KENYA’S TRADE DIVERSIFICATION POLICY WITH THE EAST AFRICAN COMMUNITY AND ITS IMPACT ON ECONOMIC GROWTH

BY
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RESEARCH PROJECT SUBMITTED TO THE SCHOOL OF ECONOMICS, UNIVERSITY OF NAIROBI, IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE IN MASTER OF ARTS IN ECONOMICS

NOVEMBER 2015
DECLARATION

I hereby declare that this is my original work and has never been presented to any University or academic institution for an award of a diploma or degree. All the references cited in the study have been duly acknowledged.

Signed ………………………………………….   Date………………………………..

Toluwalase Amondi
X50/80096/2012

This research paper has been submitted with our approval as the University of Nairobi supervisors.

Signed ………………………………………….   Date………………………………..

Dr. Daniel Abala

Signed ………………………………………….   Date………………………………..

Professor Kiriti Ng’ang’a
ACKNOWLEDGEMENT

I am indebted to many friends and family relations living in Nigeria, Kenya and from across the world, and particularly some staff members at the University of Nairobi, for their support in ensuring that this project is completed. Since it would be difficult to mention all of you by name, I wish to thank everybody collectively and confirm unequivocally that I appreciate the assistance and resources you have provided.

My two supervisors have always gone the extra mile in supervising and guiding me throughout this project. I am grateful to Dr. Daniel Abala and Professor Kiriti Ng’ang’a.

To God and his Spirit of wisdom and might, be all glory and honor.
DEDICATION

I dedicate this study to my mother and late Father; for their sacrifice, understanding and encouragement throughout my academic pursuit.
LIST OF ACRONYMS

COMESA Common Market of East and Southern Africa
CET Common External Tariff
CEMAC Economic and Monetary Community of Central Africa
CU Custom Union
DVI Diversification Index
EAC East African Community
ECOWAS Economic Community of West African States
EU European Union
FDI Foreign Direct Investment
GDP Gross Domestic Product
GOK Government of Kenya
HHI Herfindahl-Hirschman Index
IMF International Monetary Fund
KSH Kenya Shillings
KNBS Kenya National Bureau of Statistics
PTA Preferential Trade Agreement
REC Regional Economic Community
RTA Regional Trade Agreements
SACU South African Custom Union
SADC South African Development Community
UNCTAD United Nations Conference on Trade and Development
UNECA United Nations Economic Commission for Africa
USD United States Dollar
WDI World Development Indicators
WTO World Trade Organisation
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This study sought to examine the relationship between Kenya’s horizontal trade diversification policy with the East African Community (EAC) and its impact on her economic growth for the period 1995 to 2013.

The study used the random effects model on a balanced panel dataset to determine the impact of the Herfindahl-Hirschman Index (HHI) on the growth of three dominant EAC countries, i.e. Kenya, Tanzania and Uganda for a nineteen years period. The HHI measures the dispersion of trade value across a country’s exports, and the index itself is bounded between 0 and 1, with a higher index indicating that exports are concentrated in fewer sectors, thus vulnerable to trade shocks and thereby reducing economic growth rates, while a completely diversified product sector will be closer to 0.

The research confirmed that the arithmetic mean of Kenya’s GDP, which was the best in the EAC region, was USD27.1 billion while the HHI averaged 0.73; and is significantly influenced by Per-capita GDP and volume of manufacturing exports to total exports. This index indicates a prolonged but declining worsening of Kenya’s trade diversification policy, and posits the need for a structural transformation of her merchandise exports.

Overall, the results obtained were consistent with the findings of some trade economists, such as Bebczuk and Berretoni (2006) and Noureen and Mahmood (2014), who opined that the major determinants of HHI includes; Exports to GDP, Manufacturing exports to total exports, Per Capita GDP, Gross Fixed Capital to GDP, Credit to Private Sector to GDP, Net Foreign Direct Investment to GDP and the author’s recent inclusion of the impact of the EAC Treaty on economic growth for the three dominant countries.
CHAPTER ONE

1.0 Introduction

Regional trade agreements (RTAs) are long-term international trade concessions which are formally executed between two or more countries, through integrations that strengthen customs and monetary unions, in order to boost rapid economic growth by increased diversification, specialization and comparative cost advantage of member countries.

The various theories on regional trade diversification confirmed that this policy encourages trade creation or trade diversion, favorable customs and monetary union regime, larger economies of scale in the production and distribution of high quality manufactured goods, efficient management of scarce resources and poverty alleviation within the regional market.

Jhingan (1989) defines economic growth as the quantitative sustained increase in the per capita output or income of a country. This increase should be evidenced by a rise in a country’s labour force, level of consumption, capital and increase in the volume of trade. Economic growth is measured by a sustained increase in a country’s Gross Domestic Product or GDP over a long period of time.
1.1 Background

International trade creation increases the earnings of regional partners, and in the long-run eliminates dumping of inferior goods from countries outside of the regional market. From studies carried out by Markusen et al (1995), Trade creation occurs when inefficient domestic products of regional member countries are replaced with imports from another integrated country’s exports at lower costs. Conversely, trade diversion occurs when less costly imports from outside of the integrating market are replaced with high cost imports from regional members. The success of trade diversification models is hinged on the elasticity of demand of a country’s exports and the sufficiency of improved technological capabilities; Do gruel and Tekce (2011).

The literature on foreign trade has progressed over the past two decades, with two types of export trade diversification models identified. Cramer (1999), confirmed two major types of trade diversification models, i.e. Horizontal trade diversification- the addition of several exportable products or commercial services within the same sector or industry, e.g. Kenya concentrates more on five agricultural exports of tea, coffee, horticulture, vegetable oils and articles of apparels and Vertical trade diversification- the change in composition of exportables by switching from producing primary products to high quality manufactured goods, to minimize external risks due to price instability or decline of inferior inputs. The country exports very few merchandise goods in small quantities, i.e. iron and steel, pharmaceuticals and cement.
1.2 Evolution of Regional Trade Agreements

Regional trade agreements (RTAs) evolved globally, against the backdrop of increasing regionalism, i.e. multi-country and bilateral RTAs, and the Doha forum of multilateral trade negotiations. The RTAs have become a major economic policy tool, through which most developing economies have achieved moderate economic growth by integrating monetary and economic unions, which reduced high tariffs and duties and established free movement of goods and services within regional markets- International Monetary Fund or (IMF, 2005).

The Government of Kenya (GOK) in its Vision 2030 Sector Plan for Trade (2013-2017) reiterated that expansion of intra-African trade agreements is a major economic policy that will boost the country’s long term growth. The GOK observed that the top five dominant agricultural commodities and service products, i.e. Tea, horticulture, Coffee, Articles of Apparels and Clothing and Vegetable oils (which accounted for about 55 percent of total exports in 2014), including tourism have declined sharply over the period, due to the impact of cyclical price instability and terrorism attacks at the coastal and northern regions.

1.2.1 Objectives of Regional Trade Agreements in Africa

The establishment of RTAs as an economic integration policy also liberalizes international trade by altering the prices of exports from the member states, as tariffs are gradually phased out relative to imports from the rest of the world, leading to changes in
the demand patterns and subsequent adjustments in both trade and output flows, according to Viner (1950).

RTAs have been confirmed by IMF (2005), to provide benefits which includes; long-term economic prosperity through exploring economies of large scale production, broadening of local markets, harmonizing economic policies with international trade standards, improved diversification of products and services due to trade liberalization and credible investments in basic regional infrastructures, e.g. roads, energy, seaports and information technology.

Africa has over thirty regional trade arrangements, which on average suggests that each African country may belong to at least four RTAs (World Bank, 2004). The IMF (2003), confirmed that despite the dense web of multiple trade and investment agreements in the African continent (which hosts 12 percent of the world’s population), Sub-Saharan African countries produce just about 2 percent of the world’s global output because of two major geographic and economic constraints, i.e. landlocked but small growth economies and weak or inadequate infrastructures. This eventually leads to extremely low productivity and worsening living conditions for the majority of her citizens.

In June 2013, at the 20th Conference of African Ministers of Industry (CAMI-20), the Government of Kenya and other African countries ratified the intra-African trade policy initiative, whose core objective was to increase the share of Africa’s merchandise and commercial trade exports in the global market from a disproportionate share of 3 percent
in 2012 to about 10 percent by 2017. This continental trade objective was to be achieved by promoting viable intra-African trade partnerships amongst the leading economies from each region.

The United Nations Economic Commission for Africa (UNECA 2015) identified eight building blocks for Regional Economic Communities (REC) or Preferential Trade Agreements (PTA) in Africa, which are namely;

i. Arab Maghreb Union (UMA)

ii. Common Market for Eastern and Southern Africa (COMESA)

iii. Community of Sahel-Saharan States (CEN-SAD)

iv. East African Community (EAC)

v. Economic Community of Central African States (ECCAS)

vi. Economic Community of West African States (ECOWAS)

vii. Intergovernmental Authority on Development (IGAD)

viii. Southern African Development Community (SADC)

The World Bank (2004) confirmed that the dominant regional trade blocks in Africa were;

i. East African Community (EAC) –Comprising Burundi, Kenya, Rwanda, Tanzania and Uganda. The protocol establishing the EAC was signed in 2009, but it came into force on July 1, 2010.
ii. Economic Community of West African States (ECOWAS)- Comprising of Benin, Burkina Faso, Cape Verde, Gambia, Ghana, Guinea, Guinea-Bissau, Ivory Coast, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone and Togo.

iii. Economic and Monetary Community of Central Africa (CEMAC)- Comprising of Cameroon, Chad, Congo, Central African Republic, Equatorial Guinea and Gabon.

iv. Common Market for Eastern and Southern Africa (COMESA)- This comprises Burundi, Rwanda, Angola, Republic of Congo, Tanzania, Kenya, Uganda, Djibouti, Egypt, Ethiopia, Eritrea, Sudan, Namibia, Swaziland, Mauritius, Seychelles, Comoros and Madagascar.

v. South African Customs Union (SACU) - Comprising Botswana, Lesotho and South Africa.

vi. Southern African Development Community; This involves Angola, Republic of Congo, Tanzania, Mauritius, Seychelles, Namibia, Swaziland, Botswana, Lesotho, South Africa, Malawi, Mozambique, Zambia and Zimbabwe.

In addition to the six dominant African RTAs, there are also three major continental trade promoting institutions, i.e. African Economic Community (AEC), the African Union (AU) and the New Partnership for Africa’s development (NEPAD).

The World Economic Forum (2011) on African trade competitiveness observed that due to robust export diversification policies and limited integration of the East African Community in the global financial markets, the EAC attained an impressive annual growth rate of about 7 percent from between 2005 to 2008 and was ranked amongst the fastest growing regional trading blocks in the world.
1.2.2 Evolution of Kenya’s Trade Diversification policy

There have been few but less effective trade policies by the GOK from between 1965-2003, due mainly to the continuous reforms in the public sector and the impact of negative economic shocks that were occasioned by high concentration on non-value-yielding export commodities i.e. coffee, tea and horticulture, whose prices and quality specifications are regulated by international commodity exchange boards in Europe and North America. (Republic of Kenya Economic Update, 2014).

The first trade policy was an import substitution strategy, as expressed in the first Sessional Paper No. 10 of 1965 (Republic of Kenya, 1965), aimed at improving international trade imbalances by stimulating the domestic market. Manyara (2015) observed that the GOK used this policy to protect the domestic market and spur the production of imported goods by local industries, thereby stimulating rapid trade growth, easing balance of payment pressure, increasing domestic control of the economy and generating employment.

The Structural Adjustment Policies (SAPs) was targeted at domestic trade liberalization and was introduced within the framework of the Sessional Paper No. 1 of 1986 and this policy replaced the import-substitution model. The SAPs focused on promoting non-traditional exports, liberalized markets and reforms of trade regulations (Republic of Kenya, 1990). The researcher confirmed that the adjustment policies of SAP were fully implemented between 1986-1989 to address public sector redundancies, price instability and macro-economic imbalances which had stifled economic growth and created an inefficient civil service structure which was fraught by bureaucracy and corruption.
The third trade policy was embodied within the Sixth Development Plan (1989-1993), and its main policy thrusts was Export oriented growth, i.e. horizontal trade diversification model which sought to restore efficiency in public resource management, institutional reforms, reduction of high tariffs, abolition of export duties, improvement in tourism services, lowering balance of payment deficits, achieving moderate inflation, increasing employment, boosting private sector led economic growth and establishing the National Export Credit Guarantee Corporation (Manyara, 2015).

