AN ANALYSIS OF KENYA'S TRADE EXPERIENCE WITH REGIONAL COOPERATION AND INTEGRATION UNDER COMESA

BY

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An analysis of kenya’s trade
DECLARATION

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

Signature

Date 14th Oct, 2003

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This dissertation has been submitted with our approval as University Supervisors.

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DEDICATION

To my Dad, Mr. Elijah M. Karuga
ACKNOWLEDGEMENTS

I want to thank most sincerely my supervisors, Mr. Patrick Kuuya and Dr. Angelica Njuguna who have provided guidance, advice and support in my work on this project. Their efforts made my work easy. Their efforts were given support and inspiration by other members of staff in the Economics Department, which I appreciate most sincerely. Thanks also go to my classmates for their support and encouragement.

Special thanks go to Mr. Christopher Onyango of COMESA desk, Ministry of Trade and Industry and Mr. Tobias K’Onyango of Kenya Revenue Authority for their cooperation in data and information collection. They also provided me with technical guidance, which was most appreciated.

My dad’s financial support and family members’ encouragement kept me going throughout the duration of the course. I am grateful to them.
ABSTRACT

Regional Cooperation and Integration is highly regarded by many countries in the world, both the developed and developing countries. However, much as many leaders in the world enthusiastically embrace the idea of regional cooperation, some studies have shown that there are countries that do not benefit from the arrangements put in place especially at the beginning of these regional blocks. Other studies show that economies that adopt complete trade liberalisation develop faster than those that join a regional trade body. In view of these arguments there arises a need to evaluate the position of Kenya in the country’s adoption of trade liberalisation policies in general and their application to the Common Market for East and Southern Africa (COMESA).

To undertake this study, data are obtained from International Financial Statistics, Statistical Abstracts and other publications. Tests were carried out on the data, and estimation of the relationship between variables was done using Generalised Least Square method. Since some variables were correlated, estimation was repeatedly done leading to the dropping of some variables, and choosing of the best model.

The results show that Kenya’s participation in regional trade arrangements, in particular reference to COMESA, results in growth in trade. The government should therefore promote and strengthen trade arrangements with COMESA countries in order to reap more benefits that would result into further growth in trade between Kenya and other members of COMESA. Further, the government should lead the manufacturing and services sectors into investing in research focused on identifying other trade opportunities that have to be taken advantage of.
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<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>COMESA</td>
<td>Common Market for Eastern and Southern Africa</td>
</tr>
<tr>
<td>EAC</td>
<td>East African Community</td>
</tr>
<tr>
<td>OECD</td>
<td>Organisation for Economic Cooperation and Development</td>
</tr>
<tr>
<td>EASCO</td>
<td>East Africa Common Services Organisation</td>
</tr>
<tr>
<td>PTA</td>
<td>Preferential Trade Area</td>
</tr>
<tr>
<td>CU</td>
<td>Custom Union</td>
</tr>
<tr>
<td>FTA</td>
<td>Free Trade Area</td>
</tr>
<tr>
<td>CET</td>
<td>Common External Tariff</td>
</tr>
<tr>
<td>FDI</td>
<td>Foreign Direct Investment</td>
</tr>
<tr>
<td>ATI</td>
<td>Africa Trade Insurance</td>
</tr>
<tr>
<td>ACE</td>
<td>African Commerce Exchange</td>
</tr>
<tr>
<td>RIFF</td>
<td>Regional Integration Facilitation Forum</td>
</tr>
<tr>
<td>SACU</td>
<td>South African Custom Union</td>
</tr>
<tr>
<td>SADC</td>
<td>Southern African Development Community</td>
</tr>
<tr>
<td>SSA</td>
<td>Sub Saharan Africa</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
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<tr>
<td>RI</td>
<td>Regional Integration</td>
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<tr>
<td>RTA</td>
<td>Regional Trade Agreement</td>
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<tr>
<td>EFTA</td>
<td>European Free Trade Association</td>
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<tr>
<td>EU</td>
<td>European Union</td>
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<tr>
<td>GATT</td>
<td>General Agreement On Tariff and Trade</td>
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</table>
Definition of Terms as Used in the Study:

Trade - Exports and Imports

Volume of Trade – Imports plus Exports

Balance of Trade – Exports less Imports

Free Trade Area – An arrangement in a regional organisation where there are no tariffs on imports from member countries.

Custom Union – An arrangement in a regional organisation where the member countries impose a common tariff on imports from other countries.
CHAPTER ONE

INTRODUCTION

1.1 Background

Kenya has been a member of several regional organizations. These include; the East African High Commission between 1948 and 1961; the East Africa Common Services Organization (EASCO) from 1961 to 1967; and the East African Community (EAC) between 1967 and 1977. Conflict of interest between member states led to the collapse of the EAC in 1977 but it has since 1998 been revived (EAC, 2002). Kenya is also a member of a larger regional economic group, the Common Market for East and Southern Africa (COMESA) which started as a Preferential Trading Area (PTA) for East and Southern Africa in 1981 until it graduated into COMESA in 1993 (COMESA, 2001).

COMESA has become a major export destination for a majority of Kenya’s exports. It has overtaken the Organization for Economic Cooperation and Development (OECD) countries, which led in the past years (Republic of Kenya, 2002). On the other hand, there has not been remarkable increase in the value of imports from COMESA countries over the years as can be seen from Table 1.1. As a result, the volume of trade between Kenya and COMESA countries has been increasing, but mainly as a result of the increasing value of exports. Table 1.1 below shows the value of Kenya’s exports to and imports from COMESA.

Table 1.1: Kenya’s exports to and imports from COMESA in K£000.

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Exports</td>
<td>121,364</td>
<td>145,264</td>
<td>179,055</td>
<td>341,922</td>
<td>1,629,401</td>
<td>2,277,248</td>
<td>2,361,083</td>
</tr>
<tr>
<td>Imports</td>
<td>23,216</td>
<td>24,604</td>
<td>47,254</td>
<td>69,519</td>
<td>149,684</td>
<td>339,629</td>
<td>179,219</td>
</tr>
</tbody>
</table>

Trade between Kenya and the rest of the world has also been increasing, but as a result of increase in the level of imports. Table 1.2 below shows the value of Kenya’s exports to and imports from the rest of the world.

Table 1.2: Kenya’s exports to and imports from the rest of the world in K£000.

<table>
<thead>
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</tr>
</thead>
<tbody>
<tr>
<td>Exports</td>
<td>447,280</td>
<td>666,168</td>
<td>772,824</td>
<td>1,357,455</td>
<td>2,562,808</td>
<td>3,454,834</td>
<td>3,441,398</td>
</tr>
<tr>
<td>Imports</td>
<td>877,089</td>
<td>1,171,396</td>
<td>1,717,891</td>
<td>2,588,195</td>
<td>2,869,882</td>
<td>9,200,264</td>
<td>10,140,810</td>
</tr>
</tbody>
</table>


It is important to note that both the volume of trade with the rest of the world and with COMESA have been increasing over the years. However, the rate of growth is greater with the rest of the world than with COMESA as can be seen in figure 1.1.

Source of data: Statistical abstracts 1991, 2001

The higher volume of trade with the rest of the world can be explained by the fact that Kenya’s imports from the rest of the world have been growing very fast, whereas Kenya’s exports to the rest of the world have only grown marginally. It will also be noted
that except for tourism, primary products, whose terms of trade have been deteriorating over the period, dominate Kenya’s exports to the rest of the world.

1.1.1 The Common Market for East and South Africa (COMESA)

The history of COMESA can be traced from the early independence days in 1960s when the need to promote economic cooperation among African countries was recognised. This was to solve the problem of postcolonial African national markets that were characterized by smallness and fragmentation. A meeting for Eastern and Southern African countries in 1965 proposed the establishment of a mechanism for the promotion of sub-regional economic integration and creation of Economic Community of Eastern and southern African States. Continuous work towards this goal was hindered by problems that were specific to different countries after independence.

