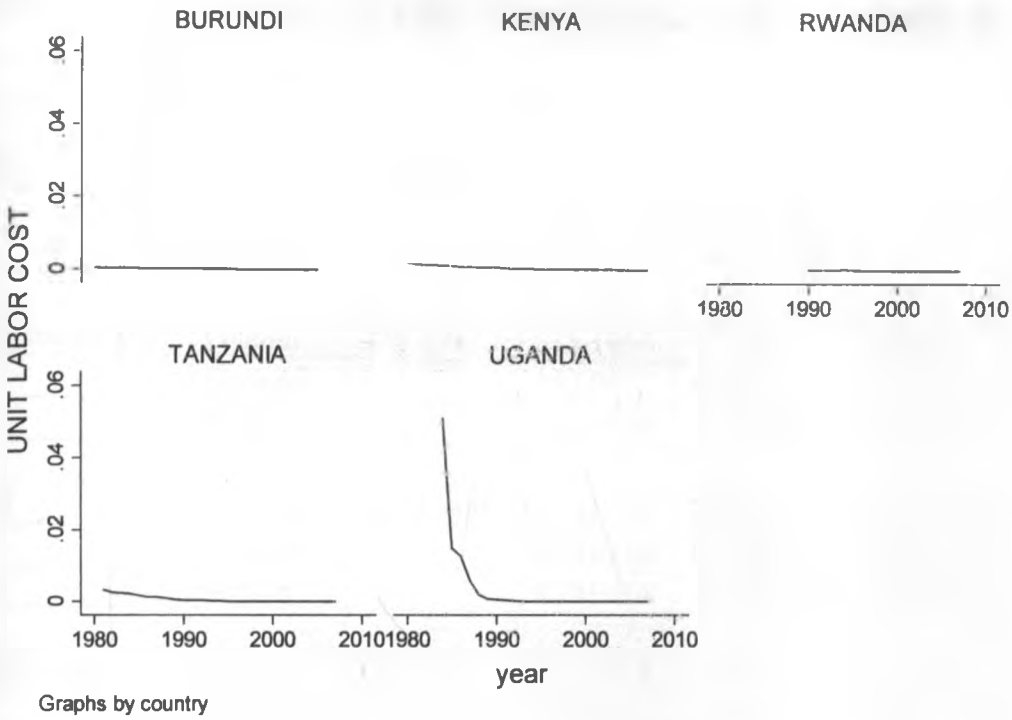


GNI for Kenya has been increasing at the highest rate compared to other member countries (see figure 6). Tanzania has a stronger growth than Uganda. But Burundi has the least growth. This suggests that the market for exports in East Africa Community is the highest in Kenya. Gross national income is an indicator of availability of market for exports in international trade. The growth of GNI suggests expanding market for commodities and it's a good incentive to investors to invest and also to trade. High GNI and high rate of GNI growth provide huge purchasing power to consumers in the economy who spend their incomes on domestic goods as well as imports. Due to competitions and economies of scale in production resulting from producing in a large economy as indicated by national income, the firms tend to have cost advantage when producing in higher income economies and hence this output is competitive as compared to imports from other member countries.

Most of East African countries are characterized by high population growth with a birth rate of above 2 percent. But wages have not increased much in real and nominal terms. Despite, there being low human resource development in member countries especially in Rwanda and Burundi, labour still remains the most dominant factor of production given the low levels in capital accumulation. Due to labour abundance in EAC community, production process is labour intensive mainly because of low capital accumulation. Mody and Yilmaz (2002) cost of output is determined by unit labour cost. Therefore, cost of labour can influence flow of

goods as it has a bearing on price of exports since labour enters the production function explicitly as a variable factor and implicitly as human capital. Figure 7 demonstrates the unit labour cost over time for the EAC member countries.

Figure 7: Unit labour cost in East African Community



It can be observed that unit labour costs in Tanzania, Burundi, Rwanda and Kenya are falling through time and about 1990 the wage rates have remained constant. However, in Uganda before 1990, had the highest unit labour cost due to political turmoil from late 1970s upto mid 1980s that led to a surge in illiteracy levels and hence under-development of human capital. This prompted the Ugandan government and the private sector to higher foreign expatriates that were paid higher wages.

4.3. Summary statistics

In the context of panel data, summary statistics are provided in three dimensions; overall, between groups and within groups. Overall statistics are for the pooled data which is a combination of cross sectional and time series dimension, between and within statistics are computed across the countries and within the countries respectively. Table 1 shows summary

statistics of the variables. From 1980 to 2010, overall exports averaged were 8.68 million US dollars, lowest exports were 452767.6 and the highest were 5.7 million US dollars.

