

## Intra-African Trade: Issues Involved in Improving Ghana's Trade with the Rest of Africa

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### Abstract

This paper aims to find out why Ghana's trade to Africa is low and how it can be improved. This is necessary because Ghana is looking at achieving middle income GDP per capita status by the year 2015 thereby reducing poverty and one of the ways proposed is through the increment in Ghana's export volume. Thus in 2004, the government of Ghana developed the Ghana trade policy document to serve as a guide in achieving the goal. This paper focuses on the determinants of Ghana's trade with other African countries through analysis of Ghana's trade performance, the trade policy document of Ghana, Trade Cost and Regionalism<sup>i</sup>. An export equation is estimated using trade data on 49<sup>ii</sup> importing African countries using the gravity model. The result shows that the determinants of trade cost are very significant in explaining Ghana's trade except tariff. Most importantly is that the improvement in the importers infrastructure will increase Ghana's trade significantly. Also proper regional integration is very significant in increasing Ghana's trade.

**Keywords:** Trade, Trade Cost, Gravity Model, Regionalism

### 1. Introduction

Ghana's main economic policy objective is becoming a middle-income status country by 2015 and also become a leading Agro-industrial country, thereby substantially reducing poverty. As part of this, it was incorporated in the Poverty Reduction Strategy Policy of Ghana ways of increasing the volume and structure of export as well as broadens the destination of exports. In 2004, the Cabinet of Ghana approved the Ghana Trade Policy and the Ghana Trade Sector Support Programme followed in 2005, these documents are to provide broad guidelines and objectives for the policies geared towards the increase of Ghana's export. The policy aims to, *inter alia*, increase Ghana's regional and global integration, diversify and strengthen its export base including expanding export to other African countries, and promote agricultural processing. This amongst other things led to the establishment of the Ghana Free Trade Zone Board and the Ghana Export Promotion Council as the main export promotion body of Ghana. But currently, Ghana's trade with other African countries is relatively low. From 1980, Ghana's trade with Africa has increased from 0.90% relative to the African average of 1.89% in 1980 to 3.13% in 2007 as oppose to the Africa average of 1.87% in the same year. Over the same period, Ghana's share of Intra-African exports grew from 2.46% to 25.51% and the imports share also moved from 3.68% to 12.11% relative to Africa average of 9.81 to 20.81 and 7.6 to 17.2 respectively. The share of Ghana's exports exceeds its imports thus as far as trade with the rest of Africa is concerned, Ghana is doing well and has mostly been registering a surplus but still lags behind countries like Nigeria and South Africa whose current share of intra-African trade is 10.28 and 21 percent respectively.<sup>iii</sup> Considering Ghana seeks to broaden the export destination of goods exported, it is important for Ghana not to only concentrate on trade with only advanced countries but also it very important for Ghana to focus on trading with African countries seriously either bilaterally or regionally. Regionally, Ghana's main regional integration effort has been through its membership in the Economic Community of West African States (ECOWAS). Even though ECOWAS members have been taking steps to establish a customs union since 1990, they have been still implementing a trade liberalization scheme but have delayed the harmonization of their trade regimes, including the adoption of a common external transport cost. In spite of measures taken to integrate regional economies, the level of intra-ECOWAS trade has remained very low.<sup>iv</sup> Thus it is important to find ways to improve on Ghana's export. In assessing why the rate Ghana's export to the developing countries is increasing but the export to other African countries is stagnant coupled with the low performance of the ECOWAS regional integration (and integration with Africa as a whole is low) not much work has been done in respect to policy analysis and trade structure as well as transportation cost effect on trade. Therefore it will be important to analyse policies to ascertain how best to promote effective regional integration in Africa, in this case Ghana, to increase trade (export).

The purpose of this research is to find out how to improved Ghana's export by analysing the effect of high transport cost and other latent barriers and regionalism on the export growth of Ghana through policy analysis and Ordinary Least Square regression analysis. After decades of stagnant export, Ghana's exports has started picking up and to further promote Ghana's export so the huge trade deficit can be reduced. It is for this reason

why it has become imperative that we assess how integration with Africa will help improve the exports of Ghana and in link with the Ghana Poverty Reduction Strategy Policy improve the Gross National Product of Ghana and subsequently achieve middle income status by 2015.

Even though trade with the advanced countries is very important, this paper seeks to point out that serious concentration also on Africa will contribute to further growth of Ghana's now growing export. Also, in order for Ghana to integrate well into the African region, it must know how important it will be and also how effective if Ghana were aware fully of the challenges and prospects so policies will be adjusted or tailored to suit the challenges and enhance the prospects. This is important, especially, in the area of bilateral Free Trade Agreement as a way of outwitting the high transport cost rate and other trade barriers.

To achieve this purpose, three basic and important questions needs to be answered and they are:

- A. Why is Ghana's trade with the rest of Africa very low?
- B. What can be done to improve Ghana's trade?
- C. Could regional integration improve Ghana's export to Africa?

The study makes use of qualitative and quantitative methods. A qualitative analysis of relevant materials and statistics will be conducted in providing answers to the basics research questions. A thorough study is done on the trade pattern of Ghana, export structure of Ghana, the effect of transport cost and other trade barriers by destination countries on the export of Ghana and the impact of regionalism, in this case ECOWAS, on the export growth of Ghana with available data and statistics. The quantitative analysis will be used to assess the results obtained from the qualitative analysis. This will be done through regression analysis. The regression results will serve as a basis for empirical analysis and conclusions.

The rest of this paper is organised as follows, Section 2 will review relevant literature on the importance of trade and the determinants of transport cost in Africa. In Section 3, we will analyse Ghana's trade performance and Section 4 will analyse critical issues on Ghana's trade. Section 5 is empirical test and analysis. Finally, Section 6 concludes.

## **2. Factors that affect Intra-African Trade**

World trade has expanded in recent years but the trade performance of Sub-Saharan African countries has not improved due to high transport cost and lack of regional integration even though it still remains an ongoing debate. In general, technological improvement over the years such as introduction of maritime in the 1950s has reduced transport cost dramatically. For instance, the average real port charges and ocean freight per short ton of cargo declined by approximately two thirds (2/3) in the period between 1930 and 2000 (Baldwin and Martin, 1999).

A review of the main international corridors in Africa carried out by the World Bank (2008) reveals that the cost of transport to transport service providers are not excessively high, in contrast to what most literature have presented, in Africa. However, high cost of trade like Transport Cost have been pointed out as major obstacles to trade in Africa and growing literature has pointed out the negative impact of trade cost on a countries trade performance. Amjadi and Yeats (1995) found out that nominal freight rates on African exports are considerably higher than those on similar goods shipped from outside the region hence they also concluded that trade costs represent a more important obstacle in Africa than import tariffs and trade restrictions. Even though direct evidence on boarder cost shows that tariff barriers are relatively low across all countries, poor infrastructure and weak institutions contribute in a larger extent to high trade costs in Sub-Saharan Africa (SSA)<sup>v</sup>

Considering overall poor nature of roads and highways as well as ports and shipping equipment in Africa in general, Limao and Vernables (2001) also pointed out that transport costs can also be determined by relatively poor transport infrastructure compared to their advanced country counterparts. They also estimate that the median landlocked country transport costs are 46% higher than the median coastal economy, distance explains only 10% of the change in transport cost, poor road infrastructure represents 40% of transport cost predicted for coastal countries and 60% for landlocked countries which is especially relevant for African countries where transport costs seem to be particularly high even for a given distance because of location and poor infrastructure. Investigations of the potential trade benefits of investing in upgrading and maintaining a trans-African highway network by Buys, Deichmann, and Wheeler (2006) found that intra-African trade as a whole can be expected to increase from \$10billion to about \$30billion per year while initial investments and annual maintenance costs would be relatively moderate over the course of the investment cycle.

Ariyo and Raheem (1991) were of the view that the Economic Community of West African States' (ECOWAS's) major failure was its inability to achieve an appreciable volume of intra-ECOWAS trade. They pointed out also, without reliance on any empirical evidence, that for various reasons ECOWAS member states still actively engage in trade with developed economies like Europe and the United States even in some commodities that could be supplied from within the sub-region.

Roelofsens (1989) also shared a similar view of the inherent potential for trade among ECOWAS countries exist by noting in his study that, the annual PTA import bill for those products which are also exported by PTA members amounted to \$5billion or about 50% of the PTA's total annual imports between 1983 and 1987. Contrary to this, a study by the World Bank in 1991 pointed out that intra-African trade potential was low.

Some research pointed out that institutional arrangement (governance, rent seeking, corruption and policies), market institutions (bureaucracy and competition) and social norms matters are the cause (see North 1990 and Dollar et al. 2003). Political factors such as ethnic fractionalization, lack of democracy, quality of governance and high incidences of conflict among others are to be blame (Gyimah-Brempong et al. 1999). Many studies have also demonstrated that the poor quality of infrastructure or the related issues of low productivity of public investment (to provide physical and human capital) are the factors behind the poor performance (Krugman 1990; Collier et al. 1999; and ECA, AUC and AfDB 2010). In addition to the infrastructure constraints, there have also been arguments that structural factors such as geography, natural barriers to trade and resource endowment hence higher trade costs are also a significant part of the explanation (Mbabazi et al. 2008; Duffrenot et al. 2009; Leyaro, 2010). Morrissey (2009) reviews evidence on the extent of trade costs, mainly transport and logistics (transport-related) costs in Africa and their effects. The study found that SSA on average has far higher transport costs than elsewhere and that they have been a major constraint on SSA trade and growth. Edward (2008) also summarizes the sources of Africa marginalization in world and regional trade and attributes it to weak infrastructural, institutional and regulatory environment which are seen to inhibit export supply response. High internal transport costs and long delays in Africa, according to Djankov et al. (2006), are to blame Collier (2000) and Elbadawi (2001) also showed that high transactions costs associated with poor investment climate are bad for manufactures exporters. Foroutan et al. (1993), Rodrik (1997) and Wood et al. (2001) argued that Africa is marginalised because it has not grown; its trade composition reflects endowments due to the underlying factors such as income, geography and size. Thus all these studies argue that, structural factors in terms of weak infrastructure, weak institutions and weak supply response capacities are the main trade binding constraints in Africa that have raised trade costs. They have also hindered Africa from conferring many potential benefit of increased trade integration. For trade to improve in Africa it has to institute measures, reforms and investments that lower trade costs, as pointed in many empirical studies, as critical prerequisites both for trade and growth performance. Investment in infrastructure, especially roads (transportation), and supporting improvements in logistics and services (trade facilitation), especially customs, ports and administrative procedures, are crucial. These will help reduce trade costs for example, which has been shown to be appropriate areas for intervention to reduce trade costs in Africa (Morrissey, 2009). Despite technological advances in shipping freight, as international shipping is characterized by cartels, transport costs have not declined in SSA. The land transport tend to be higher (per unit distance) and more important (as share of transport) in SSA than other regions (Teravaninthorn and Raballand, 2009).<sup>vi</sup>

According to Alberto Portugal-Perez and John S. Wilson, the slowest-growing economies in Africa are either engaged in conflict or having recently emerged from conflict. Geography has also played a major role in shaping the economic fortune of African countries; fifteen African countries are landlocked and about forty percent of Africans live in one of them. As these landlocked countries are dependent on the political stability, the infrastructure and the institutional quality of their neighboring transit countries to reach overseas markets, their remoteness from major world markets is amplified and if combined with corruption, underdeveloped institutions, constraints on business competition, and weak governance, international trade and investment in Africa tend to be more costly<sup>vii</sup>.

In relation to transport costs, Tang (2006) shows that they have a higher effect on trade for homogeneous goods. This result is also obtained in other studies considering sector heterogeneity such as Giuliano et al. (2006), in line with the idea that homogeneous goods are on average heavier and more costly to move than other goods (Rauch, 1999) and that differentiated products generally have higher value-to-size or value-to-weight ratios, and thus they should be less affected by transport costs (Huang, 2007).

