ADDIS ABABA UNIVERSITY SCHOOL OF GRADUATE STUDIES

TRADE FLOW, CREATION, AND DIVERSION EFFECTS OF COMESA

A Research Project Submitted to the School Of Graduate Studies of Addis Ababa University in Partial Fulfillment of the Requirements for the Degree of Masters of Art in Economics

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Approved by: **signature:**

Tassew Woldehanna

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Table of Contents

ACRONYMS

AC	African and Caribbean
AFTA	ASEAN Free Trade Area
AMU	Arab Maghreb Union
APEC	Asia Pacific Economic Cooperation
ASEAN	Association of South-East Asian Nations
CEAO	Economic Community of West Africa
CEMAC	Economic and Monetary Union of Central Africa
CET	Common External Tariff
COMESA	Common Market for Eastern and Southern Africa
CU	Customs Union
EAC	East African Community
EAC	East African Customs Union
ECA	Economic Commission for Africa
ECCAS	Economic Community of Central African States
ECOWAS	Economic Community of West African States
EIA	Economic Integration Arrangement
EPA	Economic Partnership Agreement
ESA	Eastern and Southern Africa
EU	European Union
FTA	Free Trade Area/Agreement
GATT	General Agreement on Tariffs and Trade
GATS	General Agreement on Trade in Services
HS	Harmonized commodity description and coding system
IGAD	Intergovernmental Authority on Development
Iid	Independently and identically distributed
IMF	International Monetary Fund
LAIA	Latin American Integration Association
LPA	Lagos Plan of Action
MERCOSUR	Southern Common Market
NAFTA	North American Free Trade Area
OAU	Organization for African Unity
OECD	Organization for Economic Co-operation and Development
PTA	Preferential Trade Area
REC	Regional Economic Communities
RTA	Regional Trade Arrangement
SACU	South African Customs Union
SADC	Southern African Development Community
WAEMU	West African Economic and Monetary Union
WTO	World Trade Organization

Abstract

In this paper, we take in hand two main issues: what determines trade flow among COMESA members and what effect COMESA has on its member countries, trade creation or diversion?

Annual data for 20 African countries, 12 COMESA members and 8 non-members, and that of EU for the period 1999-2007 are used to estimate the gravity model employed in the study.

According to the findings from the study, the GDPs, population and language among other factors can explain export flows in our observation. We find that export flows among countries increase more than proportionately with GDPs.

We also found that the geographic distance might impede trade rather more strongly in the context of COMESA. The other crucial finding is that COMESA has not produced the trade creation expected among its members. The major challenges faced by COMESA such as: overlapping membership and under developed infrastructures may explain this result.

These results suggest the importance of improvement of trade facilities and infrastructures, which could strengthen the targets of regional agreements.

***Key words**: COMESA, gravity model, trade flow, creation and diversion*

1. Introduction

Regional Trade Agreements (RTAs) are groupings of countries formed with the objective of reducing barriers to trade between members. The cumulative number of RTAs that had been reported to the GATT (General Agreement on Tariffs and Trade) since its inception in 1948 was 25 in 1990. The number began to increase in the 1990s to record 91 in 2000, and then it has accelerated to reach 194 as of March 1, 2007. Now almost all countries are members of at least one RTA, and more than one third of world trade takes place within such agreements.

The rapid expansion of RTAs is attributable to various factors. One important reason is stalemate in the Doha Development Agenda, the on-going multilateral trade negotiation under the World Trade Organization (WTO). Faced with this situation, countries interested in promotion of trade liberalization have pursued bilateral or multilateral trade liberalization under Free Trade Areas (FTAs) with the like-minded countries. Being concerned with possible exclusion from FTAs, an increasing number of countries began showing a strong interest in FTAs.

The importance of RTAs is very pertinent issue in Africa, particularly in light of existing political and economic weaknesses. Africa is infested with the deepest levels poverty, lowest share of world trade, and weakest development of human capital and infrastructure, to say the least. It is because of this fact that RTA is needed in Africa, as this will assist in enhancing economic development and growth (Manone, 2008).

In recent decades, the urgency for RTA has been underscored by a combination of external and internal factors. For instance, the acceleration of the globalization process,

as well as Africa's risk of further marginalization in a multi – polar world in which it is dominated by trading blocs in North America, Europe, South – East Asia and China, has presented African regional economic integration as an imperative. The challenge is therefore Africa to take it upon itself to ensure that it succeeds in RTAs. This will be possible by identifying the real challenges and problems faced by same so that curative measures will be taken, and ensuring that the importance of RTAs is spelt out and understood by all the necessary role players.

One of the obvious reasons for RTA is that it overcomes distance as a hindrance to trade. In the literature, distance is commonly referred to as a 'friction to trade'. Subsequently, it is viewed (from both intuitive and econometric viewpoints) as having a negative impact on trade flows. As a result from both expectation and economic theory a negative sign should be the expected sign for the distance coefficient in any econometric equation (Pöyhönen, 1963, Linneman, 1966, Tinbergen, 1962). Srivastava and Green assert that of all the determinants of trade intensity between nations, distance is the *single most important determinant* (Srivastava and Green, 1986).

There are also other underlying reasons for the rise of RTAs world-wide. It has been proposed that regionalism has been embraced due to frustration with the delay in GATT negotiations and that the United States has shifted its tendencies from that of multilateralism to that of ardent regionalism (Baldwin, 1997).

Proponents of RTAs argue that RTAs allow countries to gradually work toward global free trade while providing a window of respite for domestic industries that need time to adjust to the specter of global competition. Critics argue that the proliferation of RTAs

has spawned issues in trade that will in the end hinder multilateral trade negotiations (ex. complex trade preferences, fear of dumping accusations and the attendant retaliatory action, etc) (GTN, 2006).

The proliferation of RTAs also appear to have affected economic conditions in many countries, not only RTA members but also non-members, through foreign trade. Two possible impacts, trade creation and trade diversion, may be realized as a result of RTAs. Trade creation effect means that RTA eliminates trade barriers on trade among RTA members and, therefore, creates trade among them, while trade diversion effect means that RTA would replace imports of highly efficient non-member countries by imports from less efficient RTA members. Trade creation results in an improvement in resource allocation and economic welfare, while trade diversion worsens efficiency in resource allocation.

The existence and creation of RTAs will be the subject of debate for some years to come. With in the broader strand of research on regional economic integration, several papers have raised issues of specific relevance to regional initiatives in Africa. However, attention has so far been mostly devoted to West Africa, where the whole process of integration is admittedly more advanced.[1] In addition, most of the studies[2] not tell us clearly whether or not the regional organizations studied have trade creation or diversion.

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[1] *See, for instance, Masson and Pattillo (2001 and 2002), Debrun et al. (2003), Fielding and Shields (2004).*
[2] *See for instance, Tinbergen (1962), Linnenmann (1966), Aitken (1973), Hewett (1976), Bergstrand (1985), Hamilton and Winters (1992), Endoh (1999)*

Giving due attention on revealing the major challenges and problems faced, intra-regional determinants of trade flows, plus trade creation and diversion effects this paper expands the literature by looking at what happens in Eastern and Southern Africa, and more specifically in the Common Market for Eastern and Southern Africa (COMESA).

COMESA is an interesting case study for at least three reasons. First, it is an initiative involving a large number of countries (covering 42.6 % of total African surface and accounting for 44.6 % of total population and 32 % of total GDP in the continent) characterized by strong disparities in their economic and social background and facing critical development challenges. Second, the initiative builds on an ambitious program of policy harmonization that envisages the creation of a monetary union in the region by 2025. Third, Ethiopia, country of our concern, is the member of this regional initiative.

The purpose of this paper is hence to provide some pragmatic and empirical answers to issues related to trade flow determinants and trade creation and diversion effects of COMESA. Its contribution is two – fold. On the one hand, it applies thorough empirical and qualitative analysis, and panel models to a large data set, thus generating a set of results that significantly extends those already reported in the literature. On the other hand, by shedding light on the major problems/challenges faced by RTAs in Africa, the paper suggests possible corrections / improvements for the way for ward.

In this study, we, according to the theory, hypothesize that: COMESA will have a trade creation effect for the member countries.

The scope of this research project is confined to only on one of the regional economic integrations in Africa, COMESA. The major limitation this study faces emanates from

data. Missing values for some countries/or commodities are common in trade data. Reports for some countries are not up-to-date. Trade data for some countries are not reported consistently and in a uniform unit of account.