According to Nganga (2015), Kenya still mainly exports raw materials or products with low value addition. Its share in global manufacturing exports has been constantly falling, from 0.18 percent in 1980 to 0.06 percent in 1994 and 0.02 percent in 2013. The author argues that the GOK’s Seventh Economic Development Plan (1994-1996) proposed regulatory changes to make investments in bonded factories and Export Processing Zones more attractive, and by the end of Year 1995 the only remaining barrier to international trade was countervailing duties.

The most recent integrated trade policy of the GOK is the Vision 2030, which was introduced from 2004 onwards, is hinged on transforming Kenya (Republic of Kenya, 2004). The policy seeks to make the country globally competitive and prosperous through massive investments in critical international trade infrastructures, expansion of the quality of exportable commodities (i.e. Tea, Horticulture, Coffee, Articles of Apparels and Clothing and Vegetable oils), political and economic service reforms and the deployment of technology to stimulate growth and development.
As shown in Table 1 below, Kenya’s most recent trade policy is deemed to have been successful, with total global exports increasing by over 64 percent from Ksh344.9 billion in Year 2008 to Ksh537.2 billion in 2014. However, export growth rate reduced between 2012 and 2013 by 3 percent, i.e. a sharp decline of Ksh15.5 billion (Year 2013) and a weaker economic growth rate of 5.7 percent (KNBS, 2014), which was mainly due to negative concerns about the outcome of the last general elections, and investment anxieties due to the devolved system of government.

### Table 1: Kenya’s Global Exports by destination: 2009-2014 (Ksh Million)

<table>
<thead>
<tr>
<th>Destination or Region</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014*</th>
</tr>
</thead>
<tbody>
<tr>
<td>European Union</td>
<td>89,295</td>
<td>92,015</td>
<td>97,922</td>
<td>115,866</td>
<td>108,719</td>
<td>104,645</td>
<td>119,958</td>
</tr>
<tr>
<td>Other European countries</td>
<td>9,106</td>
<td>8,960</td>
<td>11,501</td>
<td>20,380</td>
<td>16,476</td>
<td>18,654</td>
<td>19,007</td>
</tr>
<tr>
<td><strong>Total Europe</strong></td>
<td>98,401</td>
<td>100,975</td>
<td>109,422</td>
<td>136,246</td>
<td>125,195</td>
<td>123,299</td>
<td>138,965</td>
</tr>
<tr>
<td>U.S.A</td>
<td>20,512</td>
<td>17,422</td>
<td>22,522</td>
<td>25,772</td>
<td>26,405</td>
<td>29,936</td>
<td>38,290</td>
</tr>
<tr>
<td>Canada</td>
<td>745</td>
<td>1,009</td>
<td>1,170</td>
<td>1,190</td>
<td>1,516</td>
<td>1,297</td>
<td>1,690</td>
</tr>
<tr>
<td>Other American countries</td>
<td>798</td>
<td>531</td>
<td>688</td>
<td>630</td>
<td>820</td>
<td>2,533</td>
<td>5,684</td>
</tr>
<tr>
<td><strong>Total America</strong></td>
<td>22,054</td>
<td>18,961</td>
<td>24,380</td>
<td>27,592</td>
<td>28,740</td>
<td>33,765</td>
<td>45,664</td>
</tr>
<tr>
<td>East African Community</td>
<td>83,941</td>
<td>90,460</td>
<td>101,312</td>
<td>137,155</td>
<td>134,946</td>
<td>124,957</td>
<td>125,798</td>
</tr>
<tr>
<td>COMESA</td>
<td>56,519</td>
<td>52,598</td>
<td>67,709</td>
<td>86,110</td>
<td>86,822</td>
<td>79,210</td>
<td>86,903</td>
</tr>
<tr>
<td>Other African countries</td>
<td>21,921</td>
<td>19,552</td>
<td>19,893</td>
<td>24,335</td>
<td>28,821</td>
<td>27,307</td>
<td>28,661</td>
</tr>
<tr>
<td><strong>Total Africa</strong></td>
<td>162,540</td>
<td>162,732</td>
<td>188,914</td>
<td>247,600</td>
<td>250,589</td>
<td>231,474</td>
<td>241,363</td>
</tr>
<tr>
<td>Total Asia</td>
<td>57,241</td>
<td>59,236</td>
<td>81,600</td>
<td>95,613</td>
<td>105,460</td>
<td>107,558</td>
<td>100,018</td>
</tr>
<tr>
<td>All Other Countries</td>
<td>3,964</td>
<td>3,044</td>
<td>5,479</td>
<td>5,553</td>
<td>7,862</td>
<td>6,190</td>
<td>11,226</td>
</tr>
<tr>
<td><strong>Total Exports</strong></td>
<td>344,947</td>
<td>344,949</td>
<td>409,794</td>
<td>512,604</td>
<td>517,847</td>
<td>502,286</td>
<td>537,236</td>
</tr>
</tbody>
</table>

*Source: Republic of Kenya Economic Survey various issues

*Provisional figures*
The chart in Figure 1 below summarizes Kenya's top seven agricultural exports (Horticulture, tea, articles of clothing, roasted coffee, tobacco, plastic and essential oils) in Year 2014 accounting for about 59 percent of total exports. The prices of these traditional goods have been declining at international markets since Year 2008 due to high volatility and inelastic demand, and because of excess supply of similar products by majority of EAC and COMESA member countries.

**Figure 1: Values of Principal Domestic Exports by Kenya: 2014**

*Source: Author’s Compilation*
As shown in Table 2 below, while Kenya’s global exports grew by over 64 percent in 2014, the total import bills increased by 47 percent, from Ksh770.6 billion in 2008 to Ksh1.6 trillion by 2014, thereby creating an adverse balance of payment deficit, and depreciation of the local currency to fund external trade obligations of Ksh1,081 trillion, from Kenya’s three major import regions (supplying 90 percent of her consumable products), i.e. Europe, America and Asia.

Table 2: Kenya’s Global Imports by Origin: 2008-2014 (Ksh Million)

<table>
<thead>
<tr>
<th>Destination</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014*</th>
</tr>
</thead>
<tbody>
<tr>
<td>European Union</td>
<td>135,201</td>
<td>140,846</td>
<td>185,431</td>
<td>227,599</td>
<td>225,543</td>
<td>231,597</td>
<td>245,651</td>
</tr>
<tr>
<td>Other European</td>
<td>31,258</td>
<td>31,031</td>
<td>18,483</td>
<td>27,350</td>
<td>24,226</td>
<td>39,039</td>
<td>40,294</td>
</tr>
<tr>
<td>Total Europe</td>
<td>166,459</td>
<td>171,878</td>
<td>203,914</td>
<td>254,950</td>
<td>249,769</td>
<td>270,635</td>
<td>285,945</td>
</tr>
<tr>
<td>U.S.A</td>
<td>27,549</td>
<td>50,056</td>
<td>39,316</td>
<td>44,547</td>
<td>65,966</td>
<td>57,412</td>
<td>168,720</td>
</tr>
<tr>
<td>Canada</td>
<td>4,532</td>
<td>6,139</td>
<td>7,068</td>
<td>7,418</td>
<td>13,372</td>
<td>6,525</td>
<td>7,886</td>
</tr>
<tr>
<td>Other American</td>
<td>11,496</td>
<td>8,721</td>
<td>9,263</td>
<td>27,203</td>
<td>39,955</td>
<td>20,539</td>
<td>10,869</td>
</tr>
<tr>
<td>Total America</td>
<td>43,577</td>
<td>64,916</td>
<td>55,647</td>
<td>79,168</td>
<td>119,293</td>
<td>84,477</td>
<td>187,476</td>
</tr>
<tr>
<td>East African</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community*</td>
<td>12,589</td>
<td>12,568</td>
<td>20,351</td>
<td>26,899</td>
<td>30,857</td>
<td>28,811</td>
<td>36,658</td>
</tr>
<tr>
<td>COMESA*</td>
<td>22,947</td>
<td>20,529</td>
<td>31,216</td>
<td>44,061</td>
<td>45,117</td>
<td>41,121</td>
<td>42,066</td>
</tr>
<tr>
<td>Other African</td>
<td>50,453</td>
<td>71,569</td>
<td>63,237</td>
<td>80,892</td>
<td>64,781</td>
<td>77,908</td>
<td>67,416</td>
</tr>
<tr>
<td>Total Africa</td>
<td>85,991</td>
<td>104,672</td>
<td>114,804</td>
<td>151,254</td>
<td>140,755</td>
<td>147,839</td>
<td>146,141</td>
</tr>
<tr>
<td>Total Asia</td>
<td>468,770</td>
<td>442,125</td>
<td>567,921</td>
<td>809,123</td>
<td>856,525</td>
<td>896,700</td>
<td>990,173</td>
</tr>
<tr>
<td>All Other Countries</td>
<td>1,947</td>
<td>4,506</td>
<td>4,920</td>
<td>6,254</td>
<td>8,246</td>
<td>13,664</td>
<td>8,586</td>
</tr>
<tr>
<td>n.e.s</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grand Total</td>
<td>770,651</td>
<td>788,097</td>
<td>947,206</td>
<td>1,300,749</td>
<td>1,374,587</td>
<td>1,413,316</td>
<td>1,618,321</td>
</tr>
</tbody>
</table>

*COMESA includes imports from Uganda

*Provisional figures (2014)

Source: Republic of Kenya Economic Survey Various issues
Figure 2 below explains the major consummable products of the country, which is mostly relied upon by local manufacturers in processing traditional exports. The bulk, i.e. 53 percent of external trade payments comes from petroleum products, industrial machines, aircraft equipments, road vehicles and iron and steel. It is believed that with the GOK’s recent investments in high capacity rail networks, port infrastructures and clean energy sources, and provided the supply conditions encourages private-public partnerships, then we may see very high reductions in the volume of those importable products by Year 2017.

**Figure 2: Values of Principal Domestic Imports by Kenya: 2014**

*Source: Author’s Compilation*
The EAC Regional Economic Community (REC) has consolidated itself as the major export destination for Kenya, as trade increased by 37 percent from Ksh90.4 billion to Ksh124.9 billion, between 2009 and 2013. By Year 2014 the major products exported to the EAC region were petrochemicals, fuels, lubricants, machinery and transport services. Uganda is now Kenya’s top export destination (with 13 percent market share), followed by Tanzania (9 percent share) and Rwanda (3 percent).

It was observed that while the EAC absorbed about 52 percent of Kenya’s total exports to Africa and 25 percent of exports to the rest of the world (Year 2014), she contributed poorly at about 2 percent to the country’s import demands of merchandise products, i.e. food and beverages, industrial supplies, refined petroleum products and machineries, due to exports of similar agricultural products and poor industrial growth of EAC countries.

1.3.3 Kenya’s Trade Growth with the EAC

The Treaty of the East African Community came into force in July 2000, comprising of Kenya, Uganda and Tanzania, and these three countries currently account for about 87 percent of trade flows within the EAC, with Kenya having 40 percent, Uganda-33 percent, while Tanzania contributed 14 percent (East African Community, 2011).

The protocol which established the EAC as a Custom Union (EAC-CU), and thereafter registered additional member states, i.e. Burundi and Rwanda to join Kenya, Uganda and Tanzania was signed in December 2004, but the implementation of the CU started from 1\textsuperscript{st} January 2005. The EAC Common Market agreement came into effect on 1\textsuperscript{st} July 2010, and its overall objective is to build an integrated customs union for a broader monetary
and political federation of the East African States, and also widen and deepen trade cooperation amongst the partner states.

The EAC Treaty, Chapter 15 (Article 89) identifies the critical areas for trade cooperation among member states, i.e. the harmonization of regulatory laws and practices, construction and maintenance of infrastructure and the designing of intermodal transportation systems.

The GOK is committed to strengthening the EAC Regional Economic Community, and this was clearly demonstrated by major developments in the EAC-Kenya export trade infrastructures, as observed from the recent expansion of the Lamu sea port, upgrading of terminals at Jomo Kenyatta International Airport and the construction of a modern Standard Gauge Railway, which runs from Mombasa Sea ports through Nairobi town and ends at Malaba- which borders Kenya and Uganda.

The EAC region has also been actively engaging her members in eliminating the Non-Trade Barriers, through the National Monitoring Committees (NMCs) that was launched in December 2008, which also meets quarterly to implement this mandate.
The Table 3 below summarizes the unfavorable import deficits of 29 percent (Year 2014) between Kenya and EAC. The negative balance of trade position supports previous empirical studies which proved constant trade diversion of high quality imports to European, Asian and American markets, with the EAC region loosing huge trade revenues due to weak trade creation.