Koester (1986) also used measures to examine the scope of using intra-regional trade to improve food security in southern and eastern African countries. The study finds, among other things, that there would be ample opportunity for trade among the countries studied if barriers could be removed and so does the study by Badiane (1988).

In as much as all the cited literatures seems to suggest that baring any trade barrier intra-African trade can be improved, the studies have always appeared to be too general to be significantly useful to a particular country, in this case Ghana, who is seeking to expand its export to other African countries thus country specific studies have rarely been made and it is important to study Ghana's trade performance and what factors affect it so as to make it more beneficial to the country.

### 3. Analysis On Ghana's Trade

This section analysis Ghana's trade in terms of polices developed by the government and the export performance by trends and structure.

#### 3.1 Trade Structure and Trends:

Trade in this context is defined by Ghana's export performance structure and trends over the period of 1992-2008. This is explained below:

##### 3.1.1 Exports by Destination:

Ghana's trade has experienced an increasing trend right after 1996 from about \$1.16 billion to about \$4.03 billion in 2008. Ghana benefits from the Generalized System of Preferences (GSP) offered by industrialised countries other than the EU and the United States of America. The United States offers a number of African countries, including Ghana, special access to its market under the African Growth and Opportunity Act (AGOA). Under AGOA over six thousand products from the beneficiary countries enter the USA market duty-free and quota-free. Apparel made from US fabric, yarn or thread also enters the US market duty-free and quota-free. However, according to the World Trade Organisation (WTO), Ghana's export has thus increased by an annual average of 14.7%<sup>viii</sup> but the direction seems to be shifting to developing countries resulting in a constant reduction in the share of export to the developed countries though it is still larger than the share of developing countries. This is mainly due to the use of the Sanitary and Phytosanitary Standards as trade barriers and also tariff escalation on value added goods. Regionally, Sub-Saharan Africa is becoming a more and more likely destination for the exports of Ghana and has taken over from Europe, with Ghana export about 1.5 times the value of goods Europe and Central Asia to Africa. East Asia and the Pacific and the USA and Canada records low exports values from Ghana even though exports to the former is increasing marginally. Despite the increment of export to Sub-Saharan Africa, export to South Africa accounts for about 86% of all these exports in 2008 thus trade with the other countries remain significantly low or non-existent. Overall, Ghana is exporting more to developing countries than developed countries and least to LDCs for the period under consideration. See

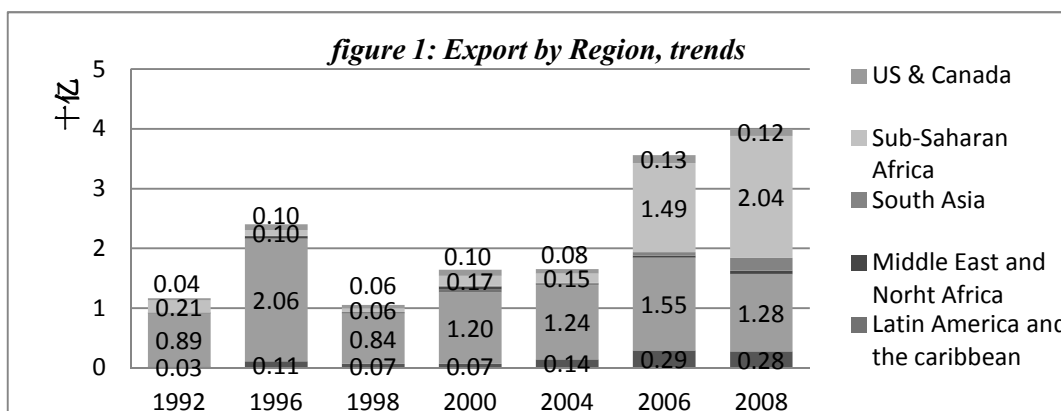
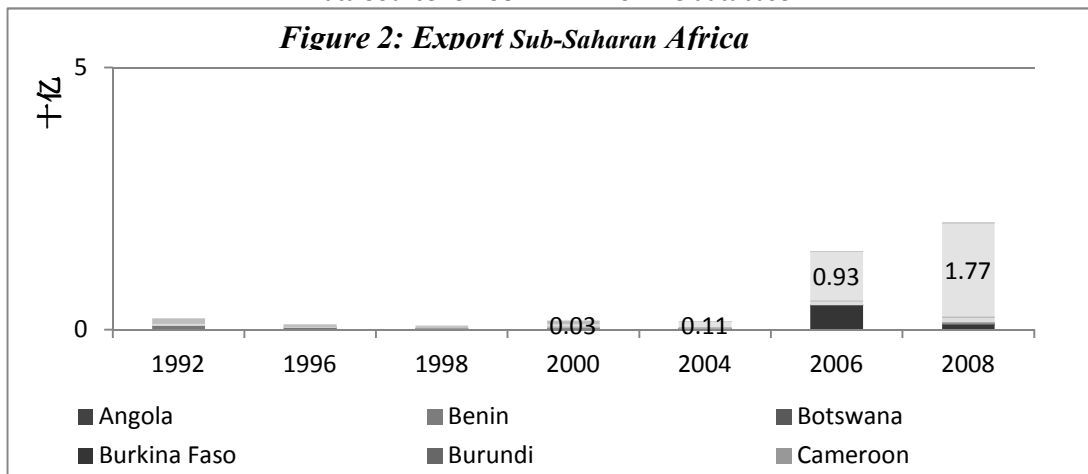


figure 1 and 2 below.

Data Source: UNCOMTRADE online database

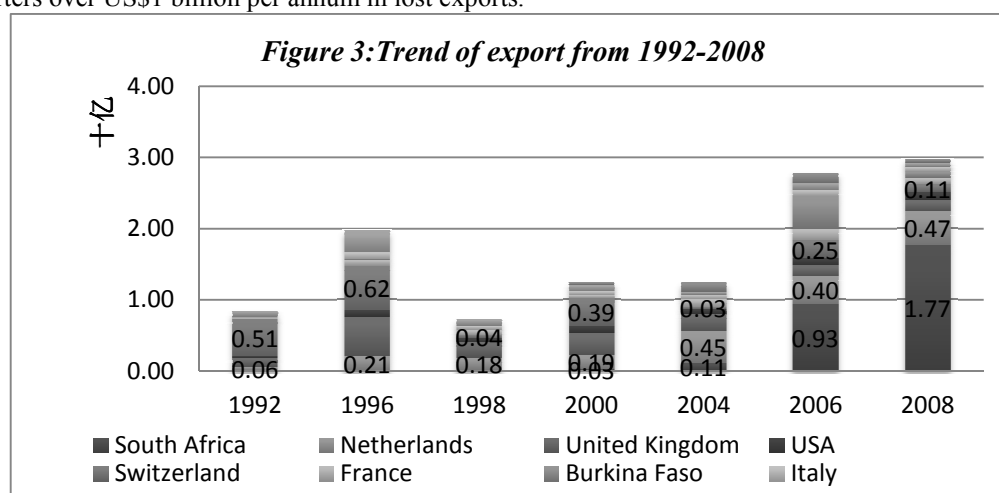


Data Source: UNCOMTRADE online database

### 3.1.2 Exports by Countries:

Figure 3 below shows that South Africa has emerged as the country Ghana exports most to, currently accounting for about 58% of all export to the top 10 trading partners. This is followed by the Netherlands and the United Kingdom. There has however been a shift from export to the United Kingdom, Germany and Switzerland who were the top export destination in the early 1990s.

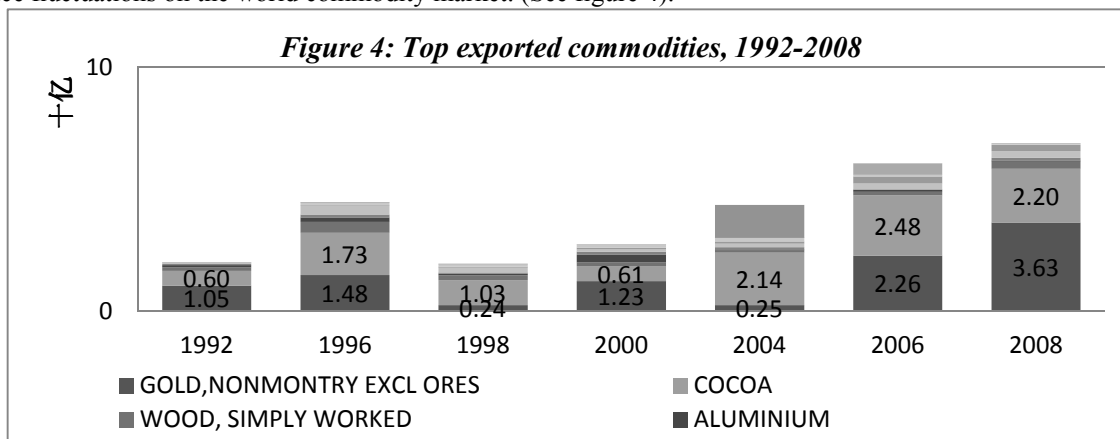
Ghana, together with other West African countries, is negotiating a WTO-compatible Economic Partnership Agreement (EPA) with the European Union (EU) to replace the existing non-reciprocal Cotonou preferential trade regime under which about 97% of the exports of the African, Caribbean and Pacific (ACP) countries, including Ghana, enter the EU duty-free. The current regime is being implemented under a WTO waiver which expires on 31 December 2007. Under the new regime, West Africa region and the other five ACP regions negotiating EPAs with the EU are expected to also open their markets progressively in an asymmetrical manner to EU exports. This will be accompanied by EU-supported measures to accelerate West Africa's integration processes, upgrade its industries and build its productive capacity and competitiveness. This is to enable West Africa to take full advantage of market access opportunities offered by the EU and to integrate into the global economy. The negotiations are expected to be concluded by 31 December 2007. This was concluded in the stipulated time given the outstanding work which remains to be accomplished by West Africa. West Africa and the European Commission (EC), which is negotiating on behalf of the EU, are therefore looking for an interim arrangement that could be put in place to ensure that trade is not disrupted when the waiver expires on 31 December 2007 so that the negotiations could continue until both sides agree on a true development-oriented EPA that will serve the best interests of West Africa. Despite this, Ghana is exporting less than it used to before to the EU, which was the main export destinations, reaching as low as \$0.79 billion in 1998 despite preferential trade agreements between Ghana and the EU. Within the EU, the Netherlands and the United Kingdom recorded high values in terms of imports from Ghana compared to other countries which recorded relatively insignificant values. The main issues of this decline in export to EU are tariff escalation and Sanitary and Phytosanitary standards (SPS). Another dysfunctional aspect of rich-country trade policy is tariff escalation: the tariffs on processed materials are higher than on the unprocessed materials. This makes it harder for the countries of the bottom billion to diversify their exports by processing their raw materials before exporting them (Paul Collier, 2001 pp 160). Sanitary and Phytosanitary Standards (SPS) are receiving increasing attention within the framework of international trade. SPS measures are meant to ensure that imports do not undermine national health and safety. However, restrictions designed to uphold domestic safety standards can be misused as disguised protectionism. This risk has gained importance because tariffs as traditional measures of protection are covered by World Trade Organization (WTO) reduction commitments. Against this background, international agreements on SPS aim to balance the targets of granting nations free choice of their national level of safety protection and facilitating fair market access. According to research by Danish Institute for International Studies (DIIS)<sup>ix</sup> which seeks to identify the legal measures under the EU food safety policy which 'cause the most problems for developing country exporters' and propose possible solutions, it is noted that food safety requirements have been identified as 'one of the foremost issues affecting exports of agricultural and food products from developing countries', with shortcomings in compliance that are estimated to cost African exporters over US\$1 billion per annum in lost exports.