Table 1: Summary statistics

Variable		Mean	Std. Dev.	Min	Max	Observations
Export	Overall	8.68E*+07	1.24E+08	452767.6	5.70E+08	150
	Between		1.04E+08	4832302	2.63E+08	5
	Within		8.07E+07	-9.19E+07	3.95E+08	30
GNI	Overall	5.55E+09	5.56E+09	5.77E+08	3.43E+10	150
	Between		4.46E+09	9.38E+08	1.16E+10	5
	Within		3.80E+09	-6.51E+08	2.82E+10	30
Exchange rate	Overall	448.1742	515.1864	0.0757	1949.18	150
	Between		360.0472	45.831	952.9316	5
	Within		393.3538	-504.682	1444.423	30
Inf	Overall	1.00E+09	1.14E+09	3.83E+07	8.51E+09	150
	Between		8.51E+08	1.16E+08	2.20E+09	5
	Within		8.24E+08	-2.21E+08	7.32E+09	30
Openness	Overall	0.530154	0.210138	0.097273	1.145746	150
	Between		0.181332	0.370305	0.822778	5
	Within		0.13187	0.257122	0.907108	30
Lbc	Overall	0.001096	0.004918	1.36E-05	0.051065	150
	Between		0.001496	0.000139	0.003724	5
	Within		0.004738	-0.00262	0.048436	30

E* is exponent

Over the same period mean GNI was 5.55 billion US dollars which implies that there exist a large market for exports in the trading bloc. Openness is the ratio of exports to imports which is an indicator of trade orientation therefore, trade policy of an economy. This variable indicates that despite efforts for integration, the economies are not free as the ratio is still very high suggesting that member states are still protective.

Infrastructure facilitates trade through easier mobility of goods and services from the point of production to the selling point (market). For this reason, infrastructure is crucial in determining competitiveness of goods in the domestic and international market since high

cost of transport shows up in the final price of the commodities. In this way, infrastructure has a major influence on the flow of goods across economies especially when the economies produce and export similar commodities (Njinkeu et al, 2007).

Investment in infrastructure is very low given the level of economic growth and development in EAC. On average member countries invested 1 billion US dollars, the lowest investment was 38 million US dollars and the highest was about 8 billion US dollars. Observably, this is very low investment compared to GNI.

4.4. Correlation Coefficient

Correlation matrix shows correlation between the variables. The importance of this correlation matrix is that, apart from showing the strength and direction of the variables, it helps in detecting multicollinearity between variables. Variables are said to be multicollinear if the correlation between explanatory variables is very high, with correlation coefficient of above 0.8 especially in time series data (Gujarati, 2007). If explanatory variable are collinear, the parameters computed are inefficient, inconsistent and biased. In the extreme case of multicollinearity, the parameters cannot be estimated.

Table 2: Correlation matrix

Variable	Export	GNI	Exchange rate	LBC	Openness	Inf
Export	1					
Gni	0.7984	1				
Exchange rate	0.2062	0.0197	1			
Lbc	-0.0919	-0.0533	-0.1716	1		
Open ness	0.6032	0.5974	-0.2469	0.2352	1	
Inf	0.8039	0.793	0.0617	-0.105	0.5723	1

GNI, fixed capital formation (Inf), openness and exchange rate are positively correlated with manufactured export however unit labour cost is negatively correlated. Multicollinearity is not significant as the correlation coefficients are less or equal to 0.8 (Gujarati, 2007).

4.5. Unit root testing

Most of the macroeconomic data is usually non-stationary. A time series is said to be stationary if its mean and covariance are independent. This is to say there should be no correlation across time, that is, no serial correlation, otherwise it will be non-stationary. To avoid the pitfall of wrong inferences from the non-stationary regressions, the time series data should be stationary. If one regresses a non-stationary variable on another non-stationary variable the results obtained might look very attractive, which might be characterized by high R^2 and a low DW statistic whilst in actual fact they are spurious.

In the context of panel data, regression involving non-stationary variables results in spurious results. As a first step in estimating our model we conduct a unit root test on each variable. Levin, Lin and Chu test assumes a common unit root process for all the cross sections while other tests such as Im, Pesaran and Shin, Philip and Perron and Augmented Dicky Fuller tests assume individual unit root process for the groups. The results of unit root test are presented in Table 3.

Table 3: Unit root test

GNI		
Method	Statistic	Prob.**
Levin, Lin & Chu t*	9.51478	1.0000
Im, Pesaran and Shin W-stat	9.16251	1.0000
ADF - Fisher Chi-square	2.1E-10	1.0000
PP - Fisher Chi-square	1.1E-07	1.0000
Fixed capital formation		
Method	Statistic	Prob.**
Levin, Lin & Chu t*	-1.45732	0.0725
Im, Pesaran and Shin W-stat	-0.94912	0.1713
ADF - Fisher Chi-square	3.48765	0.1749
PP - Fisher Chi-square	1.04199	0.5939
Variable export		
Method	Statistic	Prob.**
Levin, Lin & Chu t*	-0.76232	0.2229
Im, Pesaran and Shin W-stat	-1.04994	0.1469
ADF - Fisher Chi-square	3.99453	0.1357
PP - Fisher Chi-square	4.34092	0.1141
Variable exchange rate		
Method	Statistic	Prob.**
Levin, Lin & Chu t*	7.98444	1.0000
Im, Pesaran and Shin W-stat	5.13098	1.0000

ADF - Fisher Chi-square	1.1E-06	1.0000
PP - Fisher Chi-square	0.00077	0.9996
Openness		
Method	Statistic	Prob.**
Levin, Lin & Chu t*	2.05090	0.9799
Im, Pesaran and Shin W-stat	1.21895	0.8886
ADF - Fisher Chi-square	0.21557	0.8978
PP - Fisher Chi-square	1.34446	0.5106

From the stationarity tests all the variables are non stationary. Even though a series is non-stationary, existence of long run relationship between the variables ordinary least square estimation yields consistent and unbiased estimates. The advantage of estimating a cointegration model is that there is no loss of degrees of freedom occasioned by differencing the nonstationary variables to make them stationary and also the adjustment of the dependent variable from its short run equilibrium to long run equilibrium is given (Gujarati, 2007). Therefore, we conduct a cointegration test to establish whether the variables are cointegrated. The null hypothesis is that the variables are not cointegrated.

