ANALYSIS OF GOVERNANCE AND EXPORT PERFORMANCE IN THE EAC

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Declaration

I declare that this research paper is my original work and that it has not been presented for a degree award in any other university or institution.

…… Date: …….

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This research paper has been submitted for examination with approval from my supervisor.

…… Date: …….

DR. KENNEDY OSORO

Dedication

To my dad, Mr. Muthoka Sila, it’s been a long way coming; to my late mum, Mrs. Loise Muthoka, still loud and fresh; to my siblings, the way is clear.

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Glory be to God! I am indebted to my supervisor, Dr. Kennedy Osoro, whose scrupulous guidance has shaped this thesis in both detail and structure. I thank the AERC for the CMAP scholarship – for the unusual academic, networking and horizon-defining opportunities attached therewith. I further acknowledge support from the whole faculty at the School of Economics, both in the coursework period and over the development of the research work. Particularly, I thank Prof. Mwabu who has been a continuous source of inspiration and guidance – and will be for many days to come. Lastly, I celebrate my classmates in the Sep-2014 class, and one Majune Kraido Socrates, who have been of sustained help through mock debates. That notwithstanding, all responsibility over this document is fully mine.

List of Abbreviations

AFDB	African Development Bank
EAC	East African Community
EACSO	East African Common Services Organisation
EU	European Union
FDI	Foreign Direct Investment
FE	Fixed Effects
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
MENA	Middle East and Northern Africa
OECD	Organisation for Economic Cooperation and Development
OIC	Organisation of Islamic Cooperation
OLS	Ordinary Least Squares
RE	Random Effects
UN	United Nations
US	United States
WITS	World Integrated Trade Statistics
WTO	World Trade Organisation

Abstract

This study focused on the link between quality of governance and export performance in the EAC region, using six aspects of governance as explanatory variables for exports in a fixed effects panel model. The results showed a positive relationship between the quality of governance and exports of countries in the EAC in the period 1996 - 2014. Among the six indicators used, political violence, regulatory quality, rule of law, and control of corruption were significant. We also found that better quality of governance improves exports by amplifying the capital and labour elasticities of exports, and by enhancing responsiveness of private sector exports to exchange rate appreciation. We also interacted governance with the control variables in the model to study the mechanism of transmission between the two. The coefficients of the interactions' models were highly significant for capital, labour and real exchange rate.

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CHAPTER ONE: INTRODUCTION

1.0 Background Information

The EAC is a regional intergovernmental economic bloc comprising of six countries namely: the Republics of Kenya, Uganda, Burundi, Rwanda, South Sudan and the United Republic of Tanzania. Four of the six member countries of the EAC are landlocked (Uganda, Rwanda, South Sudan and Burundi) while the other two (Kenya and Tanzania) have an extensive coastline along the Indian Ocean. The founding objective of the bloc was to unify individual countries with a common history, and shared goal for sustainable socioeconomic development, and hence to streamline regional effort towards economic growth and development through implementation of common policies and programmes (UN, 2014; Davies, 2008).

Although the current structure of the bloc was promulgated in 2001, the idea for economic union started to form earlier in the 20th century (AFDB, 2014). The very first hint of the regional union dates back to 1902 when the British government joined Kenya and Uganda to ease administration of the railway services (Davies, 2008). By 1905, the two countries were using a common currency, a customs union in 1917, with Tanzania (then Tanganyika) becoming a member later, after being handed over to Britain by the League of Nations (AFDB, 2014). Nevertheless, the actual EAC was not formed, until 1967, after the countries got independence and Africans took over the EACSO. However, coupled with differences in ideological and strategic alliances of leaders in the three countries, the lack of political goodwill led to the collapse of the EAC a decade later in 1977 (Davies, 2008).

After a decade of deliberations, the EAC was reconstituted in November 1999; Rwanda and Burundi acceded into the EAC in July 2007. A customs union was launched on 1st July 2005 (East African Business Council, 2008); a common market came into effect from 1st July 2010, with all of Kenya, Rwanda, Uganda, Burundi and Tanzania ratifying it; a monetary union protocol was signed by the five countries in November 2013 (EAC, 2013). South Sudan just became an official member of the EAC in March 2016, making the present six member states.

1.1 Governance Profile

The meaning of governance henceforth is applied in a narrower sense to mean political institutions and structures where country–level policies are made and implemented. Kaufmann,

Kraay and Mastruzzi (2005) set out up to six indicators of the quality of political governance in any country. They span such issues as accountability of government, effectiveness, quality of regulations, control of corruption, political stability and reliability of legal structures. Thus, and onwards, governance is limited to the scope of governance within the "Kaufmann indicators", and governance and political governance are used interchangeably. Other forms, in which the term governance is generally applied, such as corporate governance and social governance, are not the focus of the present analysis. Although their effects on export performance at the country level may be non-trivial, availability of data (for social governance) and the fact that they are not available as country level statistics (for corporate governance) places them outside the scope of this work.

Each of the EAC member countries has a unique history of political governance, and that has implications on their economic performance. Kenya got independent from the British in December 1963 and began to allow for multi-party democracy. Up until 1982 when Kenya became a *de facto* one party state, the economy performed well, with an economic growth rate averaging about 7% per annum. The Despite returning to multi-party governance in 1992, Kenya continued to record poor economic performance. In the 2000s and 2010s, Kenya's political governance and economic growth have been fairly stable and improving. Kenya is regarded the most stable and prosperous state among the EAC members (Roberts and Fagernas, 2004). However, it continues to grapple with corruption and ethnic polarization.

Uganda obtained independence form the British in October 1962. Contrary to Kenya's colonial experience, the local Ugandans were allowed to participate in colonial politics long before independence (The Commonwealth, 2016). Yet between 1971 and 1979, Uganda experienced unparalleled institutionalized murder, expropriation, expelling, and persecution of civilians, especially Asians, Jews, intellectuals and Christians. In the following years, instability and political uncertainty led to very poor economic growth rates in the country and strained relations with usual trade partners. From mid-1980s, the government focused on reviving the economy through macroeconomic stability and peaceful, inclusive, democratic governance. As a result, the country placed among the fastest growing countries in the world in the 1990s and 2000s (World Bank, 2016).

Tanzania was under the Arab and German rule, before becoming an official colony of the British in 1919. Mainland Tanzania gained independence in 1961 and united with Zanzibar in 1964. Immediately, the government began to tilt towards idealistic socialism. As a result, a political system emerged that enacted policies that impeded foreign investment in the domestic economy (Aminzade, 2003). In this period, the economy grew at negative rates. Owing to the failure of the socialistic experiment, in the late 1980s and early 1990s, Tanzania constitutionalized multi-party democracy, and started to commit more to globalization and market economies. Since then, the economy started to record positive growth rates, and economic welfare improved sustainably (Muganda, 2004). The government continues to participate in global markets, but the slump of the 1960s and 70s still affects its international commitments.

Rwanda and Burundi gained independence from the Belgians in 1962 as one state but the two split immediately. Their ethnic constitution, political history and economic potential are quite similar and simultaneous. They were engulfed in civil tensions and political instability in the 1970s, 80s and 90s. Since the aftermath of Rwanda's 1994 genocide, the country has committed to foster intra-national peace and economic coexistence. On the contrary, Burundi continues in successive waves of political instability of varying magnitudes. Rwanda enjoys more tranquility and international recognition as a conducive environment for doing business. Rwanda is among the fastest growing economies in the continent, averaging about 8.8% growth rate per year (Malunda, 2012).