**Table 3: Value of Kenya Exports and Imports with EAC: 2008-2014 (Ksh. Billions)**

<table>
<thead>
<tr>
<th>Description</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014*</th>
</tr>
</thead>
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<tr>
<td>Exports</td>
<td>83.9</td>
<td>90.5</td>
<td>101.3</td>
<td>137.2</td>
<td>134.9</td>
<td>124.9</td>
<td>125.7</td>
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<tr>
<td>Imports</td>
<td>12.6</td>
<td>12.6</td>
<td>20.4</td>
<td>26.9</td>
<td>30.9</td>
<td>28.8</td>
<td>36.6</td>
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<tr>
<td>Percent (%) of Imports over Exports</td>
<td>15%</td>
<td>14%</td>
<td>20%</td>
<td>19%</td>
<td>23%</td>
<td>23%</td>
<td>29%</td>
</tr>
</tbody>
</table>

*Provisional figures


The EAC has continued to be the major export destination for Kenya, accounting for over 54 percent of total exports to the African continent in 2013, and maintaining a high growth rate of 60 percent, from exports of Ksh83.9 billion in 2008 to Ksh134.9 billion by 2012. EAC regional trade also accounted for 23 percent of Kenya’s global exports in Year 2014, according to the Author’s compilation.

The downtrend of trade growth within the EAC was observed in the gradual decline of exports to the region from Ksh137.2 billion in 2011 to Ksh125.7 billion 2014, which was due largely to the barriers of high exchange rates and other non-tariff barriers, i.e. import quotas, export restrictions, bureaucratic custom practices and competition from the informal sectors.
Nganga-Kiriti and Okelo (2012) found out that food and agricultural commodities dominated the composition of exports outside the EAC region for Kenya, Uganda and Tanzania in Year 2001.

Abala (2013) argued that a distinctive feature of the manufacturing sector in Kenya is the coexistence of the modern sector alongside a rapidly expanding informal sector, and while the formal sector comprises mainly small, medium, and large-scale enterprises (i.e. firms employing more than one hundred workers), the informal sector consists of numerous open-air small and micro-scale productive activities in towns and rural trading centers, usually employing less than five workers.

In 2014, the EAC region contributed poorly to the country’s import demands, accounting for just 2 percent i.e. Ksh36.6 billion of Kenya’s total import demand of Ksh1.6 trillion, due to challenges of industrial expansion and over-reliance on similar primary export products.

It was observed that the huge economic potentials of the EAC market has not been realized by Kenya, despite having a vibrant market population of over 130 million people in 2010, a high GDP of USD74.5 billion in 2009, viable land mass area of 1.82 million square kilometers and several untapped natural resources, i.e. Oil & Gas, precious metals, wind energy, sea ports, arable land for agricultural expansion, good climatic conditions for tourism and fairly stable democratic governments that can all spur rapid economic growth for Kenya (Republic of Kenya Economic Survey, various issues).

The low value yielding exportable products such as Tea, Coffee, Apparels of Clothing, and Horticulture have also dominated the country’s export basket for over two decades, thereby suggesting the poor performance of the horizontal trade diversification model to
increase Kenya’s export earnings, reduce trade deficits and imbalances within the EAC region, and enable the country achieve her overall economic growth targets of Vision 2030.

1.4 Trade growth potentials in relation to policy challenges

The GOK’s major economic growth program is captured in its Vision 2030 policy statement. The Second Medium Term Plan (MTP) of 2013-2017 outlines the country’s plan for sustained growth in agriculture, manufacturing, and service sectors, to enable Kenya achieve a GDP growth rate of 10 percent by 2017 (Republic of Kenya Economic Update, 2014).

Kenya is ranked as the fifth largest economy in Sub-Saharan Africa, with an estimated population of over 40 million people and average growth rates of 5 percent from 2007-2013 and 5.4 percent in 2014. She currently has a rebased GDP of USD55.2 billion and a GDP per capita figure of USD1,246 (World Bank, 2013). The country’s long-term growth was mainly attributed to the real estate industry, tourism, agriculture and manufacturing (World Bank, 2014).

The Trade diversification strategy adopted by Kenya within the EAC is the horizontal model, where the country exports mostly agricultural commodities, e.g. tea, Arabica coffee, horticulture, and low quality machinery and transportation services, but imports refined food and beverages, industrial supplies, machinery, and oil & gas petroleum products from Europe, Asia and Africa.

The European imports have increased by 57 percent, i.e. from Ksh171.8 billion in Year 2009 to Ksh270.6 billion by Year 2013, and now accounts for over 17 percent of total
world imports of Ksh1.6 trillion in 2014. Asia’s import trade grew to about 61 percent of total imports, while Africa’s share was about 9 percent in Year 2014, i.e. Ksh146.1 billion.

Kenya’s exports earnings have been shrinking over the years due to weaker demands from Europe, and the high importation costs of refined commodities from Europe and Asia, which have not been adequately supplied by the other top two EAC exporters. The challenges of funding the country’s budget deficits have been compounded by the gradual ceasing of monetary easing policies and production of shale oil by the United States government.

The continuous decline in trade earnings across Europe and North America after the global economic crisis of 2008, coupled with price volatility of Kenya’s exportable products to those markets, motivates the need for this study. The research aims to explore the benefits and challenges associated with the horizontal trade diversification policy of Kenya with the EAC and recommend policies that will spur moderate economic growth and development in the long-term.

1.5 Problem Statement

The Government of Kenya’s Vision 2030 master plan asserts that intra-African trade growth is a very critical component in the performance of Kenya’s developing economy, which in turn leads to improvement in the standards of living of citizens and ensuring stability in both fiscal and monetary environment. It therefore suggests that increased growth in Kenya’s export earnings from trade with the two major EAC partners i.e. Uganda and Tanzania should have a direct correlation with the stability of the financial
sector and major macroeconomic aggregates in the country, i.e. Exchange rates, inflation, poverty rates, general price level and employment.

Within the past three years, it was observed that the country suffered a gradual decline in trade with the EAC, from Ksh137.2 billion in Year 2011 to Ksh124.9 billion by 2013, and a corresponding widening of the country’s balance of trade deficits, which increased from Ksh537 billion in Year 2010 to Ksh911 billion in Year 2013, i.e. 70 percent shortfall. Also, the top seven exports of Kenya which accounts for about 59 percent of global trade in Year 2014 are products with volatile price structures in international markets.

The major drawback to Kenya’s income and trade growth since the global recession of 2008 has been the country’s vulnerability to traditional exports to the OECD countries; i.e. European Union (Euro-zone debt crises) and the United States of America’s gradual ceasing of monetary stimulus, which has now increased the cost of financing imports and payments on foreign currency loans.

It has been observed that the country’s foreign and domestic debts increased steadily over a period of thirty one years, with external debt rising from Ksh13 billion in 1981 to Ksh749.2 billion in 2012, while the domestic debt rose from Ksh10.7 billion (1981) to Ksh768.7 billion (2012), according to Wangari (2013). The Kenya Institute of Economic Affairs (2015) observed that the costs of financing imported goods, subsidies for local consumption and welfare services has sharply increased over the past three years, leading to high government debts of Ksh2.2 trillion as at June 30, 2014, which now accounts for about 42 percent of total GDP of Ksh5.29 trillion in 2014.
The ongoing depreciation of the local currency by the Central Bank of Kenya (CBK), which is aimed at controlling balance of payment deficits from imported goods and servicing of foreign indebtedness, has steadily caused over 26 percent value erosion in the shillings, i.e. from Ksh84.2/USD1 in June 29, 2012, to Ksh106/USD1 as at July 28, 2015.

According to the World Bank (2013), the Herfindahl-Hirschman index or HHI is the most reliable indicator for measuring the dispersion of trade value across an exporter’s product, and the HHI index is bounded between 0 and 1. A higher index closer to 1 shows that exports are vulnerably concentrated in fewer sectors while a completely diversified export portfolio, which in turn improves economic growth, will be closer to zero.

In view of the foregoing economic issues, the research aims at measuring the effectiveness and sustainability of Kenya’s horizontal trade diversification index (HHI) to economic growth, and comparing outcomes with the two dominant countries in the EAC, i.e. Uganda and Tanzania. The study is important as the conclusions reached will lead to the formulation of better set of pro-growth trade policies for these EAC countries.

1.6 Research Questions

This study intends to provide answers to the following questions;

   i. How effective has the horizontal trade diversification policy contributed to the achievement of Kenya’s economic growth objectives during the review period?

   ii. Will this EAC trade diversification model still support Kenya’s long-term economic growth target of 10 percent by 2017?
1.7 Objectives of the Study

The broad objective of the research is to measure the effectiveness of the EAC horizontal trade diversification policy on Kenya, Uganda and Tanzania’s economic growth from 1995-2013, being the earliest period trade diversification data was made available by UNCTAD.

The other specific objectives of the research are;

I. Determine the contributions of diversification to the growth of Kenya, Uganda and Tanzania, prior to the enforcement of the EAC treaty in July 2000, up until Year 2013.

II. Evaluate the impact and trends of technological development, diversification and economic growth for these EAC countries.

III. Use the results obtained from data analysis to recommend suitable policies that will aid the achievement of Kenya’s 10 percent growth objective by 2017.

1.8 Justification of the Study

The Government of Kenya, under its second medium term plan (2013-2017) aims at increasing economic growth rate to 10 percent by 2017, through the transformation of domestic and international trade across Africa, especially the EAC, in such areas as agriculture, manufacturing, telecommunication, tourism, clean energy and oil & gas production.

Despite the laudable achievements of the GOK in achieving high growth rates by reforming the social, political and intra-African trade infrastructures, Kenya has been recording significant reduction in foreign exchange reserves, due to the high cost of
financing imported consumables and accumulated foreign loans. Also, there has been decline in growth of tourism earnings since Year 2013 due to terrorism attacks, while most agricultural exports are become vulnerable to volatile commodity prices in the European and Asian markets.

The EAC region has recently become a stable market for Kenya’s exports, due to policy and infrastructural interventions by the current administration. However, despite the success of these trade integration strategies, there still exist huge trade imbalances between Kenya and the two dominant EAC countries (Uganda and Tanzania), hence the lack of the right set of trade diversification policies that will maximize for Kenya the growth potentials of the EAC market.

The outcome of this empirical study shall improve the stock of literature on intra-African trade and its impact on economic growth and development.

1.9 Organization of the Study

Following this introduction of the study, the rest of the paper is organized as follows; Chapter two reviews both theoretical and empirical literature and gives an interpretation of other contemporary studies on the subject of international trade. Chapter three outlines the specific methodology used in testing and analyzing the outcomes of the research hypothesis and describes the data types and sources. Chapter four presents the analyzed data and discusses the empirical results obtained, while Chapter five narrates the conclusion and policy recommendations of the research.
CHAPTER TWO

2.0 LITERATURE REVIEW

This chapter reviews theoretical and empirical literature on export trade diversification models and its impact on long-term economic growth, with special focus on Asian and African economies. Asia has now become Kenya’s most dominant industrialized trade partner, as the continent accounted for about 61 percent of imports in Year 2014 (KNBS, 2014). The theoretical literature summarizes the classical, neo-classical and modern trade theories, reviews the evolution of trade diversification theories and analyzes the relevant empirical literature that is useful for this study.

2.1. Introduction

Regional trade diversification has become one of the most important economic policies of the GOK, since the introduction of the sixth economic development plan of 1989. This trade program was aimed at improving long-term economic growth through various intra-African trade and investment agreements that were subsequently implemented during that period. This study shall examine literature which explains those factors that influence the effectiveness of trade diversification models.

According to Dwivedi (2004), economic growth is a sustained increase in per capita national output or net national product over a long period of time. This suggests that real growth is sustainable when the rate of increase in total output is greater than the rate of population growth.
The major theories explaining economic growth includes; Harrod-Domar theory of growth, Meade’s Neo Classical model of economic growth and the Solow model of long-run growth, while theories of international trade began with the works of Mun (1664) using the Mercantilism theory, Adam Smith (1776) proposed the Absolute advantage theory of trade, while David Ricardo further extended Smith’s absolute advantage theory in 1817, by introducing the comparative advantage or opportunity cost principle.

The Heckscher (1919), Ohlin (1933) theorem, i.e. H-O, was an extension of Ricardo’s work on factors determining trade between two countries, assuming existence of free trade and zero transportation costs.