In 1978, a meeting by Ministers of Trade, Finance and Planning from countries in East and South Africa was held in Lusaka, Zambia. The meeting recommended the creation of a sub-regional economic community, beginning with a sub-regional trade area, which would gradually be upgraded over a ten-year period to a common market until the community had been established. On this basis, member countries adopted the “Lusaka Declaration of Intent and Commitment to the Establishment of Preferential Trade Area for Eastern and Southern Africa”. In December 1981, the Heads of State of East and South African countries signed a treaty establishing the Preferential Trade Area (PTA). The founder member countries of PTA included; Angola, Burundi, Comoros, Democratic Republic of Congo, Djibouti, Ethiopia, Kenya, Madagascar, Malawi, Mauritius, Mozambique, Rwanda, Seychelles, Sudan, Swaziland, Tanzania, Uganda,

\(^1\)This section is heavily borrowed from COMESA, 2001
Zambia and Zimbabwe. The treaty came into force on 30th September 1982. Other countries in the region joined later.

The PTA treaty envisaged its transformation into a common market. Consequently, a treaty establishing COMESA was signed on 5th November 1993 in Kampala, Uganda and ratified in Lilongwe, Malawi on 8th December 1994. By then, membership had grown to include: Angola, Burundi, Comoros, Democratic Republic of Congo, Djibouti, Eritrea, Ethiopia, Kenya, Malawi, Madagascar, Mauritius, Mozambique, Namibia, Rwanda, Seychelles, Sudan, Swaziland, Tanzania, Uganda, Zambia and Zimbabwe. Egypt later joined COMESA in 1997. One founder member, Tanzania withdrew its membership from COMESA in the year 2000.

1.1.1.1 The Objectives of COMESA

The main purpose of COMESA is to promote trade among member countries. To achieve this, the treaty is designed to remove the structural and institutional weaknesses in the member countries by pooling their resources together in order to sustain development efforts either individually or collectively. The specific objectives are:

- to attain sustainable growth and development of the member countries by promoting a more balanced and harmonious development of the countries’ production and marketing structures;
- to promote joint development in all fields of economic activity and the joint adoption of macro-economic policies and programmes;
- to raise the living standards of its peoples, and to foster closer relations among its member states;
• to cooperate in the creation of an enabling environment for foreign, cross-border and domestic investment, including the joint promotion of research and adaptation of science and technology for development;
• to cooperate in the promotion of peace, security and stability among the member states in order to enhance economic development in the region;
• to cooperate in strengthening the relations between the common market and the rest of the world and the adoption of common positions in international front; and
• to contribute towards the establishment, progress and the realization of the objectives of an African Economic Community.

The COMESA agenda is to deepen and broaden the integration process among member states through adoption of more comprehensive trade liberation measures such as:

• complete elimination of tariff and non-tariff barriers to trade;
• elimination of customs duties: through the free movement of capital, labour, goods;
• promoting standardized technical specifications, standardization and quality control;
• the elimination of controls on the movement of goods and individuals;
• standardizing taxation rates (including value added tax and excise duties), and conditions regarding industrial cooperation, particularly on company laws, intellectual property rights and investment laws;
• the promotion of the adoption of a single currency and the establishment of a monetary union; and
• the adoption of a Common External Tariff (CET).
By agreeing to the above, member countries agreed on the need to create and maintain:

- a full Free Trade Area guaranteeing the free movement of goods and services produced within COMESA and the removal of all tariffs and non-tariff barriers;
- a customs union under which goods and services imported from non-COMESA countries will attract an agreed single tariff for all COMESA States;
- free movement of capital and investment supported by the adoption of common investment practices as to create a more favourable investment climate for the entire COMESA region;
- a gradual establishment of a payments union based on the COMESA "clearing house" and the eventual establishment of a common monetary union with a common currency; and
- the adoption of a common visa arrangement, including the right of establishment leading eventually to free movement of bona fide persons (COMESA, 2001).

1.1.1.2 Achievements of COMESA

According to Republic of Kenya (2002a), COMESA has achieved several of the objectives for which it was formed. These achievements are supposed to culminate into the formation of a Free Trade Area (FTA). The process towards a FTA was launched in the year 2000. The benefits that the Free Trade Area is supposed to bring to member states include:

- providing incentives to increased trade;
- increased profits in the private sector;
- provide incentives for expansion of existing industries;
• provide incentives for production of capital and intermediate goods
• provide incentives for foreign direct investments (FDI);
• providing a greater range of products to consumers at each member state;
• providing a training ground of regional business persons and companies for competition in global trade;
• act as a catalyst for increased cross-boarder investment.

Republic of Kenya (2002a), notes that there is increased reduction of Tariffs by member states. Countries that have achieved 100 percent tariff reduction include; Kenya, Egypt, Madagascar, Mauritius, Djibouti, Malawi, Sudan, Zambia and Zimbabwe. Comoros, Eritrea and Uganda have managed 80 percent reduction with Democratic Republic of Congo reducing her tariffs by 70 percent. Burundi and Rwanda have achieved 60 percent reduction while Ethiopia lies far behind with only 10 percent reduction in its tariffs.

The other achievements of COMESA highlighted by Republic of Kenya (2002a) include:
• Establishment of African Trade Insurance agency (ATI) in 2001. The ATI is a risk guarantee scheme against imports and exports into the region. Initially, it covers seven countries including; Burundi, Kenya, Malawi, Rwanda, Tanzania, Uganda and Zambia.
• Establishment of the COMESA Fund in 2002 to provide member states with balance of payments assistance as they implement trade liberalization programme and to improve their infrastructure to become more efficient in production.
• A cross border payment and settlement system (COMPASS) has been designed to enable users to make and receive payments in their home currencies.

• The African Commerce Exchange (ACE) was launched in 2000 aimed at providing a SWIFT Service Bureau and an Electronic Communication Bureau for small banks, which cannot afford individual SWIFT Services. In Kenya, Akiba Bank has joined the ACE facility.

• The COMESA Court of Justice has been instituted to enforce justice and ensure rule-based COMESA trade.

Similarly, there is transport facilitation instruments put in place including; harmonized road transit charges, COMESA Carrier's license, COMESA yellow card scheme, advanced cargo information system and COMESA customs bond guarantee scheme (Republic of Kenya, 2002a).

It is further expected that a Customs Union will be established in COMESA by the year 2004. Upon its establishment, all member states have agreed to implement Common External Tariffs (CET) rates. With CET in place, all goods coming into COMESA area will be subject to exactly the same tariff rates and controls. The proposed rates are as follows: zero percent on capital goods, five percent on raw materials, fifteen percent on intermediate goods and thirty percent on final goods (COMESA, 2002). Other plans include establishment of a Common Market in 2015, a Monetary Union in 2025 and an Economic Community thereafter (Republic of Kenya, 2002a).

1.1.2 Government Policy and its effects on Trade in COMESA

Republic of Kenya (2001) indicates that the government of Kenya is committed to participate in regional cooperation with African countries for the purposes of promoting
trade. This is shown by the country’s active participation in the formation of these bodies and the prominent role the country plays in many of them. The country recognizes trade as the engine of growth of the economy because increased participation of the country in these regional bodies promotes the country’s exports, an objective that is highly ranked for purposes of foreign exchange earnings.

As a way to promote trade, Kenya has since 1992 adopted liberalisation policies. The liberalisation policies adopted have resulted in improved trade in the country through various channels. Trade in the country has been affected by these policies through the removal of tariff and non-tariff barriers. Firstly, reduction of tariff barriers on imports by the government has facilitated increased trade between Kenya and the rest of the world. According to Republic of Kenya (2002a), removal of tariffs by Kenya as per COMESA agreement has led to increase in trade between Kenya and COMESA countries. With the removal of these tariffs, the import prices are lowered, making imported goods and services more affordable and competitive. It is with this regard that some products, which previously were not imported from COMESA, have found their way in Kenya’s market. Sugar from Sudan and Malawi, and toilet papers from Egypt are good examples. One of the policies under liberalisation was abolition of licensing of imports. This has allowed investors to freely import inputs, which has facilitated efficiency and increased production of goods and services for export to COMESA. Further, the decontrol of prices under liberalisation has led to restructuring of production to reduce costs, thus making Kenya’s products more competitive.

