

# AFRICA'S ECONOMIC REGIONALISM: IS THERE ANY OTHER OBSTACLE?\*

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## ABSTRACT

*This study extends the gravity model to examine the role of infrastructure (including human capital), macroeconomic policies, the institutional quality and the colonial regimes on intra-African trade. The results show that the basic gravity variables have substantial influence on the bilateral trade in the continent. Most interestingly, whilst internal conflicts appear to have harmful and significant impacts on the flow of such trade; human capital, the flow of FDI and the British colonial regime come out as encouraging factors. The results imply that devoting more resources to human capital and creating a favourable investment environment should come as top priority in the current efforts to facilitate Africa's economic regionalism.*

**Keywords:** economic integration, bilateral trade, internal conflict

## 1. Introduction

Since 1910 the initiatives for regional integration in Africa had started; and the 1970s witnessed the establishment of numerous regional economic communities (RECs)<sup>1</sup>. Today in Africa, it is impracticable to establish a country outside any regional agreement. In spite of the efforts made to facilitate such integration in the African Continent, the outcomes of these efforts are still below expectation. According to the Economic Commission for Africa (2010), the situation of intra-African trade, is disappointing; if not more so, since it remains consistently low compared with its intercontinental trade<sup>2</sup>. The figures tell us that more than 80% of Africa's exports are still destined for outside markets, and imports more than 90% of her goods from outside of the continent (WTO 2011). There are two key theoretical motivations for the call for trade blocs, which are the allocation effect and the growth effect of free trade within a regional bloc (Baldwin

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1997). Augmented linkages among African countries, through an expansion of intra-regional trade, can be an essential mechanism in producing the required growth spillovers and encourage regional take-off. Based on the simulations model, the UNDP (2011) had conducted a study to examine the impact of Africa's economic regionalism on the welfare of the continent. The simulations proposed that all African regions are better off with regional integration. Additionally, continental integration will result in considerable increases in welfare across Africa. In contrast, and under some circumstances, global integration in the absence of regional integration may reduce welfare in African regions.

Investigation on trade creation and trade diversion effects of regional integration rooted to the customs union theory developed by Viner (1950); and thereafter several studies have been conducted to identify the extra gains from trade expansion. Recall that the new growth theory (e.g. Rivera-Batiz and Romer 1991; Grossman and Helpman 1991) provides supplementary support to the traditional arguments in linking trade liberalization and growth. The economic geography approach (Krugman 1991) identifies the influence of the regional integration on FDI locations chosen. Several authors have arrived to a conclusion that for developing regions and Africa in particular, the diversion of trade makes the expected gains from regional trading arrangements unachievable (World Bank 2000; Schiff 1997). Others believe that the fragmented national economies of Africa as the main constrain in their economy (Elbadawi 1997). Studies on the impact of intra-African trade on trade creation or trade diversion is mixed. While studies of, for example, Foroutan and Pritchett (1993), Elbadawi (1997), Lyakurwa et al. (1997) and Longo and Sekkat (2001), Ogunkola (1994) on Western Africa; and Gedaa, and Kebret (2007) conclude that the experience of regional integration in Africa is a disappointment. It fails to achieve its objectives of rising intra-regional trade. Others, such as Cernat (2001) and Gbetnkom (2008) reveal that regional trading arrangements in developing regions have a positive and significant influence on trade creation. However, the absence of an econometric relationship between trade creation and regional integration does not imply that the current effort in Africa's regionalism is a waste of time. This is because the lack of such evidence might be attributed to several factors (see Fontagné et al. 2002). The United Nations Conference on Trade and Development (2009) stated that "the lack of evidence for a positive effect of integration on intra-African trade could be due to the presence of too many obstacles to trade in comparison with

other regions.” Given the comments of UNCTAD (2009), the review on existing studies on the impact of intra-Africa trade flow on the trade creation or trade diversion have the following comments:

First, the concept of the infrastructure is reduced to physical infrastructure only and they ignore human capital aspect, although it is defined by Globerman and Shapiro (2002) as infrastructure. The Human-Capital Augmented Solow Model (Mankiw et al. 1992) and the endogenous growth theory by Romer (1990) acknowledged the role of human capital of not just in facilitating the adoption of existing technologies, but the creation of new ones as well. This view supports the argument that human capital is necessary in achieving economic development on the basis of export's substitution or/ and expansion strategy. The importance of human capital for exports expansion has been documented by many scholars in general and for developing countries in particular (Chuang 2000; Narayan and Smyth 2004; Contractor and Mudambi 2008). For instance, Wood and Mayer (2001), utilizing the cross section regression, show that the concentration of Africa's exports on primary goods in Africa is caused by a combination of low level of education and abundance of nature resources. Thus, the introduction of human capital variable as a crucial form of infrastructure in our explanation for the low intra-African trade integration might help in understanding part of this story.