2. Literature Review

Economic integration or RTA occurs when two or more nations undertake policies that result in greater mutual economic interdependence. Economists have defined the term 'economic integration' in several different ways over time. Economic integration is a process of eliminating restrictions on international trade, payments and factor mobility (Carbaugh, 2004). Economic integration thus results in the uniting of two or more national economies in regional trading agreements. According to Biswaro (2003), regional economic integration involves the process of trade, economic and financial convergence of integrating states.

2.1 Theory of Regional Economic Integration and its Origin

Some scholars believe that the theory of economic integration is based on the broad study on this issue by Balassa (1961), but there are those who believe that this theory began with the contributions to the customs union issue by Viner (1950) and Meade (1955). Viner (1950) provided the essential insight that programmes for the removal of trade barriers that might unequivocally improve the welfare of the implementing country if implemented on a unilateral or multilateral basis, will not necessarily do so if implemented on a preferential basis. As well known, this is because RTAs and other preferential agreements, by discriminating in favour of their members, must inevitably discriminate against non-members.

In essence, the theoretical foundations of conventional approaches to regional integration date back to three important schools of economic and political thought, which are neo – classical, Marxist, and development economics. The theory of economic

integration was originally developed from traditional trade theory, which assumes perfect comptetion, and whose major concern is the location of production of different kinds of goods (Imbriani and Reganati, 1994). Biswaro (2003) points out that the earliest theoretical work on regional economic integration emanated from the theory of comparative advantage in international trade, and the interests of liberal economists in promoting the reduction of tariff and non – tariff barriers to trade.

The main ingredients of regional economic integration, as indicated by theory, include the removal of tariff and non-tariff barriers among member states, having a common external trade policy which initiates common external trade restrictions against non-members, initiating free movement of goods and services, as well as free movement of factors of production across national borders, harmonization of policies, unification of national monetary policies, and acceptance of a common currency. These happen in stages which include free trade area, customs union, common market, economic union, and complete regional integration.

Regional economic integration is persuading for a variety of reasons. The main motivation for all regional integration schemes has been the prospect of enhanced economic growth and development.

The term 'economic integration' is specifically meant to refer to either regional economic integration or international economic integration. Whereas international economic integration is synonymous with globalization, regional economic integration limits economic integration to a particular region. In this context, this study will focus on the

regional aspects of economic integration, specifically one of Africa's economic integrations, COMESA.

2.2 Economic Integration versus Economic Cooperation

The economic integration literature clearly distinguishes between regional economic integration and regional economic cooperation. Regional cooperation is seen more as an ad hoc and temporary scheme, which is mainly based on contractual agreements with regard to projects of mutual interest between member states. Such projects could involve two or more countries in the region. On the other side, regional economic integration involves agreements that are more permanent.

Sunmonu (2002) describes the difference of economic integration and economic cooperation as:

> *"Economic integration is a close degree of economic intertwining, by formal agreement of informal circumstances that the countries involved begin to surrender some degree of sovereignty and act as an economic unit. Yet, economic cooperation can be understood as a process whereby sovereign states cooperate with one another bilaterally or multi-laterally through international governmental organizations (such as the IMF) or processes (such as the G-7 meetings)."*

it is not clear when economic cooperation becomes economic integration as it is an evolving process along a spectrum of stages ranging from economic isolation, through commercial policy, to economic cooperation, and lastly to economic integration.

2.3 Stages/Levels of Regional Economic Integration

As international trade and investment levels continue to rise, the level of economic integration between various groups of nations is also deepening. The most obvious example of this is the European Union, which has evolved from a collection of autarkical nations to become a fully integrated economic unit. Although it is rare that relationships between countries follow so precise a pattern, formal economic integration takes place in stages, beginning with the lowering and removal of barriers to trade and culminating in the creation of an economic union. These stages, as stated by Balassa (1961), Rolf Mirus and Nataliya Rylska (2001), and House of Commons (2002), are summarized below:

2.3.1 Trade Agreements

The first level of formal economic integration is the establishment of free trade agreements (FTAs). Unlike Balassa (1961), Rolf Mirus and Nataliya Rylska (2001), and House of Commons (2002), other economists have suggested that the first step in economic integration is a preferential trading agreements (PTAs), though limited in scope. A preferential trade agreement is perhaps the weakest form of economic integration. Hodgson and Herander (1983) describe a PTA as an agreement in which members apply lower tariffs to imports produced by other members than to imports produced by non-members.

FTAs, on the other hand, eliminate, beyond lowering them, import tariffs as well as import quotas between signatory countries. These agreements can be limited to a few sectors or can encompass all aspects of international trade. FTAs can also include

formal mechanisms to resolve trade disputes. The North American Free Trade Agreement (NAFTA) is an example of such an arrangement.

Aside from a commitment to a reciprocal trade liberalization schedule, FTAs place few limitations on member states. Although FTAs may contain provisions in these areas if the signatory countries agree to do so, no further harmonization of regulations, standards or economic policies is required, nor is the free movement of capital and labor a necessary part of a free trade agreement. FTA signatory countries also retain independent trade policy with all countries outside the agreement.

However, in order for an FTA to function properly, member countries must establish rules of origin for all third-party goods entering the free trade area. Goods produced within the free trade area (and subject to the agreement) may cross borders tariff-free, but rules of origin requirements must be met to prove that the good was in fact produced in the exporting country. In the absence of rules of origin, third-party countries seeking trade access to the FTA area will choose the path of least resistance – the country where they face the lowest opposing tariff – in order to gain effective entry to the entire FTA region.

2.3.2 Customs Union

A customs union (CU) builds on a free trade area by, in addition to removing internal barriers to trade, also requiring participating nations to harmonize their external trade policy. This includes establishing a common external tariff (CET) and import quotas on products entering the region from third-party countries, as well as possibly establishing common trade remedy policies such as anti-dumping and countervail measures. A

customs union may also preclude the use of trade remedy mechanisms within the union. Members of a CU also typically negotiate any multilateral trade initiative (such as at the World Trade Organization) as a single bloc. Countries with an established customs union no longer require rules of origin, since any product entering the CU area would be subject to the same tariff rates and/or import quotas regardless of the point of entry.

The elimination of the need for rules of origin is the chief benefit of a customs union over a free trade area. To maintain rules of origin requires extensive documentation by all FTA member countries as well as enforcement of those rules at borders within the free trade area. This is a costly process and can lead to disputes over interpretation of the rules as well as other delays. A CU would result in significant administrative cost savings and efficiency gains.

In order to gain the benefits of a customs union, member countries would have to surrender some degree of policy freedom – specifically the ability to set independent trade policy. By extension, because of the increased importance of trade and economic measures as foreign policy tools, customs unions place some limitations on independent foreign policy as well.

2.3.3 Common Market

A common market represents a major step towards significant economic integration. In addition to containing the provisions of a customs union, a common market (CM) removes all barriers to the mobility of people, capital and other resources within the area

in question, as well as eliminating non-tariff barriers to trade, such as the regulatory treatment of product standards.

Establishing a common market typically requires significant policy harmonization in a number of areas. Free movement of labor, for example, necessitates agreement on worker qualifications and certifications. A common market is also typically associated – whether by design or consequence – with a broad convergence of fiscal and monetary policies due to the increased economic interdependence within the region and the effect that one member country's policies can have on other member countries. This necessarily places more severe limitations on member countries' ability to pursue independent economic policies.

The principal advantage of establishing a common market is the expected gains in economic efficiency. With unfettered mobility, labor and capital can more easily respond to economic signals within the common market, resulting in a more efficient allocation of resources.

The European Union was established as a common market by the Treaty of Rome in 1957, although it took a long time for the transition to take place. Today, EU citizens have a common passport, can work in any EU member country and can invest throughout the union without restriction.

2.3.4 Economic Union

The deepest form of economic integration, an economic union adds to a common market the need to harmonize a number of key policy areas. Most notably, economic

unions require formally coordinated monetary and fiscal policies as well as labour market, regional development, transportation and industrial policies. Since all countries would essentially share the same economic space, it would be counter-productive to operate divergent policies in those areas.

An economic union frequently includes the use of a common currency and a unified monetary policy. Eliminating exchange rate uncertainty improves the functioning of an economic union by allowing trade to follow economically efficient paths without being unduly affected by exchange rate considerations. The same is true of business location decisions. Supranational institutions would be required to regulate commerce within the union to ensure uniform application of the rules. These laws would still be administered at the national level, but countries would abdicate individual control in this area.

2.4 Multilateralism vs. Regionalism

In the post World War II period many nations have pursued the objective of trade liberalization. One device used to achieve this was the GATT and its successor, the WTO. Although the GATT began with less than 50 member countries, the WTO claimed 132 members by 1997. Since GATT and WTO agreements commit all member nations to reduce trade barriers simultaneously, it is sometimes referred to as a *multilateral* approach to trade liberalization.