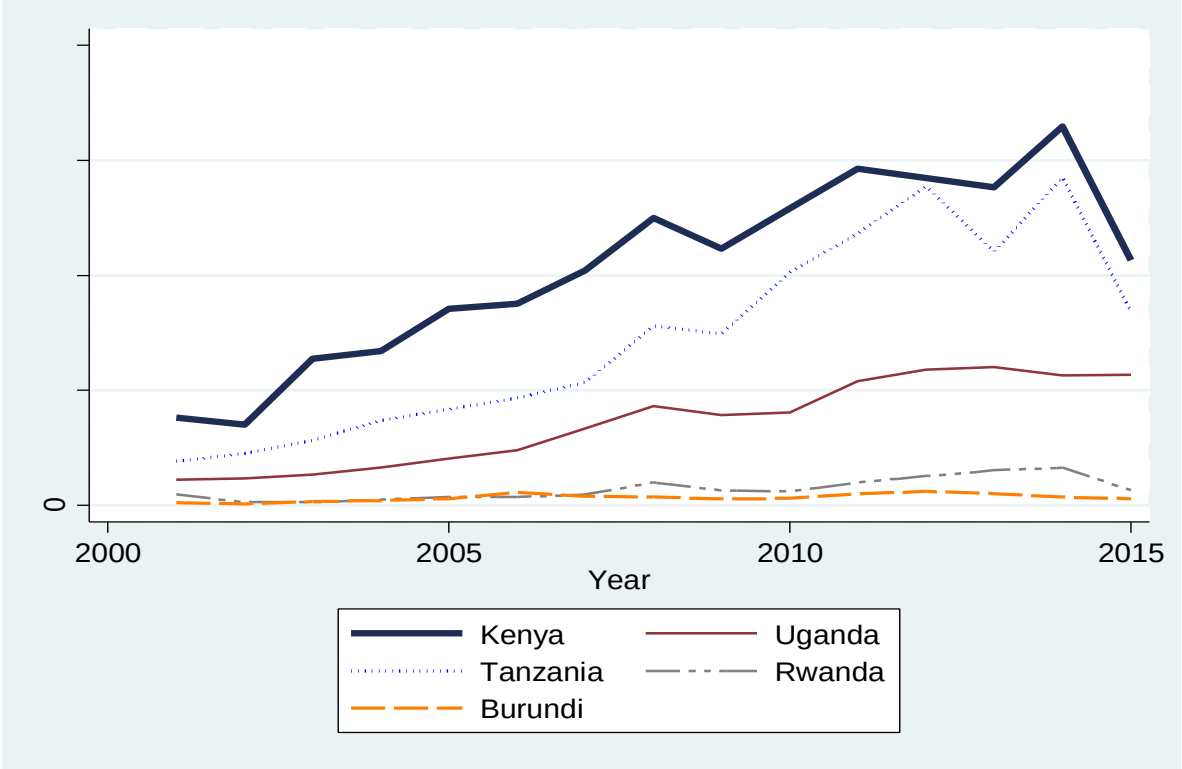
Lastly, South Sudan, which acceded into the EAC early 2016, got independence from Sudan in July 2011 after a protracted struggle. However, the new state plunged into a civil struggle that threatened the political stability and democracy. It is hoped that sustained peace and commitment to economic reconstruction will help the nation to reap maximal benefits from its petroleum potential.

1.3 Key Exports

The major product exports from the EAC countries are primary exports. Coffee, tea, mate and spices were the most important export products for the region, both by volume and inclusivity. They accounted for up to 17.44% of total exports in the region for the period 2001-2015 (International Trade Centre, 2015). Coffee, tea, mate and spices were the leading product exports

for all others except Rwanda and Tanzania. In Rwanda, they accounted for 30.56% of total exports – second to only ores, slag and ash at 34.33% of total exports – while they accounted for just 5.69% of total exports in Tanzania between 2001 and 2015. The leading exports in Tanzania over the same period were pearls, precious stones and metals (at 31.09% of total exports) followed further below by ores, slag and ash (at 13.17%). Other significant export products from the EAC region include horticulture, petroleum products, tobacco products, and fish products as shown in **Figure 1.** Export performance has been on a fairly increasing but volatile trend for most of EAC members, except for Burundi whose trend remains stable – but it remains the lowest in the region.

Figure 1: Trends of Total Exports by EAC Countries between 2001 and 2015



Data Source: International Trade Centre, 2015.

1.4 Export Destinations

Export destinations for member countries of the EAC follow various patterns. Exports to former colonial powers, or countries that share the language of EAC members, are significantly high. However, forging of trade relations with other countries are evident. **Table 1** summarizes the key

export destinations and export products by country. Only Kenya exports at least 50% of total exports comprising of consumer goods. All other EAC member countries, except Tanzania whose major exports comprise of intermediate goods, have raw materials as the most prominent export product.

Table 1: Major Export Destinations for EAC Member Countries

Country	Top export products (% of total)	Top export destinations (% of total)
Burundi	Raw materials (43%) Consumer goods (29%) Intermediate goods (25%)	DRC (20%), UAE (18%), Switzerland (17%), India (11%), Kenya (9%), Germany (9%) and Belgium (6%)
Kenya[1]	Consumer goods (64%) Intermediate goods (17%) Raw materials (13%)	Uganda (12%), UAE (8%), UK (8%), Tanzania (8%), Netherlands (7%), US (6%) and South Africa (5%)
Rwanda	Raw materials (45%) Consumer goods (35%) Intermediate goods (12%)	Tanzania (28%), DRC (24%), Uganda (12%), Kenya (11%) and Austria (4%)
Tanzania	Intermediate goods (48%) Raw materials (32%) Consumer goods (14%)	India (22%), South Africa (12%), China (12%), Kenya (8%) and DRC (5%)
Uganda[2]	Raw materials (38%) Consumer goods (29%) Intermediate products (24%)	Kenya (13%), DRC (11%), Sudan (10%) Rwanda (9%) and South Sudan (7%)

Data source: WITS 2014

1.5 Problem Statement

Exports from the EAC vary greatly across individual countries. Even among the better performing countries like Kenya, exports are highly volatile. For some countries, like Rwanda and Burundi, exports have almost stagnated. A further cursory analysis suggests that political

[1] Only 2013 data is available for Kenya.
[2] Only 2013 data is available for Uganda.

governance may explain export variance among member countries. Although the general trend of country exports in the EAC is increasing, one observes that the increase is more pronounced for Kenya and Tanzania than for Rwanda and Burundi. More explicitly, Burundi, which had continued instability, exhibits the least growth (almost zero) in exports. Rwanda, whose three decades of civil war ended in mid-1990s is slightly better than Burundi. This trend maps onto the observed quality of governance in the various countries. Even for the relatively stable Kenya, one observes slumps in exports around election years when political environment is uncertain. As a result, this study seeks to understand the relationship between governance and exports of countries in the EAC. It examines whether governance matters in export performance, and the channel of transmission between governance and exports in the region.

1.6 Objectives

1.6.1 General Objective

The study explored the role of political governance on the exports of the countries in the East Africa Community.

1.6.2 Specific Objectives

The following were the specific objectives of the study:

i. To establish the effect of quality of governance on export performance in the East African Community,
ii. To establish the mechanism by which governance affects export performance, and
iii. To draw policy recommendations from the results.

1.7 Research Questions

i. How does the quality of governance affect export performance of countries in the East African Community?
ii. By what channel does quality of governance affect export performance in the region, and
iii. What are the policy lessons for export-led growth in the East African Community?

1.8 Justification of the Study

This study sought to provide a possible explanation for the differences in export flows from the EAC member countries. Member participation and goodwill has particularly been impeded by lack of mutual commitment, a position that arises from a notion of an unfair distribution of the

gains from integration. Yet, in spite of continued struggle to explain the variance in export growth among EAC member countries, no study has attempted to analyse political governance and export performance in the EAC. That notwithstanding, research in other parts of the world is not conclusive on the possible correlation between governance and exports. Literature is divided on the effect of quality of governance on export performance; some find positive correlation while others find no correlation (for instance Ahmed and Said, 2012). Besides, in the wake of instability in the EU, a much adored model for regional integration, such information was necessary, not only to cement state commitments in the EAC, but also to inform export policy on how to maximize benefits from EAC membership.

The results underscored how political governance bears upon trade, even when other variables are equated, and how governance reforms are just as important as other inputs of the trade sector. The basic goal for this work was to provide recommendations on the governance qualities that may maximize production for exportation and incentivize actual participation in export markets.

1.9 Organization of the Document

The present section has introduced the major issues in exports and political governance among EAC member countries. It has also outlined the research problem and the objectives that guided the study. Chapter 2 provides an overview of some relevant theories and literature. At the end of the section is an overview pointing to the particular contribution of this work to existing literature. In Chapter 3, the methodology, consisting of the conceptual modeling and the empirical specifications, is provided. Chapter 4 presents the data analysis, results and interpretations, while Chapter 5 summarizes the findings, and concludes the work with policy recommendations.

CHAPTER TWO: LITERATURE REVIEW

2.1 Theoretical Literature

2.1.1 Classical Theories of International Trade

The essence of the classical bundle of theories of trade is the concept of different endowments among countries. For the mercantilists, it meant that countries are definitely justified to export, hence increase their wealth. The mercantilist philosophy was that importation makes other countries to gain wealth at the importers' expense. This theory advocates exportation but restricts importation, in a bid to ensure that countries gain from international trade. Accordingly, exporters are gainers while importers are losers in trade.

The theory of absolute advantage advanced by Adam Smith corrected the anti-trade environment that resulted from entrenchment of the mercantilist philosophy. It asserted that countries could still gain from importing goods. However, this could only happen in three ways: one, if the cost of producing such goods domestically was higher than that of buying them overseas, two, if the utility contribution of the imported goods was far more than that of locally produced ones, and, three, if both one and two were true.

