ADDIS ABABA UNIVERSITY

School of Graduate Studies

AN ANALYSIS OF AFRICAN REGIONAL TRADE INTEGRATION USING A GRAVITY APPROACH: THE CASE OF COMMON MARKET FOR EASTERN AND SOUTHERN AFRICA (COMESA)

BY

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Signature

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ACRONYMS

ADB	Africa Development Bank
IMF	International Monetary Fund
CBI	Cross-Border Initiative
CEMAC	Economic and Monetary Community
CEN-SAD	Community of Sahle-Saharan States
CEPGL	Economic Community for Great Lakes Countries
COMESA	Common Market for Eastern and Southern Africa
DOTS	Direction of Trade Statistics
EAC	East African Community
ECA	Economic Commission for Africa
ECCAS	Economic Community of Central Africa States
ECOWAS	Economic Community of West Africa States
EPA	Economic Partnership Agreement
FDI	Foreign Direct Investment
IOC	The Indian Ocean commission
IGAD	Intergovernmental Authority on Development
IMF	International Monetary Fund
MRU	Mano River Union
OAU	Organization for Africa Unity
PTA	Preferential Trade Area
REC	Regional Economic Communities
RTA	Regional Trade Agreement
SACU	Southern Africa Custom Union
SADC	Southern Africa Development Community
UMA	Arab Megreb Union
UNCTAD	United Nation Conference for Trade and Development
WAEMU	West Africa Economic and Monetary Union In
WDI	World Development Indicator
WTO	World Trade Organization

Abstract

Although Regional integration in Africa has a long history which dates back to the end of 19th century, it has failed to achieve its objectives. Several studies have pointed out different factors which contribute for its poor performance. These factors include loss of revenue due to trade liberalization, non-complementarity of tradable goods, poor private sector participation, overlapping of memberships and so on. His study assessed and analyzed the problems and determinants Africa regional trade integration in general and COMESA in particular. However, it gives a due attention to determine the impact of trade openness (trade liberalization) and overlapping of memberships on top of other determinants (GDP, percapita GDp, common boundaries, common language of member countries, distance between member countries etc.) on COMESA total trade flow using gravity model approach.

The study comes up with the finding that trade openness (trade liberalization) within COMESA member countries boosts the intra-trade flow of the region. In contrast to this, overlapping of membership results in decline for the intra- trade flow of COMESA. Thus, the study recommends that COMESA member countries should liberalize their trade ,diversify the tradable commodities ,increase private sector participations and they should not to be a member of more than one regional group.

I. Introduction

The Creation of regional trade agreement (RTA) and regional integration agreement (RIAs) gathered speed in the 1980's and 1990's. The rationale for the formation of regional integration arises from the international trade theory which states that trade liberalization is beneficial than discriminatory trade for trading partners. It is assumed that trade liberalization is the most important way to expand trading activities among trading countries because it increases the benefit obtained from trade and foster economic growth. Thus, the formation of regional integration is the means to promote free trade since it avoids trade barriers among trading partners. According to OECD/ADB, African economic outlook (2002), world trade is taking place with in regional block rising from about 35% during the 1960s to 42% in 1970s, 50%in 1980s and about 60% during 1990s.

Regional integration benefit the member countries through greater export- lead growth, resulting from increased access to the significant market share of their trading partners, encouraging the return of capital flight (i.e. capital that left from the member country in share of more secured return abroad), and fostering more structural reforms domestically (Salvatore, 1998).

Regional integration can also play a significant role for member countries through increased scale and competition, especially when their endowments and market size are limited (Fernandez & Proter, 1998; venables, 2000). Thus, regional integration can combine market, enabling firms to expand and markets to be more competitive. More competition may induce firms to eliminate internal inefficiencies and raise productivity for small and low-income countries. Oyejiide (2000) also argued that regional integration is a means of fostering sustainable economic growth in general and encourages trade in particular by deriving economies of scale through expansion of trade and economic growth.

As stated by Blomstorom and kokko (1997); World Bank (2000) regional integration arguments can increase investment in member countries by reducing distortions, enlarging market access and enhancing the credibility of economic and political reforms. The result can increase the return to investment, make larger investment, and reduce

economic and political uncertainty. Moreover, regional integration can encourage foreign investors to engage in order to trade frequency with all members –expanding investment by local and foreign investors. Apart from its direct impact on production, increased investment particularly, foreign direct investment (FDI), which can promote knowledge and technology transfer and spillovers, raising productivity in member countries.

Regional integration in Africa had initiated because of the above aforementioned justification. It has a long history, dating back to the establishment of the South African Customs Union (SACU) in 1910 and the East African Community (EAC) in 1919. Since then a number of regional economic communities have been formed across the continent, particularly since the 1970s (Alemayehu & Haile, 2002). However, other regional economic theories explain that it is during the struggle for political independence in many African countries that continental unity and regional cooperation was acknowledged as a strategy for combating foreign dependence and under development.

Today it is very rare to find one Africa country that has not shown over time interest in at least one of the several existing regional integration scheme on the continent. Currently there are about 14 regional integration groupings in Africa [1]. It is significant that Africa alone, with in the past four decades has experimented with about 200 international organizations; most of them claim to have responsibility for promoting regional cooperation (Adetual, 2002). Beyond these efforts at regional level, attempts have been under way to create economic cooperation among African countries at a continental level, which concluded in the singing of the Abuja, treaty held in 1991.

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[1]These are: East African Community (EAC) And Intergovernmental Authority On Development (IGAD) In The Eastern Africa; Economic Community Of West Africa States (ECOWAS), Mano River Union (MRU), And West Africa Economic And Monetary Union (WAEMU) In Western Africa; Community Of Sahle-Saharan States (CEN-SAD), Economic Community Of Central Africa States (ECCAS), Economic And Monetary Community (CEMAC), Economic Community For Great Lakes Countries (CEPGL) In Central Africa; Southern Africa Custom Union(SACU),Southern Africa Development Community(SADC),The Indian Ocean commission(IOC) In The Southern Africa; Arab Megreb Union (UMA)In The Northern Part and Common Market For Eastern And Southern Africa(COMESA) Straddle The Sub Region Of Southern And Eastern Africa (ECA,2006).

Despite such efforts, however, there seems to be a consensus that the success of all the RECs in achieving their objectives has been less than satisfactory (Johnson, 1995, Lyakurwa, 1997). Yang and Gupta (2005) also analyzed that the effectiveness of regional integration in Africa in achieving their major goals of increasing intra – regional trade. They put low resource complementarily in addition to market size, poor transport facilities and high trading costs among the major constraints. The study also criticized the goal of regional integration in Africa for being highly ambitious which in turn contributes to the failure of achieving it.

Studies such as; Alemayehu& Haile (2002), Foroutan (1992), McCarthy (1995), Longo and Sekkat (2004) explained various reasons for the failure of Africa regional integration. Among these include revenue loss, non-complementarity of tradeble goods among trading partners, poor private sector participation, implementation problem of harmonization, overlapping of membership and loss of sovereignty and lack of political commitment. In addition to this Prichett (1993) and Ingco,(2001) states that Formidable trade barriers or a very low degree of trade openness even between and among African regional trading blocks contributes for the poor performance of the region's intra-trade. However, there are different arguments which states that setting trade barrier in the form of tariff is taken as a source of revenue for these countries. Thus, liberalization will result a loss of this revenue in short run even though it has along run benefit obtained from the expansion of trade.

The objective of this study is to assess the above mentioned problems of intra- Africa regional trade in general and COMESA in particular and to come up with the possible solutions. Moreover, the study intended to fill the gap of the previous studies by determining how trade openness and overlapping of membership in addition to other determinants of trade flow (GDP of the member countries, per capita GDP, common language, common border, area of the member countries, distance among members and so on) affect comesa intra-trade.

