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Trade Effect of Regional Economic Integration: The Case of COMESA

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CERTIFICATE

This is to certify that Mr. **ADANE MAMO SIYOUM,** student of Master of Arts in Economics (MEC) programme from Indira Gandhi National Open University (IGNOU), was working under my supervision and guidance for his project work for the Course **MECP-001**.

His project work entitled

"**Trade Effect of Regional Economic Integration: The Case of COMESA"**

which he is submitting, is his genuine and original work.

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DECLARATION

I hereby declare that the thesis entitled "**Trade Effect of Regional Economic Integration: The Case of COMESA"** submitted by me for the partial fulfillment of the **Marster of Arts in Economics (MEC)** to Indira Gandhi National Open University (IGNOU), New Delhi, is my own original work and has not been submitted earlier either to IGNOU or to any other institution for the fulfillment of the requirement for any other programme of study. I also declare that no chapter of this manuscript in whole or in part is lifted and incorporate in this report from any earlier work done by me or others.

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A.M

Table of Contents

Contents	**Page**

List of Tables

List of Figure

Abstract

One key aspect of development strategies is the dynamic potential of regional cooperation and integration. The wave of regionalism in the 1990s has spurred academic and professional interest towards the economic effects of Regional Trade Agreements (RIA). An RTA is expected to strengthen trade links and hence enhance economic growth. Common Market for Eastern and Southern Africa (COMESA) is one of such RTA's in Africa which was established 1994 as a regional economic integration for the coordination and promotion of economic cooperation and sustainable development in East and Southern Africa. The challenges of economic development in an underdeveloped and highly unstable environment such as the Sub-Sahara Africa appear to be enormous and so leave one to ponder on the possibility of success or otherwise in realizing such an ideal.

The paper analyses the potential trade impact of RTA using the experience of COMESA as a case study. It examines the trade linkages among the member countries of the COMESA and the extent to which the introduction of the COMESA common external tariff will liberalize their trade regimes. To gauge the potential trade impact, descriptive data analysis method as well as econometric method using the standard Gravity Model is used. Bilateral trade flows among the regional groupings found to be explained by standard variables and the empirical result indicated that the COMESA trade agreement dummy variable to be negative. This must result from the fact that, on balance, *trade diversion* is more powerful than *trade creation*. The review of the issues indicates, also, that the performance of regional bloc is mainly constrained by problems of variation in initial condition, real political commitment, overlapping membership, policy harmonization, lack of competition policy, and poor private sector participation.

ABBREVIATIONS / ACRONYMS

AGOA	-	African Growth and Opportunity Act
APEC	-	Asia-Pacific Economic Cooperation
ASEAN	-	Association of South-East Asian Nations
COMESA	-	Common Market for Eastern and Southern Africa
CU	-	Customs Union
EAC	-	East African Community
ECA	-	Economic Community for Africa
ECLAC	-	Economic Commission for Latin America and the Caribbean
ECOWAS	-	Economic Community of West African States
EU	-	European Union
FE	-	Fixed Effect
FTA	-	Free Trade Area
GATT	-	General Agreement on Tariffs and Trade
GDP	-	Gross Domestic Product
IGAD	-	Intergovernmental Authority on Development
IMF	-	International Monetary Fund
LDS	-	Least Developed Countries
MDGs	-	Millennium Development Goals
MERCOSUR	-	Mercado Común del Sur: an economic and political agreement among Argentina, Brazil, Paraguay, Uruguay, Venezuela, and Bolivia
NAFTA	-	North American Free Trade Agreement
NRA	-	New Regionalism Approach
OLS	-	Ordinary Least Squares
PTA	-	Preferential Trade Area
REC	-	Regional Economic Cooperation
RE	-	Random Effect
ROW	-	Rest of the world
RTAs	-	Regional Trade Agreements
SACU	-	Southern African Customs Union
SADC	-	Southern African Development Community
SAP	-	Structural Adjustment Progress
SSA	-	Sub-Saharan Africa
UNCTAD	-	United Nations Conference on Trade and Development
WDI	-	World Development Indicators
WTO	-	World Trade Organization

1. INTRODUCTION

1.1   Background

In a mixed economic structure where governments intervene in the market to a various extent, trade interventions like tariffs and quotas distort markets. Consequently, it affects the gain that free trade brings and will result in inefficiency. Since a few decades ago, however, being part of one or more regional economic integration has been considered as a reward of free trade in many economies of the world. The term ***Economic Integration*** refers to**: "**the unification of economic policies between different states through the partial or full abolition of tariff and non-tariff restrictions on trade taking place among them prior to their integration''* (Wikipedia). Its aim is to reduce costs for both consumers and producers, as well as to increase trade between the countries taking part in the agreement. Thus, it is believed that economic integration will help economies to maintain the balance of trade between members and prohibit the entry of other countries in their trade processes. The aim of the study is, therefore, to assess and analyze trade effects of regional economic integration with reference to Common Market for Eastern and Southern Africa (COMESA) using descriptive and econometric panel data analysis comprising time series and cross sectional data.

Following indicative IMF's Structural Adjustment Programs (SAP), a characteristic feature of developing countries including in the 1990s was the speed with which governments extricated themselves from direct ownership and management of business. Although the process was part of a global trend, it has tended to have large economic and political connotations in these countries than elsewhere (Bennel, 1997). This is because African governments had embraced state ownership of the formal economy much more strongly than other parts of the world. However, as noted in the works of Drum (1993), the structural adjustment programs that were embarked on in the 1980s presented an alternative approach based on less intrusive government, and with trade liberalization and integration seen as important for the success of economic reform.

Decades prior to Africa, many continents of the world had formed several regional integrations since the formation of the General Agreement on Tariffs and Trade (GATT), the current World Trade Organization (WTO), in 1947. To highlight a few, the European Union (EU), the North American Free Trade Area (NAFTA), the Association of South East Asian Nations (ASEAN), and the Southern American Southern Common Market (MERCOSUR) are some of the known and successful regional agreements.

Since 1990, most African countries agree to liberalize their trading system through integration by removing barriers to trade (Jones, 1994). SADC, ECOWAS, and IGAD are some of the African trade unions. Another regional integration, in which Ethiopia became a member, called COMESA was established in 1994 after passing several processes and years. As noted in the Document of COMESA Treaty (1994), the integration constitutes 19 member states that agreed to co-operate in developing their natural and human resources focusing on the formation of large economic and trading units to overcome barriers to individual states and has a strategy to economic prosperity.

The objective of regional agreement could range from economic to political, although it become a political economy initiative where commercial purposes are the means to achieve broader socio-political and security objectives. In either way, countries have benefited from regional integration, which reflected through economic growth, stable security, and rising standards of living for the peoples of the respective countries. (Myrdal G, 1957)

Theoretical and empirical literatures of Vamvakidis, A. (1999), Alemayehu Geda and Haile Kibret (2002), ECA (2011), and Forouton, F. (1993) show regional trading blocs would bring welfare gains to the participating countries through the effects of *trade creation* given some constraints. In regional trade agreements there is a concept of "***equal partners***" that grew out of the concept of providing reinforcement to the economies to all the member countries. Integration will help economies to maintain the balance of trade between member countries and prohibit the entry of others in their trade process. An important example, from developed economies, is the North American Free Trade Area (NAFTA), formed when the Canada – U.S Free Trade Agreement was extended to Mexico. Another vibrant would entail as to how EU has formed linkages incorporating the transition economies of Eastern Europe through the Europe agreements. (ibid)

As part of recent regional agreements in Africa, COMESA was signed on 5th November 1993 in Kampala, Uganda and was ratified a year later in Lilongwe, Malawi on 8th December 1994. Currently, COMESA has 20 (including South Sudan, which enter the group in 2011) member nations from northern, eastern, & southern parts of Africa. "It was established as *an organization of free independent sovereign states which have agreed to cooperate in developing their natural and human resources for the good of all their people*." (http//:www.comesa.int)

1.2 Problem Statement

According to ECA's study report on the establishment of inter-RECs Free Trade in Africa (2011: 28), with land area covering about 12 million square km, the COMESA region has a population of over 443.3 million, with an annual average import of around US$ 138.2 billion and export of US$ 114.8 billion that formed a major market place for internal and external trading. COMESA was established to improve the prosperity of the peoples of member nations through economic integration. However, economic, social, and political constraints facing almost all member countries contribute the lion's share in the implementation of economic integration. These constraints have also contributed to the stagnation of economic growth and development in the region.

The empirical literature highlights many works which focus on the problem of the economic growth process in Africa (e.g., Easterly and Levine, 1997; Bloom and Sachs, 1998; Collier and Gunning, 1999; Block, 2001; Bertocchi and Canova, 2002). However, little attention has been paid to the real effect of regional economic integration on bilateral and total trade, consequently on economic growth among the countries within an economic integration in the African continent, particularly of COMESA. On this subject, five papers (McCoskey, 2002; Paap et al., Carmignani, 2006; Cuñado and Pérez de Gracia, 2006; Carmignani, 2007) must be resented.

Despite a number of theoretical and empirical research contributions in recent years (Betina Dimaranan & Simon Mevel, 2008; Elin Weyler, 2004), the effects of regional economic integration on trade in the region using panel data analysis have not been investigated rigorously. A re-thinking and clear understanding of the factors underlying an REI's bilateral trade is needed as the global trade regime becomes more liberalized. The relationship between the overall bilateral trade of COMESA and its determinants as propounded in the standard models may not necessarily be the same with the bilateral trade balances. These existing research gaps, therefore, sparked off my enthusiasm and desire to undertake this research project to examine and reveal the effect of COMESA on member nations' bilateral trade. The main reason that justify the interest of study this subject is to investigate the effects of COMESA on bilateral trade of member nations.

1.3 Research Questions

In view of the above, this study has tried to give answers for the following leading questions:

- ➢ Have East African countries really benefited from Regional Economic Integration?

- ➢ What is the *'trade creation effect'* of COMESA?

- ➢ What is the *'trade diversion effect'* of COMESA?

- ➢ What is the level of inter-country trade in the region?

- ➢ What is the level of intra-trade of the region?

- ➢ What policies should COMESA member countries, like Ethiopia, adopt in order to benefit from the regional economic integration?

1.4 Objectives of the Study

The main objective of the study is to investigate the effects of COMESA on bilateral trade focusing on the trade aspect of regional economic integration.

The specific objectives include:

- ◆ Examining **trade diversion** and **trade creation** effects of COMESA; and
- ◆ Assessing the level of inter-trade and intra-trade level of the region.

1.5 Significance of the Study

The study is significant because of the following reasons. *First*, only very few researchers have tried to relate regional economic integration role in development and growth of nations, particularly in developing countries. So, filling the existing literature gap is the primary concern of the study. *Second*, it helps policy makers, particularly those who participate in international trade and Regional Economic Integrations (REGs), by providing more information in the area. *Third*, the study has multidimensional contribution to COMESA itself, which includes the use of the study outcome as a source of reference material, and for policy planning and decision making processes, etc. *Finally*, the study is expected to be used as a stepping stone for further research undertakings.

1.6 Limitation of the study

It is obvious that research work cannot totally be free from limitation. To this end, some limitations were also observed in this study. Apparent limitations were constraint with data inconsistencies, shortages of adequate and well-organized data, and financial constraints. Moreover, the countries included in the study had different macro-economic policies and level of participations in regional economic integration - more than half of COMESA member countries are members of another Regional Economic Integrations like ECA, AGOA, SADC, etc. In spite of these short comings, however, it was attempted to make the study as complete as possible.

1.7   Research Hypothesis

The study has the following hypothesis:

- Change in reporter (i) and partner (j) countries' GDP has a positive impact on bilateral.
- Trade effect of regional economic integration seems to be insignificant or negative in the case of COMESA.
- Physical distance (**DIS**) between COMESA member countries will have a negative impact on trade between them.
- There is positive relationship between COMESA's bilateral trade with former colonies.

1.8   Outcome of the Research

The major outcome of the research was that it provides holistic issues of regional economic integration and the effect of COMESA's regional integration on bilateral trade.

1.9   Organization of the Thesis

The research project consists of six chapters. The first chapter holds the introductory part of the study as presented above. The review of literature on the concept of regionalism and regional economic integration is discussed in chapter two. Looking at an overview of regional integration progress in Africa is also part of this section. Chapter three examines an overview of economic, political and institutional aspects of COMESA member states, and pays attention to both traditional and modern theory of regional economic integration as well as the effects of regional integration. It also assesses existing empirical findings on effects of regional economic integration to support the analytical methods used in this study. This is followed by empirical methodology used in chapter four. In this regard, this study looks at model specification, description of the data and variables used for the analysis of the model used for this study. Chapter five presents both descriptive and econometric results. Global and COMESA's performance and pattern of trade in the last decade as well as econometric model estimation result and interpretation of estimates are presented in the chapter. Finally, Chapter six gives conclusion and policy implication.

2. REGIONALISM AND REGIONAL ECONOMIC INTEGRATION

2.1 Regionalism

The study of regionalism is a hybrid and extension of sorts between international relations theory (IR) and international political economy (IPE). These theories are by and large state-centric concentrating on interstate relations. They usually originate from realism and liberalist traditions where states are concerned the most important actor driven by its power relations. Regionalism theory place more weight on mutual dependencies as driver of states' relationship to each other. While realist theories are preoccupied with conflict between countries, regionalism examines cooperation between countries, usually within a region.

However, there is no one model for the theory of regionalism but three major theoretical tendencies. First are the systemic theories that see regionalism as a result from reassurance from external forces. The second one consider interconnectedness and interdependencies as the driving forces for regionalism, while the third one cover the domestic level and explore for instance the impact of democracy. Presumably all three models are needed to understand the driving forces of regionalism. (Smith & Wally, 1997)

In the new regionalism theory, economic integration is not an objective in itself, but serves a higher objective of economic and political nature. Björn Hettne presents the new regionalism as a package of a multi-dimensional process of economics, politics, social and cultural parallel and interrelated processes. It will fill the purposes of new regional and political ambitions of territorial identity, political convergence, collective security and regional coherence. (Asante 1997)

Stubbs and Underhill (1994) identify three central elements of regionalism. First is a common historical experience within a geographically distinct group of countries – a region. Second is the boundary within which more intensive interactions take place – rationalization. Finally, it is the organized legal and institutional design of conscious policy that defines – regionalism. The three dimensions are different in different cases in both spatial variety and to level and extent.

Sheila Page (2001) defines regionalization as a process that a group of countries who have chosen integration by their own will and share a legal framework of cooperation, have extensive economic relations but also express the intention to continue this process by evolve or change. She agrees that countries in regions share common historic traits or background, similar characteristics and trade links, which, she warns, may have implications for the multilateral trade system. The importance of outsiders is considered small but political cohesion and security issues as strong reasons for economic integration. She defines what creates a common interest as geographical closeness, population structure, economic size, political congruence and a common background or sense of community. Therefore, countries with similar characteristics of resources, climate, organizational structure and religion for example have good prospects of becoming regionalized.