In addition, Ricardo's theory of comparative advantage traced the opportunity for mutually beneficial trade even when one country had an absolute disadvantage in producing all consumables in the global market (Salvatore, 2013). It states that a country will export, hence specialize in exporting, that good for which it has the biggest comparative advantage (smallest comparative disadvantage) in producing, and import that good for which the converse is true.

2.1.2 Modern Theories of International Trade

The Hecksher-Ohlin theory predicts trade flows in a market characterized by a vector of commodities and a vector of factors of production. Each commodity is intensive in at least one factor. Each country will export the commodity whose production uses its most abundant factor of production intensively. The Hecksher-Ohlin theory was extended into four addendums which predict trade patterns when the economy changes. First, the factor-price equalization theorem states that, given the conditions for Hecksher-Ohlin theory, trade in goods and services leads to equalization of factor prices across countries' borders. In addition, the Rybczynski theorem asserts that, if one production factor increases and the other remain constant, exports of the

product which uses the increasing factor intensively will increase while the exports of the other product reduces, provided factor and product prices remain constant. The Stolper-Samuelson theorem asserts that, if a tariff is put on the importable product, the import competing sector experiences increasing in the overall incomes, both for suppliers of factors of production as well as producers. Lastly, Leonteif's Paradox provides a contradictory empirical result for the Hecksher-Ohlin theory. Conducting a test of the Hecksher-Ohlin theory using US data, Leonteif found that the US, being capital intensive, exported labour-intensive products and imported capital-intensive products.

Another modern trade theory is the new trade theory advanced by Krugman (1980), which predicts trade patterns between homogenous countries. The new trade theory dwells on increasing returns to scale, product differentiation and imperfect competition in markets to explain trade patterns. Increasing returns to scale are a benefit to a country if it can guarantee sufficiently large domestic market for the commodities produced. Average production costs are assumed to fall with volume of output due to high fixed costs. As a result, as companies produce larger volumes for the domestic market, they realize benefits of increasing returns to scale which enable them to offer lower prices in the global market. Therefore, countries are expected to export those commodities for which they have a large domestic market. Exporters are also able to sustain export demand, even if other factors remain homogenous across countries, through product differentiation.

2.1.3 New Institutionalism Theory

In this theory, trade flows are also explainable by the system of rules and customs that characterize both how trade is done and the environment in which trade is done. Accordingly, a country with better quality institutions will export more than a similar country with poor quality institutions. These institutions determine levels of risk, uncertainty and investment security (Greif, 1992; North, 1992a & 1992b; Dutraive, 2009; Berkowitz, Moenius and Pistor, 2006), initial and post-trade distribution of productive resources and trade benefits (Acemoglu, Johnson and Robinson, 2005; Acemoglu and Robinson, 2008), sustainability of mutually beneficial trade relations (Berkowitz, et.al., 2006; North, 2000), efficiency and economic potential of producing in given regions (Acemoglu and Robinson, 2008), consumption preferences of citizens (North, 1991 & Hodgson, 2006), and a country's affinity to international assistance in infrastructure and

other development projects (Acemoglu and Robinson, 2008 & Dutraive, 2009). Information asymmetries arising from the structure of institutions may also deter prompt response to improvements in the prices of exports (Morrissey, 2005). As such, institutions establish a fabric of incentives and disincentives for investment, consumption and trade patterns in a society, and so over time. Entrepreneurship and individuals' propensity to invest and participate in exportation are all derived from the institutional environment (Meyer, 2001; Francois and Machin, 2007).

2.2 Empirical Literature

In this section, the relevant empirical studies are reviewed and discussed to illustrate the existing gaps in literature. So far, there has been only one attempt to study the governance-export nexus in the EAC region. Ochieng' (2015) used similar data as this work to explore the relationship between quality of governance institutions and trade flows in the EAC. Using a gravity model, he found that better quality institutions increase intra-EAC trade flows, and that this effect is mixed across countries, with some reducing exports because of improvement in governance.

Roy (2014) analysed the effect of corruption on cross-border trade flows in GATT-WTO framework. He interacted GATT-WTO membership with corruption levels and found that exporting member countries were more disadvantaged by corruption than importing ones. Millogo (2015), whose article on the effect of governance quality on trade found that trade flows between France and the MENA reduce with more corruption in France, supports these ideas.

Among developing countries, Fosu (2003) looked at the effect of political instability on the export performance of Sub-Saharan Africa and found that the deleterious effect of political instability was very pronounced on exports. In addition, Meon and Sekkat (2004) studied the impact of institutions on the performance of manufacturing exports in the MENA region. They estimated a log-linear panel relationship between institutional quality and performance of manufacturing exports. The results indicated that lack of effective governance, lack of rule of law and high corruption levels have big, negative and significant impacts on a country's manufactured exports. Meon and Sekkat (2008) studied the role of governance in export performance using a sample of 60 countries drawn from the various continents and 2SLS method of estimation. The results showed that effects of institutional quality vary across classes of exports and institutional indicators. Only manufactured exports were significantly affected (positive) by institutional quality, while non-manufacturing exports were uncorrelated with governance.

On the other hand, Levchenko (2007) explored the effect of quality of institutions in the exporting country on US imports using industry-level cross-sectional data spanning 389 industries and 116 countries. The results indicated a positive and significant impact of improving the rule of law in the exporting country on its share of total US imports for the industry that is more dependent on institutions. De Groot, Linders and Rietveld (2004) investigated the

institutional determinants of trade in a bilateral set up. The results indicated that institutions in the exporting country have a bigger influence on bilateral flow of exports than institutions in the importing country. Yogatama and Hastiadi (2015) used political liberalization and governance quality as institutional indicators to explain Indonesian exports to countries in the OIC. The results showed a positive relationship between home country's democracy and performance of exports, but a negative one with democracy in destination countries.

On the contrary, some authors have found that export performance is not correlated with political governance. For instance, Ahmed and Said (2012) explored the determinants of firm-level exports in Pakistan, India, Bangladesh and Sri Lanka using World Bank Enterprise Survey data. The results suggested that corruption does not affect export, except when firms depend on external finances. It also indicated that export performance is independent from competition from unlicensed firms, and efficiency of licensing institutions. At the same time, De Souza and Lochard (2012) found that institutions related to a country's colonial heritage could not explain the difference in trade performance among African countries.

Another set of literature did not focus on governance, but rather explained exports using other variables. For example, Majeed and Ahmad (2006) explored the determinants of exports in developing countries using data from the World Development Indicators. They found a non-significant relationship between FDI and exports, but found positive significant relationships with labour force, savings, development assistance, communication technology, and real effective exchange rate. These results are slightly contradicted by Wang, Wei and Liu (2010), who also explored the factors of export flows between OECD countries, using gravity model approach. They found that the volume of exports of a country are positively related with the GDP of trading countries, FDI inflows, R & D investments, differences in factor endowments, and whether the economies are identical in GDP sizes.

2.3 Overview of Literature

The theories of trade flows reviewed are not independent of each other. New institutionalism theory, upon which this study is based, extends the classical and modern systems of trade theories by appreciating the environment in which trade takes place. Of necessity in new institutionalism theory are the production and transaction costs that emanate from poor political

governance and institutions. Nevertheless, except for some generous mention, previous literature barely appreciated these costs explicitly in the estimated framework.

However, the empirical impact of political governance on export flows differs across authors, geographical contexts, governance indicators, classes of export products, and the theoretical models assumed. Empirical literature points to the importance of governance institutions in the determination of export flows. Particularly, governance in the exporting country is more correlated with exports than governance in the importing country. That notwithstanding, the nexus between exports and governance has barely been studied in the context of the EAC. Previous literature failed to explicitly model these two classes of costs, namely production and transaction costs of poor governance. There has been no regard for endogeneity, which is especially explicit in inclusion of price with demand and supply variables (for example, Meon and Sekkat, 2004). Endogeneity is also possible due to exclusion of relevant explanatory variables (for example, capital and experience in Ahmed and Said, 2012).

This study extended the literature in three aspects. First, it analysed the role of political institutions in export performance using an updated dataset in novel context, the EAC. Second, it explicitly conceptualized production and transaction costs of poor governance in the conceptual model. Third, it attempted to address endogeneity by controlling for factor endowments in the countries. Therefore, it sticks closer to economic theory in determination of export production and supply at the country level.

CHAPTER THREE: METHODOLOGY

3.1 Conceptual Framework

In order to study the effects of governance on export performance, we conceptualise the postulates of the new institutionalism theory into a neoclassical framework of production and supply of exports. This set up excels in endogenizing both production and transaction cost effects of poor governance in export markets. Poor governance enters exports function through, first, production and, second, trade processes.