Similarly, the decontrol of foreign exchange operations has led to the adoption of a floating exchange rate. In the 1980s and early 1990s, the Kenya shilling was over-valued as compared to many of Kenya’s trading partners (Republic of Kenya, 1995). This
situation caused Kenya’s exports to be expensive and less competitive in the world market. It was partly as a result of the floating exchange rate that Kenya’s exports became more competitive hence increasing the country’s export capacity. Decontrol of foreign exchange operations also allowed investors freedom to hold foreign exchange accounts that enable them to carry out business transactions involving foreign exchange freely with relatively less risks. This has increased the capacity to import inputs and hence promoting increased production for export. Further, through liberalisation policies, companies in the country are allowed to access off-show funds, which are cheaper for investment in production for export (Republic of Kenya, 1999).

1.2 Statement of the Problem

A number of studies have been carried out on the contribution of regional co-operation to the growth of countries’ economies. Lyakurwa (1991) shows that countries that depend heavily on tariff revenue may not benefit at the beginning of regional co-operation unless other measures are taken to compensate for the loss in tariff revenues. Karingi, Siriwardana and Ronge (2002) also show that there are countries that will not benefit from COMESA FTA until a Customs Union is established. On the other hand, Vamvakidis (1999) indicates that economies grow faster after broad liberalisation in both the short and long run but slower after participating in a Regional Trade Agreement.

Given that these studies have shown the possibilities of countries not benefiting from regional cooperation and integration, there is need to assess the position of Kenya in her participation in COMESA and evaluate whether the benefits expected from the country’s membership in the regional organization outweighs the opportunities foregone.

This study will therefore seek to answer the following research questions:
i. Is the fast growth in trade between Kenya and COMESA countries a result of Kenya’s membership in COMESA?

ii. What policy recommendations can be made on the basis of (i) above?

1.3 Objectives of the Study

The general objective of the study is to establish the contribution of regional cooperation and integration to Kenya’s trade. The specific objectives are;

i. to establish the relationship between Kenya’s membership of COMESA and the country’s trade performance within COMESA;

ii. to make policy recommendations based on (i) above.

1.4 Significance of the Study

Although studies have been done on regional co-operation and integration, no study seems to address the position of specific countries in these regional organisations. It is in view of this that this study will evaluate the benefits of Kenya’s membership in COMESA. The study will therefore provide important information on trade in the country.

The withdrawal of Tanzania from COMESA in the year 2000 is an important justification for this study since the withdrawal implies that for some member countries of COMESA, there are more negative effects to membership than positive ones. (COMESA, 2001). This study will therefore seek to establish whether current trade benefits and those expected in future justify Kenya’s continued active membership in COMESA.
1.4 Scope of the Study

This study will focus on the impact Kenya's membership in COMESA on growth in trade. It will therefore compare the trend of trade before the formation of COMESA in 1993 and the period after its formation. The study will focus on aggregate trade in goods and services with all the 21 member states of COMESA.
CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This section reviews theoretical and empirical literature on regional economic cooperation and integration, and studies done on specific regional bodies including the East African Community and COMESA.

2.1 Theoretical Literature

According to Roll (1992), the theory of regional cooperation and integration can be traced from the philosophy of Friedrich List (1789-1846). List was a German scholar during a time that German was split into a number of independent states, which maintained powerful custom barriers against each other, but offered no resistance to the influx of the products of English industry. List’s contribution advanced the argument that a free trade area should be created for the whole of Germany, and that at the same time, the region should be strongly protected against foreign competition. The contribution faced opposition but was later implemented, with low tariff rates against the outside world at first, but pressure from certain section of the industry made the question of increased protection more urgent.

List’s theory of customs union (Zollverein) can be seen on the basis of the premise that a number of less economically advance countries neighboring each other should

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1 Das Nationale System der politischen Ökonomie, der internationale Handel, die Handelspolitik und der deutsche Zollverein (1841).
come together and pull down barriers against their own internal trade and have uniform custom policy for import duties. This can be summarised as follows:

i. Free trade should only be for members of the Zollverein since they are of similar economic level;

ii. Tariffs should be imposed on imports from outside the customs union in order to protect infant industries;

iii. The advantage of the Zollverein was that the member countries have access to a larger internal market created by the Zollverein; and

iv. In the long run, the member states of the Zollverein should achieve political unity to create a large and strong country, which can effectively compete with the more advanced economies.

Hazlewood (1975) argues that a customs union will be beneficial if on balance it is trade creating and it will be harmful if on balance it is trade diverting. If the union causes a member to replace its own high cost production of particular commodities with imports from other members of the union that have lower costs, this will be trade creation. This will depend on the country’s comparative advantage for various products.

Hazlewood also noted that benefits might not be evenly distributed among member countries especially if the union is between countries of substantially different levels of development. He says that there are chances that countries may grow more rapidly outside the union than inside. In the event that a product is being produced in more than one country forming the union, the removal of tariff may result into competition, which increases efficiency, and results in one of the plant expanding and reaping economies of scale at the expense of others.
Hazlewood further said that there would be no problem if a country’s losses on some products were offset by its gain on others. The study shows that there are tendencies for development to be polarized in a few member states of the union. Some member countries may find the demand for their product rising while others may find themselves increasing purchases from the union members. Development will tend to take place mainly in the countries that are attractive to industrial development.

Hazlewood however, noted that there are chances that a union would not solely cause inequality within an economic union and therefore proposed fiscal compensation for the inequalities caused by the operation of the market through fiscal transfers.

2.3 Empirical Literature

2.3.1 Studies Specific to Africa

London (1999) did a study on integration and cooperation in Africa. The study’s objective was to determine the causes of failure of co-operation and integration in Africa. The study noted that the experiences of various integration and cooperation efforts in Africa have been hindered by a number of constraints. These constraints include the following:

- Institutional constraints where there are divergences in legal and institutional frameworks in the different participating countries.

- Structural constraints where some member states lack basic infrastructure to facilitate intra-regional trade.
• Uncertainty regarding the gains to be derived from regional cooperation and integration.

• Political constraints including political and economic influence of the former colonial power and conflicts between and within member countries.

The study also associated overlapping membership of countries to different economic integration groups as part of the failure of fast progress growth in these regional bodies since different bodies have different objectives, some of which may be contradicting.

In a study on trade, investment and regional integration, Sharer (2001) looked at the causes of weak trade performance and causes of failure of regional cooperation and integration in countries in Africa. The study identified that the causes of Africa’s weak trade performance is a result of lack of infrastructure, physical and human capital and other factors that are outside Africa’s control as well as flawed policies in this region. The study shows that failure to have progress in regional cooperation and integration is as a result of member countries in these regions pursuing a protectionism regime, which is a threat to regional cooperation and integration.

According to Sharer, the other problem with regional trade arrangements especially in Eastern and Southern Africa is the number of inconsistent initiatives. These initiatives include; Regional Integration Facilitation Forum (RIFF), COMESA, South African Custom Union (SACU), and South African Development Community (SADC). It was observed that they have overlapping memberships, conflicting obligations, different strategies, objectives and conflicting rules, and administration procedures. The study recommended that regional trade arrangements should be accompanied by broadly
similar degree of external trade reform, otherwise it would cause trade diversion to more expensive imports from regional partners.