II. Theoretical & Empirical Reviews

Integration means bringing parts or units together to formulate or creating interdependence. It could be represent a situation in which states became interdependent in whatever aspect of their relationship they desire. Nonetheless, integration can be said to exist when units join together in order to satisfy objectives, which they cannot meet autonomously. In this way integration is can be a process, which has tens up the achievement of certain objective in the interest of larger body. Such a process would involve the shifting of loyalties expectations and political activities towards anew and larger center whose institutions and process demand some justifications over those of the national states. The extent of such a transfer of loyalties and jurisdictions enjoyed by new center would depends the level and goals of integration scheme as well as the socio-economic and political ramification which the implementation of integrative policies generate with in and between the integrating rule. (Adetual, 2004).

As (Salvatore, 1998) states The theory of regional integration refers to a commercial policy of discriminatively reducing or eliminating trade barriers among the nations integrating together which can be take different forms that could range from preferential trade area (PTA) that is the loosest level of economic integration to Free Trade Area, Custom Union, Common Market, Economic Union which is the most advanced types of economic integration

The basis for regional integration can be economic, political, and social as well as cultural matters. Regional integration can embrace economic matters so as to achieve economies of scale, effectively allocate resources, super economic growth and expand trade of member countries. The social ground for regional integration attributed to facilitation of factor mobility. With regard to political motive regional integration enhance the credibility of government commitment. (Ayodele and olu-adeyami, 2007)

In line with the above arguments Regional integration has many effects or impacts for the member countries which is analyzed on the basis of static effect as well as dynamic

effect. Viner (1950) explains that static effect of regional integration determined the welfare effect of the society, which is depending up on the relative size of trade creation and trade diversion.

Trade creation takes place when a member country replaces its domestic production by imports from a more efficient partner (at a relative low cost). Thus, trade creation is supposed to enhance welfare of member states as it leads to greater specialization in production. In contrast to this trade diversion take place when higher cost import from member states replaces lower cost imports from outside the regional integration. Since trade diversion shift production from more efficient to less efficient producer, welfare reduced. Thus, regional integration is beneficial if trade creation outweighs that of trade diversion. On the other hand, Dynamic effect of regional integration results in change in the economy through increase competition, increase investment and industrialization and through achievement of economies of scale. Regional economic integration exposed members to greater competition, which in turn leads to more efficiency in production and market. (Lyakurwa, 1997)

Based on the above strong arguments regional integration in Africa had initiated in the early 20th century and different regional groupings have been formed with different form of arrangements. However, the Current African integration arrangements can be divided into two broad groups: those that fit into the Lagos Plan of Action (LPA) adopted in April 1980, and those that were either in existence or came about outside the LPA.

The Lagos Plan was promoted by the ECA and launched in a special initiative by the OAU. It envisaged three regional arrangements aimed at the creation of separate but convergent and over-arching integration arrangements in three sub-Saharan sub-regions. The first is West Africa which is served by the Economic Community of West African States (ECOWAS), which pre-dated the Lagos Plan. The second group is A Preferential Trade Area (PTA) was established in 1981 to cover the countries of East and Southern Africa, which was eventually replaced in 1993 by the Common Market for Eastern and Southern Africa (COMESA). The third one is Central Africa where the treaty

of the Economic Community of Central African States (ECCAS) was approved in 1983 but remains to be fully ratified. Together with the Arab Maghreb Union (AMU) in North Africa, these arrangements were expected to lead to an all-African common market by the year 2025. The Lagos Plan was followed up in 1991 by the Abuja Treaty, re-affirming the commitment of the OAU's Heads of State to an integrated African economy (McCarthy, 1995). In April 2001, African Heads of State launched the African Union at Sirte to replace the OAU.

A second group of integration arrangements has grown up outside the LPA.Two important RTAs are associated with this group of arrangement. There is the West African Economic and Monetary Union (WAEMU) within the ambit of ECOWAS and the Economic and Monetary Union of Central Africa (CEMAC) within the proposed ECCAS region. The other arrangement is Within the geographic area of COMESA where there are the Southern African Customs Union (SACU) with its associated monetary union (the Common Monetary Area, CMA), the Southern African Development Community (SADC) and the East African Community (EAC). Some countries in this region are also joined with countries in the Horn of Africa in the Intergovernmental Authority on Development (IGAD).

In spite of the above initiation to have strong regional groups and the desire of creating one regional group at the continental level, Africa's regional group is not successful. McCarthy (1999:17) argues that, even if developing countries are united under a regional trade arrangement, their economies are still small compared to world standards. This is the reason why developing countries have changed their policy from import substitution to export promotion, while remaining under regional integration.

Lyakurwa (1997) reviews the experience of regional integration in Africa by examining the objectives and achievements of regional integration scheme. He also assesses the problem and prospects of regional integration in Africa. The major reasons for the failure of regional integration in Africa, as stated by Lyakurwa et al (1997), are failure to implement trade liberalization policies, issue of compensation, failure of import

substitution policies, which was adopted by most Africa countries, lack of political commitment and macroeconomic instability.

Alemayehu & Haile (2002) give extensive explanation for the failure of regional integration scheme in Africa taking institutional, political and policy issues as major factors that hinder the progress of regional integration in Africa using gravity model. Moreover, the study put the issue of revenue loss, issue of complementarily, issue of compensation and variation in initial condition and poor private sector participation as impediment to the progress of regional integration in Africa. As pointed out by Longo and Sekkat (2004), the progress of regional integration in Africa has been disappointing as both the level and growth rates of intra-Africa trade remain very low. The study emphasized on lack of infrastructure, political instability and inadequate economic policies as major obstacles for intra-Africa trade expansion.

2.1. Problems and Prospects of Africa Regional Trade Integration

2.1.2. Problems of Africa Regional Trade Integration

As stated above many scholars explain different problems for the poor performance of Africa regional trade integration. However, the following are the major Problems of Africa regional trade integrations in general and comesa in particular which this study assesses in detail.

A. Non- complementarity of trade

A major congenital rigidity of most African economies is that their colonial masters encouraged the development and export of a few primary raw material products meant to service factories in Europe, a situation that has changed very little in the 1990s. Oxfam (1993) report that overdependence on commodity exports on depression-prone world markets is at the heart of Africa's trade crisis. According to the report, more than any other developing region, Africa depends on primary commodities—such as coffee, cocoa, cotton and copper—to generate the foreign exchange needed to buy imports and it is for historical/colonial reasons that Africa's major export markets are also identical, a fact which causes its own problems.

As (UNCTAD, 1995) Most African countries have failed to shift their exports from primary products towards manufactured, which faces more elastic demand. In 1995 primary commodity accounted for 64% of Africa's exports, compared with 49% for Latin America and just 5% for Asia. The world average was about 24%. Manufactured products made up only 28% of Africa's export while the share was 50% for Latiin America and 37%for Asia. The study finds that African exports are concentrated in a few commodities. For 20 of 47 African countries a single commodity account for more than 60% of exports. In 31 of these countries only three commodities account for more than 80% of exports. And 19 of these countries rely on three commodities for more than 95%of their exports. Similarly, the production structure of almost all comesa member countries is similar and is also dominated by primary commodities production. Primary commodities constitute an average of 82.6% of total export earnings for these countries,

of which 59.4% are from single commodities. Apart from creating balance of payments problems if production of the single commodities is disrupted, any slump in world commodity prices erodes the ability of COMESA economies to maintain investment in infrastructure, to say nothing about the negative effects on regional integration efforts.

B. Overlapping of membership

Many African countries are members of more than one regional grouping. In eastern and southern Africa some countries members of both SACU and SADC or both COMESA and SADC. In western Africa many countries that belongs to ECOWAS also belongs to UEMOA. The overlap extends to the country level of the 53 African countries, 26 are members of two regional economic communities, and 20 are a member of three regional groupings and one country (DRC) belongs to four regional groups. Only 6 countries maintain membership in one regional economic community (See annex A).

There are controversial arguments on overlapping of membership of member countries. Some arguments stares that overlapping of membership is beneficial for members in such away that it allows countries to integrate on various fronts, with some moving faster tan others, to optimize benefits from integration and to create optimal economic spaces to coordinate and harmonize national policies and strategies in sub-regions and eventually in the entire regions. In contrast other arguments state the difficulties posed by overlapping membership. ECA policy research report, (2004) explains that overlapping of membership leads to wasteful duplication of efforts, and counter productive competition among countries and institutions. Moreover it adds burdens to member countries in such away that countries belongs to two or more regional groupings not only face multiple financial obligations, but also required to cope up with different meetings, policy decisions, instruments, procedures and schedules.