The second comment is on ignoring the role of colonization as one of the obstacles (or facilitators) in spreading out intra-African trade. According to Khapoya (2012), for the Africans to be aware of the influence of colonization on them is perhaps the most crucial factor in being conscious about the existing condition of the African continent and its people. The role of colonization in African economic development or African backwardness is well recognized in various studies (Bertocchia and Canova 2002; Duignan 19975; Simensen 1999; Austin 2010; Cogneau 2003; Shillington 2005). Without going into detail, there are two opposite views regarding the impact of colonization on the colonies' economy. One view and on the basis of what called “drain of wealth” thesis, colonization is considered bad for colonies' economy. In contrast, in the modernization thesis, colonial rule is legitimized by the fact that it facilitates the integration of the colonies into the world (Bertocchia and Canova 2002). Others suggest that the impacts of the colonization on the colonies' economy vary between the colonizers. For instance,

one strand of literature suggests that this might be due to the adaptability of British legal institutions to the market economy, or the high level of personal freedom as provided by the British culture, that the effects of British colonizer on the colonies' economy lead to better outcomes than colonization by other colonial powers (Hayak 1960; Lipset 1993; North 2005). The recent UNCTAD (2009) also highlighted on the importance of the colonial regime in explaining the intra-African trade. Thus, acknowledging the role of the colonial in explaining the flow of exports in Africa is likely to have great policy implication.

The third comment is related to the expected role of institutional quality on exports expansion. Levchenko (2007) argues that in the context of international trade, differences in institutional quality as sources of comparative advantage, might justify why trade flows from one country to another. Although several studies have been conducted to investigate the impact of institutional quality on economic growth (Knack and Keefer 1995; Nugent and Lin 1995; Galeser et al. 2004 Magda 2009) very few studies have been conducted to investigate its impact on the sub-components of economic growth. One of the widely used proxies for the institutional quality is, for example, the degree of corruption. Corruption has been recognized as a harmful factor for economic development (Knack and Keefer 1995; Mauro 1995), deformed governmental expenditures (Mauro 1998; Tanzi and Davoodi 1997), hinder investment (Wei 2000), and reduce the effectiveness of FDI (Princeton Survey Research Associates 2003). In contrast, in what is called as "greases the wheels of trade" corruption can be efficiency enhancing, because it removes government-imposed rigidities that impede investment and interfere with other economic decisions favourable to growth (Leff 1964; Huntington 1968; Rose-Ackerman 1997). With respect to this, it influences bilateral trade flow. Recently Dutt and Traca (2010) examined the impact of corruption on this type of trade during the period 1989 to 2001, covering 122 countries. They find that corruption taxes trade. This happens when corrupt customs officials in the importing country extort bribes from exporters (extortion effect). Nonetheless, this can be trade enhancing; in high tariffs environment, corrupt officials allow exporters to evade the tariff barriers (evasion effect). In the latest Transparency International Report (2012), it stated that most of, or all African countries are classified as highly corrupted countries (bottom of the list). Since corruption acts as the proxy for institutional quality, linked

to the performance of bilateral trade, controlling over such institutional quality in the analysis of intra-African trade flow is expected to have remarkable policy implication.

The above discussion on the factors that might be utilized to explain the low intra-African has raised the following questions: In addition to the standard variables in the Gravity model, what is the role of human capital in explaining the bilateral trade between African countries? Is there any role played by the colonial regime in this issue? To what extent the quality of institution can help us in understanding the magnitude of exports flow between African countries? In this study we seek to find answers for these questions and extract some policy implications that might help the policy makers in adopting specific policies to accelerate the economic integration in the continent. The rest of this paper is organized as follows: next section reviews the intra-African trade. Subsequently we outline model specification, variables definition and measurement and method of estimation. After that, we deal with results and discussion and we conclude the paper by a section that outlines some policy implications.

## **2. Review of intra-African trade**

In this section, we will try to describe the situation of intra-African trade at various time frames. The analysis will start by explaining the importance of trade in terms of exports and imports for Africa compared to other region. Subsequently we discuss the general pattern of trade between Africa and the rest of the world. Then we outline the main feature of Africa's exports and imports. Next we deal with the trend in intra-African trade. Table 1 below summarizes the current situation for African trade for half a century. The table shows that in spite of the relatively higher proportion of trade in Africa's GDP (approximately same as that of European area), it registered a lower average annual growth rate for trade during the same period. More specifically, the average annual growth rate in other regions is almost more than two times of that of African region. Interestingly, although the OECD region reported low share of trade in its GDP, the region enjoys higher average annual growth rate in the share of trade in its GDP. Thus, it is inaccurate to look at the absolute value of trade (% GDP) in order to evaluate the importance of trade for African economy since it does not reflect progress or failure over time.

**Table 1 Trade (%GDP) and average annual growth rate for selecting regions, 1960-2012.**

Region	Average Trade (% GDP)	Average annual growth rate
Africa	56.60	0.19
OECD members	37.01	0.46
East Asia & Pacific	42.25	0.45
Euro area	55.65	0.42

Sources: World Development indicators

In term of exports, the composition of Africa's export compared to other regions as shown in Figure 1 below demonstrates that the structure of Africa's export is unlike that of other regions. Whilst exports for manufactured goods constitute higher proportion in the other regions' exports, for Africa, the export of fuel accounts nearly 40%. In other words, in other regions, exports of manufactured goods account approximately more than 70% of merchandise exports, while for Africa it is only 25%. Economic Commission for Africa (2013) stated that the relatively high share of primary product (food and fuel) in Africa's export is largely due to the rising trend in international commodity price. Rising commodity prices explain around two thirds of recent primary product export growth given the persistent commodity concentration of exports in the continent. The reports conclude that the concentration of fuel and food in Africa's export portfolio is likely to manifest in a significant surplus in trade of these product. This surplus can be allocated to finance Africa's imports of manufactured goods as well as building productive capacities for structural transformation<sup>3</sup>.