Lyakurwa (1991) carried out a study on Trade Policy and Promotion in Sub-Saharan Africa and notes that there are very few Sub-Saharan African (SSA) countries that export substantial amount of industrial goods. The study shows that for countries with that type of industrial structure, rapid liberalisation can easily destroy the emerging industrial sector thereby reducing income and employment, as well as opportunities for technical learning. The study’s major contribution is that there is need for timing and sequencing reforms. Since there is also substantial dependence of the state budget on trade taxes, many of these countries will face a major problem.

Paying attention to trade revenue, the study observes that the revenue can be increased by reducing very high rates of tariff if evasion rate fall, or if import demand is price elastic. However such tariff increases do not occur automatically. On countries that are highly dependent on tariff revenue, Lyakurwa further argues that the effects of tariff reduction should be evaluated before implementing reforms like measures to enhance revenue from other sources.

Focusing on all countries in sub-Saharan Africa, the study further observes that since these economies are highly fragmented and small, regional economic integration is necessary to attain economies of scale and product differentiation, which are essential in intra industry trade. The success of regional integration schemes can be measured by the ratio of intra-regional trade to total trade. Increased shares are identified with success, decreasing shares with failure.
Karingi, Siriwardana and Ronge (2002) carried out research on the implication of the COMESA Free Trade Area and the proposed Customs Union. The study evaluated performance of five COMESA countries including Malawi, Tanzania, Uganda, Zambia and Zimbabwe. It was noted that COMESA economies depend quite significantly on trade given the ratio of exports and imports to GDP of the countries. Overall, the trade dependence indicates that the five COMESA countries have a potential to experience significant effects from any trade policy change. The study admits that there is scope for trade liberalisation that is to be developed through Free Trade Area (FTA) and the Customs Union (CU) that will have their impact on the structure of these economies.

Basing the argument on H-O’s factor endowment and Ricardo’s comparative advantage theory, Karingi, et al (2002) seek to know whether COMESA countries will gain from FTA creation and what effects a Customs Union would have on these countries. The study noted that countries with similar endowments and technology tend to have higher inter-sectoral trade, a case that is not between countries with varying proportions of factor and income endowment. The ultimate outcome depends on the initial condition of the liberalizing economies as determined by their intra-regional trade barriers in the case of FTA and their external tariffs to the rest of the world in case of a Custom Union.

On macro-economic and trade performance results for COMESA FTA, the study notes that the FTA in general seem to have a positive impact on the COMESA countries’ economies. Since COMESA countries have significant trade barriers on imports from most sectors of partner states, removal of trade barriers would be expected in theory to lead to important changes in the level and direction of trade. It is noted that the
improvement of GDP and extension of trade can be attributed to improvement in the terms of trade.

The study, on the other hand, showed that improvement in trade would be greater in the short run than in the long run. This is because elimination of import tariffs automatically leads to reduction of import prices. This reduction, with unchanged export prices, is in the short run since COMESA countries are small countries. This means that lower quantities of exports need to be attained to finance the same amount of imports as in the pre-liberalized period. In the long run, exports and imports are able to adjust as input intensity changes. In the long run, export prices will come down as a result of competition. This explains the positive changes in terms of trade (Karingi, et al., 2002).

On Tanzania’s withdrawal, Karingi et al. (2002) notes that Tanzania would have experienced substantial welfare gains in trade following a move towards the FTA. The study shows that the initial losses that such countries experienced before establishment of a FTA and thereafter a Customs Union, would turn positive to the benefit of the countries thereafter.

Elbadawi (1997) aimed at determining the impact of regional trade and monetary schemes on intra-subSaharan African (SSA) trade. The study observes that the objectives of regional integration schemes range from cooperation between neighboring states in a limited set of policy areas to complete trade and monetary integration.

Further, the study notes that the failure of regionalism in SSA can partly be attributed to the highly protectionist national trade policies in the region. Other factors include; fiscal revenue constraints, skewed nature of costs and benefits of integration across countries, associated difficulty in developing sustainable compensation schemes
from gainers to losers and dominant role of state in the African regional initiatives resulting into marginalisation of the private sector.

The study models the determinants of intra-SSA trade in the context of a gravity model focusing on the role of African regional schemes in regional trade. It identified among others the effects of the Regional Integration (RI) schemes in SSA, trade diversion or creation effects of the RI schemes as major factors that affect trade attraction between two countries. Other important factors identified include; distance between countries, economic size, cultural similarities and income per capita differentials. Exchange rates were found to only have small effects on trade attraction.

Alemayehu and Haile (2002) carried out a study on regional economic integration in Africa. The study’s objectives were to highlight the most important issues that have affected the progress of regional integration in Africa in the past, and assess their implication to the prospect of future progress. The study also sought to empirically identify the most important determinants of intra-regional trade in Africa taking COMESA as a case study.

The study established that failure of the progress of regional integration in Africa is caused by unwillingness of governments to:

(i) surrender sovereignty of macroeconomic policy making to a regional authority;
(ii) face potential consumption costs that may arise by importing from a high cost member country;
(iii) accept unequal distribution of gains and losses that may follow an integration agreement, and
(iv) discontinue existing economic ties with non-members.
The study specifies a gravity model to estimate the relationship between trade and other variables as follows:

\[
T_{ij} = \beta_0 + \beta_1 \left( Y_i \cdot Y_j \right) + \beta_2 \left( YC_i \cdot YC_j \right) + \beta_3 Dist + \beta_4 \left( A_i \cdot A_j \right) + \beta_5 \left| YC_i - YC_j \right|
+ \left[ \beta_i \sum Z_i + \beta_j \sum Z_j \right]
\]

(2.1)

Where

- \( T \) is bilateral trade between country \( i \) and \( j \);
- \( Y \) is GNP;
- \( YC \) is GNP per capita;
- \( Dist \) represents the distance between the major trading centres for the trading countries;
- \( A \) represents the size in area of the trading countries; and
- \( Z_i \) and \( Z_j \) are other relevant variables grouped under 'Infrastructure' (such as Road length per 1000 people, number of telephone per 100 people), Policy (such as FDI, Parallel market premium, financial deepening), political (occurrence of war, coup, revolution), 'Cultural and geographic' (language, sharing border, landlockedness).

The study found out that regional integration arrangements failed to positively affect intra-regional trade. The study also observed that, intra-COMESA trade is not significantly different from its trade with non-member countries where imports or exports are used to measure bilateral trade.

From the results, Alemayehu raise the central question seeking to find out why economic integration schemes in Africa fail to affect trade flows despite the multitude of arrangements. The other question raised in the study is whether the prospects for
establishing successful regional and/or continental economic integration scheme are better now than what has been so far.

The study suggests that the answer to these questions would depend on the extent to which African leaders (and other stakeholders) are ready to overcome past constraints and adopt approaches that are incentive-compatible with stated objectives.

2.3.2 Studies on Other Regional Trade Organizations

Haaland and Tollefsen (1994) carried out a study on the Uruguay round and trade in manufactures and services. The study was aimed at examining the possible production, trade and welfare effects of successful implementations of Uruguay Round results. A numerical general equilibrium model was used in the study, which included trade in manufactures and some services among industrial regions and countries. The study ignored the effects of agricultural liberalisation in developed countries and the effects for developing countries. The study distinguishes four world regions; European Union (EU), European Free Trade Association (EFTA), Japan and the USA. Trade balances with the rest of the world are kept constant.

The study found out that upon successful liberalisation, the overall outcome would be trade creation. The study shows that there is significant growth in trade where the total inter-regional trade of products from imperfectly competitive industries grows by approximately 25 percent of the General Agreement on Tariffs and Trade (GATT). The prices in the regions are expected to fall due to lower import prices and increased competition in all markets. This would lead to lower nominal costs and thus price cuts for non-traded goods. Stronger price reductions seemed to come in industries and regions
where the imperfectly competitive structure was most pronounced. The study measures welfare as real income less real trade cost and shows that welfare effects as a result of liberalisation is moderate in all region apart from Japan whose simulated production growth is strong. However, for the small, open economies in EFTA, the overall effects were fairly small.