An alternative method used many countries to achieve trade liberalization includes the formation of preferential trade arrangements, free trade areas, customs unions and common markets. Since many of these agreements involve geographically contiguous

countries, these methods are sometimes referred to as a *regional* approach to trade liberalization.

One reason supporters of free trade may support regional trade an arrangement is because they are seen to represent movements towards free trade. Indeed, Section 24 of the original GATT allows signatory countries to form free trade agreements and customs unions despite the fact that preferential agreements violate the principle of non-discrimination. When a free trade area or customs union is formed between two or more WTO member countries, they agree to lower their tariffs to zero between each other but will maintain their tariffs against other WTO countries. Thus, the free trade area represents discriminatory policies. Presumably the reason these agreements are tolerated within the WTO is because they represent significant commitments to free trade, which is another fundamental goal of the WTO.

However, there is also some concern among economists that regional trade agreements may make it more difficult, rather than easier, to achieve the ultimate objective of global free trade.

The fear is that although regional trade agreements will liberalize trade among its member countries, the arrangements may also increase incentives to raise protectionist trade barriers against countries outside the area. The logic here is that the larger the regional trade area, relative to the size of the world market, the larger will be that region's market power in trade. The more market power, the higher would be the region's optimal tariffs and export taxes. Thus, the regional approach to trade liberalization could lead to the formation of large "trade blocs" which trade freely among

members but choke off trade with the rest of the world. For this reason some economists have argued that the multilateral approach to trade liberalization, represented by the trade liberalization agreements in successive WTO rounds, is more likely to achieve global free trade than the regional or preferential approach.

2.5 Problems/Challenges of Regional Economic Integration in Africa

2.5.1 Poor (inter/intra) African trade performance - the first challenge of regional integration is how to promote inter-and-intra regional trade in Africa. A number of factors have contributed to the poor (inter/intra) African trade performance, including:

i. Primary Product– first and for most, countries in the region basically produce raw materials, which are less competitive in the international markets. Sometimes they are raw materials for which there is "virtually no demand elsewhere in Africa."[3]

ii. Few product Mix – secondly, many African countries have not diversified their products hence "few commodities often make up the bulk of their exports."[4] For instance, petroleum and petroleum products account for more than 90 per cent of Angola's export to other countries in Africa. Likewise, fresh fish constitutes nearly 98 per cent of such exports for the Seychelles[5].

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[3] *Esterhuysen, P. (eds), Africa A-Z Continental and Country Profiles, African Institute of South Africa, Pretoria, 1978, p.62.*

[4] *Mutume, G., How to Boost Trade within Africa, Africa Recovery, Vol.16, 2002, p.20.*

[5] *Ibid.*

iii. Colonial Trade Partnership - thirdly, many African countries are still "grapping to undo a legacy dominated by trade with their former colonial rulers rather than with each other."[6] For example, though Senegal is the Gambia's neighbor, trade between the two is negligible. France is Senegal's biggest trading partner, while the Gambia trades largely with the United Kingdom (UK). Furthermore, because of these "hindrances to trade within Africa, exports from Tunisia and Cameroon often find their way to French warehouses before being redirected to each other's market shelves."[7]

2.5.2 Poor Infrastructure - the second challenge of promoting regional integration in Africa concerns the low level if not inefficient or inadequate infrastructures, particularly transport and communications on the continent. Transportation of goods is very costly, for example, the freight costs for imports to "landlocked African countries are more than twice as high as in Asia."[8] Furthermore, it is not incidental to note that traveling from one African country to another by air is more difficult and in some cases, this has meant that one has to "travel via Geneva or Paris."[9]The problem is even intensified in relation to visa acquisition formalities. For example, African entrepreneurs "frequently need to wait 6 – 8 weeks to get visas to visit other African countries while citizens of the UK or France can travel to many African countries and obtain visa on arrival."[10] Similarly, Africa

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[6] *Ibid.*

[7] *Ibid.*

[8] *Ibid.*

[9] *For further reference, see Press Conference on Regional Integration in Africa at http://A:/press conference on regional integration in Africa.htm*

[10] *Harsch, E., "Making African Integration a Reality" in African Recovery, 2002, p.11.*

is lagging behind in the area of communications. Statistically, Africa has the lowest "telephone density in the world yet the highest telephone charges, and three times the rate of faults per line as in other developing regions."[11] In its report, the World Bank noted, "(...) for every 100 people in Africa, there are 1.2 telephone lines – the lowest rate in the world. (...) telephone calls between African countries can be 50 – 100 times more expensive than they are within North America."[12]

2.5.3 Lack of success experiences – this challenge stems from the fact that regional integration efforts have not been very successful in Africa. This is because a compensation mechanism has not been designed to leverage the gains and drawbacks that are "unavoidably and unequally distributed between member countries."[13]

2.5.4 Diversity in basic features - a significant drawback to successful regional integration on the continent has been the "great diversity in African countries' sizes, national resources, level of development and connections to global markets."[14]For example, tiny Benin does not have "the same economic interests as its giant oil-rich neighbor, Nigeria, and also South Africa and Malawi do not experience the costs and benefits of regional trade arrangements in the same way."[15]

2.5.5 National policies/interests versus regional policies/interests – the African countries have difficult choices to make in terms of whether to commit to regional

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[11] *Kawonishe, D., "Is Globalisation Exacerbating or Alleviating Poverty and Underdevelopment in Africa?" African Journal of International Affairs and Development, Vol. 6:2, 2001, p.6.*

[12] *See Mutume, G., "How to Boost Trade ....", p.22.*

[13] *See Harsch, E., "Making African ...", p.12.*

[14] *Ibid.*

[15] *Ibid*

integration or concentrate on the domestic problems. We must acknowledge that benefits from integration are only somewhat accruable in the long run whereas its cost has to be met in the short term by members who obviously have more than enough social, political and economic problems to cope with at home. These include salaries for civil servants, internal conflicts, endemic diseases etc. It is difficult for these countries to commit their limited resources and contribute to regional organizations.

Another challenge is how to make African governments incorporate regional agreements into national policies. The policies of liberalization, privatization and deregulation as well as unsound package of macro-economic policies imposed through structural adjustment and conditionality by the IMF and World Bank have been widely criticized as being biased against African countries on one hand and regional integration efforts on the other.[16] The programs, focusing heavily on liberalization and market mechanisms, are almost exclusively national in scope, as they have obliged each African government to negotiate separately with its external financing institutions, but with no reference to regional dimensions.[17] Similarly, the donor institutions have strong preference for funding national programs rather than those with a regional focus[18]. For example under

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[16] *This was obvious in 2000 at Libreville, Gabon on 11th January 2000 when the Bretton Woods representatives acknowledged the failure of Structural Adjustment Programmes in Africa at a time when they were working towards the introduction of Poverty Reduction Strategy Papers (PRSP). For frurther reference, see Ngwane, G., Why We Need An African Union Now, Kalak Books, 2000, p.6.*

[17] *See the article on "A better environment for integration?" African Recovery, September 2002, p.12.*

[18] *Ibid.*

the structural adjustment programs in place in most African countries, domestic considerations take precedence over sub-regional preoccupations.[19]

2.5.6 Competition - besides, competition of products pauses yet another challenge. Economic liberalization is leading to opening of the African market to goods originating from the developed countries (for example the EU), which no African country can compete with. That has led to the de-industrialization of Africa, as manufacturing now account for less than 5 per cent of GDP compared to 10 – 15 percent in 1960 – 1975.[20] Hence, there is need to address the question of how to launch a new process of industrialization, which could at least contribute to getting Africa on the track of economic growth.

2.5.7 Overlapping membership - overlapping membership of the regional trade agreements (RTAs) or regional economic communities (RECs), has worked against the overall objective of regional integration in Africa. There are 13 RTAs with diverse aims and activities: "almost all African countries belong to more than one of these RECs. 27 countries belong to two, 18 belong to three and one country belongs to four."[21] What do overlapping memberships in RTAs imply? The case of the Eastern and Southern African (ESA) region best illustrates this issue.

