



**Strathmore**  
UNIVERSITY

**IMPACT OF POLITICAL CONFLICT ON INTERNATIONAL TRADE;  
A CASE OF ELECTORAL VIOLENCE IN KENYA**

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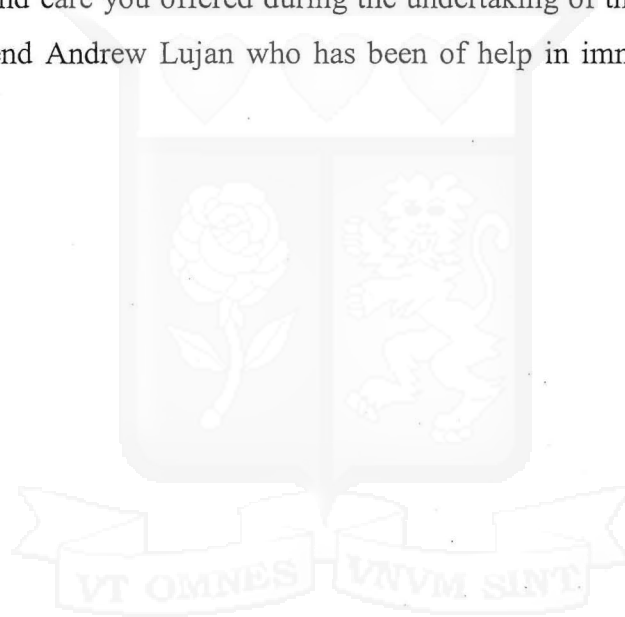
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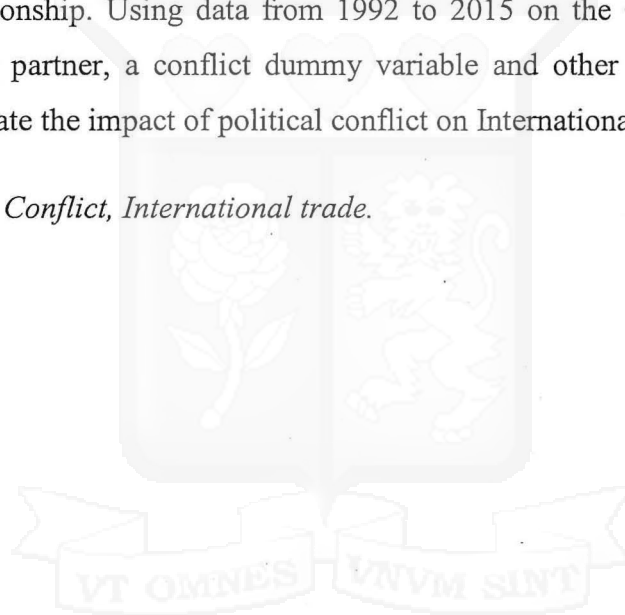
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## ABSTRACT

Political conflict has been a major setback for developing economies over the years and the effect on the economy cannot be ignored. International trade which is significant in development is not spared when internal conflict arises. Using a gravity model this paper will focus on the impact of political conflict on International trade in Kenya. The study will use panel data from Kenya and 5 of its main trading partners to measure this relationship empirically. The paper will pay attention to political cycles in Kenya and the variable of interest will be conflict. The value of trade with a trading partner will be the dependent variable in this relationship. Using data from 1992 to 2015 on the GDP, distance between Kenya and a trading partner, a conflict dummy variable and other controls in the gravity model, I will investigate the impact of political conflict on International trade.

**Key words;** *Political Conflict, International trade.*



# 1. INTRODUCTION

## 1.1 Background

Most developing economies in Africa experience uncertain political cycles; this can be attributed to several factors among them being poor governance. Among the major courses of uncertain political cycles is electoral violence. This is a common phenomenon in African economies and such cases have seen development slow down. One of the worst cases was the Rwandan genocide in 1994 which saw hundreds of thousands die. Electoral violence affects the economy in negative ways, both socially and economically. This paper aims to look at the effect of internal conflict on international trade to establish whether political conflict in Kenya affects International trade; the focus will be on the behavior of exports and imports during election and post-election years if there was electoral violence. The paper will focus on a developing economy; Kenya, which has had cases of violence after polls since the year 1992, the cycle skipped the 2002 and 2013 elections which were peaceful. Violence erupted in most regions within the country in the year 2007, a civil war that attracted international attention; this was fueled by political rivalry which translated to interethnic conflicts. Globalization has been significant in improving Less Developed Countries economies since trade has several benefits among them being strengthening ties between nations by bringing people together in peaceful and mutually beneficial exchanges and as such contributes to peace and stability. When Kenya is in conflict the International community is concerned since some of the stakeholders are affected directly or indirectly by the violence. The International Community responded to the situation in 2007 with a clear view that the strategic position held by Kenya both in the region and in the continent, could not be allowed to drown according to a report by (Waki & Kriegler, 2009). The occurrence of electoral violence in Kenya has affected stakeholders during election years and as such uncertain political cycles have had an impact on Kenya's economy over the years since the violence in 1992 and the most severe in 2007 which affected the economy significantly.

## **1.2 Post-Election Violence in Kenya**

The trend towards violence surrounding elections in the third wave of democratization in Sub-Saharan Africa surprised many who “assumed incorrectly that most countries were heading down a one-way path to democracy and development” according to (Mueller 2008, p. 205). Kenya has experienced uncertain political cycles over the years, this is after internal conflict was experienced in 1992, 1998 and 2007-2008 which was the most fatal. Although the 1997 elections passed off with less violence than had been the case in 1992, events in January 1998 put paid to any hopes that political violence might be a thing of the past in Kenya (Kanyongolo & Lunn, 1998). On 30th December 2007, following the announcement of the presidential election results, violence broke out in several places across Kenya amid claims that the Electoral Commission of Kenya had rigged the presidential elections. Mass demonstrations and violence spread throughout the country, killing over 1,300 people and displacing over 600,000 people (Kenya Red Cross, 2008). The violence was caused by political rivalry between Raila Odinga and Mwai Kibaki, it was fueled by ethnicity and political history especially in Rift valley region where the Kikuyus and the Kalenjins were not in terms. Their conflict dated from president’s Moi era when the Kalenjins fought the kikuyus in Rift valley in 1992 and 1998. Odinga had campaigned to appeal to the poor and youth vote, while Kibaki emphasized the economic success of the country (ICG, 2013). Although voting was done in order, there was clear manipulation at the tallying stage. The pre-election polls conducted and published through the media showed that Orange Democratic Movement was in the lead. However, when the presidential election results announced by the Electoral Commission of Kenya indicated both a rapid disintegration of Odinga’s large lead and a 2.5 percent margin between the two leading candidates Odinga and Kibaki, suspicions of tampering with the votes was high since Orange Democratic Movement had won ninety-nine seats at the parliamentary level to the Party of National Unity forty-three. Violence has affected the Kenyan economy and social activities in Kenya largely not to mention the political landscape in 2008 which saw the introduction of a coalition government between Raila Odinga who would act as prime minister and Kibaki who would be president.