Firms whose objective is to maximize profits do the exportation. Using the representative agent theorem (Lucas, 1976), a micro-simulation of *country i* is illustrated using a representative *firm i* operating within that country. Supposing a perfectly competitive economy where product and factor prices are determined exogenously, profit maximization is equivalent to output maximization. Firms consider the quality of governance in the country in various ways. First, poor governance causes inefficiencies in the production process through bureaucratic delays, rent seeking, high and uncertain contracting costs, labour market inefficiency, and other transaction costs. Second, some governments may force closure of markets for particular products. Lastly, the supply (or efficient allocation) of factor inputs like capital, labour, *inter alia*, may be inhibited significantly by political factors in such countries. Eq. (1) shows the optimization problem for *firm i.* It uses the Cobb-Douglas specification of the production function.

$$\text{Max } Q_i = A_i K_i^{\alpha} L_i^{\delta}; \qquad \text{subject to } C_i \leq r_i K_i + w_i L_i \tag{1}$$

Where Q_i is the *potential* output of firm i, A_i is the technical coefficient for firm i, K_i and L_i are capital and labour stock for firm i respectively, α and δ are the respective elasticities, C_i is the total cost for firm i, while r_i and w_i are the market unit prices for capital and labour respectively.

Because of the perfect market assumption, when a firm chooses the optimal capital and labour, the total cost C_i is determined. The cost constraint in the subsequent discussions is, therefore, a constant. By the mechanisms above, poor quality of governance has specific consequences: some capital will be committed to pay hiked contracting costs, or rents to various authorities, or to maneuver bureaucratic procedures; minimum wages and graft-laden jobs in government bureaus will make firms hire less skilled labour or labour without sector specific skills at wages above their marginal productivity; in worse cases, the production process may be subject to bad politics

leading to a fall in A_i (see Fosu, 2012). Other possible effects include closure of the market and direct reduction of supply of capital and labour. Given these possible effects, eq. (1) is augmented with governance to get eq. (2):

$$\text{Max } Q_i \mid \textit{quality of governance} = A_i K_i^{\alpha} L_i^{\delta} - \mu_p (A_i K_i^{\alpha} L_i^{\delta}); \quad \text{subject to } C_i \leq C_0 \qquad (2)$$

Where $0 < \mu_p < 1$ is the proportion of *potential* output of firm i lost in the production process due to bad governance. It is expected that μ_p increases with poor governance.

In order to arrive at the exports of firm i, hence, country i, we note that countries export a surplus of domestic production (Krugman, 1980 and Yogatama and Hastiadi, 2015). Therefore, adjusting for domestic consumption, the supply of exports from country i *at a given price and time* is conceptualized as in eq. (3):

$$E_i \mid \{g_0; \text{exchange rates}\} = A_i K_i^{\alpha} L_i^{\delta} - \mu_p (A_i K_i^{\alpha} L_i^{\delta}) - Q_d - \mu_d (A_i K_i^{\alpha} L_i^{\delta}) - \mu_e (A_i K_i^{\alpha} L_i^{\delta}) \qquad (3)$$

Where E_i denotes the observed exports by firm i, g_0 denotes the existing quality of governance in country i, Q_d denotes the quantity of i's output consumed within the country, μ_d denotes the proportion of potential output lost in the domestic markets due to bad governance, and μ_e denotes the proportion of potential output lost in exporting process by a domestic firm. We observe that $\mathbf{0 < \mu_p < 1}$, $\mathbf{0 < \mu_d < 1}$, and $\mathbf{0 < \mu_e < 1}$. Besides, since consumers and traders in the domestic markets are more shrewd in bad governance regimes, $\boldsymbol{\mu_d < \mu_e}$. Lastly, $\boldsymbol{\mu_p + \mu_d + \mu_e = \mu}$, where $\boldsymbol{\mu}$ denotes the composite effect of poor governance on observed exports. In order to estimate the effect of poor governance on exports, the conceptual model now is

$$E_i \mid \{g_0; \text{exchange rates}\} = A_i K_i^{\alpha} L_i^{\delta} - \mu (A_i K_i^{\alpha} L_i^{\delta}) - Q_d \qquad (4)$$

$$\boldsymbol{\mu} = \begin{cases} 1, & \text{if poor governance completely depletes the market for the product} \\ 0 < \mu < 1, & \text{if poor governance depletes the market partially} \\ 0, & \text{if governance encourages the market perfectly.} \end{cases}$$

In order to interpret $\boldsymbol{\mu}$ with regard to exports only, Eq. (4) assumes that $\mu_d = 0$, and that the portion of μ_p relating to producing for domestic market is also 0 (or absorbed in Q_d).

In order to study the mechanism between quality of governance and exportation, governance was interacted with the other variables. The conceptual model appreciates the complementarity between resource endowments and production and trade environment in fostering bigger export volumes. The resulting relationship is shown in eq. (5):

$$E_i \mid \{g_{0;}\, \text{exchange rates}\} = A_i\,(g_0K_i)^{\alpha}\,(g_0L_i)^{\delta} - g_0Q_d \qquad (5)$$

3.2 Empirical Model Specification

One objective of this study was to determine the effect of quality of governance on export performance at country level. A log-linear relationship was assumed, following the analogy of a representative firm used in the previous section. However, the implementation of log-linearisation was limited by the available data measurements, resulting to usage of percentage measurements, other than exact logarithmic transformations. Nevertheless, the interpretation of percentage and logarithmic relationships are usually equivalent, so the conceptual implication was minimal. The subscript i henceforth denotes country i. Eq. (6), which is a version of eq. (3) was estimated. The subscript t denotes year t for all variables.

$$E_{it} = \ln A_i + \alpha K_{it} + \delta L_{it} + \mu \ln g_{0it} + \beta_3 RER_{it} - \beta_4 GDP_{it} + \acute{e}_{it}^{3} \qquad (6)$$

Where E_{it} is observed total exports as a percentage of the GDP to control for size of economy, K_{it} denotes capital formation as a percentage of GDP, L_{it} is the labour force as a percentage of population, $\ln g_{0it}$ is the logarithm of the quality of governance, RER_{it} denotes the real effective exchange rate of the US dollar (used as a proxy for price in the usual supply function), GDP_{it} denotes the percentage growth rate GDP to control for domestic demand, , and $\acute{e}_{it}$ denotes the stochastic error term.

Eq. (7) was estimated in order to analyze the transmission mechanisms between quality of governance and export performance. The notations retained the same meaning as in eq. (6).

$$E_{it} = \ln A_i + \alpha \ln (g_0K_{it}) + \delta \ln (g_0L_{it}) + \beta_3 \ln (g_0RER_{it}) - \beta_4 \ln (g_0GDP_{it}) + \acute{e}_{it} \qquad (7)$$

[3] This model takes into consideration data measurement issues. Exports, capital, labour and GDP were measured as percentages in the dataset, hence, modeling their logs would be *non-sensical* in theory. In equation (7), however, a backward manipulation was used to get the ratios for these variables, and the ratios were multiplied with governance indices. It was therefore prudent to model transmission mechanisms in equation (7) as log-linear, but still exports remained as percentages. In spite of this, the interpretation in both models remains a percentage relationship.

3.3 Data Types and Sources

The study used a time-series panel dataset for five member countries of EAC from 1996 to 2014 (excluding South Sudan for which data was not available). Data on the governance aspects was not available for years prior to 1996, and that limited the scope of the study to post-1996 era. Data on exports, GDP, per capita GDP, capital stock, labour force, and real exchange rate was obtained from the World Development Indicators. Data on governance indicators was obtained from World Bank's World Governance Indicators dataset released yearly. There are up to six indicators of governance quality provided, each being an index ranging between about -2.5 to 2.5, with higher values indicating governance of better quality. Since each indicator measures a unique aspect of governance, it was expedient to estimate the effect of each in this study. Using them in turns as explanatory variables has been common in recent research anyway (for example, Meon and Sekkat, 2008). Hence, this study used them in turns as well. To normalize these indices, and to be able to obtain logarithms, 3.5 was added to each value so that the least measure was about 1. The six aspects of governance for which data is available include:

1) Voice and accountability: it measures the extent to which governments are accountable to the electorate, and are actually put on check through established regulations and laws. It measures the freedom of economic agents, including media and markets.

2) Political stability: measures the prevalence of political unrests, protests and possibility of government overturn through violent means. Political instability renders investment survivals purely random and raise the risk profile of a country.

3) Government effectiveness: measures the extent to which the sitting government can be relied upon to formulate and implement progressive policies. It is a measure of both governmental good will and ability in the economy.

4) Regulatory quality: measures the extent to which the government and other bodies implement policies that motivate, as opposed to inhibiting, economic activity.

5) Rule of law: this measures the efficiency of the legal structures of a country. It deals with the predictability of judicial procedures and outcomes, their fairness and expediency, even when dealing with foreign investors. Practically, this deals with contract agreements and enforcement.