Vamvakidis, (1999) did a study to determine whether an economy should open its trade to all countries or limit itself to participation in regional trade agreements. The study was based on time series evidence for a data set for 1950 to 1992 across all regions in the world. It involved estimating and comparing the growth performance of countries that liberalized broadly and those that joined Regional Trade Agreements (RTA). The study considered 109 cases of countries participating in RTA and 51 cases of broad liberalisation between, between 1960 and 1989.

Using a fixed effects growth model, the study found out that economies have grown faster on average after liberalisation, in both the long run and the short run, but not after joining an RTA. The study further showed that the impact of RTAs on growth is negative and statistically significant in most empirical specifications. The results also suggested that broad liberalisation leads to higher investment share while RTAs lead to lower ones. The study concluded that for a closed economy that want to open its markets, it will be better off with world integration as opposed to regional integration, in terms of benefits for short and long run growth. However the study assumes that RTAs have regional trade liberalisation as one of their main purposes, which is not always the case. The study also did not focus on the cases of recent RTAs.
2.4 Overview of the Literature

Most studies carried out on regional cooperation and integration consider the impact of the regional organisations on the welfare of the economies that are members of the organisations. Generalized effects of these regional bodies are considered with respect to their effects on general performance of the economies. The study by London (1999) and Sharer (2001) focus on hindrance to cooperation and integration in Africa and the causes of failure of the regional bodies in the region. However these studies fail to consider the effects of the established regional bodies on the economies of member countries.

Lyakurwa (1991) observes that rapid liberalisation in Africa may easily destroy the industrial structure and affect the revenues of growing economies. His study however does not show the impact of these effects on the aggregate trade in the economies that form the regional bodies.

Karingi et al. (2002) focuses on the implication of the COMESA FTA and Customs Union on the COMESA member countries. The study shows how the economies in COMESA will be affected upon the full implementation of the COMESA FTA treaty and the proposed Customs Union. However, the study focuses on performance of the countries and does not focus on the effects of the FTA and Customs Union between member countries.

Hazlewood (1975) work shows that countries that are in different levels of development may not benefit equally from a regional integration scheme. The benefits that are considered in Hazlewood’s work are considered to be the generalized economic
performance of the country. On the other hand, his work is not based on empirical evidence. And does not focus on trade effects.

The study by Elbadawi (1997) observed that the effect of regional integration scheme is a major determinant of intra-sub-Saharan trade. However, Alemayehu et al. (2002) using similar methodology found out that regional integration arrangement schemes failed to positively affect regional trade. Further, the study observed that intra-COMESA trade is not significantly different from trade with non-members. The Elbadawi and Alemayehu studies however do not focus on specific countries but make generalized conclusions based on aggregate data.

The studies by Haaland (1994) and Vamvakidis (1999) have been based on experiences in developed countries. The studies may therefore fail to reflect the practical situation under which COMESA operates. However, the studies make important contributions as they focus on welfare effects on the countries under study. Therefore, these studies will provide a good comparison of regional bodies in the developed countries and those that are in less developed countries.

It is with respect to the gaps in the aforementioned studies, that the current study will focus on a search for empirical evidence to support the theory relating to regional cooperation, with Kenya’s trade with COMESA as a case study.
CHAPTER THREE
THEORETICAL AND EMPIRICAL FRAMEWORK

3.1 Introduction

The literature reviewed in the previous chapter identifies various variables that explain the levels of trade in a given country. This chapter involves presentation of theoretical and empirical framework on the basis of these studies.

3.2 Theoretical Framework

This study adopts Alemayehu, et al. (2002) and Elbadawi (1997) extended gravity model for Sub-Saharan Africa (SSA). The model specifies that the volume of trade $T_{ij}$ between any two countries $(i, j)$, is a function of each country's trade potential ($TP_j$) and their mutual trade attraction ($TA_{ij}$).

$$T_{ij} = f(TP_j, TA_{ij})$$  \hspace{1cm} (3.1)

The absolute trade potential of a country, $TP_i$, in equation (3.1) depends on its total economic size, which is the nominal Gross Domestic Product, $Y^*_i$, and the trade intensity, $T_{gi}$, which is the ratio of trade to GDP.

$$TP_i = f(Y^*_i, T_{gi})$$  \hspace{1cm} (3.2)

The trade intensity of a country $T_{gi}$ in equation (3.2) is determined by economic factors such as the level of development, proxied by nominal GDP per capita, $YC^*_i$, and geographical characteristics, $G$. These geographic characteristics are taken to include area $A_i$ of the country and whether the country is an island or not, $I$.

Therefore
\[ T_{gi} = f(YC^*, A_i, I). \]  

Equation (3.2) becomes

\[ TP_i = f(Y^*, YC^*, A_i, I) \]  

Given the trade potential of country \( i \), in equation (3.4), the trade potential of the trading partner \( TP_j \) may be given by

\[ TP_j = f(Y^*_j, YC^*_j, A_j, I) \]  

In bilateral trade regressions, the multiplacative forms of GDP and GDP per capita and geographical size are used. This is justified under the modern theory of imperfect competition, which implies that trade between two equal sized countries will be greater than trade between a large country and a small country. Since gravity model is based on imperfect competition, multiplicative forms of the variables are used.

Hence, trade potential between the two countries, \( TP_{ij} \) is given by the multiplicative forms of the variables in equation (3.4) and (3.5) above as follows:

\[ TP_{ij} = f\left(\left(\frac{Y^*_i}{Y^*_j}\right)\left(\frac{YC^*_i}{YC^*_j}\right)\left(A_i \cdot A_j\right), I\right) \]  

On the other hand, trade attraction, \( TA_{ij} \) in equation (3.1) between two countries is determined by a host of factors that influence the cost of trade. These include transport cost \( C_t \), policy and political inducements to trade such as regional cooperation schemes, and cultural and historical ties such as common language or colonial relationships.

In this model, transport cost \( C_t \) is proxied by distance between the economic centers of gravity in the two countries, \( D_{ij} \) and whether the two countries share a common boarder, \( B_{ij} \). Therefore,

\[ \text{Transport cost } C_t = f\left(D_{ij}, B_{ij}\right) \]  

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Regional cooperation schemes, $RI_{ij}$ and language sharing between two trading countries, $L_{ij}$ are also included in this model as determinants of trade attraction between two countries. Therefore,

$$\text{Trade Attraction } TA_{ij} = f\left(D_{ij}, B_{ij}, RI_{ij}, L_{ij}\right)$$  \hspace{1cm} (3.8)

Further development of the gravity model by Elbadawi (1997) is designed to test hypothesis related to the effect of the difference between the two countries level of per capita income $(YC_i^* - YC_j^*)$. The extension also includes two channels of exchange rate effect. These are real exchange rate variability $ER_{var}^*$ and real exchange rate overvaluation. $ER_{over}^*$.

Trade diversion effect of a regional integration scheme $RI(1)_{ijk}$ of a scheme $k$ and trade creation effect of the regional integration scheme $RI(2)_{ijk}$ of the scheme are also considered in determination of trade volume between two countries in this model.

Substituting equations (3.6) and (3.8) in equation (3.1), and including Elbadawi (1997)'s extension, the extended gravity model for SSA is as follows:

$$T_{ij} = f\left(\left(Y_i^*, Y_j^*\right), (YC_i^*, YC_j^*), (YC_i^* - YC_j^*), (A_i, A_j), I_i, D_{ij}\right)$$

$$\left[B_{ij}, L_{ij}, RI(1)_{ijk}, RI(2)_{ijk}, ER_{var}^*, ER_{over}^*\right]$$  \hspace{1cm} (3.9)

### 3.3 Empirical framework

To determine the effects of regional cooperation and integration, the Elbadawi’s (1997) extended gravity model shall be used in this study to estimate the relationship between trade volume and other variables. In this study, country $i$ shall be taken to be
Kenya and the country’s trading partner $j$ will be assumed to be COMESA countries, which will be taken as a trading block.