Table 4: Cointegration test

Alternative hypothesis: common AR coefs. (within-dimension)					
				Weighted	
		Statistic	Prob.	Statistic	Prob.
Panel v-Statistic		0.199986	0.4207	0.199986	0.4207
Panel rho-Statistic		1.350302	0.9115	1.350302	0.9115
Panel PP-Statistic		0.358998	0.6402	0.358998	0.6402
Panel ADF-Statistic		-1.366194	0.0859	-1.366194	0.0859
Alternative hypothesis: individual AR coefs. (between-dimension)					
		Statistic	Prob.		
Group rho-Statistic		2.337805	0.9903		
Group PP-Statistic		1.066253	0.8568		
Group ADF-Statistic		-1.008756	0.1565		
Cross section specific results					
Phillips-Peron results (non-parametric)					
Cross ID	AR(1)	Variance	HAC	Bandwidth	Obs
BURUNDI	0.481	5.37E+12	5.87E+12	2.00	25
KENYA	0.481	5.37E+12	5.87E+12	2.00	25
RWANDA	0.481	5.37E+12	5.87E+12	2.00	25
TANZANIA	0.481	5.37E+12	5.87E+12	2.00	25
UGANDA	0.481	5.37E+12	5.87E+12	2.00	25
Augmented Dickey-Fuller results (parametric)					

Cross ID	AR(1)	Variance	Lag	Max lag	Obs
BURUNDI	0.285	4.77E+12	1	--	24
KENYA	0.285	4.77E+12	1	--	24
RWANDA	0.285	4.77E+12	1	--	24
TANZANIA	0.285	4.77E+12	1	--	24
UGANDA	0.285	4.77E+12	1	--	24

From Table 4 the variables are not co-integrated, therefore an OLS estimation using non stationary variables will be spurious. Appropriate step to estimate this model is making the variables stationary by differencing them and in so doing the variables will be integrated of order zero.

Order of integration is the number of times a variable is differenced to make it stationary. Stationarity test of variables differenced appropriate times to make them stationary is shown in Table 5.

Table 5: ADF - Fisher Chi-square

Variable	Statistic	Prob.	Order of integration
Export	7.948	0.00	1
Exchange rate	6.969	0.01	1
GNI	20.980	0.025	2
Openness	12.787	0.00	1
Fixed capital formation	3.447	0.05	3

Table 5 shows ADF - Fisher Chi-square unit root test after differencing the variable. GNI was integrated of order two and fixed capital formation of order three since they were differenced twice and thrice respectively to be stationary.

4.6. Regression analysis

In panel regression, estimating a wrong model amounts to misspecification. Misspecification leads to biased, inefficient and inconsistent parameter estimate. Possible misspecification errors is estimation of fixed effects model while the data generating process demands a random effects model (Baltagi,2007). The choice of an appropriate model is determined by testing for redundancy of fixed effect. If fixed effects are redundant then the underlying data generating process is best described by random effects. Table 6 shows specification results of fixed effects test.

Table 6: Redundant Fixed Effects Tests:

Test cross-section fixed effects			
Effects Test	Statistic	d.f.	Prob.
Cross-section F	0.000000	(4,121)	1.0000
Cross-section Chi-square	0.000000	4	1.0000

Table 6 suggests that fixed effects in the model are redundant compared to random effects in the two-way error component panel regression. Therefore, we estimate a two-way error component random effects model (see equation 4).

Table 7: Two-way error component parameter estimates.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6804182.	1304055.	5.217711	0.0000
OPP	640454.6	169590.2	3.776484	0.0002
XCHRATE	3883.231	453.6110	8.560708	0.0000
INF	0.007203	0.002219	3.245768	0.0015
LBC	-378.7302	16.61033	-22.80088	0.0000
Random Effects (Cross)				
Burundi--C	-729514.5			
Kenya-C	-729514.5			
Rwanda--C	-729514.5			
Tanzania--C	-729514.5			
Uganda--C	-729514.5			
Random Effects (Period)				
1980—C	-7701833.			
1981—C	-6642335.			
1982—C	-5867197.			
1983—C	-7380057.			
1984—C	-4267626.			
1985—C	-2562496.			
1986—C	961764.1			
1987—C	3415431.			
1988—C	-1227537.			
1989—C	-4592810.			
1990—C	-5138216.			
1991—C	-5145729.			
1992—C	1970778.			
1993—C	294790.0			
1994—C	-2399812.			
1995—C	-24717.44			
1996—C	-3134908.			
1997—C	-6107226.			
1998—C	-6347757.			
1999—C	-6305264.			