### 1.3 Kenya and International Trade

Merchandise trade is an important aspect of economic growth, The Asia-Pacific region is the largest trading region in the world, accounting for a 39% share of world exports and a 37% share of world imports according to a report by Asia-Pacific Trade and Investment in 2015 (Is Merchandise Trade In Trouble ?, 2015). This has enabled the growth of economies such as China until recently in 2014 when the trade volumes reduced. The Republic of Kenya with a geographical area of 582,650 sq. km, and GDP of US \$ 57.65 billion is the largest economy in the East African region. Kenya is located on the eastern coast of Africa; the country is bordered by Somalia to the east; Ethiopia to the north; South Sudan to the north-west; Uganda to the west and Tanzania to the south. Her geographical position makes her the gateway for trade to land locked East African Community countries such as Uganda and South Sudan; Mombasa being the most important port. Nairobi is also becoming the regional hub for air transport, serving major markets like Europe, Middle East and other African countries with significant exports of horticulture to European markets. Kenya's total exports were valued at US \$ 5.8 billion in 2011 accounting for 0.04% of world's total exports. Exports rose from US \$ 4.1 billion to US \$ 5.8 billion, representing an annual average growth of 9.1% between 2007 and 2011 (EPC, 2012). Although Kenya's growth in exports has been on the rise it continues to show an unfavorable trade balance, trade deficit went up significantly from US \$ 4.9 billion in 2007 to US \$ 9.1 billion in 2011. The export growth was way below the policy target of 20% annual growth in 5 years. This was around the period in which the country was experiencing the aftermath of the Post-Election violence which had been experienced after the 2007 general elections. Among other factors that had affected outputs include a drought in 2009 and the 2007 financial crisis which had affected most economies. Kenya's exports are mainly composed of primary commodities including tea, horticulture, apparels and clothing, coffee, tobacco and tobacco products, iron and steel products, and soda ash which all together account for slightly over 60% of total exports according to (EPC, 2012). Although there have been efforts towards diversification of the export sector, Kenya's exports are still dominated by primary agricultural products (Were, Njuguna, Geda, & Karingi, 2002). Kenya's main imports as of 2011 include industrial machinery, crude petroleum and petroleum products, motor vehicles, iron and steel, and plastics. Most of the imports are capital goods or goods for industrial use. In 2010, developing countries import growth contributed to half of world trade

growth compared with 43 per cent in the pre-crisis period of 2004-2007. This is a clear indicator that most developing countries import more than they export hence a negative trade deficit. Economies such as China have recorded negative growth in imports in recent years while they remain major exporters to economies in Africa and Asia.

#### **1.4 Research Problem**

Policy should be given importance during campaigns and after elections. However, this is not the case in developing economies especially in Africa where politics is fueled by ethnicity which in some years has led to political violence. Studies done in this area have highlighted the impact of various types of conflict on the economy, (Blomberg, Hess, & Orphanides, 2003) investigate the impact of various forms of conflict such as terrorism, internal wars and external wars on a country's economic growth and find that the impacts are largest in Africa and amongst non-democratic states. Therefore, it will be important to look at the impact of conflict on International trade which is a major economic driver. Research work done on Kenya under this topic include (Christopher, Macchiavello, & Morjaria, 2010) which investigates the mechanisms and costs of disruptions induced by the post-electoral violence in 2008 on Kenya floriculture. This paper will focus on the general level of bilateral trade between Kenya and 5 of its main trading partners' to empirically investigate the impact of political conflict on International trade.

#### **1.5 Research Questions**

What is the impact of political conflict on International trade?

#### **1.6 Research Hypothesis**

Political conflict influences the International trade value between a country in conflict and its trade to other countries globally.

## **1.7 Motivation**

My motivation for this study comes from an interest in political economics. African economies remain behind in terms of development because of internal conflict; this can be attributed to a wide range of factors ranging from ethnicity, corruption, weak institutions and poor governance. Kenya which is a developing economy has a large trade deficit which is an issue of concern in terms of growth. Exporters from Kenya have not developed the art of adding value to their products not to mention factors such as internal conflict which can hinder exporters. An example is the 2007-2008 Post-Election violence in Kenya which affected economic growth in almost all sectors, the most affected being service exports in terms of tourism. International trade has been a major driver of economic growth which is not spared when internal conflict arises. Therefore, I will focus my research on the impact of political conflict to International trade.

## **1.8 Significance**

### **1.8.1 Policy makers**

They will find this paper useful given the level of uncertainty that comes with elections in Kenya. The results will provide a decision-making basis on the level of cautionary measures the regulators can take during political conflict so that International trade is affected at a very minimal level if not affected at all from levels as low as the production sector in Agriculture where we enjoy significant revenues from the exports.

### **1.8.2 Government**

The Governments in developing countries that are prone to various types of conflict will find this paper useful. The paper gives an insight to a social problem that translates to an economic problem if not well handled. Highlighting the impact of conflict on International trade gives the authorities an incentive to improve the Institutions to ensure that conflict cases that arise after elections are minimal to achieve maximum trade benefits without shocks that may arise from political conflict.

### 1.8.3 Research Work

This paper will contribute to the research work that has been done on the subject. Using the gravity model, the paper will add a social variable to determine how the level of bilateral trade is affected. It will also be of use to researchers who are working on similar studies as it details on political conflict and trade which are diverse in their respective fields but have a causal relationship.



## 2. LITERATURE REVIEW

One of the most important changes in the world economy since 1980 has been the move towards freer trade among countries across the globe. Many developing countries are liberalizing trade adopting export-oriented policies. Conflict is an issue that has affected most developing economies in Africa and as such some of the benefits of liberating trade have not been fully achieved. According to (Collier & Gunning, 1999) which examines the significant difference between two types of conflict; civil wars are generally more damaging than international wars because they are fought entirely over the landscape of the country and so are more likely to undermine government organization.

### 2.1 Theoretical Literature

The International trade theory that has been used for this study trade is the gravity model that has also been used in several papers to analyze trade activities. From the first conceptualization of (Tinbergen, 1962) the gravity equation has been used time and again to empirically analyze trade between countries. It has been defined as the workhorse of international trade and its ability to correctly approximate bilateral trade flows makes it one of the most stable empirical relationships in economics. In its simplest form, the analogy with Newton's "Law of Universal Gravitation" implies that a mass of goods or labor or other factors of production at origin  $i$ ,  $E_i$ , is attracted to a mass of demand for goods or labor at destination  $j$ ,  $E_j$ , but the potential flow is reduced by distance between them.

The model is expressed in a log-log form, so that the parameters are elastic of the trade flow with respect to the explanatory variables in the model. Bilateral trade flows are determined by the variables included in the right-hand-side of the gravity equation. This implies a clear direction of causality that runs from income and distance to trade. Additional variables can be added on the right side of the gravity equation like (Binh, Duong, & Cuong) which adds exchange rate and controls for the other variables to determine the impact on bilateral trade between Vietnam and 60 countries from 2000 to 2010. This study will use the gravity model and incorporate conflict as a social variable into the gravity model. Studies done using the gravity model have focused in financial and policy factors that have affected International trade. Since the gravity model provides flexibility on the independent variables, it is feasible to add a social variable into the model and determine its impact on bilateral trade.

Gravity model was derived under perfect completion by (Anderson J. , 1979) which assumes a Constant Elasticity of Substitution (CES) import demand system where each country produces and sells goods on the international market that are differentiated from those produced in every other country. An alternative derivation of a mathematically equivalent gravity model was proposed by (Eaton & Kortum, 2002) based on homogeneous goods on the demand side, iceberg trade costs, and Ricardian technology with heterogeneous productivity for each country and good due to random productivity draws. A development by (Anderson & Wincoop, 2003) – building on (Anderson J. , 1979) – showed that the flow of bilateral trade is influenced by both the trade obstacles that exist at the bilateral level (Bilateral Resistance) and by the relative weight of these obstacles with respect to all other countries (what they called the Multilateral Resistance) hence a theory of the bilateral flows must account for the relative attractiveness of origin-destination pairs. This attractiveness of origin can be influenced by various factors such as political conflict that causes instability in the economy. Each sale has multiple possible destinations and each purchase has multiple possible origins: any bilateral sale interacts with all others and involves all other bilateral frictions. In order to avoid this bias suggestions have been made to improve the model by accounting for the price effect; (1) the use of published data on price indexes (Baier & Bergstrand, 2001); (2) direct estimation according to (Anderson & Wincoop, 2003); (3) or the use of country fixed effects (Eaton & Kortum, 2002).