Looking at the second part of the story, we can look at Africa's imports compared to other regions. Interestingly, the structure of the Africa's import seems to be identical to that of other regions. That is to say, similar to the other regions, in Africa, the import of manufactured products, followed by fuel, food and agricultural raw material are top in the import menu. Furthermore, it is clear that the continent is suffering a deficit in manufactured products since there are more imports than exports of this item (deficit equal to 40% during 1995-2012).

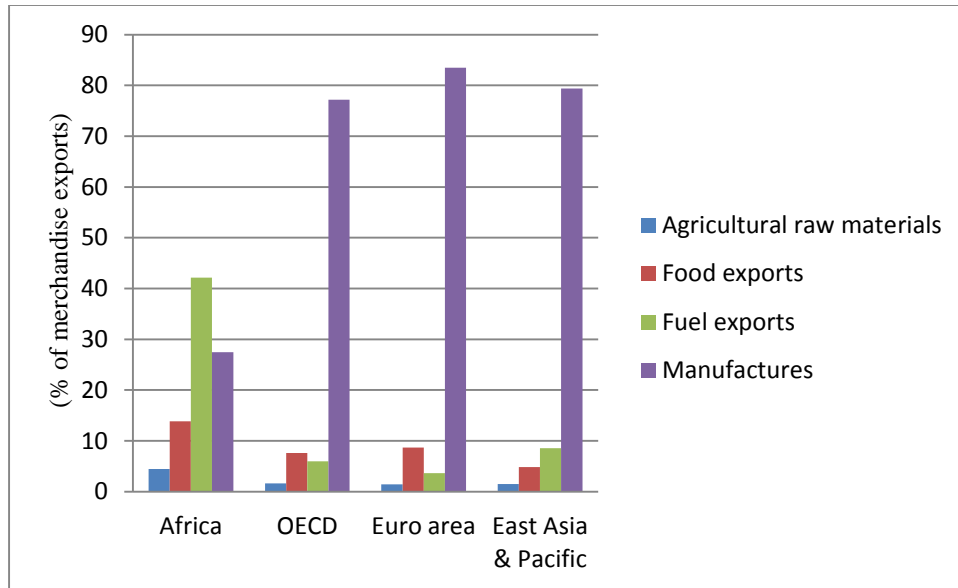


Figure 1: Agriculture raw material, food, fuel and manufactured exports (% of merchandise exports), average 1995-2012.

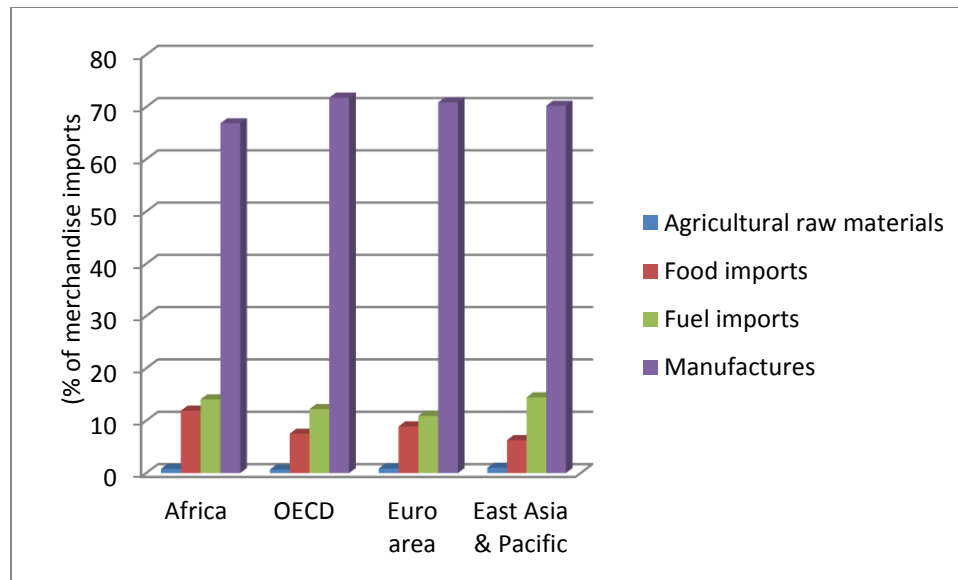


Figure 2: Agricultural raw material, food, fuel and manufactured imports (% of merchandise imports), average 1995-2012.

Now we move to illustrate intra-African trade pattern, which is the key interest of this study. At aggregate level, Figure 3 and 4 below describes on the intra-African trade (exports and imports) during the period 2000-2010. In 2010, trade within Africa represented about 12% of the continent's total trade and the rest (88%) is with the rest of the world. However, during 2000s, on average the level of intra-African trade had never exceeded 15%. Similarly, the African

Development Bank (2013) estimates that the trade between African countries is about 10%-12% of the continent’s total, compared to 48% for trade within North American countries, 72% of European trade between the countries and 52% for Asia Continent. In the same respect, the Economic Commission for Africa (ECA 2004), conducted a study to measure progress in integration in Africa and they concluded that the regional integration in Africa is weak in general and across sectors, countries and regional communities in particular. However, figures on intra-Africa trade do not include the unrecorded trade between countries that has common borders. According to the UNDP (2011) the unreported trade constitute a large proportion of the total intra-Africa trade, and it is possible that the growing integration has not been incorporated into the official figures.