C. Lack of harmonization and coordination of policies.

One of the problems of Africa regional integration is lack harmonization and macroeconomic policies. In many of the member states cooperation does not go far beyond the signing of treaties and protocols. Moreover, some governments do not send

to meetings those officials who have the appropriate expertise on the issues to be discussed. The result, of course, is that appropriate substantive ministries, whose officials or experts do not attend such meetings, are generally unaware that collective decisions are being taken on topics in their fields of competence. Hence no action is taken to implement the decisions or to set aside funds for the implementation of programs adopted.

D. Excessive Dependency of Comesa States on the Developed West

As a result partly of the congenital rigidities, it is no secret that many African nations generally still depend on the West for imports of raw material-supplies and manufactured products, even in cases where products of comparable quality may be available in member states. There are two main reasons for the continued dependence on the West. First, the preference for Western imports is attributable to habit, where both consumers and the importers prefer anything "Western." Secondly, many of the imports from the West are tied directly to aid programs which tend to favor imports from the aid-giving country: nearly two thirds of capital and commodity aid and an even higher proportion of technical assistance require imports from the aid-giving country. This happens regardless of the suitability of the products for local conditions. For instance, about US$5 billion worth of goods exported by COMESA members to developed countries are re-imported back into the region by other members. This runs counter to the rationale for creating bigger markets to facilitate the growth of viable production ventures. High dependence on imported raw materials from the West makes COMESA economies particularly vulnerable to foreign exchange availability—which in Africa is typically in short supply. Secondly, inter-sectoral and intra-sectoral linkages are bound to be weak, because firms buy their requirements from outside COMESA, rather than from within.

E. Revenue Loss Due To Trade Liberalization

Reducing trade barriers in economies where tariff revenue is a significant source of government revenue complicates the inter-temporal trade off between the apparent short term loss of revenue and the expected long term benefit emanating from regional integration. In countries that trade a lot with in a given community, government revenue losses due to liberalization could be large because international trade is the main source of tax revenue for many African countries. Study by mussa (1997) explains that assuming full liberalization of inter-community trade, the estimated revenue loss was less than 0.5% of GDP across region, which is small, while the estimated tax revenue loss from full implementation of WTO agreement is about 2% of Africa's GDP.

In line with the above argument no Economic theory that offer a magic formula for determining the appropriate degree of trade restrictions for achieving both the protection and revenue objective in the context of medium-term growth strategies of African countries. (IMF, 1997) states that although trade taxes as a proportion of total tax revenue declined in Africa from over 40% in the 1970s to just over 30%, in the mid-1990s, Africa's relative dependence remains much higher than that of the Asia-Pacific region (24%), as well as the Latin America and the Caribbean region (21%). Africa's level of dependence is of course, many multiples of the 2% level for the OECD countries). However, the study argue that it will be only over the long term, as domestic productive capacity (and hence the domestic tax base) grows and broadens and as administrative capacities improve, that a major shift from reliance on international trade taxation to a reliance on domestic taxation would be expected to occur.

F. Poor private participation

Private sector participation plays a vital role for the expansion and encouragement of regional arrangements. According to (Asante, 1997), particular attention on private sector participation in formulating strategy and programs would be useful to encourage Africa regional groups. However, the participation of private sector in Africa's regional grouping is insignificant. This is due to lack of government resources to ensure full

participation and when some resources are secured. The participation is also limited at the level of chamber of commerce officials.

2.1.2. Prospects of Africa Regional Trade Integration

Despite of the problems of Africa regional integration, many programs or initiatives have designed to create a fertile ground for the future. These initiatives are both inside initiatives and cross-border initiatives. The prospect for the closer cooperation and regional integration among countries in Africa seems bright if the designed programs are implemented effectively. Most of the existing regional integration efforts in Africa including the Africa union to some extent hold theoretical allegiance to the European process of integration and the custom union theory. Recent trends and developments show many of the countries to be on the side of increased commitments to regional cooperation and integration. (Adetual, 2002) explains that the increased commitment of core Africa states such as Nigeria and South Africa to the goal of Africa unity and regional integration through the Africa union is enjoying strong domestic support in their respective countries. For instance, New Partnership for Africa's Development (NEPAD), Omega Plan, and the other programs which are dominantly supported by Nigeria and South Africa Millennium Partnership for Recovery Programme (MAP) and Constitutive Act of Africa Union which have been implemented to promote the new initiative of Africa unity.

On the other hand, there are cross-border initiatives of Africa regional integration to address these problems. According to these initiatives there are two new optimistic approaches that state regionalism may have greater success in Africa. The first approach in action is the Regional Integration Facilitation Forum (RIFF), which originated as the Cross-Border Initiative (CBI) in 1992 as a framework of harmonized policies to facilitate a market-driven concept of integration in Eastern and Southern Africa and the Indian Ocean countries. Fourteen countries participate in the CBI/RIFF, which is co-sponsored by the African Development Bank, the European Union, the International Monetary Fund and the World Bank. Given the ongoing economic reform programs in these countries, the underlying premise is that regional integration can

accelerate the pace of economic growth by fostering efficient cross-border investment and trade flows. In contrast to previous regional initiatives the CBI/RIFF is characterized by Outward-orientation and openness to the rest of the world, Avoidance of the creation of new institutions, direct involvement of the private sector in the formulation and implementation of a conductive policy environment and Peer pressure from fast reformers setting the pace of integration. However, the CBI/RIFF is criticized as being incompatible with the ECA-driven regional framework for Africa and for proposing a market-driven rather than development-oriented regionalism model.

The second approach is the Cotonou Agreement which explains that restructuring of trade relations between the ACP States and the EU is helpful to develop momentum behind regional integration in Africa in this decade. Trade relations, which are now based on non-reciprocal trade preferences granted by the EU, will in future be based on economic integration agreements. The EU intends to negotiate these Economic Partnership Agreements (EPAs) with ACP countries engaged in a regional integration process, and not with individual States except in exceptional circumstances. EPAs are thus intended to consolidate regional integration initiatives within the ACP. Decisions about the geographical configuration of future EPAs are still outstanding. Under the Cotonou Agreement, this decision lies with the ACP countries, but the EU has added the rider that it is up to the Community to ensure that this decision is in line with the objectives and principles of the Agreement. The EU has published "Orientations on the Qualification of ACP Regions for the Negotiation of EPAs" setting out the Commission's views in this respect (EU Commission, 2001).

There are a number of problems arise in implementing the above initiatives particularly the cross-border initiative. The first difficulty situation is in implementing this agreement where groupings have non-ACP States as members. The Commission points out that while, legally, arrangements could be put in place to allow free circulation of goods within the free trade area while confining the benefits of the EPA to the ACP members of the group, in practice this situation would not be possible in the longer term because of the possibility of trade deflection. The other problem arises is overlapping membership

which leads to the negotiation of two or more EPAs with the same countries, which is not conceivable. The Commission does not rule out overlapping membership but points to the obvious corollary that the regional groupings concerned would have to harmonize their negotiating position vis-à-vis the EU to ensure that all countries of both groupings have the same access arrangements to the EU, and that negotiations take place in one setting. As overlapping memberships mainly affect the broad, free trade groupings, this could effectively end up forcing even larger integration arrangements than currently exist.

Finally, the EU has now classified the ACP countries into developing and least developed countries in the sense that the latter benefit from the unilateral duty-free access offered to all least-developed countries (LDCs) under the "Everything But Arms" initiative. While this might imply that only the former are required to provide some measure of reciprocity under the new regime, in practice it is hard to see how LDCs which are members of regional groupings with non-LDC ACP States can retain external protection against EU imports. In addition to this, such an arrangement would give rise to the potential for goods with reduced (or zero) tariffs to be imported from the EU by the more advanced ACP members and re-exported under the FTA to LDC members which have the right to protect themselves by higher tariffs. Thus, LDCs lose out because of the potential for trade diversion under EPAs as EU exporters now gain better access to the markets of ACP countries at their expense.

