REGIONAL TRADE INTEGRATIONS:
A Comparative Study of African RTAs

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1. GENERAL INTRODUCTION

Regional integration remains the key strategy that should enable African governments to accelerate the transformation of their fragmented small economies, expand their markets, widen the region’s economic space, and reap the benefits of economies of scale for production and trade, thereby maximizing the welfare of their nations. It increases competition in global trade and improves access to foreign technology, investment, and ideas. African leaders thus consider it an important path to broad-based development and a continental economic community, in accordance with the Treaty Establishing the African Economic Community (1991) and the Constitutive Act of the African Union (2000).

However, while many countries have benefited from increased trade and regional integration, Africa has, in general, been left behind. International trade statistics indicate that its share in world trade has declined from around 6 per cent 25 years ago to about 2 per cent; less than 1 per cent, if South Africa is excluded (UNECA, 2008). This trend points to the continent’s increased marginalization in the context of world trade. The situation is no different, if not worse, with regard to intra-Africa trade, which has consistently remained minimal compared with its intercontinental trade. The pattern of African exports continues to be heavily influenced by historical links with the rest of the world. More than 80 per cent of African countries’ exports are still destined for markets outside the continent, with the EU and the
United States accounting for more than 50 per cent of this total. On average, over the past decades, only about 10 to 12 per cent of African trade takes place among other African nations. This is not an encouraging trend, especially when compared with other world regions.

The implications of low intra-African trade are many and far reaching. Many opportunities are lost for using trade within the continent to enhance the prospects for specialization between African countries and accelerated development and integration. Intra-African trade can generate development and dynamic integration among African sub-regions and is a powerful driver of African growth and economic maturity. The main question, therefore, is how to reverse the situation so that African countries can benefit from improved intra-regional trade.

Given the above, the objectives of this study, therefore, are to assess the problems faced by regional groups in Africa, more specifically 4 regional trading agreements namely EAC, COMESA, SACU and SADC. We analyse the economic and non-economic obstacles which hinder the expansion and good functioning of these regional trading groups. We explain the problems encountered by most RTAs within the African continent using both qualitative and quantitative analysis. Gravity models are used with the help of UN COMTRADE disaggregated trade data for the African economies within the four regional trading groups. In addition, we also undertook a survey through the administering of a questionnaire to gauge the performance, obstacles and remedies thereto of the selected African RTAs. The questionnaire was thus forwarded to various institutions in the region including to the different Secretariats, Government Agencies, Investment Promotion Agencies as well as Private Consultancy firms.

The study is structured as follows. Section 2 reviews the theoretical and empirical literature on regional trade agreements and their implication on trade, with particular emphasis on regional integration within the African continent. This section also specifically reviews the studies undertaken on Sub Saharan Africa; whereby the gravity model is applied. The econometric analysis on the selected RTA performance is discussed in section 3 via the application of the gravity model. The findings are thus explained and analysed. Section 4 discusses the findings obtained from our survey which attempted to examine the possible hindering obstacles related
to the relevant RTAs and also to the possible remedies that could accelerate regional integration and trade within the region. We finally conclude in section 5 with policy implications.

2. LITERATURE REVIEW

Over the past decade, Regional Trade Agreements (RTAs) have played a central role in modern economy. Recognized as a catalyst for globalization, RTAs are permitted by the World Trade Organization (WTO) as long as they are consistent with Article XXIV of GATT and Article V of GATS. RTAs are generally defined as agreements between countries to eliminate or reduce trade barriers and act as a form of economic co-operation and integration. Membership to a regional integration arrangement is the political choice of a country, whether based on political, social, geographic and / or economic considerations. Governments enter into trade agreements to satisfy a variety of objectives, thereby explaining the rationale as to why regional integration and cooperation arrangements vary widely in their structure, objectives, sector coverage, and membership.

Initially, regional cooperation schemes among countries were encouraged by international organizations as a means towards regional stability and development. Countries are now increasingly making RTAs a central objective of their trade policy (Brown 2005). This combination of regional, sub-regional and multilateral negotiations has guided governments towards acceptance of a more open system for cross-border economic transactions. However, another school of thought argues that RTAs are an impediment rather than a stepping stone to multilateralism and globalization. Countries are increasingly prioritizing RTAs over multilateral trade objectives in their trade policy. The effect of Regional trade agreements on trade depends on their design and implementation (Global Economic Prospects: 2005). The broader policy context in which an RTA is designed and implemented is crucial.
For an RTA itself, the most determining factor is low trade barriers with all global partners. Brown (2005) explains that successful regional integration is premised on a number of preconditions namely, domestic peace/security in countries, political and civic commitment and mutual trust among countries, minimum threshold of macro-economic stability, good financial management in countries and sufficiently broad national reforms to open markets. Successful regional agreements should be capable of complementing rather than inhibiting multilateral negotiations.

With this new wave of regionalism, the effect of RTAs on trade is still an open question. The European experience has been one of convergence but a number of regional agreements between developing countries, mainly African countries have been associated with divergence of economic performance. Hence, this paper aims to provide answers to some questions as to whether RTAs really increase trade among members, thereby furthering trade liberalization and whether they harm non member countries, by exploring the effects on intra- and on extra-bloc trade.

2.1 RTAs in AFRICA

The performance of north-north regional agreements has often been contrasted with those of developing countries. Venables (1999) explains that the experience of the European Union is one of considerable convergence of per capita income levels of member countries. The historical record from 1947 (when the BeNeLux Customs Union was created), through 1957 (creation of the EEC), 1968 (when internal tariffs were finally eliminated) and to the early 1980s is studied by Ben-David (1993). The most interesting features are the strong performance of Ireland, Spain and Portugal, which have made significant improvement in closing the gap with richer members of the EU. Venables (1999) further argues that regional agreements between developing countries have been mostly related with divergence of economic performance. The East African Common Market and the Economic Community of West Africa exemplify the latter situation. The rationale forwarded is that if a group of developing countries enter into a regional trade agreement, the lowest income members are likely to suffer real income loss due
to trade diversion as compared to an RTA which contains a relatively high income country whereby there is a tendency for the lower income countries to converge towards the high income partner. This explains why most of the south-south agreements have not been as successful as the north-north agreements.

Among developing countries, it is not easy to find many that have not been in the past or are not currently member of some kind of preferential or regional trading bloc. Virtually every country in Sub Saharan Africa and Latin America participates in at least one such grouping, and many belong to three or even more groupings. Despite this proliferation of trading blocs, however, not every bloc can be considered as being effective, in the sense of playing a significant role in shaping the trade flows and/or policies of its members (Foroutan 1998).

Indeed, empirical literature lays proof to regional economic integration which has had a fairly long history in virtually all parts of Sub-Saharan Africa (SSA). African leaders have long emphasized the importance of cooperation and integration among African countries based on the view that the economic constraints imposed by the smallness and fragmentation of national markets were the main economic constraints that could be overcome by regionalism (Lyakurwa et al. 1997). The ultimate objective behind the economic integration was the formation of an Africa-wide economic union.

In the late 70s and early 1980s, concrete steps were taken to re-launch and establish economic integration institutions in all sub-regions of Africa. The first type of regional integration schemes were motivated partly by the political vision of African Unity and partly as a means for providing sufficient scale to import substitution industrialization policies. However, the import substitution strategy failed for many obvious reasons of greater costs over benefits. Thus, progressively countries switched from import-substitution to open-door policies with more popular regional integration schemes characterized by open regional arrangements until promotion of regional integration has become an important economic and political goal in Africa.
In 1991 African Heads of State adopted the Treaty establishing the African Economic Community (AEC) as a step towards deeper integration of the African region. A number of Regional Economic Communities like SADC, COMESA, the Economic Community of West African States (ECOWAS), the Economic Community of Central African States (ECCAS/CEEAC) and SACU have been designated as the building blocks of the AEC. As per Article 88 of the Treaty establishing the AEC, these RECs should have as their final goal the establishment of the AEC through free trade, a Common Market and eventually an African Economic Union. Hence, the formation of an Africa-wide economic union depends on the level of integration within the RECs. As per UNECA 2005, it was initially targeted that by 2028, the highest level of integration would be achieved but this timely implementation is also highly dependent on the progress of integration by the numerous RECs in the region. However, most of the RECs in Southern and Eastern Africa are far behind the schedule, indicating the lack of commitment towards deeper integration. The latter have become known more for solemn statements and extensive protocols than for implementation of agreed policies and proven economic impact.