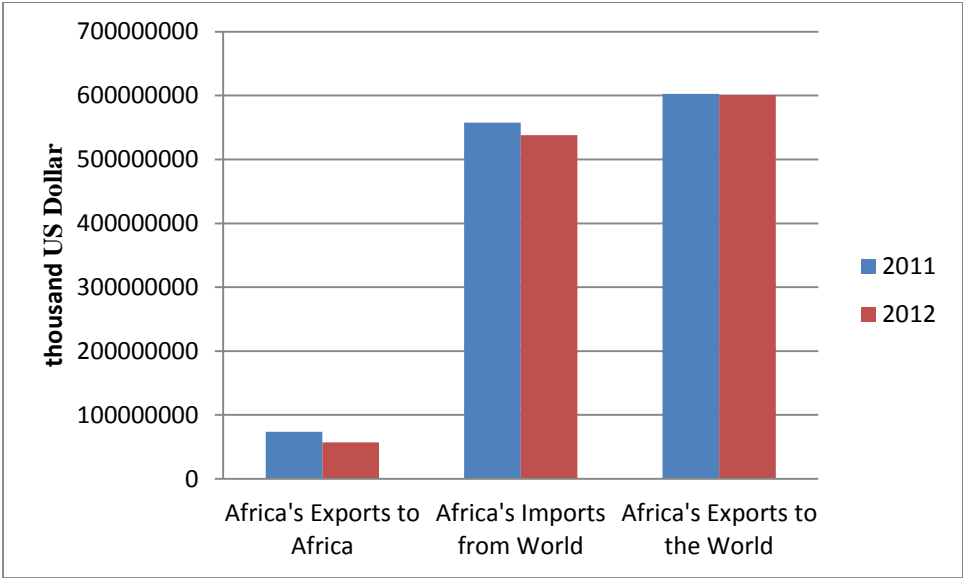


Figure 3: Africa’s exports, imports to Africa and the World, 2011-2012.



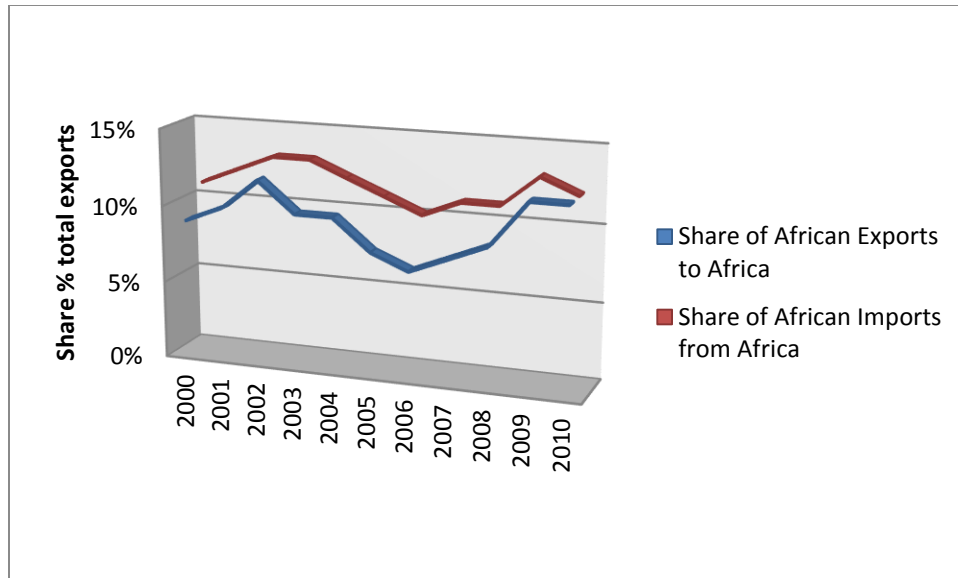


Figure 4: Intra-African export and import trends over the period 2000-2010.

Clearly, aggregate data on African trade do not represent a large share of total African trade. This is because there is variation among African countries in intra-African trade and the aggregate data ignore such variation. The UNCTAD (2009) identifies two groups of countries in which the African market represent a significant portion to their exports. More specifically, five African countries have exported more than half of their total exports to Africa; and 14 countries export more than a quarter of their exports to Africa.<sup>4</sup>

Figure 5 illustrates the general composition of intra-African trade (exports by main sectors). Obviously a high share of intra-African exports are in the form of manufactured goods (more than 45%), and this is followed primary commodities. Between 2004 and 2008, the trade in both product categories account for almost 40%. The figure clearly indicates the absence of any evidence of diversion in the intra-African trade since manufactured goods and primary commodities have the lion share in such trade. In contrast, intra-African trade in agricultural products and food are relatively low (nearly 15%). It is well known that agricultural sector is expected to be the backbone of economic development for Africa since considerable portion of employment are in this sector. The low share for agricultural trade implies that more efforts are required to improve the share of agricultural products in African trade. In addition, it is possible to improve the value added of the agricultural sector by linking it to the manufacturing sector.