2.2. An Overview of COMESA

Common Market for Eastern and Southern Africa (COMESA) is the successor organization to the regional Preferential Trading Area (PTA), and came into force on December 8, 1994. COMESA has now 19 members[2]. Among these eight members[3] are also members of the Southern African Development Community (SADC). It is Africa's largest economic community with a total population of around 374 million and an estimated GDP of US$ 203 billion (2006). (www.comesa.org)

Comesa was established with the aim and objectives, which pursue to deepen and broaden the process of regional integration in the region which had been initiated by the PTA. The aims and objectives of comesa as stated in the treaty are:

- Attaining sustainable growth and development of member states by promoting amore balanced and harmonious development of its production and marketing structure
- Promoting joint development in all fields of economic activity and adopting joint a macro- economic policies and programs to raise the standard of living of its people and to foster closer relation among its member states.
- Cooperation in the creation of an enabling environment for foreign, cross-boarder and domestic investment through promotion of research and adaptation of science and technology for development.
- Cooperation in the strengthening the relationship between the common market and the rest of the world.
- Contributing towards the establishment, progress and realization of the objectives of the Africa Economic Community. (Www.comesa.org)
- Eliminate the structural and institutional weaknesses of member states and to promote political stability and sustained economic development

[2]These are: Burundi, Comoros, Djibouti, Egypt, Eritrea, Ethiopia, Kenya, Libya, Madagascar, Mauritius, Malawi, and The democratic republic of Congo, Rwanda, Seychelles, Sudan, Swaziland, Uganda, Zambia, and Zimbabwe

[3]These are: DRC, Madagascar, Malawi, Mauritius, Seychelles, Swaziland, Zambia and Zimbabwe

- The creation of a Free Trade Area (FTA) on October 31, 2000. However, so far only 13 countries: Burundi, Comoros, Djibouti, Egypt, Kenya, Libya, Madagascar, Malawi, Mauritius, Rwanda, Sudan, Zambia and Zimbabwe have agreed to join the FTA. The 13 FTA members have removed all barriers to intra-regional trade, granted trade preferences to COMESA members that are not yet part of FTA, and retain tariffs on imports from outside COMESA. The reluctance of remaining member states to join FTA remains with disagreement over Common External Tariff, which had also caused it to miss the Customs Union by 2004, the date for which has been set to December, 2008.
- Elimination of non-tariff barriers such as import licensing requirement, foreign exchange restrictions, removal of import and export quotas, easing of customs formalities and improved functioning of border posts. But a number of non tariff barriers are still impeding the flow of trade amongst the COMESA members. For instance, it is still not possible for companies manufacturing pharmaceutical products in one country, i.e., Zambia to export these to other COMESA countries, as there are different procedures for drug registration in each of them. In Zimbabwe, it takes three years to complete the documentation and formalities for registration and sale of new drugs.
- Establishment of a Customs Union, liberalization of visa facilities for the COMESA citizens and introduction of COMESA wide telephone system to provide cheaper and direct telecommunications facilities among member countries.
- COMESA also has future prospects in achieving its goal which includes achievement of macro-economic convergence, harmonization of policies in energy, agriculture, free movement of services by 2010, free right of residence by 2014 and establishment of an Economic Community by 2025.
- In order to achieve these objectives both comesa and its predecessor PTA have made achievements in the area of trade, investment, custom, transport, development finance and technical co-operation. For instance, the role of he PTA bank in promoting investment and providing trade financing facilities, the transport costs reduction by about 25% in accordance with the traffic facilitation of measures

under taken and telecommunication sector developments can be mentioned among the achievements. Moreover, COMESA in accordance with its vision to eliminate the structural and institutional weaknesses of member states and to promote political stability and sustained economic development in the grouping, in year 2007 established one-stop border post at Chirundu between Zambia and Zimbabwe. One such Border Post has already been established at Malaba on the Uganda-Kenya border. COMESA is also working on establishing similar posts on the Zambia-DRC, Zambia-Malawi, Uganda-Rwanda borders. This will ease traffic congestion and facilitate the trade flow between the countries. (www.comesa.org).

In regard to trade activities, comesa intra-trade performance is not satisfactory. UNCTAD, (2007) explains that Intra- comesa trade has grown from US$ 798 million in 1985 to US$ 2.7 billion in 1995 and to US$8.5 billion in 2006 as a result of various measured under such as trade facilitation and trade liberalization measure. Growth in intra-trade has consistently been above 5.0 percent except in 1985 and 2000, when 4.4and 4.9 percent growth rates were registered. The annual growth rate of intra-comesa trade is about 5.7% on average. However, Alemayehu & Haile, (2002) explain that despite this increase in the intra- COMESA trade in value terms, its share in total trade of COMESA remain very small accounting for about 4% to 6% of total trade of COMESA over the period 1981 to 2006. According to COMESA (2008) this low performance in intra-trade is attributed to lack of political commitment, weak balance of payments and foreign reserve situation. As industry and manufacturing is underdeveloped many members are unwilling to reduce tariffs further for fear of undermining local industries and revenue collection. (IMF working paper, 2007), also states that even though intra- COMESA tariff liberalization has a trade creation effect, it is insignificant.

Study such as Muuka et al (1998), explained that the low level of trade share of intra-comesa trade from total comesa trade can be attributed to the competitive and non-complementarily trade structure of member countries, overlapping of membership, issue of revenue loss, unequal distribution of gain, lack of harmonization and coordination of policies.

III. Methodology and Data Sources

Gravity models utilize the gravitational force concept as an analogy to explain the volume of trade, capital flows, and migration among the countries of the world. Gravity models begin with Newton's Law for the gravitational force between two objects *i* and *j*. In equation form, this is expressed as:

$$F_{ij} = \frac{G M_i M_j}{D_{ij}^{2}}$$

Where, F_{ij} is the force of attraction between two bodies, Mi and M_j are the masses of the two objects and D_{ij} is the distance between the two objects. In this equation, the gravitational force is directly proportional to the masses of the objects and indirectly proportional to the distance between them.

Moreover, gravity models establish a baseline for trade-flow volumes as determined by gross domestic product (GDP), population, and distance. The effect of policies on trade flows can then be assessed by adding the policy variables to the equation and estimating deviations from the baseline flows. The core gravity equation has been used for empirical analysis since the econometric studies of trade by Tinbergen (1962) and Poyhonen (1963), the theoretical foundations to the model are of more recent origin. The most classic and early application of the model to international trade was perhaps by Linnemann (1966).

Trade theorists have found the model to be consistent with theories of trade based upon models of imperfect competition and with the Hecksher – Ohlin model. At a theoretical level, Deardorff (1998) shows that a gravity equation can easily be motivated in a Heckscher-Ohlin model without assuming product differentiation. The trick is to relax the assumption that factor prices are equalized internationally, so that countries specialize in producing different goods.

Tinbergen (1962) specified the gravity model for international trade as:

$$\text{Trade}_{ij} = \alpha \frac{GDP_i\, GDPj}{D_{ij}^2}$$

Where, trade_{ij} is the value of trade flows between country i and country j; GDP_i and GDP_j are national income of the two countries (relative economic size of country i and country j) respectively; and D_{ij} is the distance between the two countries and α is constant.

For its simplicity the linear relationship of the model can be taken in logarithm form as:

$$\text{Ln Trade}_{ij} = \alpha + \beta_1 \ln GDP_i + \beta_2 \ln GDPj - \beta_3 \ln D_{ij} + \varepsilon_{ij}$$

A gravity model is also an important tool to ensure the strength and weaknesses of trade theories. For instance, the standard assumption of the Heckscher-Ohlin model that prices of traded goods are the same in each country has proved to be faulty due to the presence of what trade economists call "border effects." Properly accounting for these border effects requires prices of traded goods to differ among the countries of the world. Anderson (1979) was the first to do this, employing the product differentiation by country of origin assumption, commonly known as the "Armington assumption" (Armington, 1969). By specifying demand in these terms, Anderson helped to explain the presence of income variables in the gravity model, as well as their multiplicative (or log linear) form. This approach was also adopted by Bergstrand (1985) who more thoroughly specified the supply side of economies. The result was the insight that prices in the form of GDP deflators might be an important additional variable to include in the gravity equations described above.