Jakobeit et al (2005) identifies another problem linked to regional trade agreements in Africa, namely the overlap of membership among RECs in the Eastern and Southern region. Indeed, the move towards deeper integration is contradicted by the persistence of multiple and overlapping membership in the region. This has a negative bearing on the costs and benefits of a more enhanced integration as merely focusing on tariffs and revenue foregone would mean bypassing some of the more fundamental aspects of regional integration. Moreover, from a technical viewpoint membership in more than one Customs Union (CU) is impossible. As such, there is a trade off for member states with multiple memberships between belonging to one or another CU grouping. Member states will consequently have to decide which REC will best serve their interests in the process of deeper integration.

The likely causes of poor performance in RTAs in Africa are numerous, but include also the maintenance of non tariff barriers. The lowering of tariff barriers has boosted trade among the African countries but this regional trade has barely kept pace with increases in trade with the rest of the world due to non tariff barriers. Indeed, licensing rules and standards affect trade
throughout the entire region. Restrictive trade practices, rules of origin and corruption cause trade distortions - increasing the price of imported goods in the African region. Corruption is a key endemic problem in practically all the African countries. Charalambides (2005) found that corruption, along with payment default, was the greatest constraint to trade with Southern and Eastern Africa for South African SMEs.

Imani (2009) found that clearance of goods’ documentation and transit traffic/trucking issues were the most significant barriers to regional trade among five SADC members namely Malawi, Mauritius, Swaziland, Tanzania, Zambia and Zimbabwe. These Non Tariff Barriers imply higher costs and reduced competitiveness in the region, hence undermining regional trade preferences in Africa. At the macroeconomic level, these NTBs impose higher costs on businesses and consequently higher prices that are passed on to consumers. A World Bank (2008) study on 5 Eastern African Countries found that customs, administrative entry and passage procedures, government participation in trade and restrictive practices tolerated by it, distribution restrictions, specific limitations, technical barriers to trade and Sanitary and Phyto-Sanitary Measures were the most significant factors restricting intra-EAC trade. Carrere (2009) further explains that NTBs are more restrictive than existing tariffs. Transport costs are higher in Southern Africa than in most other regions, thereby increasing the costs of exporting. Some categories of NTBs, such as inefficiencies in customs administration and transit traffic or dysfunctional fiscal borders, affect regional trade at all levels. However, some NTBs, such as rules of origin, restrictive trade practices and differences in product standards, are significant for certain specific sectors only. Complicated and inefficient fiscal borders also contribute to the costs of regional trade in Southern Africa.

Foroutan (1998) explains that the most important reforms in African countries have occurred only during 1996, when the seven UDEAC members as well as Benin (a member of UEMOA) drastically reduced their average tariff and simplified the structure of tariff rates and other indirect taxes thereby greatly reducing the level and dispersion of the average rate of protection. Despite these reforms, however, the average rate of protection in SSA remains high,
at around 22 percent with little difference between countries that are classified as belonging to an effective RTA and those that are not.

The empirical work estimating these effects is particularly important since the theoretical work suggests that regional agreements may be beneficial or harmful depending on the particular countries involved and the extent of the trade creation relative to the trade diversion (Panagariya, 2000).

2.2 TRADE CREATION AND TRADE DIVERSION

Countries may be able to use regional agreements as a commitment mechanism to lock in economic reforms. This seems to have happened in Mexico with NAFTA, and in the agreements between the European Union and East European economies. An RTA may also promote technology transfer from the high income country to lower income members. Coe and Helpman (1995) and Coe, Helpman and Hoffmaister (1997) found that access to foreign knowledge is a statistically significant determinant of the rate of total factor productivity across OECD and developing countries. Thus an RTA might promote technology transfer via its effect on trade. Similarly, RTAs typically promote foreign direct investment, another likely source of technology transfer.

Frankel (1997) identifies traditional gains from trade, strengthening domestic policy reform, increased multilateral bargaining power, guarantees of access, strategic linkages and multilateral and regional interplay. However, Coulibaly (2006) explains that many empirical papers have addressed the issue of RTA trade effects, but it is difficult to infer welfare effects on RTA members and non-members from these studies, as pointed out by Tovias (1982), Pelkmans (1983) and Winters (1987) among others. Trade economists now recognize that there is no clear mapping between the trade effects of an RTA and its welfare effects. Most of the papers on this topic only speculate on the welfare impact of RTAs. Welfare is a complex notion that may take into account the availability of differentiated goods for consumers who love varieties and also the supply of public goods financed by taxes and custom duties. But, some papers rigorously explored the issue of RTAs welfare effects within some specific frameworks.
The papers by Frankel, Stein and Wei (1993) and Spilimbergo and Stein (1996) dealt with the welfare effect of RTAs in a Computable General Equilibrium framework. The paper by Winters (1997) dealt with the welfare effect of an RTA on non-members building on the competitive neoclassical model used by Kemp and Wan (1976). Milner, Morrissey and McKay (2005) use a partial equilibrium method to measure the short term welfare effects of economic partnership between RTAs. RTAs can fail in multiple dimensions. In economic terms, the negative results can include trade diversion, reduction of quality, increasing consumer prices and lowering global competitiveness for a country (Yeats, 1998). Investment, economic growth, government tax revenue and employment may also fall. In social terms, the flow on effects may be reduced wealth and income distribution, and living standards may fall (Woolcock, 2001). In the political sphere, stability and co-operation may decline, and conflict may increase (World Bank, 2000). In terms of sustainability, it is not always coincident with economic expansion (Barbier, 2003).

In general, it is believed that RTAs increase trade among members within blocs, which are often referred to as trade-creation effects. However, regionalism has the potential of diverting bilateral trade away from countries outside the bloc (trade diversion)(Lee 2008). The distinction between trade creation and trade diversion dates back to Viner (1950). Trade creation occurs as low-cost member countries displace high-cost domestic producers. Trade diversion, on the other hand, occurs when members of an RTA reorient their trade away from low-cost, non-member countries toward higher-cost member countries. Therefore, RTAs can either increase or decrease world welfare depending upon the relative magnitudes of the trade-creation and trade-diversion effects. Regional agreements may be beneficial or harmful depending on the particular countries involved and the extent of the trade creation relative to the trade diversion (Panagariya, 2000).

International trade economists have conducted a number of studies investigating whether RTAs are trade-creating or trade-diverting. The majority of the research uses the gravity model to test for the trade effects of RTAs. By estimating various forms of the gravity model equations, researchers have reached the consensus that RTAs are trade-creating. As Burfisher et al. (2001) put it, “whether or not a regional trade agreement benefits its members will depend on
parameter values and initial economic structure — it is essentially an empirical issue that must be settled by data analysis.”

Cernat (2001) explains that in a simple partial equilibrium model under perfect competition RTAs may have a positive impact on the level of trade between members at the expense of less efficient domestic producers (trade creation) but also of more efficient third countries (trade diversion). The net effect of RTA on trade thus depends on the relative size of these two effects. Esteban and Anesa (2006) postulate that RTAs are in line with the principles of multilateral trade as long as they are trade creating. These arguments are based on the theory of comparative advantage; free trade motivates the operation of the principle of comparative advantage by curbing the discrimination between the existing sources of supply. Contrarily RTAs shift the discrimination between the existing sources of supply among trading partners by granting preferential market access to its signatory members.