Since time series data will be used, some variables that have been used in the Elbadawi (1997) gravity model will maintain a constant value over time. These include: the area of the two countries, $A_i$ and $A_j$, Island $I_i$, Distance $D_{ij}$, Boarder $B_{ij}$, and language $L_{ij}$.

The two channels of exchange rate effect in the gravity model, the real exchange rate variability $\text{ER}^{\text{var}}$ and real exchange rate overvaluation $\text{ER}^{\text{over}}$ will be assumed to be functions of real exchange rate $\text{ER}^*$, which shall be used in this study.

On the other hand, both trade diversion effect $RJ_1(1)_{ijk}$ and trade creation $RJ_2(2)_{ijk}$ are a reflection of the effects of regional cooperation and integration. A dummy $D$ will be used to capture the effects of regional cooperation and integration on trade in this study. A comparison will be done between two periods; a period during Preferential Trade Area of East and South Africa (PTA) and a period during which COMESA has been in operation. These regimes are the period between 1981 and 1993, and the period between 1994 and 2001, respectively.

This study will establish a relationship between total trade and the variables in the developed version of the gravity model. Given the above analysis, the following equation will be used in this study:

$$\text{Trade } T_{ij} = \beta_0 + \beta_1 D + \beta_2 (Y_i^* - Y_j^*) + \beta_3 (YC_i^* - YC_j^*) + \beta_4 (YC_i^* - YC_j^*) + \beta_5 \text{ER}^* + u_t \quad (3.10)$$

A log linear version of the model is expressed as follows:

$$\log T_{ij} = \beta_0 + \beta_1 D + \beta_2 \log(Y_i^* - Y_j^*) + \beta_3 \log(YC_i^* - YC_j^*) + \beta_4 \log(YC_i^* - YC_j^*) + \beta_5 \log \text{ER}^* + u_t \quad (3.11)$$
Where; \( T_{ij} \) is bilateral trade between country \( i \) and \( j \)

\[ D \] is a dummy variable reflecting two periods. For this study, \( D = 1 \) if the period after 1994 and \( D = 0 \) if otherwise.

\( Y^*_{i} \) and \( Y^*_{j} \) are GDP of country \( i \) and country \( j \), respectively.

\( YC^*_{i} \) and \( YC^*_{j} \) are per capita incomes of countries \( i \) and \( j \), respectively

\( YC^*_{i} - YC^*_{j} \) is the difference between the two countries per capita income

\( ER^* \) is the domestic Exchange Rate.

\( u_i \) is the error term.

To answer the objectives of the study, this model will be used to establish the contribution of regional cooperation and integration to Kenya’s aggregate trade. This will be done by estimating the coefficients of the variables used which will also give the relationship between Kenya’s membership in COMESA and its aggregate trade volume.

### 3.4 Measurement of variables

**Bilateral trade (\( T_{ij} \))** - The volume of trade between Kenya and COMESA countries. This will be measured by addition of the exports to COMESA and all the imports from COMESA.

**Gross Domestic Product (\( Y^* \))** – This will be taken as the National Income.

**Per capita income (\( YC^* \))** – This is the GDP per person.

**Per capita income difference (\( YC^*_{i} - YC^*_{j} \))** – This is the difference in per capita income of two trading countries.

**Exchange Rate (\( ER^* \))** – This will be measured as the rate at which the countries’ currencies buy one US Dollar.
3.5 Concluding Remarks

This chapter describes the theoretical framework and empirical model used to study the contribution of Kenya's membership in COMESA to Kenya's trade. The theoretical framework presented is adopted from Alemayehu, et al. (2002) and Elbadawi (1997) extended gravity model for Sub-Saharan Africa (SSA). Adjustments are made to the model in the empirical model in order to apply it in a time series estimation of Kenya's trade experience with COMESA.

The next chapter presents data analysis, model estimation and analysis of results. The data used is subjected to statistical and diagnostic tests.
CHAPTER FOUR
DATA, MODEL ESTIMATION AND ANALYSIS OF RESULTS

4.1 Introduction

This chapter presents the data used in the study and model estimation based on econometric methodology presented in Chapter three. The Chapter also presents an analysis of the results that will be used to draw the conclusion of the paper.

4.2 Data Type and Sources

To achieve the objectives of this study, annual time series data for the period 1981 to 2001 was obtained from various sources including International Financial Statistics (IFS), IMF, various issues of Statistical Abstracts published by Central Bureau of Statistics (Kenya) and Policy issues published by World Bank. The data collected include; Kenya’s Trade with COMESA, GDP and Per Capita Income for Kenya and COMESA countries including Angola, Burundi, Comoros, Democratic Republic of Congo, Djibouti, Egypt, Eritrea, Ethiopia, Malawi, Madagascar, Mauritius, Mozambique, Namibia, Rwanda, Seychelles, Sudan, Swaziland, Tanzania, Uganda, Zambia and Zimbabwe, and the exchange rates in Shillings per U.S. Dollar for Kenya and the countries that are members of COMESA. The basic data used are presented in appendix I. Two dummies are used in the study. One used in the estimation of the effect of regional cooperation and integration on Kenya’s trade, and the other is used to estimate the effect of liberalisation in Kenya. Logarithm form of the data is used in this study.

Statistical tests show that most of the variables are stationary at first level (See Appendix II). Diagnostic tests are also done as can be seen in Appendix III.
4.3 Estimation Results

The results of the estimation of equation (3.11) from Chapter three are presented in Table 4.1. The Ordinary Least Square is used to estimate the equation. The variables in the model are; Dum which represents a dummy for regional cooperation and integration; LINC is Gross Domestic Product (GDP); LINCPC represents per capita GDP; LINCD represents variation in LINCPC between Kenya and COMESA over the years; LER is exchange rate in Kenya Shillings per US Dollar; and DUMER is the dummy variable for liberalisation.

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Estimated Coefficients</th>
<th>Standard Error</th>
<th>t-ratios</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>21.25764</td>
<td>6.002755</td>
<td>3.541314**</td>
<td>0.0033</td>
</tr>
<tr>
<td>DUM</td>
<td>1.114014</td>
<td>0.178777</td>
<td>6.231315**</td>
<td>0.0000</td>
</tr>
<tr>
<td>LINC</td>
<td>0.409653</td>
<td>0.625156</td>
<td>0.655282</td>
<td>0.5229</td>
</tr>
<tr>
<td>LINCPC</td>
<td>-0.572666</td>
<td>0.760029</td>
<td>-0.753479</td>
<td>0.4636</td>
</tr>
<tr>
<td>LINCD</td>
<td>-0.090536</td>
<td>0.082739</td>
<td>-1.094227</td>
<td>0.2923</td>
</tr>
<tr>
<td>LER</td>
<td>-0.143529</td>
<td>0.379935</td>
<td>-0.377771</td>
<td>0.7113</td>
</tr>
<tr>
<td>DUMER</td>
<td>0.308389</td>
<td>0.336361</td>
<td>0.916839</td>
<td>0.3748</td>
</tr>
</tbody>
</table>

Note: **Significance at 1% level, *Significance at 5%

\[ R^2 = 0.962, \text{ Adjusted } R^2 = 0.946, \text{ F-statistic}=58.865, \text{ Durbin Watson Stat}=1.751 \]

The results show that the constant term and the dummy for regional cooperation and integration (DUM) are significant at one per cent level. GDP (LINC), Per Capita GDP (LINCPC), Per Capita Income variation (LINCD), Exchange rate (LER) and the dummy for liberalisation (DUMER) are not significant at the same level. The dummy for regional cooperation and integration (DUM), per capita GDP variation and the dummy for liberalisation have the expected sign. GDP and per capita GDP have a negative sign as opposed to the
expected positive sign. The F-statistic is 58.86503, which is relatively high implying that the
model has a high predictive ability. Adjusted $R^2$ is 0.946 implying that 94.6 per cent of the
variation in trade is explained by variations of the variables in the model.