2000—C	-5548150.			
2001—C	-3542311.			
2002—C	-3320696.			
2003—C	-3459956.			
2004—C	-451102.3			
2005—C	16859.11			
	Effects Specification			
			S.D.	Rho
Cross-section random			1.14E-10	0.0000
Period random			3062192.	1.0000
Idiosyncratic random			1.08E-09	0.0000
	Weighted Statistics			
R-squared	0.538341	Mean dependent var		8.69E-10
Adjusted R-squared	0.523568	S.D. dependent var		4.12E-10
S.E. of regression	4.89E-10	Sum squared resid		2.99E-17
F-statistic	36.44062	Durbin-Watson stat		0.591909
Prob(F-statistic)	0.000000			
	Unweighted Statistics			
R-squared	-1.053913	Mean dependent var		4832302.
Sum squared resid	2.54E+15	Durbin-Watson stat		0.338944

Method: Pooled EGLS (Two-way random effects)

Regression results from a two-way random effects are shown in the Table 7. The dependent variable is the export volume and explanatory variables are labour cost, exchange rate, GNP, the ratio of exports to imports and fixed capital investment. All the explanatory variables are significant at 5%. Openness is the ratio of exports to import. Openness has a positive coefficient of 640454.6 implying that when an economy's openness improves by 1 unit, exports increase by 640454.6. Countries that pursue protectionism precipitate retaliatory actions that reduce export competitiveness like tariff and non-tariff barriers which ultimately reduce the volume of exports. In addition, openness provides exporters with incentive to innovate and reduce cost of production (Mody and Yilmaz, 2002).

Nominal exchange rate is the price of a domestic currency per US dollar. The coefficient on exchange rate is 3883.231 and is significant. A unit depreciation increase export volume by 3883.231. A depreciation of exchange rate makes exports more competitive and hence increases export volume. Exchange rate policy depicts trade policy orientation of an economy. Overvaluation of the exchange rate implies protectionism which impedes exports in two ways. First, imported inputs of domestically produced import-competing inputs will have to be purchased by the export industries at above world prices. Second, a protected

industry can tolerate relatively more inefficiency than an unprotected industry (Morrison, 1976).

Fixed capital formation is 0.0072; increase in fixed capital formation by one unit improves export competitiveness by 0.0072. Fixed capital formation facilitates trade among the trading partners (Njinkeu et al, 2007). Unit labour cost has a negative coefficient of 378.7302 implying that an increase in one unit of labour cost reduces export volume by 378.7302. This is consistent with the prediction of comparative advantage model. The results are consistent with findings of Helleiner (1986b) and Mody and Yilmaz (2002). Random factors specific to individual countries reduce exports on average by 729514.5.

CHAPTER FIVE
SUMMARY, CONCLUSIONS AND POLICY RECOMMENDATIONS

5.1. Introduction

This chapter presents findings of the study, draws conclusions, policy recommendation based on regression results, limitations of the study and areas for further study.

5.2. Summary and Conclusion

The overall objective of this study was to investigate factors influencing competitiveness of Kenya's manufactured exports to the EAC. Specifically, this paper was to determine factors that influence Kenya's manufactured exports, relative competitiveness to the EAC and to make policy recommendations. To achieve the objectives we estimated a two-way error component model in which manufactured export was the dependent variable and explanatory variables were GNI, unit labour cost, exchange rate, ratio of exports to imports and fixed capital investment.

All the variables were non stationary at levels. After differencing appropriate times the variables were made stationary. The entire regression model had all the variables significant at 5%. Estimates suggest that competiveness of exports is determined by labour abundance, trade facilitation factors-infrastructure, the national market, level of openness and exchange rate policy. In addition there are unexplained factors among the trading partners that reduce export competiveness. However, overtime the unexplained factors that influence export competiveness have a varied effect since the period effects oscillate between positive and negative.

5.3. Policy Recommendations

Regression results suggest that trade policy captured by openness (640454.6) and nominal exchange (3883.231) have large effect on export competitiveness since their coefficients are large. However, fixed capital formation which is a proxy for trade facilitation has a small effect on export competitiveness; when infrastructural development increases by one unit export competitiveness increases only by 0.007203. Infrastructural development is not playing the rightful role in releasing export potential of the trading bloc; hence is a bottle

neck on the export supply side. The national government should have a policy of infrastructural investment like construction of corridors and upgrading of railway system to increase accessibility and ease the movement of manufactured exports.

Unit labour cost has a negative effect on export competiveness. EAC member countries are labour abundant and therefore productivity of labour is more important than numbers. The member countries should invest in research and development, health care, education and capital equipment to increase labour productivity that lower unit labour costs thereby increasing competitiveness of manufactured goods.

It is important that Kenya should design policies aimed at diversifying production of manufactured goods for exports in which she holds a comparative advantage over her trading counterparts in the EAC. This will effectively cushion the economy against adverse effects associated with fluctuations of primary products prices which forms the bulk of the total exports to the world market. It is known that primary products fetch low income and have low price elasticities of demand. A more detailed analysis at the sectoral level will be vital to further examine these aspects. We also need to assess and seek ways of increasing manufactured exports share of the overall exports from the current 24%.