Further research has taken into consideration the determinants of international trade in a multivariate perspective. Amongst these, one of the most noteworthy studies is (Linneman, 1966). In it, based on an econometric model, he analyzed the factors which determined trade flows between eighty countries in 1959. The variables considered influential to international trade were: gross national product (GNP), population, geographic distance and an ulterior specific factor of preferential trade. It was noted by (Linneman, 1966) that all the variables used in the econometric analysis showed a significant importance lying within the volume of imports and exports of the countries examined. The results by (Linneman, 1966) have been extended by various scholars such as (Krugman, 1980), and (Mavondo & Evans, 2001) the theory of international trade has begun to emphasize the importance of costs as a significant factor in trade flows. This has expanded the types of costs which may affect trade flows beyond traditional ones, such as those linked to the transport of goods. New factors came into

play, such as those related to moral hazard and to uncertainty towards the outside environment, ascribable to cultural differences. There are also political variables that are considered significant within an empirical analysis of trade flows, and these are the political instability of the exporting country and the existence of colonial relations between the exporting country and the importing country. It is widely accepted that high levels of political instability within the exporting country are associated with a low volume of trade. According to studies conducted by the "Business International Corporation", this is true for most of traded goods, whilst for energy goods (for example, oil, gas, and coal), the "political instability" variable seems to be irrelevant (Srivastava & Green, 1986). Trade relations between colony and mother-country tend to be regarded as decisive and meaningful to the analysis of the intensity of trade. Although ex-colonial countries have obtained political independence from the so-called "mother-country", they seem to maintain commercial interdependence due to the persistence of strong political and cultural links, proving to be influential for international trade. This paper seeks to build on the theoretical literature that has been added to the gravity model by adding a political inspired variable; conflict to the model.

One well recognized problem in studying empirical trade using the gravity model is that trade datasets often contain zeros: the trade matrix is sparse. The prevalence of zeros rises with disaggregation, so that in finely grained data a large majority of bilateral flows appear to be inactive. One way to rationalize zeros is to modify the demand specification to allow 'choke prices' above which all demand is choked off (Anderson, 2011). Dynamics is largely a missing piece in the gravity model story. However, there are at least two good reasons to take dynamics into consideration (Benedictis & Taglioni, 2011). The first one is a direct consequence of deriving the gravity equation from a micro-founded trade model with heterogeneous firms. An empirical reason for this proposition from (Benedictis & Vicarelli, 2005) finds strong persistence in aggregate trade data, and countries that trade with each other at time  $t-1$  also tend to trade at time  $t$ . This can mean that the general growth of trade can be as a cause of a few countries whose trade amongst each other has increased because of increased trade between these few countries.

Other trade models that exist include the International trade theory which was laid out by (Smith, 1986) and David Ricardo's Principles of Economics in the year 1951. The two

volumes herald the formulation of a theory of free trade, based on the unprecedented success of England in the respective fields of industry and trade. For Smith, the division of labor, in the nascent large-scale industries of his homeland England, provided the base for lowering labor costs, which ensured effective competition across countries. Ricardo sort out the basic premises of a theory of free trade which Smith had initiated due to the advancement of Industrial capitalism at his time compared to Smith. Free trade, as opposed to the Mercantilist policies of protection, was championed by both Smith and Ricardo as a route to achieve production efficiency at a global level.

Political instability is believed to have strong adverse effects on economic prosperity. However, to date, the evidence on this matter is scarce, probably because it is difficult to know how economies would have evolved in absence of political conflicts. Debates over the question of whether economic interdependence promotes peace or contributes to international conflict are often framed in terms of the 'paradigm wars' between liberal and realist theory. The field of political science has managed to come up with two perspectives on the impact of trade on conflict; liberal and realist perspectives. The liberal perspective states that trade generates economic benefits for both sides and hence hinders trading partners to engage in conflict because of expected trade losses while realists point out that trade has an insignificant effect on conflict since increased competition and asymmetric trade may foster conflict between trading partners. However, both theories agree on the negative impact conflict has on trade which will be the main area of focus in this paper as little research work has been done in the area. (Hegre, Gissinger , & Gleditsch, 1998) suggests that the liberal model advocated that an open economy leads to a higher level of economic development while the structuralist model argues that an open economy will lead to high levels of inequality and injustice since the penetration of trade and foreign capital into peripheral economies leads to the exploitation of local human and natural resources, and to a transfer of profit back to the imperial centers. The structuralist model can be argued to be true by looking at Kenya; which has an open economy but is rated the 10th most unequal country in the world in terms of wealth disparities. Of Africa's 54 states, it is the third most unequal after South Africa and Nigeria.

## 2.2 Empirical Literature

Most authors look at the how international trade has affected conflict and have found international trade to motivate conflict in some cases such as (Collier, Hoeffler, & Rohner, 2006) and discussed critically by (Fearon, 2005); Higher primary commodity exports can provide opportunities for predation by rebel groups and therefore help finance the rebellion. This can be linked to economies such as Nigeria, Congo and South Sudan in Africa which enjoy a significant share in the world's market for natural resources such as oil. However, (Laitin, 2003) finds no support for an independent effect of primary commodity export dependence on civil war onset, despite using the same measure of commodity exports as Collier and Hoeffler and a similar list of civil wars. This could be brought about by the difference in model specifications. Empirical literature on the effects of political conflict on economic variables have used cross sections of country-level data but this paper will mainly focus on internal conflict within a developing nation; Kenya. Evidence on the effects of war is seen to vary as per the intensity of conflict in different regions. An empirical study will be done using the gravity model to determine the impact of political conflict on Kenya's International trade with 5 main partners; Uganda, United Kingdom, Tanzania, Netherlands and the United States.

A work in progress by (Kamin, 2012) analyzes theoretically and empirically the effect conflict has on trade. The analysis is based on a panel data set with annual observations on 198 countries from 1992 to 2011, which brings together trade data from the World Bank and armed conflict, non-state conflict and one-sided-violence data from the Uppsala Conflict Data Program. The data is explored with a structural gravity model. Theory-consistent estimation methods such as the fixed effect estimator are used to solve for endogeneity issues which may arise. In their research, they state that major conflicts reduce trade flows up to 67%, with the negative impact being higher on the exporter side than on the importer side. From (Christopher, Macchiavello, & Morjaria, 2010) the weekly wage bill in Kenya during the post-electoral violence period increased by 70% for the average firm. However, at the average firm, about 50% of the labor force did not come to work for at least one week during the period of the violence. Even considering the 10% depreciation of the Kenyan shilling, the lower revenue and cost increases suggest that the average firm operated at a loss during the period of the violence. In the year 2003 the exports in garments and apparel from Kenya rose

due to African Growth and Opportunities Act (AGOA), which allowed African countries to export textiles and garments duty-free and without import quota restrictions. A significant decline in these exports is observed in the year 2008 because of closure of some firms' due to losses incurred due to the post-election violence and the influx of third class products which entered the Kenyan market leading to unhealthy competition.