According to Mejean and Andrade (2012), the H-O theorem concludes that; provided those assumptions holds true, then countries will specialize in the trading of those goods that intensively use its richest factor endowments, thereby leading to relative factor price equalization, through international price equalization mechanisms.

The modern theory of international trade was made popular by the Nobel Laureate; Krugman (1981), who defined competitiveness of a country in terms of existence of imperfect market in the national economies, which on aggregate confers relative competitiveness to that economy’s exports, especially in those industries where substantial economies of scale exist or have a firm that was the first to move into that industry.
2.2 Evolution of Theories on Export Trade Diversification

The traditional theories mentioned above argued that countries would only benefit from international trade if they can specialize in producing and exporting products where they have absolute or comparative cost advantage, under certain economic assumptions that was roundly disputed by Krugman (1981) hypothesis of the dynamic nature of global supply chains.

Shortly after the Second World War (from 1939-1945), Prebisch (1950) and Singer (1950) argued against the global practices of classical and neo-classical theories of free trade, because of its failure to address the import dependency trap of smaller economies, which had stunted their economic growth and made developing countries heavily dependent on consumer and manufactured goods from other developed nations, while they exchanged their agricultural and raw materials inputs at lower prices.

The conclusion of the Prebisch-Singer export diversification hypothesis is that developing countries should increase the variety of their exportable product basket, due to low income elasticity of demand for such primary products, and that diversifying helps to reduce the risk of commodity shocks, price instabilities and terms of trade (Noureen and Mahmood, 2014).

The Prebisch-Singer hypothesis gained acceptability by prominent economists, such as Dogruel and Tekce (2011) and Haussman and Hwang (2006), as they observed that the most frequent requirement for the success of diversification policy is the existence of an elastic demand for the exporting country’s products in global markets, to protect from adverse effects of negative terms of trade.
2.3 Empirical Literature Review

The GOK from early 1989 after the sixth development plan designed her trade policy to support diversified export-led growth, i.e. the horizontal trade diversification model. This was aimed at increasing the volume and composition of several primary exports to minimize the effects of volatile export prices, but this policy had produced mixed economic results due to the inelastic demand of Kenya’s agricultural products in world markets, i.e., there are fewer substitutes to agricultural exports, therefore the percentage change in quantity demanded of those primary products has always been less than the adjusted market prices.

Despite the policy challenges, this empirical research shall explore various studies carried out by trade economists who have outlined the mechanisms for structural transformation in trade diversification, through which developing countries can successfully develop and strengthen global supply chains that are required for generating high-yield manufactured goods.

Most trade economists have adopted the Herfindahl-Hirschman index (HHI) as the most reliable indicator for measuring export diversification in developing countries. According to Petersson (2005), the depth of diversification is obtained by subtracting one from the HHI, to determine whether the structure of exports by product of a given country differs from the world average.

The use of a theoretical framework to explore the relationship between the overall exports for economic growth and the advantages of export diversification was carried out by Hausmann and Rodrik (2003). The authors used a factor endowments model to predict the structure of comparative advantage for different Latin American and Asian member
countries for the period 1960-2000, measured by their economic growth as dependent variable and share of twenty-five item of manufactured products in total export basket as independent variables, and then compared those with the 6 digit HS code (UNCOMTRADE) data. The results obtained proved that developing nations improved their growth rate through diversification of investments in several innovative goods, rather than the traditional comparative advantage structure.

By using a fixed effect model estimate across fifty-six countries from 1960-2002, Bebczuk and Berretoni (2006) proposed seven major economic variables or determinants of export diversification in developing countries. They adopted the HHI index as the measure of export diversification and as the dependent variable. Furthermore, export to GDP, manufacturing export to total exports, GDP per capita, domestic investment, financial development, net foreign direct investment and telephone lines (per 1,000 people) were all used as independent variables. The research concluded that diversification in developing countries increases largely as compared to other developed countries, whose macroeconomic performance is good with stable institutions and total factor productivity is high.

As a result of the robustness of panel data estimates to measure the impact of export diversification on growth in forty-one Sub-Saharan African (SSA) and East Asian countries from 1965 to 2000, Yokoyama and Alemu (2009) confirmed that vertical export diversification was very successful in enhancing economic growth in the East Asian region because of government’s massive investment in human capital over
education and the abundance of physical capital received through foreign direct investments (FDI). In SSA, the authors discovered that horizontal export diversification shared a positive relationship with economic growth, but due to the challenges of poor investment in human and physical capital, and concentration of African countries on primary export products, the effect on growth wasn’t as successful as other East Asian countries.

By using fixed effect model estimation of panel data from 1990-2003, Damuri (2011) showed that trade integration and specialization in the Association of Southern East Asian Countries-plus three (ASEAN5+3) countries namely Malaysia, Singapore, Philippines, Thailand, Indonesia, China, Japan and South Korea, was not stable overtime in ASEAN5+3 economies, because the countries included in the study concentrated diversification on different manufacturing products, therefore different factors contributed to some extent in producing different degrees of concentration in exports. His results proved that depreciation of real exchange rates and tariff rates have significant negative effects on concentration. Also, greater economic integration within ASEAN economies led to less product concentration, and therefore the GDP of these ASEAN countries was positively associated with the trade specialization of those economies.

Following the previous studies carried out on estimating the impact of diversification on developing countries, Gylfason and Nganou (2014) used Uganda as a case study, and compared the results obtained with selected African countries. The research used independent variables such as quality of education, distribution of natural resource
wealth, foreign direct investment, physical, social, human and financial capital and exchange rate. The authors confirmed that Sub-Saharan Africa’s ratio of manufactures to total merchandise exports increased from 12 percent in 1974 to 32 percent in 2002, but dropped to 27 percent in 2012 due to price volatility in export composition (World Bank, 2012). The HHI concentration was ranked from zero to one, with values closer to one indicating a larger difference from the world average, and therefore one minus the HHI rises with diversification of products.

The factors affecting export diversification in selected ASEAN region (Indonesia, Malaysia, Singapore, Thailand, Philippines) and South Asian Association for Regional Co-operation or SAARC region comprising Pakistan, India, Bangladesh and Sri Lanka from 1986-2012 using a balanced panel dataset was undertaken by Noureen and Mahmood (2014). The researchers used a Fully Modified Ordinary Least Square (FMOLS) technique, which proved that export diversification (represented by HHI index) is significantly and positively dependent on explanatory variables such as; GDP per capita, foreign direct investment to GDP, Exports to GDP, Gross Fixed Capital formation to GDP, Manufacture exports to total exports and Credit to private sector.

In order to determine the factors affecting the competitiveness of Kenya’s exports to the EAC, Ayieko (2011) argued that openness and nominal exchange rate has a large effect on export competitiveness, while fixed capital formation which is a proxy for trade facilitation has a small co-efficient effect on export competitiveness. The study of Jepkemei (2012) adopted the gravity model technique to measure the effects of EAC-
RTAs on Kenya’s agricultural exports from 2000-2010. The researcher confirmed that Kenya’s agricultural exports; especially maize and meat had reduced significantly due to poor transportation networks and non-tariff barriers between Kenya and Tanzania, who both produce similar exports in large quantities.

Kwamboka (2013) confirmed the significant effect of export led growth on Kenya’s economic growth from 1980-2011 by using gravity model to estimate relationship of seven variable macro-economic models, i.e. GDP, export, import, capital, labour, real exchange rate and terms of trade. The researcher observed that there exists a positive unidirectional causality flowing from exports to economic growth. The primary goal of this study is to explain whether export diversification as an intra-African trade model within the EAC is an effective policy for sustainable economic growth in Kenya, and across the EAC.

From recent figures obtained from UNCTAD (2014), the manufacturing component in Kenya’s exports now constitutes 34 percent. The merchandise trade deficits has been worsening since the past four years, with gross annual increases of over 56 percent from 2010-2014, i.e. USD6.9 billion in Year 2010, USD10.5 billion in Year 2013 and USD12.2 billion in Year 2014.

Conversely, the country’s exports have recovered from negative economic shocks associated with terrorism and political instability at the coastal regions. Growth of services improved to 65 percent, i.e. USD1.4 billion in Year 2014, compared to USD906 million in Year 2013.
2.4 General Overview of Literature

The bulk of the empirical literature reviewed confirmed the theory that export diversification tends to have a positive effect on economic growth, which in turn improves the income and welfare of a country due to increased specialization, wage income growth and improvement in living standards. However, most of the literature available tends to agree that the degree of technological transformation (Do gruel and Tekce, 2011) and elasticity of demand for goods; Noureen and Mahmood (2014) both have larger significance on economic growth.

The study will adopt appropriate econometric tools to analyze the effects of horizontal trade diversification on the economic growth of Kenya, Uganda and Tanzania using the HHI index as the dependent variable proxy for export diversification. The explanatory variables are GDP per capita, Net FDI to GDP, Exports to GDP, Gross Fixed Capital formation to GDP, Manufacture exports to total exports, Credit to private sector and Real exchange rate.
CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter provides the methodology used to carry out the research and the data set requirement and sources. It begins with the conceptual framework, followed by the specification of the empirical model of the panel data, and the interpretation of the signs of the independent variables. The test for the reliability of the data is discussed under the diagnostic and Co-integration test, which is expected to be undertaken.

3.2 Theoretical Framework

The reviewed literature offers three different ways of calculating the degree of export diversification in international trade, but this depends upon the different definitions, dimensions, forms, and levels of diversification. The more reliable measures of diversification or specialization can be obtained through determining different variety of specialization or concentration indices (Noureen and Mahmood 2014).

Following the works of Petersson (2005), Bebczuk and Berrettoni (2006) and Noureen and Mahmood (2014), this study shall adopt the formula derived by the researchers for calculating the Herfindahl-Hirschman index (HHI), which determines the changes in Kenya’s export concentration to the EAC region.

According to Petersson (2005), the HHI index is calculated as follows;

$$SPEC_{jt} = \sum_{j} \left( \frac{E_{jit}}{\sum_{j} E_{jit}} \right)^2 \quad \text{................................................. (1)}$$
The HHI is calculated by squaring the value of exportable products of each country, and then summing the resulting figures obtained. The notations are described as follows:

- \( E_{ijt} \): The exports of EAC countries ‘j’ for ‘i’ products (sector) at a time period ‘t’.

- \( \text{HHI Index value} \): ranges between 0 and 1 (calculated by UNCTAD), where an index of 1 shows a full degree of export concentration (or specialization) and 0 value indicates complete export diversification and reduced vulnerability to trade shocks.

The HHI for EAC countries is shown in Table 4 below, which reflects a higher degree of regional trade concentration for Tanzania with 0.74 and GDP of USD45.8 billion (2013) and Uganda with 0.72 and GDP of USD26.4 billion (2013). Kenya however had an improving but constant HHI at 0.64 (2011-2013) with a GDP of USD54.4 billion (2013).

Also, the degree of export trade diversification can be identified from the changes in sector or products composition over the nineteen year’s period.