The monopolistic competition model of new trade theory has been another approach to providing theoretical foundations to the gravity model (Helpman, 1987 and Bergstrand, 1989). Here, the product differentiation by country of origin approach is replaced by product differentiation among producing firms, and the empirical success of the gravity

model is considered to be supportive of the monopolistic competition explanation of intra-industry trade. However, Deardorff (1998) and Feenstra (2004) have cast doubt on this interpretation, noting the compatibility of the gravity equation with some forms of the Heckscher-Ohlin model and, consequently, the need for empirical evidence to distinguish among potential theoretical bases: product differentiation by country of origin; product differentiation by firm; and particular forms of Heckscher-Ohlin-based comparative advantage. In each of these cases, the common denominator is complete specialization by countries in a particular good. Without this feature, bilateral trade tends to become indeterminate.

Alternatively, there are other approaches to gravity-based explanations of bilateral trade that do not depend on compete specialization. As emphasized by Haveman and Hummels (2004), this involves accounting for trade frictions in the form of distance-based shipping costs or other trade costs, as well as policy-based trade barriers. Distance costs can also be augmented to account for infrastructure, oil price, and trade composition as in Brun et al. (2005). The two approaches (complete vs. incomplete specialization) can be empirically distinguished by category of good, namely differentiated vs. homogeneous, as in Feenstra, Markusen and Rose (2001).

The gravity model can augmented through additional variables that affect the trade flow such as geographical proximity , culture similarities , proxies by common language or common taste or custom, historical ties by colonial relationship, political and policy factors such as regional agreements on top of the basic gravity model variables of GDP, population and distance.

In addition to this, gravity models have been employed to assess the impact of trade policies such as the impact of regional integration agreements on trade flow. The model has been used to address the impact of the regional trade agreement on the level and direction of trade. The model has been used to evaluate how effective the regional trade agreements in promoting trade among members.

In general the gravity model that has been used frequently to analyze bilateral trade flow between countries takes the following specification;

$$Trade_{ij} = \beta_0 + \beta_1 GDP_i + \beta_2 GDPj + \beta_3 N_{i+} \beta_4 N_{j+} \beta_5 D_{ij} + \beta_6 A_{ij} + \varepsilon_{ij}$$

Where $Trade_{ij}$ represents the value of the trade flow from country i and j ; GDP_i and GDP_j are the values of GDP in country i and j respectively; N_i and N_j are the size of population in both countries ; D_{ij} represents the distance between the capital cities of country i and country j; βs are parameters to be estimated ; and A_{ij} represents any other factor such as geographical proximity , historical ties, cultural similarities ,policy or political factors , trade complementarity effect , overlapping of memberships and the like.

An alternative specification for the above general gravity model making a simple modification which is associated with both gross domestic product and GDP per capita (GDPPC), respectively. In these cases, the equation becomes as follow:

$$Trade_{ij} = \beta_0 + \beta_1 GDP_i + \beta_2 GDPj + \beta_3 GDPPC_i + \beta_4 GDPPC_j + \beta 5 N_{i+} \beta_6 N_j + \beta_7 D_{ij} + \beta_8 A_{ij} + \varepsilon_{ij}$$

Several explanations have been provided in the literature for inclusion of GDP per capita as an independent variable in addition to GDP. One possible explanation for the independent effect of per capita income is that exotic foreign varieties of goods are superior in consumption. Other possibilities arise out of the literature on endogenous growth. For instance, the process of development may be led by the innovation or invention of new products that are then demanded as exports by other countries.

It is also instructive to focus explicitly on GDP per capita as a determinant of trade. The standard gravity model predicts that countries with similar levels of output per capita will trade more than countries with dissimilar levels. This is true of the Helpman-Krugman sort of theory also, as it predicts that the volume of trade should increase with increasingly equal distribution of national income. This however contradicts the traditional Heckscher-Ohlin theories of trade that predict that countries with dissimilar levels of output will trade more than countries with similar levels.

The ultimate justification for the inclusion of distance in the model is of course given by the fact that this measure seems to be a reasonable measure of averaging across different modes of transportation between neighboring countries that often engage in large volumes of border trade. The dummy variable is unity if countries i and j share a common border and 0 when they do not. On the other hand the justification for inclusion of Common language (Langij) is that countries speaking the same language (official or commercial) have low transaction cost which helps to facilitate trade negotiations

Among the many studies using the gravity framework, a high percentage shares the research task of predicting trade potentials. Rahman (2003) has estimated trade potential for Bangladesh using panel data approach with economic factors like openness, exchange rates etc rather than natural factors. Christie (2002) estimates trade potential for Southeast Europe using ordinary least square estimation on cross section data from 1996- 99.

Several studies have analyzed the trade enhancing impact of preferential trading arrangements. These studies predict the additional bilateral trade that would be a consequence of the economic integration of a set of economies. Both the cross section and panel data approach has been used by these studies. The cross-section as also the panel data approach is mainly static and refers to a long run relationship. Frankel (1997) has used the gravity model to investigate a host of issues like the estimates of trading blocs, role of currency links etc using cross-section and panel data. Frankel and Wei (1993) have examined bilateral trade patterns throughout the world and analyzed the impact of currency blocs and exchange rate stability on trade.

The most recently developed gravity model, by UNCTAD-WTO Trade Centre is *TradeSim.* This is being used for the estimation of trade potentials for countries with limited trade relations in the past, in particular transition economies. The model is in general being used to analyze the bilateral trade flows of developing countries with their trading partners.

3.1. Model Specification

Gravity model is an appropriate to show the determinants of trade flow among member countries of the regional grouping. However, the principal focus of the study is determining the impact of trade openness and overlapping of membership on COMESA intra-trade on top of other determinants (GDP of member countries, GDP percapita of member countries, distance among member countries, common boundaries, geographical area of member countries, language, landlockedness) using gravity model.

Bilateral trade flow is the dependant variable of this model which shows the trade relation among the trading partners of the comesa regional group. It is determined by trade openness among member countries, overlapping of membership, geographical area of the member countries, distance among member countries, language, landlockdness, common boundary (adjacency) etc. These determinants taken as the explanatory variable of the under studied. Even though all the above factors are the determinants of trade flow of a given regional group, the main interest of this study is to show how trade openness (trade liberalization) and overlapping of memberships affects the trade flow of comesa regional group.

Trade openness between countries is an important indicator for the potential expansion of intraregional trade. The degree of trade liberalization of countries is proxy by trade openness index of the respective country. The trade openness index is the ratio of the sum of total imports and export of the country to the GDP of that country. For instance, the trade openness index of country i (TO_i) and country j (TO_j) is given as:

$$TO_i = \frac{(\Sigma M_i + \Sigma X_i)}{GDP_i} \quad \text{and} \quad TO_j = \frac{(\Sigma M_j + \Sigma X_j)}{GDP_j}$$

Where, TO_i and TO_j are trade openness index of country i and country j respectively.

ΣM_i and ΣX_i are total import and total export of country i respectively

ΣM_j and ΣX_j are total import and total export of country j respectively and

GDP_i and GDP_j are gross domestic product of country i and country j respectively.

The trade openness index of a given country measures the share of foreign trade in the total economy of the country. The justification for the inclusion of trade openness in the gravity model is that the higher trade openness with in regional group, the more will be the benefit that the member countries obtain from the integration in the long run since the loss of revenue due to liberalization in the short run is small (Mussa, 1997).
In context to this, Rodrik (1998) expresses the emerging consensus regarding the broad contours of a development oriented trade policy for African countries as follows: "de-monopolize trade; streamline the import regime; reduce red tape and implement transparent customs procedures; replace quantitative restrictions with tariffs, avoid extreme variation in tariff rates and excessively high rates of effective protection; allow exporters duty-free access to imported inputs; refrain from large doses of anti-export bias; do not tax exports to highly". In other words, liberal trade policy leads to trade expansion which, in turn, generates economic growth. Stigliz (1997) also explains that openness to trade may be relatively more growth-inducing for the developing countries that have already succeeded in establishing an efficient and competitive manufacturing base prior to deeper liberalization of their trade regimes. More over, based on the trade liberalization experiences of a sample of developing countries, Michaely (1991) concludes that the survival of trade liberalization attempts trends strongly to be related to a favorable export performance, whereas the collapse of trade liberalization is overwhelmingly connected with a dismal export performance. From these arguments in general one can conclude trade openness has appositive net effect for one's country trade and economic expansion.