5.4. Limitations of the study

This study did not take into account cultural behavior of consumers in the importing countries and research and development mainly because of lack of data. Sometimes it is the cultural behavior of the importers, research and development of the manufactured goods exporters in the trading countries in the EAC that heavily impacts on the volume of exports of the manufactured goods to the export destinations of the EAC trading countries.

5.5. Areas of further study

Future study can include the cultural behavior of consumers and research and development of the manufactured goods exporters. The inclusion of cultural behavior and research and development in the model will be able to examine to what extent these factors can determine competitiveness of Kenya's manufactured exports to the East African Community.

REFERENCES

Amjabi, A. and Yeats A (1995). "Have Transport Costs Contributed to the Relative Decline of Sub-Saharan Africa's Exports?" *World Bank working paper series* No. 1559. The World Bank, Washington, D.C.

Appleyard, D. and Field, A (2001). *International Economics.* 4th Edition, McGraw Hill Singapore.

Araújo, R. and Teixeira, J (2003). "A Structural Economic Dynamic Approach to North-South Technological Gaps". *Proceedings, IV International Colloquium.* J. Teixeira (editor). University of Brasília.

Baltagi, B (2008). *Econometric Analysis of Panel Data.* 4th Edition. John Wiley, Chichester.
Donges, J. and Riedel J (1977). "The Expansion of Manufactured Exports in Developing Countries: An Empirical Assessment of Supply and Demand Issues". *Weltwirtschaftliches Archive*, Vol. 113 pp. 200-289.

Dornbusch, R., Fischer, S. and Samuelson, P (1977). "Comparative Advantage, Trade and Payments in a Ricardian Model with a Continuum of Goods". *American Economic Review*, Vol 65: pp. 297-308.

EAC (East African Community) website. Available: www.eac.int. Accessed on: 05/04/2011

Eita, H.J and Jordan, A (2007). "*South Africa's Wood Export Potential using a Gravity Model Approach*". University of Pretoria, working paper: 2007-23.

Edwards, L. and Alves, P (2006). "South African Export Performance: Determinants of Export Supply". *South African Journal of Economics*, Vol. 74, No. 3, pp. 473–500.

Export Promotion Council of Kenya, 2011. Manufacturing Sector. Available at: http:// www.epckenya.org . Accessed on 31/05/2011.

Fisch, G. and Speyer, B (1997). "TRIPS as an Adjustment Mechanism in North-South Trade". *Economics*, Vol. 55–56 pp 150-302.

Frankel, J (1997). "*Regional Trading Blocs in the World Economic System*". Institute for International Economics. Washington. DC.

Gitonga, A (2008). "*Factors affecting Growth of Micro and Small Enterprises in Nairobi.*" KIPPRA DPNo.88, Nairobi. Kenya Institute for Policy Research and Analysis.

Glenday, G and Ndii, D (2000). "*Export Performance in Kenya*". African Economic Policy. Discussion paper No. 43.

Gourevitch, P., Bohn, R. and Mckendrick, D. (2000). "Globalization of production: Insights from the hard disk drive industry". *World Development*, Vol. 8, 2: pp 301-317.

Greene, W (2002). *Econometric Methods*. 8th Ed Mac Millan Publishers, New York.

Grubel, H and Lloyd, P (1975). "*Intra-industry trade: The Theory and Measurement of Iceland and the Centre for Applied Micro Econometrics, International Trade in Differentiated Products*". New York, Wiley.

Gujarati, N. D (2007). *Basic Econometrics*. 4th Edition Mc Graw-Hill. New York.

Helleiner, G.K (1973). "Manufactured Exports from Less Developed Countries and Multinational Firms". *Blackwell publishing*, Vol. 83, No. 389, pp 21- 47.

Helleiner, G.K (1986b). "Outward Orientation, Import Instability and African Economic Growth: An Empirical Investigation," in: S.Lall and F.Stewart, eds., *Theory and Reality in Economic Development*. London. Macmillan.

Helpman, E (1981). "International Trade in the Presence of Product Differentiation, Economies of Scale, and Monopolistic Competition: A Chamberlin-Heckscher-Ohlin Approach." *Journal of International Economics,* Vol. 11: pp 305-340.

Herschede, F (1991). "Competition among ASEAN, China, and the East Asian NICs; A Shift Share Analysis". *ASEAN Economic Bulletin*, March; pp 290-306.

Hoekmann, B (2001). "Trade policy Reform and Poverty Alleviation". *World Bank poverty working paper* No. 2733. The World Bank.

Hoekman, B. and Njinkeu, D (2007). "Aid for Trade and Export Competitiveness". New York: Cambridge University Press.

Im, Kyung, S. Pesaran, H and Yongcheol, S (1996). "Testing for Unit Roots in Heterogeneous Panels". University of Cambridge, Department of Economics.

Johansen, S (1991). "Estimation and Hypothesis Testing of Cointegration Vectors in Gaussian Vector Autoregressive Models". *Econometrica* Vol. 59, pp 1551–80.