6) Control of corruption: measures the extent of rent-seeking and entrenchment of underhand transactions between public and private agents in an economy. It indicates prevalence of unscrupulous behavior in the governance systems of a country.

3.4 Hausmann Test

Since the research is a panel study, in order to estimate the most efficient and consistent model coefficients, we used the Hausman test to decide on the model that suits our data. There are usually three possible models and each is based on stringent assumptions on the stochastic error term as well as the cross-country heterogeneities. These models are pooled OLS, random effects and fixed effects panel models.

3.4.1 Pooled OLS Panel Models

These panel models assume that there is no heterogeneity across the cross-section and does not consider time dependence of parameters. However, the resultant parameters are inconsistent if cross-country heterogeneity is non-trivial or non-random, or there is non-trivial time dependence in the model. Even without heterogeneity and time dependence, the standard error estimates are usually inflated, leading to faulty statistical inference. Eq. (8) shows the model under Pooled OLS.

$$\text{Ln } E_{it} = \lambda + \ln Xit'\beta + \acute{e}_{it} \quad (8)$$

3.4.2 Random Effects Panel Models

This model considers possible heterogeneity across countries and over time, contrary to the Pooled OLS. However, these are further assumed to be random ***iid***'s with mean 0 and constant variance, hence, estimable together with the stochastic panel error term. The parameters under RE models are inconsistent if the country and/or time effects are not distributed as *iid's* with mean 0 and constant variance. Supposing v_i denotes country specific effects, the model to be estimated under random effects model is eq. (9) below

$$\text{Ln } E_{it} = \lambda + \ln Xit'\beta + E_{it,} \text{ where } E_{it} = \acute{e}_{it} + v_i \quad (9)$$

3.4.3 Fixed Effects Panel Models

This model assumes that the estimated model exhibits significant heterogeneity across countries or over time. As such, it estimates these effects as unique parameters in the model. If indeed the

heterogeneities exist and are non-random, only the FE model can give consistent estimates of β. Eq. (10) is estimated under the fixed effects panel model.

$$\text{Ln } E_{it} = v_i + \pi_t + \ln Xit'\beta + \acute{e}_{it} \quad (10)$$

Where v_i denotes the country-specific intercept and π_t denotes the time specific intercept.

CHAPTER FOUR: RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the data analysis, and interpretation and discussion of results. Section 4.2 presents the descriptive statistics together with discussions, Section 4.3 presents the correlation analysis, and Section 4.4 concludes the chapter by presenting the fitted panel regression model.

4.2 Descriptive Statistics

Table 4.1 presents summary statistics for the dataset. The dataset was a strongly balanced panel with 70 observations which span the five countries over 14 years between 1996 and 2014. A number of observations are worth mentioning. First, on average, the countries under study had a relatively high expected-prevalence of political instability. At 0.87, the mean of the natural logarithm of political violence is the least among all governance indicators. Other poor performing indicators include rule of law, control of corruption, and voice and accountability of governments were at 1.00, 1.00, and 1.01 respectively. We noted, however, that there was a greater variance in the prevalence of political violence across countries than in other governance indicators. The standard deviation is greater for political violence (0.21) than for any other indicator (the next largest is voice and accountability at 0.16). Second, on average, countries in the sample perform best in the quality of regulation, as is evident in a greater mean for the quality of regulation. They also manifest good quality governance in terms of government effectiveness.

In overall, capital formation in the region had an average of 21.9% of the GDP. However, exports accounted for only 15% of the GDP over the same period. It is evident that the capital inflows did not translate to exportation. It is also possible that the capital formed actually went into export oriented sectors, but whose structure takes a long time to yield.

Table 2: Descriptive Statistics

Variable		Mean	Std. Dev.	Min	Max	Observations
Exports/GDP (%)	Overall	15.1631	5.803415	5.585064	28.50903	N = 70
	Between		5.504408	7.750958	21.86271	n = 5
	Within		3.014886	8.370926	23.01202	T = 14
Capital formation/GDP (%)	Overall	21.85158	6.116048	2.781138	33.24037	N = 70
	Between		2.808681	19.08304	26.00366	n = 5
	Within		5.56809	3.990175	31.72889	T = 14
ln labourforce/population	Overall	44.30612	4.612008	37.16961	50.20562	N = 70
	Between		5.057327	38.04428	49.17502	n = 5
	Within		0.7161235	42.14184	45.88344	T = 14
GDP growth rate	Overall	5.727549	2.981669	-8	12.7457	N = 70
	Between		1.962439	2.968978	8.121902	n = 5
	Within		2.400992	-5.241429	10.35134	T = 14
real exchange rate (US$)	Overall	107.5384	24.5944	76.17744	199.337	N = 70
	Between		12.90529	96.55567	128.4391	n = 5
	Within		21.67293	64.59304	178.4364	T = 14
ln (voice and accountability)	Overall	1.007845	0.1746204	0.5595618	1.214462	N = 70
	Between		0.1611065	0.7935407	1.162681	n = 5
	Within		0.0970934	0.6799544	1.171861	T = 14
ln (political violence)	Overall	0.8743371	0.2800886	-0.0139241	1.272367	N = 70
	Between		0.2164725	0.5529985	1.146426	n = 5
	Within		0.2010424	0.2028846	1.279287	T = 14
ln (governance effectiveness)	Overall	1.044206	0.1456245	0.5727537	1.273803	N = 70
	Between		0.1335279	0.8079791	1.136933	n = 5
	Within		0.0820732	0.7404153	1.181076	T = 14
ln (regulatory quality)	Overall	1.087221	0.1649148	0.6026915	1.321655	N = 70
	Between		0.1518322	0.8336976	1.219119	n = 5
	Within		0.092126	0.7216721	1.317812	T = 14
ln (rule of law)	Overall	1.00369	0.1596354	0.5721882	1.275469	N = 70
	Between		0.1276535	0.814788	1.129311	n = 5
	Within		0.1107168	0.5574928	1.260774	T = 14

ln (control of corruption)	Overall	1.004182	0.1591523	0.7231479	1.46552	N = 70
	Between		0.1422661	0.85765	1.229063	n = 5
	Within		0.0943561	0.7187399	1.240639	T = 14

4.3 Correlation Analysis

Appendix 1 presents the correlation matrix of the variables. Indicators of governance quality exhibit the largest correlation with exports, although there is a big variance between control of corruption and the rest. Voice and accountability (0.71) and regulatory quality (0.67) are the most correlated while control of corruption exhibits the least correlation with exports at 0.07. Although we noticed in the previous section that governments of the countries in the sample, on average, perform better in regulatory quality and government effectiveness than in voice and accountability, the correlation matrix illustrates a greater relationship between exports and voice and accountability than with both. The small correlation between control of corruption and exports, in spite of the poor ranking of countries in the sample in control of corruption, suggests the existence of resilience and survival innovations among domestic exporters who operate in regimes of high incidence of corruption.

Some noteworthy observations here include a negative correlation between labour force and exports at -0.44, and between reduction of political violence and capital at 0.62. Besides, voice and accountability and control of corruption exhibit a negative correlation, although the coefficient is fairly small. Other variables have the expected correlation patterns, including high correlation coefficients among the indicators of the quality of governance.

4.4 Empirical Results

The Hausman test was carried out to choose the suitable estimation framework for the dataset. Appendices 2, 3 and 4 provide the Pooled OLS model, fixed effects and random effects panel model pre-estimations upon which the Hausman test procedure was carried out. Appendix 5 presents the result of the Hausman test procedure. The assumption that the cross-country differences in the coefficients are distributed randomly is rejected. The p-value (Prob>chi2 = 0.0000) is significant at 1% level of significance, suggesting that differences in the coefficients were systematic. Upon finding evidence for cross-country fixed effects in exports, the Least Square Dummy Variable (LSDV) technique was adopted to estimate these effects.

4.4.1 Effect of Quality of Governance on Export Performance

The fixed effects panel model was fitted to estimate the composite effect of various aspects of governance on the exports of EAC countries. Dummies were introduced to control for the systematic differences in country exports. The reported intercept for Rwanda was zero because Rwanda was used as the reference country in estimations. Regarding the quality of governance, the six indicators were used in turns. Table 3 presents the fitted fixed effects estimation for export performance. The reported coefficients correspond to the model depicted by eq. (11):

$$E_{it} = \ln A_i + \alpha K_{it} + \delta L_{it} + \mu \ln g_{0it} + \beta_3 RER_{it} - \beta_4 GDP_{it} + \acute{e}_{it} \quad (11)$$

All of the six estimated models were significant at 1% level of significance. Adjusted R^2 was at least 0.8124 for all estimations. The coefficients had the expected signs, except for labour. They were significant for capital, labour and exchange rates, but not for GDP growth rate. In the model including political violence, GDP growth rate had a positive coefficient, contrary to expectation. Nevertheless, it was not significant, just as in the other five estimations. The coefficients for cross-country heterogeneity were all significant, except for Tanzania when voice and accountability was used the measure of quality of governance. Majority of them were significant at 1% level.