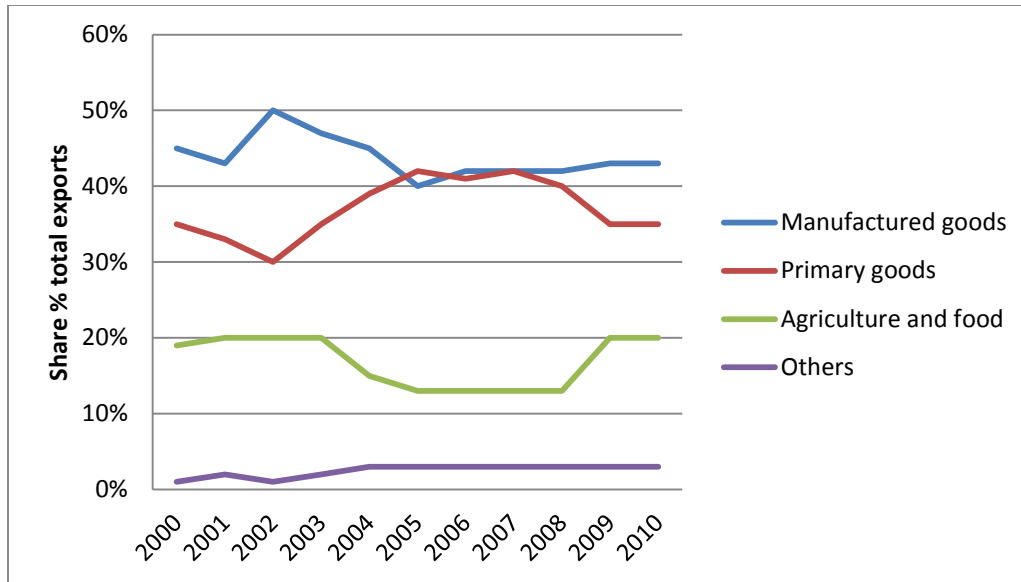


Figure 5: Intra-African trade composition (exports) by main sectors (2000-2010).

We can summarize the above discussion on African trade and/ or intra-African trade by arguing that for half a century, the progress made in trade in general as reflected in the low average trade growth rate (see Table 1) is very low. Since no considerable change in the structure of African economy has ever been recorded (agriculture is still the dominant sector in the economy), it is possible to allocate more resources from primary product exports to finance agricultural sector, which at the same time is also the intermediate input for the manufacturing sector. This will help the continent (of course with supportive policies) to gain more from trade and from intra-African trade, in particular.

### 3. The Methodology and Data

The standard model employed to assess regional integration issues is the gravity model introduced by Tinbergen (1962). Linnemann (1966) then introduced the model as a reduced form of a broad group of structural models (Anderson 1979; Bergstrand 1989). Subsequently, the model has been derived from trade model with various forms of market structure such as competition and/or monopoly (Deardorff 1998; Feenstra et al. 2001). Although some argued that the gravity model lacked of theoretical basis (see for example Frankel et al. 1994), numerous studies examining regional integration issues had employed the model since it fits the

underpinning variables remarkably well (see Foroutan and Pritchett (1993), Elbadawi (1997), Lyakurwa et al. (1997) and Longo and Sekkat (2001) and Ogunkola (1994). Consequently, in this study we shall also utilize the model to investigate possible obstacles for economic regionalism among African economies.

Previous studies using gravity model frequently adopted a double-log specification form in attempt to overcome the extreme value of zero bilateral trade between pairs of countries for accuracy purposes. This is because through a double-log specification model, the reported zero bilateral trade between pairs of countries will be omitted in the analysis. Longo and Sekkat (2004) argue that the zero bilateral trade is not very detrimental in the case of trade between developed countries since there are approximately no zeros. However, in the case of developing economies, the double-log specification model might not be appropriate since the probability of recording zero bilateral trade is relatively high. Since the study will be investigating samples from African countries, in which the present of zero bilateral trade is likely to exist, the double-log specification model is unacceptable. Therefore, we follow Elbadawi (1997), Longo and Sekkat (2004) and Gedaa and Kebret (2007) and employ a semi-log form for the gravity equation. In this form, while the independent variables are presented in the log form, the bilateral trade (dependent variable) is specified in levels. Since it is likely that there are cases of the dependent variable (the bilateral trade) with a value of zero, the Ordinary Least Square method (OLS) is inaccurate. Consequently, we use the Tobit technique<sup>5</sup> to estimate the gravity model as suggested by the previous studies (see for example Elbadawi 1997; Foroutan and Prichett 1993; Longo and Sekkat 2004; Gedaa and Kebret 2007) through the following equation:

$$\begin{aligned}
 Trf = & \alpha_0 + \alpha_1 \log(GDP_r) + \alpha_1 \log(GDP)_p + \alpha_2 \log(PGDP_r) + \alpha_2 \log(PGDP_p) + \\
 & \alpha_3 \log(PGDP_r - PGDP_p) + \alpha_4 \log(Dis_{rp}) + \alpha_5 \log(Land_r * Land_p) + \alpha_6 \log(Hc_r) + \\
 & \alpha_6 \log(Hc_p) + \alpha_7 \log(Tel_r) + \alpha_7 \log(Tel_p) + \alpha_8 \log(Inf_r) + \alpha_8 \log(Inf_p) + \alpha_9 \log(FDI_r) + \\
 & \alpha_9 \log(FDI_p) + \alpha_{10} \log(Cur_r) + \alpha_{10} \log(Cur_p) + \alpha_{11} \log(Bur_r) + \alpha_{11} \log(Bur_p) + \\
 & \alpha_{12} \log(Inc_r) + \alpha_{12} \log(Inc_p) + \alpha_{13} Col
 \end{aligned}$$