Jones, C (2002). *Introduction to Economic Growth*. 2nd Edition. W.W. Norton & Company, Inc., New York, N.Y.

Kennedy, M (2007). "The Role of Infrastructure in Determining Export Competitiveness". Framework Paper.

Kimuyu, P. and Moyi E (1999). "Revealed Comparative Advantage and Export Propensity in Kenya". *Discussion paper* No. DP 015/99. Institute of Policy Analysis and Research.

Kotan, Z. and Sayan. S (2002). "Comparative Investigation of the Price Competitiveness of Turkish and Southeast Asian Exports in the European Union Market, 1990-1997". *Emerging Markets Finance and Trade* Vol. 38, No. 4, pp. 59-85.

Krugman, P (1981). "Intra-industry Specialization and the Gains from Trade". *Journal of Political Economy*, Vol.89, No.5, pp. 959-973.

Krugman, P (1991). "Increasing Returns and Economic Geography." *Journal of Political Economy*, Vol. 99, pp.483-499.

Krugman, P and Venables, A (1995). "Globalizations and the Inequality of Nations". *Quarterly Journal of Economics*, Vol.60, pp.857-880.

Lawrence, E. and Volker, S (1990). "Measures of Competitiveness: A Dynamic Approach to South Africa's trade Performance in the 1990s". *South African Journal of Economics, 70 (5)*, 1008-1046.

Lawrence, E. and Alves, P (2006). "South Africa's Export Performance: Determinants of export supply, *South African Journal of Economics* Vol. 74, No.3 pp 296-455

Lowe, N. and Kenney M (1999). "Foreign Investment and the Global Geography of Production: Why the Mexican Consumer Electronics Industry Failed". *World Development*, Vol.27 No.8 pp 1427-1443.

Lundberg, S (1988). "Labor Supply of Husbands and Wifes: A Simultaneous Equation Approach". *The Review of Economics and Statistics*, Vol.70, pp 224-235.

Martin, W. (2001). "Trade Policies, Developing Countries and Globalization". *Development Research Group*. Washington DC: World Bank.

Metcalf, S., Ramlogan R., and Uyarra E (2003). "*Economic Development and the Competitive Process*". Paper delivered at the International Conference on Systems of Innovation and Development Strategies for the Third Millennium, Rio de Janeiro, Brazil.

Ministry of Agriculture, Tanzania. Website: www.kilimo.go.tz. Accessed on: 02/06/2011

Mody, A. and Yilmaz, K (2002). "Imported Machinery for Export Competitiveness". *World Bank Review*, Vol. 16, No. 1, pp 23-48.

Morrison, K (1976). "Manufactured Exports and Protection in Developing Countries and Protection in Developing Countries: A Cross-Country Analysis". *Economic development and cultural change*, Vol. 25, No. 1, pp 151-158

Mwabu, A (2000). "Trade Liberalization and Growth: Policy Options for African Countries in a Global Economy". *Economic Research Paper* No. 60. The African Development Bank.

Mwega, F (2007). "*China, India and Africa: Prospects and Challenges*". Paper presented at International Conference on Accelerating Africa's Development, Leiden Netherlands.

Mwega, F (2002). "Promotion of Non-Traditional Exports in Kenya: 1980-1996". In Helleiner, G.K (Ed.). *Promotion of Non-traditional Exports in Sub-Saharan Africa.* New York: Palgrave.

Naudé, W. and Matthee, M (2010). "The Location of Manufacturing Exporters in Africa: Empirical Evidence". *African Development Review*, Vol. 22, No. 2, 2010, 276–291

Ng'ang'a, W. (2006). "The "New" East African Community: Effects on Trade, Welfare and Productive Activities in East Africa". University of Saskatchewan Saskatoon, SK, Canada. M.A *Research Thesis.*

Night, M (2010). "Determinants of Kenya's Exports: Gravity Model Approach". University of Nairobi. M.A *Research Thesis.*

Olofin, S (2002). "Trade and Competitiveness of African Economies in the 21st Century". African Development Bank.

Olofin, S (1977). "ECOWAS and The Lome Convention: An Experiment in Complementary or Conflicting Customs Union". *Journal of Common Market Studies*, Vol. XVI. pp. 200-421.

Pierre-Richard, A. (1997). "Competitiveness and External Trade Performance of the French Manufacturing Industry". *Institut fur Weltwirtschaft an der Universitat Kiel,* Vol 133, No.1 pp.103-133.

Porter, M (1990). "*The Competitive Advantage of Nations*". New York: Free Press.

Pöynöhen, P (1963). "A Tentative Model for the Volume of Trade between Countries". *Welwirtshafliches Archiv* Vol. 90, No.1: pp.93-99.