Data Source: UNCOMTRADE online database

### 3.1.3 Export by Composition:

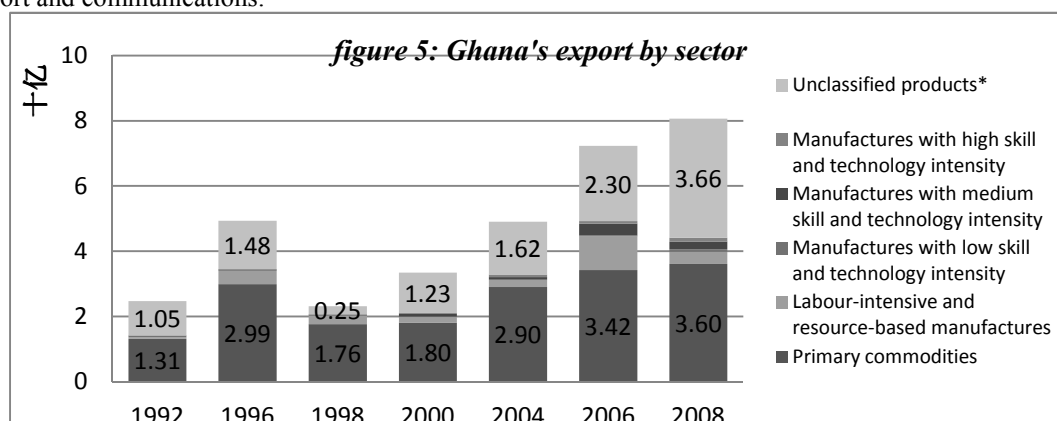
Ghana's top export commodities are Gold and Cocoa beans. These two commodity exports alternate depending on the level of production for a particular year. These commodities have been the traditional exports of Ghana and they have contributed a lot to Ghana's growth even though they are very volatile in that they are subject to price fluctuations on the world commodity market. (See figure 4).



Data Source: UNCOMTRADE online database

### 3.1.4 Exports by Sector:

Figure 5 shows that Ghana's export is biased towards primary commodities followed by unspecified services export and labour intensive commodities respectively with little export in manufactures with high, medium and low skilled technology intensive goods. Agriculture is the driving sector and backbone of Ghana's economy; cocoa is the main cash crop and Ghana's single most important export product. The recent strong growth of the sector has resulted from the performance of the cocoa subsector. Other cash crops include oil palm, cotton, and coconut. Production of food crops, predominantly on a smallholder basis, has increased in recent years, but is still characterized by low productivity. Livestock production, which is mainly for domestic consumption, has also increased. The Government assists agricultural producers mainly through extension services and the provision of subsidized seeds. Log and timber production has decreased significantly, and export volumes have been stagnating. Exports of round or unprocessed logs, and raw rattan cane and bamboo are prohibited in order to encourage domestic processing. Fisheries contribute some 4%<sup>x</sup> to GDP, but production is mainly for domestic consumption. The contribution of mining and quarrying to GDP has fallen below 5%. Nonetheless, gold remains Ghana's second most important export product, with a share of over 30% in total exports in most years. Ghana has a relatively broad and diverse industrial base. While most manufacturing activities centre on the processing of agricultural goods, they also include textiles, pharmaceuticals, and electronics production. Nonetheless, the contribution of the manufacturing sector to GDP remains modest, at below 10%. Marked positive tariff escalation for food products and textiles implies high effective protection to these industries, and reflects their low competitiveness. Ghana has traditionally been a net importer of services. Travels represent the most important generator of foreign exchange among the services categories, while imported services comprise mainly freight and merchandise insurance. Growth rates in the services sector have been particularly high in transport and communications.



Data Source: UNCOMTRADE online database

#### 4. Analysis Of Critical Issues On Ghana's Trade:

This section takes a look at the main issues that has been affecting or influencing Ghana's export to other African countries and their significance:

##### 4.1 Trade Cost:

Trade cost in this context is defined broadly to include the costs incurred in getting a final good or service to a final user other than the cost of producing the good itself within a certain period<sup>xi</sup>. Considering the final price of export products are influenced highly by trade cost inclusive of tariffs and other transport cost determinants, it is important to analyse how much effect these variables have on Ghana's exports so that the final product price will not be affect and also indirectly affect businesses and subsequent exports. Thus the effect and significance of determinants of trade cost in Africa are as elaborated below:

##### 4.1.1 Tariff:

Trends towards geographical regionalisation and globalisation have led to the decreasing role of tariff barriers as an influencing factor on trade. As a result, the relative importance of transport costs has increased, and these costs have become a relevant determinant of trade patterns. According to Marquez-Ramos, 2007, depending on the continent, transport costs range between 8% and 13% of import values. Leamer (1990) found that both tariff and non-tariff barriers have a large import-reducing effect. In contrast, Harrigan (1993) finds that tariffs are a more substantial barrier to trade in manufactures between developed countries than non-tariff barriers using bilateral trade data. Recently, Anderson and van Wincoop (2004) point out that the use of non-tariff barriers was concentrated in a few sectors in 1999 (food products, textiles, apparel, timber and other manufactures). Fink, Mattoo and Neagu (2005) also find that tariffs have a negative impact on trade for reference-priced and homogeneous goods; however, the tariff variable is not statistically different from zero in the case of differentiated goods. The reason for this could be that tariffs, in general, are low for differentiated products. The impact of tariffs in the analysis of trade determinants is therefore ambiguous. On the one hand, relatively high foreign tariffs would be associated with lower exports for an industry. In this case, tariffs increase costs and reduce trade. On the other hand, high foreign tariffs might be a response to countries' competition, indicating industries in which a country is comparatively strong.

In seven of the countries examined in Africa, either restrictions which were removed were reinstated, or some existing barriers were strengthened to offset reductions in others. Nigeria, though it eliminated most quantitative restrictions (quotas and licensing) increased dramatically the number of import bans. Ghana, which was the only country to make great strides in cutting formal tariffs, reversed this with the implementation of large special taxes on imports. Cote d'Ivoire raised tariffs significantly, after having reduced Quota Rates. In some cases the motive for reversal appears to be pressure from import-competing industries as they begin to experience competition from abroad (e.g., Cote d'Ivoire, Ghana). In others, resurgence of foreign exchange shortages have slowed the liberalization of tariffs (Madagascar), or reversed the foreign exchange market reform itself (Kenya) (Dean, *et al.*, 1994).

##### 4.1.2 Infrastructure:

According to Gumisai Mutume<sup>xii</sup>, as far back as the 1960s, architects of African integration agreed that building infrastructure was vital to lubricate the wheels of intra-African trade and distribute its benefits regionally. The continent's leaders embarked on ambitious projects such as the trans-African highways -- segments of which would eventually stretch from Cairo to Dakar, Tripoli to Windhoek and Lagos to Mombasa. These would provide access to the sea to 15 landlocked countries and improve regional links. Prof. Adebayo Adedeji, eminent Nigerian scholar and proponent of integration, also pointed out that "Unfortunately, like the economic integration process, regional infrastructure cooperation and integration has not been an outstanding success," Currently after over 50 years a major drawback to trade among African countries remains the dire lack of or poor nature of infrastructure. Africa lags behind the rest of the world in all aspects of infrastructure development -- quantity, quality, cost and access. In 1997, Africa (excluding South Africa) had 171,000 kilometres of paved roads -- about 18 per cent less than Poland, a country roughly the size of Zimbabwe. As efforts to complete the trans-African highways continue, the quality of existing roads is deteriorating. In 1992 about 17 per cent of sub-Saharan Africa's primary roads were paved, but by 1998 the figure had fallen to 12 per cent, reports the World Bank. Today, more than 80 per cent of unpaved roads are only in fair condition and 85 per cent of rural feeder roads are in poor condition and cannot be used during the wet season. World Bank studies show that a 10 per cent drop in transport costs could result in a 25 per cent increase in total African trade. Then Bank also concludes that only about 25 per cent of the decline in Africa's share of world exports can be attributed to poor prices, while the rest is due to non-price factors such as poor infrastructure and information services. Most of African countries have not only invested little in infrastructure development but also in its maintenance. Crude estimates indicate that \$18-25 billion per year is required to provide adequate infrastructure in Africa. However, the continent only invests about \$5 billion annually.<sup>xiii</sup> If roads are properly linked between nations it will help to meet the large-scale demand for intra and interregional good traffic.

Research by Buys, Deichmann and Wheeler shows that there will be strong trade benefits from investing in and maintaining a trans-African highway network. Their proposed network links 83 major cities and covers a length of about 100,000 km, and could expand trade by \$250 billion over 15 years.

Andreas Kopp, a Lead Transport Economist at the Bank, noted the importance of infrastructure maintenance and that underfunding of maintenance in Sub-Saharan Africa between 1970 and 1989 led to an estimated loss of \$45 bn. in road asset value. He argued that this loss could have been avoided by spending \$12bn in maintenance. Hence to curb the high cost of inland transportation, improvements are needed in two key areas according to the World Bank research on why trade cost matter in Africa—physical infrastructure (providing the costs are likely to yield significant benefits) and administrative practices and political stability in these countries.

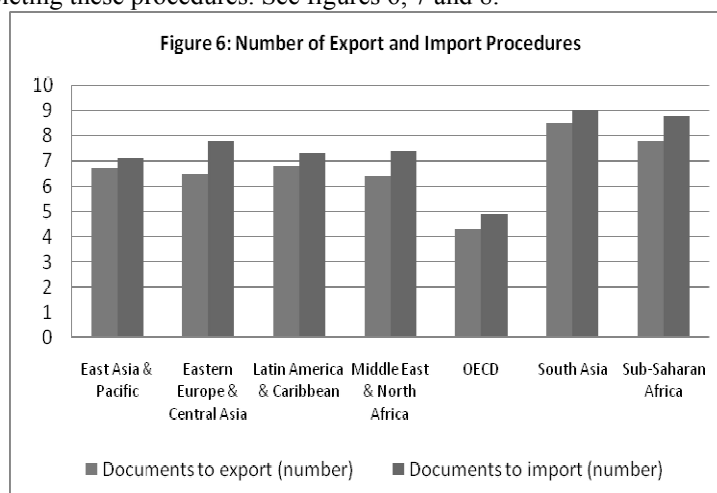
#### 4.1.3 Border Related Costs:

According to OECD, increases in trade volumes and complexity in recent years have significantly changed the operating environment for the international trading community. They have also highlighted the negative impact of inefficient border procedures on governments, businesses and ultimately on the customer and the economy as a whole. Governments may face smuggling, fraud and national security problems, which drains the public coffers, while businesses pay the price of slow and unpredictable goods delivery, costly customs procedures, and even lost business opportunities. And all these costs ultimately make goods more expensive for the consumer. These “hidden” costs of trade are so high – as much as 15% of the value of the goods traded in some cases – that studies show that for many countries, the welfare benefits for from more efficient customs procedures could be as high as those from reducing tariffs.