Where  $r$  and  $p$  refer to reporter (exporter) and partner (importer) countries respectively.  $Trf$  is real export flows through deflating the nominal value of exports using the unit value of exports

index from IMF (IFS) following Longo and Sekkat (2004). Data on export flows are gathered from IMF Direction of Trade, which is reliable as recommended by Longo and Sekkat (2004). The conventional gravity model variables are comprised of: real Gross Domestic Product (*GDP*) and real per capita GDP (*PGDP*) (in 2000 \$ constant prices) gathered from the World Development Indicators (WDI); distance between trading partners (*Dis*) measured in kilometers gathered from the following website: <http://www.distancefromto.net/countries.php>; Land (*Land*) is the total land area in kilometers gathered from the WDI; infrastructure variables include telephone (*Tel*) measured by telephone lines per 100 people also gathered from WDI; human capital (*HC*) is measured in terms of average years of schooling for population over 15 years old retrieved from Barro and Lee (2010) database. Since harmonizing macroeconomic and trade policies are seen as important factors in enhancing economic integration (see O'Connell 1997; Geda 2001), we introduce foreign direct investment (*FDI*), measured as a percentage of GDP; and inflation (*Inf*) is measured by changes in CPI as indicators for the harmonizing macroeconomic policy. Both are retrieved from WDI (refer Note 2).

For institutional quality, we follow UNCTAD (2005) and employed two proxies for institutional quality; i.e. the corruption and bureaucracy quality indices. The measurement for computing the corruption index (*Cur*) includes financial corruption in the form of demand for special payments, excessive patronage, nepotism, job reservations, 'favour-for-favours', secret party funding and suspicious close ties between politics and businesses. The value of this index ranges between six (low corrupted countries) to zero (high corrupted countries). Information regarding this index is obtained from the International Country Risk Guide (ICRG) database (ICRG 2012).

The second proxy for institutional quality is the bureaucracy quality (*Bur*), which is frequently been reflected by the degree of stability of the respective government. According the ICRG, the institutional strength and quality of the bureaucracy are other shock absorbers that tend to minimize revisions of policy when government changes. Generally, government instability will affect the performance of country's management which subsequently has negative effect on the international sector. Some parts of literature had focused their discussions regarding the impact of political economy of government management and political processes on

numerous aspects of economic performance - such as budget deficit, investment decisions and trade matters. In this regard, political instability due to political fragmentation, for instance, tends to shrink the chance of the current government to implement any beneficial reform which is likely to produce its effect in the future. The instability of the government, as experienced by many African countries obviously has an impact on the respective country's management performance including the international sector. Data for bureaucracy quality (*Bur*) are also gathered from ICRG, where high points (maximum of 4) are given to countries where their bureaucracy has the strength and expertise to govern without drastic changes in policy or interruptions in government services (ICRG 2012).

The roles of the politics in intra-African trade are represented by two variables which are the internal conflict and the role of colonization. The internal conflict variable is an assessment of political violence in the country and its actual or potential impact on governance. For countries where there is no armed or civil opposition to the government and the government does not indulge in arbitrary violence, direct or indirect, or going against its own people are given a high rate, otherwise low rating (the rate is range between 4 and 0). The internal conflict variable is constructed from three subcomponents, which are civil war/coup threat, terrorism/political violence and civil disorder; and they have equal weight. The data on this variable are collected from the International Country Risk Guide (ICRG) database (2012). In addition, we also employ a dummy variable to control for the role of colonization for the pattern of the intra-African trade flow. In fact, if most of the African countries were never being colonized before, then the best way we can capture the impact of the colonization intra-African trade flow is by assigning 'one' in the dummy variable for the pairs of the countries are colonized; otherwise zero. Unfortunately, most, if not all, the African countries have been exposed colonial regime in their history. In this study we examine that impacts of the British colonizer on the colonies' economy; which include their trade, infrastructures..., etc. In other words, we seek to examine whether countries that were previously colonized by the British have inherited an economic system that affects economic their performance in the post-colonial era. Thus, our dummy variable in this study takes the value one if the pairs of the countries were previously colonized by British; and zero if otherwise. The classification of the countries according to the colonizer is obtained from Bertocchi and Canova (2002).

In brief, the expected sign for the coefficients ( $\alpha_s$ ) in Equation 1 above is as the followings: the basic gravity model assumes that the absolute trade potential of a country depends on its total economic size ( $GDP$ ) and on its intensity of trade. Obviously, if the economic size large, the trade level is likely to be higher, so  $\alpha_1 > 0$ . Per capita GDP ( $PGDP$ ) is the conventional proxy for the level development, which reflects the trade intensity of the country. The higher the level of economic development the greater is the country intensity to trade, thus,  $\alpha_2$  is expected to be positive ( $\alpha_2 > 0$ ). The difference in the level of development between two countries might boost or shrink the intra-trade between them. Longo and Sekkat (2004) argue that the basic idea of including the difference in the level of development between two countries in the gravity model is to examine the impact of similarity or dissimilarity between two countries in the level of development on the trade flow between them. If we find  $\alpha_3$  positive, this implies that the countries have similar degree of living standard, characterized by high level of intra-industry trade, as they share several trading goods (it is called Linder Hypothesis). The difference is in the factor endowments where it will manifest in the difference in  $PGDP$ ; and this will be reflected in lower intra-industry between these countries; whereby the coefficient  $\alpha_3$ , will be negative. The greater the distance between the two countries, the lower their trade flow since it leads to increase in the cost of transport, so  $\alpha_4$  is expected to be negative. Country with large size (area) will face the problem of insufficient road network and this will lower the proportion of its output across borders, so  $\alpha_5$  is expected to be negative.