2.2   Regionalism in Africa

Regionalization in Africa is one aspect of the pan-African movement aiming to "unification of African forces against imperial and colonial domination". The purpose was that it should serve as an "integrative force as well as a movement of liberation." (Asante 1997 p. 32) With the creation of the Organization of African Unity (OAU) the liberation aspects of pan-African integration continentally lost momentum. Recently, African awareness of integration for growth and development has grown and economic integration has become a priority issue in African development strategy.

In the African economy and political evolution, regionalism might have other implications. Bignu WT Mutharica offers an interpretation where regionalism is a "Process whereby two or more countries in a particular area voluntarily go together to pursue common policies and objectives in matters of general economic development arrangement. In particular the economic field is of common interest to mutual advantage of all the participation's states". This considered true for regions and sub-regions in Africa. (Asante 1997 p.20)

Andrew Grant and Fredrik Söderbaum (2003) are correcting the prior neglect of Africa. Their works are rooted in the 'the new regionalism/regionalisms approach' (NRA). The approach goes beyond the state-centric focus and integrates discourses of human security and development. Consequently also non-state actors and 'informal regionalism' is considered. The approach is based on the critique against conventional regionalism that does not capture the process of regionalization in Africa. It regards the state as an actor also promoting its own interests and not normatively for public good as described in realist and liberalist theory. The NRA is more concerned with the dynamics of the regionalism process in various fields and at different levels rather than the institutions and trade policy that is usually considered in mainstream research. It is concerned with the content of regionalism rather than the form.

2.3   Regional Economic Integration

The issue of international trade and economic growth has gained substantial importance with the introduction of trade liberalization policies on the globe following the formation of GATT, the present WTO, in 1947. Since its formation, the developed and developing countries have experienced various economic integration to boost their economic growth from the benefit that international trade bring. According to UN working paper (2008), the degree of economic integration is categorized into five stages: ***Preferential Trade Area (PTA)***, ***Free Trade Area (FTA)***, ***Customs Union (CU)***, ***Common Market***, and ***Economic and Monetary Union***. In a PTA, members grant tariff preferences amongst them while in a FTA, members move towards zero or near-zero tariff level amongst them on substantially all trade. In a CU, members, in addition, have a common external tariff on products coming from outside the union. Even movement of factors of production is allowed in the case of common market. In the case of economic and monetary union, harmonization of various economic policies, including monetary policies, are also effected.

Theoretically, the stages of regional integration are adopted in sequence depicting deeper economic integration process. In reality, however, countries have embarked up on regional integration without, at times, following the strict sequence of different stages of integration. The main reason behind regional trade integration is imbibed in the theories of ***trade creation*** and ***trade diversion***. (Vamvakidis, A., 1999)

Regional cooperation is a way to get to regional integration. One key aspect of development strategies is the dynamic potential of regional cooperation and integration. Regional integration is a process in which states enter into a regional agreement in order to enhance regional cooperation through regional institutions and rules. Philippe De Lombaerde and Luk Van Langenhove, (2007), defined regional integration as a worldwide phenomenon of territorial systems that increase the interaction between their components and create new forms of organization, co-existing with traditional forms of state-led organization at the national level. It is a process by which states within a particular region increase their level of interaction with regard to economic, political, security, and social and cultural issues depending on the willingness and commitment of independent sovereign states to share their sovereignty.

2.3.1 Economic Integration in Africa

Africa is home to some 30 regional trade arrangements (RTAs), many of which are part of deeper regional integration schemes, (UNCTAD, 2011). African RTAs have largely been motivated by the continent's desire to promote growth through regional cooperation. Many African countries are landlocked small economies with inadequate infrastructure. Although Africa has 12 per cent of the world's population, it produces just 2 per cent of the world's output because its productivity is low. RTAs, by creating larger markets, are thought to enable African countries to exploit economies of scale and enhance domestic competition as well as to raise returns on investment and, hence, attract more foreign direct investment (FDI). On average, each African country belongs to four RTAs (World Bank, 2004) and on top of the list are many Eastern and Southern African countries.

2.3.2   Overlapping membership

There is overlap of membership among Regional Economic Communities (RECs) in African region to an extent unparalleled anywhere else in the world. For example, almost half of COMESA members are also members of SADC, whose membership is smaller than COMESA's. This may tend to weaken the integration process. It leads to costly competition (even for

attention and resources); conflict; inconsistencies in policy formulation and implementation; unnecessary duplication of functions and efforts; fragmentation of markets and restriction in the growth potential of the sub-region. Yet, as most RECs in the Eastern and Southern African region wish to move to a Customs Union (CU), member states with multiple memberships at present will have to strike the balance of the costs and benefits of belonging to one or another CU grouping.

Developing countries need regional grouping of institutions to perform economic decolonization but economic integration is a gradual process, (Asante 1997). Even though climate, infrastructure, and other factors are contributing to making coherent political action a rational choice several competing political jurisdictions are making it difficult. Notably national sovereignty is making cooperation difficult, Wood (2003).

3. ANALYSIS OF REGIONAL TRADE: THEORETICAL AND EMPIRICAL PERSPECTIVE

3.1 Theory of Regional Trade, Growth and Development

Trade theory of regional trade deals with national units with a single difference – whether each one is capable of affecting international relative prices. Low levels of development imply limited productive basis, hence limited capacity to generate savings, to produce foreign currency and therefore limited availability of resources to invest. The area in trade theory that deals more closely with these issues is the theory of protection, in its complementary dimensions of positive theory, normative prescriptions and the political economy of protection. Nevertheless the actual treatment of the effects of trade for output growth is not as exhaustively dealt with as the effects of growth on trade. (Vamvakidis, A., 1999)

Orthodox reasoning would argue that there is no first-best argument for maintaining trade barriers, as productive efficiency would be maximized when factors are allocated in accordance to the presumed (static) comparative advantages. Yet there is no totally open economy: the world does not correspond to 'first-best' presumptions. Orthodoxy would also argue that there is no case for trade preferential agreements, since multilateral opening would provide the best price signaling. Yet one sees an increasing number of agreements and an intensification of regional trade flows. (ECLAC, 2000).

De Melo, Panagariya and Rodrik (1993) suggested three channels through which regional integration could alter economic outcomes for the better. Firstly, a regional trade agreement entails a larger political community which might lessen the scope for adverse discretionary actions by governments, and in particular restrict the power of growth-retarding political interest groups, unless politically powerful lobbies can form alliances across countries. Secondly, when a regional institution is set up *ab initio*, better choices may be made than at the nation-state level, where policy-makers have to contend with existing institutions that accommodate factional interests. Thirdly, when participating countries have different economic institutions, policy-making at the regional level will entail a compromise between those institutions and may lead to a superior outcome for at least some member countries.

Closer integration of neighboring economies is seen as a first step in creating a larger regional market for trade and investment. This works as a spur to greater efficiency, productivity gain and competitiveness, not just by lowering border barriers, but by reducing other costs and risks of trade and investment. Bilateral and sub-regional trading arrangements are advocated as development tools as they encourage a shift towards greater market openness. Such agreements can also reduce the risk of reversion towards protectionism, locking in reforms already made and encouraging further structural adjustment.

3.2   Common Market for Eastern and Southern Africa (COMESA)

The COMESA is a regional integration grouping of African states (Burundi, Comoros, Democratic Republic of Congo, Djibouti, Egypt, Eritrea, Ethiopia, Kenya, Libya, Madagascar, Malawi, Mauritius, Rwanda, Seychelles, Sudan, Swaziland, Tanzania, Uganda, Zambia and Zimbabwe) which have agreed to promote regional integration through trade development and to develop their natural and human resources for the mutual benefit of all their peoples.

3.2.1   Historical Origin

The history of COMESA can be traced as far back as the mid-sixties. During this period, the United Nations Economic Commission for Africa (ECA) proposed the division of the continent in to four sub-regions: Eastern and Southern, Central, West, and North Africa. In October 1965, the ECA convened a ministerial meeting of the then politically independent states of eastern and southern Africa to consider proposals for the establishment of a mechanism for the promotion of sub-regional economic integration in Lusaka, Zambia. The meeting recommended the creation of an Economic Community of Eastern and Southern African states and recommended, also, an Interim Council of Ministers to achieve the objective. In May 1966 in Addis Ababa, Ethiopia, the Terms of Association to govern the interim arrangements before the signing of the formal Treaty were adopted and signed by Burundi, Ethiopia, Kenya, Madagascar, Malawi, Mauritius, Rwanda, Somalia, Tanzania, and Zambia. (COMESA Secretariat)

The collapse of the federations in Central Africa, embracing Nyasaland, Northern and Southern Rhodesia, (now Malawi, Zambia, & Zimbabwe, respectively) and Eastern Africa also known as British East Africa (present-day Kenya, Uganda, & The Great Rift Valley), the destabilization of the economies of the Southern African states by apartheid, and the recognition of Eastern and Southern African states to adopt self-sustaining development measures in all sectors, in 1970's, increase the need for a sub-regional economic arrangements. Thus, at a meeting of Ministers of Trade, Finance, and Planning in Lusaka, Zambia, during March 1978, a recommendation was made for the creation of a sub-regional Preferential Trade Area (PTA). This PTA, which would be designed to become a common market after 10 years, was decided on in the adoption of the Lusaka Declaration of Intent and Commitment to the Establishment of PTA for Eastern and Southern Africa. The PTA was finally established with the signing of a treaty on December 21, 1981, in Lusaka and its subsequent ratification on September 30, 1982.

As sited on the PTA Document, the objectives of the PTA are:-

➢ To promote cooperation and integration covering all areas of economic activity, particularly trade and customs, industry, transport and communications, agriculture and monetary affairs;

➢ To raise the standards of living of the people of the region by fostering closer relations among Member States;

➢ To create a common market by the year 2000 in order to allow the free movement of goods, capital and labor within the sub region ;and

➢ To contribute to the progress and development of all other African countries.

Towards attainment of these objectives, PTA strategy includes:

▪ Reduction and elimination of trade barriers on selected goods traded within the area;

▪ Cooperation in customs through simplification and harmonization of customs procedures and regulations;

- Introduction of rules of origin to determine which goods will receive preferential treatment;

- Granting of transit rights to all transporters when coming from or entering other Member States or third countries;

- Clearing and payments arrangements to promote trade in goods and services within the sub region;

- Cooperation to develop coordinated and complementary policies and systems in transport and communications;

- Cooperation in the field of industrial development in order to promote self sustained industrialization within the PTA, to expand trade in industrial products and to bring about structural transformation of industry for the purpose of fostering the overall social and economic development of Member States;

- Cooperation in the area of agricultural development so as to raise production and supply of food to coordinate the export of agricultural commodities to harmonize programmers in agricultural production develop land and water resources share agricultural services, technology and marketing and stabilize the prices of agricultural commodities in the sub region;

- Simplification and harmonization of trade documents and procedures in the area; and

- interventions to assist the least industrialized Member States e.g. through special consideration in allocating multinational industries. Thus, the PTA has a broad and challenging mandate.

The PTA treaty called for a gradual transition to a common market, and envisaged its transformation into a Common Market and the Treaty established COMESA was signed on 5th November 1993 in Kampala, Uganda. It was ratified a year later in Lilongwe, Malawi on 8th December 1994.

The process of economic integration in Eastern and Southern Africa has, therefore, not been episodic, but rather systematic, following a logical progression on step by step basis. Firstly, a Preferential Trade Area was established and operated for over a decade, which then transformed into a common market. The third phase will evolve the eventual establishment of the Economic Community.

3.2.2 COMESA's Priorities and Objectives

The establishment of COMESA binds together free independent sovereign States which have agreed to co-operate in exploiting their natural and human resources for the common good of all their peoples. To attain these goals COMESA recognized that peace, security and stability are basic factors in providing investment, development, trade and regional economic integration. Experience has shown that civil strives, political instabilities and cross-border disputes in the region have seriously affected the ability of the countries to develop their individual economies as well as their capacity to participate and take full advantage of the regional integration arrangement under COMESA.

Therefore, in pursuit of the aims and objectives stated in Article 3 of the COMESA Treaty, and in conformity with the Treaty for the Establishment of the African Economic Community signed at Abuja, Nigeria on 3rd June 1991, the member States of COMESA have agreed to adhere to the following principles: (COMESA Secretariat)

  i.   Equality and inter-independence of the member States;
 ii.   Solidarity and collective self-reliance among the member States;
iii.   Inter-State co-operation, harmonization of policies and integration of programmes among the member States;
 iv.   Non-aggression between the member States;
  v.   Recognition, promotion and protection of human and people's rights in accordance with the provisions of the African Charter on Human and People's Rights;
 vi.   Accountability, economic justice and popular participation in development;
vii.   The recognition and observance of the rule of law;

viii. The promotion and sustenance of a democratic system of governance in each member State;

ix. The maintenance of regional peace and stability through the promotion and strengthening of good neighborliness; and

x. The peaceful settlement of disputes among the member States, the active co-operation between neighboring countries and the promotion of a peaceful environment as a pre-requisite for their economic development.

COMESA is an all-embracing development organization involving co-operation in all economic and social Sectors. However, due to resources constraints, the implementation of activities and programmes will be prioritized to areas where the greatest impacts can be made. To that end, COMESA has adopted the following five priorities, as stated on the COMESA Treaty (1994):

- Significant and sustained increases in productivity in industry, manufacturing, processing and agro-industries to provide competitive goods as the basis for cross-border trade and to create more wealth, more jobs, and more incomes for the people of the region;

- Iincrease agricultural production, with special emphasis on the joint development of lake and river basins so as to reduce dependence on rain-fed agriculture and new programmes on food security at the provincial or district, national, and regional levels;

- Development of transport and communications infrastructures and services with special emphasis on linking the rural areas with the rest of the economy in each country as well as linking the member States

- New programmes for trade promotion, trade expansion, and trade facilitation especially geared to the private sector, so as to enable the business community to take maximum advantage of the Common Market, and

- Development of comprehensive, reliable and up to date information data bases covering all sectors of the economy including industry, energy, environment, agriculture, transport, communications, investment and finance, trade, health and human resources to form the basis for sound investment decisions and macro-economic policy formulation and programming.

COMESA, the 19-nation African trade bloc, launched its free trade area (FTA) on 31 October 2000 with nine of its members initially participating in the project, which dismantled trade barriers and guaranteed free movement of goods and services in the region. COMESA was pushing ahead with its plan to adopt a common external tariff and a customs union in December 2004 and to adopt a common currency for regional members by 2025. The target for the CU was initially 2004 but this target has already been missed and the new target is 2012. Article 45 of the COMESA Treaty provides that "*within the CU, custom duties and other charges of equivalent effect imposed on imports shall be eliminated*". Non-tariff barriers shall also be eliminated.