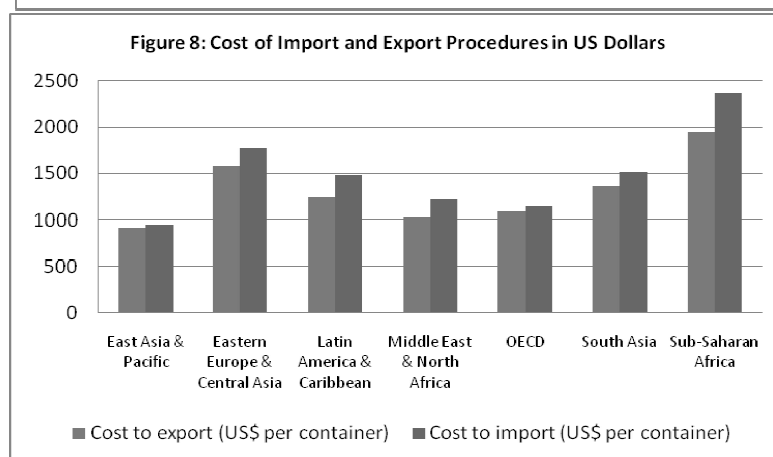
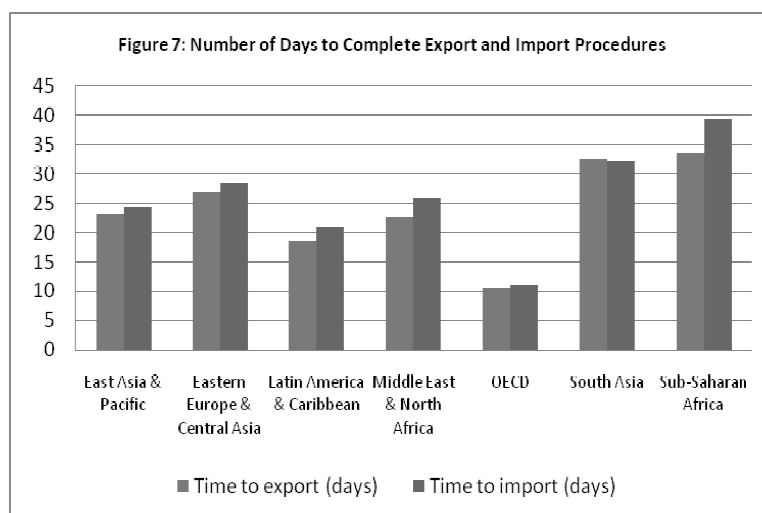
##### I. Customs Procedures:

As far as implementing government policies on trade at the borders is concerned, the national customs administration are in charge and in the case of Ghana sometimes helped by the other security services. This usually includes tariff issues, checking that traders conform to rules regarding trade across borders and preventing the importation of prohibited or unsafe goods like illegal weapons, contaminated or expired food or medicines and the like. All this is expected to be done as efficient and effectively so as to minimise cost to traders. This can be achieved through keeping simple and transparent, the procedures, so as to avoid long delays by reducing the time needed to clear goods at customs and subsequently lower trade cost. Djankov, Freud and Pham (2006) find that each day of delay at customs is equivalent to a country distancing itself from its trading partners by additional 85km. They also pointed out those long delays in customs procedures increase cost, not only in terms of opportunity cost, but also represent additional costs such as storage and wage charges.

Sub-Saharan Africa records the highest number of procedures for imports and exports and the number of days to complete them according to the World Bank Doing Business (2010) report. Documents recorded include port filing documents, customs declaration and clearance documents, and official documents exchanged between the concerned parties. Time is recorded in calendar days, from start to finish of each procedure. Cost measures the fees levied on a 20-foot container in U.S. dollars. All the fees associated with completing the procedures to export or import the goods are included, such as costs for documents, administrative fees for customs clearance and technical control, terminal handling charges and inland transport. The cost measure does not include tariffs or trade taxes. Despite the fact that there is relatively a lot more procedures involved in export and import in South Asia than Sub-Saharan Africa, it takes less days to complete the procedures in the former than the later thus reducing the cost of the procedure. Overall it takes longer to complete import and export procedures in Africa especially in Sub-Saharan Africa because of the long procedures involved and this translate eventually into high cost of completing these procedures. See figures 6, 7 and 8.





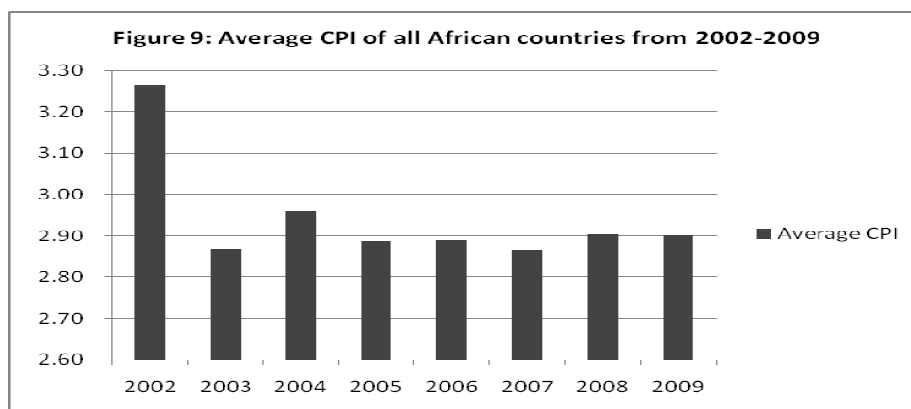


Source: Data for the three diagrammes above is gotten from World Bank's Doing Business dataset 2010

## II. Corruption at Borders:

In 2008, the Minister of Ports Harbours and Railways, Professor Christopher Ameyaw Akumfi said there were massive bribery, pilfering and corruption, going on in the shipping industry. According to him, the Ministry was doing its best to eradicate the cankers, but they would simply not go away<sup>xiv</sup>. The Chief Executive Officer (CEO) of the Ghana Shippers Council, Kofi Mbiah, also told the forum that the issue of efficiency in ports and land entry points, in relation to the clearance of goods, had been a matter of concern to Ghanaian shippers over the years. He suggested further that scanners should be used at the ports for the examination of containers, the compulsory wearing of uniforms and badges, by all customs excise staff and the registration of operators within the ports, among others and also the strengthening its tax collecting system, to stem corruption.

Transparency international's Corruption Perception Index indicates that the perception of African countries as corrupt keeps increasing than change thus even though in 2002, African countries public officials were perceived as corrupt on average, they were better than they used to be now, considering it dropped from 3.27 to about 2.90 where 0 stands for most corrupt and 10 for least corrupt. The Corruption Perceptions Index (CPI) measures the perceived levels of public sector corruption in 180 countries and territories. A composite index, the CPI is based on 13 different expert and business surveys.



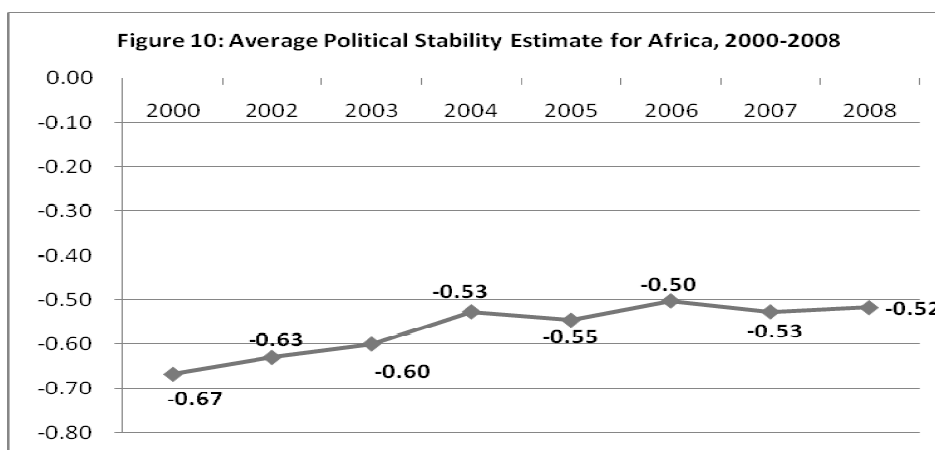
Source: *Transparency Internationals dataset on Corruption Perception Index.*

Rose Ackerman (1997) argues that customs officials are particularly likely to engage in corruption of both types. Extortion emerges because customs clearance procedures offer officials control over something that firm's value - access to and from the outside world, it affects the sharing of rents between exporters and officials. Evasion arises as payoffs to officials are used to reduce tariffs and other regulatory barriers to trade. It augments the rents to be shared by exporters and officials.

According to research by Pushan Dutt and Daniel Traca<sup>xv</sup>, Customs clearance depends also on the actions of the customs official. Customs officials have the last word on whether or not the good is allowed through customs. This prompts two types of behavior by customs officials. First, customs officials may abuse their role as gatekeepers to extract bribes from the exporter, in order to allow the merchandise to transit through customs. Bribes are set through the bargaining between the exporter and the customs official. Extortion carries the risk to the official of being caught and punished by the authorities. They assume that a high level of corruption in the country reduces the probability of getting caught in extortion and/or the social or pecuniary penalty associated and so increases the utility of the bribe to the customs official. Secondly, officials can exert more or less zeal in making sure that the merchandise has complied with all regulatory barriers. For example, the customs official may overlook under invoicing, allow for a wrongful classification of the merchandise into categories with lower tariffs, exonerate the merchandise from time consuming inspections, or ignore some documentation requirements. They obtain a negative and significant coefficient on corruption after running a regression. According to the regression, one standard deviation decrease in corruption would lead to a 29.5% increase in bilateral trade. While these numbers seem very large, they may simply be capturing the fact that corrupt countries also exhibit high levels of protectionism. Wei (2000)<sup>1</sup> also argues that countries that have a natural propensity to trade, because of their small size and favorable locations, will "find it optimal to devote more resources to building strong institutions" that constrain corrupt behavior. Next we analyse how uncertainty affects export in Africa.

#### 4.1.4 Political Stability:

In trade literature, the relationship between political instability and export has not been explored much. The few attempts to integrate political variables into standard trade models have focused primarily on total trade with no explicit attention to the potential impact of political instability in foreign markets on export ( in this case Ghana's export or even Africa ). Srivastava and Green (1986) showed, with data from 45 exporting countries and 82 importing countries, that "... stable nations tend to be the higher level exporters when bilateral trade are examined. Conversely, there is very little effect of the instability of the importing nation on the intensity of trade (p. 635).<sup>xvii</sup>" Morrow et al (1998) also tested alternative hypotheses of the effect of international politics on trade flows and found that democratic government structure and political alliances increase bilateral trade. However, their emphasis was more on politics and political arrangements rather than on political instability.



Data Source: *World Bank African Development Indicators Dataset*

On average, the political situation has been worse despite improving slightly from 2000 to 2008 according to data from the World Bank African Development Indicators on political stability estimates<sup>xvii</sup>. This data is measured in units ranging from about -2.5 to 2.5, with higher values corresponding to better governance outcomes. Political instability (PI) has been growth-inhibiting even when exports are accounted for despite the increasing interest in the role of export-promotion strategies in fostering economic growth.

#### 4.1.5 Distance<sup>xviii</sup>:

This factor is important in determining export since the longer distance the higher the transportation costs between the exporter and importer and consequently increases product prices and thereby reducing competitiveness of the products. According to research Anokye M. Adam and George Tweneboah on the changing patterns of Ghana's bilateral trade flows, trade between Ghana and the trading partner falls by little below 2% for every 1% increase in the distance between them. The magnitude and sign of the distance coefficient are related to the importance of bilateral activities with partners that are far away relative to those that are located nearby (Kleinert and Toubal, 2004 and Marquez-Ramos, Martinez-Zarzoso and Suarez-Burguet, 2007). In 2005, a typical person in sub-Saharan Africa was 13 per cent more distant from economic markets than a typical person in Europe and Central Asia<sup>xix</sup>.

#### 4.1.6 Landlocked<sup>xx</sup>:

One of the major determinants of bilateral trade is how remote the trade partner is and how costly it will be to reach them. Landlocked countries in Africa are more remote and have to depend on their neighbours to be able to trade properly by usually transiting trade goods through neighbouring countries through inland transport. According to Caroline Freund and Nadia Rocha (2010), inland transit delays in Africa have a robust negative effect on export values. They estimated that a one day increase of inland transit times reduces export values by about 7% and this effect is higher for time-sensitive goods with respect to time-insensitive goods. This is also as a result of the quality of and security (basically uncertainty) of roads, border delays and efficiency of security checkpoints, the age of the truck fleet and competition in trucking. Thus, if inland transit is improved, it will boost export and have broad positive economic effects.