Ramesh, M and Nandwa, B (2007). "Testing Export Led Growth Hypothesis in Kenya". *ARDL Bounds Test Approach:* MPRA paper No. 5582

_____Republic of Kenya (2007). "*Kenya National Bureau of Statistics*". Nairobi: Government Printer.

_____Republic of Kenya (2008). "*Kenya National Bureau of Statistics*". Nairobi: Government Printer.

_____Republic of Kenya (2009). "*Kenya National Bureau of Statistics*". Nairobi: Government Printer.

_____Republic of Kenya (2010). "*Kenya National Bureau of Statistics*". Nairobi: Government Printer.

_____Republic of Kenya (2010).Vision 2030: "*A Competitive and Prosperous*". Nairobi: Government Printer.

Ricardo, D (1817). "*On the Principles of Political Economy and Taxation*". Variorum edition in P. Sraffa, ed., Works & Correspondence of David Ricardo, Vol. I. Cambridge: Cambridge University Press, 1951.

Roberts, M. and Tybout, J (1997). "The Decision to Export in Columbia: An Empirical Model of Entry with Sunk Costs". *American Economics Review* Vol.87: No.4 pp.545-565.

Smith, A (1776). "An Inquiry into the Nature and Causes of the Wealth of Nations". W.strahan and T. Cadell, London.

Schumpeter, J.A (1942). "Capitalism, Socialism and Democracy". New York: Harper.
Tinbergen, J (1962). "Shaping the World Economy; Suggestions for an International Economic Policy". New York, Twentieth Century Fund.

Tyler, B (2007). "Assessing Export Supply Constraints: Methodology, Data and Measurement". AERC, mimeo.

Vernon, R (1966). "International Investment and International Trade in the Product Cycle". *Quarterly Journal of Economics,* Vol.80, No. 2: pp. 190-207.

Wagacha, M (2000). "Analysis of Liberalization of the Trade and Exchange Regime in Kenya since 1980". *IPAR Discussion Paper* No. 023. Nairobi: Kenya Institute of Policy Analysis and Research.

Wangwe, S (1995). "*Exporting Africa-Technology, Trade and Industrialization in Sub-Saharan Africa*". London. United Nations University.

Were, M., Njuguna S., Alemayehu G., and Karingi S (2002). "Analysis of Kenya's Export Performance: An Empirical Evaluation". *Discussion Paper* No. 22 Nairobi: Kenya Institute of Policy Analysis and Research.

William, L (2007). "The Business of Exporting: Transaction Costs Facing Suppliers in Sub-Saharan Africa". Framework paper presented at AERC Collaborative Research Workshop on *Export Supply Response Constraints in Sub-Saharan Africa.* Dar es Salaam, Tanzania.

World Bank (1993). *World Development Indicators*. Washington DC: Oxford University Press.

APPENDICES

Appendix 1: Kenya Export data analysis, 1980 – 2010

Year	Xs/Ys (%)	MXs/Xs (%)	OXs/Xs (%)
1990	13	17	83
1991	14	23	77
1992	13	25	75
1993	22	25	75
1994	21	32	68
1995	20	30	70
1996	17	28	72
1997	15	19	81
1998	13	23	77
1999	13	24	76
2000	12	22	78
2001	12	24	76
2002	13	27	73
2003	12	28	72
2004	12	31	69
2005	15	22	78
2006	14	36	64
2007	13	36	64
2008	14.5	40	60
2009	25.3	42	58
2010	14.2	44	56

Source: Own compilation

Key: Xs/Ys…….. Percent total exports to GDP

MXs/Xs…….. Percent manufactured exports to total exports

OXs/Xs……Percent non-manufactured exports to total exports

Appendix 2: Kenya Intra - EAC Trade (Million USD)

2004		2005	2006	2007	2008
Kenya to Uganda	468.1	564.9	385.7	498.5	611.2
Kenya from Uganda	12.8	18.5	13.9	88.8	75.5
Balance Kenya to/from Uganda	455.3	546.4	371.8	409.7	535.8
Kenya to Tanzania	226.3	264.1	253.6	331.5	422.4
Kenya from Tanzania	25.4	41.0	62.6	99.2	105.0
Balance Kenya to/from Tanzania	200.9	223.1	191.0	232.3	317.4
Kenya to Rwanda	78.2	96.3	66.1	86.2	129.4
Kenya from Rwanda	0.2	1.5	2.9	1.3	0.4
Balance Kenya to/from Rwanda	78.0	94.8	63.2	84.9	129.1
Kenya to Burundi	37.5	49.0	30.3	36.0	50.3
Kenya from Burundi	0.0	0.5	4.7	2.3	1.1
Balance Kenya to/from Burundi	37.5	48.5	25.6	33.7	49.2
Kenya to rest of EAC	810.1	974.3	735.8	952.2	1213.4
Kenya from rest of EAC	38.4	61.5	84.1	191.6	182.0
Balance Kenya to/from rest of EAC	771.7	912.8	651.6	760.6	1031.4