Scholars such as Chaisrisawatsuk, S. and W. Chaisrisawatsuk, (2007) have used the gravity model approach to determine the impact of trade openness on Bangladesh trade flow. Their finding was that trade openness play a significant role fore trade flow of Bangladesh and they recommended the country to liberalize its trade for its trading partners. In contrast to the above arguments there are different scholars who believe

that trade openness has a negative impact especially for LDCs who trade primary commodities. Thus, this study uses gravity approach to determine the impact of trade openness on comesa trade flow.

The other area of interest of this study is overlapping of memberships. There are controversial arguments on overlapping of membership of member countries. Some arguments stares that overlapping of membership is beneficial for members in such away that it allows countries to integrate on various fronts, with some moving faster than others, to optimize benefits from integration and to create optimal economic spaces to coordinate and harmonize national policies and strategies in sub-regions and eventually in the entire regions. On the other handsome arguments state that overlapping of membership is problematic in respect to the proper administration of tariffs, enforcement of the Rule of origin at the border (which may also breed corruption) and other administration costs related to preparation of planning and seminars. Studies such as Alemayehu and Haile (2002), Aden kasay (20008) use gravity model to explain the impact of overlapping of memberships on comesa regional trade integration. They conclude that overlapping of membership has a negative impact for the region's intra-trade.

The Model

As described above this study conduct the estimation of gravity model to show the impact comesa trade flow determinants, taking due attention given for trade openness and overlapping of memberships.

Since there are some dummy variables (common language, landlockdness, overlapping of membership, common boundary), which have value of zero the model takes the following semi-log linear form.

$\log T_{ij} = F(\log GDP_i, \log GDP_j, \log GDPPC_i, \log GDPPC_j, \log SURF_i, \log SURF_j, \log D_{ij}, \log TO_i, \log TO_j\ LANG_{ij}, LAND_i, LAND_j, CB_{ij}, SADC_{ij},)$

Where T_{ij} represents the value of the total comesa intra-trade flow (total import plus total export) between country i and j; GDP_i and GDP_j are the values of GDP in country i

and j respectively; $GDPPC_i$ and $GDPPC_j$ are the values of per capita GDP of country i and country j. $SURF_i$, $SURF_j$ are the geographical size of both countries; D_{ij} represents the distance between the capital cities of country i and country j; $LAND_i$, and $LAND_j$ are dummy variables represents the landlockdeness of country i and county j respectively, which take the value of 0 if the country is land locked and 1 other wise ; common border between the two countries (CB_{ij}) is a dummy variable which takes the value of 1 if the countries share common border and 0 otherwise. TO_i and TO_j are the trade openness index of the county I and country j. The model proxy the impact of overlapping of membership by considering countries who are the member of SADIC on top of comesa. Thus, $SADC_{ij}$ is a dummy which takes the value of 1 if both countries are the member of SADC and 0 otherwise. $LANG_{ij}$ is also a dummy which takes the value of 1 if both there is language similarities between country i and country j and 0 otherwise.

Expected Sign

A larger GDP_i and GDP_j reflect the higher capacity of country i and country j to supply export goods and to demand imported goods each other. Thus the expected sign of these variables are positive.

$GDPPC_i$ and $GDPPC_j$ indicates the level of development of the two countries .according to the endogenous growth theory the process of development may be led by the innovation or invention of new products that are then demanded as exports by other countries. Moreover countries with similar levels of output per capita will trade more than countries with dissimilar levels. The expected signs of $GDPPC_i$ and $GDPPC_j$ are positive.

Countries are expected to trade more as they have larger size ($SURF_i$, $SURF_j$). This is because countries might have the many endowments for the production of tradable goods and many people who demand imported goods. It boosts bilateral trade between these countries. Therefore, $SURF_i$, $SURF_j$ is expected to have positive sign.

Distance D_{ij} is also important in explaining trade between economies. The sign of the distance coefficient cannot be predicted in advance. If the sign is estimated to be positive, it indicates that the market can be expected to be dominated by a home market effect as explained by Helpman and Krugman (1989) and in numbers of other models such as the geographical model of Krugman (1991a).

Even though Foroutan and Pritchett (1993) find that distance is insignificant and as such not a great barrier to intra SSA trade) find argue distance is particularly costly in Africa. In line with Limao and Venables (2001), an increase in distance between economies is expected to increase transportation costs of comesa intra-trade flow. Thus, the expected sign of D_{ij} in this study is negative.

$LANG_{ij}$ Common language is expected to reduce transaction costs as speaking the same language helps facilitate trade negotiations. Hence, the expected sign for $LANG_{ij}$ is positive.

If countries that share a common border (CB_{ij}), it reduces transportation cost. Thus, the expected sign is positive. The impact of landlockedness ($LAND_i$, and $LAND_j$) for the trade flow is negative since the lack of ocean ports reduces trade, which may add to transportation costs.

The trade openness index of country i and country j (TO_i and TO_j) shows the degree of trade liberalization within their trading partners. The higher the trade openness index, the more the trading partners trade among themselves and the higher will be the benefit they get from the regional agreement. Thus, the expected sign of the trade openness is positive. From previous studies stated above and theoretical justifications overlapping of membership has a negative impact for Africa's regional integration. Thus, this study expects the negative sign for the stated variable.

The Data

This study employs secondary data. Because of data limitation in some member comesa countries and to make it manageable, the study selects thirteen comesa member countries[4] out of the total nineteen. The criterion to choose the countries is the accessibility and the reliability of data. The data will cover the period from 1999 to 2006. Since the COMESA has established in 1994, data before 1999 are very limited for this purpose. The study collects these data from different sources which include custom authority, World Development Indicator CD- ROM, IMF data of trade statistics (DOTS), ECA data source, UNCTAD data and COMESA &WTO web pages etc.

Estimation Techniques

This study uses the panel data set. The panel data is very important than time series and cross-sectional data. Because it is explains why individual units behave differently and also to model why a given unit behaves differently at different time period. This estimation technique is under-gone either by fixed effect or random effect model. The fixed effects model is the one which captures the effect of those variables which are peculiar to the i-th individual and other unobservable individual specific effects where as the random effect model didn't capture such individual specific effect.

To under take the estimation the study has to choose either the two models using the hausman specification test (see annex D). Although the test allows the fixed effect model, this study prefers the random effect model based on the following justifications. First, the fixed effect model drops the time invariant variables (distance, geographical area) and dummy variables (common boundary, and overlapping of memberships etc) while these variable are the area of interest of this study (see annex C). Hence, the random effect model is preferred to include the impact of these variables on comesa intra-trade. Secondly, since the model has a hetroscedastic problem (see annex E), the random effect (GLS) is appropriate to control it.

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[4]These are: Comoros, DRC, Djibouti, Egypt, Ethiopia, Kenya, Madagascar, Malawi, Rwanda, Sudan, Uganda, Zambia, and Zimbabwe

Finally, on average the level of significance of the estimated variable is higher in random effect model than fixed effect model

3.2 Econometric Results

As the main area of interest of this study is to examine the impact of trade openness and overlapping of memberships in addition to other variables, on comesa intra- trade regional using a gravity model, this section of the study will analyze the of the estimated result of the model. The regression result of the panel data for the specified variable with the stated period of time is outlined in the following table.

Table1: Results of Random and fixed effect model.