3.3 Empirical Analysis of RTAs in Developing Countries

The general experience of regional trade agreements in developing countries has been disappointing because they have been highly inward-looking and protectionist, with trade diversion exceeding trade creation. Typically, the existing ratio of trade to GDP has been high in the member countries and the ratio of trade with the rest of the world has also been high so that the scope for trade creation has been minimal and the potential for trade diversion has been great. Forouton (1993) concludes his study of regional integration in sub-Saharan Africa (SSA) by saying "*the structural characteristics of the SSA economies, the pursuit of import-substitution policies, and the very uneven distribution of costs and benefits of integration arising from economic differences among the partner countries, have thus far prevented any meaningful trade integration in SSA*".

Empirical work across developing countries as a whole supports this pessimistic conclusion as far as regional trade agreements are concerned, but finds that broad trade liberalization does lead to faster growth. Research by De Melo, Panagariya and Rodrick (1993) finds no evidence that regional integration among developing countries exerted a positive effect on income and growth, except in the case of the Southern African Customs Union (SACU) where favorable growth effects were found for Botswana, Lesotho and Swaziland. Vamvakidis (1999) takes 109 cases of participation in 18 regional trade agreements over the period 1950 to 1992 and concludes that their impact on the growth rate of members has been negative. Vamvakidis also takes 51 cases of broad liberalization and finds that countries have grown faster after liberalization.

In other work, Vamvakidis (1998) has tried to estimate the effect on growth of the size and openness of neighboring countries, and finds that countries which have neighbors with large open economies experience faster growth. Openness matters more than size. Being near a developed country also has a positive spill-over effect. In both respects, sub-Saharan Africa is at a disadvantage, consisting as it does of mainly small and highly protected economies, relatively remote from the industrialized economies of Europe and North America.

3.4 The Case of COMESA

Concerning COMESA's regional integration, different scholars have carried out controversial studies regarding the contribution of COMESA on different types of variables like economic growth, trade openness, export growth, and others. While some studies show insignificancy of the regional integration in boosting economic growth of the member states, others show significant and positive effect of COMESA on trade.

Alemayehu Geda and Haile Kibret (2002) have critically reviewed the issues of regional economic integration in Africa in general and tested the determinants of trade flows using the experience of COMESA. The study was carried out eight years after the ratification of COMESA document among members and two years after the creation of Customs Union. With this limitation, the conclusion drawn from the study reveals regional groupings has had insignificant effect on the flow of bilateral trade.

In contrast to the above findings, the AU reported substantial growth increases in intra-regional trade in the region from US $3.1billion in 2000 to US $13.7 billion in 2008. This study has further documented an increase in the three RECs' share of African trade in which the East African Community (EAC) share rose from 15.6% in 1995 to 21.7% in 2005 and to 33.4% in 2009. The corresponding figures for COMESA are 14.8%, 21.2% and 23.2% in 1995, 2005 and 2009 respectively. (ECA, 2011)

4. DATA AND METHODOLOGY

4.1   Data Used

Bilateral panel data of total 20 trading partners (19 COMESA members and rest of the world, ROW) were used in the analysis. The countries represented are Burundi, Comoros, Congo (DR), Djibouti, Egypt, Eritrea, Ethiopia, Kenya, Libya, Madagascar, Malawi, Mauritius, Rwanda, Seychelles, Sudan, Swaziland, Uganda, Zambia, and Zimbabwe. Export and import statistics over the sample period, 2000-2011, have been collected from *Direction of Trade Statistics (DOT)* database on the IMF website. The GDP data have been collected from *World Development Indicator (WDI)* database of the World Bank. The geographical distance ($dist_{ij}$) between the capital cities of trading partners are obtained from World Fact Book (CIA) and from www.distancefromto.net. Data for the dummy variables of border, language, and colony are obtained from World Penn Table (WPT). All observations are annual and were processed following required procedures.

In assessing the effects of COMESA on trade flows among member nations, the study relies on Gravity Model specification of economic integration. An augmented gravity model of panel data approach is used to determine the extent of intra regional trade bias and potential trade diversion effects.

4.2   Gravity Model: Theoretical Background

The gravity equation as a tool of explaining bilateral trade patterns was originally proposed by the seminar work of Jan Tinbergen (1962) that the size of bilateral trade flows between any two countries can be approximated by a law called the "gravity equation" by analogy with the Newtonian theory of gravitation. Just as planets are mutually attracted in proportion to their sizes and proximity, countries' trade in proportion to their respective GDPs and proximity.

Prominent models of international trade at that time include the Ricardian model, which relies on differences in technology across countries to explain trade patterns, and the Heckscher-Ohlin (HO) model that relies on differences in factor endowments among countries as the basis for trade. It was assumed then that standard Ricardian and HO models were incapable of providing a foundation for the gravity model. In the HO model, for example, country size has little to do with the structure of trade flows.

The gravity model is a popular formulation for statistical analyses of bilateral flows between different geographical entities. The gravity model of bilateral trade hypothesizes that the flows of trade between two countries is proportional to their gross domestic product (GDP) and negatively related to trade barriers between them. (www.wikipedia.com)

The gravity equation in the simplest form postulates that bilateral trade between two countries is directly proportional to economic size of the trading partners and inversely proportional to the distance between them (D) thus resembling the famous Newton's gravity law. The economic size of the partners is usually given by real income (Y).

In mathematical notation the simple gravity equation has the following structure:

$$\mathbf{TT_{ij}} = \mathbf{A}\frac{\mathbf{Y_i^{\alpha}Y_j^{\beta}}}{\mathbf{D_{ij}^{\phi}}}\dots\dots\dots\dots\dots\dots\dots\text{[1]}$$

where, TT_{ij} - total trade flows between country i and country *j*; Y_i, Y_j - market size of countries i and j, for instance given by their real income, D_{ij} - distance between counties i and j, A – some constant gravity parameter.

Log-linearising equation [1] above yields the following equation:

$$\mathbf{lnTT_{ij} = lnA + \alpha lnY_i + \beta lnY_j - \phi lnD_{ij}}\dots\dots\dots\dots\dots\dots\text{[2]}$$

In the basic form of the gravity equation above, trade between a pair of countries is modeled as an increasing function of their sizes and a decreasing function of the distance between the two countries.

4.3   Model Specification

The theoretical basis of the model used for this study is similar to that of Anderson and van Wincoop (2004), with some modifications. Anderson and Wincoop employ a version of the gravity model to analyze the effects of regional trade agreements (RTAs) on bilateral trade of trading countries. The basic idea of the gravity model is that bilateral trade flows are explained by three sets of variables:

    a) variables indicating total bilateral trade of exporting and importing countries;

    b) variables indicating total market size of the countries; and

    c) variables that hinder or engender trade between importing and exporting countries.

The basic gravity equation is frequently extended to incorporate many other factors affecting (stimulating or hindering) bilateral trade flows (WTO, 2012). These include both quantitative and qualitative variables such as incomes per capita, cultural and linguistic proximity, historical links, infrastructure, economic structures, access to sea, and various barriers to trade of trade partners. Generally, the gravity model implies that the larger, the more prosperous and the closer to each other are two countries, the more they are likely to trade.

Typically, empirical studies proxy trade costs with bilateral distance. However, a number of additional variables are also customarily used. These include dummies for islands, landlocked countries and common borders. They are used to reflect the hypotheses that transport costs increase with distance and that they are higher for landlocked countries and islands but are lower for neighboring countries. Dummies for common language, adjacency or other relevant cultural features such as colonial history are used to capture information costs. Search costs are probably lower for trade between countries whose business practices, competitiveness and delivery reliability are well known to one another.

As such, the researcher used Dummy variables such as border, language, colonial history, and COMESA membership in the basic gravity model to show the effect of regional economic integration of COMESA on bilateral trade of member nations. The following log-linear gravity model is formulated for the analysis of international trade:

$$\ln TT_{ijt} = \alpha_0 + \beta_1 \ln Y_{it} + \beta_2 \ln Y_{jt} + \beta_3 \ln N_{it} + \beta_4 N_{jt} + \beta_5 \ln(dis_{ij}) + \beta_6 \ln(bord_{ij}) + \beta_7 \ln(col_{ij}) +$$

$$\beta 8 \ln(langij) + \beta 9 \ln(OneInCOMij) + \beta 10 \ln(BothInCOMij) + \varepsilon ijt \quad \text{...........................[3]}$$

where,

TT_{ijt} - bilateral trade between countries i and j at time t;

α_0 - constant term common to all years and pairs of countries;

Y_{it}, Y_{jt} - GDP of country i & j at time t;

N_{it}, N_{jt} - Population of county i & j at time t;

dis_{ij} - distance between capital cities of country i and j in km;

$bord_{ij}$ - a dummy that takes a value of 1 if both countries share border, 0 otherwise;

col_{ij} - a dummy that takes a value of 1 if both were colonized by same country, 0 otherwise;

$lang_{ij}$ - a dummy that takes value 1 if official language of countries i & j are same, 0 otherwise

$OneInCOM_{ij}$ - a dummy that takes a value of 1 if one belong to COMESA, 0 otherwise;

$BothInCOM_{ij}$ - a dummy that takes a value of 1 if both belong to COMESA, 0 otherwise;

ε_{ijt} - log normal error term; and

$\ln$ - the natural logarithm operator

In the researcher's model specification dummy variable, "*OneInCOM$_{ij}$*" and "*BothInCOM$_{ij}$*", captures the total inter-regional and intra-regional trade bias, respectively, where a positive and significant coefficients indicates that member countries have switched to trade to members rather than non-members. This case is interpreted as ***trade creation***, the case where member countries preferring to trade with members rather than non-members. In contrary, if the parameters become negative and significant, it indicates that member countries prefer to trade with the rest of the world (ROW) rather than to members, the case of ***trade diversion***. If the dummy variables become significant with different signs, the decision would be based on comparative statistics.

The gravity model of the effect of regional trade agreements on total trade of member nations developed as Equation (3) has been examined empirically for the case of COMESA using data on inter-and intra-trade between COMESA member countries and rest of the world (ROW) during the 2000-2011 period.

4.4   Method of Analysis

In order to estimate the equation of bilateral trade of Equation (3), this study presents in log-linear form following a numbers of studies like Jan Tinbergen (1962) and Bahmani-Oskooee (1999). The attractive feature of the log-linear model is that the slope coefficient measures the elasticity of the dependent variable with respect to the independent variable. Both descriptive and econometric panel data methods are used in this study. The effect of regional trade agreement (COMESA) on total trade performance of member nations is analyzed, first, using descriptive data analysis in the form of averages, ratios, time trend, tables, and graph.

Then, and broadly, econometric framework is applied to show whether COMESA 'create' trade or 'divert' it. Panel data- comprising both time series and cross-sectional – are used as inputs for all the variables in the model. Fixed Effects Models (FEM) and Random Effects Models (REM) of panel analytic models are applied. To select the right estimator for the model, ***Hausman specification test*** has been performed to check whether classical OLS assumptions hold for the model and remedies are suggested. Then the bilateral trade model has been estimated using appropriate method(s).

4.5   Tests of the Model

Before carrying out panel data estimations, it is necessary to choose the appropriate estimation techniques for the model and test for the characteristics of specification. The likelihood ratio test for individual effects and Hausman test are performed to decide whether individual effects are treated as country-specific or period specific and for such effects choice are made between fixed or random. Tests for heteroscedasticity, autocorrelation and multicollinearity assist specification and estimation.

Thus, the following tests are first carried out to help choose the estimation techniques.

i. **Test for Individual Effects**

To test for the presence of individual effects the unrestricted specification of the model in equation (3) must be estimated first using a two-way fixed effects estimator. The joint significance of all of the effects as well as the joint significance of the cross-section effects (here, the country-specific effects) and the period effects are tested separately. Results show the joint significance of all these tests using sums-of-squares (F-test) and the likelihood function (Chi-square test).

In this study, impacts of the determinants of the model differ between country pairs due to heterogenous country characteristics. It is of interest to identify the country-specific effects and to explore the possibility of heterogeneity across countries. Since time series variability is deemed sufficient to allow reasonably precise estimates, we specify the static model by assuming that the parameters are constant over time and might be variable across countries. Cross-section specific (i.e. country-specific) effects of the model have also been performed and the presence of this type of effect is confirmed by the test result.

ii. *Test of Multicollinearity*

To check whether there is multicollinearity in the model the simple correlation coefficients between the explanatory variables have been examined. The values of all the correlation coefficients between explanatory variables are lower than 0.80. Following some authors (e.g., Studenmund, 2001) it is argued that the test does not detect the existence of severe multicollinearity of explanatory variables of the model.

iii. *Test of Heteroscedasticity*

In panel data analysis homoscedasticity is an underlying assumption. Consequently, the assumption of homoscedasticity in the panel sample data needs to be tested. To test the heteroscedasticity in the model the Park Test method has been adopted, which has good power of detecting heteroscedasticity of unknown form. The Park test of model (3) has detected the

existence of heteroscedasticity in the observations within group and in every observation. So, the most popular remedy for heteroscedasticity, called – heteroscedasticity corrected standard errors technique is used for estimation of the fixed effects of the model. It focuses on improving the estimation of the standard errors of estimators without changing the estimates of the slope coefficients.

iv.   Test for Serial Correlation

The estimation of the fixed effects model provide the Durbin-Watson (DW) test statistics at about 0.80 which indicates the presence of serial correlation in the residuals. To remedy the first-order serial correlation – the Generalized Least Squares (GLS) estimator – is used to yield unbiased and efficient parameter estimates. The conventionally better way to estimate GLS equations is the *AR(1)* method, which is a step-one process that estimates all the parameters as well as the coefficient of serial correlation. The *AR(1)* method estimates the model using iterative nonlinear regression techniques, which is more relevant to the model.

v. Fixed Effects versus Random Effects – The Hausman Test

In the estimation, balanced panel data have been used, and individual effects are included in the regressions. So it has to be decided whether they are treated as fixed or as random. A central assumption in random effects estimation is that the random effects are uncorrelated with the explanatory variables. One common method for testing this assumption is to employ the Hausman (1978) test to compare the fixed and random effects estimates of coefficients. Hausman test indicates whether the specific effects are correlated or not with the explanatory variables.

5. DATA ANALYSIS AND RESULTS

5.1 Descriptive Analysis

5.1.1 Global Trade Performance of COMESA

Member countries of the regional block, Common Market for East and Southern Africa (COMESA), are Burundi, Comoros, Congo (D.R), Djibouti, Egypt, Eritrea, Ethiopia, Kenya, Libya, Madagascar, Malawi, Mauritius, Rwanda, Seychelles, Sudan, Swaziland, Uganda, Zambia, and Zimbabwe. With population of more than 443 million, GDP of 498.7 billion US$, and total trade of 346.5 billion US$ in 2011 (IMF), the block comprises 6.4%, 0.7%, and 0.8% of the world's total population, GDP, and total trade, respectively. Table 5.1 through Table 5.3 summarizes this performance for the periods 2000 to 2011.