A trade-creating RTA has both static and dynamic benefits arising from a reduction in administrative costs and an increase in bargaining power, competition, economies of scale and a stimulus to investment through tariff factories amongst other major factors. Trade, by taking advantage of differences in factor endowments, larger markets and the availability of new technologies generates gains from pure arbitrage, economies of scale and more sophisticated product differentiation and extended innovations as explained in traditional trade models. Higher production efficiency brought about by enhanced competition, decreased average production costs due to economies of scale in larger markets, higher international investment, resulting from an increase in investment opportunities, enhanced technological change resulting from increased competition, all these dynamic effects change the welfare trajectory. Cernat (2001) found a strong case of trade creation between African RTAs which he attributed to greater trade facilitation amongst members of RTAs. This is an evident indication that RTAs in Africa have good chances of being trade-creating, especially in light of the sum of the welfare effects on all RTA members.
Brown (2005) further argues that as the European Union shows, trade agreements can also signify deep and profound economic, social and political changes. Imports become cheaper and export more valuable, thus promoting foreign direct investment (FDI), improving economic growth, improving a countries’ balance of payments position, and open access to new skills and technology. While economic self-interest is generally the principal motivation of RTA growth, such agreements are also more and more being directed by political, strategic and security concerns. The Association of Southeast Asian Nations (ASEAN) was initially created as a response to the perceived spread of communism in the region in the 1960. Regional blocs are a powerful tool to negotiate common interests both within and outside the WTO. In the case of Latin American countries, regional integration has been used to counter the negotiating power of the US.

2.3 EMPIRICAL REVIEW

The measurement of success or failure of RTAs has been examined in economic terms, mainly in the form of trade diversion or trade creation, but little work has been done examining the political, socio-cultural and other environmental dimensions (Woodcock, 2001). Jacob Viner (1950) is the starting point for the modern economic analysis of trading blocs. This seminal work described how the welfare effects of a regional trade agreement (RTA) depend on the trade creation and the trade diversion. Johnson (1960) developed a partial equilibrium diagram that explains the economic effects of ‘trade diversion’ and ‘trade creation’ impact of an RTA and sum up its several effects in markets where trade is diverted, countries may be better or worse off.

Tinbergen (1962) provides initial specifications for the gravity model and uses it to look at the determinants of the trade flows, while Aitken (1973) was one of the first applying this approach to analyze the RTAs. We can divide the existing studies estimating changes in trade patterns due to regionalism in two distinct ways. The one is ex-post studies which examine trade flows after the RTA has been implemented and compare the actual levels of trade with a prediction of trade in the absence of the RTA and the other is ex-ante studies using trade patterns and
estimated elasticities or computable general equilibrium models prior to the agreement to
calculate the predicted effect of eliminating trade barriers with a partner country. Ex-ante and
ex-post, the both methods as currently implemented, however, are subject to criticism.
Wonnacott and Lutz (1989) and Krugman (1991) have proposed a “natural trading partner”
hypothesis according to which the countries will tend to form the regional agreements if they
have already significant bilateral trade, and that such agreements are likely to be trade
creating. An extreme case of the Krugman hypothesis even ignores the impact of RTAs and
explains the entire tendency in trade volumes by the trade costs and the historical ties.
Bayoumi and Eichengreen (1997) and Frankel (1997), both of whom examined the effect of
RTAs on non-members as well as members and try to separate the ‘trade creation’ and ‘trade
diversion’ effects of RTAs. Low (2003) discusses some of the practical issues relating to RTAs
and particular relevance to APEC and ASEAN.
Magee (2003) employs simultaneous equations model to demonstrate empirically that higher
mutual trade flows do boost the probability that countries will form free trade agreements.
Therefore, the coefficients on RTA dummy variables are capturing more than just the effects of
the agreement; they also include the possibility that high levels of intra-bloc trade may not be
due to the formation of preferential trading arrangements but rather to historical or political
relationships between bloc members. Bayoumi and Eichengreen (1995) made an effort to deal
with this criticism by running the gravity model in first differences so that unobserved country
pair characteristics that are constant over time will drop out. This methodology will not control
for time-varying omitted variables.
The estimates of gravity model calculating the RTA effects are also sensitive to the sample of
countries chosen for the analysis. Haveman and Hummels (1998) demonstrate that changing
the country sample results with a different prediction of trade in the absence of the RTA, and
thus the estimates of RTA effects vary considerably in their conclusions. Pomfret (1997) also
mentions a number of incredible results in studies using the gravity model to measure the trade
effects of RTAs and concludes the inadequacy in this approach. More recently, Ghosh and
Yamarik (2004) make a case that the gravity model results are very sensitive to the variables included in the regressions and to the prior beliefs of the researchers. They find a remarkable drop in the number of regional agreements that are trade creating when they incorporate the researcher's prior beliefs into the estimation.

Foroutan (1998) found that the countries which were currently member of an effective RTA, namely Israel, Mexico, and Turkey which were in an effective RTA arrangement with the US and/or the EU as well as the Latin American countries that belonged to an effective regional grouping are also the ones that had most radically liberalized their trade regimes in the past decade. Thus, to the extent that any relation between regionalism and trade liberalism could be established, it appeared that the acceptance of a liberal trade policy might be a requirement for the survival and deepening of a meaningful RTA whereas belonging to a regional scheme constitutes neither a necessary nor a sufficient condition for an open and liberal trade regime.

Venables (1999) examined the way in which the benefits and costs of a free trade area were divided between member countries by using a generalized Heckscher-Ohlin trade model. This model assumed all countries had the same technology but different endowments of two factors, referred to as skilled and unskilled labour, S and U and these differences were the basis of their comparative advantage. The author found that that free trade agreement between low income countries tend to lead to divergence of member country incomes, while agreements between high income countries caused convergence. These results suggested that developing countries were likely to be better served by ‘northsouth’ than by ‘south-south’ free trade agreements.

However, Soloaga and Winters (1997) found convincing evidence of trade diversion for EU and EFTA as EU’s and EFTA’s propensity to import were significantly lower in 1995-96 than in 1980-82. The latter used annual non-fuel imports data for 58 countries from 1980 to 1996 from the UN-COMTRADE database. This set of countries represented around 70% of total world imports in the period covered. They extended the basic gravity model by defining three sets of dummy variables for each trade bloc: one that captured intra-bloc trade, a second that captured
imports by members from all countries (members and non-members), and a third that captured exports by bloc members to all countries. The last two dummies reflected respectively overall bloc “openness” to imports and exports, while the intra-bloc dummy reflected the additional effect of a given PTA on members’ trade. These bloc related coefficients were statistically tested for changes “before and after” blocs revival/formation. The authors found no indication that the ‘new wave’ of regionalism boosted intra-bloc trade significantly. When testing intra-bloc trade “before and after” years of bloc revamping/creation we found no statistically significant change in the propensity for intra-bloc trade.

The trade diverting effect between a developed and developing countries were also found by Rahman (2006). The author found that EU and Bangkok agreement (APTA) were intra-bloc export diverting and net export diverting. Rahman (2006) investigated the trade creation and trade diversion effects of a number of RTAs, with special focus on the SAFTA, by using a gravity model. Panel data approach with country pair specific fixed effects and year specific fixed effects was followed. Two-stage estimation method was pursued to capture the time dimension and cross section specification of the data. The study found that there was significant intra-bloc export creation in SAPTA; however, at the same time there was evidence of net export diversion in the SAPTA. Bangladesh, India and Pakistan were expected to gain from joining the RTA, while Nepal, Maldives and Sri Lanka were likely to be negatively affected. Among the other RTAs covered under the study, AFTA, NAFTA, SADC, MERCOSUR, CAN, EAC were associated with intra-bloc export creation and net export diversion but EU and Bangkok agreement (APTA) were found to be intra-bloc export diverting and net export diverting.

Similar results were found by Chong Wha Lee (2008). The latter examined the relative magnitude of trade-creating and trade-diverting effects of some RTAs using a panel dataset consisting of observations for every five years beginning in 1950 and ending in 1999, taken from Andrew Rose’s gravity model (2004) database. His study concluded that the trade-creating effects in five of the ten RTAs (EC, CACM, MERCOSUR, ASEAN, and SPARTECA) were remarkable. Secondly, he found trade-creating effects were decreasing in some RTAs (EC, CACM, MERCOSUR, and ASEAN), suggesting that the trade-creating effects were over-estimated
without controlling the country heterogeneity bias. Finally, the EU and NAFTA seemed to be relatively less open trade blocs than are MERCOSUR and ASEAN.