Overlapping RTAs of the ESA region are not the first and only kinds in the world as there are many others elsewhere. Despite their belonging to a main RTA countries also

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[19] *See Ndulo, M. "African Economic Community and the Promotion of Intra-African Trade" African Notes, 1992; and African Recovery, "A better environment for integration?" September, 2002, p.12.*

[20] *Ibid.*

[21] *Amaoko, K. Y., "Accelerating the Pace of Regional Integration in Africa: The Challenges Ahead", Address to the Third African Development Forum, Addis Ababa, Ethiopia, 4 March 2002.*

have other bilateral or trade accords in the region. A significant challenge for the ESA countries is that overlapping memberships in RTAs discourage rather than encourage trade liberalisation. These RTAs have not increased trade, attracted foreign direct investment (FDI), achieved convergence nor facilitated economic growth.[22]

The overlapping RTAs have been subjected to obligations that cause contradictions in international law. A case in point is the membership of Kenya, Uganda and Tanzania in the EAC[23], as well as belonging to COMESA[24] and IGAD[25]. Tanzania, which is a member of EAC and SADC, has withdrawn from COMESA and does not belong to IGAD. Uganda on the other hand is not a member of COMESA's FTA structure but trades on preferential terms with other members. Kenya is a member of COMESA and grants duty free access to other RTA-implementing states, while Tanzania does not grant preferences to COMESA members but grants them to SADC members.

In the new Customs Union Protocol of the EAC, both Kenya and Uganda should apply the CET on goods originating from COMESA, which had earlier on benefited from preferential or duty free access. Similarly, Tanzania, which grants preferential access of goods from SADC members and is in the process of completing free market access by

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[22] *Rocha, M., The Cotonou Agreement and its Implications for the Regional Trade Agenda in Eastern and Southern Africa, World Bank Policy Research Working Paper 3090, Washington DC, 2003, p.3, at http://www.econ.worldbank.org/files/27936_wps3090.pdf.*

[23] *East African Community re-established in 1999 between Kenya Tanzania and Uganda after the collapse of the former EAC in 1977.*

[24] *The Common Market for Eastern and Southern Africa was established in 1994 as a successor of the Preferential Trade Area (PTA). Presently, members who have eliminated all intra-COMESA tariffs are respectively: Burundi, Egypt, Ethiopia Kenya, Madagascar, Malawi, Mauritius, Rwanda, Sudan and Zimbabwe. Eritrea and Uganda grant 80 percent, Democratic Republic of Congo (DRC) 70 percent, Ethiopia 10 percent preferences. Other COMESA members have made no reductions.*

[25] *Inter-Governmental Authority on Development was established by Eastern African countries in 1986.*

2008, is expected to apply the CET of the EAC to these goods, or else under the principle of free market circulation.[26] This means that these goods would access the Kenyan and Ugandan market duty free even though they are not SADC members.

Another example is that of Swaziland, which belongs to SADC, COMESA and SACU. Under COMESA, the country benefits from preferential access to the markets of the other members. However, it was exempted from granting preferential access to its market for the reason that this would make goods from COMESA have free access to the wider SACU market. Thus, in the light of COMESA moving to become a customs union, Swaziland will be forced to make the choice of becoming a member of the RTA since membership to two CUs with different CETs and Rules of Origin would cause further conflict in its obligations. Furthermore, since Swaziland needs market access to COMESA, its withdrawal, the way Namibia did[27], will be a politically challenging choice, which needs to be made in order to ensure its balance in its present RTA obligations.[28] These two are examples of conflicting legal obligations resulting from multi-memberships and overlapping obligations of countries in the ESA region.

We can argue that these kinds of conflicts have undermined the process of effective implementation of these RTAs in many countries in the region. Taking the example of

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[26] *According to the principle of free circulation, if members of a customs union have removed barriers and have agreed on a CET, movements of goods within the CU need not be subjected to RoO. For further reference, see Mathis 2002:145.*

[27] *In 2003, Namibia withdrew from COMESA on the grounds that it wanted to concentrate on SACU. See http://www.gmet.gov.na/Nav_frames/News_launch.htm.*

[28] *Mutai, H., Memberships in Multiple Regional Regional Trading Arrangements: Legal Implications for the conduct of Trade Negotiations, Tralac Trade Briefs, Cape Town, August 2003, http://www.tralac.org/scripts/contnent.php?=1914*

Article 37:1 of the East African Customs Union (EACU) Protocol, there is a provision on recognition and honouring of existing multi-lateral and international obligations, which may not be legally practical in cases where such conflicts exist. Moreover, Article 37:3(a) of the EACU Protocol does recognise the possibility of conflict in obligations and the member states agreeing on seeking convergence on these issue as this matter was deferred to an implementation mechanism.[29] So lack of compromise on how to resolve the conflicting obligations resulting from multi-memberships could be a hindrance in the implementation process of the EACU protocol since the agreement on how to resolve this issue seems to be a pre-condition to how effective the protocol will be.

Moreover, there are other technical problems peculiar to regional integration in Africa, which compound the legal conflicts of overlapping memberships in RTAs: (a) lack of capacity to effectively participate in various regional negotiations and initiatives while concurrently engaging in multilateral negotiations, which is a hardship emerging from multiple memberships in regional trade agreements, (b) capacity limitations also hinder effective analysis and interpretation of trade policy matters, for instance, designing customs administration policies and documentation which could effectively encompass multiple obligations resulting from memberships in various RTAs. As such, withdrawal from and joining other RTAs as an option portrays the inability to undertake effective

[29] *According to Article 37:3 of the EACU Protocol, there is a provision for establishing a mechanism to guide the relationship between EACU and other regional groupings as well as for arriving at convergence in the matters arising out of memberships.*

assessments in relation to the "cost-benefit proposition as well as legal consequences of belonging to different RTAs."[30]

In addition to the sub-regional RTAs, there are many other multinational or bilateral organisations with activities focussed on specific areas, such as telecommunications, aviation, maritime transport, banking, river management, agriculture, energy and others.[31]The Arab League and the Organisation of Petroleum Exporting Countries (OPEC) best illustrate this. Some economists argue that membership of some countries in the Arab League works against the economic integration of Africa. The Arab world also encompasses those African countries north of the Sahara. They work to promote the Arabic interests globally and these interests (of the Arab League) are not often in line with those sub-Saharan African countries. Furthermore the very being of OPEC as a commodity cartel is a hindrance to economic integration of Africa. This is because its membership, which includes non-African countries, has divided the continent into OPEC and non-OPEC members. The allocation of production quotas by OPEC has adverse effects on the price of crude oil in the world market. This high price does have strong effects on the economies of non-OPEC African countries. As such economic integration of Africa is hindered because the prices of crude oil will remain a source of conflict in the OPEC and non-OPEC African.[32]

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[30] *In a report, officials from the Confederation of Tanzanian Industry criticised the government for withdrawing from COMESA and joining SADC claiming that in this event, Tanzania lost the benefits of their membership in COMESA to become a conduit for South African goods as a SADC member. For further reference, see the report published in the East African Newspaper, 26 July 2004, which can be accessed at: http://allafrica.com/stories/2004072508.html.*

[31] *See Harsch, E. "Making African Integration…", p.24.*

[32] *See Njemanze, P., "Economic Integration of Africa: An Anatomy of Centripetal and Centrifugal Forces" in the Nigerian Forum, Vol. 22, 2004, p.150.*

Conflicts and civil strives in Africa are yet another hurdle to jump in the integration process of Africa. It is striking that "virtually every country in Africa has either a festering or full blown conflict to deal with."[33] Since no war leaves the neighbouring countries unaffected, what may generally begin as a "small" misunderstanding over power and resources can quickly spread around the entire region with the outcome of displacement of people, aid flow and investments are reduced, development projects are brought to a standstill etc.

The lack of sustained political willingness and commitment to put in place agreed policies and plans has been one of Africa's major problems.[34] Perhaps this could be one of the traditional explanations of the failure of integration schemes in Africa. Lack of political willingness is "expressed in the chronic non-observance of commitments undertaken within the respective agreements and in the insufficient use of the instruments set up by these agreements."[35] Furthermore, for integration to succeed, some element of national sovereignty must be sacrificed. But, hardly any African state ruler is really prepared to do so because "the transfer of resources and power of decisions to a supranational institution means a dissolving of the mass of patronage with which they can buy loyalty."[36]

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[33] *See the African Journal of International Affairs and Development, Vol. 7(1) 2002, p.iii.*

[34] *Nevin, T., "Exit OAU, enter AU. Will the African Union succeed where the OAU failed?" African Business, September 2001, p.10.*

[35] *Ibid.*

[36] *Ibid.*

2.6 Effects of Regional Economic Integration

Preferential trade arrangements and/or regional integrations are often supported because they represent a movement in the direction of free trade. If free trade is economically the most efficient policy, it would seem to follow that any movement towards free trade should be beneficial in terms of economic efficiency. It turns out that this conclusion is wrong. Even if free trade is most efficient, it is not true that a step in that direction necessarily raises economic efficiency. Whether a preferential trade arrangement raises a country's welfare and raises economic efficiency depends on the extent to which the arrangement causes trade diversion versus trade creation.