	Coefficients	
	Random effect	Fixed effect
loggdpi	.0910157	.078188
loggdpj	.1617294	.0894073
loggdppci	.454931	895431
loggdppcj	.3602913	.97136
logtoi	1.245719	1.187014
logtoj	1.1159014	1.114721
logsuri	.1385595	(dropped)
logsurj	.0560813	0473983
logdij	-.3087328	(dropped)
sadcij	-.1019943	(dropped)
cbij	.0288386	.0973618
landi	-.4569869	(dropped)
landj	-.2883303	.0132779
langij	.034823	.1453186
constant	12.19765	7.912386

N.B. All variables stated above are explanatory variables (in logarithm from) and dummy variables of the model. The dependant variable of the model is total trade flow.

Base on the stated justifications in the estimation technique the study analyzed the result using random effect model. Hence, as shown above the coefficient of the GDP of both countries (county i and country j) are positive and statically significant at 1% level as expected. A unit increase in county i and county j GDP results .0910157 and .1617294 increase on total trade flow of comesa respectively. This result is consistent with the theoretical foundation which explain that the GDP of exporting country (county i) represents the exporting capacity of the country and GDP of the importing country (country j) represents the absorbing capacity of the country for import trade. The result is consistent with the previous studies that use the gravity model.

Like GDP coefficients of percapita GDP of country i and country j are positive and statically significant at 1% level of significant as the study expects. The coefficients imply that a unit increase in GDPPC of country i and country j results a .454931 and .3602913 increase total trade flow of comesa respectively. This is also consistent from the theoretical base of international trade and with previous works Helpman-Krugman (1998). The logic behind this is that when the percapita income of the countries rise implies the peoples demand for both domestic and imported product rise, which increases the trade flow.

The coefficients of trade openness of both countries, which is the area of interest of this study, are positive and statistically significant at 1 % of significant as expected. The result shows that if the exporting country and importing country open (liberalized) the trade flow of comesa will increase by 1.245719 and 1.159014 respectively. The justification for this argument is that when countries make there trade liberal the long run gain exceeds the short run revenue loss by liberalization. This result is consistent with the theoretical frame work and previous Studies such as Rahman (2003), Mussa (1997), Stigliz (1997), Michaely (1991), and Rodrik (1998), Chaisrisawatsuk, S. and W. Chaisrisawatsuk, (2007) that of trade openness has a positive impact for comesa intra-regional trade

The coefficient of geographical areas of both countries is positive as expected and statically significant at 1% level of significant. The result shows that the geographical surface of country i and country j contributes about .1385595 and .0560813 for he total trade flow of comesa respectively. From the theoretical base as the geographical area the trading partners is larger there is enough resource for the production of traded commodities than those small countries with limited endowments.

The distance variable coefficient is negative as expected and statically significant at 1% level of significant, which the theoretical justification that as the distance between the trading partners increase, the cost of transportation rises which adversely affect the smooth flow of trade among them ,which assures the previous works such as Foroutan and Pritchett (1993), Limao and Venables (2001).

The coefficient of overlapping of membership, is negative as expected but statically insignificant. This implies the contribution of overlapping of membership for the poor performance of intra-comesa trade is insignificant. This result is consistent with the previous works such as Alemayehu and Haile (2002), Aden kasay (2008). Similarly, the coefficients of landlockedness of both countries are negative as expected and statically significant at1% level of significance. If the exporting country and importing country are landlocked the trade flow comesa will decline by -.4569869 and -.2883303 respectively. From the theoretical frame if trading partners are landlocked the price of traded commodities will rise since the cost of the leased port (transportation cost) is added.

The coefficient for common boundary and common language among trading partners are positive as expected. This is also consistent with the theoretical justification and the previous studies that use the gravity model.

IV. Conclusion and Recommendations

This study has assessed the problem of Africa regional trade integration in general and comesa intra-trade in particular. It aims to determine the extent by how much trade openness and overlapping of memberships, in addition to other determinants, affect the comesa intra-trade flow using a gravity model approach. The gravity model is an important instrument to examine these determinants of total trade flow of a given region.

According to the estimation trade openness has appositive impact on comesa-intra trade flow. As expected coefficient of trade openness is positive and statistically significant which are in line with the theoretical justification and previous works of Mussa (1997), Stigliz (1997), Michaely (1991), and Rodrik (1998. This implies when the trading partner make their trade liberal the benefit they get from the regional arrangement outweighs the revenue loss from the liberalization.

The other area of focus of this study is overlapping of memberships. The coefficient of this variable is negative but statistically insignificant which cope up with the previous studies. This implies if trading partners become a member of more than one regional block, their trade flow will decline. This is due to the cost which associated being a member of more than one regional group.

In general the finding shows that the coefficients of GDP, GDPPC, trade openness of member countries, geographical area of the trading partners are positive as expected and statically significant while coefficients of Common language and common boundaries are positive as expected but statically insignificant. Moreover, coefficient of landlockedness is negative as expected and statically significant. These results are consistent with the theoretical background and other previous works.

Researchers such as Alemayehu and Haile (2002), Musila (2005), fortune (1999) Muuka et al (1998), explain several factors that attributes for the poor performance of Africa regional trade integration an general and comesa regional block in particular. These

factors includes overlapping of memberships, non-trade complementarity among the trading partners, lack of macroeconomic harmonization and stability poor private participation, revenue loss due to trade openness. However, the revenue loss due to trade liberalization is a short term problem for the regional trade integration. This study shows that trade openness contributes more for the total trade flow of the intra-trade flow which is against the short term loss of revenue.

In line with the above findings and assessments this study will suggest member countries to diversifying the resource complementarity ,harmonizing macroeconomic and implementation policies ,increasing production capacity ,active participation of private sector ,reducing the trade barriers among member countries, reducing or eliminating of overlapping of memberships to boost the intra-trade flow of comesa regional block in particular and Africa regional trade integration in general.

Even though results discussed above are as expected, the study has its own limitations. It didn't determine the impact of non-trade complementarity, poor private participation, lack of macroeconomic stability on intra- trade of comesa due to lack of sufficient data and time. Thus, the study will serve as a spring board for other researchers to analyze the impact of the above mentioned issues, which it didn't address.

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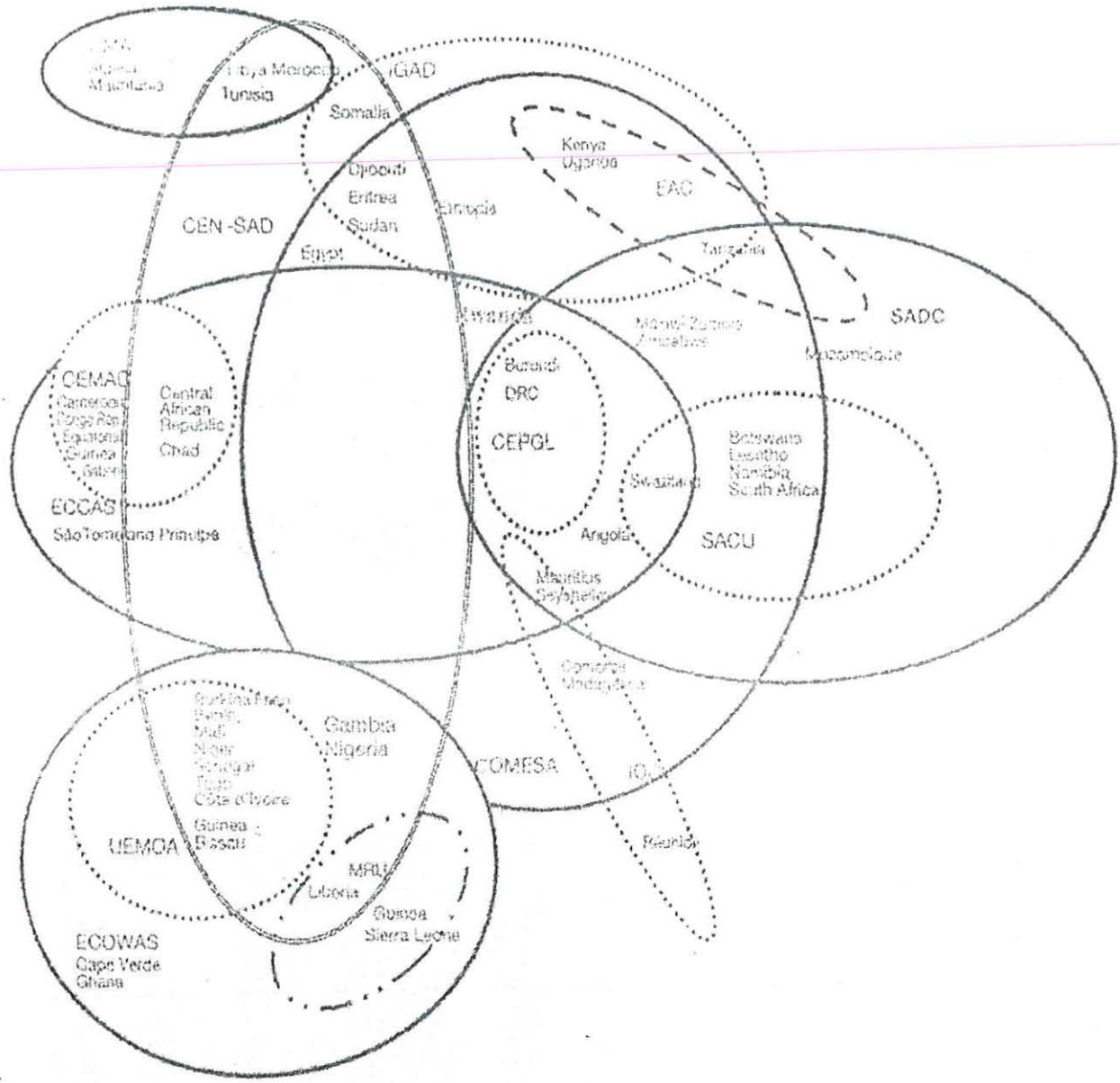
Annex - A