In terms of aspects of governance, the results provided evidence for a positive relationship between quality of governance and export performance of countries in the sample. The positive relationship was significant for political violence, regulatory quality, rule of law and control of corruption but remained non-significant for voice and accountability, and government effectiveness. The estimated quality-of-governance elasticity of exports was 7.7, 9.6, 12.5 and 9.3, for political violence, regulatory quality, rule of law and control of corruption, respectively. These effects were all significant at 1% level except regulatory quality, which was significant at 5% level. Although the elasticities corresponding to voice and accountability and government effectiveness were not significant, they remained positive, at 3.4 and 5.5 respectively. By being positive across the six aspects of governance, the results conformed fully to the theory of new institutional economics, which asserts that better quality institutions increase trade flows and economic wellbeing.

Table 3: Effects of Quality of Governance on Export Performance[4]

	Dependent variable: Exports/GDP (%)					
	Indicator of Quality of Governance Used					
Variable	*voice and accountability*	*political violence*	*government effectiveness*	*regulatory quality*	*rule of law*	*control of corruption*
Capital/GDP (%)	0.3399 (0.0909)	1.9822 (0.0792)	0.3544 (0.0713)	0.3393 (0.0669)	0.2582 (0.0678)	0.3470 (0.0646)
Labour/population (%)	-1.7446 (0.5073)	-2.2356 (0.4746)	-2.0606 (0.5607)	-2.3652 (0.5432)	-2.2459 (0.4663)	-2.0946 (0.4893)
RER (US$)	0.0399 (0.0142)	0.0239 (0.0137)	0.0363 (0.0146)	0.0388 (0.0136)	0.0371 (0.0127)	0.0322 (0.0137)
GDP growth (%)	-0.1330 (0.1397)	0.0177 (1232)	-0.0896 (0.1303)	-0.0634 (0.1266)	-0.0478 (0.1179)	-0.0837 (0.1238)
Ln (Quality of governance)	3.4020 (4.9069)	7.7062 (2.1214)	5.4777 (5.0022)	9.6397 (4.0934)	12.4811 (3.1786)	9.3044 (3.3572)
Country Dummies						
Burundi	-12.0452(2.3982)	-9.6875 (2.2132)	-10.9808 (2.4390)	-11.5469 (2.2634)	-10.7184 (2.1245)	-9.4392 (2.3746)
Kenya	-11.3454 (5.8057)	-13.9683 (5.2411)	-13.2111 (6.1642)	-17.8420 (6.2796)	-14.6373 (5.1852)	-10.9254 (5.3603)
Tanzania	2.8776 (1.9050)	3.5684 (1.0173)	4.2907 (1.1497)	3.5488 (1.0827)	3.2444 (1.0129)	5.7573 (1.2381)
Uganda	-12.7362 (4.8094)	-14.9733 (4.3934)	-14.4878 (5.1478)	-18.7388 (5.3355)	-17.0900 (4.4386)	-12.5827 4.5047)
Constant	84.7221 (24.7877)	107.4842 (22.6987)	96.4843 (25.2954)	107.1715 (24.6745)	100.6248 (21.9704)	93.4924 (23.0296)
Adj. R (sq)	0.8124	0.8450	0.8146	0.8269	0.8496	0.8324
P-value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Note: Standard errors are in parenthesis.

[4] As discussed in the footnote (3) to equation (6), the variables were measured differently in the dataset. Exports, capital, labour and GDP were collected as percentages; hence, it would be theoretically unfounded to convert them to logs. However, this did not affect the interpretation of the relationship, since logs would equally lead to a percentage-percentage relationship. On the other hand, real effective exchange rate was kept as an index and interpreted as such.

On the other hand, the results of the estimation indicated that a 1% increase in labour leads to a decrease of at least 1.7446% in the exports of countries in the EAC. This contradicted the neoclassical growth theory where labour is seen as a vital input in the production of exports. However, this anomaly was not overly strange, given the structure of the economies in the sample. The role of labour in exports of a country depends on a number of factors, including reallocation effects of acquisition of skills, and the relation between labour dynamics and the dominant export sector. Since the dominant kind of agriculture practiced in the region does not use the gained skills intensively, entrants in the labour market continued to shift from the export-oriented sector (agriculture) to non-export oriented sectors (such as *jua kali* and small scale manufacturing). This logic is documented by Okhankhuele and Opafunso (2013) who found that agricultural productivity suffered due to rural-urban migration in Nigeria. Besides, UNCTAD (2015) observed that although many developing countries exported agricultural products, their productivity in manufacturing and service sectors was higher. Therefore, it would be expected that, in the sample, labourforce grew outside agriculture, while in agriculture labourforce decreased through rural-urban migration as well as through cross-sectoral reallocation.

4.4.2 The Mechanism of Governance in Export Performance

An interactive model was estimated in which the explanatory variables were interacted with the particular aspect of governance. The estimation approach followed the structure set out in Table 3, accounting for country-specific fixed effects and entering one aspect of governance at a time. Table 4 tabulates the results that were obtained. All the estimated models were fairly powerful, as indicated by significance at the 1% level, with the least and largest Adjusted R^2 being 0.7504 and 0.8066 respectively. The coefficients reported correspond to the parameters in eq. (12):

$$E_{it} = \ln A_i + \alpha \ln (g_0K_{it}) + \delta \ln (g_0L_{it}) + \beta_3 \ln (g_0RER_{it}) - \beta_4 \ln (g_0GDP_{it}) + \acute{e}_{it} \qquad (12)$$

One caveat in estimating the model was that the interaction between the indicators of quality of governance and Uganda country dummy was highly correlated with the other explanatory variables in the model. This problem manifested itself in majorly two ways. First, the software automatically omitted all other country-specific intercepts in the estimation (see Appendix 6 for illustration). Second, even the estimated coefficients were barely significant – in line with econometric theory – except the Uganda country-specific coefficient. The Uganda country-

specific variable was, therefore, dropped in the reported estimations. The effect was limited to a significant diminishing of the size of the other coefficients, but better through improved significance of and ability to observe other country specific effects of quality of governance in the region. This tact further reserved the intended coefficients by which to test the mechanism by which the quality of governance bears on exports. It is also noteworthy that this model just dropped one variable, as opposed to using it as a reference level. As such, the country-specific coefficients reported were absolute effects rather than differences.

The results in Table 4 indicated that quality of governance affects exports through capital, labour, and real exchange rate. The estimated elasticities corresponding to the interaction between quality of governance and capital was both positive and significant at 1% level for all the six aspects of governance. In addition, the elasticity corresponding to the interaction between real exchange rate and quality of governance was also big, positive and significant at the 1% level, except for political violence where it was significant at the 5% level. The results suggested that improved quality of governance affects exports by amplifying the productivity of capital and labour in the production and transaction processes, as well as in expediting responsiveness to favourable macroeconomic conditions. Even though the elasticity corresponding to the interaction between labour and quality of governance remained negative, it was still greater in the interacted model than the one reported in Table 3. The coefficient corresponding to the GDP growth rate was not significant in any of the estimations, suggesting that governance does not affect exports through domestic markets for exportable products.