In general, trade diversion means that a free trade area diverts trade, away from a more efficient supplier outside the FTA, towards a less efficient supplier within the FTA. In some cases, trade diversion will reduce a country's national welfare but in some cases national welfare could improve despite the trade diversion. Because there are both positive and negative elements, the net national welfare effect can be either positive or negative.

Generally speaking, the larger is the difference between the non-distorted prices in the FTA partner country and in the rest of the world, the more likely that trade diversion will reduce national welfare.

Trade creation means that a free trade area creates trade that would not have existed otherwise. As a result, supply occurs from a more efficient producer of the product. In all cases trade creation will raise a country's national welfare.

2.7 Empirical Literature on Gravity Model

The Gravity Model[37] has been used since the early 1960's to describe bilateral trade flows between nations. Tinbergen (1962) and Pöyhönen (1963) were among the first to utilize the Gravity Model in their respective studies regarding trade. Since then, the gravity model has been widely used and increasingly improved in empirical studies of international trade. Specifically, a population variable was incorporated to show a negative effect of it on trade flows (Oguledo & MacPhee, 1994 and Endoh 1999, 2000).

Linneman (1966) employed the Gravity Model in his exhaustive study on world trade flows. In Linneman's model, more variables that tended toward a more theoretical justification of the Gravity Model rather than the more intuitive arguments of Pöyhönen and Tinbergen were added (Deardorff, 1995). Linneman's version of the Gravity Model was said to be grounded in that of a Walrasian General Equilibrium System.

Furthermore, other development used a per capita income variable to provide a good proxy for the level of economic development that has its positive effect on international trade (Frankel, Stein and Wei, 1995 and Elliott & Ikemoto, 2004, Alemayehu and Haile 2002). It should be noted that several kinds of dummy variables have been added in the gravity models to account for specific factors that can support or hinder bilateral flows of goods such as geographical factors, cultural factors and institutional factors. While gravity models used in empirical applications are known for their strong fit to the data, it is in recent decades that their predictive ability began to be justified by many theoretical

[37] *Newton postulated the "Law of Universal Gravitation" in 1687 describing the attraction between two forces as the result of the product of the mass of the two bodies divided by the squared distance between the two bodies multiplied by a gravitational constant*

studies of the model. Since Anderson (1979), the first attempt to provide theoretical foundations of the gravity model, scholars have tried to demonstrate that the gravity model can be derived as a foundation from various trade theory models such as Ricardian models, Heckcher-Ohlin models and Increasing Returns to Scale (IRS) models[38]. Especially, nowadays it is recognized that the gravity equation can provide a useful multivariate approach for assessing the impacts of regional trade agreements on the level and direction of bilateral trade flows. Illustrations of the application to the analysis of the preferential trade liberalization are referred to Aitken (1973) and Endoh (1999, 2000), among others.

Aitken (1973) first included a dummy variable showing intra-regional trade to capture trade creation and diversion between members. Later, other studies tried to add a second dummy variable to illustrate extra regional trade effect with non-members. Recently, Endoh (1999) made good progress to incorporate 3 dummy variables in order to offer a simple and clear distinction between the trade creation and trade diversion.

In 1974, Leamer employed both the Gravity Model and a Heckscher-Ohlin model in order to lend credence as to the motivation for the explanatory variables in his regression analysis of trade flows, Leamer however refrained from combining both the Gravity Model and the Heckscher-Ohlin model together theoretically (Leamer, 1974). Attempts to justify the Gravity Model theoretically would be addressed by several parties. In 1979, Anderson proffered his theoretical justification for the Gravity Model, where he proposed that by modeling preferences over traded goods only, by assuming Cobb-Douglas preferences and by making what is commonly known today as the

[38] *See Bergstand (1985, 1989), Helpman & Krugman (1985) among others*

Armington Association of the national differentiation to the origins of goods, the Gravity Model could be derived. Bergstrand would follow Anderson in 1985, where Bergstrand posited that, like Anderson, by assuming Constant Elasticity to Substitution (CES) preferences and accepting the Armingston Assumption for traded goods, a reduced form equation for the estimation of the flow of goods between nations could be obtained.

Not only has the gravity equation been used in examining bilateral trade between generalized groups of nations, it has also been utilized, as mentioned previously, in examining the trade creation and trade diversion effects in particular regions and within particular trading bloc. Carrillo and Li utilized the Gravity Model in an attempt to determine what influence the Andean Community and MERCOSUR preferential trading agreements had had on trading patterns from 1980-1997, focusing primarily on intra-regional, intra-industrial trade. Carrillo and Li found that the AC and MERCOSUR had had an effect on intraregional and intra-industrial trade but when compared with other crucial variables their impact was somewhat diminished.

Koo, Kennedy, and Skipnitchenko utilized the Gravity Model in analyzing the effects that Regional Trading Agreements (RTAs) have had on *agricultural* trade. The RTAs that were examined were: the ASEAN Free Trade Agreement (AFTA), Andean Community (CAN), the EU, and NAFTA. Koo, Kennedy, and Skipnitchenko found that RTAs had, overall, a positive and significant influence on increasing trade volumes among member countries and that RTAs could have a *positive* trade diversion effect (in this case for NAFTA). This positive effect being derived from the low substitutability between traded goods. According to the authors, another reason for the positive trade creation effect could be that since there was a positive trade creation effect in the case of NAFTA,

overall demand increased, offsetting any trade diversion effects. Koo, Kennedy, and Skipnitchenko concluded that RTAs increase welfare for RTA members and, to a lesser extent, non-RTA members as well.

3 Overview of COMESA and Ethiopia's Experience in Regional Economic Integration

3.1 Brief Overview of COMESA

The Common Market for Eastern and Southern Africa traces its genesis to the mid 1960s. The idea of regional economic co-operation received considerable impetus from the buoyant and optimistic mood that characterized the post-independence period in most of Africa. The mood then was one of pan-African solidarity and collective self-reliance born of a shared destiny. It was under these circumstances that, in 1965, the United Nations Economic Commission for Africa (ECA) convened a ministerial meeting of the then newly independent states of Eastern and Southern Africa to consider proposals for the establishment of a mechanism for the promotion of sub-regional economic integration. The meeting, which was held in Lusaka, Zambia, recommended the creation of an Economic Community of Eastern and Central African states.

In 1978, at a meeting of Ministers of Trade, Finance and Planning in Lusaka, the creation of a sub-regional economic community was recommended, beginning with a sub-regional preferential trade area which would be gradually upgraded over a ten-year period to a common market until the community had been established. To this end, the meeting adopted the "Lusaka Declaration of Intent and Commitment to the Establishment of a Preferential Trade Area for Eastern and Southern Africa" (PTA) and created an Inter-governmental Negotiating Team on the Treaty for the establishment of the PTA. The meeting also agreed on an indicative time-table for the work of the Intergovernmental Negotiating Team.

After the preparatory work had been completed a meeting of Heads of State and Government was convened in Lusaka on 21st December 1981 at which the Treaty establishing the PTA was signed. The Treaty came into force on 30th September 1982 after it had been ratified by more than seven signatory states as provided for in Article 50 of the Treaty.

The PTA was established to take advantage of a larger market size, to share the region's common heritage and destiny and to allow greater social and economic co-operation, with the ultimate objective being to create an economic community. The PTA Treaty envisaged its transformation into a Common Market and, in conformity with this, the Treaty establishing the Common Market for Eastern and Southern Africa, COMESA, was signed on 5th November 1993 in Kampala, Uganda and was ratified a year later in Lilongwe, Malawi on 8th December 1994.

It is important to underline the fact that the establishment of PTA, and its transformation into COMESA, was in conformity with the objectives of the Lagos Plan of Action (LPA) and the Final Act of Lagos (FAL) of the Organization of African Unity (Organization of African unity). Both the LPA and the FAL envisaged an evolutionary process in the economic integration of the continent in which regional economic communities would constitute building blocks upon which the creation of an African Economic Community (AEC) would ultimately be erected.

COMESA's Vision is to "be a fully integrated, internationally competitive regional economic community with high standards of living for all its people ready to merge into an African Economic Community." Its Mission to "Endeavour to achieve sustainable

economic and social progress in all Member States through increased co-operation and integration in all fields of development particularly in trade, customs and monetary affairs, transport, communication and information, technology, industry and energy, gender, agriculture, environment and natural resources",

There are generally three recognized approaches to integration: Market Integration, Production or Project-directed Integration, and Development Integration. The Market Integration approach focuses on the integration of markets through, principally, trade liberalization by way of removal of both tariff and non-tariff barriers to commercial interaction and investment. This approach aims at achieving full economic co-operation through a gradual process starting with the creation of a free trading zone, followed by the establishment of a common market and ending with an economic community.