Coulibaly (2006) focused on six developing RTAs covering Subsaharan Africa (ECOWAS and SADC), Asia (AFTA) and Latin America (CACM, CAN and MERCOSUR) over the period 1960-1996, and two developed ones (EU and NAFTA) for the sake of comparison to estimate their trade as well as welfare impacts. A gravity model was combined with kernel and bootstrap estimation techniques to investigate the trade and welfare profile along with the number of years their members participated over the period 1960-1996. “Younger” RTAs (AFTA, CAN, MERCOSUR, NAFTA and SADC) appeared to be rewarded by a positive welfare effects during first years of existence, while “older” RTAs (CACM, ECOWAS and EU) depicted more volatile welfare effects. The author also found that the trade and welfare impacts of developing and developed RTAs evolved non-monotonically over time.

On the other hand, Muhammed and Yucer investigated the effects of RTAs in the Western Hemisphere. Annual data from 38 countries covering six RTAs in the Western Hemisphere for the years 1986–2005 was used. The regression estimates for the effects of the different RTAs varied remarkably. All RTAs were found to foster greater trade and so were welfare enhancing except LAIA and NAFTA. While LAIA, NAFTA and MERCOSUR showed a significant trade diversion effect, ANDEAN and CACM had a positive significant trade diversion coefficient which indicated that these RTAs were not only helping in boosting the trade within the region but also contributing the overall world trade.

2.4 THE GRAVITY MODEL APPROACH

Any country involved in RTAs expects a welfare gain. This expectation is so strong that most engage in many different agreements leading to what Bhagwati (1993) called the “spaghetti bowl” phenomenon, that is the crisscrossing of regional agreements differing in their schedules of phasing out tariffs, rules of origin and excluded products. To this, the first one to have proposed a model to be able to quantify the several benefits of RTAs is Viner (1950) who proposed a way to assess the welfare effect of an RTA by developing the notions of trade
creation and trade diversions. In the basic gravity model, trade between two countries depends on their size (GDP, population, land area) and on transaction costs (distance, cultural similarities). Its empirical robustness has made it the work-horse for investigations of the geographical patterns of trade. Shortly afterwards, Meade in 1955 extended this model by including demand elasticities that shape post custom union trade flows in addition to cost structures.

Balassa (1967) on the other hand proposed a “gross trade creation” measure as a computable version of Viner’s trade creation and trade diversion notions while Aitken (1973) formulated a gravity model including RTA dummy variables to estimate Balassa’s measures. But such an approach does not originate from here.

The gravity model comes from the Newtonian physic notion which acts as an ex-post analysis approach using historical data to guide policy by explaining its effect where it has already been implemented. Tinbergen (1962) and Poyhonen (1963) first applied the gravity model to analyze international trade flows. Since then, numerous empirical studies applied gravity model to inspect the trade creation and trade diversion effects of the RTAs. According to this model, flows of export between two countries are explained by their economic sizes (GDP or GNP), population and direct geographical distances between the countries. Most estimates of gravity model add a certain number of dummy variables to the original gravity equation that test for specific effects. This refers to membership in a RTA, sharing of a common land border and commonality of language. With inclusion of dummy variables of trade agreements, gravity model has broader implications in terms of the trade creation and trade diversion. Although empirical studies have found high explanatory value (high value of $R^2$) of the gravity model in explaining bilateral trade flows, as regards theoretical justification not much had been done during the early stage of its application. However after the 1990’s with Bergstrand (1990), Deardorff (1998) and Feenstra, Markusen and Rose (1998), the gravity model was set on solid theoretical foundations as opposed to the early articles using adhoc gravity models.
To cater for RTAs, it is also common to expand the basic gravity model by adding other variables, which are thought to explain the impact of various policy issues on trade flows. In the case of gravity equations used to estimate the impact of regional trade arrangements dummy variables are added for the particular RTA in question. In addition, in order to avoid capturing by these dummy variables the impact of other influences on trade, other dummy variables are added to control for common language and common border. By estimating various forms of the gravity model’s specifications, researchers have agreed that RTAs are trade creating. For example, Bergstrand (1985) and Thursby (1987) show that the European trade blocs increased trade during the 1960s and 1970s. Frankel and Wei (1993, 1995) and Frankel (1997) find evidence of trade creation in Asian and North American trading blocs. Soloaga and Winters (2001) find trade creation in Latin America during the 1990s. Recent papers by Rose (2000) Frankel and Rose (2002) find that RTAs are, in general, trade-creating.

Regional Trade Agreements have become a common feature of the global economy and consequently have significant implications on trade of a country. To address effectively the issue of NTBs at the regional level, a legal framework committing member states to their removal is primordial. The establishment of appropriate regional and national institutions to monitor, report and deal with NTBs should be prioritized at the national level to minimize the trade-restrictiveness of such measures. In the Western Hemisphere, the new wave of regionalism spread most visibly and, because of the involvement of the USA and Canada, it gained much reputation. Indeed this new wave of regionalism not only altered the regional economic relations on this continent, but the relative importance of regionalism on the overall world scenario as well. The competitive environment of this new regionalism and the current worldwide regional integration process has also changed the set out concepts of regional integration qualitatively. Usually, regional integration agreements had mostly been restricted to the formation of Free Trade Agreements (FTAs) and Custom Unions (CUs), in this manner it is basically an economic ventures. However, the modern integration concepts of the 1990s are most often targeted to become areas of deeper integration. This wave of regionalism has an objective to enforce the industries to be more competitive in international spectrum by having
better integrated markets, so they involve a much higher political content than former agreements. Moreover, we can say that the new Regionalism is both political and economic. This enhancement of world trade through a better oriented RTA policy can be a forward step for the globalization.

For the purpose of this study, the gravity equation will be based on the assumption that trade between two countries depends on their GDPs and geographic proximity.

The basic model in multiplicative form can be written as follows:

$$T_{ij} = a_0 Y_i^{\alpha_1} Y_j^{\alpha_2} D_{ij}^{\alpha_3}$$

where \( T \) is the trade flow from country \( i \) to country \( j \) and \( D \) is the distance between the country pair \( ij \), or as considered in the theory all costs associated with doing a business at a distance. The multiplicative form of the model indicates that a 1% increase of \( Y \) (GDP of country \( i \)) results in an increase of \( \alpha_1 \% \) in the exports of supplying country.

The above equation can also include the effects of custom unions, exchange-rate mechanisms, international borders amongst so many variables by the inclusion of dummies to the phenomena wanted to be explained in the model. Most of the precedent applications of the model used the OLS estimator by log-linearization of the multiplicative form. However, this OLS estimation can be termed to be inconsistent and inefficient when considering the ideas of Santos Silva and Tenreyro (2006). Moreover, the approach of including RTAs by using dummy variables can be problematic, because the dummy captures a range of other country-pair-specific effects contemporaneous with RTA implementation. In addition, dummy variables treat all countries in a certain RTA as a homogenous group, not taking into account the country heterogeneity. To cope with this problem, a fixed-effects model can be used to control for all factors that are fixed over time. Also, distance does not reflect the cost of trading between the countries of the pair and is considered to be a poor measure of such costs.

The gravity equation used will hence follow the specifications of Cheng and Wall (2005), but introduces important modifications—in particular, it includes time-varying country dummies
In addition, following Ghosh and Yamarik (2004), we have added $\alpha_{RTAi}$ to include RTA dummy variables to capture the external effects of RTAs on trade as follows:

$$\ln(\text{trade}_{ij}) = \eta_{ij} + \delta_t + \beta_1 \ln(\text{GDP}_i \cdot \text{GDP}_j) + \beta_2 \ln(\text{distance}_{ij}) + \beta_3 X_{ij} + \varphi_1 \text{RTA}_{ij} + \varphi_2 \text{RTA}_t + \epsilon_{ij}$$

Where $\eta_{ij}$ indicates the country-pair fixed effects between countries $i$ and $j$, and $\delta_t$ is year-specific dummies. Our empirical experiment later will test time-varying country fixed effects as well; therefore, in this case $\eta_{ij} + \delta_t = \lambda_{it} + \mu_{jt} + \eta_{ij}$ where $\lambda_{it}$ and $\mu_{jt}$ are time-varying country dummies for country $i$ and $j$, respectively.

$RTAi$ is a vector of variables that measure current membership of either country, $i$ or $j$, in a regional trading arrangement (that is, only one country belongs to an RTA and another is outside). The coefficient $\varphi_2$ is interpreted as the extent of abnormal trade between a nation in the trading bloc and a country outside the bloc relative to a random pair of countries.