Table 5.1: COMESA's Global Performance: Population, GDP, and Total Trade for the years 2000-2011

	Year	2000	2001-2004	2005-2007	2008-2010	2011
Population	**World**	6,118	6,311	6,580	6,815	6,974
(millions)	**COMESA**	342	364	395	424	443.85
GDP (billion $)	**World**	32,334	36,349	50,352	60,804	70,020
	COMESA	204	195	302	468	498
Total Trade	**World**	15,986	18,358	29,959	36,061	44,212
(billion $)	**COMESA**	95	108	213	332	346

Source: Author's calculation based on COMSTAT DATABASE and IMF

As indicated on Table 5.1 above, while the World's population, GDP, and total trade were respectively 6.1 billion, 32.3 trillion dollar, and 16 trillion dollar in 2000, the figure for COMESA was 342 million, 204 billion, and 95 billion, respectively. By the year 2011, the World has performed two-fold and three-fold more than that of COMESA in GDP and total trade, respectively. Table 5.2 below show the growth rate of the three indicators for the periods 2000-2011.

Table 5.2: Average Growth of Population, GDP, and Total Trade for the years 2000-2011

		2000-2004	2005-2007	2008-2010	2011	2000-2011
Population	World	1.3%	1.2%	1.2%	1.2%	1.2%
	COMESA	2.5%	2.4%	2.4%	2.3%	2.4%
GDP	World	-0.6%	7.1%	9.7%	4.5%	7.4%
	COMESA	-2.7%	0.7%	20.6%	12.5%	9.0%
Total Trade	World	-2.7%	9.7%	14.7%	4.4%	10.4%
	COMESA	-2.1%	9.9%	24.7%	10.1%	13.2%

Source: Author's calculation based on COMSTAT Data Base and IMF, 2013

Between the years 2000 and 2011, GDP and Total Trade of the World grow at an average rate of 7.4% and 10.4%, respectively. On the same period COMESA has performed 9% and 13.2%. On contrary, population growth rate in COMESA region was double than the World. GDP and Trade should have grown double than World's. This gap is clearly depicted on graph 1 below. While World's GDP and Total Trade has a positive and growth trend, that of COMESA is horizontally drawn on the x-axis showing static or no change and acting like an entity stopped by red economic traffic light.
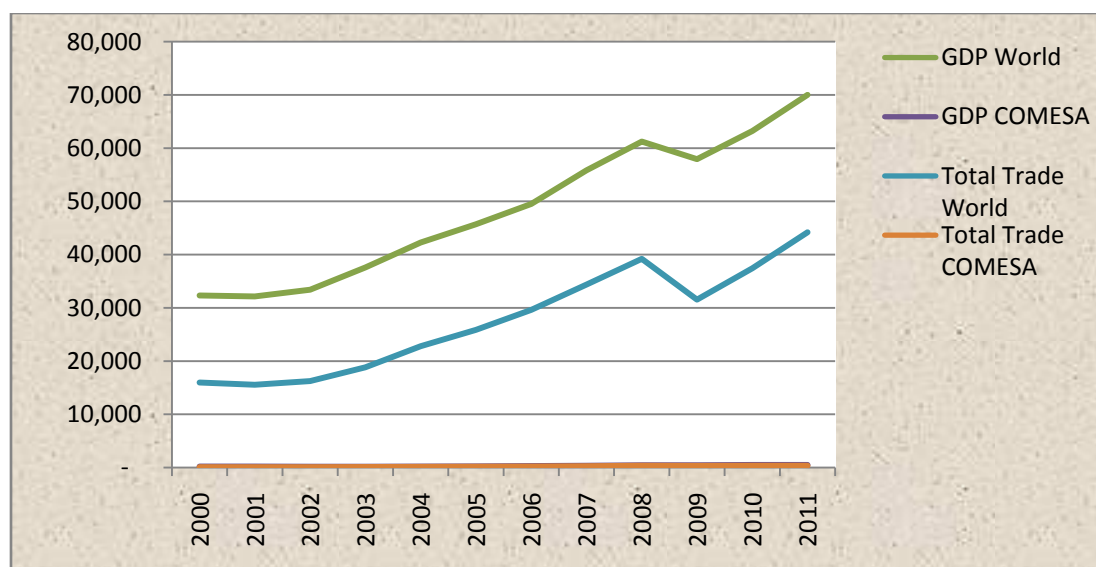
Figure 5.1: Growth of GDP and Total Trade of the World and COMESA, 2000-2011

This performance has several implications: first high population and low GDP growth leads to lower GDP per capita. Second, the slow growth and increment in total trade and GDP can be one of the several reasons that make 12 COMESA members to stay in Least Developed Countries (LDC) except Egypt, Kenya, Libya, Madagascar, Mauritius, Seychelles, and Zimbabwe according to UN's WDI. Finally, even though the amount of GDP and total trade has increased, growth of its share with the rest of the world (ROW) seems to be insignificant. Therefore, trade integration of COMESA is not supporting the pace of economic growth of member nations.

COMESA is a small player in world trade. Table 5.4 shows the shares of trade with COMESA to the total trade of the World. The aggregate COMESA region constitute less than one percent of World's total trade and GDP.

Table 5.3: COMESA's share of World's Population, GDP, and Total Trade for the years 2000-2011

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Average
Population	5.6%	5.7%	5.7%	5.8%	5.9%	5.9%	6.0%	6.1%	6.1%	6.2%	6.3%	6.4%	**6.01%**
GDP	0.6%	0.6%	0.5%	0.5%	0.5%	0.5%	0.6%	0.7%	0.7%	0.8%	0.8%	0.7%	**0.63%**
Total Trade	0.6%	0.6%	0.6%	0.6%	0.6%	0.7%	0.7%	0.8%	0.9%	1.0%	0.9%	0.8%	**0.73%**

Source: Author's calculation based on COMSTAT Data Base, WTO, and IMF, 2013

In the year 2000 the share of COMESA's population was 5.6%; both GDP and total trade share were 0.6%. In 2011, the World has performed 70 trillion $ GDP and 44.2 trillion $ total trade with population of 6.97 billion. Population, GDP, and total trade of COMESA share reached 6.4%, 0.7%, and 0.8%. In the twelve years span, while the world's share of population has increased by 0.8% for COMESA, GDP and Total trade share has increased only by 0.1% and 0.2%, respectively.

5.1.2 COMESA's patterns of trade

In the context of regional trade arrangements, members of the same bloc exporting similar products are less likely to benefit from the arrangement as trading within them will be limited. The essence of trade creation within a regional bloc lies on diversified export potentials among members of the region. Economists have used imports and exports values to generate different indicators as a means to find out whether there exist potential trade benefits between trading partners. As COMESA's trade pattern is concerned, which can be explained using export shares, the shares of COMESA members' exports to the COMESA block has increased in 2011 compared to 2000, with a peak in the year 2011. The share of intra exports to total exports of the COMESA bloc is depicted below.

Table 5.4: Share of COMESA intra exports as a percentage of COMESA total exports

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
COMESA intra export (Billion $)	1.59	1.50	2.55	2.32	2.33	3.27	3.33	4.95	7.63	7.23	9.85	10.46
COMESA total exports (Billion $)	45.23	43.30	42.64	53.55	68.56	86.11	108.0	134.59	171.48	159.88	171.75	144.69
Share of intra exports to total exports	3.5%	3.5%	6.0%	4.3%	3.4%	3.8%	3.1%	3.7%	4.4%	4.5%	5.7%	7.2%

Source: Author's calculation based on COMSTAT Data Base, WTO and IMF, 2013

As shown on Table 5.4 above, though the share rises from year to year, its growth is minimal compared to export to the rest of the world. This can be explained by the fact that COMESA's internal trade is very minimal as a share of COMESA trade to the world. An export to non-COMESA countries (ROW) is observed to have been very influential to the economic development of the countries. This is principally due to the large export volume from COMESA to EU and USA under the Lomé Convention/ Cotonou Agreement and the AGOA preferential regime. Moreover, the fact that most export items of these nations being agricultural raw materials or similar export item component contribute largely to the minimal export share in intra trade within COMESA block.

Another feature regarding the trade patterns in COMESA is with the product composition of trade. The COMESA countries export mainly unprocessed agricultural and mineral products and import manufactured goods from their trading partners. The issue of non-complementarity of the trade structure in COMESA has often been cited as an obstacle to expansion of intra-regional trade.

5.2 Econometric Framework

As described in the previous chapter, the model we are going to analyze looks:

$$\mathbf{lnTT_{ijt}} = \alpha_0 + \beta_1 lnY_{it} + \beta_2 lnY_{jt} + \beta_3 lnN_{it} + \beta_4 N_{jt} + \beta_5 ln(dis_{ij}) + \beta_6(bord_{ij}) + \beta_7(col_{ij}) +$$
$$\beta 8ln(langij) + \beta 9(OneInCOMij) + \beta 10(BothInCOMij) + \varepsilon ijt \dots\dots\dots\dots\dots\dots\dots[3]$$

The above model was employed in an attempt to measure the effect of COMESA on intra-COMESA trade over the period 2000-2011 using a panel data analysis. The purpose of this model is to identify the factors that determine bilateral trade in COMESA's economic block and estimate trade effect of COMESA using panel data analysis. Quantitative variables (GDP, population & Distance) as well as qualitative variables (border, language, nature of colony, membership to COMESA) were included in the model as explanatory variables. ε_{ijt} is disturbance term and assumed to have zero mean and constant variance. α_i and β_i are unknown parameters to be estimated. The regional dummy which show COMESA membership (**OneInCOM$_{ij}$** and **BothInCOM$_{ij}$** variables included in equation [3] above) have been introduced as explanatory variable in the model. This dummy variable can serve the purpose of capturing the effects of trade agreements other than intra trade agreements.

5.2.1 STATA Results

The analysis start by running the cross section regressions as a preliminary exercise (averaged over the sample period 2000-2011). Since no severe multicollinearity is found among the explanatory variables, the model of equation (3) above is estimated taking all variables for all 19 countries for 12 year, the number of observation is 4,560. The obtained Fixed Effect (FE) and Random Effect (RE) results are shown on the following two tables.

Table 5.5 Fixed Effect Regression Result

```
Fixed-effects (within) regression              Number of obs      =      4560
Group variable: pairid                         Number of groups   =       380

R-sq:  within  = 0.0605                         Obs per group: min =        12
       between = 0.3800                                        avg =      12.0
       overall = 0.3069                                        max =        12

                                               F(2,4178)          =    134.60
corr(u_i, Xb)  = 0.0401                         Prob > F           =    0.0000
```

lntt	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
lnyi	.9555639	.1861133	5.13	0.000	.5906828	1.320445
lnyj	.9522667	.1861133	5.12	0.000	.5873855	1.317148
lndij	0	(omitted)				
col	0	(omitted)				
bothincom	0	(omitted)				
_cons	-30.76875	2.657046	-11.58	0.000	-35.97797	-25.55952
sigma_u	4.3237751					
sigma_e	3.0202034					
rho	.67208038	(fraction of variance due to u_i)				

```
F test that all u_i=0:     F(379, 4178) =    24.55              Prob > F = 0.0000
```

Source: Author's regression result using STATA 11.0

Table 5.6 Random Effect Regression Result

```
Random-effects GLS regression               Number of obs      =       4560
Group variable: pairid                      Number of groups   =        380

R-sq:  within  = 0.0605                      Obs per group: min =         12
       between = 0.4639                                     avg =       12.0
       overall = 0.3716                                     max =         12

                                            Wald chi2(5)       =     593.04
corr(u_i, X)   = 0 (assumed)                Prob > chi2        =     0.0000
```

lntt	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
lnyi	.9006164	.0754938	11.93	0.000	.7526512	1.048582
lnyj	.9360495	.0756466	12.37	0.000	.7877848	1.084314
lndij	-1.614211	.3215556	-5.02	0.000	-2.244448	-.9839733
col	2.304063	.4577783	5.03	0.000	1.406834	3.201292
bothincom	-4.332843	.91829	-4.72	0.000	-6.132659	-2.533028
_cons	-13.16627	3.978585	-3.31	0.001	-20.96415	-5.368384
sigma_u	3.9433994					
sigma_e	3.0202034					
rho	.6302846	(fraction of variance due to u_i)				

Source: Author's regression result using STATA 11.0

Table 5.5 & 5.6 above show the estimates of fixed effect and random effect models. With panel data, the issue is whether to use a random effects or the fixed effects estimation approach. Accordingly, to determine which of these estimators are more appropriate to use in the present case, both a fixed effects (FE) and a random effects (RE) estimator were initially used to estimate the equation as shown on Table 5.5 & Table 5.6 and the Hausman specification test was performed to evaluate the assumption in the random effects model. The Hausman test tests the null hypothesis that the coefficients estimated by the efficient random effects estimator are the same as the ones estimated by the consistent fixed effects estimator. The Hausman test result is shown below.

Table 5.7: Hausman Test for FE and RE Panel Data Models

```
            ─── Coefficients ───
             (b)          (B)          (b-B)      sqrt(diag(V_b-V_B))
            fixed       random       Difference          S.E.

    lnyi   .9555639     .9006164      .0549476          .1701143
    lnyj   .9522667     .9360495      .0162171          .1700464
```

```
                    b = consistent under Ho and Ha; obtained from xtreg
         B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

            chi2(2) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                    =        1.64
            Prob>chi2 =     0.4394
```

Though both models supports the efficiency of estimators, the Hausman test can not reject (Prob $> \text{chi}^2 = 0.4394$) the null hypothesis that the coefficients of FE and RE models are equal. Hence the estimates of RE model are more consistence than the FE model. The R^2 value also supports the selection of RE estimates.