Scholars who have empirically examined the impact of conflict on trade and the impact of trade on conflict concede that the true nature of the relationship between these two variables is probably reciprocal, and that current models fail to capture the relative importance of these causal paths. A development by (Martin, Mayer, & Thoenig, 2008) methodological objective in an article written on how trade affects civil wars attempts to solve this reverse causality issue with the use of instruments. He uses gravity equations which measure increases in trade costs (related to infrastructure, rule of law, information, trust, etc.) due to a civil war. Left in the equation to be estimated is an exporter GDP term, and a vector of the traditional proxies for trade costs, all expressed relative to the United States. The list of proxies for trade costs include bilateral distance, contiguity, colonial linkages, a dummy indicating whether one country has a communist regime, common membership in a regional trade area, and a variable counting the number of GATT/WTO member in the country pair. To this list he adds lags and leads of dummies indicating the occurrence of a civil war in the importing or the exporting country. Coefficients on those dummies measure the trade (exports and imports) impact of such conflicts and the persistence of this impact over time.

When (Blomberg & Hess, 2002) investigated the empirical impact of violence as compared to other trade impediments on trade flows they come up with different views on the cost of conflict on trade; Using the traditional and theoretical gravity models they calculate that for a given country year, the presence of terrorism, as well as internal and external conflict is equivalent to as much as a 30 percent tariff on trade. It is larger than estimated tariff equivalent costs of border and language barriers and tariff-equivalent reduction through GSPs and WTO participation.

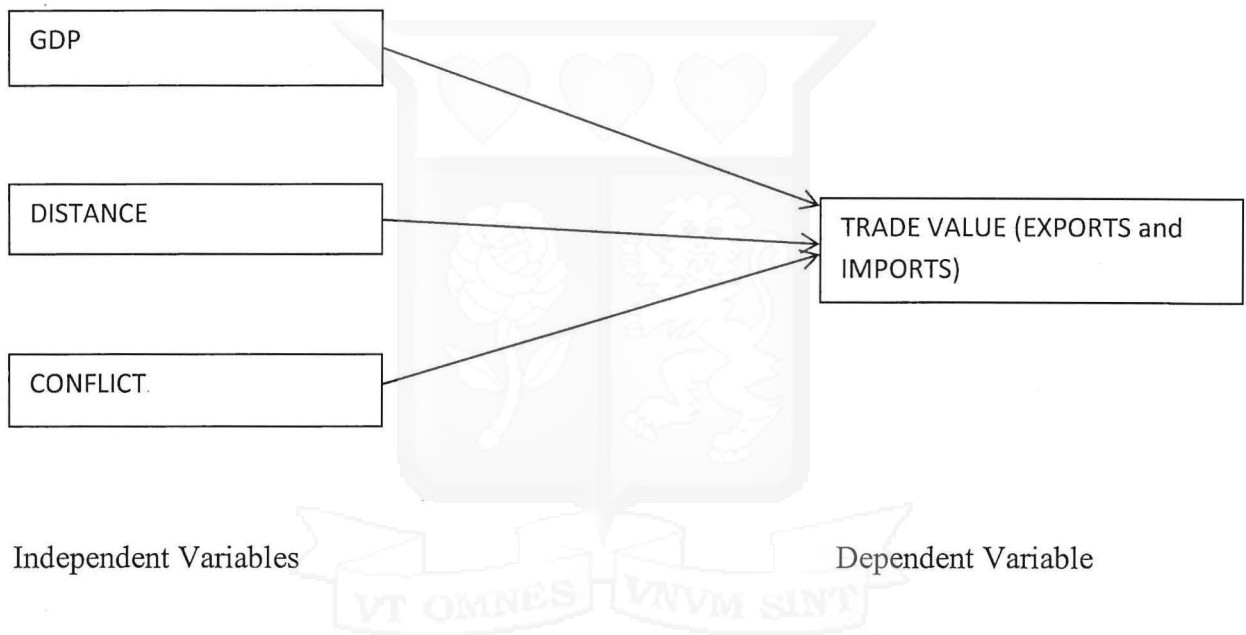
Other authors who study the relationship between the election violence in Kenya and economic variables include (Christopher, Macchiavello, & Morjaria, 2010) study how firms react to electoral violence. Predictions derived from a model of firms' reaction to violence are

tested using Kenya flower exporters during the 2008 post-election violence. Horticulture is exclusively export orientated and an important part of GDP in Kenya, being one of the three largest foreign exchange earners in 2006 (with tourism and tea), and taking the top spot in 2007. In their work, they found that weekly export volumes for firms on affected regions reduced by 38% relative to what would have happened had the violence not occurred. Evidence shows that workers' absence, which across firms averaged 50% of the labor force at the peak of the violence, was the main channel through which the violence affected production. Agriculture in Kenya bore the greatest brunt as it heavily relies on unskilled labor often Immigrant workers from outside the counties. The resulting disruption in labor supply affected the production process, farm schedules and destruction of capital assets, which in turn distorted the demand and export patterns. Luis Gil-Alana Alberiko and Prakarsh Singh work is in line with the recent trend towards using micro-level data to identify consequences of conflict on human capital investment (Guariso & Verpoorten, 2014). This paper will focus on the consequences of conflict at a macro level by looking at how International trade is affected by political conflict; this relationship will be tested empirically with conflict as an independent variable among other variables that affect International trade according to the gravity model.

This paper will add to the literature on relationship between conflict and International trade. Most research work under this area explains how International trade affects conflict between or within states. Research work done under the impact of conflict on International trade focuses on conflict between states or internal armed and non-armed conflict because of a resource curse in developing economies like Congo or terrorism events. The main area of focus in this paper will be political conflict which has seen economies of developing economies like Kenya experience uncertainty during election years but has not experienced much attention from authors. The paper will highlight the gap by looking at the behavior of trade value between Kenya and the 5 of its main trading partners over the years putting importance on the political cycle in which electoral violence has been experienced in some years.

### 2.3 Conceptual Framework

The conceptual framework for the relationship between conflict and trade is summarized as below. In this case the conflict variable falls under trade barriers which can make the full benefits of International trade not to be realized. The impact of political conflict on International trade will be investigated with other variables such as distance and GDP which affect trade according to the gravity equation.



### **3. METHODOLOGY**

#### **3.1 Research Design**

The research design used panel data to determine the impact of political conflict on International trade. The reason for choosing a panel design is because this study observed change in trade value and conflict over a period of 23 years between Kenya and 5 of its main trading partners since 1992; Uganda, United Kingdom, Tanzania, Netherlands and the United States. The reason for choosing these 5 countries is because of their significant level of trade with Kenya over the years hence will provide a good estimate for the trade value given that Kenya is not large on International trade like developed economies. Variables included in the model such as GDP were studied for the same length without interference. Similar studies that use this research design include (Kamin, 2012) which is a work in progress and (Binh, Duong, & Cuong) who analyze bilateral trade activities between Vietnam and 60 countries from 2000 to 2010. This study replicates the methodology used in the studies mentioned and look at the level of bilateral trade between Kenya and 5 of its main trading partners since 1992 to 2015. The methodology incorporated a social variable; conflict, just like (Binh, Duong, & Cuong) incorporate a financial variable; exchange rate, to determine how it affects bilateral trade between Vietnam and 23 other countries.

#### **3.2 Data Collection**

The data was obtained from various sources, the export and import values for Kenya and five of its main trading partners was obtained from the International Trade Statistics. Missing values for imports or exports from Kenya were filled using the export and import values of the partner. Where there was completely no trade recorded the paper will assume that no trade took place for that period, this is the case for 5 observations in the data. GDP data was collected from the World Bank website and conflicts intensity data within Kenya was obtained from Armed Conflict Location and Event Data Project (ACLED). The distance between two countries was calculated using the distance calculator which is available online, the distance represented is between the capital cities of two countries.