Consequently, a positive value for $\varphi_2$ implies that trade between a country within the bloc and countries outside the bloc is more than random, and is interpreted as openness of that region to imports from outside the region. A negative value for $\varphi_2$ indicates less trade with nonmembers, and is thus interpreted as evidence of trade diversion.

4. AN ECONOMETRIC FRAMEWORK (GRAVITY MODEL) TO MEASURE IMPACT OF SELECTED AFRICAN RTAS
4.1 METHODOLOGICAL FRAMEWORK

Trade creation/diversion associated with the elimination of internal duties within an RTA can be evaluated. The issue is addressed within the context of RTA-member and RTA-non-member suppliers offering agricultural goods in the international market using an empirical model first developed by Balassa (1967). The analytical framework requires three demand functions to be estimated – one typifying imports from member countries, another imports from non-member countries and finally total imports. The model generates ex-post income elasticity of import demand in the period preceding and following the formation of the RTA. The generated elasticities measure the relative responsiveness of imports to changes in both income and prices. Being ex post estimates, they reflect both substitution effects (movement along indifference curves), as well as income effects (movement from one indifference curve to another) (Balassa, 1963).

The gravity model has performed remarkably well as a tool for measuring the impacts of RTAs. Anderson (1979) provided the first theoretical foundation for the gravity model based on the constant elasticity of substitution (CES) expenditure system. Subsequent refinements were provided by Bergstrand (1985, 1989), Helpman and Krugman (1985), and Deardorff (1998). Eichengreen and Irwin (1998) called the gravity model "the workhorse for empirical studies to the virtual exclusion of other approaches".

In its most basic form, the gravity model states that bilateral trade flow (either export or sum of import and export) between two countries (i and j) is a function of GDP of each country, and geographical distance between them. In a log-linear form it is written as follows:

\[
\log(X_{ij}) = a + \beta_1 \log(GDP_i) + \beta_2 \log(GDP_j) + \beta_3 \log(D_{ij})
\]  

(Eq 1)

In the recent past, the basic gravity model has been augmented to include a number of other variables (like population and language similarity) in different forms as explanatory variables of trade. However, there has also been a large debate on variables used in the gravity models.
Some researchers, including Rahman (2003) and Sharma and Chua (2000) use trade value (i.e. sum of imports and exports) as dependant variable, while others, including Adams, Dee, Gali and McGuire (2003) use only exports value. Baldwin and Taglioni (2006) solve the dilemma of whether to use trade values or export values. They suggest the use of one-way trade and this is the model we follow in this study.

On the explanatory variables side, GDP, GNP, GDP per capita, GNP per capita, sum of GDP and products of GDP have all been used to represent income. Basically, studies using gravity models argue that trade are inversely related to size variables (e.g. population size).

The argument on which this hypothesis is based is that the larger a country’s population size, the more that country’s productive capacity and self sufficiency will be.

RTA-specific dummies to capture the trade creation and trade diversion of RTAs have been widely used in the literature. However, the number of dummies for each RTA differs among various studies, and thereby the explanation of the estimated coefficients for these dummies differs.

Some studies have used one dummy for each RTA to capture the intra trade-bloc effect of a RTA (e.g. Aitken (1973)); other studies have used two dummy variables for each RTA to separately capture the effects of intra-bloc and extra-bloc trade (e.g. Frankel, 1997); yet in other studies, three dummy variables have been added for each RTA to not only separately capture the effects of intra-bloc and extra-bloc trade, but also to distinguish between extra-bloc effects on imports and extra-bloc effects on exports (e.g. Soloaga and Winters, 2001, Rojid (2006)).

However, previous studies investigating the trade flow effects of RTAs have produced conflicting results (Ghosh and Yamarik 2004; Baier and Bergstrand (B&B) 2007). B&B (2007) highlighted the European Union (EU) integration as a case and point: some studies have found

---

1 For a review on the explanatory variables included in past studies refer to Adams, Dee, Gali and McGuire (2003)
positive and significant effects (Tinbergen 1962; Aitken 1973; Brada and Mendez 1985), while others have found insignificant and, in some cases, negative trade flow effects (Frankel, Stein, and Wei 1995, 1996; Frankel 1997; Krueger 2000). These conflicting results are outcomes of different sample selections coupled with different model specifications and at times due to different approaches in methodology used.

Ghosh and Yamarik (2004) addressed this issue econometrically and showed that cross-sectional gravity equations yielded highly unstable results. B&B (2007) found similarly unstable RTA effects in cross-section regressions. However, B&B (2007) went a step further and showed that previous studies have produced biased results because countries select endogenously into RTAs. Using panel data methods to account for the endogeneity of RTA membership and a theoretically consistent gravity equation, B&B (2007) found that RTAs approximately doubled members' trade using aggregate trade data. This study follows B&B's (2007) and applies the panel data framework. As we pointed out above, the study concentrates on trade within African RTAs.

A typical log-linear gravity equation to investigate the trade flow effects of RTAs includes variables like size, distance and geographic and preference similarities, is as follows:

\[ X_{ijt} = GDP_i + GDP_j + D_{ij} + ADJ_{ij} + POP_i + POP_j + LANG_{ij} + LL_{ij} + t + RTA_{ijt} \]  

(Eq 2)

where:

- \( X_{ij} \) is the value of trade from country i to country j (measured by export from country i to country j in $ terms);
- \( GDP_i \) and \( GDP_j \) is the gross domestic product of the exporting (importing) country as a proxy for economic size (measured as the GDP of the respective countries in $ terms);
- \( D_{ij} \) is the distance between countries i and j used to proxy for transportation costs.
\(POP_{ij}\) is population size of the exporting country in year \(t\)

\(POP_{jt}\) is population size of the importing country in year \(t\)

\(T\) is the time factor element

**Dummy Variables:**

\(ADJ_{ij}\) whether the two countries share a common border

\(LANG_{ij}\) whether these two countries share a common language

\(LL_{ij}\) whether one of these two countries are landlocked. It takes a value of unity if either of the countries are landlocked.

\(RTA_{ij}\) is a dummy variable indicating the existence of a regional trade agreement between countries \(i\) and \(j\). (In this study we focus on four African RTAs namely SADC, COMESA, EAC and SACU, this implies thus inserting a dummy for each of them \((RTACOMESA, RTASADC, RTAEAC, RTASACU)\) and a fifth dummy for the rest of RTA in the sample \((RTAREST)\)

The econometric formulation can be written in a log-linear form as follows:

\[
\ln X_{ijt} = \alpha + \beta_1 \ln GDP_{it} + \beta_2 \ln GDP_{jt} + \beta_3 D_{ij} + \beta_4 ADJ_{ij} + \beta_5 \ln POP_{it} + \beta_6 \ln POP_{jt} + \beta_7 LANG_{ij} + \beta_8 LL_{ij} + \beta_9 RTA_{ij} + \beta_{10} t + \varepsilon_{ijt}
\]

(Eq 3)

**4.2 DATA SET & DATA SOURCES**

This study makes use of data from 37 countries (but focuses on African RTAs) and the time frame for the study is for the period 1996 to 2009 (14 years). Bilateral Trade data has been obtained from Center for Global Trade Analysis (GTAP) and is derived from the United Nations
Commodity Trade Statistics Database (COMTRADE). Production and expenditure data (in U.S. dollars) has been obtained from the World Bank Development Indicators database and the International Monetary Fund’s (IMF) Financial Statistics Yearbook will be used to supplement World Bank data for incomplete and missing data.

Trade flow data and production and expenditure for country i and j will not be converted to real dollars for two reasons. First, Srinivasan (1995) showed that purchasing power parity rates are subject to large measurement error. Second, Frankel (1997) found little difference in the gravity equation results when using real data. Moreover, time fixed effects control for inflationary pressures and the growth in world trade over the sample period.

Distance, contiguity, and common language indicators has been taken from the Centre d’Etudes Prospectives et d’Informations Internationales (CEPII). CEPII used the great circle formula to calculate the geographic distance between countries, referenced by latitudes and longitudes of the largest urban agglomerations in terms of population. The landlocked variable has been constructed from the CIA World Fact Book (available at www.cia.gov). The regression equation 3 is estimated using a panel fixed effect model in the first instance (column 2 in the tables).