5.2.2 Data Analysis & Interpretation

As indicated above, the Hausman's test favors the random effects approach as the null hypothesis was rejected. From the RE result the following model is derived for the COMESA members to calculate the potential trade if they are having similar inter- and intra-regional trade integration success. The first regression result gave us the following model. (Detail result is attached on Annex 2)

$$TT_{ijt} = -12.8218 + 0.8098Y_{it} + 0.8899Y_{jt} + 0.1053N_{it} + 0.1291N_{jt} - 1.6661(dist_{ij}) - 0.4906(bord_{ij}) - 0.5834(lang_{ij}) + 2.6485(col_{ij}) - 0.8866(OneinCOM_{ij}) - 4.8379(BothinCOM_{ij})$$

Variables	Coefficient	Standard Error	z-value
Constant	-12.8218	5.3203	-2.41
lnY_i	0.8098	0.1402	5.77
lnY_j	0.8899	0.1421	6.26
lnN_i	0.1054	0.1532	0.69
lnN_j	0.1291	0.1521	0.85
$lndis_{ij}$	-1.6661	0.3819	-4.36
border	-0.4907	0.7869	-0.62
language	-0.5834	0.5245	-1.11
colony	2.6486	0.5099	5.19
OneInCOM	-0.8866	2.0874	-0.42
BothInCOM	-4.8379	1.5219	-3.18
R^2		0.3751	
Durbin-Watson		1.4658	

However, the parameters of exporter (i) and importer (j) counties *population* and dummy variables- **border**, **language**, and **OneInCom**, seem to be insignificant (the shaded boxes) in the model since they experience high standard error with low z-value. Therefore, omitting these variables from the model, and regressing the model again as depicted on Table 5.5 and Table 5.6 above, we reach on the following RE regression model where figures in bracket represent their respective standard errors.

$$\mathbf{TT_{ijt}} = -13.1663 + 0.9061\mathbf{Y_{it}} + 0.9360\mathbf{Y_{jt}} - 1.6142(\mathbf{dist_{ij}}) + 2.3041(\mathbf{col_{ij}}) - 4.3328(\mathbf{BothinCOM_{ij}})$$
$$\qquad (3.9786) \quad (0.0755) \quad (0.0756) \quad (0.3215) \quad (0.4578) \quad (0.9183) \quad \ldots\ldots\ldots\ldots\ldots(4)$$
$$R^2 = 0.37$$

As this model estimates the variables in natural logarithm, the coefficients of variables estimate the elasticity. According to the definition of elasticity, estimated coefficients can be interpreted as percentage change of trade due change in different variable. In log-log model regression analysis, the interpretation of dummy variables is not as the standard OLS model. In such case, we subtract the parameters from 1 and take antilog of the dummy slope coefficients and multiply the result by 100 to get the percent change in the dependent variable (bilateral trade in our case) for a percentage change in the dummy variable(s).

Major variables are found significant and the signs are as expected. Coefficients for GDP are positive for both reporting country and partner country, while coefficient for distance between them is negative. This finding is symmetric to the theory that higher GDP increases trade, while higher distance creates resistance. All these coefficients are significant at 5% level. Accordingly, a 1% change in reporting country's GDP would change 0.91% trade between reporting country and partner country; while 1% change in partner country's GDP would change 0.93% trade between them. Change in both GDP and trade would occur in same direction. Secondly, 1% change in distance between exporter and importer countries would change bilateral trade by about 1.6% in opposite direction. Thirdly, a percentage change in bilateral trade with colonial ties would rise bilateral trade of the bloc by about 2.3%. This implies that trade in the region is influenced by colonial history. Countries in the region trade more with a distant country which directly or indirectly control them politically in the past or at present.

Of interest to this research, the effect of COMESA on intra trade, as revealed by the significant and negative parameter of the dummy variable (***BothInCOM***) shows that the COMESA agreements had '***diverted***' the intra trade to the rest of the world (ROW). In contrast to the argument and belief that regional economic integration would '***create trade***' and thus rise the economic growth of member nations, the current finding show '***trade diversion***' from the region. It should be noted that this might be due to various issues encircling COMESA like similarity of export items, overlapping membership, poor private sector participation in the economy, and many more.

6. CONCLUSION AND RECOMMENDATION

6.1 Conclusion

Throughout these chapters, certain conclusions have been drawn with respect to regional economic integration and its trade effect in the case of Common Market for Eastern and Southern Africa (COMESA). The purpose of the present section is to draw together the more important and general conclusions that emerge from the experience examined in the previous sections.

This paper attempted to examine the concept of regionalism and its trade effect by taking COMESA as a case study. Regionalism refers to the process whereby two or more countries in a particular area voluntarily go together to pursue common policies and objectives in matters of general economic development arrangement. In Africa regionalization becomes one aspect of the pan-African movement since the foundation of OAU. Africa is home to some 30 regional trade arrangements (RTAs), many of which are part of deeper regional integration schemes. Among the RTAs that have proliferated in Africa the COMESA is a preferential trading area consisting of 20 member countries including South Sudan (2011). It was established in 1994 with objective to co-operate in exploiting their natural and human resources for the common good of all their peoples.

The study examines inter- and intra-trade level of the region as well as *trade diversion* and *trade creation* effects of COMESA using descriptive and econometric data analysis. During the study period (2000-2011), GDP and Total Trade of COMESA region has grow at an average rate of 9% and 13.2%, respectively. However, while COMESA's world share in population has increased by 0.8%, its GDP and Total trade share has increased only by 0.1% and 0.2%, respectively. This implies that the share of trade with the rest of the world (ROW) seems to be insignificant. As COMESA's trade pattern is concerned, which can be explained using export shares, inter-regional export of the bloc seems to be very minimal as compared to export to the rest of the world.

In the econometric method, the study applied the standard Gravity Model of panel data analysis. The gravity model developed in this study captures the effects of all the factors influencing bilateral trade in COMESA bloc as suggested by conventional Gravity Model. In the standard models, factors like GDP, Population, geographical distance, colonial background, common language, border, and the situation of political stability determine the trading pattern and hence the trade balance of a country in bilateral trade with partners. GDP of exporter (i) and importer (j) country, geographical distance between capital cities, colonial ties, and COMESA agreement are found to be the factors that affect bilateral trade in our case. The choice of whether to use Random Effect (RE) or Fixed Effect (FE) estimation methods has been done using the Hausman test. The test favors estimates of RE model as consistence than the FE model.

The empirical results provide some useful insights into the trade effect of COMESA on member nations. The findings are symmetric to the theory that higher GDP increases trade, while higher distance creates resistance. Moreover, there is a strong relationship between bilateral trade and colonial ties.

Another important feature of the regression result is the negligible trade creation resulting from COMESA as demonstrated by the negative RTA dummy variable, ***BothInCOM***. The regression results provide preliminary evidence that the COMESA agreement had negative trade benefits to member nations during the study period. In other words, the trading bloc's inter-trade to the rest of the world (ROW) observed to have been very influential to the economic development of the countries. This finding is in contrast to the argument that RTA's would '***create trade***' and increase economic growth of member nations.

COMESA has not been able to implement its ambitious agenda of regional integration and economic development yet. The trading bloc show only low levels of intra-regional trade and limited political will of their members to move towards deeper economic integration. The reasons for this are complex, starting from a non-complementary trade structure and a low industrialization degree, thus limiting the expansion of intra-regional trade, to very different economic development degrees among member countries, which has resulted, in addition to

protectionist attitudes, in polarization effects. Furthermore, supply-side constraints, such as poor infrastructure of most member countries, cumbersome customs procedure, limited production capacities, being small and highly protected economies, and relatively remoteness from the industrialized economies of Europe and North America have contributed to limited intra-regional trade in COMESA.

There is overlap of membership among Regional Economic Communities (RECs) in African region to an extent unparalleled anywhere else in the world. For example, almost half of COMESA members are also members of SADC, whose membership is smaller than COMESA's. This may tend to weaken the integration process. It leads to costly competition (even for attention and resources); conflict; inconsistencies in policy formulation and implementation; unnecessary duplication of functions and efforts; fragmentation of markets and restriction in the growth potential of the sub-region. Thus, countries' need to take integration not only as lingering pan-African ideology but more importantly as economic survival strategy aimed at combating marginalization from the global economy.

6.2 Policy Recommendation

Regional Trade Agreements (RTAs) have become very fashionable in the form of Free Trade Areas and Customs Unions in recent decades. Generally, RTAs between competitive and/or complementary economies have resulted in positive static and dynamic benefits of trade for the participating countries. Prominent success models include the EU, NAFTA; MERCOSUR, APEC, ASEAN, and SACU. However, many RTAs between developing countries, such as COMESA, are not between economies that have these characteristics, and the results have been disappointing. The trading patterns of the COMESA members indicate that trade linkages are relatively weak. Therefore, one cannot really characterize the economies as either complementary or competitive.

In line with the above conclusion and findings, the researcher forwards the following recommendations to achieve the benefits or RTAs, particularly COMESA.

➤ Regional integration may bring some benefits if wisely designed, but more important is to get right the growth fundamentals of high level investment in physical and human capital, good governance, and a structure of production that gives scope for scale economies and high productivity which at the same time produces goods, the world demand for which is rising fast.

➤ The impact of trade liberalization on economic growth works mainly through improving efficiency and stimulating exports which have powerful effects on both supply and demand within an economy. It is vital that COMESA sustain the implementation of a comprehensive package of macroeconomic and structural reforms. This would include:

♦ Strong governance policies to improve transparency and accountability and eliminate corruption;
♦ Strengthening the efficiency of the financial system;
♦ Labor market reforms to increase labor market flexibility;
♦ Prudent fiscal policies to ensure that adequate resources are devoted to infrastructural development and improving the levels of education and health.

➤ The effect of preferential trade agreements on trade and welfare depends on the relative size of ***trade creation*** and ***trade deviation effects***. Policy-makers preparing to sign a preferential trade agreement should have access to an assessment of the likely effect of the agreement, or at least to analyses of previous relevant experiences. While the effects of tariff changes are relatively straightforward, the effects of non-tariff measures depend on the specific measure and can vary substantially depending on the circumstances.

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ANNEXES

Annex 1: Summary & Description of Data Used in the Econometric Work

1.1 Description of Data Used in the Econometric Work

```
              storage  display    value
variable name  type    format     label     variable label
────────────────────────────────────────────────────────────────

country        byte   %8.0g                 COMESA member countries
year           int    %8.0g                 Years under consideration
xit            double %8.0g                 Total trade of country i
gdpit          double %8.0g                 GDP of country i
gdpjt          double %8.0g                 GDP of country j
gdprowt        double %8.0g                 GDP of rest of the world (ROW)
nit            long   %8.0g                 Population of i
njt            long   %8.0g                 Population of j
nrowt          double %8.0g                 Population of ROW
btij           long   %8.0g                 Bilateral trade b/n i & j
disij          int    %8.0g                 Distance b/n capital cities of i & j in km
rdi            float  %9.0g                 Dummy variable for COMESA membership
```

1.2 Data Summary

Variable	Obs	Mean	Std. Dev.	Min	Max
country	4332	9.947368	5.539722	1	19
year	4332	2005.5	3.452451	2000	2011
xit	4332	1.10e+10	2.09e+10	9.95e+07	1.23e+11
gdpit	4332	1.66e+10	3.29e+10	2.02e+08	2.30e+11
gdpjt	4104	1.66e+10	3.29e+10	2.02e+08	2.30e+11
gdprowt	4332	4.81e+13	1.25e+13	3.19e+13	6.95e+13
nit	4332	2.06e+07	2.39e+07	81131	8.47e+07
njt	4104	2.06e+07	2.39e+07	81131	8.47e+07
nrowt	4332	6.15e+09	2.36e+08	5.78e+09	6.53e+09
btij	3544	3.33e+07	1.24e+08	4	1.85e+09
disij	4104	2776.397	1476.79	136	7541
rdi	4332	.9473684	.2233227	0	1

1.3 Country and time dummies

Country Dummy   *Time Dummy*

Exporter	Freq.	Percent	Cum.
BUR	240	5.00	5.00
COM	240	5.00	10.00
CON	240	5.00	15.00
DJB	240	5.00	20.00
EGY	240	5.00	25.00
ERI	240	5.00	30.00
ETH	240	5.00	35.00
KEN	240	5.00	40.00
LIB	240	5.00	45.00
MAD	240	5.00	50.00
MAL	240	5.00	55.00
MAU	240	5.00	60.00
RWN	240	5.00	65.00
SEY	240	5.00	70.00
SUD	240	5.00	75.00
SWZ	240	5.00	80.00
UGN	240	5.00	85.00
ZAM	240	5.00	90.00
ZIM	240	5.00	95.00
ZROW	240	5.00	100.00
Total	4,800	100.00	

year	Freq.	Percent	Cum.
2000	400	8.33	8.33
2001	400	8.33	16.67
2002	400	8.33	25.00
2003	400	8.33	33.33
2004	400	8.33	41.67
2005	400	8.33	50.00
2006	400	8.33	58.33
2007	400	8.33	66.67
2008	400	8.33	75.00
2009	400	8.33	83.33
2010	400	8.33	91.67
2011	400	8.33	100.00
Total	4,800	100.00	

Annex 2: Regression Result of the Gravity Model

2.1 Fixed Effect Regression result for all variables in the initial model

```
FE (within) regression with AR(1) disturbances   Number of obs      =      4180
Group variable: pairid                           Number of groups   =       380

R-sq:   within  = 0.0358                          Obs per group: min =        11
        between = 0.3364                                         avg =      11.0
        overall = 0.2682                                         max =        11

                                                  F(4,3796)          =     35.20
corr(u_i, Xb)  = -0.8863                           Prob > F          =    0.0000
```

lntt	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
lnyi	.3622623	.3235707	1.12	0.263	-.2721269	.9966516
lnyj	.3671741	.3235707	1.13	0.257	-.2672152	1.001563
lnni	3.539482	1.891957	1.87	0.061	-.1698689	7.248832
lnnj	3.31812	1.891957	1.75	0.080	-.3912307	7.02747
lndij	0	(omitted)				
bord	0	(omitted)				
lang	0	(omitted)				
col	0	(omitted)				
oneincom	0	(omitted)				
bothincom	0	(omitted)				
_cons	-114.7071	21.49772	-5.34	0.000	-156.8553	-72.55894

rho_ar	.26815303	
sigma_u	9.742925	
sigma_e	2.9332477	
rho_fov	.91689303	(fraction of variance because of u_i)

```
F test that all u_i=0:      F(379,3796) =     12.94              Prob > F = 0.0000
modified Bhargava et al. Durbin-Watson = 1.465809
Baltagi-Wu LBI = 1.65421
```

2.2 Random Effect Regression result for all variables in the initial models

```
RE GLS regression with AR(1) disturbances     Number of obs    =      4560
Group variable: pairid                        Number of groups =       380

R-sq:  within  = 0.0609                        Obs per group: min =        12
       between = 0.4685                                       avg =      12.0
       overall = 0.3751                                       max =        12

                                              Wald chi2(11)    =    506.67
corr(u_i, Xb)      = 0 (assumed)              Prob > chi2      =    0.0000
```

lntt	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
lnyi	.8098244	.1402402	5.77	0.000	.5349586	1.08469
lnyj	.8899499	.1421376	6.26	0.000	.6113654	1.168534
lnni	.1053583	.1531763	0.69	0.492	-.1948617	.4055783
lnnj	.129114	.1520858	0.85	0.396	-.1689688	.4271967
lndij	-1.666143	.381962	-4.36	0.000	-2.414775	-.9175116
bord	-.4906716	.7869447	-0.62	0.533	-2.033055	1.051712
lang	-.5834087	.5244902	-1.11	0.266	-1.611391	.4445732
col	2.648585	.5099161	5.19	0.000	1.649168	3.648002
oneincom	-.8866446	2.087382	-0.42	0.671	-4.977838	3.204549
bothincom	-4.837959	1.521889	-3.18	0.001	-7.820806	-1.855112
_cons	-12.82179	5.320334	-2.41	0.016	-23.24945	-2.394124

rho_ar	.26815303	(estimated autocorrelation coefficient)	
sigma_u	3.8297603		
sigma_e	2.9637444		
rho_fov	.62543861	(fraction of variance due to u_i)	
theta	.71587529		

```
modified Bhargava et al. Durbin-Watson = 1.465809
Baltagi-Wu LBI = 1.65421
```