According to the results, if the quality of governance improves by 1%, the stock of capital being constant, the level of exports accruing due to capital increases by 5.36% for voice and accountability, 5.42% for political violence, 8.09% for government effectiveness, 6.47% for regulatory quality, 4.70% for rule of law and 5.33% for control of corruption. This is because better quality of governance improves efficiency of capital in production and reduces trade costs (Acemoglu et.al., 2005). Furthermore, if the quality of governance improves by 1%, the real effective exchange rate being constant, the level of exports accruing due to real exchange rate increases by no less than 4.5% across all the indicators of quality of governance. This highlights the importance of good (credible) governance in order for traders to benefit from macroeconomic stability. As noted in the previous section, labour market and export sector dynamics in this

Table 4: Mechanism of Governance in Export Performance

	Dependent variable: Exports/GDP (%)					
	Indicator of Quality of Governance Used					
Variable	*voice and accountability*	*political violence*	*government effectiveness*	*regulatory quality*	*rule of law*	*control of corruption*
ln ((capital/GDP)*governance)	5.3631 (1.9633)	5.4225 (1.8725)	8.0910 (1.6198)	6.4710 (1.5810)	4.7042 (1.7121)	5.3325 (1.4855)
ln ((labour/pop.)* governance)	-7.2676 (8.3477)	-2.4128 (5.5833)	-23.1416 (7.1078)	-12.1635 (5.6188)	-3.4632 (5.9944)	-7.3849 (7.0313)
ln (RER (US$)* governance)	6.4272 (1.7734)	4.5303 (1.8233)	6.4896 (1.8655)	6.1318 (1.8955)	6.6825 (1.8370)	5.4925 (1.9961)
ln (GDP growth * governance)	-0.1102 (0.6168)	-0.0698 (0.5608)	0.1016 (0.6116)	0.2262 (0.6224)	0.1401 (0.6118)	0.0959 (0.6436)
Country Specific Effects of Improved Governance						
ln (Burundi*governance)	-8.0912 (1.2791)	-11.2364 (1.4930)	-9.3638 (1.4536)	-7.7922 (1.5944)	-7.4442 (1.3477)	-8.1781 (1.4498)
ln (Kenya*governance)	3.5808 (1.0914)	6.2897 (1.2830)	3.9339 (1.0864)	4.1563 (1.0147)	6.1139 (1.3648)	5.5533 (1.4251)
ln (Rwanda*governance)	-2.2831 (1.4041)	-4.4556 (2.0083)	1.1663 (1.8693)	-1.2573 (1.2205)	-3.0104 (1.5159)	-2.8053 (2.5618)
ln (Tanzania*governance)	1.6948 (2.0880)	-0.5941 (1.8595)	4.9901 (1.5328)	3.2287 (1.1356)	1.4777 (1.4364)	2.3133 (2.0067)
ln (Uganda*governance)						
Constant	-16.6046 (9.7589)	-5.0750 (9.7410)	-13.0210 (10.0170)	-13.5580 (10.5116)	-18.8982 (10.1029)	-10.9219 (10.6850)
Adj. R (sq)	0.7796	0.8066	0.7733	0.7647	0.7726	0.7504
P-value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Note: Standard errors are in parenthesis.

sample support a negative relationship between labourforce and export performance. This was reinforced in the interactions model.

A coincidental marvel in the estimation was the cross-country heterogeneity in the exports' returns to good governance. By interacting the country-specific dummies with the quality of governance, the study stumbled on diverse effects of improving governance in each country. For example, while improved governance in all aspects would improve exports in Kenya by no less than 3.58%, the same would reduce exports by no less than 7.44% in Burundi. Ochieng' (2015) documented similar, but less conclusive, insights on cross-country relationship between exports and quality of governance. While the present research found a consistent evidence that Kenya would benefit and Burndi lose improving all aspects of quality of governance, the results were just more nuanced for Ochieng' (2015).

CHAPTER FIVE: CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This chapter presents a summary of the findings, the conclusions and the policy impact of the research.

5.1 Key Findings

The study estimated the relationship between governance and export performance based on a strictly supply-based framework for exports. It found that export performance of countries in the EAC increases with an improvement in the quality of governance. This finding agrees with Fosu (2003), De Groot et.al. (2004), Levchenko (2007) and, most recently, Yogatama and Hastiadi (2015). The governance elasticity of exports rose up to a high of 12.48 for the rule of law, and a least of 7.71 for political violence. The figure was lower for voice and accountability, and government effectiveness, but these two were not statistically significant.

Governance institutions affected export performance through the capital and labour relations in production, and real exchange rate variations in trade transactions. The coefficients for the interactions between quality of governance and capital stock were all positive and significant at the 1% level. The coefficients ranged from 4.02 to 8.09, suggesting a big impact of the quality of governance on the capital productivity. This agrees with the postulations of Greif (1992) and other proponets of new institutionalism theory like Acemoglu and Robinson (2008 & 2010). It also finds that the coefficients for the interactions between quality of governance and the real exchange rates are all positive and highly significant. The interaction between labour and the quality of governance was significant in explaining exports in the region only for government effectiveness, regulatory quality and rule of law. All the coefficients, however, were negative, contrary to neoclassical theory of economics. This could be explained by the increased rural urban-migration and reallocation of labour away from agriculture, which forms the biggest source of exports to these countries.

5.3 Conclusions

This study set out to explore the existence of and measure the impact of the quality of governance on the exports of countries in the EAC. The results discussed confirmed that quality of governance indeed affects the volume of exports from a country. However, the volume differs

from one aspect of governance to another. A percentage improvement in rule of law, regulatory quality and control of corruption, respectively, leads to an increase in a country's exports more than a percentage improvement in voice and accountability, government effectiveness, and even political violence indices. The effect is not significant for government effectiveness, and voice and accountability, while it is significant for the other four aspects of governance.

It further showed that capital-labour production relations in export sector, and forex market implications are key channels of impact between quality of governance and export performance in the EAC. Improvement in the quality of governance increase the gains accruing to exporters' acquisition of additional capital and labour, and opportunism in times of improved real exchange rates. Out of the six aspects of governance studied, more importance is laid on some than others for different countries in the sample, depending on, possibly, the entrenchment of the private sector and structure of the export sector.

This outcome suggests significant differences in the structure of the export sector. Improving governance in Kenya benefits the export sector because exporters are braced by experience to take advantage of better market conditions. Lack of developed private sector and entrenchment of public-owned export firms, which survive on government inefficiencies, may make Burundi's exports to reduce when governance improves and avoids such inefficiencies. In summary, generally all countries in the sample would benefit from improved governance different countries. For some it may be necessary to support the private sector in order to maximize the gains though. According to the results, Tanzania would benefit by improving regulatory quality and government effectiveness, while Kenya would benefit by improving in all the six indicators. For Burundi and Rwanda, majority of the coefficients are negative, suggesting a need to prioritize reforms in the structure of the economies in favour of vibrant private-sector led economies.

5.4 Policy Implications

First, in order to increase the volume of exports, all of the EAC member countries need to improve the quality of governance. Emphasis should be laid on control of political violence, reduction of regulatory impediments to trade, enhancing rule of law and arresting wanton levels of corruption in the region. Improvement in these aspects of governance would not only lead to

higher productivity and returns to capital and labour according to the results, but also provide a further incentive for foreign direct investment in export sectors and additional acquisition of skills among the local population. While these benefits of improved governance are straightforward and generally robust in the estimated model, the country specific heterogeneities point to significant systemic cross-country differences that may either amplify or nullify the overall benefits a country accrues from better governance. This forms the basis for another policy recommendation.

Second, policy and structural reforms are still necessary to ensure a vibrant private-sector-led export sector in these countries. For countries like Burundi and Rwanda, the data suggests that the export sectors are highly dependent on the existing governance institutions. As a result, improvements in the quality of governance – which corresponds to a reduction in government inefficiencies and failures – leads to reduction in country-specific exports. It is important for these countries to enhance independence of the private sector and its responsiveness to market conditions in order to reap maximum benefits from improvements in the quality of governance.

5.5 Areas of Further Research

Future research should attempt to disaggregate the relationship between exports and governance according to type of export products in the EAC (like Meon and Sekkat, 2008), and study the empirical foundations of contradicting country-specific effects of quality of governance on exports.

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APPENDICES

Appendix 1: Correlation Analysis

	exports/ GDP (%)	Capital/ GDP (%)	labor/ Population (%)	Exchange rate	GDP growth (%)	Control of corruption	rule of law	regulatory quality	Government effectiveness	Political violence	Voice and accountability
exports/ GDP (%)	1										
capital/ GDP (%)	0.25	1									
Labor/population (%)	-0.4390	0.2282	1								
Exchange rate	0.2485	-0.2911	-0.2565	1							
GDP growth (%)	0.1141	0.2562	0.2249	-0.0931	1						
control of corruption	0.0771	0.1942	0.5251	0.0127	0.4528	1					
rule of law	0.4902	0.5919	0.1650	-0.2059	0.3676	0.5358	1				
regulatory quality	0.6734	0.3436	-0.2679	-0.012	0.3105	0.3922	0.7715	1			
government effectiveness	0.5339	0.3343	0.0297	0.0701	0.4614	0.6686	0.7895	0.8552	1		
political violence	0.5137	0.6217	0.3246	-0.0274	0.3196	0.5812	0.8482	0.6457	0.7634	1	
voice and accountability	0.7069	0.5336	-0.3366	-0.0149	0.1151	-0.185	0.4778	0.5135	0.3317	0.4514	1

Appendix 2: Pooled OLS Pre-Estimation Results

```
. reg egdp kgdp lbpop rer_us growth_gdp voi_acc
```