The spaghetti bowl of overlapping regional economic community memberships



Source: Economic Commission for Africa

Annex B

Results of Random effect model

Explanatory Variables	Coefficients	Std. Err.	z	P>z	[95% Conf.	Interval]
loggdpi	.0910157	.0319726	2.85	0.004	.0283506	.1536809
loggdpj	.1617294	.0244966	6.60	0.000	.113717	.2097418
loggdppci	.454931	.0575031	7.91	0.000	.342227	.5676349
loggdppcj	.3602913	.0520273	6.93	0.000	.2583198	.4622629
logtoi	1.245719	.060602	20.56	0.000	1.126941	1.364497
logtoj	1.159014	.0617345	18.77	0.000	1.038016	1.280011
logsuri	.1385595	.0286199	4.84	0.000	.0824656	.1946534
logsurj	.0560813	.0194088	2.89	0.004	.0180408	.0941219
logdij	-.3087328	.0970324	-3.18	0.001	-.4989128	-.1185527
sadcij	-.1019943	.1403588	-0.73	0.467	-.3770926	.173104
cbij	.0288386	.1138302	0.25	0.800	-.1942646	.2519417
landi	-.4569869	.1018531	-4.49	0.000	-.6566153	-.2573585
landj	-.2883303	.082959	-3.48	0.001	-.4509269	-.1257338
langij	.034823	.0746024	0.47	0.641	-.111395	.181041
_cons	12.19765	.8341934	14.62	0.000	10.56266	13.83264

Wald chi2 (14) = 1617.73
Prob > chi2 = 0.0000

Annex C

Fixed-Effects (Within) Regression Results

Explanatory Variables	Coefficient	Std. Err.	t	P>t	[95% Conf.	Interval]
loggdpi	.078188	.0326106	2.40	0.017	.0142009	.1421752
loggdpj	.0894073	.0280136	3.19	0.001	.0344401	.1443744
loggdppci	.895431	.129907	6.89	0.000	.6405327	1.150329
loggdppcj	.97136	.1302429	7.46	0.000	.7158024	1.226918
logtoi	1.187014	.0670489	17.70	0.000	1.055453	1.318574
logtoj	1.114721	0691476	16.12	0.000	.9790424	1.2504
logsuri	(dropped)					
logsurj	.0473983	. 0280986	1.69	0.092	.1025323	.0077356
logdij	(dropped)					
sadcij	(dropped)					
cbij	.0973618	.1637602	0.59	0.552	-.2239621	.4186857
landi	(dropped)					
landj	.0132779	.1430987	0.09	0.926	-.2675048	.2940605
langij	.1453186	.1005602	1.45	0.149	-.0519967	.3426339
_cons	7.912386	1.315251	6.02	0.000	5.331652	10.49312

Number of obs = 1247

Group variable: $country_j$ Number of groups = 156

R-sq: within = 0.5811 F (10, 1081) = 149.97

Overall=0.3055 Prob > F = 0.0000

Between = 0.2995 F test that all u_i=0: F (155, 1081) =30.01 Prob > F = 0.0000

Annex D

Hausman Fixed Results

Coefficients

	(b) Fixed	(B) random	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
loggdpi	.078188	.0910157	-.0128277	.0064189
loggdpj	.0894073	.1617294	-.0723222	.0135897
loggdppci	.895431	.454931	.4405	.116487
loggdppcj	.97136	.3602913	.6110687	.1194001
logtoi	1.187014	1.245719	-.0587053	.0286871
logtoj	1.114721	1.159014	-.0442928	.0311486
logsurj	.0473983	.0560813	.1034797	.0203182
cbij	.0973618	.0288386	.0685232	.1177289
landj	.0132779	-.2883303	.3016082	.1165978
langij	.1453186	.034823	.1104956	.0674303

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 (10) = (b-B)'[(V_b-V_B) ^ (-1)] (b-B)

= 155.52

Prob>chi2 = 0.0000

Annex E

Breusch-Pagan / Cook-Weisberg Test for Heteroskedasticity

logtij	Coefficients	Std. Err.	t	P>|t|	[95% Conf.	Interval]
loggdpi	.0137458	.036498	0.38	0.707	-.0578593	.085351
loggdpj	.1178154	.0335644	3.51	0.000	.0519656	.1836652
loggdppci	.4578152	.0433365	10.56	0.000	.3727937	.5428368
loggdppcj	.3424142	.0402	8.52	0.000	.2635462	.4212822
logtoi	.8710332	.0622762	13.99	0.000	.748854	.9932124
logtoj	.8654464	.0620481	13.95	0.000	.7437147	.9871781
logsuri	.1830485	.0242565	7.55	0.000	.1354599	.2306371
logsurj	.1144175	.0217109	5.27	0.000	.0718231	.1570119
logdij	-.3548725	.0412496	-8.60	0.000	-.4357997	-.2739452
sadcij	-.0471812	.0606201	-0.78	0.437	-.1661114	.0717489
cbij	-.2142276	.0590952	-3.63	0.000	-.3301659	-.0982893
landi	-.3882642	.042882	-9.05	0.000	-.472394	-.3041344
landj	-.3193498	.0408276	-7.82	0.000	-.3994491	-.2392505
langij	-.0328431	.0402976	-0.82	0.415	-.1119026	.0462164
_cons |	13.6804	.5489855	24.92	0.000	12.60335	14.75745

Ho: Constant variance — Number of obs = 1247

Variables: fitted values of logtij — F (14, 1232) = 160.32

chi2 (1) = 16.76 — Prob > F = 0.0000

Prob > chi2 = 0.0000 — R-squared = 0.6456

Adj R-squared = 0.6416

Declaration

I, the undersigned, declare that this project is my original work and has not been presented for degree in any other university, and that all sources of materials used for the project has been duly acknowledged.

Declared by:

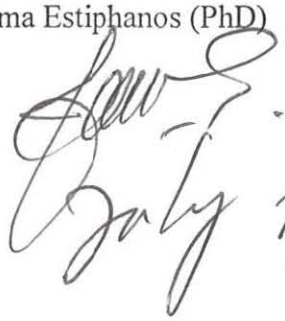
Name: Belete Hailu Demis

Signature: 

Date: 25/06/09

Confirmed by Advisor:

Name: Girma Estiphanos (PhD)

Signature: 

Date: July 1/2009