2.3 Fixed Effect Regression result after removal of insignificant variables

```
Fixed-effects (within) regression              Number of obs      =      4560
Group variable: pairid                         Number of groups   =       380

R-sq:  within  = 0.0605                         Obs per group: min =        12
       between = 0.3800                                        avg =      12.0
       overall = 0.3069                                        max =        12

                                               F(2,4178)          =    134.60
corr(u_i, Xb)  = 0.0401                         Prob > F           =    0.0000
```

lntt	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
lnyi	.9555639	.1861133	5.13	0.000	.5906828	1.320445
lnyj	.9522667	.1861133	5.12	0.000	.5873855	1.317148
lndij	0	(omitted)				
col	0	(omitted)				
bothincom	0	(omitted)				
_cons	-30.76875	2.657046	-11.58	0.000	-35.97797	-25.55952

sigma_u	4.3237751				
sigma_e	3.0202034				
rho	.67208038	(fraction of variance due to u_i)			

```
F test that all u_i=0:     F(379, 4178) =    24.55          Prob > F = 0.0000
```

2.4 Random Effect Regression result after removal of insignificant variables

```
Random-effects GLS regression                  Number of obs      =      4560
Group variable: pairid                         Number of groups   =       380

R-sq:  within  = 0.0605                         Obs per group: min =        12
       between = 0.4639                                        avg =      12.0
       overall = 0.3716                                        max =        12

                                               Wald chi2(5)       =    593.04
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0000
```

lntt	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
lnyi	.9006164	.0754938	11.93	0.000	.7526512	1.048582
lnyj	.9360495	.0756466	12.37	0.000	.7877848	1.084314
lndij	-1.614211	.3215556	-5.02	0.000	-2.244448	-.9839733
col	2.304063	.4577783	5.03	0.000	1.406834	3.201292
bothincom	-4.332843	.91829	-4.72	0.000	-6.132659	-2.533028
_cons	-13.16627	3.978585	-3.31	0.001	-20.96415	-5.368384

sigma_u	3.9433994				
sigma_e	3.0202034				
rho	.6302846	(fraction of variance due to u_i)			

2.5 Hausman Test for Fixed Effect Vs Random Effect model

```
                ──── Coefficients ────
              (b)          (B)          (b-B)      sqrt(diag(V_b-V_B))
             fixed       random       Difference          S.E.

    lnyi    .9555639    .9006164      .0549476         .1701143
    lnyj    .9522667    .9360495      .0162171         .1700464
```

```
                b = consistent under Ho and Ha; obtained from xtreg
        B = inconsistent under Ha, efficient under Ho; obtained from xtreg


   Test:  Ho:  difference in coefficients not systematic

            chi2(2) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                    =        1.64
          Prob>chi2 =      0.4394
```

2.6 Regression with individual countries for importer and exporter

```
note: lnyi omitted because of collinearity
note: exporter_19 omitted because of collinearity
note: exporter_20 omitted because of collinearity
note: importer_19 omitted because of collinearity
note: importer_20 omitted because of collinearity
note: year_12 omitted because of collinearity

Random-effects GLS regression              Number of obs      =        4560
Group variable: pairid                     Number of groups   =         380

R-sq:  within  = 0.8155                     Obs per group: min =          12
       between = 1.0000                                    avg =        12.0
       overall = 0.9950                                    max =          12

                                            Wald chi2(55)      =     3.16e+08
corr(u_i, X)   = 0 (assumed)                Prob > chi2        =      0.0000

                              (Std. Err. adjusted for 380 clusters in pairid)
------------------------------------------------------------------------------
             |               Robust
        lnyi |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        lntt |   .0013413    .000512     2.62   0.009     .0003379    .0023447
        lnyi |          0  (omitted)
        lnyj |     -.0538   .0284449    -1.89   0.059     -.109551     .001951
       lndij |   .0006724   .0007133     0.94   0.346    -.0007256    .0020704
        bord |  -.0024199   .0015474    -1.56   0.118    -.0054527    .0006129
        lang |    .000658   .0006726     0.98   0.328    -.0006603    .0019763
         col |  -.0012816   .0008975    -1.43   0.153    -.0030406    .0004774
     oneincom |  -8.445584   .2538897   -33.26   0.000    -8.943198   -7.947969
    bothincom |  -8.911826    .005742  -1552.03   0.000     -8.92308   -8.900572
   exporter_1 |  -1.634961   .0014951  -1093.58   0.000    -1.637891   -1.632031
   exporter_2 |  -2.782872   .0027102  -1026.81   0.000    -2.788184    -2.77756
   exporter_3 |   .2606482    .001825    142.82   0.000     .2570712    .2642252
   exporter_4 |  -2.055517   .0024286   -846.39   0.000    -2.060277   -2.050757
   exporter_5 |   2.979755   .0020337   1465.22   0.000     2.975769    2.983741
   exporter_6 |  -1.653932   .0020799   -795.18   0.000    -1.658008   -1.649855
   exporter_7 |   .8601845   .0016562    519.37   0.000     .8569385    .8634306
   exporter_8 |   1.204704   .0018541    649.75   0.000      1.20107    1.208338
   exporter_9 |   1.948076   .0022116    880.86   0.000     1.943741    1.952411
  exporter_10 |  -.0129821   .0013082     -9.92   0.000    -.0155462    -.010418
  exporter_11 |  -.6666633   .0011839   -563.11   0.000    -.6689837   -.6643429
  exporter_12 |   .1017415   .0012342     82.44   0.000     .0993225    .1041604
  exporter_13 |  -.7264501   .0012784   -568.25   0.000    -.7289557   -.7239444
  exporter_14 |  -1.990402   .0013631  -1460.16   0.000    -1.993073    -1.98773
  exporter_15 |   1.566757   .0011926   1313.68   0.000      1.56442    1.569095
  exporter_16 |  -.9380248   .0012941   -724.83   0.000    -.9405612   -.9354883
  exporter_17 |   .4656394   .0011535    403.66   0.000     .4633785    .4679003
  exporter_18 |   .2383951   .0010486    227.36   0.000      .23634    .2404503
  exporter_19 |          0  (omitted)
  exporter_20 |          0  (omitted)
   importer_1 |  -.0875697   .0464361     -1.89   0.059    -.1785829    .0034435
   importer_2 |  -.1428155   .0794062     -1.80   0.072    -.2984487    .0128178
   importer_3 |   .0139266   .0078008      1.79   0.074    -.0013626    .0292158
   importer_4 |  -.1052525   .0586238     -1.80   0.073    -.2201531    .0096481
   importer_5 |   .1569106   .0850917      1.84   0.065    -.0098661    .3236874
   importer_6 |  -.0850959   .0471041     -1.81   0.071    -.1774183    .0072265
   importer_7 |   .0479879   .0244825      1.96   0.050     3.13e-06    .0959726
   importer_8 |   .0625162   .0345871      1.81   0.071    -.0052733    .1303057
   importer_9 |   .1093937   .0554417      1.97   0.048       .00073    .2180573
  importer_10 |  -.0005009     .001347     -0.37   0.710    -.0031411    .0021392
  importer_11 |  -.0362074   .0188306     -1.92   0.055    -.0731148    .0006999
  importer_12 |   .0048679   .0032532      1.50   0.135    -.0015082    .0112441
  importer_13 |  -.0384938   .0205974     -1.87   0.062     -.078864    .0018764
  importer_14 |  -.1055168   .0566326     -1.86   0.062    -.2165146    .0054811
  importer_15 |   .0844964   .0447813      1.89   0.059    -.0032734    .1722662
  importer_16 |  -.0506862   .0265703     -1.91   0.056     -.102763    .0013906
  importer_17 |   .0258724   .0134059      1.93   0.054    -.0004027    .0521475
  importer_18 |   .0127739   .0070309      1.82   0.069    -.0010065    .0265542
  importer_19 |          0  (omitted)
  importer_20 |          0  (omitted)
       year_1 |   -1.06473   .0346921    -30.69   0.000    -1.132725   -.9967345
       year_2 |  -1.053477   .0334266    -31.52   0.000    -1.118992   -.9879618
       year_3 |  -1.031977   .0322407    -32.01   0.000    -1.095168   -.9687863
       year_4 |   -.922375   .0291353    -31.66   0.000    -.9794791   -.8652709
       year_5 |  -.7873081   .0260162    -30.26   0.000    -.8382989   -.7363172
       year_6 |  -.6581501   .0226947    -29.00   0.000    -.7026309   -.6136693
       year_7 |  -.5101935   .0194787    -26.19   0.000    -.5483712   -.4720159
       year_8 |  -.3621454   .0175532    -20.63   0.000     -.396549   -.3277418
       year_9 |  -.2118179   .0175566    -12.06   0.000    -.2462281   -.1774077
      year_10 |  -.1855951   .0115363    -16.09   0.000    -.2082058   -.1629843
      year_11 |  -.0678031   .0105104     -6.45   0.000    -.0884032    -.047203
      year_12 |          0  (omitted)
        _cons |   33.21739   .6572383     50.54   0.000     31.92922    34.50555
-------------+----------------------------------------------------------------
     sigma_u |          0
     sigma_e |  .18184901
         rho |          0   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

2.7 Time based Regression

```
Random-effects GLS regression                Number of obs      =       4560
Group variable: pairid                       Number of groups   =        380

R-sq:  within  = 0.0706                       Obs per group: min =         12
       between = 0.4677                                      avg =       12.0
       overall = 0.3769                                      max =         12