### 3.3 Methodological Approach

Most papers that have investigated the relationship between International trade and conflict have used the gravity model; bilateral trade between two countries is proportional to their respective sizes, measured by their GDP, and inversely proportional to the geographic distance between them which is used to measure international trade between countries (Chaney, 2011). This model was developed specifically for International trade and as such several variables can be included in the equation to see how international trade is affected. The main factors in this model are the GDP of the countries and the distance between the two countries. The GDP affects trade positively suggesting that countries with a higher GDP have more trade volumes while the distance between two countries affects trade inversely since factors such as transportation costs and trade tariffs might be affected hence higher as the geographical distance increase. To establish whether there is relationship, this paper used the gravity equation in international trade which is one of the most robust empirical finding in economics. Other control variables were used to make the augmentation of the results obtained from the gravity model more accurate. The study used an estimable log-linear specification which can be derived formally from a general equilibrium model of trade, production and consumption as in (Anderson & Wincoop, 2003).

To model the level of bilateral trade between the respective countries as a function of the log of their GDPs and dummy variables defining whether exporter or/and importer are in a conflict in the given year and their distance effect on trade, (Kamin, 2012) work in progress uses two models to estimate this relationship;

1. 
$$\log(Exports_{ijt}) = \beta_0 + \beta_1 \log(GDP_{it}) + \beta_2 \log(GDP_{jt}) + \beta_3 Conflict Variable_{it} + \beta_4 Conflict Variable_{jt} + \gamma_{ij} + \delta_{ij} + \varepsilon$$

Where  $i$  and  $j$  denote the countries,  $t$  denotes time, and the other variables are defined as:

- $Exports_{ijt}$  is the total trade value traded from country  $i$  to country  $j$  at time  $t$ ;
- $GDP_i, GDP_j$  are GDP in current US-Dollar of country  $i$  and  $j$ ;
- $Conflict Variable_i, Conflict Variable_j$  is a dummy that takes up the value 1 if country  $i$  and/ or  $j$  are in conflict in the given year, and 0 otherwise;
- $\gamma_{ij}$  is the country-pair specific fixed effect;
- $\delta_{ij}$  is the year fixed effect, and
- $\varepsilon$  is the usual error term, taking up all other influences on bilateral trade.

$$2. \log(Exports_{ijt}) = \beta_0 + \beta_1 \log(dist_{ij}) + \beta_2 Relationship Variable_{ijt} + \beta_3 Contiguity_{ij} + \beta_4 Common Language_{ijt} + \beta_5 Colonial Relationship_{ijt} + \rho_{it} + \rho_{jt}$$

Where  $i$  and  $j$  denote the countries,  $t$  denotes time, and the other variables are defined as:

- $Exports_{ij}$  is the total trade value traded from country  $i$  to country  $j$  at time  $t$ ;
- $dist_{ij}$  is the distance between country  $i$  and  $j$ ;
- $Relationship Variable_{ijt}$  are dummy variables taking up the value 1 if country-pair is allies or enemies in the given year, and 0 otherwise;
- $Contiguity_{ij}$  is a dummy variable being unity if  $i$  and  $j$  share a common border;
- $Common Language_{ijt}$  is a dummy variable being unity if  $i$  and  $j$  have a common official language in given year;
- $Colonial Relationship_{ijt}$  is a dummy variable being unity if  $i$  and  $j$  have a colonial relationship in given year;
- $\rho_{it}, \rho_{jt}$  are the country-time fixed effects, and

- $\varepsilon$  is the usual error term, taking up all other influences on bilateral trade

In this paper, two estimation were used to model the effects of political conflict in Kenya on International trade with its 5 trading partners since the paper focused only on internal conflict hence dropping the relationship dummy variable;

1.  $\log(\text{Exports}_{it}) = \beta_0 + \beta_1 \log(\text{GDP}_{it}) + \beta_2 \log(\text{GDP}_{jt}) + \beta_3 \log(\text{dist}_{ij}) + \beta_4 \text{Conflict Variable}_{it} + \rho_{it} + \rho_{jt} + \delta_{ij} + \varepsilon$
2.  $\log(\text{Imports}_{it}) = \beta_0 + \beta_1 \log(\text{GDP}_{it}) + \beta_2 \log(\text{GDP}_{jt}) + \beta_3 \log(\text{dist}_{ij}) + \beta_4 \text{Conflict Variable}_{it} + \rho_{it} + \rho_{jt} + \delta_{ij} + \varepsilon$

Where;

- $\beta_0$  is the common intercept.
- $\text{Exports}_{it}$  is the total export value from Kenya to  $j$  at given year.
- $\text{Imports}_{it}$  is the total import value from country  $j$  in a given year.
- $\beta_1 \log(\text{GDP}_{it})$  is the GDP of Kenya at a given year.
- $\beta_2 \log(\text{GDP}_{jt})$  is the GDP of country  $j$  at a given year.
- $\beta_3 \log(\text{dist}_{ij})$  is the geographical distance between Kenya and country  $j$ .
- $\beta_4 \text{Conflict Variable}_{it}$ ; This was generated as a dummy variable that takes 1 for a year that Kenya experienced electoral violence and 0 for years that did not have political violence.
- $\delta_{ij}$  will be the year fixed effect.
- $\rho_{it}$  and  $\rho_{jt}$  are the country-time fixed effects, and
- $\varepsilon$  is the usual error term, taking up all other influences on bilateral trade between Kenya and country  $j$ .

### 3.4 Analysis of the Empirical effects on International Trade

The variables of interest used are; Exports Value, Imports Value (from and to Kenya), dependent variables. GDP of Kenya and that of its trading partners, the distance between Kenya and a trading partner, the dummy variable of deaths estimated to have been caused by political violence in a given year within the observation period as the independent variables. In order to assign a dummy the number of political instigated deaths should have exceeded 40 in a given year. The data collected for all the variables is from 1992 to 2015. GDP, distance are considered to have an effect on International trade according to the gravity model, this paper adds a social variable; political conflict in form of a dummy variable as an addition to the gravity model. The analysis looks at how both imports and exports from Kenya have behaved by applying a panel data analysis on the variables. Tests were conducted on the panel data set for this study to determine their goodness of fit in the model. This tests that were conducted include; multicollinearity, heteroskedasticity and autocorrelation tests. Summary statistics for the data were also computed in the study and in addition the within and between standard deviation was also generated. Between standard deviation is the variation across countries while within standard deviation is the variation over time. The study went further to conduct the Hausman test in order to determine whether to use random or fixed effects in estimation. Hausman is a general implementation of Hausman's (1978) specification test, which compares an estimator  $\theta_1$  that is known to be consistent with an estimator  $\theta_2$  that is efficient under the assumption being tested. The null hypothesis for this test is that the individual-level effects are adequately modeled by a random-effect. Random effects model considers the residual of each entity (which is not correlated with explanatory variables) as a new explanatory variable and can estimate the invariant factors as opposed to fixed effects which works better with variables that do not change over time. The study settled on using the Random effects after failing to reject the null hypothesis. Country and time specific events were controlled for in the model since the electoral cycle in Kenya takes 5 years and institutional factors can affect International trade for the countries in this study differently.

## 4. DATA ANALYSIS

### 4.1 Statistical properties of the data

The tests in the study are carried out on Stata© 14 to determine the efficiency of the model and to estimate the parameters of the model.