### Table 4: EAC Countries HHI & GDP Figures: 1995-2013

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<td>0.78</td>
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<td>0.75</td>
<td>0.76</td>
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<td>18,508</td>
<td>18,822</td>
<td>22,092</td>
<td>27,989</td>
<td>29,256</td>
<td>30,755</td>
<td>33,311</td>
<td>38,978</td>
<td>45,859</td>
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<td></td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>HHI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.89</td>
<td>0.86</td>
<td>0.85</td>
<td>0.88</td>
<td>0.86</td>
<td>0.83</td>
<td>0.86</td>
<td>0.80</td>
<td>0.78</td>
<td>0.75</td>
<td>0.80</td>
<td>0.76</td>
<td>0.75</td>
<td>0.75</td>
<td>0.74</td>
<td>0.76</td>
<td>0.73</td>
<td>0.72</td>
</tr>
<tr>
<td>GDP (USD millions)</td>
<td>7,877</td>
<td>7,982</td>
<td>8,596</td>
<td>8,257</td>
<td>7,839</td>
<td>7,469</td>
<td>7,765</td>
<td>8,168</td>
<td>8,633</td>
<td>10,330</td>
<td>12,295</td>
<td>13,484</td>
<td>16,591</td>
<td>20,055</td>
<td>20,166</td>
<td>21,620</td>
<td>23,554</td>
<td>25,515</td>
<td>26,444</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Source: UNCTAD (2015)*
3.3 Empirical Model Specification

Literature confirms that it is difficult examining all the true factors of export diversification, because of the lack of extensive theoretical or empirical structure to identify all potential factors in the whole (Noureen and Mahmood 2014). However, adopting the modified HHI model presented by Bebczuk and Berrettoni (2006), we can adopt a macroeconomic model relationship of dependent variable (HHI) and independent variables as captured below;

\[ HHI = f \left( GDPP, FDI, EXP, GFC, CPS, EXCH, MANU \right) \] \hspace{1cm} (2)

Where; HHI is the export diversification rate,
- GDPP is the GDP per capita
- FDI is foreign direct investment to GDP
- EXP is the exports to GDP
- GFC is the gross fixed capital formation to GDP
- CPS is the credit to private sector.
- EXCH is the real exchange rate
- MANU is manufactures exports to total exports

The study employs secondary annual balanced panel data (2005-2013) of the three most dominant EAC countries, i.e. Kenya, Uganda and Tanzania, and its sourced directly from the United Nation's Commodity Trade Statistics Database (UNComTrade, various issues) and the World Bank (World Development Indicators, various issues).
3.4 Estimable Model Specification

The study intends to estimate the macroeconomic model using the OLS regression estimation technique. The econometric form of the equation two above is given as;

$$HHI_{it} = \alpha_0 + \beta_1 exp_{it} + \beta_2 gdpp_{it} + \beta_3 cps_{it} + \beta_4 manuf_{it} + \beta_5 gfc_{it} + \beta_6 exch.\ rate_{it} + \beta_7 fdi_{it} + \beta_8 EAC_{it} + \varepsilon_{it}.$$ (3)

Where; HHI is the export diversification rate as a dependent variable, represents the time period (1995-2013), i indicates countries under study and other explanatory variables are GDPP which is the GDP per capita, FDI which is foreign direct investment to GDP, Exp which is the exports to GDP, GFC which is the gross fixed capital formation to GDP, Manuf which is manufactures exports to total exports and CPS which is credit to private sector, EAC represents dummy variable to measure effects of the EAC Treaty on diversification (0 before Treaty and 1 after enforcement of Treaty), $\varepsilon$ is the error term, $\beta_0$ the intercept and $\beta_1, \beta_2, \ldots, \beta_8$ are slope parameters.

GDP per capita is taken as a independent variable to proxy economic growth through labour supply, and other independent variables were adopted in this study because they are all indicative of macro-economic efficiency and strength and indicate growth of domestic firms in international trade (Noureen and Mahmood 2014). Furthermore, FDI and GFC determines value of physical capital investments to GDP, EXP identifies volume of foreign earnings to GDP, CPS is private sector credit/savings and Manuf, is the main determinant of the level of technological or structural (vertical trade diversification).

The expected signs for explanatory variables as indicated in Table 5 overleaf, are derived from various literature reviewed. Some papers have found out that per capita GDP affects export diversification negatively while others have found this to affect it positively.
Literature reviewed has it that Export to GDP, Manufactures export to total exports, Fixed Capital to GDP, Credit to Private sector investment and Net FDI and the EAC Treaty all affects growth positively, with a long-term indirect impact on economic growth.

The EAC Treaty dummy variable is interpreted as ‘0’ before the Regional Trade Agreement was implemented from periods 1995-2000, and ‘1’ after implementation of Treaty, i.e. 2001-2013 for the three countries; Kenya, Uganda and Tanzania. The EAC dummy sign is positive because the Treaty is expected to boost trade diversification policy.

### Table 5: Theoretical expected signs of explanatory variables with Export diversification

<table>
<thead>
<tr>
<th>Variable</th>
<th>Abbreviated As:</th>
<th>Indicators</th>
<th>Expected sign (+/-)</th>
<th>Data Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Export to GDP</td>
<td>EXP</td>
<td>Competitiveness</td>
<td>+</td>
<td>UNCTAD</td>
</tr>
<tr>
<td>Manufactures export to total exports</td>
<td>MANU</td>
<td>Industrial sector growth rate</td>
<td>+</td>
<td>UNCTAD</td>
</tr>
<tr>
<td>Per Capita GDP</td>
<td>GDPP</td>
<td>Institutional Strength</td>
<td>+,-</td>
<td>UNCTAD</td>
</tr>
<tr>
<td>Gross Fixed Capital to GDP</td>
<td>GFC</td>
<td>Domestic investment growth rate</td>
<td>+</td>
<td>UNCTAD</td>
</tr>
<tr>
<td>Credit to the Private Sector to GDP</td>
<td>CPS</td>
<td>Financial development</td>
<td>+</td>
<td>UNCTAD</td>
</tr>
<tr>
<td>Net Foreign Direct Investment to GDP</td>
<td>FDI</td>
<td>FDI flow rate (macroeconomic efficiency)</td>
<td>+</td>
<td>UNCTAD</td>
</tr>
<tr>
<td>* EAC Dummy Variable</td>
<td>EAC</td>
<td>Effects of EAC Treaty on HHI</td>
<td>+</td>
<td>UNCTAD</td>
</tr>
</tbody>
</table>

*Source: Noureen and Mahmood (2014), *Author’s inclusion.*
3.5 Diagnostic tests and measurement of variables

Diagnostic test is carried out to confirm the consistency or otherwise of models. These tests includes test for normality, serial correlation and heteroscedasticity. To test for normality, Jarque-Bera or Shapiro-Wilk test statistics is used to determine whether the residual variances are normally distributed. Autocorrelation tests are used to establish whether the residual variances are correlated across periods. Test of heteroscedasticity is conducted to determine whether the error terms have equal variances or not. Heteroskedasticity is present if the variances are not constant across observations.

3.5.1 Unit Root Test

The test for stationarity of the model is undertaken to avoid spurious or inconsistent regression problems in cross-sectional data, which occurs when truly unrelated series are seen to be related because they share a common time trend- and this can be confirmed using DW-Statistics.

To capture the relationship between non-stationary series within a stationary model, we apply the Augmented Dickey Fuller test and establish the order of integration of the individual series. The null hypothesis of this test is the existence of a unit root (non-stationary). The absolute value of the ADF test statistic should be greater than critical ADF test statistic at; 1%, 5% or 10% levels of significance for the null hypothesis to be rejected.
3.5.2 Co-integration Analysis Test

Co-integration analysis confirms if macro-economic variables which usually trend together overtime in groups may eventually drift apart together, i.e. if the regression of two series that are integrated of order 1 yields residuals that are integrated of order 0, then we have co-integration.

3.6 Estimation Technique

The main tool of analysis is the Pooled Ordinary Least Squares (POLS), which allows us to pool the panel data together and estimate an OLS regression. Before estimation, the data is subjected to test for the major problem of individual heterogeneity. To control for this problem, we shall determine the individual-specific and time-specific effects on the panel dataset collected, using the Hausman test statistics to determine whether to use either the random effects or fixed effects model. If the Hausman test is insignificant, we use the random effects, but if significant we use the fixed effects model.

The random effects model is preferred because it assumes that the individual specific effects for the EAC countries are uncorrelated with the independent variables that will be measured against the HHI, thereby avoiding omission of variables bias that is common with fixed effects models.

The advantages of panel data includes control of heterogeneity of cross-sectional units, increase in the degrees of freedom, larger number of data points over several time periods (1995-2013), and permits more accurate analysis of dynamic adjustments of macroeconomic variables. The main software that will be used in the study is Stata 12 due to its accuracy in analyzing and simplifying the interpretation of panel data estimates.
3.7 Data Type and Sources

The study uses secondary panel data of the top three EAC exporting countries, i.e. Kenya, Uganda and Tanzania from 1995-2013, and the main source of data for the macroeconomic variables are UNComTrade, KNBS and World Bank Development Indicators. The HHI diversification data is provided by UNCTAD on annual observations, for the three countries.
CHAPTER FOUR

ESTIMATION RESULTS AND DISCUSSIONS

4.1 Introduction

The chapter highlights the statistical description of the panel data empirical results for the three countries, i.e. Kenya, Tanzania and Uganda, whose combined GDP was USD136.4 billion (Year 2014), and represents 92 percent of total EAC GDP of USD147.2 billion for same period (World Bank 2014).

The major research objective was to determine the effectiveness of the horizontal trade diversification policy to Kenya’s economic growth objectives and determine if the diversification model will still support Kenya’s long-term economic growth target of ten percent by 2017.

4.2 Descriptive Statistics

From Table 6 overleaf, it is clear that there is no high spread of data among the dependent and independent variables. The total number of panel observations, i.e. ‘N’ is fifty seven for the three EAC countries- ‘n’; during nineteen years period (1995-2013).

The model presents us with higher degrees of freedom, which shows that the cross-sectional variables for these countries depict a normalized data disparity and therefore the matrix of the dataset is linearly independent.
Table 6: Summarized Variables relationship for EAC Countries

<table>
<thead>
<tr>
<th>Variable</th>
<th>Overall Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>gdp</td>
<td>20070.59</td>
<td>11561.74</td>
<td>7469.261</td>
<td>54443.18</td>
<td>N = 57</td>
</tr>
<tr>
<td></td>
<td>between</td>
<td>5978.2</td>
<td>13823.05</td>
<td>25737.01</td>
<td>n = 3</td>
</tr>
<tr>
<td></td>
<td>within</td>
<td>10460.52</td>
<td>7179.06</td>
<td>48776.75</td>
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</tr>
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<td>dvi</td>
<td>.7588515</td>
<td>.0610782</td>
<td>.6400783</td>
<td>.8909551</td>
<td>N = 57</td>
</tr>
<tr>
<td></td>
<td>between</td>
<td>.0530073</td>
<td>.6996975</td>
<td>.8020438</td>
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</tr>
<tr>
<td></td>
<td>within</td>
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<td>.6806371</td>
<td>.8477627</td>
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</tr>
<tr>
<td>manf</td>
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<td>.1438084</td>
<td>.3331922</td>
<td>.9141382</td>
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</tr>
<tr>
<td></td>
<td>between</td>
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<td>.5158738</td>
<td>.6451778</td>
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</tr>
<tr>
<td></td>
<td>within</td>
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<td>.4075561</td>
<td>.988502</td>
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<tr>
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<td>between</td>
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<td>.1830386</td>
<td>.2623448</td>
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<tr>
<td></td>
<td>within</td>
<td>.0358318</td>
<td>.1576541</td>
<td>.3131897</td>
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<tr>
<td>gdppc</td>
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<td>259.1537</td>
<td>1227.478</td>
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<tr>
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<td>465.3612</td>
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<td>197.7714</td>
<td>306.4032</td>
<td>1088.103</td>
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<td>.0308747</td>
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<tr>
<td></td>
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<td>.010728</td>
<td>.003924</td>
<td>.0494951</td>
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<tr>
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<td>.1568061</td>
<td>.3329297</td>
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<td>.1669666</td>
<td>.3154085</td>
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<td>.0956468</td>
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<td>.2057299</td>
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<tr>
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<td>within</td>
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<td>.1087102</td>
<td>.2305003</td>
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<td>.4689614</td>
<td>0</td>
<td>1</td>
<td>N = 57</td>
</tr>
<tr>
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<td>between</td>
<td>0</td>
<td>.6842105</td>
<td>.6842105</td>
<td>n = 3</td>
</tr>
<tr>
<td></td>
<td>within</td>
<td>.4689614</td>
<td>0</td>
<td>1</td>
<td>T = 19</td>
</tr>
</tbody>
</table>

Source: Author’s Compilation

4.3 Stationarity Test Results

The panel data was subjected to stationarity tests in Table 7 overleaf using Augmented-Dickey Fuller (ADF) unit root test. A unit root test was necessary since some data series were found to be non-stationary at levels but the variables became stationary after differencing once using the Levin-Lin-Chu unit-root test. The decision as to whether to Reject or Not to Reject the null hypothesis was based on comparison of the P-values.
(within the brackets in table 7), and we test stationarity at 1%, 5% and 10% significance levels. The stationery series result is denoted as of order zero or I(0), while a random walk or non-stationery series is denoted below as being of order one or I(1).