                                              Wald chi2(19)      =     642.63
corr(u_i, X)   = 0 (assumed)                  Prob > chi2        =     0.0000
```

lntt	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
lnyi	.7789097	.1285687	6.06	0.000	.5269197	1.0309
lnyj	.8708501	.1310683	6.64	0.000	.6139609	1.127739
lndij	-1.702863	.3806277	-4.47	0.000	-2.44888	-.9568466
bord	-.2317978	.8010166	-0.29	0.772	-1.801762	1.338166
lang	-.6285911	.5323543	-1.18	0.238	-1.671986	.4148041
col	2.628256	.5161887	5.09	0.000	1.616545	3.639967
oneincom	-.8344615	2.065932	-0.40	0.686	-4.883613	3.21469
bothincom	-5.890458	1.592236	-3.70	0.000	-9.011183	-2.769734
year_1	.0049562	.2915933	0.02	0.986	-.5665562	.5764686
year_2	-.2892805	.2902882	-1.00	0.319	-.8582349	.2796738
year_3	.105098	.2876638	0.37	0.715	-.4587126	.6689086
year_4	.3318472	.2750665	1.21	0.228	-.2072731	.8709676
year_5	.4605539	.2608317	1.77	0.077	-.0506669	.9717747
year_6	.1167432	.2487875	0.47	0.639	-.3708713	.6043578
year_7	-.4846146	.2371017	-2.04	0.041	-.9493253	-.0199038
year_8	.3898567	.227858	1.71	0.087	-.0567368	.8364501
year_9	.2277458	.2215379	1.03	0.304	-.2064605	.6619522
year_10	.1938355	.2207625	0.88	0.380	-.2388512	.6265221
year_11	.74303	.2185165	3.40	0.001	.3147454	1.171315
year_12	0	(omitted)				
_cons	-6.804859	5.995603	-1.13	0.256	-18.55603	4.946307
sigma_u	3.9507412					
sigma_e	3.0079014					
rho	.63304939	(fraction of variance due to u_i)				

Annex 3: PTA/COMESA Member Countries

S.N	Country	Year of Entrance	Remarks
1.	Burundi	December 21, 1981	
2.	Comoros	December 21, 1981	
3.	Congo (D.R)	December 21, 1981	
4.	Djibouti	December 21, 1981	
5.	Egypt	January 6, 1999	
6.	Eritrea	1994	
7.	Ethiopia	December 21, 1981	
8.	Kenya	December 21, 1981	
9.	Libya	June 3, 2005	
10.	Madagascar	December 21, 1981	
11.	Malawi	December 21, 1981	
12.	Mauritius	December 21, 1981	
13.	Rwanda	December 21, 1981	
14.	Seychelles	2001	
15.	South Sudan	October 15, 2011	
16.	Sudan	December 21, 1981	
17.	Swaziland	December 21, 1981	
18.	Uganda	December 21, 1981	
19.	Zambia	December 21, 1981	
20.	Zimbabwe	December 21, 1981	
	Former Members		
1.	Angola	1994	Suspended itself in 2007
2.	Lesotho	1994	left in 1997
3.	Mozambique	1994	left in 1997
4.	Namibia	1994	Left May 2, 2004
5.	Tanzania	1994	left September 2, 2000

Source: http://www.comesa.int

Annex 4: COMESA (Goods) Summary Fact Sheet

4.1 Background Information

Parties	Burundi, Democratic Republic of Congo, Comoros, Djibouti, Egypt, Eritrea, Ethiopia, Kenya, Libya, Madagascar, Malawi, Mauritius, Rwanda, Seychelles, Sudan, Swaziland, Uganda, Zambia and Zimbabwe.
Date of signature	5th November 1993
Date of entry into force	8th December 1994
Transition period for full implementation	6 years for the FTA and 10 years for the Customs Union
Date of full implementation	31 October 2000, FTA
Website addresses or points of contact	Official site: http://www.comesa.int/

4.2 Internal trade liberalization provisions

Import duties and charges	Article 46 (Customs Duties)
Export duties and charges	None
Non-tariff measures	Article 49 (Elimination of Non-tariff Barriers on Common Market Goods)
Sector-specific rules	Chapter Eleven (Co-operation in the Development of Transport and Communications) Twelve (Co-operation in Industrial Development) Chapter Thirteen (Co-operation in the Development of Energy) Chapter Seventeen (Co-operation in the Development of Science and Technology) Chapter Eighteen (Co-operation in Agriculture and Rural Development) Nineteen (Co-operation in Tourism) Chapter Twenty-Three (Development of the Private Sector) Annex I (Protocol on Transit Trade and Transit Facilities)
Product exclusions	None

4.3 Common External Tariff

Provisions	Article 47 (Common External Tariff)

4.4 General trade-related provisions

Provision	Relevant Article(s)	Additional Information
Rules of Origin	Article 48 and Protocol on Rules of Origin	In general, goods are considered to have originated in a given Party if they have been wholly produced in that state, or if they have undergone a process of substantial transformation of materials imported from outside that Party.
Standards-related measures	Chapter Fifteen	The Parties undertake to apply uniform rules and procedures for the formulation of their national standards and when possible adopt African regional standards. The Chapter also describes the role of standardization and quality assurance, certification and laboratory accreditation, co-operation in testing, training in standardization and quality assurance, etc.
SPS measures	Article 132	The Member States shall harmonize their policies and regulations relating to phyto-sanitary and sanitary measures.
Safeguard mechanisms (intra-trade)	Articles 49.5, 60 and 61	In the event of serious disturbances in the economy of a Member State following the application of the Agreement, the State can take necessary safeguard measures which can remain in force for one year and may be extended by a Council decision. The Council shall, on the recommendation of the Intergovernmental Committee, determine the remedial steps to be taken with respect to a Member State which has suffered substantial loss of revenue from import duties. In case of balance-of-payments difficulties, a Member State may impose for the purpose only of overcoming such difficulties for a specified period to be determined by the Council, quantitative or the like restrictions or prohibitions, on goods originating from the other Member States, provided that it has taken all reasonable steps to overcome the difficulties.

Provision	Relevant Article(s)	Additional Information
Anti-dumping and countervailing measures	Articles 51, 53 and 54	No Member State shall levy an anti-dumping duty (or countervailing duty) on imports from another Member State unless it is determined that the effect of the alleged dumping (or subsidy) is such as to cause or threaten material injury to an established domestic industry or such as to retard materially the establishment of a domestic industry. Any affected Member State may levy an anti-dumping duty on any dumped products from a third country in a Members State's market. Member States shall co-operate in the detection and investigation of dumping and subsidy practices and in imposing agreed measures to curb such practices.
Subsidies and state aid	Article 52	Any subsidy granted by a Member State which distorts competition by favoring certain undertakings or the production of certain goods is prohibited. Members may offset the effect of subsidies by levying countervailing duties.
Customs-related procedures	Article 57, Chapter Seven	The Parties will simplify, harmonize and standardize their customs regulations, procedures and documents to ensure the effective application of the Agreement.
Intellectual Property Right (IPR)[1]	None	
Government procurement	None	
Competition	Article 55	Any practice which negates the objective of free and liberalized trade is prohibited. The Council shall make regulations to regulate competition within Member States.
Investment	Chapter Twenty Six	The Member States agree to adopt harmonised macro-economic policies that shall attract private sector investment in the Common Market.
General exceptions	Article 50 and Annex III	A State may, after having given notice to the Secretary-General of its intention to do so, introduce or continue or execute restrictions or prohibitions affecting the application of security laws and regulations, the control of arms and ammunition, the protection of human, animal or plant health or life, the protection of public morality, the transfer of gold, silver and semi-precious stones, the protection of any item of national important, or the maintenance of food security in the event of war and famine.

[1] While there is no specific and explicit provision in the Treaty, COMESA has undertaken a number of initiatives and activities in collaboration with the World Intellectual Property Organisation (WIPO) aimed at promoting IPRs.

Provision	Relevant Article(s)	Additional Information
Accession	Article 1 and Article 194	Any state referred to in paragraph 2 of Article 1 may accede to this Treaty on such terms and conditions as the Authority may determine.
Dispute resolution	Chapter Five	The Court of Justice shall ensure the adherence to law in the interpretation and application of the Treaty.
Relation with other trade agreements	Chapter Thirty-Three	This Chapter recognizes the continuation in force of certain institutions and agreements, describes the relationship between the institutions of the Common Market and the Common Market, and outlines the dissolution of certain existing institutions.
Transparency	Article 141 Article 160	Trade Information Investment Information
Institutional provisions	Chapter Four	This Chapter establishes the following institutions: the Authority, the Council, the Court of Justice, the Committee of Governors of Central Banks, the Intergovernmental Committee, the Technical Committees, the Secretariat and the Consultative Committee. It describes the composition and function of each of these bodies.
Other		The Agreement provides for the adoption of trade promotion measures (Art. 62) and has disciplines on cooperation *inter alia* in: simplification and harmonization of trade documents and procedures; monetary and finance; transport and communications; industrial development; energy; health; natural resources, environment and wildlife; science and technology; agriculture and rural development; tourism; and investment.

Annex 5: Project Proposal

Indra Gandhi National Open University
School of Social Sciences
Faculty of Economics

Trade Effect of Regional Economic Integration: The Case of COMESA

Project Work Proposal (MECP-001)

By: Adane Mamo Siyoum

Enrolment Number: 109101012

Study Center: St. Mary University College
Addis Ababa, Ethiopia

Submitted to:

Programme Coordinator
(MA Economics Programme)
Block-F, Room No. 118
School of Social Sciences
Indira Gandhi National Open university
Maidan Garhi
New Delhi – 110068

August, 2012

Addis Ababa, Ethiopia

PROJECT PROPOSAL PROFORMA

Candidate's Information (to be filled by the candidate)   Date: **August 30, 2012**

Name: **Adane Mamo Siyoum**   Course Code: **MECP-001**

Program Code | MEC |

Enrolment No. | 1 | 0 | 9 | 1 | 0 | 1 | 0 | 1 | 2 |

Address: **Addis Ababa, Ethiopia**

Telephone: +251-911-816145

Regional Center: **Ethiopia**

Study Center Name: **St. Marry University College, School of Graduate Studies**

Study Center Code | 8 | 1 | 0 | 5 |

Title of the Project: **Trade Effects of Regional Economic Integration:
The Case of COMESA**

(By The Supervisor)

I hereby certify that the proposal for the Project entitled "**Trade Effect of Regional Economic Integration: The Case of COMESA**" by **Adane Mamo Siyoum** has been prepared after due consultation with me. I agree to supervise the above mentioned Project till its completion.

(Signature of the Supervisor)

Name: **Dagnew Eshete (Ph.D)**

Designation: Assistant Professor

Address: Addis Ababa, Ethiopia

E-mail: dagnew.eshete29@gmail.com

Table of Contents

ABBREVIATIONS

ASEAN	Association of South East Asian Nations
COMESA	Common Market for Eastern and Southern Africa
ECA	Economic Commission for Africa
ECOWAS	Economic Community of West African States
EU	European Union
GATT	General Agreement on Tariffs and Trade
IGAD	Intergovernmental Authority for Development
IMF	International Monetary Fund
Km	Kilometer
NAFTA	North American Free Trade Area
RECs	Regional Economic Co-operations
RTA	Regional Trade Agreement
SADC	Southern African Development Community
WTO	World Trade Organization

1. Background of the Study

In a mixed economic structure where governments intervene in the market to a various extent, trade interventions like tariffs and quotas distort markets. Consequently, it affects the gain that free trade brings and will result in inefficiency. Since a few decades ago, however, being part of one or more regional economic integration has been considered as a reward of free trade in many economies of the world. It is believed that integration will help economies to maintain the balance of trade between members and prohibit the entry of other countries in their trade processes. The aim of the study is, therefore, to assess and analyze trade effects of regional economic integration with reference to COMESA using econometric panel data analysis comprising time series and cross sectional data.

Following indicative IMF's Structural Adjustment Programs (SAP), a characteristic feature of developing countries including Ethiopia in the 1990s was the speed with which governments extricated themselves from direct ownership and management of business. Although the process was part of a global trend, it has tended to have large economic and political connotations in these countries than elsewhere (Bennel, 1997). This is because African governments had embraced state ownership of the formal economy much more strongly than other parts of the world. However, as noted in the works of Drum (1993), the structural programs that were embarked on in the 1980s presented an alternative approach based on less intrusive government, and with trade liberalization and integration seen as important for the success of economic reform.

Decades prior to Africa, many continents of the world had formed several regional integrations since the formation of the General Agreement on Tariffs and Trade (GATT), the current World Trade Organization (WTO), in 1947. To highlight a few, the European Union (EU), the North American Free Trade Area (NAFTA), the Association of South East Asian Nations (ASEAN), and the Southern American Southern Common Market (MERCOSUR) are some of the known and successful regional agreements. (opcite)

Since 1990, most African countries agree to liberalize their trading system through integration by removing barriers to trade (Jones, 1990). SADC, ECOWAS, and IGAD are some of the African trade unions. Another regional integration, in which Ethiopia became a member, called Common Market for Eastern and Southern Africa (COMESA) was established in 1994 after passing several processes and years. As noted in the Document of COMESA Treaty (1994), the integration constitutes 19 member states that agreed to co-operate in developing their natural and human resources focusing on the formation of large economic and trading units to overcome barriers to individual states and has a strategy to economic prosperity.

The objective of regional agreement could range from economic to political, although it become a political economy initiative where commercial purposes are the means to achieve broader socio-political and security objectives. In either way, countries have benefited from regional integration, which reflected through economic growth, stable security, and rising standards of living for the peoples of the respective countries. (Myrdal G, 1957)

Theoretical and empirical literatures of Vamvakidis, A. (1999), Alemayehu Geda and Haile Kibret (2002), ECA (2011), and Forouton, F. (1993) show regional trading blocs would bring welfare gains to the participating countries through the effects of *trade creation* given some constraints. In regional trade agreements there is a concept of "***equal partners***" that grew out of the concept of providing reinforcement to the economies to all the member countries. Integration will help economies to maintain the balance of trade between member countries and prohibit the entry of others in their trade process. An important example, from developed economies, is the North American Free Trade Area (NAFTA), formed when the Canada – U.S Free Trade Agreement was extended to Mexico. Another vibrant would entail as to how EU has formed linkages incorporating the transition economies of Eastern Europe through the Europe agreements. (ibid)

As part of recent regional agreements in Africa, the COMESA was signed on 5th November 1993 in Kampala, Uganda and was ratified a year later in Lilongwe, Malawi on 8th December 1994. Member countries are Angola, Burundi, Comoros, D.R. Congo, Eritrea, Ethiopia, Kenya, Madagascar, Malawi, Mauritius, Namibia, Rwanda, Seychelles, Sudan, Swaziland, Tanzania, Uganda, Zambia, and Zimbabwe. It was established as *an organization of free independent sovereign states which have agreed to cooperate in developing their natural and human resources for the good of all their people*. (http//:www.comesa.com)

2. Problem Statement

According to ECA's study report on the establishment of inter-RECs Free Trade in Africa (2011: 28), with land area covering about 12 million square km, the COMESA region has a population of over 443.3 million people, with an annual average import of around US$ 138.2 billion and export of US$ 114.8 billion that formed a major market place for internal and external trading. COMESA was established to improve the prosperity of the peoples of member nations through economic integration. However, economic, social, and political constraints facing almost all member countries contribute the lion's share in the implementation of economic integration. These constraints have also contributed to the stagnation of economic growth and development in this region.

Despite a number of theoretical and empirical research contributions in recent years (Betina Dimaranan & Simon Mevel, 2008; Elin Weyler, 2004), the effects of regional economic integration on trade in the region using panel data analysis have not been investigated rigorously. This existing information gap motivates the researcher to undertake the study, focusing on COMESA member countries. In assessing the effects of COMESA on trade flows among member nations, the study relies on gravity model specification of economic integration. An augmented gravity model of panel data approach is used to determine the extent of intra regional trade bias and potential trade diversion effects for each sector separately.

3. Significance of the Study

The study is significant because of the following reasons. First, only very few researchers have tried to relate regional integration role in development and growth of nations, particularly in developing countries. So, filling the existing literature gap is the primary concern of the study. Second, it helps policy makers by providing more information in the area. Third, the study has multidimensional contribution to COMESA itself, which includes the use of the study outcome as a source of reference material, and for policy planning and decision making processes, etc. The study is also expected to be used as a stepping stone for further research undertakings.

4. Objectives of the Study

The main objective of the study is to investigate the effects of COMESA on bilateral trade focusing on the trade aspect of regional economic integration.

The specific objectives of the study include:

- Examining *trade diversion* and *trade creation* effects of COMESA; and
- Assessing the level of inter-trade and intra-trade situations in the region.

5. Limitation of the study

The study is expected to have limitations that include: constraint with data inconsistencies; shortages of adequate information; problems relating to method of analysis; and time and financial constraints. Moreover, the countries to be selected for the study may have different macro-economic policies and level of participations in economic integration and monetary unions which would create problems in reaching proper generalizations.

6. Research Questions

In view of the above, this study will give answers for the following leading questions:

- ➢ Have East African countries really benefited from Regional Economic Integration?
- ➢ What is the *'trade creation effect'* of COMESA?
- ➢ What is the *'trade diversion effect'* of COMESA?
- ➢ What is the level of inter-country trade in the region?
- ➢ What is the level of intra-trade of the region?
- ➢ What policies should COMESA member countries, like Ethiopia, adopt in order to benefit from the regional economic integration?

7. Research Hypothesis

The study will have the following hypotheses:

- Change in reporter (i) and partner (j) countries' GDP has a positive impact on bilateral trade (TT).

- Trade effect of regional economic integration seems to be insignificant or negative in the case of COMESA.

- Physical distance (**DIS**) between COMESA member countries will have a negative impact on trade between them.

- There is positive relationship between COMESA's bilateral trade with former colonies.

8. Research Methodology

8.1 Data Types and Sources

The type of data that will be required for the study is mainly secondary data. The source of secondary data will be both published and unpublished documents (books, reports, previous studies, etc.). COMESA's documentation, COMTRADE Database, WTO's website, IMF's Direction of Trade and World Development Indicator, the Pen World Table (PWT), the World Bank, Trade Map, www.distancefromto.com, and other relevant data sources. Cross-sectional and time-series data (i.e. panel data types) will be used and analyzed in the study process.

All member countries of COMESA (Burundi, Comoros, Congo (DR), Djibouti, Egypt, Eritrea, Ethiopia, Kenya, Libya, Madagascar, Malawi, Mauritius, Rwanda, Seychelles, Sudan, Swaziland, Uganda, Zambia, and Zimbabwe) will be included in data collection and analysis method according to their listings on COMESA's website. Relevant data that is going to be used and analyzed in the model will be collected in the form of hard copy, CD, flash disks, and other electronic materials.

8.2 Model Specification

The gravity model is a popular formulation for statistical analyses of bilateral flows between different geographical entities. The gravity model of bilateral trade hypothesizes that the flows of trade between two countries is proportional to their gross domestic product (GDP) and negatively related to trade barriers between them. (www.wikipedia.com) Empirical works have provided a number of alternative specification for the gravity model. In the context of international trade, the basic formulation of the gravity model equation is:

$$X_{ijt} = \beta_0 Y_{it}^{\beta_1} Y_{jt}^{\beta_2} N_{it}^{\beta_3} N_{jt}^{\beta_4} D_{ij}^{\beta_5} U_{ijt} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \text{[1]}$$

6

For estimation purposes, the basic gravity model is most often used in its log-linear form. Hence, this is equivalently written using natural logarithms as:

$$lnX_{ijt} = ln\beta_0 + \beta_1 lnY_{it} + \beta_2 lnY_{jt} + \beta_3 lnN_{it} + \beta_4 lnN_{jt} + \beta_5 lnD_{ij} + lnU_{ijt} \quad ....[2]$$

Where notations are defined as follows:

X_{ijt} = total bilateral trade between country i to country j in year t;

Y_{it} = GDP of country i in year t

Y_{jt} = GDP of country j in year t;

N_{it} = population of country i in year t;

N_{jt} = population of country j in year t;

D_{ij} = distance between two countries, i and j

U_{ijt} = log normal error term

ln = the natural logarithm operator

In the case of gravity equations used to estimate the impact of regional trade arrangements, dummy variables are added for each RTA under critical examination. Thus, the augmented gravity model incorporates other variables; and thus, by introducing these variables in to equation (2), the basic formulation of the model can be extended as follows:

$$lnTT_{ijt} = \alpha_0 + \beta_1 lnY_{it} + \beta_2 lnY_{jt} + \beta_3 lnN_{it} + \beta_4 N_{jt} + \beta_5 ln(dis_{ij}) + \beta_6 ln(bord_{ij}) +$$
$$\beta_7 (col_{ij}) + \beta_8 ln(lang_{ij}) + \beta_9 ln(OneInCOM_{ij}) + \beta_{10} ln(BothInCOM_{ij}) + \varepsilon_{ijt} \quad ...[3]$$

where,

TT_{ijt} -   bilateral trade between countries i and j at time t;

α_0 -   constant term common to all years and pairs of countries;

Y_{it}, Y_{jt} -   GDP of country i & j at time t;

N_{it}, N_{jt} -   Population of county i & j at time t;

dis_{ij} -   distance between capital cities of country i and j in km;

$bord_{ij}$ -   a dummy that takes a value of 1 if both countries share border, 0 otherwise;

col_{ij} -   a dummy that takes a value of 1 if both were colonized by same country, 0 otherwise;

$lang_{ij}$ -   a dummy that takes value 1 if official language of countries i & j are same, 0 otherwise

$OneInCOM_{ij}$ -   a dummy that takes a value of 1 if one belong to COMESA, 0 otherwise;

$BothInCOM_{ij}$ -   a dummy that takes a value of 1 if both belong to COMESA, 0 otherwise;

ε_{ijt} -   log normal error term; and

ln -   the natural logarithm operator

In the researcher's model specification dummy variable, "*OneInCOM$_{ij}$*" and "*BothInCOM$_{ij}$*", captures the total inter-regional and intra-regional trade bias, respectively, where a positive and significant coefficients indicates that member countries have switched to trade to members rather than non-members. This case is interpreted as *trade creation*, the case where member countries preferring to trade with members rather than non-members. In contrary, if the parameters become negative and significant, it indicates that member countries prefer to trade with the rest of the world (ROW) rather than to members, the case of *trade diversion*. If the dummy variables become significant with different signs, the decision would be based on comparative statistics.

The gravity model of the effect of regional trade agreements on total trade of member nations developed as Equation (3) has been examined empirically for the case of COMESA using data on inter-and intra-trade between COMESA member countries and rest of the world (ROW) during the 2000-2011 period.

8.3   Data Analysis

In the assessment of inter-trade and intra-trade performance in the region (COMESA), descriptive analysis will be used. Global trade performance and patterns of trade will be analyzed by applying indices such as percentages and shares using tables and graphs. Data Covering the period 2000 to 2011 on GDP, Population, Export, Import, Distance between capital cities as well as qualitative nature data such as official language, common border share, colony, and membership in a regional economic integration, and all other relevant data and information will be collected and consequently analyzed. For '**trade creation'** and '**trade diversion'** effects, the researcher will apply STATA social software program analysis. This software program is selected for analysis as the study uses both time-series and cross-sectional data. To avoid questions that may be raised on the final result, both Fixed Effect (FE) and Random Effect (RE) method of panel data analysis will be used and finally the best method will be selected using Hausman test (1978). The results of both descriptive and econometric data analysis will be compared from theoretical and practical perspectives.

9. Expected Outcome

The major expected outcome of the research paper is that it provides holistic issues of regional economic integration and the effect of COMESA's regional integration on bilateral trade.

10. Work Plan and Budget

10.1 Time Schedule/Work plan

S. N		2012		2013			2014	
		May	Jun.	Jan.	Sept.	Nov.	Feb.	Apr.
1	Identifying Project topic							
2	Literature reviewing & preparation of project proposal							
3	Submission of project proposal							
4	Collecting and analyzing data							
5	Writing, typing, editing, and compiling the draft study report/thesis and submission							
6	Preparation & submission of the final project report/thesis							

10.2 Estimated Budget

S. N	Cost Item Description	Qty	Unit Cost (Birr[*])	Total Cost
1	Transportation	1000 km	2Birr/km	2,000.00
2	Internet cost	200 hrs	15Br/hr[*]	3,000.00
3	Stationary	Lump sum	-	1,750.00
4	Payment for research assistances, materials, etc	Lump sum	-	2,500.00
5	Typing and binding report	Lump sum	-	400.00
6	Other expenses	Lump sum	-	1,500.00
7	Contingency	Lump sum	-	2,200.00
Total cost of the study				**13,350.00**

[*] Br = Birr; hr = hour; km = kilometer

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Annexes

Annex 1. Theoretical Literature Review

Regional integration is a process in which states enter into a regional agreement in order to enhance regional cooperation through regional institutions and rules. Philippe De Lombaerde and Luk Van Langenhove defined regional integration as a worldwide phenomenon of territorial systems that increase the interaction between their components and create new forms of organization, co-existing with traditional forms of state-led organization at the national level. It is a process by which states within a particular region increase their level of interaction with regard to economic, political, security, and social and cultural issues depending on the willingness and commitment of independent sovereign states to share their sovereignty.

a) Regional Economic Integration

The issue of international trade and economic growth has gained substantial importance with the introduction of trade liberalization policies on the globe following the formation of General Agreement on Tariffs and Trade (GATT), the present World Trade Organization (WTO), in 1945. Since its formation, the developed and developing countries have experienced various economic integration to boost their economic growth from the benefit that international trade bring. According to a UN working paper (2008), the degree of economic integration is categorized into five stages: *Preferential trade (PTA)*, *Free Trade area (FTA)*, *Customs Union (CU)*, *Common Market*, and *Economic and monetary union*. In a PTA, members grant tariff preferences amongst them while in a FTA, members move towards zero or near-zero tariff level amongst them on substantially all trade. In a Customs Union, members, in addition, have a common external tariff on products coming from outside the union. Even movement of factors of production is allowed in the case of common market. In the case of economic and monetary union, harmonization of various economic policies, including monetary policies, are also effected.

Theoretically, the stages of regional integration are adopted in sequence depicting deeper economic integration process. In reality, however, countries have embarked up on regional integration without, at times, following the strict sequence of different stages of integration. The main reason behind regional trade integration is imbibed in the theories of *trade creation* and *trade diversion*. (Vamvakidis, A., 1999)

b) The Historical Origin of COMESA

Overview

The history of COMESA can be traced as far back as the mid-sixties. During this period, the United Nations Economic Commission for Africa (ECA) proposed the division of the continent in to four sub-regions: Eastern and Southern, Central, West, and North Africa. In October 1965, the ECA convened a ministerial meeting of the then politically independent states of eastern and southern Africa to consider proposals for the establishment of a mechanism for the promotion of sub-regional economic integration in Lusaka, Zambia. The meeting recommended the creation of an Economic Community of Eastern and Southern African states and recommended, also, an Interim Council of Ministers to achieve the objective. In May 1966 in Addis Ababa, Ethiopia, the Terms of Association to govern the interim arrangements before the signing of the formal Treaty were adopted and signed by Burundi, Ethiopia, Kenya, Madagascar, Malawi, Mauritius, Rwanda, Somalia, Tanzania, and Zambia.

The collapse of the federations in Eastern and Central Africa, the destabilization of the economies of the Southern African states by apartheid, and the recognition of Eastern and Southern African states to adopt self-sustaining development measures in all sectors, in 1970's, increase the need for a sub-regional economic arrangements. After preparatory work had been completed, the Heads of States and Government was convened in Lusaka on December 21, 1981 and established the Preferential Trade Agreements (PTA). The PTA Treaty envisaged its transformation into a Common Market and the Treaty established COMESA was signed on 5th November 1993 in Kampala, Uganda. It was ratified a year later in Lilongwe, Malawi on 8th December 1994.

The process of economic integration in Eastern and Southern Africa has, therefore, not been episodic, but rather systematic, following a logical progression on step by step basis. Firstly, a Preferential Trade Area was established and operated for over a decade, which then transformed into a common market. The third phase will evolve the eventual establishment of the Economic Community.

COMESA's Priorities and Objectives

The establishment of COMESA binds together free independent sovereign States which have agreed to co-operate in exploiting their natural and human resources for the common good of all their peoples. To attain these goals COMESA recognized that peace, security and stability are basic factors in providing investment, development, trade and regional economic integration. Experience has shown that civil strives, political instabilities and cross-border disputes in the region have seriously Affected the ability of the countries to develop their individual economies as well as their capacity to participate and take full advantage of the regional integration arrangement under COMESA.

Therefore, in pursuit of the aims and objectives stated in Article 3 of the COMESA Treaty, and in conformity with the Treaty for the Establishment of the African Economic Community signed at Abuja, Nigeria on 3rd June 1991, the member States of COMESA have agreed to adhere to the following principles:

    i.   Equality and inter-independence of the member States;
    ii.   Solidarity and collective self-reliance among the member States;
    iii.   Inter-State co-operation, harmonization of policies and integration of programmes among the member States;
    iv.   Non-aggression between the member States;
    v.   Recognition, promotion and protection of human and people's rights in accordance with the provisions of the African Charter on Human and People's Rights;
    vi.   Accountability, economic justice and popular participation in development;
    vii.   The recognition and observance of the rule of law;
    viii.   The promotion and sustenance of a democratic system of governance in each member State;

ix. The maintenance of regional peace and stability through the promotion and strengthening of good neighborliness; and

x. The peaceful settlement of disputes among the member States, the active co-operation between neighboring countries and the promotion of a peaceful environment as a pre-requisite for their economic development.

COMESA is an all-embracing development organization involving co-operation in all economic and social Sectors. However, due to resources constraints, the implementation of activities and programmes will be prioritized to areas where the greatest impacts can be made. To that end, COMESA has adopted the following five priorities, as stated on the COMESA Treaty (1994):

- significant and sustained increases in productivity in industry, manufacturing, processing and agro-industries to provide competitive goods as the basis for cross-border trade and to create more wealth, more jobs, and more incomes for the people of the region;

- increase agricultural production, with special emphasis on the joint development of lake and river basins so as to reduce dependence on rain-fed agriculture and new programmes on food security at the provincial or district, national, and regional levels;

- development of transport and communications infrastructures and services with special emphasis on linking the rural areas with the rest of the economy in each country as well as linking the member States

- new programmes for trade promotion, trade expansion, and trade facilitation especially geared to the private sector, so as to enable the business community to take maximum advantage of the Common Market, and

- development of comprehensive, reliable and up to date information data bases covering all sectors of the economy including industry, energy, environment, agriculture, transport, communications, investment and finance, trade, health and human resources to form the basis for sound investment decisions and macro-economic policy formulation and programming.

c) Conceptual Analysis of Regional Trade, Growth and Development

Trade theory deals with national units with a single difference – whether each one is capable of affecting international relative prices. Low levels of development imply limited productive basis, hence limited capacity to generate savings, to produce foreign currency and therefore limited availability of resources to invest. The area in trade theory that deals more closely with these issues is the theory of protection, in its complementary dimensions of positive theory, normative prescriptions and the political economy of protection. Nevertheless the actual treatment of the effects of trade for output growth is not as exhaustively dealt with as the effects of growth on trade. (Vamvakidis, A.-1999)

Orthodox reasoning would argue that there is no first-best argument for maintaining trade barriers, as productive efficiency would be maximized when factors are allocated in accordance to the presumed (static) comparative advantages. Yet there is no totally open economy: the world does not correspond to 'first-best' presumptions. Orthodoxy would also argue that there is no case for trade preferential agreements, since multilateral opening would provide the best price signaling. Yet one sees an increasing number of agreements and an intensification of regional trade flows. (ECLAC, 2000).

Closer integration of neighboring economies is seen as a first step in creating a larger regional market for trade and investment. This works as a spur to greater efficiency, productivity gain and competitiveness, not just by lowering border barriers, but by reducing other costs and risks of trade and investment. Bilateral and sub-regional trading arrangements are advocated as development tools as they encourage a shift towards greater market openness. Such agreements can also reduce the risk of reversion towards protectionism, locking in reforms already made and encouraging further structural adjustment.

Annex 2. Empirical Literature Review

Analysis of RTAs in Developing Countries

The general experience of regional trade agreements in developing countries has been disappointing because they have been highly inward-looking and protectionist, with trade diversion exceeding trade creation. Typically, the existing ratio of trade to GDP has been high in the member countries and the ratio of trade with the rest of the world has also been high so that the scope for trade creation has been minimal and the potential for trade diversion has been great. Forouton (1993) concludes his study of regional integration in sub-Saharan Africa (SSA) by saying "*the structural characteristics of the SSA economies, the pursuit of import-substitution policies, and the very uneven distribution of costs and benefits of integration arising from economic differences among the partner countries, have thus far prevented any meaningful trade integration in SSA*".

Recent empirical work across developing countries as a whole supports this pessimistic conclusion as far as regional trade agreements are concerned, but finds that broad trade liberalization does lead to faster growth. Vamvakidis (1999) takes 109 cases of participation in 18 regional trade agreements over the period 1950 to 1992 and concludes that their impact on the growth rate of members has been negative. Vamvakidis also takes 51 cases of broad liberalization and finds that countries have grown faster after liberalization.

Concerning COMESA, and in contrast to the above findings, the AU reported substantial growth increases in intra-regional trade in the region from US $3.1billion in 2000 to US $ 13.7 in 2008. This study has further documented an increase in the three RECs' share of African trade in which the EAC share rose from 15.6% in 1995 to 21.7% in 2005 and to 33.4% in 2009. The corresponding figures for COMESA are 14.8%, 21.2% and 23.2% in 1995, 2005 and 2009 respectively. (ECA, 2011)