This study obtained the summary statistics of the data collected for each season. **Table 1(a)** shows the mean, standard deviation, variance, skewness, kurtosis, sum and the range of the variables in the dataset.

stats	Export~e	Import~e	GDPKEN	GDPPar~r	Distan~m	DE	Deathest
mean	2.84e+08	2.31e+08	2.56e+10	2.95e+12	5284.6	.2916667	39.04167
p50	2.61e+08	1.58e+08	1.55e+10	6.11e+11	6678	0	0
sd	1.79e+08	2.44e+08	1.79e+10	4.89e+12	4324.122	.4564355	95.39193
variance	3.20e+16	5.96e+16	3.22e+20	2.39e+25	1.87e+07	.2083333	9099.62
skewness	.3569804	2.154711	.8230604	1.760803	.188468	.9166985	3.306707
kurtosis	2.184679	11.15427	2.332489	4.735123	1.684666	1.840336	13.62621
N	120	120	120	120	120	120	120
sum	3.41e+10	2.77e+10	3.07e+12	3.55e+14	634152	35	4685
range	6.59e+08	1.64e+09	5.80e+10	1.80e+13	11350	1	440
min	0	0	5.75e+09	2.86e+09	506	0	0
max	6.59e+08	1.64e+09	6.38e+10	1.80e+13	11856	1	440

From the results on the summary statistics it is evident that the mean of Kenya's Export Value is greater than the mean for Import Values which would mean that Kenya would have a surplus in its Balance of payments account if it traded with only the 5 countries in this study which is not the case in reality. It also shows that the variables in the data set do not follow a normal distribution but skewed to the right due to a positive value of the skewness for each variable in the data set. The kurtosis also indicates that the variables have a flat peak apart from the partner countries GDP and Deathest which have a kurtosis that is greater than 3.

**Table 1(b)** shows the time and cross-sectional dimensions for Exports Value and Imports Value;

Variable	Mean	Std. Dev.	Min	Max	Observations
Export <sup>Value</sup> overall	2.84e+08	1.79e+08	0	6.59e+08	N = 120
between		8.10e+07	2.00e+08	3.95e+08	n = 5
within		1.63e+08	-1.11e+08	6.94e+08	T = 24
Import <sup>Value</sup> overall	2.31e+08	2.44e+08	0	1.64e+09	N = 120
between		1.67e+08	7.98e+07	4.19e+08	n = 5
within		1.93e+08	-8.39e+07	1.45e+09	T = 24

From the above results Export Value appears to have a high variation of across countries which can be explained by the difference in trade volumes exported to these countries by Kenya over the years. Imports have a lesser variation within Kenya and the 5 countries used in the study.

**Table 1(c)** shows the time and cross-sectional dimensions for Kenya's GDP, partner states GDP and DE which is a dummy variable generated from Death estimate to represent political uncertainty;

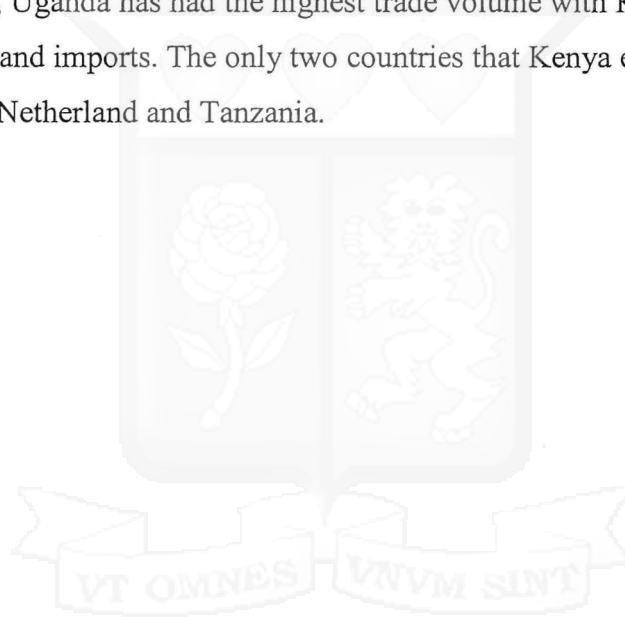
Variable	Mean	Std. Dev.	Min	Max	Observations
GDPKEN overall	2.56e+10	1.79e+10	5.75e+09	6.38e+10	N = 120
between		0	2.56e+10	2.56e+10	n = 5
within		1.79e+10	5.75e+09	6.38e+10	T = 24
GDPPartner overall	2.95e+12	4.89e+12	2.86e+09	1.80e+13	N = 120
between		5.15e+12	1.19e+10	1.20e+13	n = 5
within		1.60e+12	-2.54e+12	8.96e+12	T = 24
DE overall	.2916667	.4564355	0	1	N = 120
between		0	.2916667	.2916667	n = 5
within		.4564355	0	1	T = 24

The variance of GDP within partner states is greater than within time which would mean that country-specific effects have a higher significance on the data set than the time-specific effects that exhibits a lower standard deviation.

Table 1 (d) shows the summary statistics of the data by country;

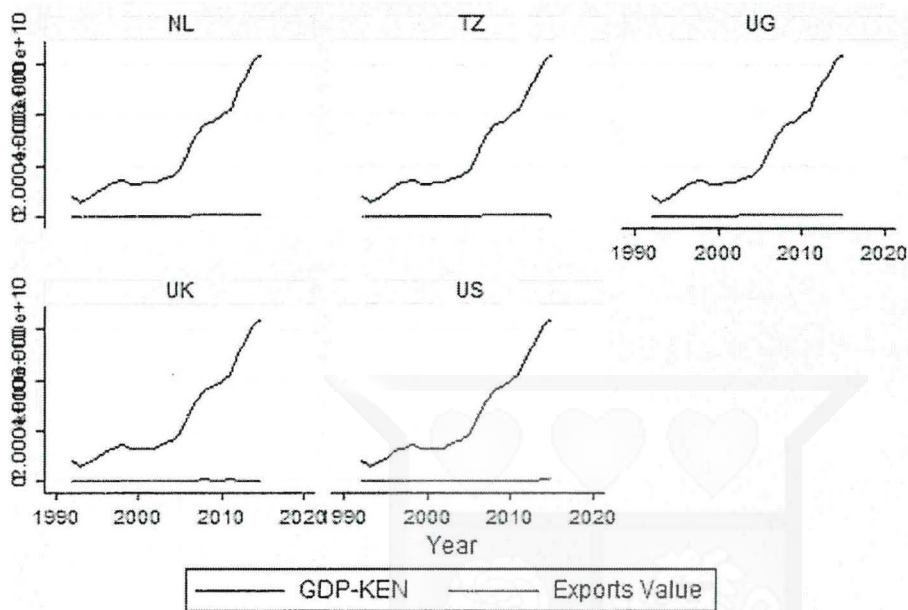
CN	Export~e	Import~e	GDPKEN	GDPPar~r	Distan~m
NL	2.39e+08	1.42e+08	2.56e+10	6.20e+11	6678
TZ	2.45e+08	1.08e+08	2.56e+10	1.93e+10	555
UG	3.95e+08	7.98e+07	2.56e+10	1.19e+10	506
UK	3.42e+08	4.04e+08	2.56e+10	2.09e+12	6828
US	2.00e+08	4.19e+08	2.56e+10	1.20e+13	11856
Total	2.84e+08	2.31e+08	2.56e+10	2.95e+12	5284.6

From the results, Uganda has had the highest trade volume with Kenya in the study period for both exports and imports. The only two countries that Kenya exports to more than they import from are Netherland and Tanzania.





## Export Values from Kenya



Above is a representation of Exports Values from Kenya which support the first set of graphs in terms of a parallel movement of the GDP with the volume of trade for a given country.