Zero Trade Flows:

We also present results with the Heckman estimates (in column 3) which takes into account zero trade flows, in fact when the zero values are thrown away, we face the so called ‘selection problem’ and this can be handled through a Heckman two-steps procedure (Heckman, 1979). This methodology treats zero trade to imply that the countries that have a positive trade compose a selected sample. The sample selection model allows us to account for the unobserved selection criterion that leads to positive trade in the current time period. In fact, the Heckit estimator combines probit analysis of zero trade flows with OLS analysis of trade volumes (see Helpman et. al, 2006 and Iwanow, 2008).

4.3 ANALYSIS

Table 5: Gravity model of agricultural trade – African RTAs
Dependant variable: Ln Exports; time period 1996-2009 (14 yrs)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Fixed Effects Estimates</th>
<th>Heckman Estimates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coef.(T-ratio)</td>
<td>Coef.(T-ratio)</td>
</tr>
<tr>
<td>Ln GDP exporting country</td>
<td>.365 (2.64)**</td>
<td>.326 (2.53)**</td>
</tr>
<tr>
<td>Ln GDP importing country</td>
<td>.443 (2.22)**</td>
<td>.337 (2.35)**</td>
</tr>
<tr>
<td>Ln population size of exporting country</td>
<td>.172 (1.89*)</td>
<td>.131 (1.87)*</td>
</tr>
<tr>
<td>Ln population size of importing country</td>
<td>.221 (1.83*)</td>
<td>.116 (1.83)*</td>
</tr>
<tr>
<td>Ln distance</td>
<td>-.206 (3.03)**</td>
<td>-.225 (2.43)**</td>
</tr>
<tr>
<td>Border</td>
<td>.136 (2.23)**</td>
<td>.143 (2.25)**</td>
</tr>
<tr>
<td>Linguistic similarity</td>
<td>.112 (2.09)**</td>
<td>.115 (2.17)**</td>
</tr>
<tr>
<td>RTACOMESA</td>
<td>.038 (1.87)*</td>
<td>.031 (2.01)*</td>
</tr>
<tr>
<td>RTASADC</td>
<td>.023 (1.23)</td>
<td>.018 (1.16)</td>
</tr>
<tr>
<td>RTAEAC</td>
<td>.054 (1.83)*</td>
<td>.046 (2.04)*</td>
</tr>
<tr>
<td>RTASACU</td>
<td>0.018 (1.34)</td>
<td>0.021 (1.02)</td>
</tr>
<tr>
<td>RTAREST</td>
<td>0.11 (1.91)*</td>
<td>0.09 (1.96)</td>
</tr>
<tr>
<td>Constant</td>
<td>-11.76 (3.12)**</td>
<td>-13.34 (2.81)**</td>
</tr>
<tr>
<td>LRχ2 (chi2)</td>
<td>101412</td>
<td>143234</td>
</tr>
<tr>
<td>R2</td>
<td>0.39</td>
<td>0.43</td>
</tr>
<tr>
<td>Hausman test</td>
<td>Prob&gt;Chi2=0.06</td>
<td>Prob &gt; F =0.00</td>
</tr>
<tr>
<td>No of Observations</td>
<td>19166</td>
<td>19166</td>
</tr>
</tbody>
</table>

*Source: Authors calculation.  Note: *significant at 10%, ** significant at 5%, ***significant at 1%

The small letters denotes variables in natural logarithmic and t values are in parentheses (robust to heteroskedasticity)

The coefficients of the conventional variables 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 country \( i \) to vary positively with the size of GDP of both importing and exporting countries. The estimated coefficients for the log of GDP for the exporting and importing country implies that a 10% increase in these variables would increase trade by 3.3%- 3.7% and 3.4%-4.4%, respectively.

Trade is positively related to the level of population as expected as well. Bilateral Trade is negatively related to distance for the following two reasons: first, the larger the distance between two countries, the higher the transportation costs. Secondly, the larger the distance, the more time involved in delivering the goods and concerns about possibilities for goods to perish. Bilateral trade is positively related to countries sharing a common border and language familiarity. Similarly, a common land border or linguistic similarity increases trade whereas distance is negatively related with trade among countries. The above is consistent using both set of estimates ( i.e fixed effect model and Heckman approach).

Our primary interest is in the impact of and of overlapping RTAs, in explaining trade effects. Recall that the dummy RTA shows the existence and extent of trade creation. It is a dummy variable, which takes a value of 1 if both exporting and importing country are members of the same RTA in the underlying year of study; zero otherwise. A positive and significant estimate on the intra-bloc membership implies that a pair of countries that join an RTA experiences an increase in bilateral trade.

In the case of the RTA model, the coefficient for the variable RTA is only significant for COMESA and ECA, although with a very little coefficient implying a relatively very small impact on trade within the RTAs (below of the expectations of the RTA objectives probably). It should be noted that the RTArest dummy yields more encouraging results, but a further decomposition of these RTA could give a better picture and more insightful comparative analysis.

4.4 MULTIPLE RTAS

As highlighted at the beginning of this study, we are interested in investigating the effects on trade if more and more members join multiple RTAs. The proliferation of RTAs has lead
eventually to some countries belonging to multiple RTAs in which their membership can be exclusive or overlapped with their trading partners. An example of multiple is that both Mauritius and Madagascar are both in SADC and COMESA. If the trade creation from multiple RTAs is larger than that from exclusive ones, it may work as an incentive for the enlargement and eventual merging of RTAs. Thus the research investigates the trade creation effects between a member that joins multiple RTAs and another member that does not.

Let us consider trade creation effects in the event where a single country has overlapping membership. We use a dummy variable, called $RTA_m$, which is unity if both $i$ and $j$ belong to the same RTA, and either $i$ or $j$ exclusively belongs to another RTA with other countries.

To investigate this impact, a new dummy variable called $RTA_{mi}$ (RTAs multiple membership and this is included for each of the four African RTA under study, i.e., $RTAmCOMESA$, $RTAmSADC$, $RTAmEAC$, $RTAmSACU$) is introduced in the equation and we follow the methodology adopted by Lee et al. (2008). In this setting of the estimation, the new dummy, $RTA_m$, captures just the additional trade creation-taking place between an overlapped country and a member country not overlapped together. This investigation answers whether there is any incentive for multiple RTAs to eventually merge, thereby leading to a globally free market. $RTA_{mi}$ is a binary variable which is unity if both $i$ and $j$ belong to the same RTA, and either $i$ or $j$ exclusively belongs to another RTA with other countries.

The modified equation to be estimated becomes:

$$
\ln X = \alpha + \beta_1 \ln GDP + \beta_2 \ln GDP_u + \beta_3 \ln ADJ + \beta_4 \ln RER + \beta_5 \ln POP + \beta_6 \ln POP_u + \beta_7 \ln LANG + \beta_8 \ln LL + \beta_9 RTA + \beta_{10} RTA_{mi} + \beta_{11} RTA_{mt} + \beta_{12} RTA_{mi} + \varepsilon
$$

(Eq 4)

A negative and significant value for the coefficient associated with the variable $RTA_{mi}$, would imply that if a member forms another RTA, by creating overlapping RTAs, its additional trade with members of existing RTA(s) or with members of new RTA(s) is less than the additional trade formed between members belonging to a single RTA.
Table below shows the result after the inclusion of this dummy.