Improvements in both or each of the infrastructure variables, namely telephone and human capital are expected to boost the flow of trade between the countries; thus, the coefficients  $\alpha_6$  and  $\alpha_7$  are expected to be positive. Increase in the country's general prices of an output will lead to shrinkage in the tradable amount from this product since it is becoming less competitive in the international market; thus, the parameter  $\alpha_8$  is expected to be negative. According to Morrisset, (2000), "openness to FDI enhances international trade thereby contributing to the integration of the host country into the world economy", consequently the coefficient  $\alpha_9$  is expected to be positive. For the corruption coefficient, two conflicting arguments on its effect on trade make the predication of the coefficient  $\alpha_{10}$  sign difficult. Good bureaucracy is associated with expansion of exports flow between the countries, so  $\alpha_{11}$  is expected to be positive. Internal conflict has been shown to be detrimental for trade;  $\alpha_{12}$  is likely to be negative. Lastly, if the coefficient of the

dummy variables appears positive and significant, it is implying that the British colonizer had considerable contribution to the existing pattern of the flow of the bilateral trade in Africa, and vice versa.

#### **4. The results and discussion**

Equation 1 is estimated by using Tobit technique. The sample includes 36 African countries during the period 2001-2012 (see the countries in the appendix). All the variables, except the dummy and average years of schooling are averaged over the period 2001-2012. For the average years of schooling, we employ the average years of schooling for the year 2010 which has the highest education attainment for the population over 15 years old in each countries. The sample for these 36 African countries should contain 1260 observation. However, due to missing data and/ or incomplete data when we generate the log of *PGDP* gap, only 631 observations are available for us to do the estimation. Table 2 below reports the results for equation 1.

**Table 2 Estimated results; dependent variable is the real value of exports flow**

Explanatory variables	Coefficients	t. statistic
Constant	-2.04***	-5.14
Log GDP reporter	1.43***	6.54
Log GDP partner	2.22***	3.08
Log PGDP reporter	-1.01***	-3.82
Log PGDP partner	1.11	1.53
Log(PGDP <sub>r</sub> - PGDP <sub>p</sub> )	0.01***	3.19
Log Distance	-2.64***	- 5.11
Log Land	-0.42*	-1.72
<b>Infrastructure variables</b>		
Log Human capital reporter	1.12**	2.32
Log Human capital partner	2.48*	1.76
Log Telephone reporter	21.09	1.42
Log Telephone partner	7.64	0.89
<b>Economic policy variables</b>		
Log Inflation reporter	2.08	0.35
Log Inflation partner	-0.84	-0.23
Log FDI reporter	-10.12	-1.33
Log FDI partner	2.85**	2.16
<b>Institution variables</b>		
Log Corruption reporter	5.08	0.36
Log Corruption partner	-7.20	-0.77
Log Bureaucracy quality reporter	-9.80	-1.60
Log Bureaucracy quality partner	4.24	0.74
<b>Political variables</b>		
Log Internal conflict reporter	-3.08*	-1.68
Log Internal conflict partner	26.45	0.97
Canalization dummy variable	0.42***	3.96
Number of observation	631	
The likelihood ratio (Chi-square)	145.37 (p = 0.001)	
Notes: (*),(**) and (***) denotes significant at 10%,5% and 1% level respectively.		

The Likelihood Ratio Chi-square of 145.37 with a p-value of 0.0001 indicates that the selected explanatory variables together, have significant impact bilateral trade flow in the African continent. The results show that increase in the economic size (*GDP*) for two countries will reflect in increasing bilateral trade between them. More specifically, an increase in the *GDP* of the reporter country *GDP* by 1% will lead to increase in its bilateral trade with the other



country by on average, 1.4%. At the same time, an increase in the *GDP* of the partner country *GDP* by 1% will lead to increase in it is bilateral trade with the other country by on average, 2.2%. These outcomes are consistent with previous studies such as by Elbadwi (1997); Longo and Sekkat (2004); and Gedaa and Kebret (2007). However, the magnitude of the coefficient varies across these studies, which might be due to, for example, the period under observation for each study. Meanwhile, the coefficient of the trade intensity proxy (*PGDP*) for the partner country has the expected sign (but statistically insignificant); for reporter country although it is statistically significant, has unexpected sign. The results indicate that improvement in the country's development will reduce the bilateral trade with its partner country. Gedaa and Kebret (2007) in the case of the COMESA detected negative but insignificant influence of the trade intensity proxy (*PGDP*) variable on the bilateral trade in the case of COMESA. In contrast, Longo and Sekkat (2004), detected positive but also insignificant influence of the trade intensity proxy (*PGDP*) variable on the bilateral trade in the case of African continent. Obviously, there is no specific pattern for these coefficients in the literature. The results also show that differences in the level of development between two countries tend to increase, even marginally, the bilateral trade between these countries. These findings seem to support the Linder Hypothesis, in which countries with similar standard of living enjoy multiple intra-industry goods for trade purpose. This finding is in line with that of Gedaa and Kebret (2007) in the case of COMESA.