### 4.3 Empirical Testing

The study tested the for correlation in the variables at 1% level of significance, **table 1(e)** below summarizes the results;

	ExportsValue	ImportsValue	GDPKEN	GDPPartner	DistanceKm	Deathest	DE
ExportsValue	1.0000						
ImportsValue	0.4059 0.0000	1.0000					
GDPKEN	0.7805 0.0000	0.6031 0.0000	1.0000				
GDPPartner	-0.0744 0.4194	0.6019 0.0000	0.1641 0.0734	1.0000			
DistanceKm	-0.2280 0.0123	0.5119 0.0000	0.0000 1.0000	0.7917 0.0000	1.0000		
Deathest	0.1162 0.2065	-0.0409 0.6570	0.0273 0.7669	0.0144 0.8760	0.0000 1.0000	1.0000	
DE	-0.2542 0.0051	-0.2029 0.0262	-0.3233 0.0003	-0.0733 0.4261	0.0000 1.0000	0.6405 0.0000	1.0000

The results indicate that the Export values variance from Kenya to its 5 trade partners in this study can be explained by 78% of Kenya's GDP and 11% of the Death estimate which generates the dummy variable, DE used in the model as the political conflict dummy variable. Imports value can be explained by 60% of Kenya's GDP and 60% of partner's GDP. Distance can is seen to explain 51% of the variance in imports between Kenya and the 5 trading partners over the years.

## 4.4 Multicollinearity test

. vif

Variable	VIF	1/VIF
GDPKEN	1.31	0.765114
GDPPartner	2.90	0.344708
DistanceKm	2.82	0.354830
Deathest	1.90	0.526671
1.DE	2.12	0.471485
Mean VIF	2.21	

The study used the Variance inflation factor to check for multicollinearity in the data. The results obtained levels have an average of 2.21 which indicates some correlation but not good enough to be concerned about since it is a VIF between 5 and 10 that indicates high correlation which may be problematic.

## 4.5 Heteroskedasticity test

### 4.5.1 Exports Value

Coefficients: generalized least squares  
Panels: homoskedastic  
Correlation: no autocorrelation

Estimated covariances	=	1	Number of obs	=	120
Estimated autocorrelations	=	0	Number of groups	=	5
Estimated coefficients	=	6	Time periods	=	24
			Wald chi2(5)	=	255.81
Log likelihood	=	-2381.473	Prob > chi2	=	0.0000

ExportsValue	Coeff.	Std. Err.	z	P> z	[95% Conf. Interval]
GDPKEN	.0074093	.0005878	12.60	0.000	.0062571 .0085614
GDPPartner	-2.81e-06	3.21e-06	-0.87	0.382	-9.10e-06 3.49e-06
DistanceKm	-6910.334	3580.312	-1.93	0.054	-13927.62 106.9489
Deathest	347754.1	133213.3	2.61	0.009	86660.89 608847.4
DE	-5.42e+07	2.94e+07	-1.84	0.066	-1.12e+08 3481380
_cons	1.42e+08	2.46e+07	5.76	0.000	9.35e+07 1.90e+08

The panel data exhibited no heteroskedasticity in the first equation for this analysis; the variables also exhibited no autocorrelation among the variables.

## 4.5.2 Imports Value

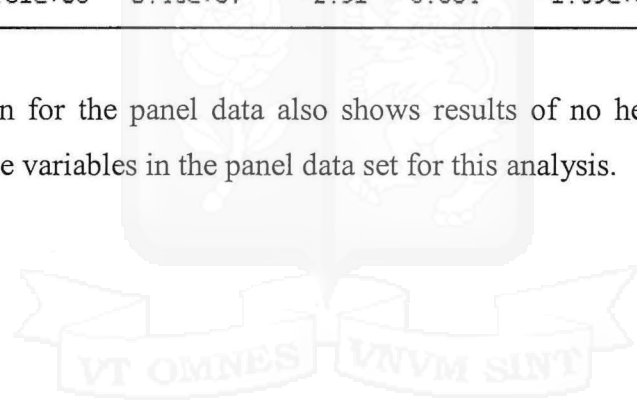
Cross-sectional time-series FGLS regression

Coefficients: generalized least squares  
 Panels: homoskedastic  
 Correlation: no autocorrelation

Estimated covariances	=	1	Number of obs	=	120
Estimated autocorrelations	=	0	Number of groups	=	5
Estimated coefficients	=	6	Time periods	=	24
			Wald chi2(5)	=	232.70
Log likelihood	=	-2422.641	Prob > chi2	=	0.0000

ImportsValue	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
GDPKEM	.007946	.0008284	9.59	0.000	.0063223 .0095696
GDPPartner	.0000145	4.53e-06	3.19	0.001	5.59e-06 .0000233
DistanceKm	15947.89	5045.578	3.16	0.002	6058.74 25837.04
Deathest	-284610.9	187731.7	-1.52	0.130	-652558.3 83336.44
DE	4.19e+07	4.15e+07	1.01	0.313	-3.94e+07 1.23e+08
_cons	-1.01e+08	3.46e+07	-2.91	0.004	-1.69e+08 -3.30e+07

The second equation for the panel data also shows results of no heteroskedasticity and no autocorrelation in the variables in the panel data set for this analysis.



## 4.6 Gravity model regression analysis

### 4.6.1 Hausman Test

	Coefficients		(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
	(b) fixed	(B) random		
GDPKEN	.0071956	.0075809	-.0003853	.0001614
GDPPartner	2.61e-06	3.88e-06	-1.27e-06	6.78e-07
DistanceKm	-11763.37	-12898.12	1134.754	11157.38
Deathest	334810	175864.8	158945.2	75294.19

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(2) = (b-B)'[(V_b-V_B)^(-1)](b-B)
          = 4.46
Prob>chi2 = 0.1077
(V_b-V_B is not positive definite)
  
```

The results indicate that the prob>chi2 is greater than 0.05 hence the study does not reject the null hypothesis proceeds to use the Random effects for analysis.

The Random effects are applied in two equations to estimate the parameters affecting International trade;

1.  $\log(\text{Exports}_{ijt}) = \beta_0 + \beta_1 \log(\text{GDP}_{it}) + \beta_2 \log(\text{GDP}_{jt}) + \beta_3 \log(\text{dist}_{ij}) + \beta_4 \text{Conflict Variable}_{it} + \rho_{it} + \rho_{jt} + \delta_{ij} + \varepsilon$
2.  $\log(\text{Imports}_{ijt}) = \beta_0 + \beta_1 \log(\text{GDP}_{it}) + \beta_2 \log(\text{GDP}_{jt}) + \beta_3 \log(\text{dist}_{ij}) + \beta_4 \text{Conflict Variable}_{it} + \rho_{it} + \rho_{jt} + \delta_{ij} + \varepsilon$

#### 4.6.2 Random effects results; Exports Value

```

Random-effects GLS regression           Number of obs   =       120
Group variable: CN                     Number of groups =         5

R-sq:                                  Obs per group:
    within = 0.8350                      min =          24
    between = 1.0000                     avg =          24.0
    overall = 0.8624                      max =          24