Source	SS	df	MS	Number of obs	=	70
				F(5, 64)	=	19.09
Model	1391.15697	5	278.231394	Prob > F	=	0.0000
Residual	932.737479	64	14.5740231	R-squared	=	0.5986
				Adj R-squared	=	0.5673
Total	2323.89445	69	33.6796297	Root MSE	=	3.8176

egdp	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
kgdp	-.013215	.1069739	-0.12	0.902	-.2269199	.2004899
lbpop	-.2370599	.1267038	-1.87	0.066	-.4901798	.01606
rer_us	.0508697	.0200079	2.54	0.013	.0108993	.0908401
growth_gdp	.2066962	.1626541	1.27	0.208	-.1182427	.5316351
voi_acc	21.33251	3.770279	5.66	0.000	13.80051	28.8645
_cons	-2.199089	7.663705	-0.29	0.775	-17.5091	13.11092

Appendix 3: Fixed Effects Model (Pre-Hausmann Test)

```
. xtreg egdp kgdp lbpop rer_us growth_gdp voi_acc LD, fe
note: LD omitted because of collinearity

Fixed-effects (within) regression               Number of obs      =        70
Group variable: Country                         Number of groups   =         5

R-sq:                                           Obs per group:
     within  = 0.3956                                         min =        14
     between = 0.3319                                         avg =      14.0
     overall = 0.3059                                         max =        14

                                                F(5,60)            =      7.85
corr(u_i, Xb)  = -0.7779                        Prob > F           =    0.0000
```

egdp	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
kgdp	.3398653	.0908705	3.74	0.000	.1580973	.5216334
lbpop	-1.744559	.5072735	-3.44	0.001	-2.759257	-.7298609
rer_us	.0399103	.0142056	2.81	0.007	.0114949	.0683257
growth_gdp	-.132977	.1397064	-0.95	0.345	-.4124314	.1464774
voi_acc	3.401981	4.906851	0.69	0.491	-6.413183	13.21714
LD	0	(omitted)				
_cons	78.07223	22.51516	3.47	0.001	33.0352	123.1093
sigma_u	7.4698443					
sigma_e	2.5135139					
rho	.8982916	(fraction of variance due to u_i)				

```
F test that all u_i=0: F(4, 60) = 21.91                     Prob > F = 0.0000
```

Appendix 4: The Random Effects Pre-estimation

```
. xtreg egdp kgdp lbpop rer_us growth_gdp voi_acc LD, re

Random-effects GLS regression                   Number of obs     =         70
Group variable: Country                         Number of groups  =          5

R-sq:                                           Obs per group:
     within  = 0.2165                                         min =         14
     between = 0.9013                                         avg =       14.0
     overall = 0.7090                                         max =         14

                                                Wald chi2(6)      =     153.50
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.0000
```

egdp	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
kgdp	.2673617	.1082727	2.47	0.014	.0551511	.4795723
lbpop	-.5335368	.1245097	-4.29	0.000	-.7775713	-.2895022
rer_us	.0341173	.0175097	1.95	0.051	-.000201	.0684356
growth_gdp	.3737318	.143713	2.60	0.009	.0920594	.6554041
voi_acc	.2798241	5.386885	0.05	0.959	-10.27828	10.83792
LD	-6.753034	1.381496	-4.89	0.000	-9.460716	-4.045351
_cons	30.92008	9.442612	3.27	0.001	12.4129	49.42726
sigma_u	0					
sigma_e	2.5135139					
rho	0	(fraction of variance due to u_i)				

Appendix 5: Hausman Test for Fixed Effects

.

	Coefficients			
	(b) fixed	(B) .	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
kgdp	.3398653	.2673617	.0725036	.0480289
lbpop	-1.744559	-.5335368	-1.211022	.649389
rer_us	.0399103	.0341173	.005793	.006023
growth_gdp	-.132977	.3737318	-.5067088	.1118404
voi_acc	3.401981	.2798241	3.122157	3.448138

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(3) = (b-B)'[(V_b-V_B)^(-1)](b-B)
= 27.69
Prob>chi2 = 0.0000
(V_b-V_B is not positive definite)

Appendix 6[5]

```
. reg egdp k_rol l_rol rer_rol gdp_rol bur_rol ken_rol rwa_rol tz_rol ug_rol
note: bur_rol omitted because of collinearity
note: ken_rol omitted because of collinearity
note: rwa_rol omitted because of collinearity
note: tz_rol omitted because of collinearity
```

Source	SS	df	MS		
Model	190.938772	5	38.1877544	Number of obs	= 14
Residual	40.803671	8	5.10045888	F(5, 8)	= 7.49
				Prob > F	= 0.0069
Total	231.742443	13	17.8263418	R-squared	= 0.8239
				Adj R-squared	= 0.7139
				Root MSE	= 2.2584

egdp	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
k_rol	6.302291	7.349817	0.86	0.416	-10.64642	23.251
l_rol	-195.9549	118.5853	-1.65	0.137	-469.4131	77.50328
rer_rol	-16.53883	10.28876	-1.61	0.147	-40.26476	7.18709
gdp_rol	.0354048	1.951395	0.02	0.986	-4.46452	4.53533
bur_rol	0	(omitted)				
ken_rol	0	(omitted)				
rwa_rol	0	(omitted)				
tz_rol	0	(omitted)				
ug_rol	190.6043	101.8585	1.87	0.098	-44.28187	425.4904
_cons	-60.1296	59.23651	-1.02	0.340	-196.7292	76.47004

[5] The aspect of governance used in this appendix is **R**ule **O**f **L**aw (ROL). K= capital, l=labour, rer=real effective exchange rate (proxied by US$)

Appendix 7: Summary of Significance of Coefficients – Effect of Governance on Export Performance

	Dependent variable: Exports/GDP (%)					
	Indicator of Quality of Governance Used					
Variable	*voice and accountability*	*political violence*	*government effectiveness*	*regulatory quality*	*rule of law*	*control of corruption*
Capital	0.3399***	1.9822**	0.3544***	0.3393***	0.2582***	0.3470***
labour	-1.7446***	-2.2356***	-2.0606***	-2.3652***	-2.2459***	-2.0946***
RER (US$)	0.0399***	0.0239*	0.0363**	0.0388***	0.0371***	0.0322**
GDP growth (%)	-0.1330	0.0177	-0.0896	-0.0634	-0.0478	-0.0837
Quality of governance	***3.4020***	***7.7062******	***5.4777***	***9.6397****	***12.4811*****	***9.3044*****
Country Dummies						
Burundi	-12.0452***	-9.6875***	-10.9808***	-11.5469***	-10.7184***	-9.4392***
Kenya	-11.3454*	-13.9683**	-13.2111**	-17.8420***	-14.6373***	-10.9254**
Tanzania	2.8776	3.5684***	4.2907***	3.5488***	3.2444***	5.7573***
Uganda	-12.7362**	-14.9733***	-14.4878***	-18.7388***	-17.0900***	-12.5827***
Constant	84.7221***	107.4842***	96.4843***	107.1715***	100.6248***	93.4924***
Adj. R (sq)	0.8124***	0.8450***	0.8146***	0.8269***	0.8496***	0.8324***
P-value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

*** denotes significance at 1%, ** significance at 5% and * significance at 10% levels respectively.

Appendix 8: Summary of Significance of Coefficients – Mechanism of Quality of Governance

	Dependent variable: Exports/GDP (%)					
	Indicator of Quality of Governance Used					
Variable	*voice and accountability*	*political violence*	*government effectiveness*	*regulatory quality*	*rule of law*	*control of corruption*
ln ((capital/GDP)*governance)	5.3631***	5.4225***	8.0910***	6.4710***	4.7042***	5.3325***
ln ((labour/pop.)* governance)	-7.2676	-2.4128	-23.1416***	-12.1635***	-3.4632***	-7.3849
ln (RER (US$)* governance)	6.4272***	4.5303**	6.4896***	6.1318***	6.6825***	5.4925***
ln (GDP growth * governance)	-0.1102	-0.0698	0.1016	0.2262	0.1401	0.0959
Country Specific Effects of Improved Governance						
ln (Burundi*governance)	-8.0912***	-11.2364***	-9.3638***	-7.7922***	-7.4442***	-8.1781***
ln (Kenya*governance)	3.5808***	6.2897***	3.9339***	4.4563***	6.1139***	5.5533***
ln (Rwanda*governance)	-2.2831	-4.4556**	1.1663	-1.2573	-3.0104*	-2.8053
ln (Tanzania*governance)	1.6948	-0.5941	4.9901***	3.2287***	1.4777	2.3133
ln (Uganda*governance)						
Constant	-16.6046*	-5.0750	-13.0210	-13.5580	-18.8982*	-10.9219
Adj. R (sq)	0.7796***	0.8066***	0.7733***	0.7647***	0.7726***	0.7504***
P-value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

*** denotes significance at 1%, ** significance at 5% and * significance at 10% levels respectively.