The Production or Project-directed approach focuses mainly on the coordinated planning and implementation of productive activities. The Development Integration approach has elements of both production and market integration approaches, but emphasizes equitable development through compensatory and corrective initiatives.

COMESA strategy so far has been to emphasis the integration of the economic space through removal of trade and investment barriers. Although COMESA has made good progress using this approach, and will continue to pursue it, the focus in the next decade and beyond will shift towards development integration. This will mean giving increased prominence to the supply side of integration, namely investment in the productive sectors. This shift in emphasis recognizes developments both at the global and regional level. Globalization in general and trade liberalization under WTO in particular is pushing

countries to remove trade barriers and open up their markets. Regionally, COMESA trade and investment promotion programs have improved the investment environment making it more attractive for investment in the productive sectors.

The attainment of full integration and the implementation of complete COMESA mandate under the Treaty are viewed as long term objectives. In the short to medium term, the emphasis in program focus will be trade development and investment, specifically, the elimination of impediments to trade and investment.

In COMESA's strategy of trade, investment and development integration, the private sector will play a central role. The Secretariat will work together with governments in COMESA to create the space and environment where the private sector can play its rightful role as the main driver of the economic integration process.

The key mechanism for trade liberalization is the removal of tariff and non-tariff barriers to intra-COMESA trade. In this regard, COMESA has adopted a program for the reduction and eventual elimination of tariff and non-tariff barriers to intra-COMESA trade. The reduction program towards the eventual elimination of tariffs on intra-COMESA trade is as follows: 60% reduction by 31 October 1993; 70% reduction by 31 October 1994; 80% reduction by 31 October 1996; 90% reduction by 31 October 1998; and 100% reduction by 31 October 2000, thus achieving a Free Trade Area.

The tariff reduction is complemented by programme aimed at removing the remaining non-tariff barriers. The non-tariff barriers that segment the COMESA regional market consist of those that affect trade, production and investment.

3.2 Ethiopia and Regional Economic Integration

Since a long time, Ethiopia committed itself to foster economic and technical cooperation and trade with the rest of Africa. Ethiopia with its huge historical role in the formation of the Organization of African Unity is also the founder member of PTA/COMESA actively participating in the negotiation process of establishing the PTA (starting from 1978 up to its creation in 1981), and IGAD (Intergovernmental authority on Development).

According to the COMESA (FTA) treaty customs duties on the list of category of goods selected were supposed to be reduced by 25 percent every two years, targeting a complete elimination of tariffs by 1992.However it attained a Free Trade Area (FTA) status in October 2000 (with 9 countries as members), implying that tariffs and non-tariffs on intra- COMESA trade were eliminated. Goods could therefore move from one COMESA country to another without any duties and other restrictions that normally hinder trade. And the bloc also holds to its plan of achieving a Customs Union by December 2004.

The rest eleven-member countries are at different stages of preparation (Tariff reduction) to join the free trade area.

Ethiopia as of the year 2002, is not a member of the Free Trade area, and has only done a 10 percent tariff reduction for the goods coming from COMESA member countries due to the fear of revenue loss as tariff revenue is one of the most significant sources of government revenue and due to potential damage to its weak industrial structures and low degree of competitiveness. Alemayehu and Haile (2002: p11) argued

that, at present the potential revenue loss from intra-COMESA trade is low owing to the low level of intra-regional trade flows. And calculated Ethiopia's revenue loss due to opening its markets to COMESA as less than one percent (although shifting from EU to COMESA could mean a lot of loss in tax revenue).

However, the issue of revenue loss could be some how difficult to know before joining the free trade area as it would be difficult to predict the degree of trade shift from current major trading areas mainly the EU to COMESA.

Ethiopia's total export to COMESA from 1991-1998 was 181 million US dollars accounting only for 1.65% of the total intra- COMESA exports, While it's Imports accounted for 6.06% of the total Intra-COMESA imports. Kenya accounted for about 39.6% and 4.6% of total intra-COMESA exports and imports respectively[39].

In general, Ethiopia is one of the least exporter and the highest importer countries during the period indicated. Ethiopia's participation in regional economic integration schemes is visible, but not at the operation (Business) level.

Another low utilization of COMESA's facilities by Ethiopia can be observed from the fact that it is one of the lowest beneficiaries, while one of the highest shareholders of the PTA/COMESA Bank (currently based in Nairobi)[1]

Ethiopia a founding member of the Bank bought 12.09% of its share at 26.7 million US dollars, while from 1986 to 1998 benefited almost zero from the banks trade financing

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[39] *For further information see COMESA website*

[1] *The major shareholders of the bank are Ethiopia, Kenya, Zimbabwe, and recently Egypt joined with equal share holding of 12.o7%.*

facilities out of the total 312.1 millions of US dollars loans the bank provided, while was able to borrow only once amounting with US dollars 457,063 for a single project out of about 155 million US dollars total project finance disbursed in the period indicated. When this is Compared with Kenya, another country of the same share holding, for example, it, got 30 millions of US dollars for project financing, and only in one year (1998) Tanzania has borrowed about 7.3 million, for trade financing (1998 Annual report of the PTA BANK).

The banks trade and project financing facilities give priority for export-oriented projects and with regional focus. Proper utilization of such facilities would have meant that, the country could have boosted its export capacity to some extent.

This all shows a clearer picture of how far Ethiopia is lagging behind in drawing benefits while is a fore runner in fulfilling obligations of collective economic development of the region and Africa in general.

How ever Ethiopia's realization of concrete results from COMESA is so far limited. This is because Ethiopia's involvement at the operation (Business) level has been weak though its participation in regional economic integration schemes (both at the formation and continuity) is visible. Poor participation of the private sector is also one of the reasons. But for the private sector to participate, some preliminary homework have to be done by the public sector such as creating awareness, involving it at all levels of negotiation and implementation levels and providing a competitively conducive investment and exporting environment.

4 Analysis

4.1 Specification of the Empirical Model

We now look at the issue of econometric specification more closely. In most of previous empirical studies based on the cross section estimation techniques, being drilled out from the generalized Gravity Model equation, exports from country i to country j (X_{ij}) are specified by the typical gravity equation for a given year as follows:

$$lnX_{ij} = \beta_0 + \beta_1 lnY_i + \beta_2 lnY_j + \beta_3 lnN_i + \beta_4 lnN_j + \beta_5 lnD_{ij} + lnU_{ij}$$

Where $Y_i(Y_j)$ indicates the GDP of the exporter (importer), $N_i(N_j)$ denoting the population of the two countries, D_{ij} measures the geographic distance between the two countries' capital cities. The disturbance term $\ln(u_{ij})$ is assumed to be iid with zero mean $E(\ln(u_{ij})) = 0$ and a constant variance.

As proposed by Endoh (1999), we employ an approach of estimating the effects of regional organizations on the flow of trade by introducing dummy variables in to the gravity equation to account for trade creation and diversion. More specifically, we construct three dummy variables: one to account for exports from a member state to another member state (intra-group trade); the next to account for exports from a non-member state to a member state; and the third to account for exports from a member state to a non-member state. The dummy variables are intended to measure trade creation and diversion as follows: an increase in intra-group trade indicates what Balassa (1967) calls 'gross trade creation', a decrease in imports of a COMESA member state from presumably more efficient non-member states indicates 'import trade diversion', a decrease in exports of COMESA member country to non-member states

indicates 'export trade diversion'. In terms of the coefficient of the dummy variables, a positive and statistically significant coefficient of an intra-group trade dummy variable suggests that member countries of the group trade more than the hypothetical level. A negative and statistically significant coefficient of the second dummy variable indicates import trade diversion while a negative and statistically significant coefficient of the third dummy variable indicates export trade diversion.