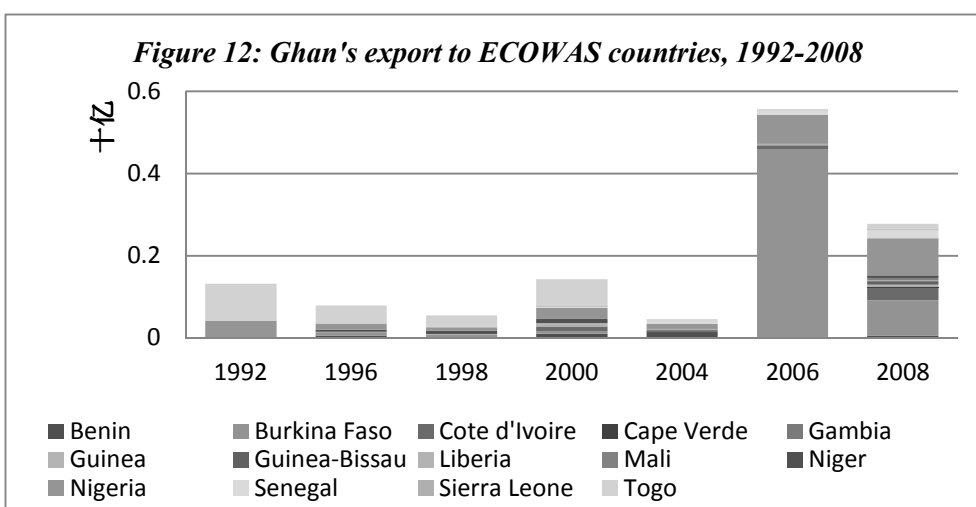
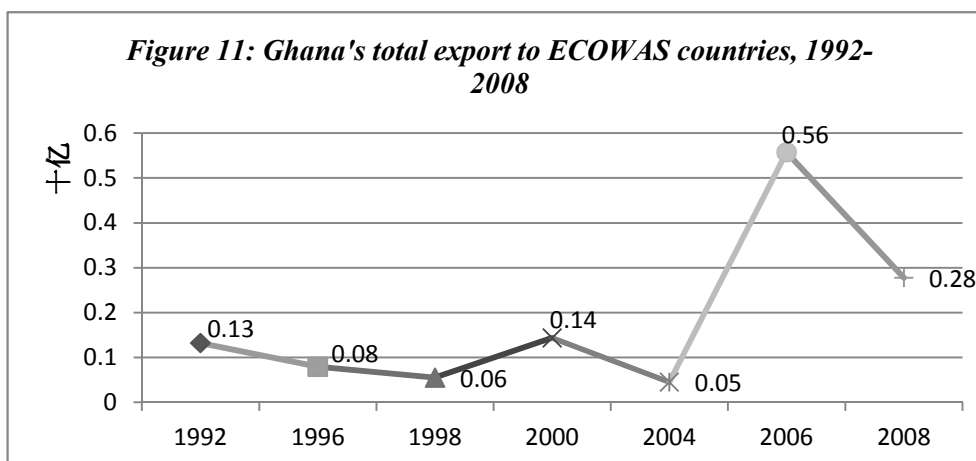
#### 4.1.7 Language:

This indicator captures the cultural similarities between two countries through colonial lineage in the case of Africa. This shows that two countries have similar consumption pattern all else held equal. Thus has a positive impact on trade among such countries and it is usually significant. The implication of two countries sharing linguistic links tends to trade roughly 2.5 times more than they would otherwise (Anokye M. Adam and Tweneboah George, 2009). Finally, the cost of information can be captured by the language barrier and similarity in language reduces the "liability of foreignness"<sup>xxi</sup> of the exporter too.

#### 4.2 Regional Integration: Economic Community of West African States (ECOWAS)

Ghana considers regional economic cooperation and integration as very important and thus actively participates in ECOWAS activities at all levels.

Figure 11 and 12 shows that despite regional integration efforts, there is low and declining export to the ECOWAS region countries in the case of Ghana whose main export destination is Burkina Faso. It rose in 2006 to about \$0.56bn because of the sudden upsurge in export to Burkina Faso but fell to half that export value in 2008.



Data Source: UNCOMTRADE online database

The outcomes of Integration Efforts in West Africa have not been very encouraging. The share of intra-ECOWAS trade grew marginally from 3 per cent in 1975 to 6 per cent in 1991 and 8.83 per cent in 2006, despite the simultaneous decline of the region's participation in world trade, it has remained at that level ever since. Hence there appear to be consensus that the high expectations placed on integration in West Africa have not been matched to any perceptible degree by results in terms of trade and economic performance (Bundu, 1997)<sup>xxii</sup>. This however seems to contradict the observation that intra-African trade levels are "actually higher than expected on the basis of the underlying determinants" (Foroutan and Pritchett, 1993, p. 96). Jebuni, Ogunkola and Soludo (1994) also indicated that integration had a positive, although small, impact on intra-ECOWAS trade. Results have hardly been any better in the area of infrastructure and natural resources development, which seems to have the characteristics of a "win-win" undertaking. Co-operation in energy supply is relatively little, even though a regional grid connecting national networks could be set up at a reasonable cost (Robinson, 1996). The most successful initiative so far is the agreement between Ghana, Togo, Benin and Côte d'Ivoire which allows Ghana to sell hydro-electric power to the other parties when their supply falls below a stated threshold level. Ghana can also import from Côte d'Ivoire in times of need. While the potential for mutually beneficial cooperation in the areas of water and transport is generally acknowledged, that has been little effort to tap this potential (Bundu, 1997). The production base of African economies remains skewed towards primary products and a limited range of consumer goods with little or no inter-industry linkages, a situation which effectively reduces the potential for intra-regional trade.

Policies have mostly been an extension at the regional level of those that, to a high cost, were being implemented behind the shield of high-tariffs and an overburden and inefficient state. What is decided on paper is seldom put in practice and very little happened in the sense of harmonising agricultural, industrial, energy, fiscal and monetary policies. Hence the potentially large scope for trade integration and joint infrastructure projects was not exploited, at least on formal markets. Limited progress was achieved in informal trading among neighbouring countries — and this would have been realised anyway, regardless of the existence of ECOWAS

and other groupings. Some changes have been introduced since the 1990s, a reflection of changes elsewhere in the world arena and of the repercussions they have had in each country, i.e. some degree of economic and political opening. A number of recent developments herald a move away from undue emphasis on trade integration to a more coherent dynamics which includes institutional adjustments that allow the participation of other economic agents, including the private sector and civil society organisations. Albeit exceedingly slow, the changing political context has also resulted in greater confidence on matters of foreign and security policies, as shown by the qualified success of ECOMOG<sup>xxiii</sup>. A further positive innovation is the acceptance of the principle of variable geometry<sup>xxiv</sup>. But the status of advancement of most ECOWAS goals is far from satisfying. Decisions to harmonise agricultural policies and adopt a common position during negotiations of international commodity agreements, for example, have just remained promises. While the protocol on the free movement of persons, residence and establishment is being implemented, individual countries contravene this when it suits specific domestic socio-political interests. The main problem for the region remains its inability to nurture a critical mass of countries, so that fall-outs turn from negative to positive. Unfortunately, it is almost impossible to find African countries whose successful macroeconomic and institutional policies have brought about high and sustainable growth rates. In West Africa, Ghana and Côte d'Ivoire have shown certain potential in this regard, but failure in harmonising national policies has created tensions. The lack of monetary co-ordination — Ghana has maintained a flexible exchange rate, while Côte d'Ivoire has anchored its currency to the French Franc — tend to adversely affect bilateral trade, which remains volatile, minimal, and one-sided. We have noted elsewhere that the inherent subsidy that the CFA Franc enjoys as a result of its relationship with the French Franc effectively distorts the trading relationship between the two countries. Moreover, Ghana suffers from high macroeconomic instability, while structural adjustment in Côte d'Ivoire has been less comprehensive, “too little, too late” (Pegatienan, 1995). Developments in Côte d'Ivoire since 1999 have been very negative, both on the political and the economic fronts, although the same period has also seen the return of democracy in Nigeria and peaceful transitions through the ballot-box in Ghana and Senegal. Under the pressure of bilateral and multilateral lenders, the need to properly align exchange rates and improve the underlying macroeconomic framework as a necessary, albeit still *per se* insufficient pre-condition for trade creation is increasingly recognised by policy-makers. The growing legitimacy of governments among the community of nations allows for a more open attitude in discussions of activities that involve some cession of authority to a supra-national body. Regionalism may hence be an important contributor in this respect if growing mutual trust translates into regional, multilateral surveillance to accelerate progress on macroeconomic convergence and monetary union. Among the significant gains that that can help improve the trade of member states are that, if countries pool their resources together and allow unrestricted access to these resources will enhance the development potential of the countries involved in the integration process. The larger regional market encourages large investments employing more efficient technologies, enjoying economies of scale and thus operating at lower cost. The harmonisation of policies improves the management of national economies and makes the policies more effective because of their being mutually supportive and applied in a synchronised manner. The same can be true for much-needed infrastructure projects such as the West African Gas Pipeline project. Thus ECOWAS appears to have changed tact, becoming more accommodating of alternative approaches to integration. Thus, for ECOWAS to improve trade among member states, which it has barely done so far, the following issues must be addressed in no particular order of importance:

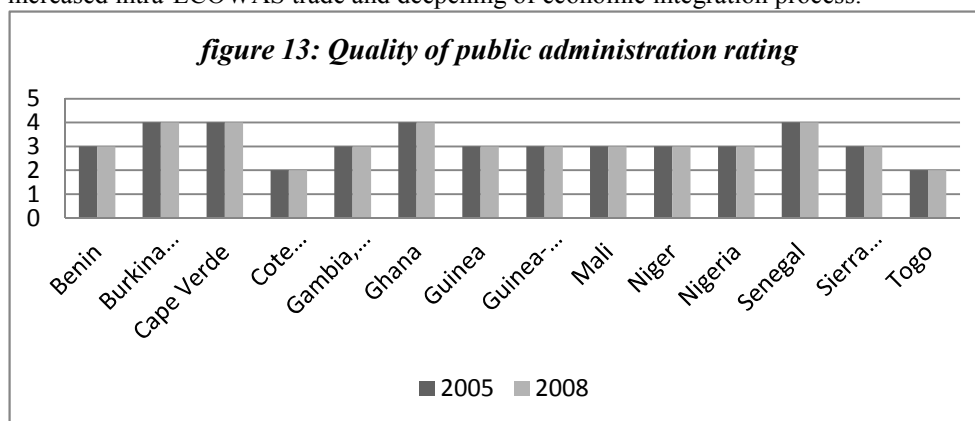
a) *Macro-Economic Policy Harmonisation:*

As indicated above, member countries of ECOWAS contravene the rules when it suits its socio-political interest and the same applies to harmonising policies. It is at this point very important that governments of member states draft and implement policies that are friendly to other member states through policy consultations during the draft process thus reducing the risk of having policies that are not aligned to or accommodating to other ECOWAS members' policies. Concerning ECOWAS Trade Liberalisation Scheme (ETLS), there have been many confrontations between exporters and Customs about the interpretation of the Rules of Origin. Consequently, in addressing the question of obstacles to intra-ECOWAS trade, exporters and Customs officials must establish a common platform for commercial conflict resolution. Also the inability of the population including economic operators to move freely across borders due to non-compliance with the Protocol on Free Movement of Persons, Right of Residence and Establishment hampers increased trade flows within the ECOWAS region. Compliance with the provisions of this protocol is extremely important especially in the case of trade in services. Economic operators' also lack of knowledge of international health requirements may lead to the authorities denying them entry into countries which are of business interest to them. Furthermore, in order to export agricultural products, knowledge of rules and regulations on Sanitary and Phytosanitary (SPS) measures is essential for ensuring rapid flow of goods across borders. According to the ECOWAS executive secretary's report<sup>xxv</sup> in 2000, they will in the immediate future, the Secretariat will focus on these fundamental

issues. A primary concern is the acceleration of the process of coordination and harmonisation of macro-economic and sectoral policies of Member States. This is a priority issue because of the need for the adoption of regional policies in all the key sectors to provide the required framework for the achievement of an economic union. In addition to the macro-economic policy harmonisation programme already in progress, the Secretariat has embarked on some aspects of this task in such sectors as agriculture, industry, transport, telecommunications and energy; this is being done in close collaboration with the relevant UN and other international organisations. Among the areas of where there should be effective coordination is the alignment of monetary-especially exchange rate- policies and infrastructure. Currently, ECOWAS member states have put together their efforts in some projects, even though the commitment is still lacking, and some examples are the establishment of the West African gas pipeline project, and the fast-track initiatives of a second monetary zone and borderless zone that have necessitated the establishment and active operation of various multi-disciplinary national committees. This ensures the required adaptation of national policies and procedures: so as to reflect ECOWAS acts and decisions, undertake legal text reviews and pass appropriate enabling legislative and administrative texts, print and circulate regionally-adopted documents in replacement of existing national instruments, monitor and evaluate the impact of regional instruments on the national economy, etc. The need for coordination of economic policy and monitoring of economic performance increases with participation in the regional integration process. This is where the role of institutions comes to play, especially quality of the government institutions not only through effective policy formulations and implementation but also education of exporters from member countries about the rules/policies formulated so it will be easy to export and through this trade will increase.