**Table 6: Gravity model of agricultural trade - African RTAs (with Multiple RTAs)**

Dependant variable: Ln Exports; time period 1996-2009 (14 yrs)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Ad Hoc Estimates</th>
<th>Heckman Estimates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coef.(T-ratio)</td>
<td>Coef.(T-ratio)</td>
</tr>
<tr>
<td>Ln GDP exporting country</td>
<td>.361 (2.23)**</td>
<td>.322 (2.53)***</td>
</tr>
<tr>
<td>Ln GDP importing country</td>
<td>.442(2.27)**</td>
<td>.332(2.35)***</td>
</tr>
<tr>
<td>Ln population size of exporting country</td>
<td>.176(1.86)*</td>
<td>.136(1.87)*</td>
</tr>
<tr>
<td>Ln population size of importing country</td>
<td>.220(1.88)*</td>
<td>.112(1.88)*</td>
</tr>
<tr>
<td>Ln distance</td>
<td>-.212(3.13)***</td>
<td>-.226(2.46)***</td>
</tr>
<tr>
<td>Border</td>
<td>.134(2.34)**</td>
<td>.151(2.24)**</td>
</tr>
<tr>
<td>Linguistic similarity</td>
<td>.118(2.12)**</td>
<td>.111(2.11)**</td>
</tr>
<tr>
<td>RTACOMESA</td>
<td>.041(1.85)*</td>
<td>.036(2.07)*</td>
</tr>
<tr>
<td>RTASADC</td>
<td>.023(1.21)</td>
<td>.013(1.24)</td>
</tr>
<tr>
<td>RTAEAC</td>
<td>.055(1.88)*</td>
<td>.042(2.02)*</td>
</tr>
<tr>
<td>RTASACU</td>
<td>0.015(1.32)</td>
<td>0.022(1.05)</td>
</tr>
<tr>
<td>RTAREST</td>
<td>0.13(1.99)*</td>
<td>0.08 (1.95)*</td>
</tr>
<tr>
<td>RTAmCOMESA</td>
<td>0.12(1.34)</td>
<td>0.112 (2.42)***</td>
</tr>
<tr>
<td>RTAmSADC</td>
<td>0.041(1.24)</td>
<td>0.042(1.27)</td>
</tr>
<tr>
<td>RTAmEAC</td>
<td>0.061(1.31)</td>
<td>0.071(1.42)</td>
</tr>
<tr>
<td>RTAmSACU</td>
<td>-0.034(1.37)</td>
<td>- 0.079(1.28)</td>
</tr>
<tr>
<td>RTAmREST</td>
<td>0.046 (1.07)</td>
<td>0.058(1.43)</td>
</tr>
<tr>
<td>Constant</td>
<td>-12.12 (4.23)***</td>
<td>-13.34 (2.86)***</td>
</tr>
<tr>
<td><strong>R2</strong></td>
<td>0.41</td>
<td>0.45</td>
</tr>
<tr>
<td><strong>Hausman test</strong></td>
<td>Prob&gt;Chi2=0.05</td>
<td>Prob &gt; F =0.01</td>
</tr>
<tr>
<td><strong>No of Observations</strong></td>
<td>19166</td>
<td>19166</td>
</tr>
</tbody>
</table>

*Source: Authors calculation.* significant at 10%, ** significant at 5%, *** significant at 1%. The small letters denotes variables in natural logarithmic and t values are in parentheses (robust to heteroskedasticity)

If we focus on the estimation results, the estimated coefficient for $RTAm$ comes out to be insignificant for all 4 African RTAs suggesting that that if a member forms part of another RTA,
by creating multiple membership, its additional trade with members of existing RTA(s) or with members of new RTA(s) is not significant and would imply that it does not matter. Indeed this is also the similar for the dummy representing the non-African RTAs (rest of sample).

As far as the African RTA’s under study are concerned, both set of estimates appear to confirm that on the overall, these RTAs have not been living up to their defined expectations. Thus in the next section a more qualitative examination of the possible hindering obstacles related to the relevant RTAs and also to the possible remedies that could accelerate regional integration and trade within the region.

5. FURTHER INVESTIGATION OF THE UNDER-PERFORMANCE OF SELECTED AFRICAN RTAS’S: QUESTIONNAIRE SURVEY

5.1 METHODOLOGY AND ANALYSIS OF QUESTIONNAIRE

In an attempt to further investigate the reasons of the relative underperformance of the selected African RTA, we have, addition to measuring the trade creating impact of the selected African regional initiatives, administered a questionnaire to gauge the characteristics, performance, obstacles and remedies thereto of selected African RTAs, namely SADC, COMESA, EAC and SACU. As such the various questions pertained to gathering information about the following:

Questions 1 to 5 were related to the country of origin of the respondents; the type of RTA to which his/her country was adhered to; and whether his/her country of origin was also a member of more than regional groupings;
Question 6 specifically sought to depict the respondents’ opinion as to the most important ingredients for a successful RTA, with 5 being the most important element and 1 being the least important.

Question 7 was geared towards gathering information on the main motivations for individual countries to join a regional initiative. Again, respondents were asked to rate the various motivations with 1 being the least important driver and 5 being the most important motivator.

On the other hand, Question 8’s main aim was to gauge the respondents’ opinion as to the negative impact of RTAs. Similarly, the respondents were requested to rate the different impediments with 5 being the most detrimental element.

Questions 9 and 10 were more relevant and specific to African RTAs. Their main objectives were to try to ascertain the underlying reasons for the overall poor performance of African RTAs where again respondents were requested to rate the various inhibiting elements on a scale of 1 (least important) to 5 (most important).

Questions 11 and 12 were open ended questions which sought to provide solutions to the problems of African RTAs. Question 11 were specifically directed to the measures that African Governments should adopt for the betterment of African RTAs performance whilst question 12, although with the same objective as Question 11, was instead directed for the RTAs Secretariat.

Finally, Questions 13, 14 and 15 were specifically geared towards the issue of multiple memberships and whether the latter was beneficial for individual member countries or whether they led to a worsening of the performance of the regional initiatives.

5.2 QUESTIONNAIRES ADMINISTRATION

After a pilot test was done, the questionnaires were then forwarded to various institutions in the region including to the different Secretariats, Government Agencies, Investment Promotion
Agencies as well as Private Consultancy firms. In this respect, 99² questionnaires were received from a wide mixed of countries which are as per Table 7 below:

**Table 7: Respondents by countries**

<table>
<thead>
<tr>
<th>Countries</th>
<th>No. of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tanzania</td>
<td>6</td>
</tr>
<tr>
<td>Mauritius</td>
<td>20</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>12</td>
</tr>
<tr>
<td>Zambia</td>
<td>6</td>
</tr>
<tr>
<td>Seychelles</td>
<td>2</td>
</tr>
<tr>
<td>DR Congo</td>
<td>3</td>
</tr>
<tr>
<td>Madagascar</td>
<td>6</td>
</tr>
<tr>
<td>South Africa</td>
<td>4</td>
</tr>
<tr>
<td>Malawi</td>
<td>2</td>
</tr>
<tr>
<td>Namibia</td>
<td>7</td>
</tr>
<tr>
<td>Lesotho</td>
<td>3</td>
</tr>
<tr>
<td>Mozambique</td>
<td>3</td>
</tr>
<tr>
<td>Botswana</td>
<td>3</td>
</tr>
<tr>
<td>Rwanda</td>
<td>5</td>
</tr>
<tr>
<td>Uganda</td>
<td>4</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>4</td>
</tr>
<tr>
<td>Burundi</td>
<td>3</td>
</tr>
<tr>
<td>Kenya</td>
<td>3</td>
</tr>
<tr>
<td>Eritrea</td>
<td>2</td>
</tr>
</tbody>
</table>

The above Table clearly demonstrates the wide range of countries from which the respondents originate. Although as expected the majority of questionnaires were administered by Mauritian respondents, nevertheless, the number of respondents from Zimbabwe, Namibia and Tanzania were not negligible. In addition, most of the respondents were senior trade economists and officials working for Governmental Bodies, the RTAs Secretariats and also from Investment Promotion Agencies. Finally, there were also a number academics and other trade experts which responded to the questionnaires.

² Although the number of respondents was 99, this figure nevertheless does not take account of multiple memberships.
In addition, when queried as to the type of RTAs their countries of Origin were adhered to, as expected the vast majority of the respondents posited that they belonged to a free trade area except for those respondents which also originated from South Africa, Lesotho, Botswana, Swaziland and Namibia which were also members to a Customs Union (SACU).

5.3. FACTORS NEGATIVELY AFFECTING THE PERFORMANCE OF AFRICAN RTAS

One of the questions sought to query not only the respondents’ views on the performance of African RTAs thus far, but also whether there are, if any, certain elements which are impacting negatively on the performance of the selected RTAs.