There is need to test the variables for autocorrelation since $R^2$ is high but most of the
coefficients are not significant. Table 4.2 presents a correlation matrix among the variables
included in the model.

**Table 4.2 Correlation Matrix for the variables**

<table>
<thead>
<tr>
<th></th>
<th>LTRADE</th>
<th>LINC</th>
<th>LINCPC</th>
<th>LINCD</th>
<th>LER</th>
</tr>
</thead>
<tbody>
<tr>
<td>LTRADE</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LINC</td>
<td>0.653</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LINCPC</td>
<td>0.204</td>
<td>0.743</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LINCD</td>
<td>-0.119</td>
<td>0.244</td>
<td>0.338</td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td>LER</td>
<td>0.789</td>
<td>0.709</td>
<td>0.069</td>
<td>0.044</td>
<td>1.000</td>
</tr>
</tbody>
</table>

The matrix shows that there is high correlation between GDP, per capita GDP and
exchange rate. Estimation will therefore be done dropping these variables alternately. Table 4.3
shows an estimation of the model omitting per capita GDP.

**Table 4.3: Log Linear Regression Omitting Per Capita GDP at levels**

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Coefficient</th>
<th>Standard error</th>
<th>t-statistic</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>16.75620</td>
<td>0.576292</td>
<td>29.07587**</td>
<td>0.0000</td>
</tr>
<tr>
<td>DUM</td>
<td>1.045310</td>
<td>0.151544</td>
<td>6.897752**</td>
<td>0.0000</td>
</tr>
<tr>
<td>LINC</td>
<td>-0.054233</td>
<td>0.106975</td>
<td>-0.506968</td>
<td>0.6195</td>
</tr>
<tr>
<td>LINCD</td>
<td>-0.098274</td>
<td>0.080908</td>
<td>-1.214637</td>
<td>0.2433</td>
</tr>
<tr>
<td>LER</td>
<td>0.122358</td>
<td>0.138765</td>
<td>0.881765</td>
<td>0.3918</td>
</tr>
<tr>
<td>DUMER</td>
<td>0.193475</td>
<td>0.295447</td>
<td>0.654854</td>
<td>0.5225</td>
</tr>
</tbody>
</table>

Note ** Significance at 1% level, * Significance at 5% level

$R^2=0.960$, Adjusted $R^2=0.947$, F-statistic=72.617, Durbin Watson stat=1.601
The results show that of all the variables, the constant term and the dummy for regional cooperation and integration are significant at five per cent level of significance. The dummy also has the expected sign as well as exchange rate, per capita GDP variation and the dummy for liberalisation. However, exchange rate and per capita GDP variation are not significant at five per cent. The coefficient for GDP has a negative sign unlike the expected positive sign, although it is not significant. The adjusted $R^2$ shows that 94.7 per cent of the variations of trade are explained by the independent variables. A high F-statistic of 72.617 shows that the model has a high predictive ability.

Omitting GDP in the estimation gives the following results as shown in Table 4.4.

Table 4.4: Log Linear Regression omitting GDP at levels

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Coefficient</th>
<th>Standard error</th>
<th>t-statistic</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>17.43066</td>
<td>1.360839</td>
<td>12.80876$^*$</td>
<td>0.0000</td>
</tr>
<tr>
<td>DUM</td>
<td>1.053315</td>
<td>0.149971</td>
<td>7.023464$^*$</td>
<td>0.0000</td>
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<tr>
<td>LINCPC</td>
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<td>0.129435</td>
<td>-0.635049</td>
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<td>LINCD</td>
<td>-0.092265</td>
<td>0.081109</td>
<td>-1.137543</td>
<td>0.2732</td>
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<td>LER</td>
<td>0.093516</td>
<td>0.113926</td>
<td>0.820843</td>
<td>0.4246</td>
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<tr>
<td>DUMER</td>
<td>0.191922</td>
<td>0.280084</td>
<td>0.685232</td>
<td>0.5037</td>
</tr>
</tbody>
</table>

Note * Significance at 5% level

$R^2=0.961$, Adjusted $R^2=0.948$, F-statistic=73.342, Durbin Watson stat=1.603

The results show that of all the variables, the constant term and the dummy for regional cooperation and integration are significant at five per cent level of significance. The dummy for integration, per capita GDP variation, exchange rate and the dummy for liberalisation have the expected sign. However, exchange rate and per capita GDP variation are not significant at five per cent. The coefficient for per capita GDP has a negative sign unlike the expected positive
sign, although it is not significant. The adjusted $R^2$ shows that 94.8 per cent of the variations of trade are explained by the independent variables. A high F-statistic of 73.342 shows that the model has a high predictive ability.

Omitting the per capita GDP variation in the estimation gives the results shown in Table 4.5.

Table 4.5: Log Linear Regression omitting per capita GDP variation at levels

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Coefficient</th>
<th>Standard error</th>
<th>t-statistic</th>
<th>Probability</th>
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<td>6.019608</td>
<td>3.625485**</td>
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<td>DUM</td>
<td>1.088124</td>
<td>0.178366</td>
<td>6.100516**</td>
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<tr>
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<td>DUMER</td>
<td>0.173190</td>
<td>0.314897</td>
<td>0.549988</td>
<td>0.5904</td>
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</table>

Note **Significance at 1% level, *Significance at 5% level

$R^2=0.959$, Adjusted $R^2=0.945$, F-statistic=69.484, Durbin Watson stat=1.51

Upon omitting the per capita GDP variation in the estimation, the Adjusted $R^2$ does not improve as well as the Durbin Watson statistic, but instead adjust downwards. The results show that the constant term and the dummy for regional cooperation and integration are significant at 5 per cent level of significance. All the others are not significant. The dummy for integration, GDP and the dummy for liberalisation have the expected positive sign. The coefficients for per capita GDP and exchange rate have a negative sign unlike the expected positive sign. The adjusted $R^2$ is 0.945,

Since many of the variables are stationary at first difference, (See Appendix II) model estimation at first difference omitting the highly correlated GDP and per capita GDP is presented in Table 4.6 and 4.7.
Table 4.6: Log Linear Regression Omitting Per Capita GDP at 1\textsuperscript{st} difference

<table>
<thead>
<tr>
<th>Independent Variables</th>
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<tr>
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<td>0.133594</td>
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<tr>
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<td>0.514323</td>
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$R^2=0.345$, Adjusted $R^2=0.127$, F-statistic=1.58, Durbin Watson stat=1.71

All the variables in the model are not significant. Unlike in earlier estimations, the dummy for regional cooperation and integration has a negative sign. Apart from the dummy for liberalisation, all the variables do not have the expected signs. Adjusted $R^2$ is 0.127 showing that only 12.7 per cent of the variations in trade are explained within the model. The F-statistic also adjusts downwards to 1.58. The Durbin Watson is 1.71.

Table 4.7: Log Linear Regression Omitting GDP at 1\textsuperscript{st} difference

<table>
<thead>
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<th>Probability</th>
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</table>

$R^2=0.317$, Adjusted $R^2=0.089$, F-statistic=1.39, Durbin Watson stat=1.68
All the variables in the model are not significant. The dummies for regional cooperation and integration and exchange rate have a negative sign unlike the expected positive sign. The dummy for liberalisation has the expected positive sign but it is also not significant. The coefficients for per capita GDP and per capita GDP variation have the expected sign. Adjusted $R^2$ is 0.089 showing that only 8.9 per cent of the variations in trade are explained within the model. Further, the F-statistic also adjusts downwards to 1.39. The Durbin Watson is 1.68.