*b) Institutional Adjustments:*

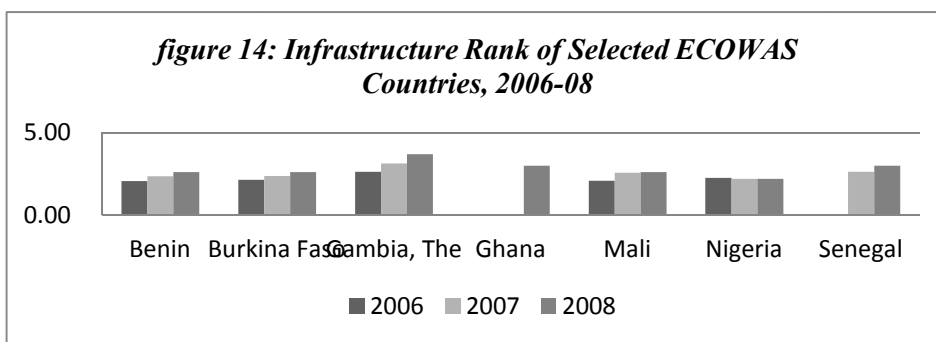
Figure 11 shows that there has not been much improvement or change in the quality of institutions in West African countries from the period 2005 to 2008. This issue according to the ECOWAS secretariat has been recognized by its members and many member states are already addressing it through the creation of strong administrative bodies (a number of Member States now have a ministry for regional cooperation and integration) and the establishment of functional coordination organs. This trend must continue with the strengthening of such ministerial agencies and greater involvement in their activities by the private sector and non-governmental organizations. A common understanding between economic operators and the relevant government ministries/departments and border agencies (customs, immigration and police) is necessary to improve compliance with ECOWAS trade-related protocols and ease the flow of trade at border posts and harbours leading to increased intra-ECOWAS trade and deepening of economic integration process.



Data Source: *World Bank African Development Indicators Dataset*

*c) Infrastructure Development:*

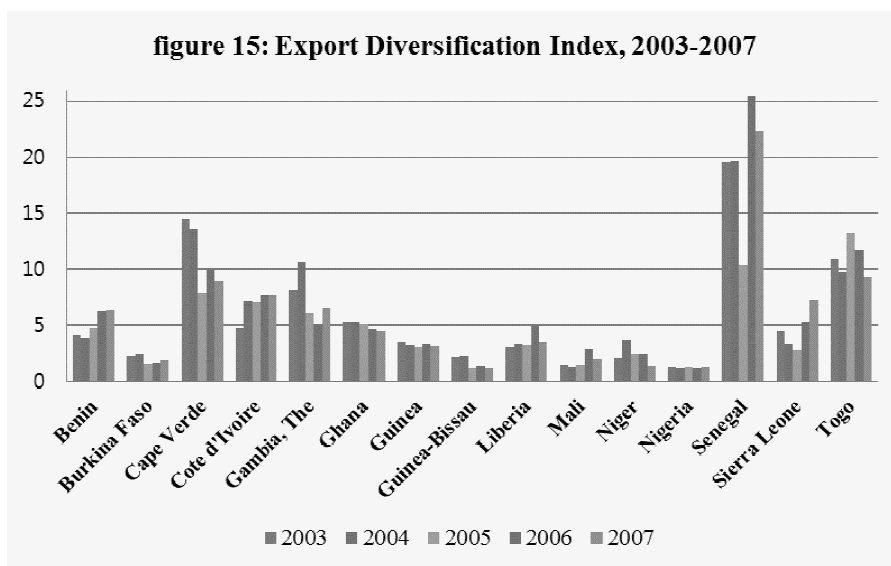
Despite the slight increment in infrastructure in ECOWAS countries, it overall is slow and low (see figure 12 below). From 2006 to 2008, ECOWAS countries infrastructure score has mostly fluctuated between the rank 2 and 3 with only Gambia scoring 3.70 out of a possible 10. The high cost of transport and communications services and facilities and the lack of adequate transport and communications infrastructure constitute serious drawback to the promotion of intra-ECOWAS trade. Since infrastructure plays an important role in trade facilitation, the community should establish a consultation mechanism with governments to address the problem of lack of infrastructure, namely rail, sea and road between ECOWAS countries.



Data Source: *World Bank African Development Indicators Dataset*

d) Diversification of Exports:

Ghana's export is not diversified in comparison to other ECOWAS member countries like Senegal, Cape Verde and immediate neighbour Togo despite their low level of diversification. According to the diagramme above, Ghana not only has low level export diversification but is experiencing a reduction in the level of diversification. Same can also be said for all other member countries except Benin who export diversification value went up marginally. This suggests that all member countries produce and export similar goods which are mostly primary products and trade among them becomes difficult since they compete than complement each other. To improve export among member countries, it is recommended that they move more into the manufacture and service goods in addition to the primary exports or add value to their export through technology upgrade. For example, instead of Ghana exporting raw cocoa to other West African countries, it can rather export value added cocoa products like chocolate, beverage, creams among others. In reference to this, Lyakurwa (1991) advocates for export diversification since he argues that it will play an important role in reducing the variability of export earnings of African countries and raising growth rates of both exports and domestic output.



Data Source: *World Bank African Development Indicators Dataset*

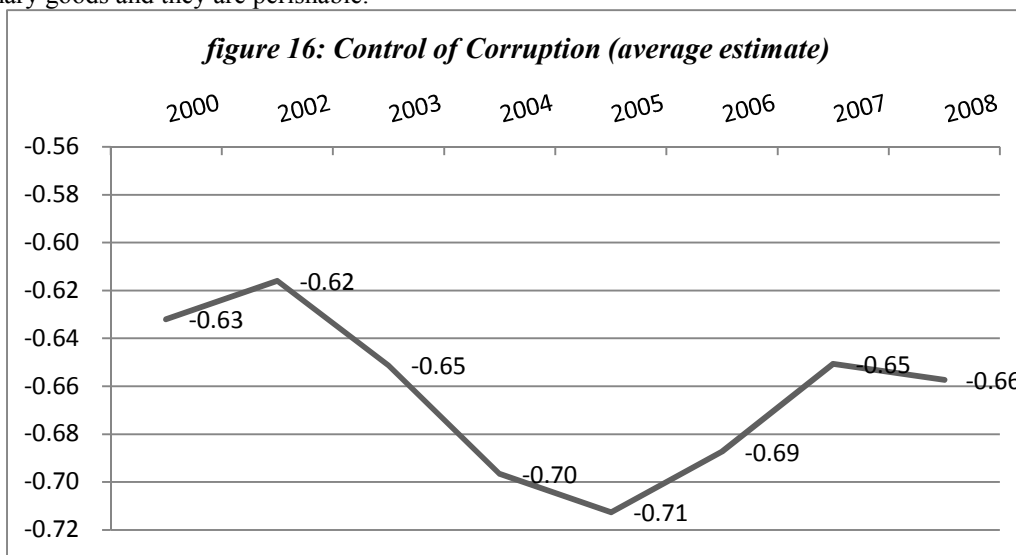
e) Improve Security:

It is important to maintain and improve political situations of member states. This builds exporters confidence in terms of decision to export to such countries. However, exporters do not only consider political stability of partner countries by the safety of their exports even in politically stable countries because their goods can be vandalised or stolen by robbers. It is therefore very important for member countries not only to maintain peace and political stability but maintain internal security of both imports and exports of citizens so as to protect trade of goods and services and increase trade in general. One way to do this is to strengthen their security forces and also check the proliferation of small arms in the region. The ECOWAS committee formed to check the proliferations of these small arms should step up their effort to recover small arms as they tend to be used to

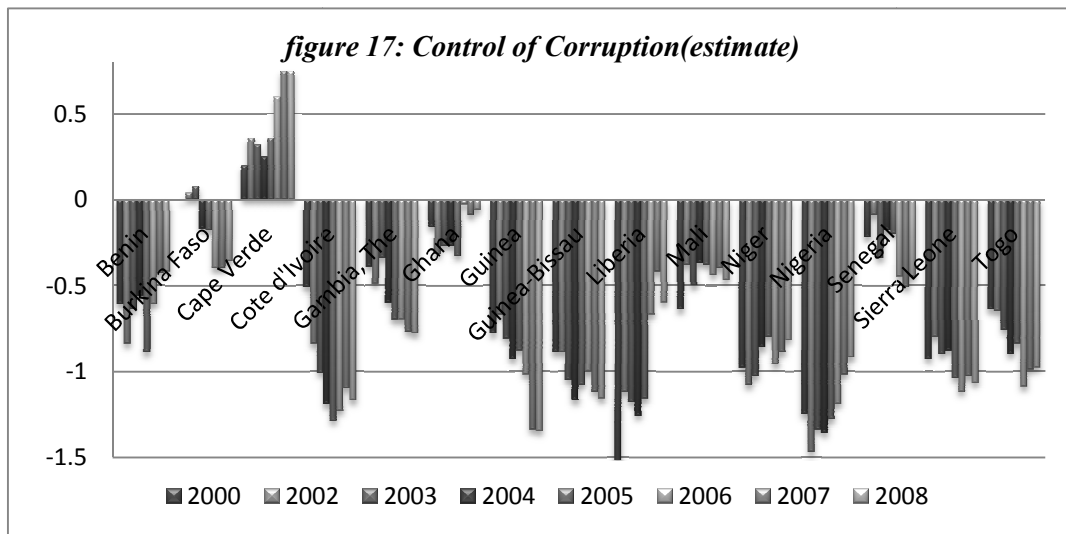
commit highway robbery when there is no more conflict in member countries. According to the president of the ECOWAS Commission, Dr. Mohamed Ibn Chambas<sup>xxvi</sup>, the key thing here is that, nationally, these committees are comprised of various stakeholders, security agencies, civil society, organisations, women and youth etc. all of whom work to identify the source of the problem in each country and how to tackle these problems so that we can prevent more small arms and light weapons coming in.

f) *Control of Corruption*<sup>xxvii</sup>:

On average, the control of corruption in West Africa is very low despite the improvement (See figure 14). Cape Verde is the only country that has successfully managed to control corruption since 2000 through to 2008. Figure 15 shows that Burkina Faso on the other hand has failed to maintain the positive score it had in the early 2000s and also Ghana is improving its score but still scores negative like the other countries left. According to the chairman of the ECOWAS Commission, the difficulty that ordinary people face when they try to move around in the region from one country to the other is the biggest challenge to the integration process in Africa. The cross border obstacles they face, particularly at the frontier where the processing of documents is extremely cumbersome and fraught with harassments, intimidation and, often times, plain extortion. Then, on the highway, you still find a lot of unauthorised checkpoints and road blocks. All of these stand in the way of free movement of persons, especially with regards to free movement of goods. There are still so many non-tariff barriers. The ECOWAS protocols have abolished tariff with regards to goods that are substantially produced in any ECOWAS member state being exported to other ECOWAS states. But there are so many non-tariff barriers and arbitrariness on the part of Customs, Immigration and other security agencies and officials who, in spite of what the protocol says, still put a lot of obstacles in the way of free trade within the sub region. Free movement of goods and services is one of the outstanding issues that need to be addressed in order to enhance the integration process in West Africa. Annequin Christel, Transport Studies Team Leader of the Hub, said the study had made some recommendations including realising a single market for member countries of the Economic Community of West African States with no internal border control as pertains in the European Union and fighting corruption. This can also be addressed through the creation of joint border post ( a one stop service for traders) to make it easy for traders to clear their goods and get to the market on time considering most of the exports in this region are primary goods and they are perishable.