80% of the respondents agreed/strongly agreed that the performance of African RTAs were poor to say the least whilst only 11% did not believe that this was the case. As such, responses to the question which tried to discuss the underlying reasons for such a poor performance become crucial. In this light, the results are depicted in Table 8 hereunder:

<table>
<thead>
<tr>
<th></th>
<th>Mean Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SADC N=81</td>
</tr>
<tr>
<td>Gains from intra-industry specialization</td>
<td>3.59</td>
</tr>
<tr>
<td>Poor record of implementing agreed policies</td>
<td>4.50</td>
</tr>
<tr>
<td>Too much emphasis on inward looking strategy</td>
<td>3.74</td>
</tr>
<tr>
<td>High Level of individual country protection</td>
<td>4.16</td>
</tr>
<tr>
<td>Limited Trade Linkages</td>
<td>4.05</td>
</tr>
<tr>
<td>Inability/unwillingness to carry out liberalisation measures</td>
<td>4.05</td>
</tr>
<tr>
<td>Issue</td>
<td>Score 1</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>Difficulty to reduce import tariffs</td>
<td>3.85</td>
</tr>
<tr>
<td>Output across countries not complementary</td>
<td>4.23</td>
</tr>
<tr>
<td>Weak Infrastructural Linkages</td>
<td>4.33</td>
</tr>
<tr>
<td>Poor Infrastructural Facilities</td>
<td>4.17</td>
</tr>
<tr>
<td>Overreliance on preferential ties with former colonial state</td>
<td>3.85</td>
</tr>
<tr>
<td>Political and Macroeconomic Instability</td>
<td>3.79</td>
</tr>
<tr>
<td>Lack of FDI</td>
<td>3.76</td>
</tr>
<tr>
<td>Economic and Political strategies of member states differ</td>
<td>3.93</td>
</tr>
<tr>
<td>Certain sectors are over protected</td>
<td>4.02</td>
</tr>
<tr>
<td>Weaknesses in design &amp; implementation of the RTA</td>
<td>3.90</td>
</tr>
<tr>
<td>Unequal bargaining power</td>
<td>3.58</td>
</tr>
<tr>
<td>Skewed distribution of benefits</td>
<td>3.67</td>
</tr>
<tr>
<td>Difficulty in establishing rules of origin</td>
<td>3.58</td>
</tr>
<tr>
<td>High level of red tape</td>
<td>4.08</td>
</tr>
<tr>
<td>Other reasons – Corruption</td>
<td></td>
</tr>
</tbody>
</table>

The results from Table 8 highlight weak infrastructural linkages (mean 4.46) and ‘poor record of implementing agreed policies’ (mean 4.46) as the 2 major factors explain the poor performance of African RTAs. The respondents were adamant that poor road networks between the various member countries, cumbersome and useless border controls, and poor institutional infrastructures were the main deterrents to trade dealings between countries in the region. The result is further supported by the element ‘poor infrastructural facilities’ which is also viewed as a major deterrent by the respondents. They argued that not only are the infrastructural linkages between member nations are poor, but more important, national infrastructures which include road networks, air and rail facilities and the provision of technological and financial support within the individual member states are also very poor.
The prevalence of ‘a poor implementation record’ is not surprising since in Table 2, political commitment was viewed as the most important ingredient for a successful RTA. They argue that many Governments, for political reasons, were not willing to relent their national autonomy to favour the regional interest. In addition, Governments are always concerned about protecting their local economies and industries and in several instances were not willing to liberalise certain specific sectors especially in situations of strong national lobbies. Such a result also tallies with the high ratings given to the element ‘unwillingness to carry out liberalization measures’ (mean 4.18) by respondents of the various regional initiatives.

Other major impediments which were also viewed as important were ‘high level of protection’ (mean 4.18), ‘political and macroeconomic instability’ (mean 4.06), ‘limited trade linkages’ (mean 4.18), ‘skewed distribution of benefits’ (mean 4.07) and ‘non complementarity of output’ (mean 4.16).

Unsurprisingly, in the ‘others category’, ‘Corruption’, as an impediment, was the single most highly rated element negatively impacting on the growth and proper functioning of African RTAs in general. Corruption, at the highest level, in Governmental institutions and at the borders was deemed prevalent in almost all member African states. The respondents argue that unless and until such a problem is removed or minimized, African RTAs will always be underperforming.

5.4 GOVERNMENTAL/SECRETARIAT MEASURES TO IMPROVE THE PERFORMANCE OF AFRICAN RTAS

There were also 2 open-ended questions which pertained to the strategies, measures and remedial actions which the Governments of member nations as well as the individual secretariats of the different RTAs should adopt to improve the performance of African RTAs in general.

As regards the governmental actions and in line with some of the findings of the earlier questions, it is not surprising that respondents were adamant that greater political
commitment from all member states was a prerequisite for an improved performance of African RTAs. In this regard, they were also very critical of various governments’ unwillingness or inability to implement already agreed policies. In this respect, they argued that at the onset, clear and well defined regional objectives (with clear estimates of their potential costs and benefits), with the involvement of all national stakeholders, should be established and every member nations should ensure that such objectives are met within a set time frame. The involvement of the various stakeholders at national level is crucial in order to avoid the establishment and furtherance of any national lobbies.

In addition and similar to the findings in Question15, many respondents argue that countries should avoid having multiple memberships. If they do, member states should either decide which REC will serve their interests best in the process of deeper integration or there needs to be a better harmonisation of economic policies across the different regional initiative. In this light, a few members went even further by stipulating that it would be best if a single economic bloc was established.

Improved governance, better and streamlined procedures and a policing of corruption practices are some of the measures deemed crucial by the respondents. A high level of red tape constitutes a waste of already scarce resources and the implementation of sound governance practices should ensure a fairer competition across the region.

Infrastructural improvements both nationally and between countries were deemed primordial if the benefits for intra regional trade were to be maximized. The streamlining and minimization of border controls have to be implemented since they constitute a waste of resources. Furthermore, a sound road network and the construction of modern ports and airports should ensure minimum transit periods for regional products which should lead to reduction in costs.

In addition and as was expected, investment geared towards capacity building for the region was deemed crucial by many respondents. For example, training specific to a better
understanding of rules of origin and on negotiating skills were cited very frequently by the respondents.

As regards the expectations from the Secretariats, several recommendations were made ranging from speeding up of the tripartite agenda for COMESA, SADC and the EAC to increasing the accountability of the various Secretariats. However, there was an overwhelming consensus that the Secretariats were performing well below expectations, particularly for SADC. Criticisms abound as regards their low degree of proactiveness and their inability to assist member states to uphold their commitments.

As such, many respondents believe that the Secretariat needs a profound restructuring and needs better staffing. In addition, they argue that the Secretariats should ensure that recommendations from studies conducted on their behalf should be implemented insofar as possible.

Finally, as is well documented, the limited ability of African states to attract FDI to the region is a major concern. Respondents believe the Secretariats have a major role to play in the promotion of the various member states as appropriate destinations for foreign investors. Regular road shows and proactive marketing strategies should be undertaken to better diffuse information about and to increase the awareness of the various member states falling under the jurisdiction of the various Secretariat.

6. CONCLUSION

The objectives of the present study were to investigate the problems faced by regional groups in Africa, more specifically 4 regional trading agreements namely EAC, COMESA, SACU and SADC. We analysed the economic and non-economic obstacles which hinder the expansion and good functioning of these regional trading groups qualitatively and quantitatively. The results from the econometric modeling suggested in general African RTAs under study have been performing up to expectations. The trade creating impact was at the very best very small for EAC and COMESA. Given the above a survey was undertaken among the member to gauge
the problems and or factors hindering trade in the region. The survey results showed that lack
of political will, weak infrastructural linkages and ‘poor record of implementing agreed policies’
are among the as the major factors explaining the poor performance of African RTAs.

As regards the governmental actions suggested and in line with some of the findings of the
earlier questions greater political commitment from all member states was a prerequisite for an
improved performance of African RTAs was recommended. The involvement of the various
stakeholders at national level is crucial in order to avoid the establishment and furtherance of
any national lobbies. Improved governance, better and streamlined procedures and a policing
of corruption practices are some of the measures also deemed crucial. As such infrastructural
improvements both nationally and between countries were deemed primordial if the benefits
for intra regional trade were to be maximized.

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