Table 7: Stationarity Results for Panel Dataset

<table>
<thead>
<tr>
<th>Variables</th>
<th>At Level with Trend and Intercept</th>
<th>First Difference with Trend and Intercept</th>
<th>Order of Integration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ADF</td>
<td>ADF</td>
<td></td>
</tr>
<tr>
<td>GDP</td>
<td>-0.7078 (0.7718)</td>
<td>-5.6349 (0.0009)</td>
<td>I(1)</td>
</tr>
<tr>
<td>DVI</td>
<td>-4.6255 (0.0051)</td>
<td></td>
<td>I(0)</td>
</tr>
<tr>
<td>MANU</td>
<td>-4.3487 (0.1874)</td>
<td>-6.7905 (0.0000)</td>
<td>I(1)</td>
</tr>
<tr>
<td>GFCF</td>
<td>-5.3588 (0.0130)</td>
<td></td>
<td>I(0)</td>
</tr>
<tr>
<td>GDPPC</td>
<td>-1.8239 (0.5093)</td>
<td>-5.5406 (0.0010)</td>
<td>I(1)</td>
</tr>
<tr>
<td>NFDI</td>
<td>-8.6741 (0.0000)</td>
<td>-8.6741 (0.0000)</td>
<td>I(0)</td>
</tr>
<tr>
<td>CPS</td>
<td>-5.4757 (0.0058)</td>
<td></td>
<td>I(0)</td>
</tr>
<tr>
<td>EXPGDP</td>
<td>-4.4102 (0.2438)</td>
<td>-5.9872 (0.0005)</td>
<td>I(1)</td>
</tr>
</tbody>
</table>

Source: Author’s Compilation

4.4 Diagnostic Tests for Correlation and Heteroscedasticity

The robust tests estimates with Variance Inflation Factors (Vif) enables us check for the presence of autocorrelation or serial correlation in time series data, to ensure that the parameters of the standard errors are unbiased.

The rule of thumb is to apply the first difference technique, whereas if Vif of population parameters ($\mathbf{\beta}$) from the first estimates as observed from Table 9 is greater than 10, i.e. if Vif ($\mathbf{\beta}_i$)$>10$, then there is a higher magnitude of multicollinearity.
The author also checked for the problems of heteroscedasticity with the variances using the scatter plots of the residual square, against fitted values of the regression in Figure 3 overleaf.

Table 8: Correlation Matrix of Panel Dataset

<table>
<thead>
<tr>
<th></th>
<th>gdp</th>
<th>dvi</th>
<th>manf</th>
<th>gfcf</th>
<th>nfdi</th>
<th>cps</th>
<th>export-Gdp</th>
<th>EAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>gdp</td>
<td>1.0000</td>
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<td>dvi</td>
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<td></td>
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<td>manf</td>
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<td>0.3651</td>
<td>1.0000</td>
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<tr>
<td>gfcf</td>
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<td>-0.5030</td>
<td>1.0000</td>
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<td></td>
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<td></td>
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<tr>
<td>cps</td>
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<td>0.9801</td>
<td>0.7652</td>
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</tr>
<tr>
<td>exportsgdp</td>
<td>0.6194</td>
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<td>-0.6261</td>
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<td>-0.1634</td>
<td>-0.0842</td>
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<tr>
<td>EAC</td>
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<td>-0.3452</td>
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<td>0.4044</td>
<td>0.3331</td>
<td>0.3854</td>
<td>0.4402</td>
<td>1.0000</td>
</tr>
</tbody>
</table>

Source: Author’s Compilation

Table 9: Results of Vif with Multicollinearity

<table>
<thead>
<tr>
<th>Variable</th>
<th>VIF</th>
<th>1/VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>cps</td>
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<td>gfcf</td>
<td>664.75</td>
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<tr>
<td>dvi</td>
<td>137.59</td>
<td>0.007268</td>
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<td>manf</td>
<td>42.71</td>
<td>0.023415</td>
</tr>
<tr>
<td>exportsgdp</td>
<td>21.14</td>
<td>0.047303</td>
</tr>
<tr>
<td>nfdi</td>
<td>8.28</td>
<td>0.120819</td>
</tr>
<tr>
<td>EAC</td>
<td>5.43</td>
<td>0.184315</td>
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<tr>
<td>Mean VIF</td>
<td>220.79</td>
<td></td>
</tr>
</tbody>
</table>

Source: Author’s Compilation

Table 10: Results of Vif after eliminating Multicollinearity

<table>
<thead>
<tr>
<th>Variable</th>
<th>VIF</th>
<th>1/VIF</th>
</tr>
</thead>
<tbody>
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<td>dgfcf</td>
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</tr>
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<td>dvi</td>
<td>4.46</td>
<td>0.223978</td>
</tr>
<tr>
<td>dcps</td>
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<td>0.238837</td>
</tr>
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<td>EAC</td>
<td>4.08</td>
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</tr>
<tr>
<td>nfdi</td>
<td>3.35</td>
<td>0.298256</td>
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<tr>
<td>dexportsgdp</td>
<td>2.65</td>
<td>0.377960</td>
</tr>
<tr>
<td>dmanf</td>
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<td>0.417749</td>
</tr>
<tr>
<td>Mean VIF</td>
<td>3.69</td>
<td></td>
</tr>
</tbody>
</table>

Source: Author’s Compilation
The results obtained in Table 10 after second differencing for cps-Gdp, gfcf-Gdp, exports-Gdp and manuf-Gdp, yields a mean VIF of 3.6, which is considered appropriate for further estimations, as compared to our previous large mean value of 220.7 for the variance term in Table 9.

**Figure 3: Heteroscedasticity test using Scatter plots**

*Source: Author’s Compilation*

### 4.5 Co-integration Results

The test results from Table 11 overleaf confirmed that both the stationary and non-stationary independent variables; manufacturing to total exports (manf), gross fixed capital formation to GDP (gfcf), net foreign direct investment to GDP (nfdi), credit to private sector to GDP (cps), exports to GDP (exportsgdp) and per-capita GDP (GDppc) statistically maintain similar equilibrium relationships overtime, to avoid spurious regression results from the estimated data.
The standard assumption for such co-integration relationships is to expect the mean of $Z_t$ to be equal to zero, and the variance of the regression to be constant and time independent across observations.

Table 11: Co-integration Results for EAC Countries

| D.res | Coef.     | Std. Err. | z      | P>|z| | [95% Conf. Interval] |
|-------|-----------|-----------|--------|------|----------------------|
| res   |           |           |        |      |                      |
| L1    | -.1335365 | .1308224  | -1.02  | 0.307 | -.3899438            |
|       |           |           |        |      | .1228707             |
| LD    | -.3196224 | .1418438  | -2.25  | 0.024 | -.5976312            |
|       |           |           |        |      | -.0416136            |
| /sigma_u | 821.6176  | 1008.53   | 74.10127 | 9109.906
| /sigma_e | 4469.212  | 472.3281  | 3633.053 | 5497.814
| rho   | .0326921  | .0791011  | .0000367 | .6101083

Random-effects ML regression  
Number of obs  = 48  
Group variable: country code  
Number of groups  = 3  
Random effects u_i ~ Gaussian  
Obs per group: min = 16  
avg = 16.0  
max = 16  
Wald chi2(2) = 10.35  
Log likelihood  = -472.19589  
Prob > chi2 = 0.0056

Source: Author’s Compilation

By adopting the Engle-granger test, we confirm from the Table 11 above the presence of co-integration among the explanatory variables which determines the HHI (a measure of export diversification in the EAC), with the number of observations reduced to 48 after second differencing, and the prob>chi^2 = 0.0056 and log likelihood being -472.1.
4.6 Regression results

The panel dataset for the EAC countries were subjected to tests for the problems of individual heterogeneity and determination of the individual-specific and time-specific effects, using the Hausman test statistics, which gives the null hypothesis ($H_0$) and alternative hypothesis ($H_1$) as follows;

- $H_0$: Hausman test is insignificant, we use the random effects model ($p > 5\%$)
- $H_1$: If Hausman test is significant, we use fixed effects model instead ($p < 5\%$)

From results obtained from Shapiro-Wilk W test for normality of data, our total observations was 57, $W = 0.98620$, $V = 0.720$, $z = -0.706$ and Prob$>z = 0.75998$.

Since $P$ values $> 0.05$ or $5\%$, we reject the alternative and adopt the random effects model to estimate the panel dataset of three EAC countries, i.e. Kenya, Tanzania and Uganda, and explain the critical research objectives;

i. The dynamic interactions of explanatory variables which the literature confirms explains horizontal trade diversification (DVI or HHI).

ii. Secondly, the study will analyze the effectiveness of HHI to Kenya’s long-term economic growth objectives.

The objective one above is summarized in Tables 12 for Kenya, Table 13 for Tanzania and Table 14 for Uganda, as seen overleaf.

The results on the effectiveness or otherwise of HHI to Kenya’s economic growth objectives (denoted by GDP estimates) is found in Table 15 overleaf.
4.6.1 Regression results on DVI for Kenya

The results from Table 12 below for Kenya, which is currently the largest export market in EAC by GDP size, i.e. USD54.4 billion (2013) indicates that DVI, which was 0.64 (Year 2013) as recalled from our previous Table 4, is influenced significantly by per capita gross domestic product (proxy for Institutional efficiency) and the first difference for manufacturing exports to total exports (a proxy of industrialization growth).

The rest of the variables are insignificant. However, both significant factors have a negative relationship such that they reduce DVI by 0.0144% and 23.52% respectively holding other factors constant.

Overall, the outcome of the results confirms the empirical hypothesis by Noureen and Mahmood (2014), in the panel data study of ASEAN region and South Asian Association for Regional Co-operation or SAARC, which proved that HHI or DVI is significantly and positively dependent on the examined explanatory variables.

Table 12: Regression results on DVI for Kenya

<table>
<thead>
<tr>
<th>dvi</th>
<th>Coef.</th>
<th>Std. Error</th>
<th>t</th>
<th>P&gt;t</th>
<th>95% Conf. Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>gdppc</td>
<td>-.000144</td>
<td>.0000174</td>
<td>-8.29</td>
<td>0.000</td>
<td>-.0001827 -.0001053</td>
</tr>
<tr>
<td>dmanf</td>
<td>-.2351722</td>
<td>.1156008</td>
<td>-2.03</td>
<td>0.069</td>
<td>-.4927468 .0224024</td>
</tr>
<tr>
<td>dgfcf</td>
<td>.1863502</td>
<td>.343524</td>
<td>0.54</td>
<td>0.599</td>
<td>-.5790689 .9517693</td>
</tr>
<tr>
<td>nfdi</td>
<td>.4014111</td>
<td>.7073943</td>
<td>0.57</td>
<td>0.583</td>
<td>-1.174762 1.977584</td>
</tr>
<tr>
<td>dcps</td>
<td>.1058364</td>
<td>.2537369</td>
<td>0.42</td>
<td>0.685</td>
<td>-.4595247 .6711975</td>
</tr>
<tr>
<td>dexportsgdp</td>
<td>-.5839802</td>
<td>.3409046</td>
<td>-1.71</td>
<td>0.117</td>
<td>-1.343563 .1756026</td>
</tr>
<tr>
<td>EAC</td>
<td>.0006996</td>
<td>.0084545</td>
<td>0.08</td>
<td>0.936</td>
<td>-.0181383 .0195375</td>
</tr>
<tr>
<td>cons</td>
<td>.7967516</td>
<td>.0095355</td>
<td>83.56</td>
<td>0.000</td>
<td>.7755053 .817998</td>
</tr>
</tbody>
</table>

Number of obs = 18  
F(7, 10) = 19.81  
Prob > F = 0.0000  
R-squared = 0.9327  
Adj R-squared = 0.8857  
Root MSE = 0.01252

Source: Author’s Compilation
4.6.2 Regression results on DVI for Tanzania

Tanzania is the second largest market in the EAC region with a GDP base of USD45.8 billion (2013) and DVI of 0.74 (2013). From Table 13 below, the F statistics is insignificant at 0.1201, with a constant t-value of 42.45, which shows that other macro-economic variables such as tourism services (i.e. travels and transportation flows) that were not included in the model impact significantly on trade diversification.