Data Source: World Bank African Development Indicators Dataset

Finally, for all the recommendations made above to help increase intra-ECOWAS, the governments of member countries must be very committed to the enforcement of regulations and joint policies proposed. Loyalty is also very crucial in the achievement of ECOWAS goals with regard to improving the economic situation of member countries through the improvement of intra-ECOWAS trade. If all this is done properly, which has not been the case thus far, then it is anticipated that it will have a positive and significant effect on trade among members and increase Ghana's trade subsequently.

**5. Empirical Test And Analysis:**

The paper has so far been qualitative in approach. However, it is important to figure out how important the qualitative analysis is in achieving our aim through a quantitative analysis of the determinants of Ghana's trade with Africa identified in the qualitative analysis. Thus this section of the thesis, through the use of the Gravity Model for International Trade, will serve as a confirmation of the qualitative analysis done so far.

*5.1 The Gravity Model:*

The gravity model is derived from the Newton's law of gravity whereby the gravitational attraction between any two objects is proportional to their masses and diminishes with distance. Drawing from that analogy, the gravity model states that the trade between two countries, ceteris paribus, is proportional to the product of their GDPs and diminishes with distance. It is used to predict the one of the most used empirical tools for modeling bilateral trade flows. According to Beers and Linnemann (1991), the Gravity model includes the most important variables traditionally used in explaining bilateral trade flows, its parameters are easily estimated and it is proven to be very successful source of empirically analysis international trade.

Most researchers have used the model to evaluate various trade policy issues, such as the effects of protection and openness, the merits of proposed regional trade arrangements and the effects of national borders but little work has been done on determining whether it fits the trade flows of a specific country.

The gravity equation was first applied to international trade flows by Tinbergen in 1962 and he represented it with the formulae

$$X_{ij} = A \frac{Y_i^\alpha Y_j^\beta}{D_{ij}^\gamma} \dots\dots\dots (1)$$

They refer to the elasticity of the exporting country's GDP ( $\alpha$ ), the elasticity of the importing country's GDP ( $\beta$ ) and the elasticity of distance ( $\gamma$ ). The exponents  $\alpha$ ,  $\beta$  and  $\gamma$  may take values other than 1. He rationalised the inclusion of the countries' income by stating that the amount of exports country  $i$  is able to supply is dependent on its purchasing power represented in the equation by GDP, GDP per capita or the country's population size and vice versa, because it indicates the market potential for sales of goods to each country. Distance may be the geographical distance between the economic hubs of the trading partners or distance between capital cities measured in nautical or land miles. Distance is a proxy for various factors that can influence trade such as transportation costs and cultural distance.

Because the gravity model is usually estimated using the Ordinary Least Squares (OLS) regression analysis, we have to take the natural logarithm of equation (1) and add an error term  $\epsilon$  to it in order to obtain the linear relationship below.

$$\ln(X_{ij}) = \ln A + \alpha \ln(Y_i) + \beta \ln(Y_j) + \gamma \ln(D_{ij}) + \epsilon_{ij} \dots\dots\dots(2)$$

The coefficients  $\alpha$ ,  $\beta$  and  $\gamma$  refers to magnitude of change of the dependent variable  $\ln(X_{ij})$  when their corresponding independent variables increase or decrease. Thus, if the exporting country's GDP ( $Y_i$ ) increases by 1%, export volume will increase by  $\alpha\%$  ceteris paribus. In the same vein, should distance between countries  $i$  and  $j$  increases by 1%, then trade flows will decrease by the same  $\gamma$  magnitude assuming that the error term is independent and log-normally distributed. In addition to the core variables, we can include other variables which are found to have influence on international that needs analysing such as effect of landlocked countries, corruption and dummies variables incorporating some characteristics common to specific flows, in our gravity equations.

Anderson (1979), Bergstrand (1989), Helpman and Krugman (1996) and Deardorff (1995) are documented for enhancing the model by providing several theoretical developments in support of it, more so when the theoretical foundation for the original researches in that field was originally very poor.

The importance of trade costs has increased over the years and it has become a relevant determinant of trade patterns. However, few studies have focused on trade costs, and many existing research only consider transport costs as proxies for trade cost in their model estimation. This is because the traditional gravity model itself uses distance between two countries as a proxy for transport costs and by extension trade costs.

Blum and Goldfarb (2006) find that distance is a good proxy for differences in tastes and preferences. They found out that the distance effect in gravity will persist for a number of products even if transport costs and other trade barriers associated with it are reduced to 0.

Huang (2007) also shows that unfamiliarity can explain part of the negative correlation between geographical distance and bilateral trade volumes. This author shows that higher uncertainty leads to lower trade flows to distant partners than gravity models predict. Guo (2004) proved that language influences on trade are more significant in China (a developing country) than in the United States (a developed country). Rauch (1999) finds that sector-heterogeneity matters in language and colonial ties.

### 5.2 Model Specification

This paper seeks to extend the standard gravity model of Tinbergen (1962) to include the factors identified to have effect on Ghana's export to other African countries. Hence, an Ordinary Least Square (OLS) regression is run to assess the impact and significance of the trade cost and regionalism variables on Ghana's export to other African countries. In addition to those variables, we will add the GDP and the population variables. Below is the framework that will be used for our analysis:

$$\ln X_{ijt} = \alpha_0 + \alpha_1 \ln Y_{jt} + \alpha_2 \ln P_j + \alpha_3 ECOWAS + \alpha_4 \ln TC_j + \varepsilon_{ijt} \quad (1)$$

Where:

$\ln$  denotes natural logarithm;

$X_{ijt}$  represents the value of the Export flow from Ghana at time  $t$ ;

$Y_{jt}$  and  $Y_{it}$  are the values of GDP (current Purchasing Power Parity) in  $i$  and  $j$  at time  $t$ ;

$P_j$  is the population of the importing country;

$ECOWAS$  dummy takes the value of 1 when countries are members of the Economic Community of West African States otherwise 0;

$TC_{ij}$  is the trade cost of the exporting country;

$\varepsilon_{ijt}$  is the log normally distributed error among all the countries under consideration.

However,  $TC_{ij}$  is a function of Distance from export to importing countries, Tariffs imposed by the importing country, Language is representative of the whether the exporting and importing country speak the same language, Landlocked countries, Political Stability and Infrastructure level of both the exporting and importing country

$$\ln TC_{ij} = \delta_1 \ln D_{ij} + \delta_2 \ln T_j + \delta_3 Lang_j + \delta_4 Land_j + \delta_5 CPI_j + \delta_6 PS_j + \delta_7 L_j \quad (2)$$

Where:

$D_{ij}$  is the distance from country  $i$  to  $j$ ;

$T_j$  is the tariff by importing country

$Lang_j$  is a dummy which stands whether Ghana and the trade partner speak the same official language;

$Land_j$  dummy takes the value of 1 when the trade partner is landlocked else 0

$CPI_j$  represents a proxy for corruption at borders.

$PS$  represents the level of the countries' political stability;

$L_j$  represents the level and quality of Infrastructure the trade partner has.

We finally develop our regression model by substituting (2) in (1):

$$\ln X_{ijt} = \alpha_0 + \alpha_1 \ln Y_{jt} + \alpha_2 \ln P_j + \alpha_3 ECOWAS + \beta_1 \ln D_{ij} + \beta_2 \ln T_j + \beta_3 Lang_j + \beta_4 Land_j + \beta_5 CPI_j + \beta_6 PS_j + \beta_7 L_j + \varepsilon_{ijt} \quad (3)$$

Where  $\beta_i = \alpha_i \delta_i$

#### 5.1.2 Expected Results:

After running the regression, we expect the following:

- A. Income, Population, Language, and Political Stability will have a positive relations with Export growth
- B. Distance, Tariff, Landlocked and Corruption have a negative effect on Ghana's export growth.
- C. There is a positive and significant relationship between Infrastructure and regionalism and export growth.

### 5.2 Data:

Export data is obtained from UNCOMTRADE online database. The level of disaggregation is 3-digit SITC. The sample considered includes one exporter (Ghana) and 49 importers from Africa. The independent variables of the regression are constructed with data from the World Development Indicators (2000-2008) for Incomes, Population, Tariff (Simple average), Corruption Perception Index, Political Stability/No Violence, and Infrastructure<sup>xxviii</sup>. Data on Distance is calculated using the Great circle distance formula for distances between the capital of Ghana (Accra) and the most important cities in each of the trading partners collected from CEPII. The dummy variable Landlocked takes the value of 1 if the trade partner is landlocked and 0 otherwise; Language takes 1 if trade partner speaks same official language as Ghana else 0. Countries that belong to ECOWAS take the value of 1 and 0 otherwise.

### 5.3 Results:

Results from Table 1 show Distance has the expected negative effect of Ghana's export but is significant in columns 2, 3, 4 but 1. Tariff however the expected negative effect on export has but is insignificant. Infrastructure has positive and significant effect on Ghana's export. Corruption proved significant (column 3) when we exclude the tariff and Political stability variables and had a negative impact on export by reducing export with a unit increase in the Corruption Perception Index of the importing country else is insignificant in explaining export of Ghana to other African countries. In column 2, when ECOWAS and GDP variables are excluded from the regression, political stability proves significant and has a positive relation with export. Landlocked is significant and affects export negatively as expected. Language and cultural similarities through colonization are significant in explaining Ghana's export (see column 1, 3 and 4). However with the exclusion of GDP and ECOWAS variables, Language becomes insignificant. ECOWAS variable is very significant in explaining Ghana's export and has the expected positive sign.

**Table 1: Summary of Regression Results.**

<b>Dependent Variable: Export</b>				
<b>Variable</b>	<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>
<b>GDP(Y)</b>	0.799 (2.563)***			0.777 (3.645)***
<b>Population(P)</b>	0.414 (1.321)	1.115 (5.895)***	1.109 (6.479)***	0.117 (0.550)
<b>Distance(D)</b>	-0.442 (-1.305)	-2.286 (-9.470)***	-0.718 (-2.137)**	-0.804 (-3.186)***
<b>Tariff(simple average)(T)</b>	-0.051 (-0.113)	-0.440 (-0.811)	-0.169 (-0.360)	
<b>Infrastructure(Inf.)</b>	0.612 (2.092)**	0.975 (3.266)***	1.063 (4.053)***	0.442 (2.074)**
<b>Corruption(CPI)</b>	-0.188 (-0.108)	-0.766 (-0.381)	-1.021 (-0.578)	-2.276 (-2.079)**
<b>Political Stability(PS)</b>	0.550 (1.720)	0.839 (2.314)**	0.554 (1.698)	
<b>Landlocked(Land)</b>	-1.795 (-3.862)***	-1.590 (-2.836)**	-1.878 (-3.851)***	-1.774 (-5.184)***
<b>Language(Lang)</b>	0.747 (1.955)**	0.705 (1.482)	0.883 (2.132)**	0.706 (2.727)***
<b>ECOWAS</b>	4.259 (6.542)***		3.627 (5.915)***	3.708 (8.019)***
<b>C</b>	-11.230 (-1.557)	13.420 (2.136)**	-0.114 (-0.019)	1.267 (0.266)
<b>Weighted Statistics</b>				
<b>R-Squared</b>	0.747	0.617	0.710	0.674
<b>Adjusted R-squared</b>	0.716	0.577	0.676	0.653
<b>Observations</b>	147	147	147	249

Notes: \*\*\*, \*\*, \* indicates significance at 1%, 5% and 10% respectively. *t*-statistics are in brackets. The dependent variable is the natural logarithm of exports in value. Income, Population, Distance, Tariff,

Infrastructure, Corruption are also given in natural logarithms. Landlocked, Language and ECOWAS are represented by dummy variables. The estimation includes importer fixed effects in the dummy variables.