Hence, taking a lead from Endoh (1999), we specify our model as follows to estimate the trade creation and diversion effect of COMESA:

$$lnX_{it} = \beta_0 + \beta_1 lnY^x_{it} + \beta_2 lnY^m_{it} + \beta_3 lnN^x_{it} + \beta_4 lnN^m_{it} + \beta_5 lnD^{xm}_i + \beta_6 lnB^{xm}_i + \beta_7 lnL^{xm}_i + \beta_8 lnC_i + \beta_9 lnNEC_i + \beta_{10} lnNIC_i + lnU_{it}$$

Where x and m denote the exporter and the importer respectively, the explanatory variables are defined as follows: X_{it} is the US dollar value of exports at time t; β_0 is an unknown constant; Y^x_{it} and Y^m_{it} are GDP of the exporting country and importing country at time t in US dollars, respectively; N^x_{it} and N^m_{it} are the populations of the exporting country and importing country at time t, respectively; D^{xm}_i is the distance in kilometers between the capital city of the exporting country and that of the importing country; B^{xm}_i is dummy that takes the value of unity if the exporting country and the importing country share a common border and 0 otherwise; L^{xm}_i is a dummy variable which is unity if the two countries speak the same official language and 0 otherwise; C_i is the dummy variable that captures exports from a member of COMESA to another COMESA member (intra-COMESA trade) and accordingly be unity if both countries belong to COMESA and 0 otherwise; NEC_i is the dummy variable that captures imports from a

non-member of COMESA to a member state (extra-COMESA imports) and accordingly be unity if only the import country belong to COMESA and 0 otherwise; NIC_i is the dummy variable that captures exports from a member of COMESA to a non-member (extra-COMESA trade) and accordingly be unity if only the exporting country belong to COMESA and 0 otherwise; u_{it} is the error term.

4.2 Data Employed and the Sources

Annual data for 20 African countries, 12 COMESA members and 8 non-members, and that of EU for the period 1999-2007 are used to estimate the model specified above. The bilateral data are obtained from IMF's Direction of Trade Statistics (2008). The GDP figures are extracted from World Economic Outlook Database of the same organization. Data on distance are obtained from Bali Online (http: // www.indo.com). The information and data on population, sharing a common border, and language are obtained from CIA "The World Fact Book" (https://www.cia.gov/library/publications/the-world-factbook/index.html). Membership of the sample countries in COMESA and other related data are obtained from official website of COMESA (http: // www.comesa.int)

4.3 Estimation Procedure

In order to check whether our data for the variables specified in the gravity equation are drawn from a population with normal distribution, we see the statistical distribution of the major variables using box plot. Accordingly, as can be seen from the sample figures on annex 2, all level variables exhibit non-normal distribution. The standard solution to this problem, according to Atnafu (2007), is to transform the data. Transformation could be differencing the variables or logarithmic transformation. But, logarithmic transformation

is the most relevant to this study because the estimable form of the gravity model is specified in logarithm of each variable.

For the sake of simple comparison, the two-dimensional plot for log-transformed variables is given on annex 2 together with the plot for the level variables. From the plots we note that the log-transformed variables exhibit relatively near normality. Thus, this strengthens our suggestion to estimate the model using log-transformed values for the variables discussed and it also enable us to base our test and interpretation of estimated parameters on the usual econometric assumptions.

When choosing from fixed and random effect, we need to pay particular attention here to the fact that our model contains not only time varying variables such as GDPs and population but also time invariant variables like distance, sharing the same border, and language. It is worth noting that fixed effect model does not allow for estimating these time invariant variables. On the contrary, random effect model has a merit of treating this kind of explanatory variables. Nguyen Trung Kien and Yoshizo Hashimotoacing (2005), facing the same scenario, preferred the random effect model reasoning they could exploit the benefits of the model by addressing its shortcomings. Cognizant of this fact, this study also take the random effect model.

Heteroskedasticity does not affect the consistency of estimators, and it is only a minor nuisance for inference (Wooldridge, 2000:125). Nevertheless, sometimes we want to test for the presence of heteroskedasticity in order to justify use of the usual OLS or 2SLS statistics. The computed statistic is found to be 3935.68 which is greater than the

critical value of 24.7 at 1%. Thus we fail to accept the null hypothesis of homoskedasticity and hence require a model which is efficient under heteroskedasticity.

When explanatory variables are not strictly exogenous, so that one or more explanatory variables are correlated to the error terms, neither t-terms from our equation nor the overall significance of the gravity equation are valid (Atnafu, 2007). According to the result from test for autocorrelation (DW value of 0.886), we fail to accept the null hypothesis and conclude that our model is not free from the problem. The test result on from the test reveals that collinearity is not a problem to worry about in this particular study.

Since GDPs, imports and exports are tied through national account identity, we shall suspect the endogeneity of GDPs of exporting and importing countries in our gravity equation. The test result is shows we are unable to accept the null of regressor exogeneity.

Since we need a model which is robust to homoskedasticity and serial autocorrelation plus having in mind we need a model which can address both the time variant and invariant variables, we estimate our model with G2SLS. For the sake of comparison and further insight, results from GLS, OLS and fixed effect model regressions are presented on annex 3. Comparing the G2SLS estimates with that of GLS, OLS and fixed effect model estimates, we observe that the pattern of sign and significance of the coefficients, in most cases, are similar.

4.5 Interpretation of the Econometric Results

The model is estimated by Two Stage Generalized Least Square (G2SLS) with the data consisting of 21 countries for the sample period 1999 -2007[40], which means we have more than 3500 observations to deal about. The model fits the data well with R^2 of 0.6. Overall, the variables in the model are jointly significant. This is evidenced by the Wald static of 756.14 with p-value of zero at 5%.

Table 4.1 G2SLS Regression Result: Dependent Variable Log of Export from Country e to Country i

Independent Variable	*Coefficient*	*P-value (95%)*
Log of GDP of the exporting country	.7094422	0.000
Log of GDP of the importing country	.5558076	0.000
Log of population of the exporting country	-.1266572	0.000
Log of population of the importing country	-.0516209	0.038
Log of distance between importer and exporter	-.0000613	0.000
Common language between importer and exporter countries	.3701814	0.000
Common border between importer and exporter countries	1.286246	0.000
Dummy for trade creation	-.2294824	0.003
Dummy for import trade diversion	-.3727744	0.000
Dummy for export trade diversion	-.5353755	0.000
Constant	-24.74652	0.000

R-sq: within = 0.1238
between = 0.6049
overall = 0.5939
Wald chi2(9) = 756.14
Prob > chi2 = 0.0000
Number of observations = 3514
Sigma_u 2.1024146

Sigma_e .90670985
Rho .84317427 (fraction of variance due to u_i)

[40] *List of the sample countries is presented on annex 1. The sample countries are selected based on their significance in intra and inter-COMESA trade, geographical location, and membership criteria.*

The coefficients on the observable effects determining bilateral trade are as expected and highly significant. The size of economies, GDP and population size, act as a proxy measure for the level of demand in the importing country and level of supply in the exporting country. A high output (GDP) level in the exporting and importing countries provides a higher export potential for the countries. Therefore we expect export of a country to vary positively with the size of GDP of both importing and exporting countries.

Trade is negatively related to the level of population indicating that large countries tend to be more self-sufficient. We also have inverse relationship between trade and distance, which could be explained by: first, the larger the distance between two countries, the higher the transportation costs. Second, the larger the distance, the more time involved in delivering the goods and concerns about possibilities for goods to perish.

On the contrary to its population and distance counterparts, as expected, bilateral trade is found to be positively related to countries sharing a common border and language familiarity. This result implies countries that are connected (culturally or otherwise) tend to have a higher flow of trade between them than countries that are not connected at all.

With regard to the trade creation and diversion effects, the coefficient for intra-COMESA trade turned out to be negative and statistically significant. The result suggests that member countries of the group trade less than the hypothetical level implying COMESA could not result in significant trade creation effect. Supporting and strengthening the above result, the negative (-.3727744) and statistically significant (p=0.000) coefficient of the second dummy variable indicates import trade diversion while a negative (-

.5353755) and statistically significant (p=0.000) coefficient of the third dummy variable also indicates export trade diversion. Accordingly, the empirical result in our analysis does not support the hypothesis that COMESA creates trade.

5 Conclusion and Policy Implication

This paper has investigated what factors can account for trade flows and what effect does COMESA has on member countries, trade creation or diversion.

Our first finding is that the GDPs, population and language among other factors can explain export flows in our observation. We find that export flows among countries increase more than proportionately with GDPs.

We noticed the language and adjacency (sharing the same border) impact in our empirical investigations. These coefficients on the language dummy suggest that the less the cultural difference in two countries the more the volume of exports between them. It would be better to say that if two countries have linguistic links, these cultural ties will encourage bilateral trade. In this respect, language and other cultural factors can symbolize tastes, habits and wants that influence consumer choice. Therefore, all these things may suggest that cultural differences can express differences in consumer preference in this paper. Viewed in this light, we can argue that two countries of identical preferences would trade more than that of different ones. This finding is somehow similar to what account for intra-industry trade in the trade theory of monopolistic competition (Krugman, 1979; Helpman & Krugman, 1985).

We also found that the geographic distance might impede trade rather more strongly in the context of COMESA. This result suggests the importance of improvement of trade facilities, which could strengthen the targets of regional agreements.