Table 13: Regression results for variables affecting DVI in Tanzania

<table>
<thead>
<tr>
<th>dvi</th>
<th>Coef.</th>
<th>Std. Err.</th>
<th>t</th>
<th>P&gt;t</th>
<th>[95% Conf. Interval]</th>
</tr>
</thead>
<tbody>
<tr>
<td>gdppc</td>
<td>-0.0000886</td>
<td>0.0000646</td>
<td>-1.37</td>
<td>0.200</td>
<td>[-0.0002325, 0.0000553]</td>
</tr>
<tr>
<td>dmanf</td>
<td>-0.0147454</td>
<td>0.1288211</td>
<td>-0.11</td>
<td>0.911</td>
<td>[-0.3017767, 0.2722859]</td>
</tr>
<tr>
<td>dgfcf</td>
<td>-0.7002353</td>
<td>0.7222525</td>
<td>-0.97</td>
<td>0.355</td>
<td>[-2.309514, 0.9090435]</td>
</tr>
<tr>
<td>nfdi</td>
<td>-1.191913</td>
<td>0.7088113</td>
<td>-1.68</td>
<td>0.124</td>
<td>[-2.771244, 0.3874167]</td>
</tr>
<tr>
<td>dcps</td>
<td>0.5609433</td>
<td>0.4972188</td>
<td>1.13</td>
<td>0.286</td>
<td>[-0.5469293, 1.668816]</td>
</tr>
<tr>
<td>dexportsgdp</td>
<td>0.1709992</td>
<td>0.731724</td>
<td>0.23</td>
<td>0.820</td>
<td>[-1.459383, 1.801382]</td>
</tr>
<tr>
<td>EAC</td>
<td>0.0321143</td>
<td>0.0237003</td>
<td>1.36</td>
<td>0.205</td>
<td>[-0.0206933, 0.084922]</td>
</tr>
<tr>
<td>_cons</td>
<td>0.8377652</td>
<td>0.0197357</td>
<td>42.45</td>
<td>0.000</td>
<td>[0.7937913, 0.881739]</td>
</tr>
</tbody>
</table>

Number of obs= 18  
F(7, 10) = 2.24  
Prob > F = 0.1201  
R-squared = 0.6102  
Adj R-squared = 0.3373  
Root MSE = 0.02564

Source: Author’s Compilation

4.6.3 Regression results on DVI for Uganda

The results for Uganda with a GDP of USD26.4 billion and DVI of 0.72 (Years 2013), as shown in Table 14 overleaf, concludes that the country’s DVI is significantly changed by per capita gross domestic product (the proxy for institutional strength) and the EAC Treaty, albeit with both having a negative impact, such that they reduce DVI by 0.02352% and 5.52% respectively, while holding other factors constant. The rest of the variables are insignificant to DVI performance overtime.
Table 14: Regression Results for Variables affecting DVI in Uganda

<table>
<thead>
<tr>
<th></th>
<th>Coef.</th>
<th>Std. Err.</th>
<th>t</th>
<th>P&gt;t</th>
<th>[95% Conf. Interval]</th>
</tr>
</thead>
<tbody>
<tr>
<td>gdppc</td>
<td>-0.002352</td>
<td>0.000577</td>
<td>-4.08</td>
<td>0.002</td>
<td>-0.003638 -0.001066</td>
</tr>
<tr>
<td>dmanf</td>
<td>0.1512015</td>
<td>0.1368342</td>
<td>1.10</td>
<td>0.295</td>
<td>-0.1536842 0.4560871</td>
</tr>
<tr>
<td>dgfcf</td>
<td>3.00031</td>
<td>3.006461</td>
<td>1.00</td>
<td>0.342</td>
<td>-3.698502 9.699122</td>
</tr>
<tr>
<td>nfdi</td>
<td>0.1830988</td>
<td>0.8565619</td>
<td>0.21</td>
<td>0.835</td>
<td>-1.72544 2.091638</td>
</tr>
<tr>
<td>dcps</td>
<td>-2.922915</td>
<td>3.075842</td>
<td>-0.95</td>
<td>0.364</td>
<td>-9.776318 3.930488</td>
</tr>
<tr>
<td>dexportsgdp</td>
<td>0.0489014</td>
<td>0.5636907</td>
<td>0.09</td>
<td>0.933</td>
<td>-1.20708 1.304883</td>
</tr>
<tr>
<td>EAC</td>
<td>-0.0552509</td>
<td>0.0162702</td>
<td>-3.40</td>
<td>0.007</td>
<td>-0.0915031 -0.0189987</td>
</tr>
<tr>
<td>_cons</td>
<td>0.9444299</td>
<td>0.0186124</td>
<td>50.74</td>
<td>0.000</td>
<td>0.9029589 0.9859009</td>
</tr>
</tbody>
</table>

Number of obs = 18
F( 7, 10) = 13.91
Prob > F = 0.0002
R-squared = 0.9069
Adj R-squared = 0.8417
Root MSE = 0.02217

Source: Author’s Compilation

4.6.4 Regression results on effects of DVI on Economic Growth of Kenya

The Table 15 overleaf confirms the findings of previous empirical literature by Bebczuk and Berretoni (2006) and Noureen and Mahmood (2014) on the significant impact of DVI (its major determinants in this study being manufacturing to total exports and exports to GDP) on the economic growth of developing nations.

The arithmetic mean of Kenya’s GDP for the eighteen years period (1995-2013) was USD27.1 billion while DVI, which is a measure of the dispersion of trade value across a country’s exports (World Bank, 2013) averaged 0.73, indicating a prolonged but declining worsening of Kenya’s diversification of five major volatile exportable products as recalled from Figure 1, whereas; Horticulture (21 percent in 2014), Tea (20 percent in 2014), Articles of Apparel and Clothing (6 percent in 2014), Coffee (4 percent in 2014) and Tobacco products (4 percent in 2014).
From the previous Table 15, DVI negatively affects GDP, so that every unit change in DVI results to a reduction in Kenya’s economic growth by USD303.7 million, while every unit change in the first difference of manufacturing exports to total exports (indicating industrial sector development) reduces GDP by USD81.4 million.

The second most significant variable which negatively impacts on Kenya’s historical growth was first difference of total exports to GDP, with unit change reductions of USD226.7 million for the eighteen years period.

We can draw the following conclusions from the analysis of the empirical data;

i. All independent variables examined in this study significantly and robustly explain about 93.36 percent of Kenya’s GDP (proxy for economic growth), while the rest at 7.88 constant is as a result of omitted variables or error term.

ii. The total unit change for the significant variables which determines GDP, accounted for growth reductions of USD611.8 million. Therefore ceteris paribus, an HHI index closer to zero will enable Kenya in the medium-term achieve a higher economic growth rate of 10 percent, provided there are significant developments in the technological or industrial sector, which should lead to the exports of high quality manufactured goods.
Table 15: Effect of DVI and other variables on Economic Growth of Kenya

| gdp     | Coef.   | Std. Error | t     | P>|t| | 95% Conf. Interval |
|---------|---------|------------|-------|------|-------------------|
| DVI     | -303700.1 | 40459.98   | -7.51 | 0.000 | -393850.6 to -213549.7 |
| dmanf   | -81420.6  | 41397.92   | -1.97 | 0.078 | -173660.9 to 10819.71 |
| dgfcf   | 89896.76  | 122411.8   | 0.73  | 0.480 | -182853.6 to 362647.2 |
| nfdi    | 235642.8  | 246615.7   | 0.96  | 0.362 | -313851.2 to 785136.8 |
| dcps    | -6828.658 | 91786.82   | -0.07 | 0.942 | -211342.4 to 197685.1 |
| dexportsgdp | -226731.2 | 112813.2   | -2.01 | 0.072 | -478094.6 to 24632.21 |
| EAC     | 3217.185  | 2961.799   | 1.09  | 0.303 | -3382.114 to 9816.485 |
| _cons   | 234670.3  | 29795.36   | 7.88  | 0.000 | 168282.1 to 301058.5 |

Number of obs = 18
F( 7, 10) = 20.09
Prob > F = 0.0000
R-squared = 0.9336
Adj R-squared = 0.8871
Root MSE = 4496.9

Source: Author’s Compilation

4.7 Discussion of Regression results of HHI on Economic Growth of EAC

The EAC has remained Kenya’s most important export destination in Africa since the early 1990’s. The World Economic Forum (2011) indicated that due to the limited integration of the EAC to global financial market fluctuation, the region attained a higher growth rate of 7 percent from 2005-2008, as observed recently by the expanding GDP growth base of USD147.2 billion and a vibrant human capital growth of 156.62 million people, according to the World Bank (2015).

The Table 16 overleaf summarizes the mixed results (positive and negative) of the arithmetic mean for the most significant explanatory variables affecting EAC GDP growth across fifty-four observations.
Table 16: Impact of Explanatory Variables on EAC GDP Growth: 1995-2013

<table>
<thead>
<tr>
<th>EAC Countries</th>
<th>Kenya</th>
<th>Tanzania</th>
<th>Uganda</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variables</td>
<td>Mean</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GDP (USD millions)</td>
<td>27,167</td>
<td>21,799</td>
<td>14,591</td>
</tr>
<tr>
<td>Dvi</td>
<td>0.74</td>
<td>0.82</td>
<td>0.85</td>
</tr>
<tr>
<td>Manf to total Exp (%)</td>
<td>0.64</td>
<td>0.54</td>
<td>0.68</td>
</tr>
<tr>
<td>Exp to Gdp (%)</td>
<td>0.22</td>
<td>0.17</td>
<td>0.16</td>
</tr>
<tr>
<td>gfcf (% of Gdp)</td>
<td>0.19</td>
<td>0.26</td>
<td>0.28</td>
</tr>
<tr>
<td>Nfdi to Gdp (%)</td>
<td>0.004</td>
<td>0.03</td>
<td>0.03</td>
</tr>
<tr>
<td>Gdppc (USD hundreds)</td>
<td>735.58</td>
<td>538.58</td>
<td>491.21</td>
</tr>
<tr>
<td>Cps to Gdp (%)</td>
<td>0.20</td>
<td>0.27</td>
<td>0.28</td>
</tr>
</tbody>
</table>

Source: Author’s Compilation: dataset provided by UNCTAD (2015)

The degree of trade competitiveness from UNCTAD (2015) figures, is observed from Figure 4 overleaf, which shows that Kenya is the most performing country in trade diversification amongst the EAC countries, with an eighteen years average index of 0.74 and 0.64 (Year 2013), while Tanzania recorded an average DVI of 0.82 and 0.74 (Year 2013), but Uganda had the worst mean value of 0.85 and 0.72 (Year 2013).

We recall that the DVI measures the dispersion of trade value across a country’s exports, and the index itself is bounded between 0 and 1, with a higher index indicating that exports are concentrated in fewer sectors, thus vulnerable to trade shocks and inimical to economic growth, while a completely diversified product sector will be closer to zero.
The Table 17 overleaf concludes the empirical results for this study, whereas we adopted the random effects model on a robust panel dataset for Kenya, Tanzania and Uganda. The findings confirmed the degree of impact of the macro-economic variables on DVI in the EAC region, and furthermore, the overall effectiveness of the horizontal trade diversification model (DVI) on Economic Growth (GDP) for the EAC countries. We note also that net foreign direct investment (nfdi), and EAC Treaty both have positive relationships on GDP, as a unit change in nfdi increases GDP by approximately USD133.4 million, while a unit change in EAC Treaty improves growth by USD6,311.

Conversely, the unit change in the first difference of exports to GDP (dexportsgdp) reduced GDP growth by USD180.3 million because the EAC countries are net-importers...
of manufacturing products, and they all export mostly similar agricultural products, which includes Tea, Horticulture, Apparels of clothing and Coffee.

The study outcomes have consistently proven that weak DVI negatively affects EAC growth, so that every unit change in DVI results to reductions in GDP by approximately USD132 million, as these countries have not completely diversified their export base, and with reduced net foreign direct investments for capital goods and weaker international trade competitiveness, which according to Krugman (2009) are factors that improves production efficiency and high value-additions for growth in developing countries.

Table 17: Regression Outcomes for EAC Countries from 1995-2013

|        | Coef.  | Std. Err. | z     | P>|z| | [95% Conf. Interval] |
|--------|--------|-----------|-------|------|----------------------|
| gdp    | -131521.1 | 19869.98  | -6.62 | 0.000 | -170465.5 -92576.64  |
| dvi    | -359.6604 | 21656.11  | -0.02 | 0.987 | -42804.85 42085.53 |
| dmanf  | 55560.16 | 113537.2 | 0.49  | 0.625 | -166968.7 278089  |
| nfdi   | 133484  | 68465.65  | 1.95  | 0.051 | -706.2358 267674.2 |
| dgfcf  | 434.7746 | 89106.5 | 0.00  | 0.996 | -174210.8 175080.3 |
| dexportsgdp | -180335.6 | 94607.2 | -1.91 | 0.057 | -365762.3 5091.139 |
| EAC    | 6311.478 | 2769.504 | 2.28  | 0.023 | 883.3492 11739.61 |
| _cons  | 112842.4 | 15540.66 | 7.26  | 0.000 | 82383.23 143301.5 |

Random-effects GLS regression Number of obs = 54
Group variable: country code Number of groups = 3
R-sq: within = 0.6272 Obs per group: min = 18
between = 0.9269 avg = 18.0
overall = 0.6827 max = 18
Wald chi2(7) = 98.98
corr(u_i, X) = 0 (assumed) Prob > chi2 = 0.0000

Source: Author’s Compilation
CHAPTER FIVE

5.0 SUMMARY AND POLICY RECOMMENDATIONS

5.1 Introduction

The research study has successfully examined the effectiveness of the EAC horizontal trade diversification model to primarily Kenya’s economic growth objectives and the other two countries, i.e. Tanzania and Uganda. This chapter shall summarize the empirical findings of the study and recommend policy implications from results obtained.