## 6. Conclusion

The objective of this paper was to find out how best to improve the export of Ghana thereby inducing economic growth and subsequently reducing poverty. We analysed the determinants of Ghana's export to Africa through review of existing research and Ghana's main trade policy document among others. We then estimated an export equation using data on GDP, Population, ECOWAS and Trade cost variables (i.e. Distance, Tariff, Infrastructure, Corruption, Political Stability, Landlocked countries and Language).

The thesis showed that ECOWAS and Trade cost (except tariff) have significant impact on Ghana's export to other African countries and the regression results confirm it. Of the trade cost variables, infrastructure is the most significant endogenous variable and Landlocked prove a significant exogenous variable in explaining export. Thus being Landlocked significantly deters export by Ghana in Africa. On the other hand, cultural similarities proxied by Language dummy have a positive effect on Ghana's trade. This result is important because it emphasises the relevance of regional integration and trade cost on trade in Africa despite the fact that the significance of tariff barriers are reducing over the last decade.

Thus, to improve Ghana's trade, there should be improvement in the quality and number of infrastructure available like roads extension, maintenance and also improvement in Telecommunication infrastructure among others. We notice that Ghana can control the improvement of infrastructure and the other instrumental variables domestically through the application of economic policies that specifically address those issues but cannot control the development of such variables in the trade partner's country. At this point the pursuance of a regional integration, represented by ECOWAS in our analysis, will help achieve the same goals of reducing trade cost and increasing export of Ghana. A proper bilateral or regional effort by Ghana and trade partners in the development of infrastructure, reduction of corruption at borders and maintain political stability will have a positive and significant impact on trade between such countries.

Future estimations for more years will be very important in finding out more about the effects of trade cost and regional integration on Ghana's trade.

## Reference

- Anokye M. Adam and Tweneboah George. (2009). *The Changing Trade Pattern Emerging Economies: Gravity Model of Ghana's Trade Flow*.
- Aryeetey, Ernest. (2001). *REGIONAL INTEGRATION IN WEST AFRICA*. Working Paper, Research programme on: Integration and Co-operation in Sub-Saharan Africa. OECD Development Centre.
- Awokuse, Titus O. and Conrado M. Gempesaw II. (2005). "Foreign political instability and U.S. agricultural exports: evidence from panel data. *Economics Bulletin*, Vol. 6, No. 15 pp. 1-12
- Baltagi, Badi H., Egger, Peter and Pfaffermayr, Michael. (2003). 'A generalized design for bilateral trade flow models'. *Economics Letters*, 80 (3): 391-397.
- Behar, Alberto and Manners, Phil. (2009). *Distance to Growing Markets and Sub-Saharan African Exports*. Economics Department and Centre for the Study of African Economies, University of Oxford, Manor Road, Oxford.
- Bergstrand, Jeffrey H. (1985). 'The Gravity Equation in International Trade: Some Microeconomic Foundations and Empirical Evidence'. *The Review of Economics and Statistics*, Vol. 67 (3), pp. 474-481.
- Bettina, Rudloff and Johannes, Simons (2004). *Comparing EU free trade agreements Sanitary and Phytosanitary Standards*, Institute of Agricultural Policy, University of Bonn
- Bundu, A. (1997). "ECOWAS and the Future of Regional Integration in West Africa", *Regional Integration and Co-operation in West Africa, A Multidimensional Perspective*. edited by Réal Lavergne, Africa World Press and IDRC, Ottawa
- Collier, P. (2007). *The Bottom Billion: Why the Poorest Countries Are Failing and What Can Be Done About It*. Oxford University Press, New York.
- Dutt, Pushan and Traca, Daniel. (2007). *Corruption and Bilateral Trade Flows: Extortion or Evasion?*
- Karingi, Stephen N. and Leyaro, Vincent. (2010). *Surmounting Africa's Trade Capacity Constraints: An Assessment of the Effectiveness of the Aid for Trade*. UN Economic Commission for Africa, Addis Ababa, Ethiopia.
- Krugman, Paul R. and Maurice, Obstfeld. (2007). *International Economics: Theory and Policy*. 8ed, Boston, Addison-Wesley .pp 10-11
- Márquez-Ramos, Laura (2007). *Understanding the Determinants of International Trade In African Countries. An Empirical Analysis for Ghana and South Africa*. Universitat Jaume I and Instituto de Economía Internacional, Castellón, Spain.

- Martínez-Zarzoso, Inmaculada and Suárez-Burguet, Celestino. (2005). 'Transport costs and trade: Empirical evidence for Latin American imports from the European Union', *The Journal of International Trade & Economic Development*, 14: 3, 353 — 371
- Ministry of Trade and Industry. Ghana Trade Policy (2004). Ghana
- Ministry of Trade and Industry. Trade Sector Support Programme (2005). Ghana
- Portugal-Perez, Alberto and Wilson, John S. (2008). Lowering Trade Cost for development in Africa: a Summary Overview, Development Research Group, World Bank
- Portugal-Perez, Alberto and Wilson, John S. (2009). Why Trade Facilitation Matters in Africa, Development Research Group, World Bank, *World Trade Review*
- Portugal-Perez, Alberto and Wilson, John S. (2008). Trade Costs in Africa: Barriers and Opportunities for Reform I, Development Research Group, World Bank, *World Trade Review*
- Todaro, Michael P. and Smith, Stephen C. (2009). *Economic Development 10ed*, Pearson, Addison-Wesley
- West Africa: Reducing Transportation Cost, Critical to Economic Growth in West African. (2010). *allAfrica magazine*, [www.allAfrica.com](http://www.allAfrica.com)
- World Trade Organisation, Trade Policy Review of Ghana. (2008). [www.wto.org](http://www.wto.org)

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#### Notes:

- <sup>i</sup> This focuses primarily of the Economic Community of West African States (ECOWAS) and how this regional body affects Ghana's trade.
- <sup>ii</sup> Countries used are Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Congo, Dem. Rep., Congo, Rep., Cote d'Ivoire, Djibouti, Egypt, Arab Rep., Equatorial Guinea, Ethiopia, Gabon, The Gambia, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Libya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, South Africa, Sudan, Swaziland, Tanzania, Togo, Tunisia, Uganda, Zambia
- <sup>iii</sup> Intra-African trade data compiled in percentages by African Export-Import Bank, Cairo, Egypt
- <sup>iv</sup> World Trade Organisation trade policy review of Ghana in 2008.
- <sup>v</sup> Draft paper prepared for the workshop on "Trade Costs and the Business Environment: a focus on Africa," African Economic Research Consortium and the World Bank, Entebbe Uganda, May 31, 2008 by Alberto Portugal-Perez and John S. Wilson.
- <sup>vi</sup> "Surmounting Africa's Trade Capacity Constraints: An Assessment of the Effectiveness of AfT in Africa" by Stephen N. Karingi and Vincent Leyaro, UNECA. Presented at Expert Group Meeting and Workshop on AfT and Africa's Trading Capacity: Supply, Demand and Performance Addis Ababa, 31 May – 2 June, 2010
- <sup>vii</sup> Part of a paper presented at the workshop on "Trade Costs and the Business Environment: A Focus on Africa," African Economic Research Consortium and the World Bank, Entebbe Uganda, May 31, 2008.
- <sup>viii</sup> World Trade Organisation, *Trade Policy Review of Ghana, 2008*, [www.wto.org](http://www.wto.org)
- <sup>ix</sup> *InBrief* No. 6B - July 2004. The aim of this *InBrief* series is to provide a synthesis of various chapters of the ten free trade agreements (FTAs) recently concluded by the European Union with developing countries, as well as other relevant trade agreements when appropriate. Each *InBrief* offers a detailed and schematic overview of a specific set of trade and trade-related provisions in these agreements.
- <sup>x</sup> Percentages are from the World Trade Organisation's review of Ghana's Trade policies and trade performance. In 2008
- <sup>xi</sup> This is an augmented definition of the definition of trade cost by Alberto Portugal-Perez and John S. Wilson in their research on how to lower trade cost in Africa
- \* Commodity or Transactions not classified elsewhere and non-identified products.
- <sup>xii</sup> In his article, "Building an efficient road network: *Public-private partnerships hold the key to regional infrastructure*" from *Africa Recovery*, Vol.16 #2-3 (September 2002), page 23.
- <sup>xiii</sup> An article feature in the African magazine: "Develop Infrastructure to Develop Africa" by James Kathuri. At this rate it will be difficult to fix the infrastructure needs of Africa within the shortest possible time and thus this will require heavy capital investment and expenditure on the infrastructure.
- <sup>xiv</sup> Speaking at an open forum, organized by the Ghana Shippers Council in Takoradi, Western Region of Ghana
- <sup>xv</sup> Research paper titled "Corruption and Bilateral Trade Flows: Extortion or Evasion?" in 2007
- <sup>xvi</sup> Awokuse, Titus O. and Conrado M. Gempesaw II, (2005) "Foreign political instability and U.S. agricultural exports: evidence from panel data." *Economics Bulletin*, Vol. 6, No. 15 pp. 1–12
- <sup>xvii</sup> This indicator reflects the statistical compilation of responses on political stability by a large number of enterprise, citizen and expert survey respondents in industrial and developing countries, as reported by a number

of survey institutes, think tanks, non-governmental organizations, and international organizations.

<sup>xviii</sup> The physical distance from the economic centre of country I to that of country J

<sup>xix</sup> Dr. Alberto Behar and Mr. Phil Manners: Distance to Growing Markets and Sub-Saharan African Exports, pp 1-3

<sup>xx</sup> Landlocked countries in Africa are: *Botswana, Burkina Faso, Burundi, Central African Republic, Chad, Ethiopia, Lesotho, Malawi, Niger, Rwanda, Swaziland, Uganda, Zambia and Zimbabwe.*

<sup>xxi</sup> Liability of Foreignness refers to the cost of doing business abroad by way of exporters or firms having inappropriate, limited or constrained capabilities relative to importers environment.

<sup>xxii</sup> BUNDU, A. (1997), "ECOWAS and the Future of Regional Integration in West Africa", *Regional Integration and Co-operation in West Africa, A Multidimensional Perspective*, edited by Réal Lavergne, Africa World Press and IDRC, Ottawa.

<sup>xxiii</sup> The Economic Community of West African States Monitoring Group, or ECOMOG, was a West African multilateral armed force established by the Economic Community of West African States (ECOWAS). ECOMOG was a formal arrangement for separate armies to work together. Its backbone was Nigerian armed forces and financial resources, with sub-battalion strength units contributed by other ECOWAS members — Ghana, Guinea, Sierra Leone, Gambia, Liberia, Mali, Burkina Faso, Niger, and others. Anglophone ECOWAS members established ECOMOG in 1990 to intervene in the civil war in Liberia (1989–96).

<sup>xxiv</sup> The idea of a WTO characterized by variable geometry, is a WTO that would serve as an umbrella framework for agreements on trade issues whose signatories would not necessarily include all its members, and thus as a vehicle for some countries to undertake deeper integration or liberalization regarding selected subjects without trammels due to the unwillingness of other members to go along.

<sup>xxv</sup> Executive Secretary's Report, 2000, Chapter III, Shaping West Africa's Future: *Shift from National to Regional Framework.*

<sup>xxvi</sup> At its 30th session held in Abuja on 14 June 2006, the Authority of Heads of State and Government decided to transform the ECOWAS Secretariat into the ECOWAS Commission with effect from 1 January 2007. Dr. Chambas was elected the first President of the ECOWAS Commission and assumed that position on 1 January 2007.

<sup>xxvii</sup> Control of Corruption measures the extent to which public power is exercised for private gain, including petty and grand forms of corruption, as well as "capture" of the state by elites and private interests. This is measured in units ranging from about -2.5 to 2.5, with higher values corresponding to better outcomes.

<sup>xxviii</sup> Average of Internet users per 100 people, Telephone mainlines per 100 people and mobile users per 100 people