Source: EAC facts and figures reports 2009

Appendix 3: East African Community: Important Timelines

Year	Event
1917	Kenya and Uganda form a customs union
1927	Tanzania joins customs union and common external tariff is in place
1931	Kenya-Uganda railway opened as major inter-territorial service
1948	Inter-territorial co-operation formalized with East African High Commission
1962	Uganda gains independence from Britain
1963	Kenya gains independence from Britain
1964	Tanzania (formerly Tanganyika) gains independence from Britain
1967	Treaty for East African co-operation signed and EAC formed
1971-1985	Uganda goes through a period of civil unrest and political instability
1977	East African Community is dissolved
1993	Signing of Agreement for the Establishment of the Permanent Tripartite Commission for East African Co-operation
1996	Launching of the Tripartite commission for East African Co-operation
1999	Treaty for the establishment of the EAC is signed
2000	Treaty for the Establishment of the East African Community enters into force
2001	EAC officially inaugurated in January with headquarters in Arusha, Tanzania
2003	Establishment of the EAC customs union
2005	Introduction of common external tariff (CET)
2007	Rwanda and Burundi become full members of the EAC
2010	Common Market protocol becomes operational

Source: Own compilation

Appendix 4: Standard International Trade Classification, Rev.3

CODE COMMODITY

0 - Food and live animals.
00 - Live animals other than animals of division 03.
01 - Meat and meat preparations.
02 - Dairy products and birds' eggs.
03- Fish (not marine mammals), crustaceans, molluscs and aquatic invertebrates, and preparations thereof.
04 - Cereals and cereal preparations.
05 - Vegetables and fruit.
06 - Sugars, sugar preparations and honey.
07 - Coffee, tea, cocoa, spices, and manufactures thereof.
08 - Feeding stuff for animals (not including unmilled cereals).
09 - Miscellaneous edible products and preparations.

1 - Beverages and tobacco.
11 – Beverages.
12 - Tobacco and tobacco manufactures.
2 - Crude materials, inedible, except fuels.
21 - Hides, skins and furskins, raw.
22 - Oil-seeds and oleaginous fruits.
23 - Crude rubber (including synthetic and reclaimed).
24 - Cork and wood.
25 - Pulp and waste paper.
26- Textile fibres (other than wool tops and other combed wool) and their wastes (not manufactured into yarn or fabric).
27 - Crude fertilizers, other than those of division 56, and crude minerals (excluding coal, petroleum and precious stones).
28 - Metalliferous ores and metal scrap.
29 - Crude animal and vegetable materials, n.e.s.

3 - Mineral fuels, lubricants and related materials.
32 - Coal, coke and briquettes.
33 - Petroleum, petroleum products and related materials
34 - Gas, natural and manufactured.
35 - Electric current.

4 - Animal and vegetable oils, fats and waxes.
41 - Animal oils and fats.
42 - Fixed vegetable fats and oils, crude, refined or fractionated.
43 - Animal or vegetable fats and oils processed; waxes of animal or vegetable origin; inedible mixtures or preparations of animal or vegetable fats or oils, n.e.s.

5 - Chemicals and related products, n.e.s.
51 - Organic chemicals.
52 - Inorganic chemicals.
53 - Dyeing, tanning and colouring materials.
54 - Medicinal and pharmaceutical products.
55- Essential oils and resinoids and perfume materials; toilet. polishing and cleansing preparations.
56 - Fertilizers (other than those of group 272)
57 - Plastics in primary forms.
58 - Plastics in non-primary forms.
59 - Chemical materials and products, n.e.s.

6 - Manufactured goods classified chiefly by material.
61 - Leather, leather manufactures, n.e.s., and dressed furskins.
62 - Rubber manufactures n.e.s.
63 - Cork and wood manufactures (excluding furniture).
64 - Paper, paperboard and articles of paper pulp, of paper or of paperboard.
65 - Textile yarn, fabrics, made-up articles, n.e.s., and related products.
66 - Non-metallic mineral manufactures n.e.s.
67 - Iron and steel.
68 - Non-ferrous metals.
69 - Manufactures of metals, n.e.s

7 - Machinery and transport equipment.
71 - Power-generating machinery and equipment.
72 - Machinery specialized for particular industries.
73 - Metalworking machinery.
74 - General industrial machinery and equipment, n.e.s., and machine parts, n.e.s.
75 - Office machines and automatic data-processing machines.
76 - Telecommunications and sound-recording and reproducing apparatus and equipment.
77 - Electrical machinery, apparatus and appliances, n.e.s., and electrical parts thereof (including non-electrical counterparts, n.e.s., of electrical household-type equipment).
78 - Road vehicles (including air-cushion vehicles).
79 - Other transport equipment.

8 - Miscellaneous manufactured articles.
81 - Prefabricated buildings; sanitary, plumbing, heating and lighting fixtures and fittings, n.e.s.
82 - Furniture, and parts thereof; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings.
83 - Travel goods, handbags and similar containers
84 - Articles of apparel and clothing accessories
85 – Footwear.
87 - Professional, scientific and controlling instruments and apparatus, n.e.s.
88 - Photographic apparatus, equipment and supplies and optical goods, n.e.s.; watches and clocks.
89 - Miscellaneous manufactured articles, n.e.s.

9 - Commodities and transactions not classified elsewhere in the SITC.
91 - Postal packages not classified according to kind.
93 - Special transactions and commodities not classified according to kind.
96 - Coin (other than gold coin), not being legal tender.
97 - Gold, non-monetary (excluding gold ores and concentrates).
I - Gold, monetary.
II - Gold coin and current coin.

Source: United Nations Statistics Division.