5.2 Summary

The study used the random effects model on a balanced panel dataset, and analyzed the impact of the HHI on the growth of the three most dominant EAC countries, i.e. Kenya, Tanzania and Uganda for nineteen years. It may be recalled that HHI according to the World Bank (2015) measures the dispersion of trade value across a country’s exports, and the index itself is bounded between 0 and 1, with a higher index indicating that exports are concentrated in fewer sectors, thus vulnerable to trade shocks and thereby reducing economic growth rates, while a completely diversified product sector will be closer to zero.

The major research objective confirmed that the horizontal trade diversification index, commonly referred to as DVI or HHI (provided by UNCTAD, 2015) was 0.64 for Kenya (Year 2013) and is influenced significantly by per capita gross domestic product (proxy for strength of development institutions) and volume of manufacturing exports to total
exports (proxy for industrialization).

It was observed that Tanzania recorded a DVI of 0.74 (Year 2013), but diversification variables were insignificant in determining her economic growth, which reveals that other macro-economic variables such as tourism (i.e. travels and transportation products) that were excluded from the model may have an indirect impact on trade diversification.

The results obtained for Uganda reveals the country’s DVI was significantly changed by per capita gross domestic product (the proxy for institutional strength) and the implementation of the EAC Treaty.

These results are considered consistent with the findings of previous trade economists, such as Bebczuk and Berretoni (2006) and Noureen and Mahmood (2014), such that there is a significant impact of DVI, and its major determinants in this study being Exports to GDP, Manufacturing exports to total exports, Per Capita GDP, Gross Fixed Capital to GDP, Credit to Private Sector to GDP, Net Foreign Direct Investment to GDP and impact of the EAC Treaty on the economic growth of these developing EAC nations.

The arithmetic mean of Kenya’s GDP for the eighteen years period (1995-2013) was USD27.1 billion while her DVI averaged 0.73, which indicated a prolonged but declining worsening of Kenya’s diversification index for the five major agricultural exports, and the need for the policy makers to adopt the vertical or structural trade transformation model, in order to achieve higher economic growth rates of 10 percent in the medium term, as envisioned in Vision 2030 program.
5.3 Policy Recommendations

Based on the findings of the research, the author recommends that stakeholders involved in policy formulation should continue to strengthen Kenya’s technological and human capital development institutions (i.e. skill-based education, qualitative healthcare and social security) by establishing trade creation or industrialisation hubs within the EAC, which substitutes high cost imported merchandise products and services for subsidized regional goods, and thereby efficiently reduce the large trade balance deficits of EAC countries, and release huge capital investments that is required for trade diversification.

In the medium-term, the expansion of trade creation within the EAC countries for basic imported products, i.e. Petroleum products, industrial machineries, aircraft parts and motor vehicles, would improve intra-African trade diversification in those agricultural inputs currently being exported by Kenya, Uganda and Tanzania. Furthermore, as EAC countries continue to specialise in the production of sufficient high quality imported goods, it would lead to complementary exchange and distribution of exports of high quality manufactured goods to regional markets and the rest of Africa.

5.4 Limitations and areas of further Study

In the context of this study, it was difficult to ascertain the impact of commercial services products, particularly tourism, on trade diversification and GDP growth of Kenya, Tanzania and Uganda, before and after the implementation of the EAC Treaty.

In addition, data limitations prevented the researcher from analyzing HHI beyond 2013. It is considered that these two areas of study comprise a subject for future research.
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APPENDIX

Appendix 1: Definition of Terms

Economic Growth Variables

GDP per capita, measures the average monetary benefit each adult citizen of a country can earn from the total production of goods and services in a given fiscal year. Todaro and Smith (2006) opined that factors that determine economic growth include; human resources, natural resources, capital formation, technological development, population growth, rate of inflation, investment share in GDP, trade openness, Government share in GDP and level of taxation. The major theories that explain economic growth includes; Harrod-Domar theory of growth, Meade’s Neo Classical model of economic growth and the Solow model of long-run growth.

Growth Accounting Equation

Growth is calculated in real terms, because we have to adjust for the persistent run on prices of goods and services over a period of time. The growth accounting equation in terms of aggregate output is given by;

$$\Delta \frac{Y}{Y} = \alpha \Delta \frac{K}{K} + (1-\alpha) \Delta \frac{L}{L} + \Delta \frac{A}{A},$$

where variables stated are as follows;

$\Delta = \text{Percentage Change}$

$\Delta Y/Y = \text{Change in total national output}$

$\alpha = \text{share of capital in output}$

$\Delta K/K = \text{Change in total national capital stock}$

$\Delta L/L = \text{Change in total labour productivity}$

$\Delta A/A = \text{Change in total factor productivity}$
**Intra-African Global Trade**

The World trade forum (2014) defines international trade as the exchange of merchandise goods (fixed assets or physical capital inputs), commercial services (transport and travel) and factors of production between two or more countries, which are in different geographical or regional blocks. The other forms of commercial services includes; communication, construction, insurance, financial, computer and information systems, royalties and license fees, personal, cultural and recreational services and other business process improvement services.

Intra-African global trade is therefore the exchange of merchandise goods, commercial services and factors of production, e.g. human resources or fixed capital transfers between two or more African countries across different geographical or regional blocks, in a fiscal year. There are currently more than three hundred RTAs globally, which exists as both bilateral and plurilateral initiatives to support each country’s export-oriented growth policy.

Hoffmaister (1999), Rodrik (1999), Subramanian and Tamirisa (2003) found that the declining share of Africa’s products in world or global trade can be explained largely by the continent’s income growth, population size, geography and economic policy.

The World trade (2014) observed that since the beginning of the millennium, there has been strong econometric evidence supporting the theory that global trade is a critical component of economic growth and development of countries. This is considered factual because rapid economic growth in many developing countries over the last three decades was combined with their deeper integration into the global economic system.
Classical Theories of Trade

Mercantilism theory of trade, which was developed by Mun (1664), was the earliest attempt by economists seeking to explain the benefits of international trade to economic growth, and this occurred between the 16th to 18th centuries. The mercantile theory was premised on the assumption that countries can only increase their trade dominance when they increase exports more than imports and accumulate precious metals, i.e. gold and silver in return for imported goods. By so doing, those monarchical countries gained more wealth of gold and silver reserves, through massive exports and lower imports.

During those medieval times, protectionism was a state policy and more wealth was shored up by monarchs to build larger armies, conquer more territories and acquire slaves for farming, mining and shipping services, at the behest of feudal lords. However, this crude policy which sought to dominate less endowed countries failed to advance any global economic benefits of regional trade diversification. The trade policy was aimed towards political and economic subjugation and therefore was later discarded immediately after the industrial revolution and Laissez-faire awareness started in France and Great Britain, with spill-over effects in the United States of America, as previously colonized British and French territories began demanding independence.

Absolute and Comparative Cost Theories

Sir Adam Smith, who is widely regarded as the Father of liberal economic science, proposed the Absolute advantage theory in 1776, and confirmed hypothetically, that considering there are only two countries in the world with limited but fixed single resource, i.e. Labour, then each country should specialize in the production of goods
which their labour can supply at its maximum quantity, and exchange those goods of lower production with another trading country which has an absolute advantage in the production of the second rival good. Smith encouraged countries to concentrate all their fixed labour resources on such goods where they have sufficient resource control and absolute advantage in its production and distribution.

David Ricardo further extended Smith’s absolute advantage theory in 1817, by introducing the opportunity cost principle, in explaining some important factors which determined the direction of trade between two countries. The comparative cost advantage theory of Ricardo states that countries can only gain from international trade when they evaluate their marginal cost of producing goods, rather than absolute cost. Therefore, countries should specialize in producing those goods in which they have lower marginal cost advantage.

The major shortcomings of the three most prominent classical trade theories was their use of precious metals (gold or silver) as a standard measure of value, whilst ignoring the other significant forms of capital in global trade, i.e. physical, social and financial stocks (Gylfason and Nganou 2014). The classical assumptions were also based on a wrong premise of perfect competition and full employment in global trade, which could only hold if labour and capital resources were efficiently distributed among nations in equal proportions and usefulness. Furthermore, the traditional trade policies did not account for normal trade facilitation costs across national borders. Within the past decade, global integrations have reduced significantly trade costs by deploying massive technological production hubs in trade regions, which has increased global supply chains across continents with unequal capital resource endowments.
Baldwin (2012) and Johnson (2015) found out that the rise of global supply chains has altered the costs and benefits of protection in a variety of ways, because countries have become intricately linked together from supply of inputs to final assembly, production and distribution of goods and services. Therefore, as inputs pass through these global chains, they cross borders of several countries many times, and so bilateral gross trade data include substantial double-counting, therefore gross exports overstated the amount of domestic value-added in exports.

**The Neoclassical Theories of Trade**

The Heckscher (1919), Ohlin (1933) theorem, i.e. H-O, was an extension of Ricardo’s work on factors determining trade between two countries, assuming existence of free trade and zero transportation costs. H-O theorem included in its analysis a two countries model, which produces two commodities but in addition to another factor of production, i.e. Capital. Furthermore, these two factors which are Labour and Capital are immobile across countries but are mobile within sectors of the producer’s local economy.

According to Mejean and Andrade (2012), the H-O theorem concludes that; provided those assumptions holds true, then countries will specialize in the trading of those goods that intensively use its richest factor endowments, thereby leading to relative factor price equalization, through international price equalization mechanisms. The theorem was faulted because of its narrow assumptions that global trade always serves as a substitute for international factor mobility, even though there exists perfect mobility within the producer’s industries, thereby leading to the unrealistic existence of an homogenous production function across the two countries.
The Stolper-Samuelson theorem (1941) proposed that international trade succeeds based on the degree of openness and reward of those factors of production which were intensively deployed. Therefore, the increase of the relative prices of goods will increase the real return to that production factor (also known as real factor price), which has been intensively used for producing such goods, but will conversely reduce the real return of the second complement factor of production. The conclusion was that the rise in the continuous use of an abundant factor of production, e.g. Capital will increase its relative remuneration overtime and also reduce the real benefits accrued to the other factor, i.e. Labour, thereby leading to income inequalities in production.

The Rybczynski theorem of 1955 proposed that for a small economy, the implications of the Samuelson-Stopper theorem is that at a given price, a higher endowment in one factor makes the production that uses this factor more intensively increase, while the production that uses less of such factor decreases also in equal proportions (Majean and Andreade, 2012).

The Leontieff (1953) paradox explains a major empirical contradiction in Ricardo’s theorem of comparative cost advantage; whereas a country, e.g. United States of America which is deemed to be rich in Capital stock, imports more capital goods into its economy, while exporting labour services which was deemed as a relatively scarce factor of production. The possible reasons given for this anomaly by Leontieff includes the lack of substitutes for raw material imports, differences in technological components in foreign trade, imperfect competition with goods and factor markets and the heterogeneity of Labour supply across international borders.
New Trade Theory

The new or modern theory of International trade was made popular by the Nobel Laureate; Krugman (1981), where he defined competitiveness of a country in terms of existence of imperfect market in the national economies, which on aggregate confers relative competitiveness to that economy’s exports, especially in those industries where substantial economies of scale exist or have a firm that was the first to move into that industry. Krugman criticized the classical models because they could not explain the causes of increasing returns of production in large trading economies, e.g. USA-Germany and USA-China bi-lateral trade relationships, as well as those huge trade flows recorded between countries with different geographical boundaries but similar factor endowments. Krugman (2009) concluded that localization of industries always leads to change in factor prices and allows greater exploitation of external economies, and hence raises production efficiency. He provided empirical examples to support this theory, noting that world trade has moved beyond classical Ricardian principles; where there exists two countries with very different resources that export different goods, to the modern or new trade theory-where we see a global expansion of trade between two or more developed countries, who share very similar economic resources but still export those homogenous goods with high value-additions. The modern trade theory is also referred to as Krugman’s theory of increasing-returns to scale of production.
Appendix 2: GDP Trend Analysis for EAC Countries

Appendix 3: EAC Treaty on GDP Growth of Countries
Appendix 4: Manufacturing development trends in EAC Countries

Graphs by country code