The coefficients of distance (*Dis*) and land area (*Land*) are significant and have the expected signs (Carrere 2002; Longo and Sekkat (2004); Gedaa and Kebret (2007)). The variable of interest, human capital has the expected sign; and is statistically significant for both the reporter and partner country. The results show that an increase of 1% in education attainment by the reporter tends to increase its bilateral trade by around 1.1%. Similarly, an increase of 1% in education attainment by the partner will result in an increase in its bilateral trade by on average, 2.5%. These findings support the argument on the considerable role of human capital in economic development for developing countries. Additionally, the findings identify, empirically, one channel through which the call for Africa's economic regionalism can be achieved. In fact many studies have arrived to a conclusion that growth in human capital is one of the crucial prerequisites in achieving sustainable economic development in the African continent (Heyneman 1999; Oketch 2000, 2002; Elu 2000; McMahon 1999). Recently, Oketch (2006) had

identified human capital as one of the key factors in improving the African region's economic productivity.

Most interesting finding is related to the significant role of FDI in improving intra-African trade. The results reveal that 1% increase in the *FDI* (% GDP) flow to the partner will boost its bilateral trade by nearly 2.9%. This finding seems to confirm the argument of Morrisset (2000) on the influence of openness to FDI on the integration of the host country into the world economy. Thus, in addition to the other expected benefits from FDI (see Dupasquier and Osakwe 2006; COMESA 2012) to economic development, in Africa to be more open to FDI seems to facilitate its attempts to integrate. In their effort for Africa's economic regionalism, policy makers should consider building a favourable investment environment.

The political proxy variables, namely, internal conflict (*Inc*) and colonization (*Col*) seem to have important role in explaining the status of trade flow in the continent. It is well known that one of the key factors behind the backwardness of the Africa is attributed to the spread of internal conflict. The results show that an increase in the internal conflict by 1% in the reporter country will reduce its bilateral trade by 3.1%. This finding is consistent with Longo and Sekkat (2004) study in which internal conflict, another face of political instability, constitutes significant obstacle in the expansion of intra-African trade.

Finally, the coefficient of the colonization dummy variables (*Col*) appears positive and statistically significant. The results seem to confirm the previous studies concerning British colonizer compared to others colonizers about the economic aspects of colonies. However, it is not clear whether the intervention of British colonizer on the economy of its colonies is for their own benefit or for the benefit of these countries. This is because the British colonizer for their own benefits might construct, for example, roads that link its colonies together (to facilitate the transportation of goods from these colonies). Thus, the existing pattern of bilateral trade between the African countries might be due to the colonization in general and that of British colonizer in particular.

## 5. Conclusion

The paper seeks to identify empirically the factors that might be hinder intra-African trade. Namely, the paper addresses the influence of the following obstacles on such trade; inadequate human capital, lack for institutional quality, mismanagement of economic policies in addition to internal conflict and colonial legacy. The results show, that with exception of institutional quality factors, the conventional determinants of bilateral trade flows as well as these obstacles have a significant impact on intra-African trade.

These results imply that building adequate human capital, besides an end itself, constitutes one of the key solutions for the observed low level of intra-African trade. The role of the FDI in the economic development in general and for regional integration is well documented in the previous studies. To accelerate the intra-African trade, the policy maker in the continent should adopt various policies to facilitate the flow of such investment into the continent. These policies include, for example, intensive and flexible tax regimes, suitable human capital, sufficient infrastructure and promotion on the culture of peace. After half a century, it is essential to conduct a critical comprehensive evaluation for the current structure of economic structure for each country and link it with the overall colonization policies. Identifying the advantages and disadvantages of colonization will help the policy maker to understand the source of power and weaknesses in their economic system that is related to colonization. This will enhance the current efforts in Africa's economic regionalism.

The data on tariff imposed by each country on imports from their trading partners are not available at this moment. Thus, further studies on the impact of such barriers on intra-African need to be more comprehensive. Since gender disparity prevails in the social and economic activities in the continent, further studies on the gender gap, in specific sector for example, might provide us with more explanations and greater understanding regarding the low level of trade flow among African countries.

## Notes:

1. See Economic Development in Africa Report (2009) “Economic Integration for Africa’s Development” for more information on the history of initiatives for regional integration in Africa.
2. According to the UNDP (2011) “Regional economic integration is much broader than efforts simply to liberalize trade. It can also include investments in regional infrastructure, harmonization of regulations and standards, common approaches to macroeconomic policy, management of shared natural resources, and greater labour mobility”.
3. See the UNDP (2011) alternative suggestion on how to develop the industrial sectors in the Africa through the economic integration with itself.
4. The five African countries that export to Africa with more than half of their total exports during 2004-2006 are Swaziland, Djibouti, Togo, Mali and Zimbabwe. The 14 countries that export more than a quarter of their exports to Africa during the same period are Kenya, Senegal ,Malawi ,Namibia, Uganda, Zambia, Burkina Faso ,Niger , Rwanda ,Cape Verde , Côte d’Ivoire .Benin, Ghana ,United Rep. of Tanzania , Gambia ,Eritrea and Lesotho.
5. See Geda and Kebret (2007) for the formal description and formulation of the gravity model and a guide to the literature.

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## Appendix 1 Reporter and partner countries

Algeria	Guinea	Rwanda
Angola	Guinea-Bissau	Senegal
Burkina Faso	Kenya	Sierra Leone
Cameroon	Liberia	Somalia
Congo, Dem. Rep	Libya	South Africa
Congo, Rep	Madagascar	Sudan
Cote d'Ivoire	Malawi	Tanzania
Egypt	Mali	Togo
Ethiopia	Morocco	Tunisia
Gabon	Mozambique	Uganda
Gambia	Niger	Zambia
Ghana	Nigeria	Zimbabwe