4.4 Diagnostic Tests

Diagnostic tests were undertaken on the estimated model as can be seen in appendix III. Actual Fitted Residual test show that the residuals are stationary. The residuals are also normally distributed as can be seen from Histogram Normality test. Other tests show that there is no serial correlation and that there is no Autoregressive Conditional Heteroscedasticity (ARCH) in the residuals. Cusum test show that the recursive residuals are within the critical lines, suggesting coefficient stability.

4.5 Concluding Remarks

This chapter presents data analysis, estimation and results. The results show that the only significant variables are the constant term and the dummy for regional cooperation and integration. This implies that there is significant relationship between regional cooperation and integration and Kenya’s trade. The two variables are robust in all the estimations except from the model using differenced variables. The results show that regional cooperation and integration has a positive effect on Kenya’s trade. Other variables in the study with the exception of liberalisation are insignificant as opposed to the study’s expectations.
The next chapter presents a summary and conclusions of the study. It further gives policy recommendations on the basis of the results of obtained in this chapter. Limitations of the study and suggestions for further research are also presented in the next chapter.
CHAPTER FIVE

SUMMARY, CONCLUSIONS AND POLICY RECOMMENDATIONS

5.1 Summary and Conclusion

The study examined the relationship between trade and other variables as presented in the gravity model. The main objective of the study was to establish the effects of Kenya’s membership of regional cooperation and integration to the country’s trade. An analysis was carried out for the period between 1981 and 2001. This is the period during which Kenya was a member of the Preferential Trade Area of East and Southern Africa (PTA), between 1981 and 1993, and the period during which Kenya is a member of the Common Market for East and Southern Africa (COMESA), between 1994 and 2001.

On the basis of the results obtained in this study, Kenya’s membership of COMESA has had a positive effect on trade. This is shown by the statistical significance of the dummy (DUM) representing the period 1994 to 2001, when Kenya is a member of regional cooperation and integration in COMESA. The results show that it is as a result of Kenya’s membership of COMESA that growth in trade between Kenya and COMESA countries has been realised.

The results therefore show that Kenya benefits in terms of trade as a result of cooperation and integration, in spite of the fact that the country depends heavily on tariff revenue like many African countries (See Lyakurwa, 1991). Further, expectations that some countries do not benefit from COMESA FTA until a Customs Union is formed (Karingi, et al. 2001), is not supported by the findings of this study since Kenya has already recorded significant trade gains from membership of COMESA.
Other than regional cooperation and integration, the results show that the growth of Kenya’s trade is partly a result at the liberalisation policies represented by the dummy (DUMER) adopted in Kenya in the early 1990s. Other variables in this study’s model, however, are not significant in determining the growth of trade between Kenya and COMESA countries.

5.2 Policy Recommendations

On the basis of the findings of this study, there is need to strengthen Kenya’s partnership that exists within COMESA. It is as a result of COMESA’s development from a Free Trade Area to a Customs Union that will spur increased trade in the region.

The government of Kenya should therefore continue to play its leading role in the promotion of the attainment of COMESA objectives. On the domestic scene, the government should target the promotion of the manufacturing and services sector, which are the leading sectors in exports to COMESA. Further, the government and the private sector, especially the manufacturing sector, should allocate more resources towards research to discover new opportunities within COMESA since the continuous growth in trade between Kenya and COMESA over the years is an indication of opportunities that have not yet been exhausted in the region.

5.3 Limitations of the study

Difficulties in measurement of some of the variables was one of the major limitations of this study. Measurement of trade creation and trade diversion as important tools in determining the effect of regional cooperation and integration, using time series
data was not possible in this study since a more advanced methodology was required. It is apparent that the dummy, which was used to estimate these variables, was unable to capture the real effects of the variables. This forms a basis for further research which will use more advanced tools of analysis.

5.4 Suggestion for Further Research

A study of Kenya’s trade experience using a comparative methodology is recommended where a comparison would be made between Kenya’s trade experience with countries belonging to a regional organisation, and Kenya’s trade experience with other countries that are not members of the regional organisation. Further, a similar study using the same methodology, but with a better measurement of trade creation and diversion would yield results that are more specific unlike the results obtained with the use of a dummy representing the two important components of regional cooperation and integration.
BIBLIOGRAPHY


Comesa, 2002. COMESA Briefings, Comesa, Lusaka.


### Appendix I: Basic Data

<table>
<thead>
<tr>
<th>Years</th>
<th>TRADE</th>
<th>INC</th>
<th>INCPC</th>
<th>INCD</th>
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**Note:**
- **Trade** - total volume of trade between Kenya and COMESA in U.S. Dollars
- **INC** - represents GDP multiplicative. i.e. The product of Kenya's GDP and COMESA GDP in U.S. Dollars.
- **INCPC** - per capita GDP multiplicative. i.e. The product of Kenya's per capita GDP and COMESA per capita GDP in "U.S. Dollars.
- **INCD** - per capita income variation. The difference between Kenya's per capita GDP and COMESA per capita GDP in "000" U.S. Dollars.
- **ER** - exchange rate in Kenya Shillings per U.S. Dollar.
## Appendix II: Stationarity Test

**Unit Root Test using ADF**

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### 1st difference

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### I(1)

**Log GDP Multiplicative**

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### I(0)

**Log GDPPC Multiplicative**

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**Log GDP Variation**

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\(I(1)\)
Appendix III: Diagnostic Tests

This section presents the different diagnostic tests undertaken to the estimated model.

A.3.1 Actual Fitted Residual Test

![Graph showing Actual Fitted Residual Test]

A.3.2 Residual Graph

![Graph showing Residual Graph]
Figure A.3.1 and A.3.2 show that the residuals are stationary. This is an indication of a well fitted model.

### A.3.3 Histogram Normality Test

In this test we test for the null hypothesis that the residuals are normally distributed. Therefore,

\[ H_0 = \text{the residuals are normally distributed} \]

\[ H_a = \text{the residuals are not normally distributed} \]

Given Jarque-Bera statistic of 2.026677, and a probability of 0.363005, we accept the null hypothesis that, the error term is normally distributed.
A.3.4 Breusch-Godfrey Serial Correlation LM Test:

This tests the null hypothesis that there is no serial correlation.

Ho = there is no serial correlation

Ha = there is serial correlation.

<p>| | | | |</p>
<table>
<thead>
<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>F-statistic</td>
<td>0.321423</td>
<td>Probability</td>
<td>0.731170</td>
</tr>
<tr>
<td>Obs*R-squared</td>
<td>1.067779</td>
<td>Probability</td>
<td>0.586320</td>
</tr>
</tbody>
</table>

Given the above results, we accept the null hypothesis that there is no serial correlation.

A.3.5 ARCH Test:

This tests the null hypothesis that there is no Autoregressive Conditional Heteroscedasticity in the residuals.

Ho = There is no ARCH in the residuals

Ha = There is ARCH in the residuals

<p>| | | | |</p>
<table>
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</thead>
<tbody>
<tr>
<td>F-statistic</td>
<td>1.954781</td>
<td>Probability</td>
<td>0.173967</td>
</tr>
<tr>
<td>Obs*R-squared</td>
<td>3.730955</td>
<td>Probability</td>
<td>0.154822</td>
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</table>

With the results above we accept the null hypothesis that there is no ARCH in the residual.
A.3.6 White Heteroscedasticity Test:

This tests the null hypothesis that there is no heteroscedasticity.

Ho = There is no heteroskedasticity

Ha = There is heteroskedasticity

<table>
<thead>
<tr>
<th>F-statistic</th>
<th>0.775570</th>
<th>Probability</th>
<th>0.660028</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obs*R-squared</td>
<td>10.21926</td>
<td>Probability</td>
<td>0.510779</td>
</tr>
</tbody>
</table>

With the above results, we accept the null hypothesis that there is no heteroskedasticity. Therefore the model is well specified.

A.3.7 Cusum Test

In this test the cumulative sum of the residual is checked against the 5 per cent critical lines.

![CUSUM Chart]

Since the cumulative sum of the recursive residuals are within the critical lines, the result suggests coefficient stability.