Next, our crucial finding is that COMESA has not produced the trade creation expected among its members. The major challenges faced by COMESA such as: overlapping

membership and under developed infrastructures should be given due attention and addressed accordingly so that the common market will achieve its mission of trade creation and accompanied benefits to its members.

Some of the findings like COMESA's trade diversion effect are inconsistent with a number of previous studies and calls for several possible extensions of our analysis as future research agenda. One is to undertake a panel data analysis with more sample countries with different and rigorous methodology. Such an in-depth analysis would prove useful in obtaining reliable results.

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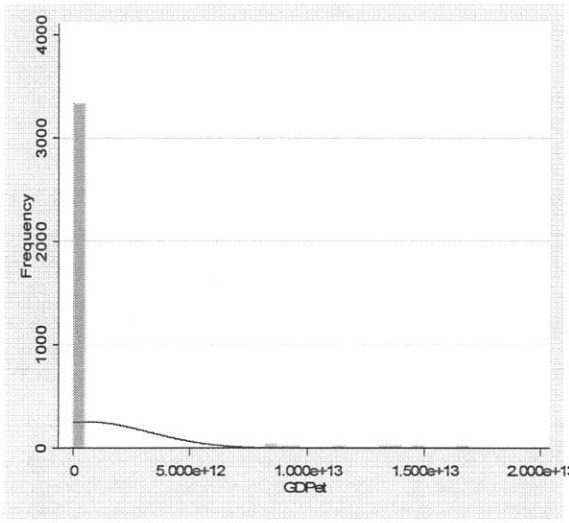
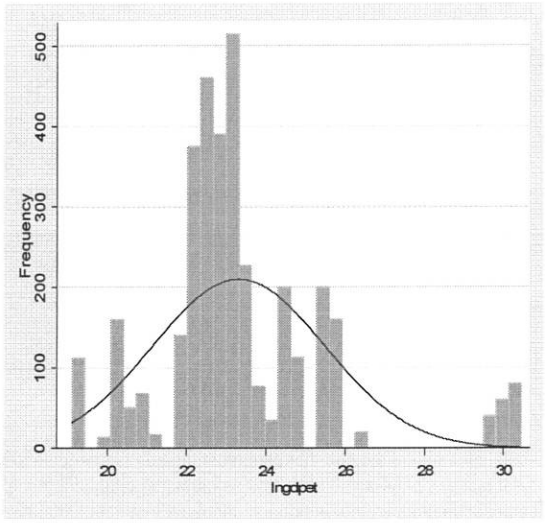
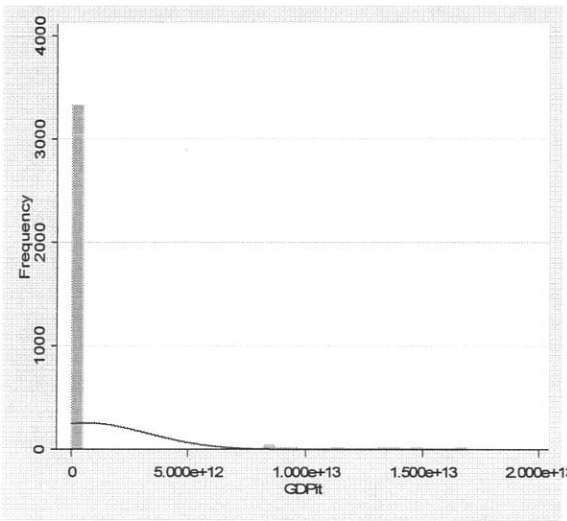
ANNEX-1- List of Sample Countries

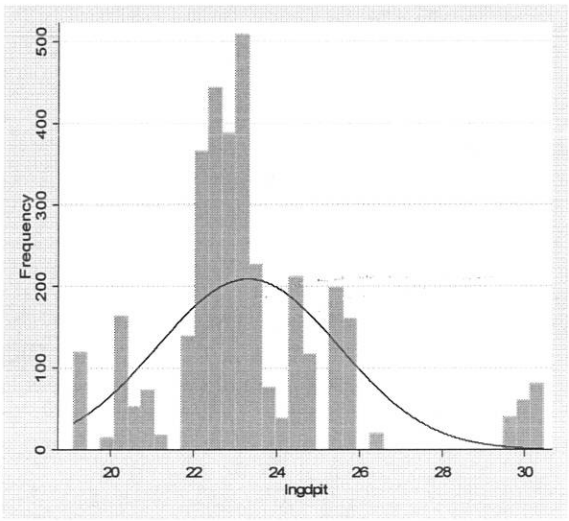
Country Name	Country Code
Angola	24
Cameroon	120
Comoros	174
Congo, Democratic Republic of	180
Djibouti	262
Ethiopia	231
Egypt	818
Gabon	266
Ghana	288
Kenya	404
Libya	434
Madagascar	450
Nigeria	566
Sierra Leone	694
South Africa	710
Sudan	736
Tanzania	834
Uganda	800
Zambia	894
Zimbabwe	716
EU	998

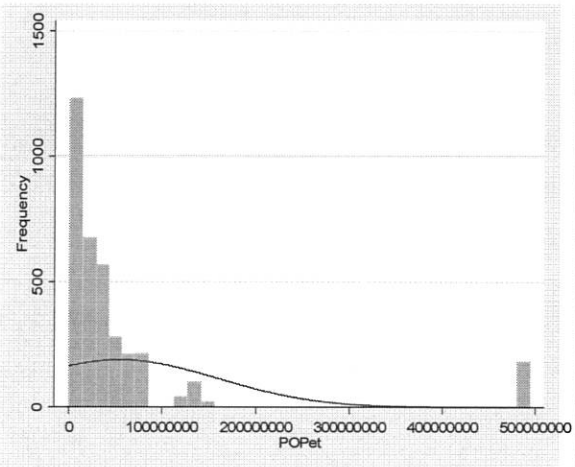
ANNEX 2 Normality Test, sample plots

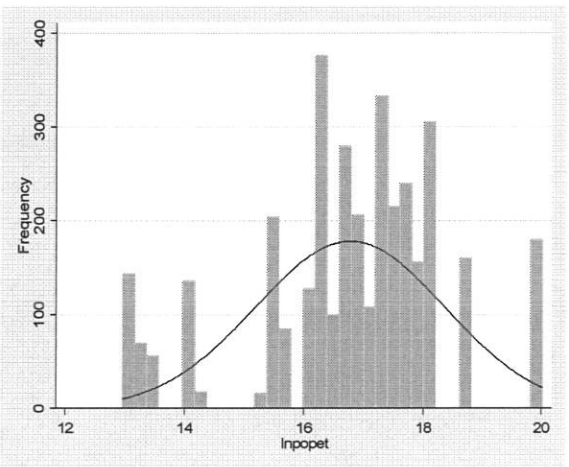












Annex 3 Regression Result for Comparison: Dependent Variable Log of Export

Independent Variable	*GLS*		*OLS*		*FIXED EFFECT*	
	Coefficient	*P-value (95%)*	*Coefficient*	*P-value (95%)*	*Coefficient*	*P-value (95%)*
Log of GDP of the exporting country	.9771279	0.000	.7094422	0.000	.3353618	0.000
Log of GDP of the importing country	.9771279	0.000	.5558076	0.000	.1834389	0.000
Log of population of the exporting country	.4197197	0.000	-.1266572	0.000	.276958	0.537
Log of population of the importing country	.5080145	0.000	-.0516209	0.039	-.0784026	0.007
Log of distance between importer and exporter	-.0002632	0.001	-.0000613	0.000	-.06021	0.001
Common language between importer and exporter countries	.4126431	0.104	.3701814	0.000		
Common border between importer and exporter countries	2.345323	0.000	-24.74652	0.000		
Dummy for trade creation	-39.65809	0.003	-.2294824	0.003		
Dummy for import trade diversion	-1.180849	0.002	-.3727744	0.000		
Dummy for export trade diversion	-1.19386	0.001	-.5353755	0.000		
Constant	-1.06551	0.000	1.286246	0.000	-13.83686	0.000
Number of observations = 3514	Wald chi2(10) = 5311.01		F(10, 3503) = 529.44		R-sq: within = 0.0920	
	Prob > chi2 = 0.0000		Prob > F = 0.0000		between = 0.5039	
			R-squared = 0.6018		overall = 0.4841	
					F(4,3119) = 48.84	
					Prob > F = 0.0000	
					sigma_u 1.740864	
					sigma_e .49566569	
					rho .92501142	

Declaration

The project is my original work. It has not been presented for a degree in any other university and that all resources of materials used for the project have dully acknowledged.

Written by:

Yetimgeta Asrat

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confirmed by:

Tassew Woldekiros

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