Wald chi2(28) =       570.20
corr(u_i, X) = 0 (assumed)              Prob > chi2      =       0.0000

```

ExportsValue	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
GDPKEN	-.0473901	.0206567	-2.29	0.022	-.0878766 - .0069036
GDPPartner	-8.13e-07	5.18e-06	-0.16	0.875	-.000011 9.33e-06
DistanceKm	-5860.835	12168.35	-0.48	0.630	-29710.36 17988.69
1.DE	-3.38e+09	1.25e+09	-2.70	0.007	-5.84e+09 -9.26e+08
Deathest	4699265	1598681	2.94	0.003	1565908 7832622
Year					
1993	6661904	5.09e+07	0.13	0.896	-9.31e+07 1.06e+08

The results show that Kenya's GDP and political conflict are significant to export values as both have a p-value of less than 0.05. Partner's GDP and the distance in this case are not significant as both have a p-value greater than 0.05. At 95% confidence interval, an increase in Kenya's GDP affects the value of exports by -0.0473901 and the case of a political conflict affects Kenya's Exports to its partners in a particular year by -3.38e+09. Random effects results;

#### 4.6.3 Random effects results; Imports Value

```

Random-effects GLS regression           Number of obs   =       120
Group variable: CN                     Number of groups =         5

R-sq:                                  Obs per group:
    within = 0.7549                      min =           24
    between = 1.0000                     avg =          24.0
    overall = 0.8472                     max =           24

Wald chi2(28) =       504.44
Prob > chi2   =       0.0000

corr(u_i, X) = 0 (assumed)

```

ImportsValue	Coeff.	Std. Err.	z	P> z	[95% Conf. Interval]	
GDPKEN	-.0243201	.0297182	-0.82	0.413	-.0825668	.0339266
GDPPartner	.0000478	7.45e-06	6.42	0.000	.0000332	.0000624
DistanceKm	-51828.33	17506.24	-2.96	0.003	-86139.93	-17516.72
1.DE	-1.91e+09	1.80e+09	-1.06	0.289	-5.45e+09	1.62e+09
Deathest	2029299	2299975	0.88	0.378	-2478569	6537168
Year						
1993	-1.76e+07	7.33e+07	-0.24	0.810	-1.61e+08	1.26e+08

The second equation estimates parameters that affect Import Value for Kenya using the Random effects model. The two variables that appear to have significance in this equation are the partners' GDP and the distance between Kenya and the trade partner. Kenya's GDP and political conflict appear to have no significance on Kenya's Import Value from the 5 countries. An increase in Kenya's GDP appears to reduce the imports by -0.0243281 while an increase in a partners' GDP increases Kenya's import value by 0.0000478. An increase by a unit of distance will have a negative impact of -51828.33 on the imports to Kenya

## 5. Discussion

This study uses the random effects model (REM) due to individual characteristic which can affect its explanatory variables, called the individual effects. For example, the factor of preference or infrastructure, although not being mentioned in the model, will still affect trade flows of each country. The main problem of fixed effects model is that the variables which do not change over time cannot be estimated directly in this model. So variables such as distance will not be supported in fixed effects model. Country and time-specific have been used to control for individual characteristics arising from time and location dynamics. The null hypothesis being tested was that political conflict does not affect International trade. From the results obtained this is rejected for the Exports Value and accepted for the Imports Value because of the significance levels obtained from the random effects test on both variables. This means that from the study we can derive that political conflict affects the exports value of Kenya negatively. In a working paper (Kamin, 2012) investigate the impact of various types of conflict and find similar results which is conflict (internal or external) affects International trade. In their study, they also include dummy variables for colonial and border relationships between trading countries. They find that the type of conflict affects exports value differently with civil war having the most impact. This paper analyzes political conflict which in this case is quantified by whether a civil war occurred in given electoral cycle and finds similar results for exports and goes further to study the impact on imports. In their study they also find distance to be insignificant which is similar to the results obtained from the dependent variable, exports value in this study. However, some studies such as (Linneman, 1966) have found distance to be significant in the gravity model which is the case for imports value in this paper. Gross National Product was also a significant factor in the gravity model according to (Linneman, 1966).

(Binh, Duong, & Cuong) Add exchange rate as an additional variable in the gravity model while the additional variable for this study was political conflict. They find that the exchange rate affects International trade between Vietnam and 20 trading partners which is similar to the results obtained from the effect of political conflict on exports value for Kenya. Their study uses additional variables such as the colonial relationship & border dummy variable where colonial relationship was found to be insignificant. In their work they find that the GDP affects the exports of Vietnam positively which is not the case for this study. This can

attributed to time-specific factors such as trade agreements, policies and institutional differences between Kenya and Vietnam. The results obtained from this study support a research done by Business International Corporation which suggests that political instability affects export commodities apart from energy products, this can support Kenya's case as the country has not been exporting energy products over the years hence exporting more agricultural products; these are more likely to be affected by political instability. The results also indicate that Kenya conducts more trade with Uganda which can be explained by the proximity, sharing of border and operating in the same trade unions as Kenya over the years which are highlighted in (Binh, Duong, & Cuong) work in application of the gravity model.

Other studies carried out on the impact of political violence on Kenya have found an impact on the economy, (Christopher, Macchiavello, & Morjaria, 2010) finds that flower exports from Kenya were affected during the post-election violence in 2007-2008. In their work they use micro level data from flower firms and markets abroad to check for the time series behavior of flower exports from Kenyan firms. They obtain similar results on the impact of political conflict on exports analyzed in this paper. This can be used to explain the significant impact of political conflict on exports in this paper since horticulture has been important in Kenya's exports. However, (Gil-Alana & Singh, 2013) in their study find that the prices of maize and wheat in Mombasa Kenya were not affected by the 2007-2008 post-election violence. They use time series data for the maize & wheat prices to check for the relationship which is a different approach from the one taken by this paper. The macroeconomic approach taken by this study differentiates it with similar studies done in Kenya over the years but the impact of political conflict is seen to have an impact both at the micro and macro levels.

## 5.1 Conclusion

This study analyzes the impact of political conflict on trade using the gravity model. Four independent variables are estimated with political conflict as a dummy variable. Thus the model analyzes how exports and imports to Kenya have behaved since 1992 to 2015 taking into consideration an effect from political cycles that have been seen to result to uncertainty due to politically instigated conflicts.

The underlying variables in the gravity variables; GDP and distance appear to have significant effect on Kenya's International trade. However, the significance differs between the exports and imports as seen in the results. This could be as a result of country and time-specific effects in the time series data and individuality in the countries institutions and policies. Political conflict has a significant effect on the Export Value which can be attributed uncertainty, exports are affected negatively; factors such as increased costs of transportation and reduced labor during a political conflict have been seen to affect the export value of a country in other studies. The results imply that the Import value is not significantly affected by political conflict but instead by the distance and the trading partner GDP, this can be explained by the fact that an internal conflict will only affect Kenya and an effect in the Import Value will be significant if Kenya alters its demand for imports during a period of political violence.

## 5.2 Limitations of the study

Some of the limitations in the study include the number of independent variables to work with. This is because International Trade is affected by many variables which may all have significance at a point in time. Controlling for the individual effects can leave too many assumptions on important factors such as institutions and infrastructure. I would therefore recommend that besides the social variable incorporated in this study; researchers should look more into Sub-Saharan countries International trade which is vital when good policies of value addition are put in place. This can be achieved through enhancing the gravity model with variables that affect International Trade in developing economies.

### 5.3 Policy Recommendations

As highlighted earlier in the paper, one of the aims of this research work was to assist policy makers with decisions. Findings from the analyzed data suggest that political conflict affects Kenya's Export value. Therefore, this study recommends both an economic and social approach to solve the uncertainty effects of political cycles in Kenya. Among the economic approach includes sound supporting systems and institutions for industries that contribute the most on Kenya's exports. Uncertainty caused by political cycles can be solved through civic education on the functions of devolution, that way more focus will be shifted towards development as National politics have proven to be highly divisive in Kenya over the years.



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